

Chapter 4. SPECIES ACCOUNTS

ABOUT THE SPECIES ACCOUNTS

This section provides a Species Account for each species that was documented in South Dakota during the second Atlas period (2008 – 2012). For species that were not confirmed breeding, the species account contains a single map. The remainder of this description pertains to species confirmed breeding during the second Atlas period.

Each account contains text and up to three maps. The purpose of the accounts is to provide details on the species' distribution and status and any changes from the first Atlas period (1988 – 1992), its breeding habitat, especially specific information on habitat use in South Dakota, and basic breeding biology, again with South Dakota – specific information when available and relevant.

Sources of information. General biological, distribution, and habitat information comes from the *Birds of North America* species accounts, a comprehensive reference of the life histories of every bird in North America. These citations are included in the Bibliography section of this document.

The account also can include information from other studies and surveys conducted in South Dakota, such as the Breeding Bird Survey (Sauer *et al.* 2014) and graduate student research. The other research usually was not conducted at the same time as the second Atlas. Most information on breeding dates and locations is from the one of the Atlases or from the state bird sightings database, an online database to which birders, ornithologists, and conservationist voluntarily submit their sightings of birds and breeding behavior (Online Bird Observation System, 2015).

Table. Each account has a table with a summary of the number of records for each breeding category (confirmed, probable, and possible breeding, not breeding). The table shows the tally on atlas blocks and outside of atlas blocks (Extra observations), as well as the percentage of blocks in which the species was found.

Maps. The first map is the basic results of the second Atlas. It shows all second Atlas observations, coded by whether the species was confirmed breeding, probably breeding, possibly breeding, or not breeding at that location. If there was more than one observation of that species within an atlas block, the 'highest' breeding code was mapped. See Appendix VIII for details and definitions of each category and their hierarchy.

The second map is a 'change map.' and shows change in the species' breeding presence by county between the first and second Atlas. The purpose of this map is to visually display changes in the breeding distribution over the intervening 20 year period (McGowan and Corwin 2008). Any 'Observed but not breeding' records were not

included in this analysis. This map does not give any indication of a species' abundance or change in abundance in either atlas.

If there were enough observations obtained from special occupancy surveys (see Methods for details), the account has a third map showing the predicted distribution of the species based on habitat modeling. This map shows the probability the species will occur in every 3 mi x 3 mi block within South Dakota. Because other factors besides habitat may determine a species presence, the predicted map may be inaccurate in some regions; this is discussed in the text when it happened.

Abbreviations used in the text:

ft = feet

mi = mile

yd, yds = yard, yards

SDGFP = South Dakota Department of Game, Fish, and Parks

CANADA GOOSE

Branta canadensis

Across their range, Canada Geese vary in size. The subspecies in South Dakota is the Giant Canada Goose, *B. c. maxima*. This subspecies was thought to be extinct by the 1950s, but small flocks were rediscovered in Minnesota and South Dakota in the 1960s. Reestablishment of this subspecies has been so successful that some populations have become overabundant.

DISTRIBUTION AND STATUS

Historically, Canada Geese bred in Alaska, Canada, and the northern half of the United States. Because of reintroductions, these geese now breed in every U.S. state except Hawaii. In South Dakota, reintroductions and management of remnant Giant Canada Goose flocks began in 1967 (Mammenga and Dieter 2014). During the first Atlas, Canada Geese were detected in 19% of blocks and were considered 'uncommon and scattered.' An estimated 100,000 geese resided in South Dakota by the end of the goose restoration project in 1998 (Vaa *et al.* 2010). During the second Atlas, an estimated average of 137,000 Canada Geese resided in the state (2007-2009) and were reported on 50% of all Atlas blocks. Game managers in South Dakota are attempting to reduce the state's population to 80,000 birds and address nuisance issues in both rural and urban areas (Vaa *et al.* 2010).

HABITAT

Canada Geese require open areas near water for nesting. Second Atlas nests

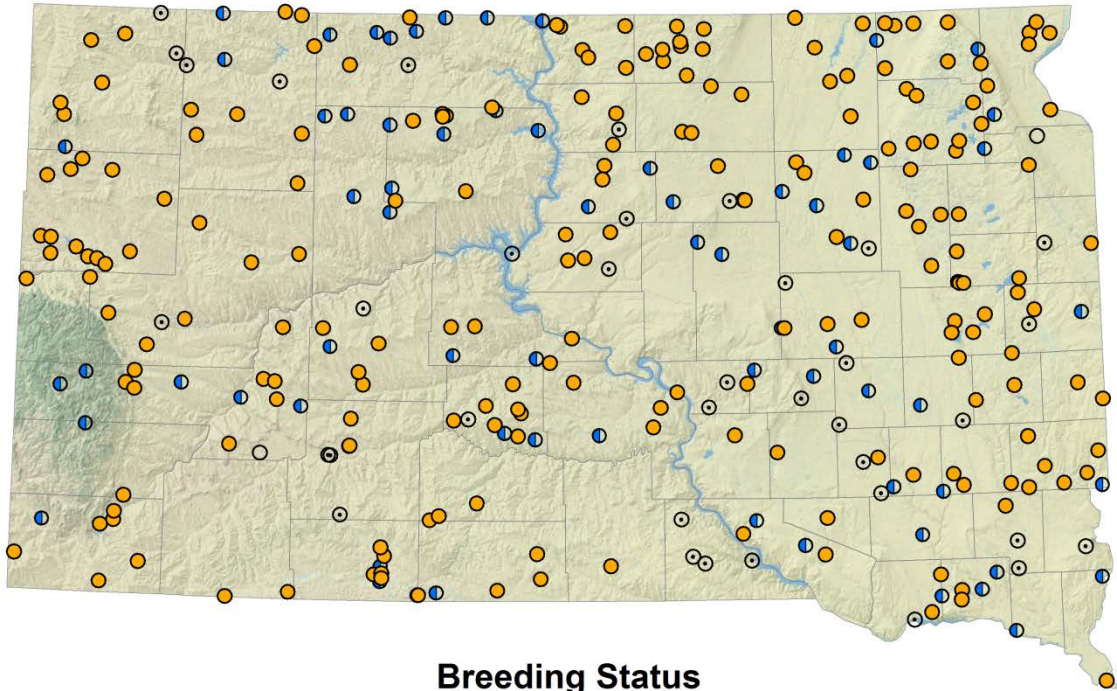
were in marshes (14 nests), lakes (10), and rivers (3). For rearing broods, geese require easy access to water and an abundance of plant food, such as grass, forbs, and seedling crop plants. Second Atlas broods (291) occurred in lakes and ponds (58%), marshes (37%), grasslands (3%), rivers (1%), and cropland (1%).

BREEDING BIOLOGY

In South Dakota, Canada Geese nest from late March to June. Pairs mate for life. During the second Atlas, Canada Geese nested in old heron and Bald Eagle nests in trees, in tree stumps, on badlands, goose nesting structures, muskrat houses, islands, and vegetation mounds in marshes. The clutch of 2 to 11 white eggs is incubated by the female for 28 days. Soon after hatching, goslings are able to walk, swim, dive, and feed. Parents lead the brood to feeding areas and provide defense while the goslings feed. Goslings can fly at 9 weeks. Young geese remain with their parents throughout their first year, traveling together in large flocks of family groups (Mowbray *et al.* 2002).

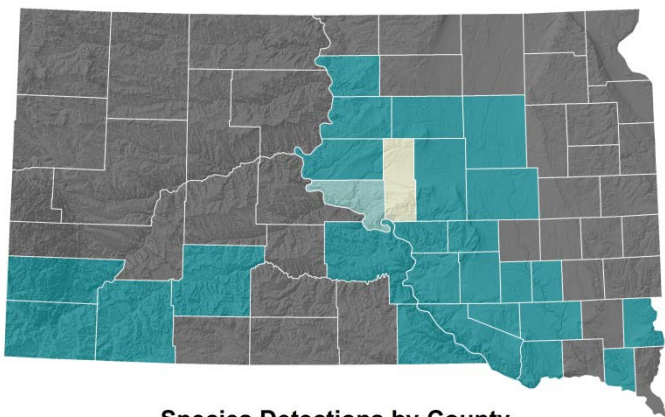
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	114	95	209
Probable	66	1	67
Possible	36	2	38
Observed	2	0	2
Total	218 (50%)	98	316

Canada Goose



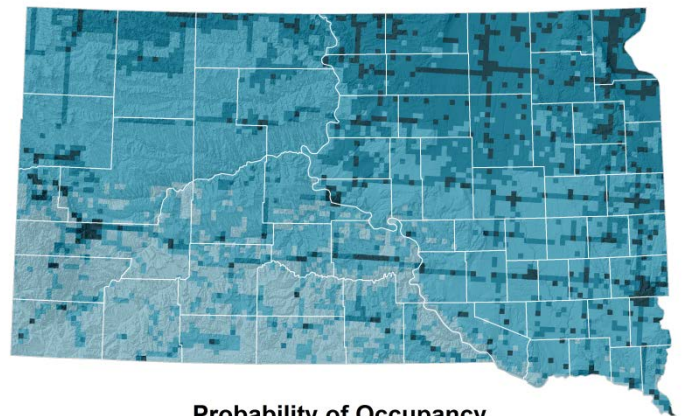
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

TRUMPETER SWAN

Cygnus buccinator

With a wingspan of more than 7 feet and a height of 4 feet, the Trumpeter Swan is North America's largest waterfowl. It is named for its distinctive call, which is loud and trumpet-like. Trumpeters mate for life and may live up to 30 years.

human disturbance. In South Dakota, landscapes around breeding swan wetlands have more grasslands and less cropland, developed land, or woodland relative to what is available (Bishop *et al.* 2012). Second Atlas observations were on ponds (50%) and marshes (50%).

DISTRIBUTION AND STATUS

The Trumpeter Swan's historic breeding range extended from central Alaska through almost all of Canada and south to Missouri, Nebraska, Wyoming and Idaho. The species' population was decimated in the 1800s by commercial and subsistence hunting. It currently occurs in isolated, scattered populations. South Dakota's Trumpeter Swans were extirpated during the 1800s. The current population is part of the High Plains flock, which was reintroduced to Lacreek National Wildlife Refuge beginning in 1960. This flock has grown at a rate of about 5% per year and has expanded into western South Dakota, eastern Wyoming, and the Nebraska Sandhills (Slater 2005, Comeau and Vrtiska 2012). This year-round resident is a South Dakota Species of Greatest Conservation Need because of its scattered distribution and limited wintering areas.

BREEDING BIOLOGY

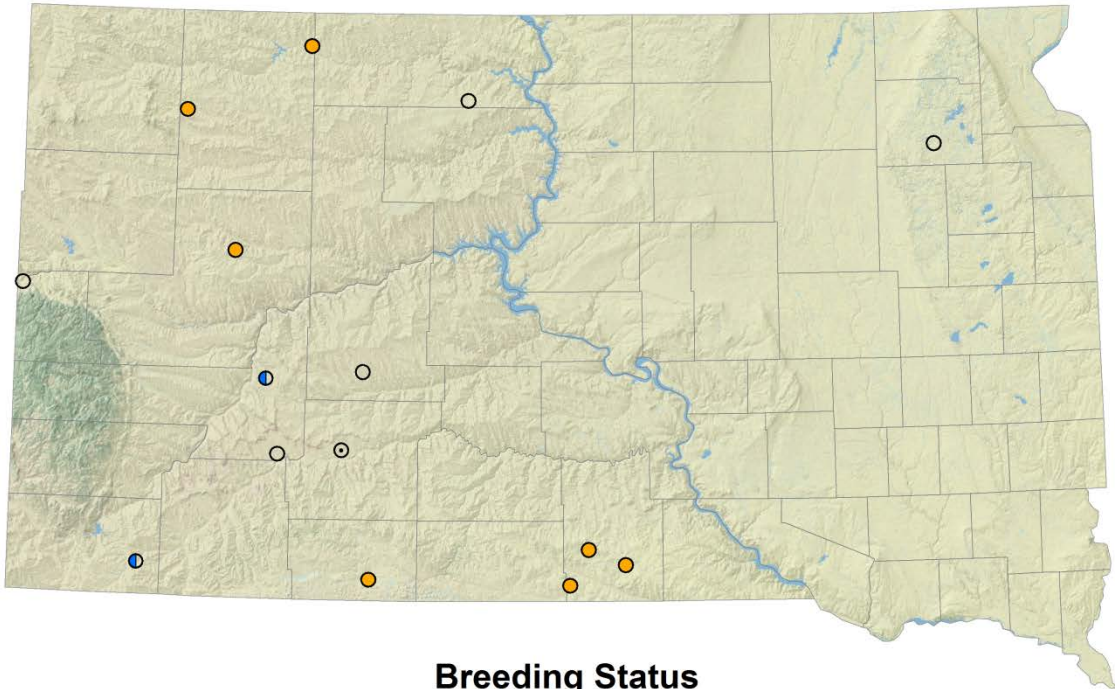
The nesting season in South Dakota is mid-April to early July. Nests are built on islands, in emergent marsh vegetation, or on a muskrat house or beaver lodge. The male gathers nest material by uprooting marsh plants and brings them to the female for placement. The nest mound, which takes two weeks to build, reaches 6' to 12' in diameter and 18" high. The female incubates an average of 4 to 6 off-white eggs for 35 days. When they hatch, the downy cygnets are able to swim and feed themselves. Adults lead cygnets to feeding areas and provide protection. The average age of first flight is 13 to 15 weeks. The young remain with their parents through the cygnets' first winter (Mitchell and Eichholz 2010).

HABITAT

Trumpeter Swans reside in freshwater habitats. Ideal breeding habitat is a large, shallow, unpolluted wetland with a diverse mix of aquatic vegetation, room for takeoff (approximately 100 yards), multiple available nest sites, and low

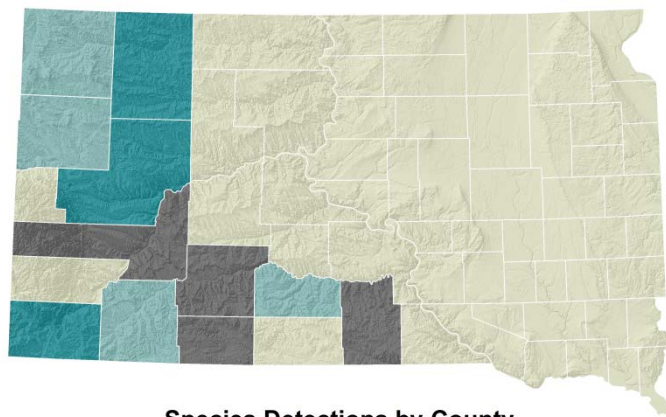
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	7	7
Probable	1	1	2
Possible	1	0	1
Observed	2	3	5
Total	4 (0.9%)	11	15

Trumpeter Swan



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

WOOD DUCK

Aix sponsa

The closest relative of the Wood Duck is the Mandarin Duck of eastern Asia. The Wood Duck's diet reflects the woodland habitat in which it forages, and includes seeds, fruit, acorns, grain, and terrestrial invertebrates.

DISTRIBUTION AND STATUS

The Wood Duck's breeding range encompasses the eastern U.S. west through the Dakotas to the northwest states, and extreme southern Canada. In South Dakota, Wood Ducks are widespread and fairly common, except in areas with few nesting trees or wetlands, such as the northwestern counties and the Black Hills. In the 1930s, Wood Ducks were limited to the extreme southeast corner of the state. By the 1990s, these ducks were documented in every county (Coughlin and Flake 1994). The increase is attributed to the maturation of cottonwood forests and proliferation of nest boxes. Since then, the distribution appears to have remained unchanged.

HABITAT

Breeding Wood Ducks during the second Atlas were reported in ponds (46%), marshes (27%), and along creeks and rivers (18%), especially those surrounded by woodland. Of 95 second Atlas broods, 53% were in ponds, 34% in marshes, and 13% along rivers and creeks. Five of these were in urban areas. Broods on rivers forage in oxbows, river-side emergent vegetation, and nearby wetlands, and use the river

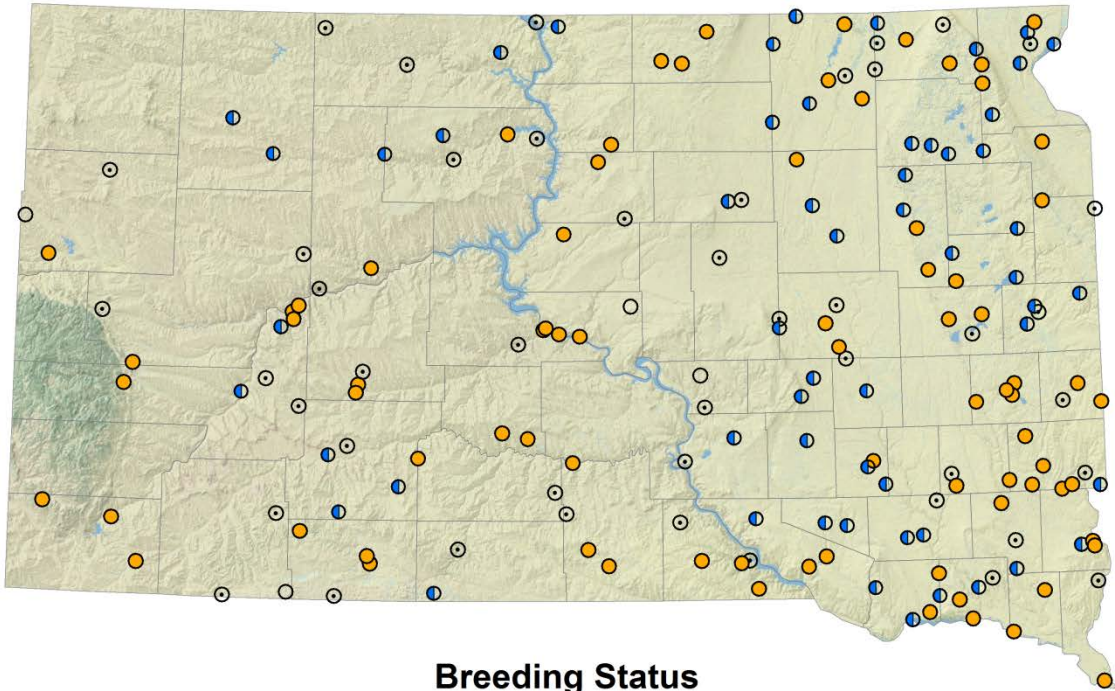
itself as a travel route (Smith and Flake 1985, Granfors and Flake 1999).

BREEDING BIOLOGY

The South Dakota nesting season is April through June, with some ducklings still accompanying the hen in early August. Wood Ducks nest in cavities, most commonly in natural tree cavities or nest boxes. They prefer sites close to or over water and near good brood-rearing areas. The female lines the nest with down pulled from her breast. She lays 9 to 13 eggs which she incubates for 30 days. Ducklings are precocial and leave the nest the morning after hatching. Before the ducklings leave, the female checks the area for danger. If safe, she calls for the ducklings from below the nest. Climbing with their sharp claws and bracing with their tails, the ducklings jump and climb up the inside of the cavity and leap to the waiting female. The female moves the brood to rearing areas. In South Dakota, broods move up to 6 miles in 2 days (Granfors and Flake 1999). The female remains with the brood for 5 to 8 weeks (Hepp and Bellrose 2013).

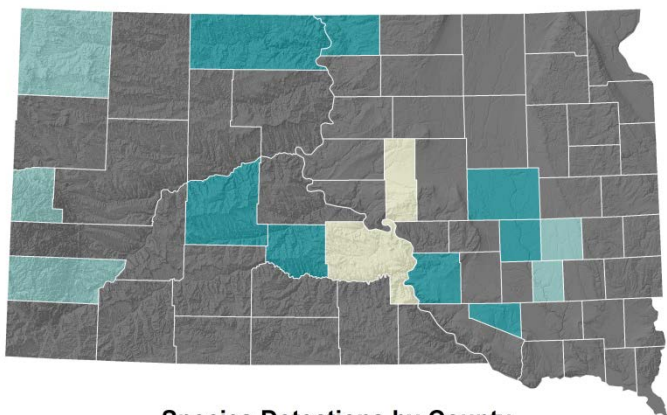
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	40	40	80
Probable	56	1	57
Possible	45	1	46
Observed	3	1	4
Total	144 (33%)	43	187

Wood Duck



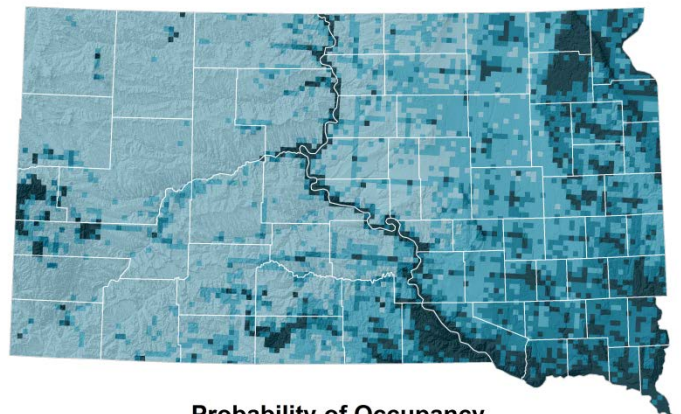
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

GADWALL

Anas strepera

Gadwall pairs form in late Fall on the wintering grounds. The male follows the female back to her breeding pond in the spring.

seen in ponds (49%), marshes (48%) or wet meadows (2%) during the second Atlas (208 broods).

DISTRIBUTION AND STATUS

Gadwalls breed in the western and north-central portions of the United States and the prairie provinces of Canada. This duck also breeds in central Europe and Asia. In South Dakota, Gadwall breed throughout the state. They are especially common in the prairie pothole, Missouri Coteau and Prairie Coteau regions, and in West River stock ponds (Brewster *et al.* 1976, Flake *et al.* 1977, May *et al.* 2008). The second Atlas recorded Gadwall in a higher proportion of blocks (64%) than did the first Atlas (51%). Breeding Bird Survey data show that South Dakota's Gadwall population is significantly increasing, at a rate of 3% per year since 1967 (Sauer *et al.* 2014).

BREEDING BIOLOGY

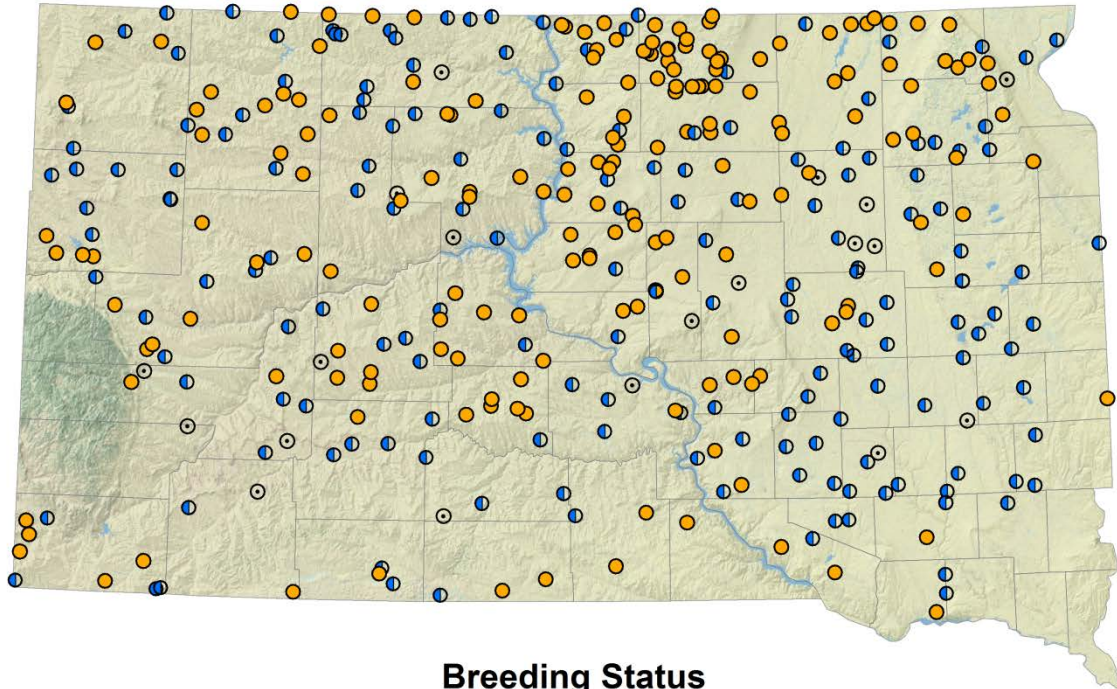
Nesting later than other dabbling ducks, Gadwall breed from mid-May to early August in South Dakota. During the second Atlas, nests with eggs were reported between May 23 and June 16 (17 nests), while broods were reported between May 28 and August 13 (208 broods). Nests are built on the ground in dense vegetation, preferably on an island or dike, and usually within 175 yds of water. Second Atlas nests were in undisturbed grassland (9 nests) and pasture (1 nest). The female builds the nest of dried grass and feathers and lays 6 to 12 eggs (second Atlas average of 9 eggs in 14 nests). Only the female incubates the eggs. Males leave during the 24 to 27-day incubation period. Ducklings are precocial at hatching and leave the nest within 24 hours. Females lead ducklings to water, where the ducklings feed on aquatic invertebrates. Ducklings can fly at 50 days and become independent before 10 weeks (Leschack *et al.* 1997).

HABITAT

In South Dakota, natural or artificial ponds with an equal proportion of marsh and open water, and shorelines with bare soil are important for breeding (Flake *et al.* 1977, Ruwaldt *et al.* 1979). Second Atlas observers found Gadwall in ponds (53%), marshes (34%), wet meadows (5%), creeks (3%), grasslands (2%), and cultivated fields (1%). Brood-rearing habitat includes a large number of ponds, and equal amounts of marsh and open water in the brood pond (Mack and Flake 1980). Most broods were

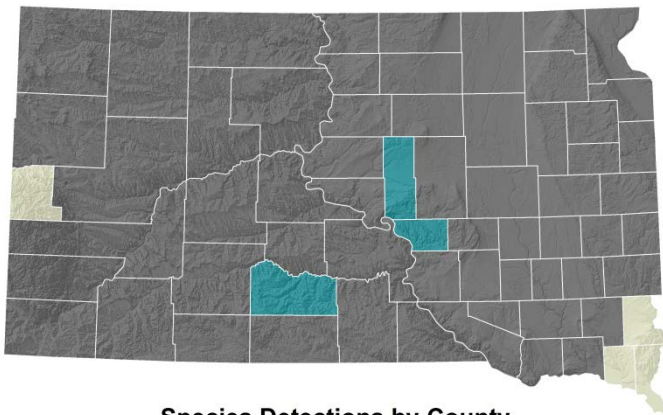
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	87	100	187
Probable	172	3	175
Possible	20	0	20
Observed	0	0	0
Total	279 (64%)	103	382

Gadwall



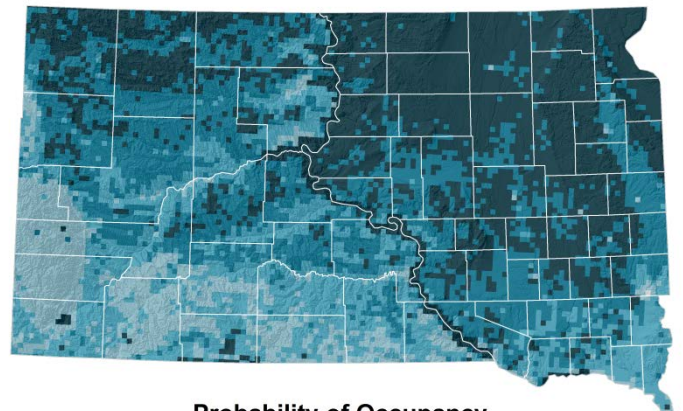
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

AMERICAN WIGEON

Anas americana

The most vegetarian of dabbling ducks, American Wigeons often graze on land like a goose. Their relatively short, tall bill increases the strength of the bill tip, allowing them to pluck vegetation. Wigeon also eat submerged vegetation, often stealing food that American Coots and other diving ducks bring up from the lake bottom.

DISTRIBUTION AND STATUS

The main breeding range of the American Wigeon includes Alaska and western Canada, south through the U.S. Prairie Pothole region. In South Dakota, American Wigeon breeds primarily in the northern 2/3rds of the state. Both Atlases recorded more wigeon west of the Missouri River compared to East River, highlighting the importance of stock ponds to this species. The first Atlas, which was a relatively dry period, detected wigeon on fewer blocks (13% of random blocks) compared to the second Atlas (25%). Populations fluctuate with climatic conditions. In drought years, wigeon overfly the Great Plains and breed farther north (Mini *et al.* 2014).

HABITAT

In South Dakota, wigeon show a marked preference for human-made wetlands and stock ponds over natural ponds and lakes (Ruwaldt *et al.* 1979). Wigeon pairs prefer areas with a mix of wetlands and uplands with brush and grass cover. Females and broods feed in the open water of marshy ponds and lake bays.

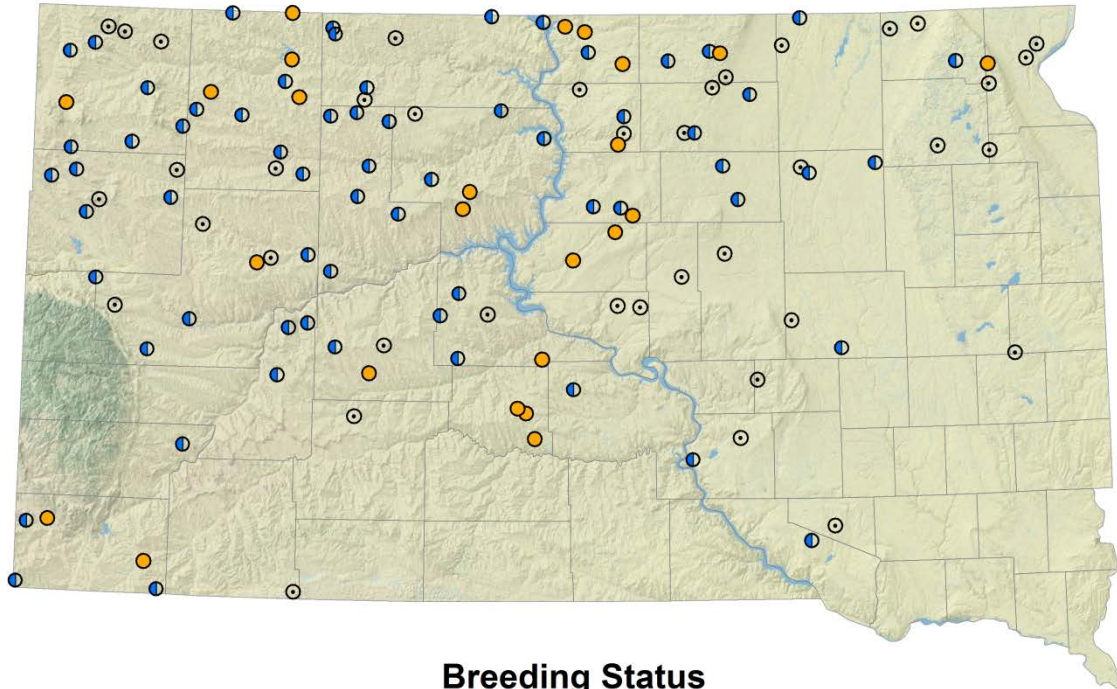
During the second Atlas, broods were reported in ponds and lakes (14 broods) and marshes (5 broods).

BREEDING BIOLOGY

American Wigeon tend to begin nesting later than most other dabbling ducks. Second Atlas nest reports ranged from May 21 to June 9, and broods were observed June 10 to July 30. Most pairs form on the wintering grounds; the male follows his mate back to the breeding site. Nests are on the ground in upland areas or on an island, under bushes, forbs, or dense grass. The female creates a shallow depression and fills it with grasses and weeds. She adds a lining of down feathers during egg laying and incubation. She lays a clutch of 7 to 10 white eggs which she incubates for 23 to 25 days. The male usually departs before the eggs hatch. The downy ducklings leave the nest within 24 hours of hatching. The female protects and leads the brood, but the ducklings feed themselves. Ducklings can fly at about 45 to 48 days (Mini *et al.* 2014).

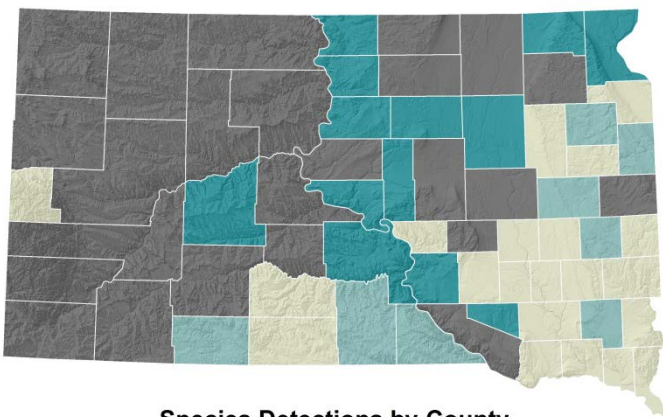
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	13	11	24
Probable	62	3	65
Possible	35	4	39
Observed	0	0	0
Total	110 (25%)	18	128

American Wigeon



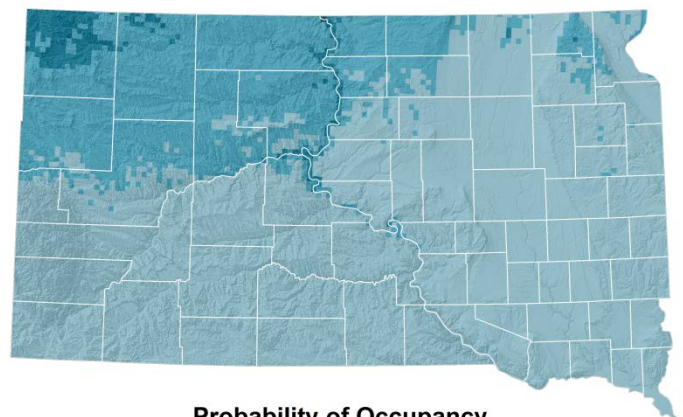
Breeding Status

- Confirmed breeding
- ◐ Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

AMERICAN BLACK DUCK

Anas rubripes

The American Black Duck is a ‘dabbling’ duck, closely related to the Mallard. However, unlike most dabbling ducks, it readily dives, especially to reach aquatic tubers.

DISTRIBUTION AND STATUS

The American Black Duck breeds in the Northeast and upper Midwest of the U.S. and throughout eastern Canada. It is an accidental breeder in eastern South Dakota. Most nest reports are from the 1930s to 1950s (Skadsen 1991), with 2 additional reports during the 1990s (Tallman *et al.* 2002). The breeding confirmation during the second Atlas was hen with a brood of 3 ducklings in Brookings County in 2011. This was the first confirmation in more than a decade and the farthest south of any previous report.

HABITAT

These ducks breed in a wide variety of wetland types, including lakes, ponds, rivers, and wooded wetlands. On the East Coast, Black Ducks also inhabit saltwater areas. Broods are raised in shallow waters with aquatic vegetation.

BREEDING BIOLOGY

Few dates were reported for the South Dakota nest records of the 1900s. The second Atlas brood was first seen July 21. Most likely, Black Ducks in South Dakota nest in May and June and raise

their broods in June and July. The nest site is usually near water, but may be up to a mile away. Typically the nest is in a shallow depression on the ground. It also may be in a shrub, on top of a stump, in a tree cavity, on a duck blind, or in the old nest of another species. The nest may have a thin lining of vegetation in addition to down that the female adds during incubation. She lays 7 to 11 creamy white eggs and incubates the clutch for 26 days. The male abandons the female during incubation and does not provide any parental care. Although the eggs are laid over the span of a week or more, all eggs typically hatch within a few hours. The female broods the ducklings until their down is dry, then leads them from the nest at night. The family may move long distances over land in the dark to the brood-rearing wetland. Ducklings find their own food, primarily feeding on insects, aquatic invertebrates, and aquatic plants. Ducklings can fly and are independent when about 45 to 60 days old (Longcore *et al.* 2000).

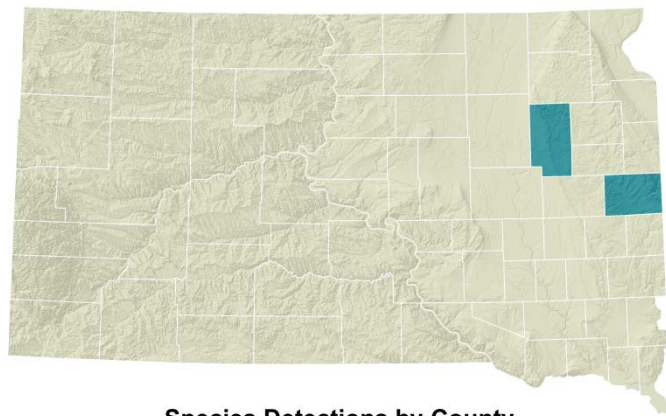
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	1	1
Probable	0	1	1
Possible	0	0	0
Observed	1	0	1
Total	1 (0.2%)	2	3

American Black Duck



Breeding Status

- Confirmed breeding
- ⦿ Possibly breeding
- ⦿ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

MALLARD

Anas platyrhynchos

The Mallard is North America's most abundant and most heavily hunted duck. Most domestic ducks are descended from the Mallard.

DISTRIBUTION AND STATUS

Mallards breed from California to Alaska and across the central plains to the Atlantic Coast. The species breeds throughout South Dakota. Mallards were the most frequently observed species during the second Atlas, reported from all 66 counties and 87% of atlas blocks. Mallards also were the most frequently reported species during the first Atlas and seem always to have been an abundant breeder in the state (Over and Thoms 1946). Their statewide distribution did not change between the two atlases.

HABITAT

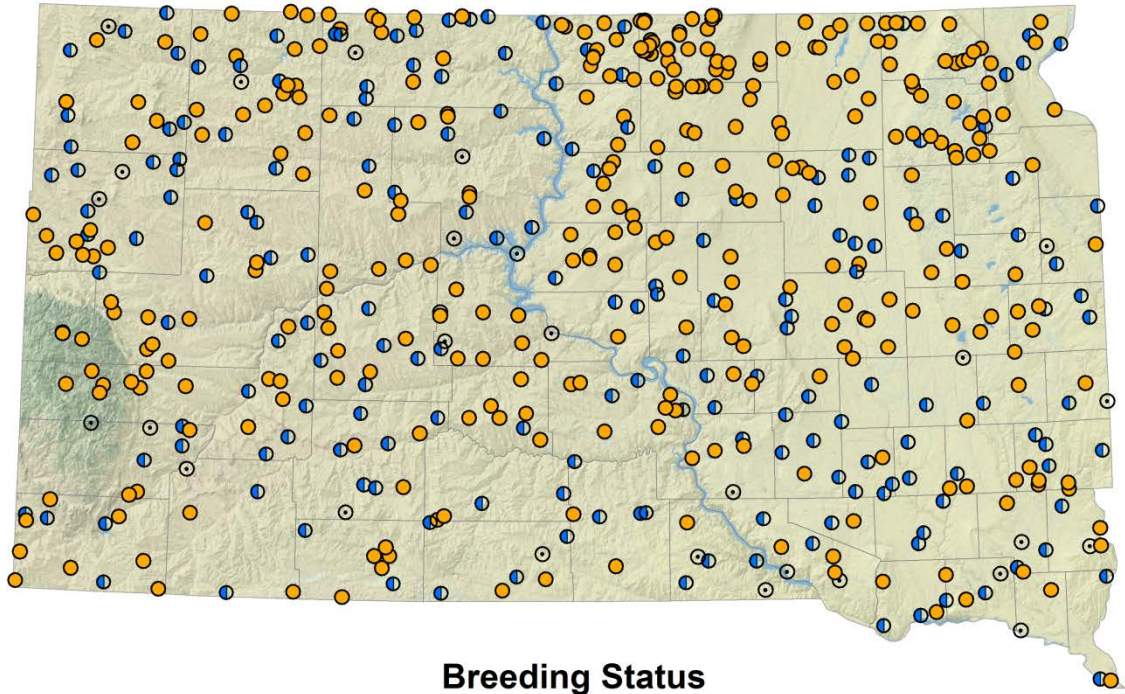
Mallards nest near all types of aquatic habitats in grasslands, farmlands, forests, and urban areas. Second Atlas observers reported Mallards in lakes and ponds (48%), marshes (31%), rivers and creeks (5%), and wet meadows (4%). Most second Atlas nest locations were in grassland (78%) or road ditches (14%), with 6% over water and one nest in a barn. Broods use seasonal, semi-permanent, or permanent ponds, lakes, rivers, and creeks. They prefer wetlands that have a mix of emergent vegetation and open water. Ducklings tend to forage at the water's edge and in shallow water.

BREEDING BIOLOGY

Although they occasionally nest over water, Mallards usually nest on the ground in uplands within three-quarters of a mile of water (Solberg and Higgins 1993). The hen builds a nest from grass and other materials. The nest is located under overhanging cover or in dense vegetation for maximum concealment. In South Dakota, hens begin laying in late April (second Atlas early nest date: April 21) and continue into late July (second Atlas late nest-with-eggs date: July 26). During the second Atlas, observers reported an average of 7.5 eggs per nest (range 1 to 15 eggs, in 29 nests). The female incubates the creamy or greenish-buff unmarked eggs for 23 to 30 days. The downy precocial ducklings leave the nest within 24 hours of hatching and follow the hen to water. The drake is not involved in parental care. The hen protects and leads the brood. Ducklings feed themselves and can fly at about 50 to 72 days (Drilling *et al.* 2002).

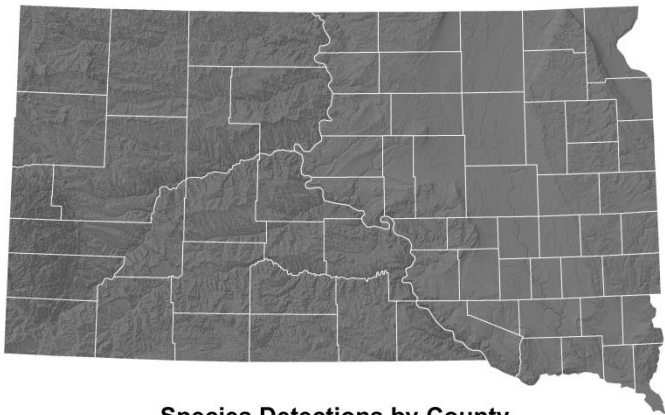
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	168	168	336
Probable	184	2	186
Possible	25	5	30
Observed	0	0	0
Total	377 (87%)	175	552

Mallard



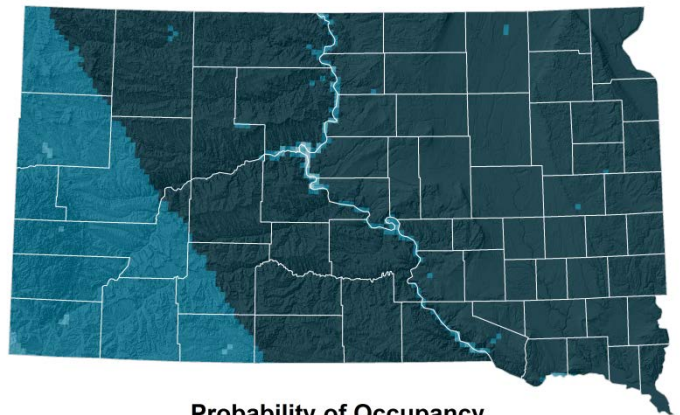
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BLUE-WINGED TEAL

Anas discors

Unlike many North American dabbling ducks, Blue-winged Teal do not spend the winter in the U.S., but overwinter in northern South America. They are one of the earliest ducks to migrate south in the fall, and among the last to migrate north in the spring.

pastures (2), marshes (2), and shoreline (1). Brood ponds, with small shallow bays, contain a mix of open water and bulrushes (Mack and Flake 1980). Most broods during the second Atlas were observed in marsh and wet meadows (51%) or ponds (48%) (370 broods).

DISTRIBUTION AND STATUS

Blue-winged Teal nest throughout Canada and Alaska, the northern United States, and the Great Plains. Highest breeding densities occur in northwest Iowa, the Dakotas, and the southern Canadian Prairie Provinces. In South Dakota, Blue-winged Teal are second only to Mallards in abundance and distribution. Teal numbers depend on pond numbers (Rohwer *et al.* 2002). Fewer teal were reported during the first Atlas (63% of random blocks), especially in north-central South Dakota. Conditions were much drier during the first Atlas (Peterson 1995), resulting in fewer nesting ponds.

BREEDING BIOLOGY

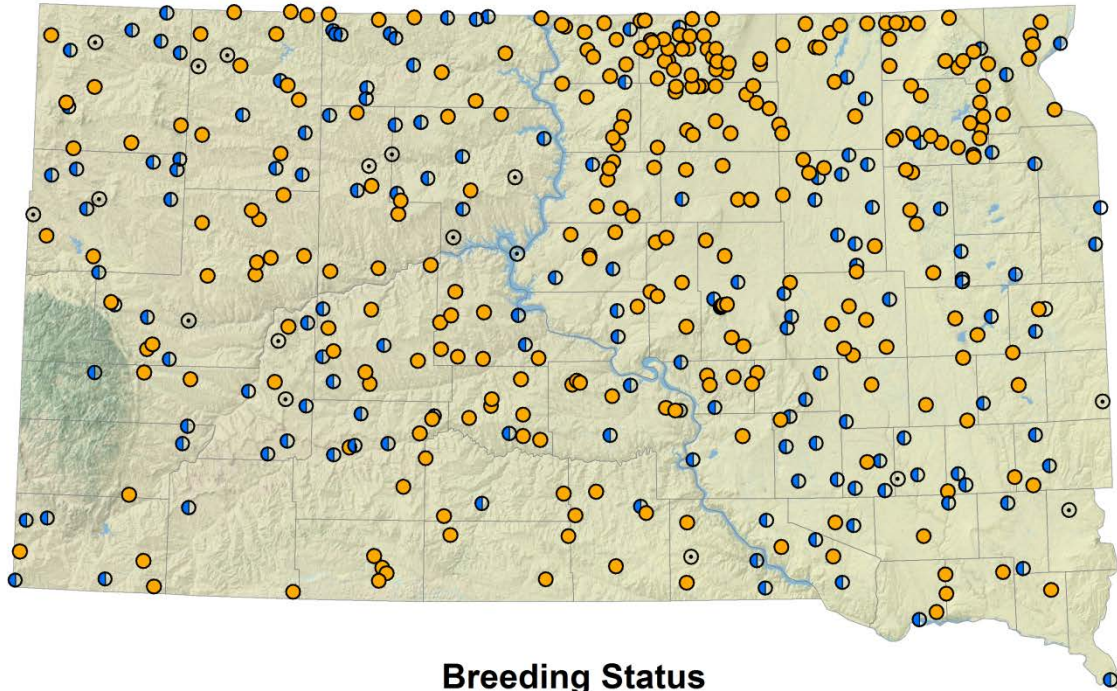
In South Dakota, nesting occurs from May into early July, and broods are present from early June into August. Pairs form on the wintering grounds and during spring migration. The nest is a bowl-shaped depression on the ground with added grass and weeds, and lined with down from the hen's breast. Second Atlas clutch sizes ranged from 4 to 12 eggs with an average of 10 eggs (15 nests). After 23 to 24 days incubation, ducklings hatch covered with wet down. As soon as the ducklings are dry, the hen leads the brood to the brood pond. Second Atlas observers reported brood sizes ranging from 1 to 13 ducklings (125 broods). Ducklings find their own food but are protected and brooded by the hen until about 40 days old (Rohwer *et al.* 2002).

HABITAT

Breeding teal inhabit shallow marshes, ponds, and stock ponds surrounded by grasslands. During the second Atlas, 51% of Blue-winged Teal records were in lakes and ponds and 44% in marshes and wet meadows. Teal also were in grasslands (2%), roadsides (1%), and cropland (1%). Nest sites are in grasslands and hayfields within stands of thick grass, generally within 170 yds of water. Second Atlas nests were in undisturbed grasslands (6 nests),

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	157	133	290
Probable	142	3	145
Possible	17	1	18
Observed	0	0	0
Total	316 (73%)	137	453

Blue-winged Teal



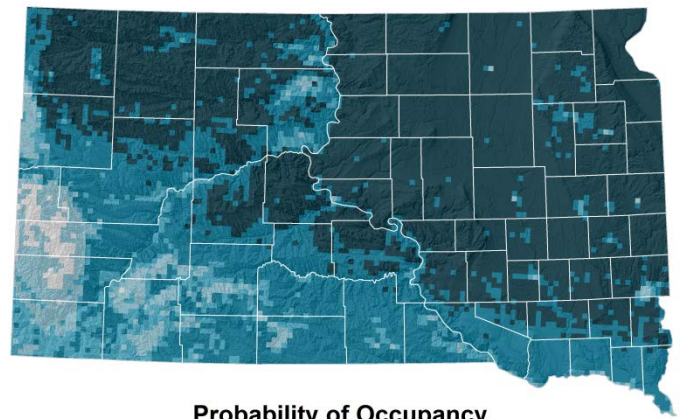
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

CINNAMON TEAL

Anas cyanoptera

Primarily breeding west of the ‘duck factory’ Prairie Pothole region of North America, the Cinnamon Teal is one of the least abundant dabbling ducks on the continent.

DISTRIBUTION AND STATUS

Cinnamon Teal breed throughout southwestern Canada and the western United States, and south into South America. This teal is uncommon but regularly seen in all seasons in the Great Plains, with scattered breeding records in the Dakotas, Nebraska, and Kansas. Few breeding records exist in South Dakota, primarily because of the species’ rarity. In addition, Cinnamon Teal hens and broods are difficult to distinguish from those of the more common Blue-winged Teal, which are almost identical in appearance. Breeding Cinnamon Teal are more common in western South Dakota. Abundance and distribution did not differ between the first and second Atlases.

HABITAT

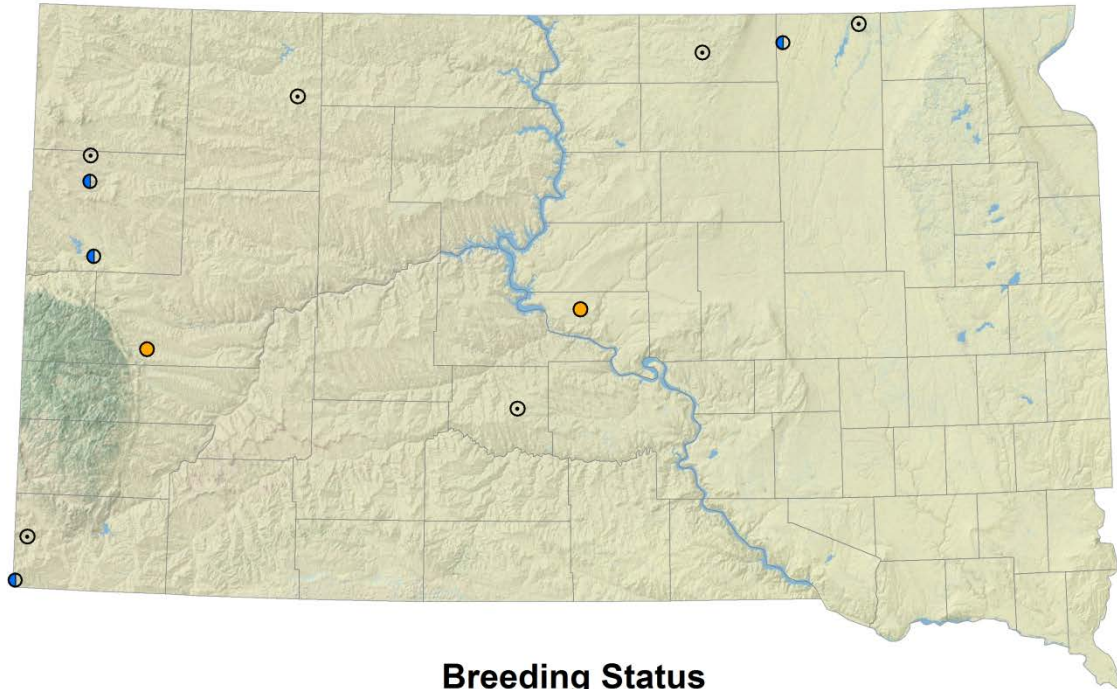
Breeding and brood-rearing habitats include seasonal and semipermanent wetlands with well-developed stands of emergent vegetation. During the second Atlas, Cinnamon Teal were reported in marshes (54%), ponds (36%) and creeks (9%). These teal nest in upland grasslands near water, or more rarely, over water in marsh vegetation. Broods feed in the same habitats. Second Atlas broods were in a marsh (1 brood) and in a pond (1 brood).

BREEDING BIOLOGY

In South Dakota, broods occur in June (second Atlas broods: June 6 and 9) and thus, nesting probably begins in early May. Pairs form before arriving in South Dakota. The female scrapes a shallow depression in the soil and lines it with dead grasses and down. The nest often is under a mat of dead vegetation so that it is completely concealed. She accesses the nest through tunnels in the vegetation. The clutch of 4 to 16 buff eggs is incubated by the female for 21 to 25 days. The male aggressively defends the female and his favorite loafing sites through the third week of incubation. He then leaves all brood-rearing duties to the female. The chicks are covered in down at hatching and within 24 hours, follow the hen to water. The ducklings are very active and feed themselves. The hen usually remains with the ducklings until fledging at about 49 days (Gammonley 2012).

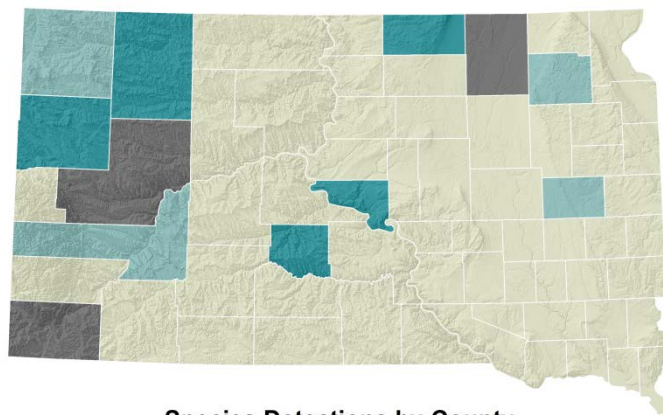
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	2	2
Probable	2	2	4
Possible	1	5	6
Observed	0	0	0
Total	3 (0.7%)	9	12

Cinnamon Teal



Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- ⦿ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

NORTHERN SHOVELER

Anas clypeata

The Northern Shoveler has a large shovel-shaped bill lined with rows of lamellae, fine comb like structures that strain tiny aquatic organisms from the water. Most dabbling ducks have 50 to 70 lamellae but shovelers have about 400, enabling them to strain larger quantities of food.

DISTRIBUTION AND STATUS

The highest breeding populations of Northern Shoveler are in Montana, the Dakotas, and the Prairie provinces of Canada. In South Dakota, Northern Shoveler is a common breeder east of the Missouri River, with fewer birds in the southeast and west of the River. Shoveler pair numbers vary markedly depending on local pond numbers. The first Atlas, conducted during a relatively dry period, detected shovelers on 37% of random blocks, while the second Atlas, conducted during a relatively wet period, detected shovelers on 51% of blocks. The shoveler population in South Dakota during the past 15 years has been increasing at a non-significant rate (Sauer *et al.* 2014).

HABITAT

During the second Atlas, observers found Northern Shovelers in marshes and wet meadows (48% of observations), ponds and lakes (47%), grasslands (2%), roadside ditches (1%), and cropland (1%). Four second Atlas nests were found in grassland and one on an island. Second Atlas broods were

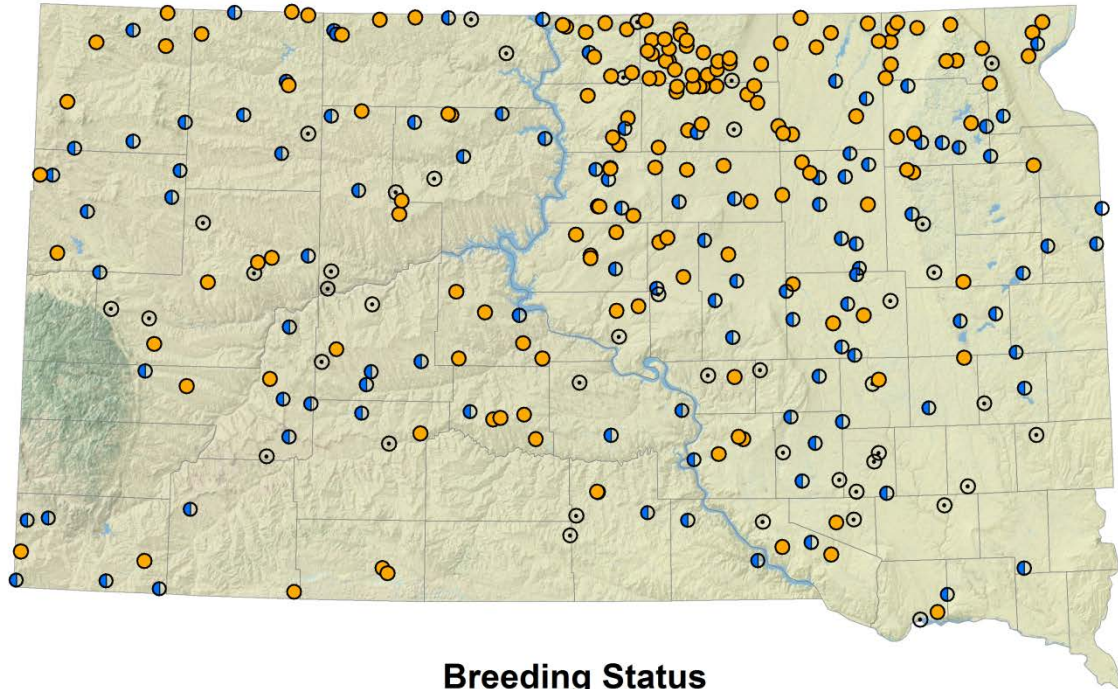
in marshes and wet meadows (58% of 181 broods), ponds and lakes (35%), ditches (2%), and creeks (1%).

BREEDING BIOLOGY

In South Dakota, shovelers nest from May through June, and raise broods during June, July, and August. Pairs form on wintering grounds and return to the breeding grounds together. The nest is built on the ground in short grass near a wetland. The female makes a shallow depression and fills it with dried grasses and weeds, then lines it with her own down. She lays 9 to 12 pale olive eggs. If the nest fails, the replacement clutch usually has fewer eggs. After 25 days, ducklings emerge fully feathered and with eyes open. Within 24 hours, they follow the hen to water. The female protects the brood and leads them to food but the ducklings feed themselves. Ducklings are able to fly at 52 to 60 days old. The young shovelers remain in the local area until fall migration (Dubowy 1996).

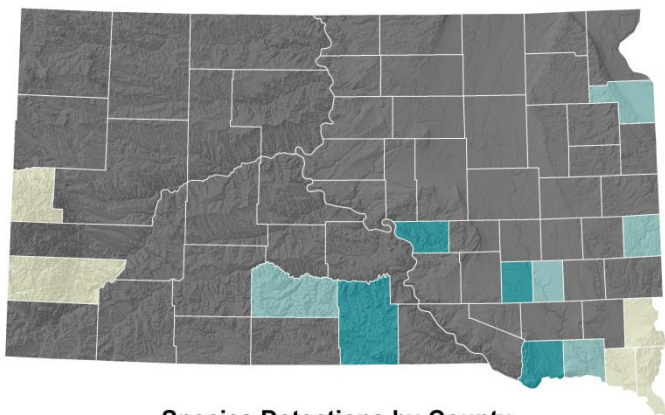
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	73	85	158
Probable	105	0	105
Possible	43	0	43
Observed	0	0	0
Total	221 (51%)	85	306

Northern Shoveler



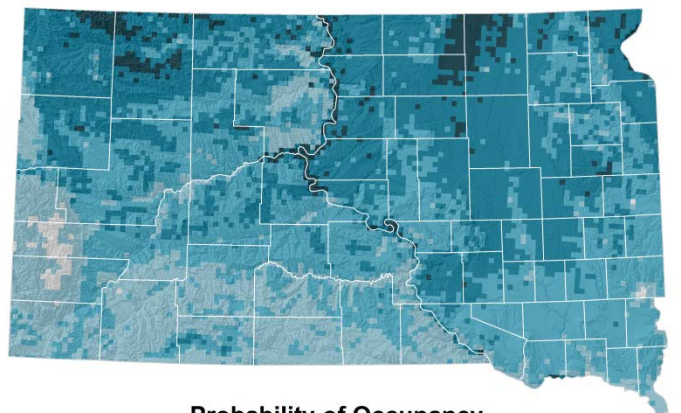
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

NORTHERN PINTAIL

Anas acuta

Northern Pintails are one of the first ducks to migrate north in the spring and to migrate south in the fall. During spring migration, about 40% of the North American population of Northern Pintails migrates through the Dakotas.

DISTRIBUTION AND STATUS

Northern Pintails breed across North America, Europe, and northern Asia. They are one of the most abundant ducks in North America, breeding throughout the western half of the continent, from above the Arctic Circle south to central California and Nebraska. South Dakota is within one of the species' core nesting regions. The distribution and abundance of Northern Pintails in the state depend on climatic conditions. During wet or normal moisture conditions, pintails are common in the pothole regions east of the Missouri River and uncommon west of the River. During dry conditions, more pintails breed west of the River, or birds may fly past South Dakota and breed elsewhere.

HABITAT

Breeding pairs forage in shallow vegetated wetlands and nest in upland grasslands, roadsides, fallow cropland, and spring and fall-seeded cereal crops. Many nests in cropland are destroyed during tilling and planting. Ideal brood-rearing habitat is shallow wetlands with a mix of open water and emergent vegetation, such as cattails, rushes, or prairie cordgrass. During the second Atlas, observers found broods (151

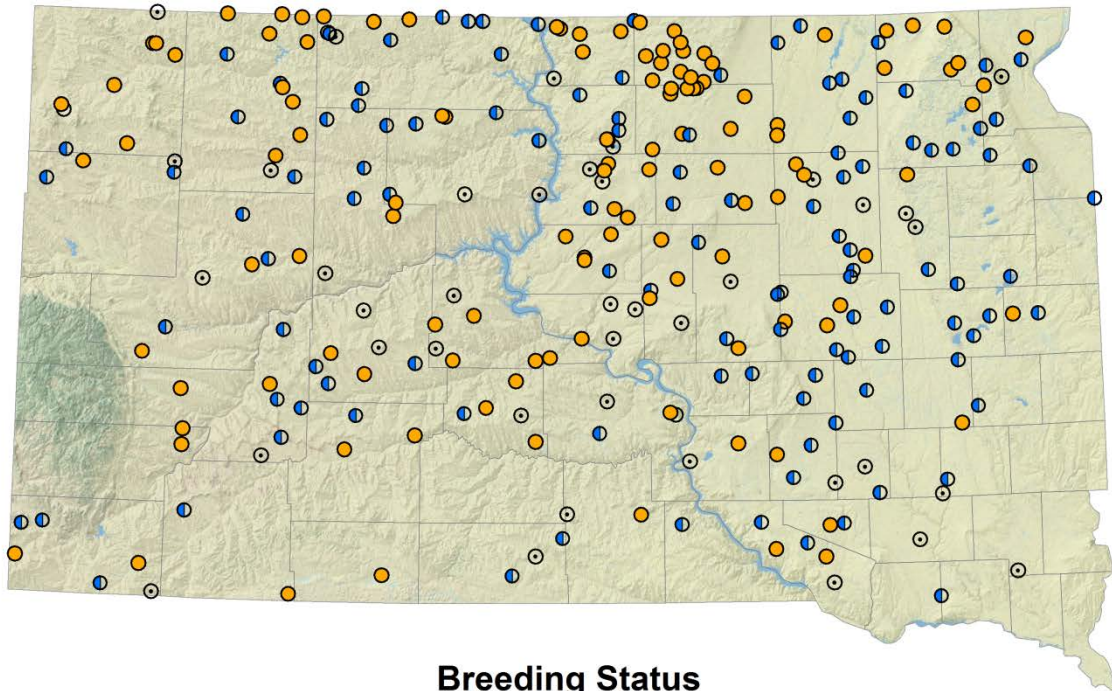
broods) in marshes (57%), ponds (40%), and wet meadows (3%).

BREEDING BIOLOGY

Northern Pintails in South Dakota begin nesting in mid-April, and raise broods from mid-May to early August. The nest is built in a slight depression on the ground in short vegetation, within 1/2 mile of water. It is a simple bowl made of grasses or weeds pulled from near the nest, to which the female adds her down feathers as laying and incubation progress. Females lay 6 to 12 eggs. The eggs can survive extreme, short-term cold—some will successfully hatch after being covered in snow and nighttime temperatures down to freezing. Incubation lasts 21 to 24 days. Ducklings leave the nest within 24 hours of hatching. The hen protects the brood and leads them to feeding areas. The ducklings forage for aquatic insects, especially midges. The family often moves among several wetlands during the brood-rearing period. Young pintails are able to fly when they are 38 to 52 days old (Clark *et al.* 2014).

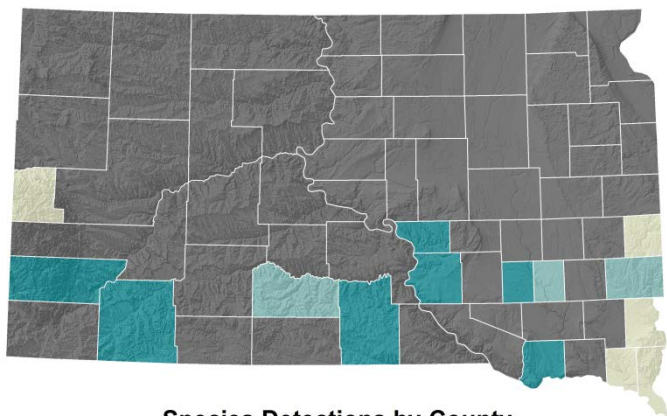
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	63	60	123
Probable	116	1	117
Possible	42	1	43
Observed	0	0	0
Total	221 (51%)	62	283

Northern Pintail



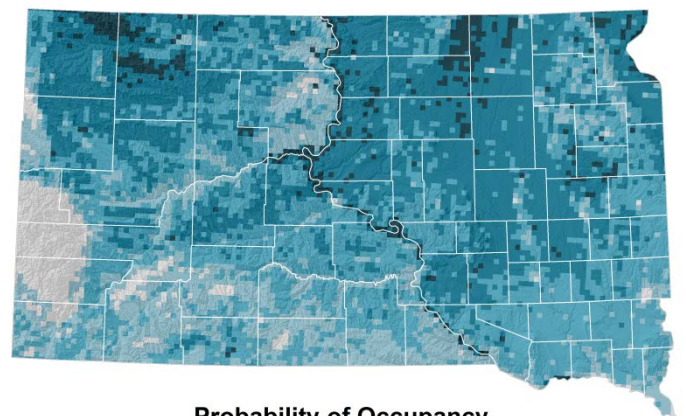
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

GREEN-WINGED TEAL

Anas crecca

North America's smallest dabbling duck, the Green-winged Teal is the second most abundant duck taken by North American hunters.

DISTRIBUTION AND STATUS

The highest densities of breeding Green-winged Teal are in the aspen parklands and boreal forests of Alaska and Canada. The species also breeds south into the northern prairie and Midwest states, Great Basin, and the Rocky Mountains. The Green-winged Teal is an uncommon breeding duck in South Dakota, found in widely-scattered locations. They are most common in the north and east-central counties. These teal were reported in a higher percentage of second Atlas blocks (28%) compared to the first Atlas (19% of random blocks). Most of the expansion was in the east-central and south-central regions of the state. Breeding bird survey data indicate that South Dakota's breeding population is stable (Sauer *et al.* 2014).

HABITAT

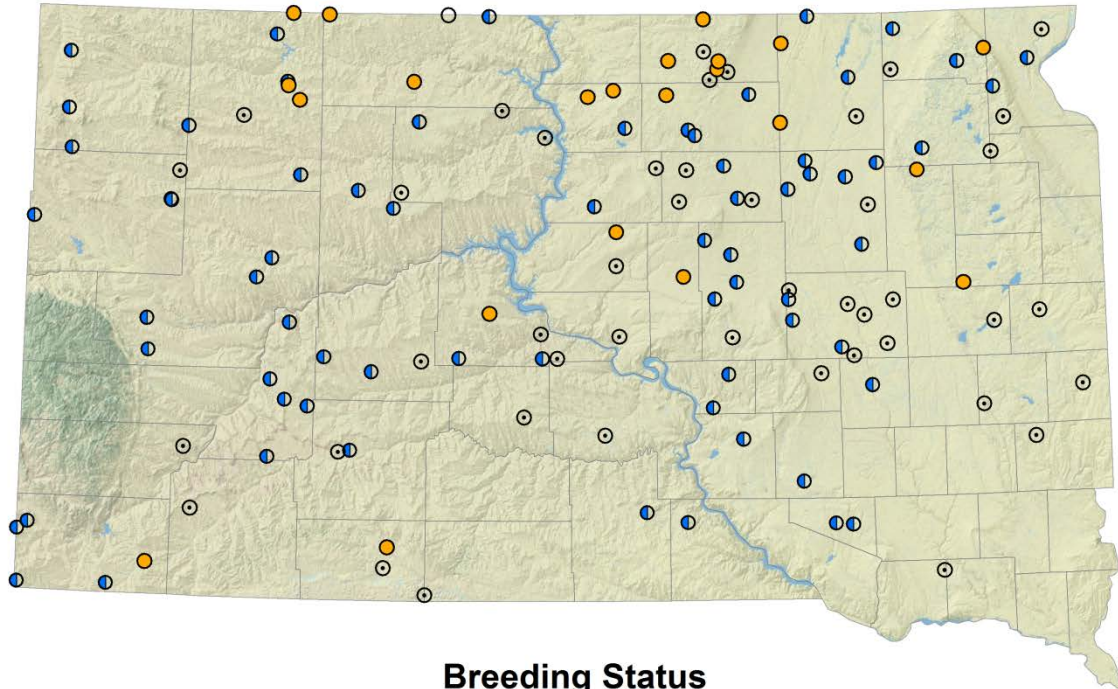
Green-winged Teal in South Dakota occur in semipermanent ponds and prairie potholes, especially those near thickets, forest, or weedy grasslands. One South Dakota study found this species only on natural ponds, not on stock ponds (Ruwaldt 1969). During the second Atlas, teal were recorded in ponds (46%), marshes (44%), and wet meadows (6%); broods were reported in marshes (67%) and ponds (33%).

BREEDING BIOLOGY

Green-winged Teal pairs bond on the wintering grounds and migrate north together. In South Dakota, teal nest from May to mid-July. One second Atlas nest was found on June 2, in a pasture. Nests are on the ground in thickets, sedges, or grass, usually within 200 yds of water. To build the nest, the female makes a simple scrape and pulls surrounding grass and other vegetation into the scrape. She then lines the nest with down pulled from her breast. The female lays 6 to 9 eggs, which she incubates for 20 to 23 days. The male deserts the female during incubation, leaving her to provide all parental care. The chicks are covered in down at hatching and their eyes are open. They can walk, swim, dive, and feed themselves a few hours after hatching. Within hours, the hen leads the chicks to water and protects them for several weeks until they are able to fly (Johnson 1995).

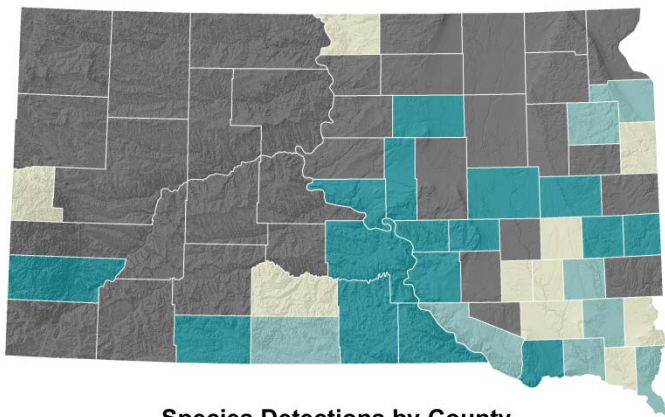
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	10	13	23
Probable	66	2	68
Possible	43	3	46
Observed	1	0	1
Total	120 (28%)	18	138

Green-winged Teal



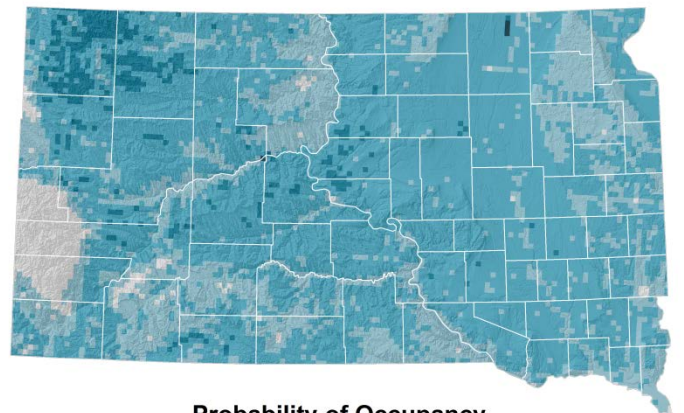
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

CANVASBACK

Aythya valisineria

Although often found in shallow water, the Canvasback is an excellent diver, diving to depths of more than 30 feet. It prefers to eat buds, tubers, rhizomes, and root stalks of submergent water plants, especially those of wild celery.

DISTRIBUTION AND STATUS

The center of the Canvasback's breeding range is in the southern prairie provinces of Canada. The range extends northwest into central Alaska and south into the Dakotas, Minnesota, and the Rocky Mountains. Continent-wide, Canvasbacks are the least abundant diving duck. In South Dakota, the species is uncommon throughout the state, being more often found on larger potholes in the eastern prairie pothole region. Population size fluctuates depending on the amount of precipitation and thus, on the availability of breeding ponds. In general, the current species' population size is higher than the 30-year average.

HABITAT

Canvasback territories usually include 3 to 5 moderate to large shallow wetlands with stable water levels and emergent aquatic vegetation. During the second Atlas, these ducks were recorded in lakes and ponds (57%), marshes (39%) and wet meadows (4%).

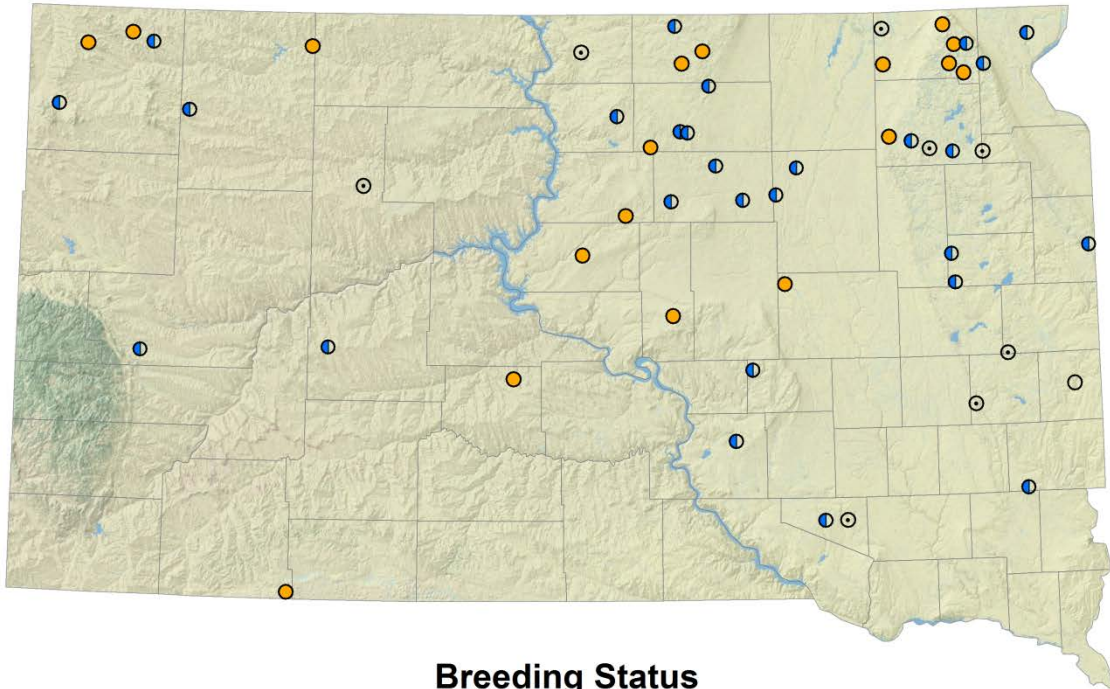
BREEDING BIOLOGY

Canvasbacks form pairs during spring migration or early on the nesting grounds. One of the earliest nesting diving ducks, this species in South

Dakota begins nesting in May and ducklings are independent by August. The female builds a large bulky nest over water from available plant materials and lines it with down. The nest may have a canopy and one or more access ramps. In shallow water, the base of the nest may rest on the bottom, in deeper water it is anchored to stems of water plants and floats on the water surface. The clutch averages 5 to 11 eggs. However, the Canvasback is a primary host for parasitic egg-laying by the Redhead, resulting in larger clutches. One nest reported during the second Atlas contained 17 eggs, presumably the result of Redhead parasitism. The female incubates the eggs for 23 to 29 days. Ducklings are precocial when they hatch; their eyes are open, they are fully covered in down, and they leave the nest less than 24 hours after hatching. The female provides all of the parental care, leading the brood to several different ponds during the two-month duckling period in search of food. Young Canvasbacks are able to fly when 56 to 68 days old (Mowbray 2002).

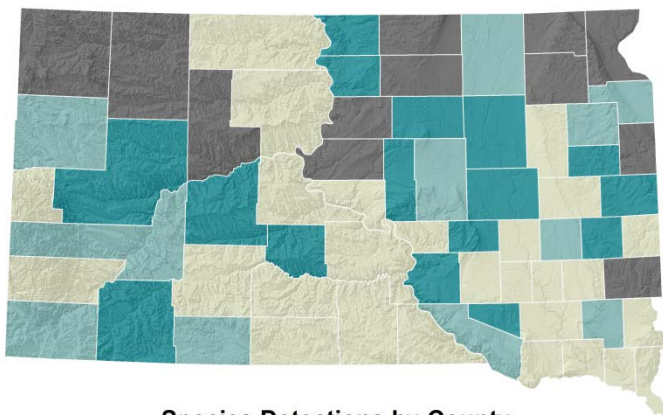
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	7	11	18
Probable	26	3	29
Possible	7	1	8
Observed	1	0	1
Total	41 (9%)	15	56

Canvasback



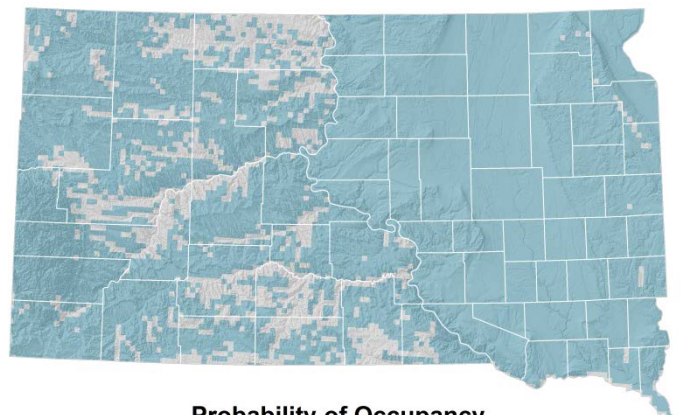
Breeding Status

- Confirmed breeding
- ◐ Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

REDHEAD

Aythya americana

Female Redheads regularly lay their eggs in each other's nests, as well as in the nests of other duck and waterbird species. A female chooses from 3 strategies—lay all of her eggs in other nests, build her own nest, or lay eggs in other nests before building her own nest. She may use a different strategy in different years, depending on water and nesting conditions.

DISTRIBUTION AND STATUS

Highest breeding densities of Redheads are in the prairie potholes of the northern Great Plains of Canada and the United States. South Dakota is on the southeastern edge of the breeding range. Redheads are the most common diving duck in the state, found most commonly on the Prairie and Missouri coteaus and very uncommonly west of the Missouri River. Redhead breeding populations fluctuate with climatic conditions. During a dry period, fewer Redheads nest in the state and almost all are east of the River, such as occurred during the first Atlas (Brewster *et al.* 1975, Peterson 1995). The second Atlas, conducted during a wet period, had more breeding Redheads (on 28% of blocks compared to 12% during the first Atlas), including some West River breeding.

HABITAT

Redheads breed in semipermanent wetlands that have a mix of open water and standing marsh vegetation. They generally select larger wetlands and rarely nest on stock ponds (Ruwaldt *et al.* 1979, Naugle *et al.* 1999b). During

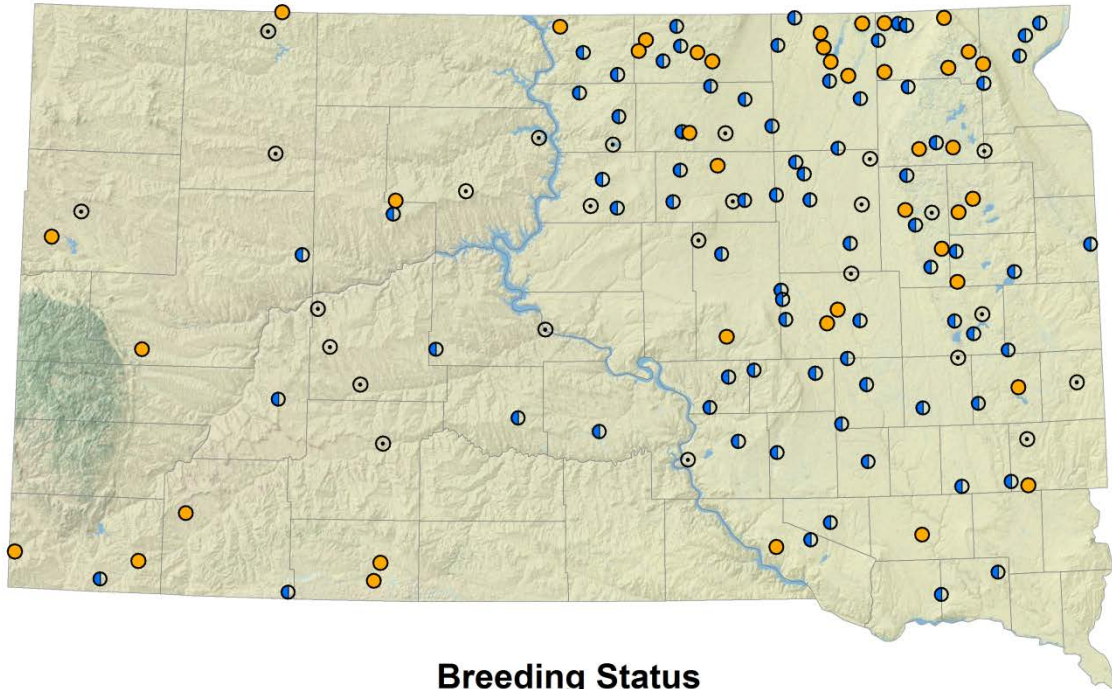
the second Atlas, observers reported Redheads in ponds and lakes (52%), marshes (45%), wet meadows (2%), and creeks (1%).

BREEDING BIOLOGY

In South Dakota, Redheads nest in late May and June and raise their broods from late June into August. The nest usually is built over water in cattails or rushes. The female constructs the circular bowl nest out of marsh plants. Most nests have a ramp of vegetation from the rim to the water's surface. The nest is lined with bits of dried vegetation and the female's down feathers. The female incubates the clutch of 7 to 14 eggs, some of which may not be her own, for 24 to 25 days. Communal nests are used by many females for egg-laying but these eggs usually are not incubated. Ducklings leave the nest within 18 hours of hatching. The female leads the brood, often over land, to a large, deep pond. The ducklings forage for themselves, eating a mix of aquatic invertebrates and plants. The female usually stays with the brood until the ducklings are able to fly at about 7 to 8 weeks (Woodin and Michot 2002).

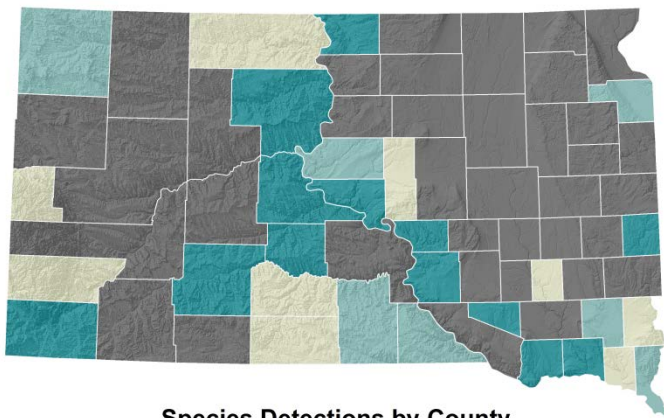
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	22	20	42
Probable	75	1	76
Possible	25	0	25
Observed	0	0	0
Total	122 (28%)	21	143

Redhead



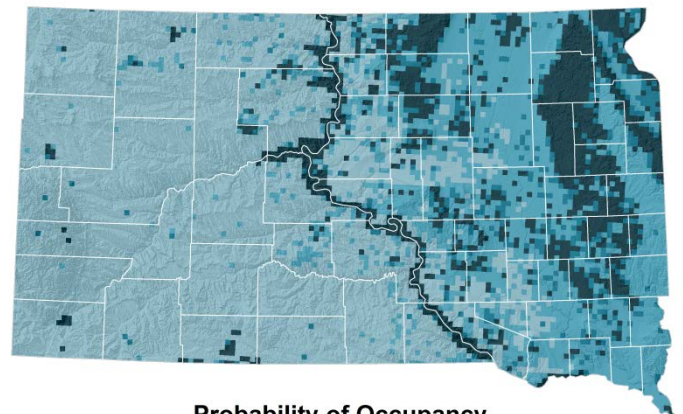
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

RING-NECKED DUCK

Aythya collaris

Despite the name, the ring on this diving duck's neck is only visible at very close range. Ring-necked Ducks can take flight directly from the water, rather than the running takeoff that most diving ducks require.

DISTRIBUTION AND STATUS

Ring-necked Ducks breed in the boreal forests of Alaska, Canada, the Rocky Mountains, and New England. South Dakota is at the southern edge of the breeding range and is well south of the highest breeding densities in central Canada. Thus Ring-necked Ducks are uncommon breeders in the state and have a limited distribution. Both Atlases recorded this species on the Prairie Coteau and a handful of observations throughout the rest of the state. During the second Atlas, about 15 observations in 6 counties of the Missouri Coteau were recorded compared to just 2 Missouri Coteau reports during the first Atlas. The change may be because the second Atlas was conducted during wetter years, resulting in more available breeding habitat.

HABITAT

In South Dakota, Ring-necked Ducks nest in shallow wetlands with stable water levels and abundant emergent, submerged, or floating plants. Second Atlas observers reported these ducks in ponds and lakes (60% of observations), marshes (38%), and wet meadows (2%). Of 6 brood reports during the

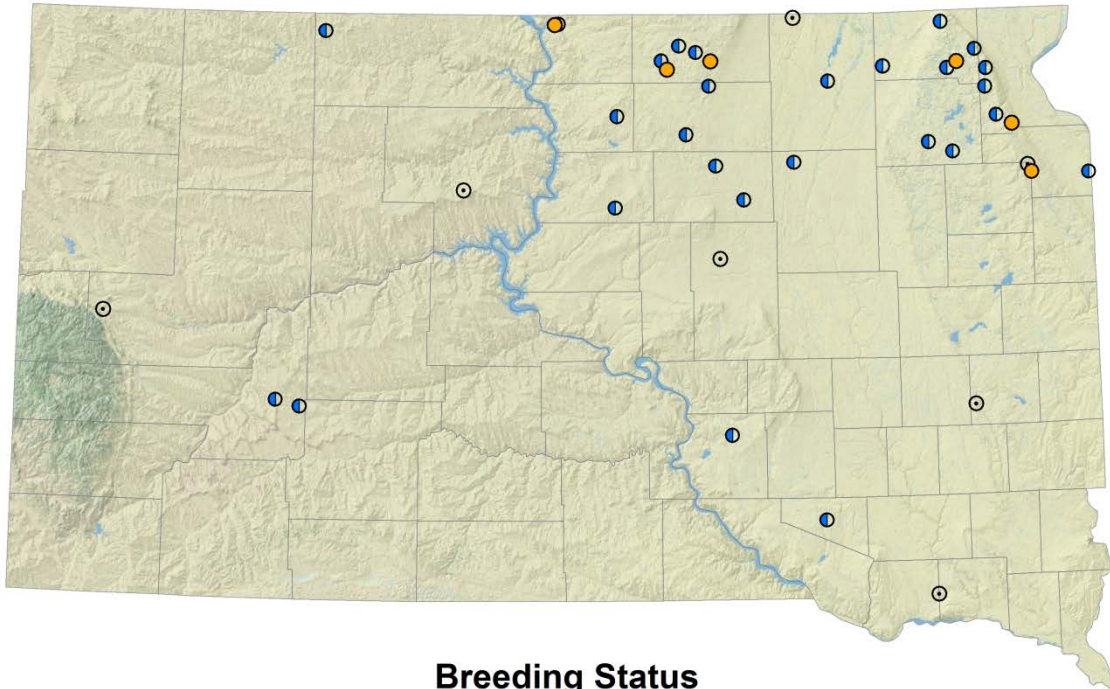
second Atlas, 2 were in marshes and 4 in ponds.

BREEDING BIOLOGY

The nesting season in South Dakota begins in May and broods are present from June to August. Ring-necked Ducks pair during spring migration in March and April; the pair bond lasts until early incubation. The female constructs the nest in marsh vegetation over water. The simple bowl-shaped nest is made of nearby marsh vegetation and usually has a ramp for access. The female adds down throughout the 26-day incubation period. Average clutch size is 9 eggs and only the female incubates. The ducklings leave the nest the day after hatching. They swim or walk through the vegetation to feed in open-water areas. Only the female provides parental care, leading the ducklings to feeding areas. At first, ducklings mainly forage on the water's surface. After 21 days, they mostly forage by diving. Unlike most ducks, the female remains until her brood is 49 to 55 days old and capable of flying (Roy *et al.* 2012).

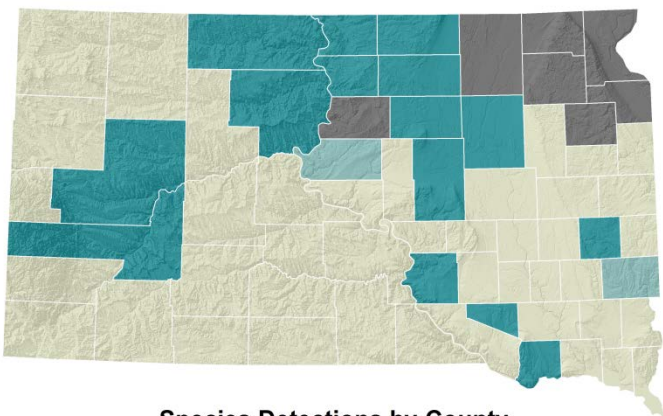
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	6	6
Probable	27	1	28
Possible	7	0	7
Observed	0	0	0
Total	34 (8%)	7	41

Ring-necked Duck



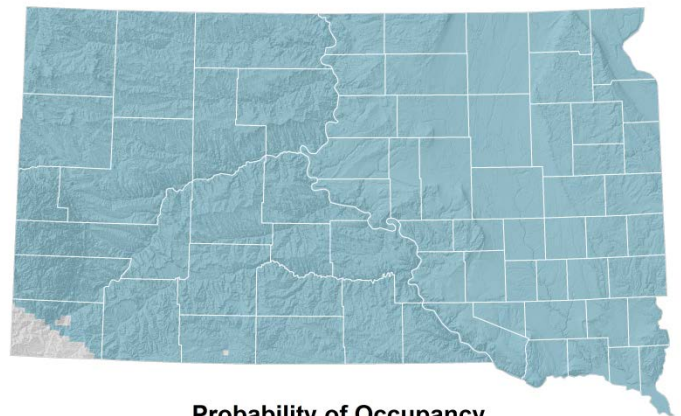
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

LESSER SCAUP

Aythya affinis

Both adult and duckling Lesser Scaup are carnivorous, favoring a diet of crustaceans, aquatic insects, and mollusks.

DISTRIBUTION AND STATUS

The most abundant diving duck in North America, Lesser Scaup breed throughout Alaska and Canada, south through the Rockies to Colorado, and south through the Great Plains to South Dakota. The species is rather common in the Missouri Coteau of South Dakota, uncommon in the Prairie Coteau, and widely scattered throughout the rest of the state. The second Atlas recorded Lesser Scaup on double the number of survey blocks as recorded during the first Atlas. The major changes occurred in the Missouri Coteau, where few were detected during the first Atlas, and west of the Missouri River, where only two were detected. The Lesser Scaup breeding population has increased rapidly in North Dakota and the Prairie Pothole region since 1997 (Anteau *et al.* 2014). Atlas data suggest that this increase may also be occurring in South Dakota.

HABITAT

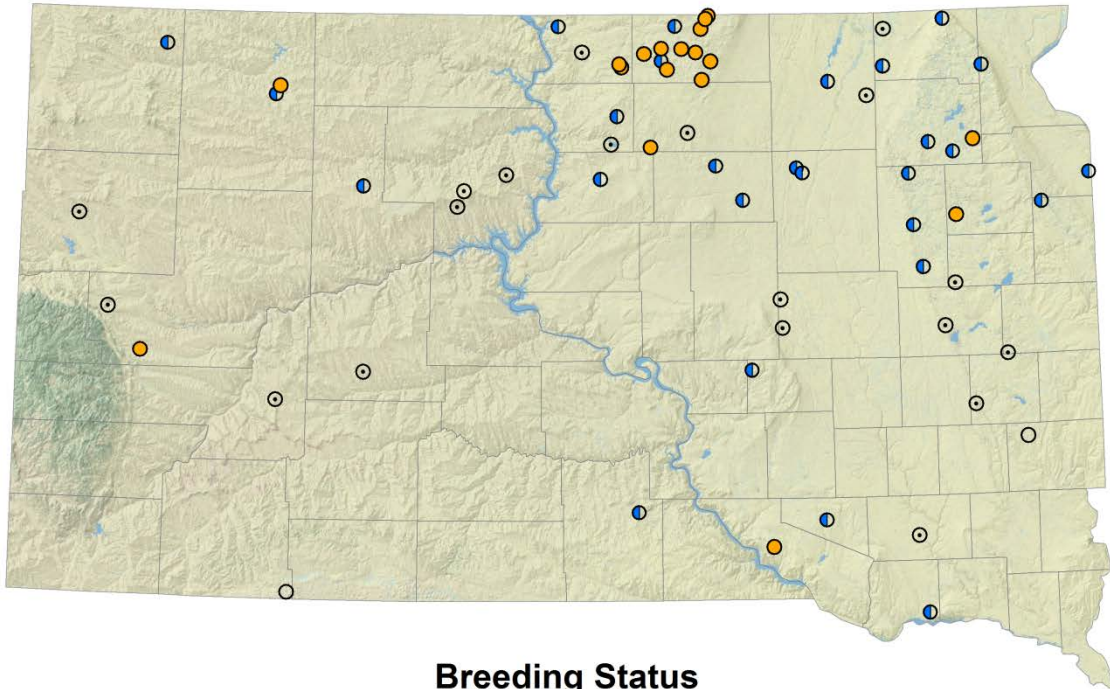
During the second Atlas, scaup were recorded on ponds and lakes (59% of observations), marshes (40%), and islands or shorelines (11%). Ideal brood-rearing habitat is a shallow semipermanent or permanent wetland that has a mixture of open water and patches of marsh vegetation.

BREEDING BIOLOGY

Lesser Scaup are one of the last waterfowl to migrate south in the fall and are among the latest waterfowl to migrate north in the spring. In South Dakota, scaup nest in June (early second Atlas date of June 10) and raise broods in July and August (late second Atlas brood sighting of August 17). Unlike most diving ducks, Lesser Scaup generally nest in upland areas (grasslands, hayfields, wet meadows) or, more rarely, in marsh vegetation over water. They also commonly nest on islands; 3 nests were found on islands during the second Atlas. The female makes a scrape on the ground and adds grass or other nearby vegetation. She lays a clutch of 6 to 14 pale olive or buff eggs. Only the female incubates the eggs; the male leaves her in the middle of the 21 to 27 day incubation period. Ducklings leave the nest within 24 hours of hatching and follow the female to water. At first, ducklings feed by dabbling for insects on the water's surface, but start diving for food during the second week after leaving the nest. The female stays with the brood for 2 to 5 weeks. Young Scaup can fly at 6 to 8 weeks (Anteau *et al.* 2014).

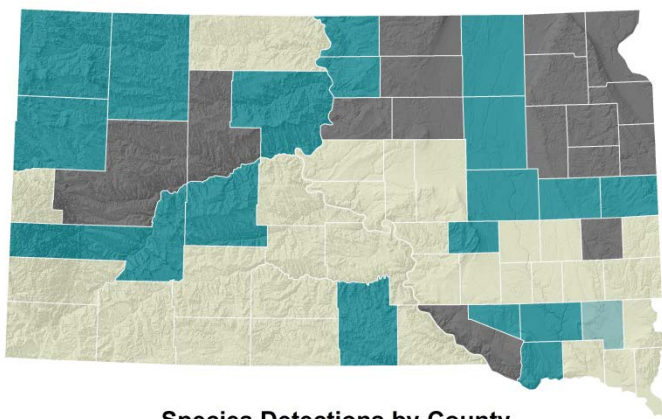
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	3	15	18
Probable	22	6	28
Possible	19	1	20
Observed	1	1	2
Total	45 (10%)	23	68

Lesser Scaup



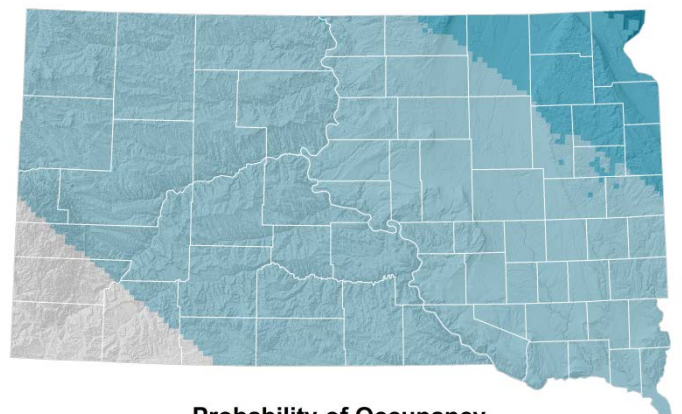
Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

-
 0 %
-
 1 - 25 %
-
 26 - 50 %
-
 51 - 75 %
-
 76 - 100 %

BUFFLEHEAD

Bucephala albeola

The Bufflehead is North America's smallest diving duck. Its small size allows it to nest in the cavities of the Northern Flicker, the only duck that is able to do so.

DISTRIBUTION AND STATUS

The main breeding populations of Bufflehead are in western and central Canada and Alaska, with isolated populations in the northwestern states, northern Rocky Mountains, and northern Great Plains. A common migrant in South Dakota, this duck is an accidental breeder in the east, with just four confirmed breeding records. The first record, a nest with eggs, occurred in 1991 at Oakwood Lakes in Brookings County (Peskin and Rohar 1991). That same year, a hen was flushed from a nest box in Lake County but did not breed. In addition, hens with young broods have been observed in Hamlin County (Whitt 1999), and near Drywood Lakes, Roberts County, on two occasions: in 2001 (Harris 2002) and during the second Atlas. Bufflehead is one of the few duck species whose numbers have increased markedly in the past 50 years (Gauthier 2014).

HABITAT

Buffleheads inhabit freshwater ponds and small lakes. This duck also needs nest boxes or tree cavities in which to nest. Second Atlas observations were in ponds or lakes (75%) and marshes (25%). The single brood observed in 2011 was in a marsh.

BREEDING BIOLOGY

Based on three South Dakota breeding records, Buffleheads begin nesting in late May and raise broods through July. Already paired when they arrive in South Dakota, Bufflehead is one of the few duck species that keeps the same mate for several years. They nest in cavities excavated by other species or in nest boxes. They prefer smaller cavities with smaller holes, to avoid competition with other cavity-nesters such as Wood Ducks. Every 1 to 3 days, the female lays an egg on the bottom of the cavity, until the clutch of 2 to 11 eggs is complete. During the 28 to 33 day incubation period, she continually adds her down feathers to the nest. The precocial ducklings hatch fully covered with down and eyes open. Their feathers dry in about 12 hours. They leave the nest within 24 to 36 hours by climbing up the inside of the cavity and jumping out. The female leads the brood to the nearest water where the ducklings feed themselves. She defends the brood for 5 to 6 weeks but then leaves before the ducklings can fly. Young Bufflehead fly at 50 to 55 days (Gauthier 2014).

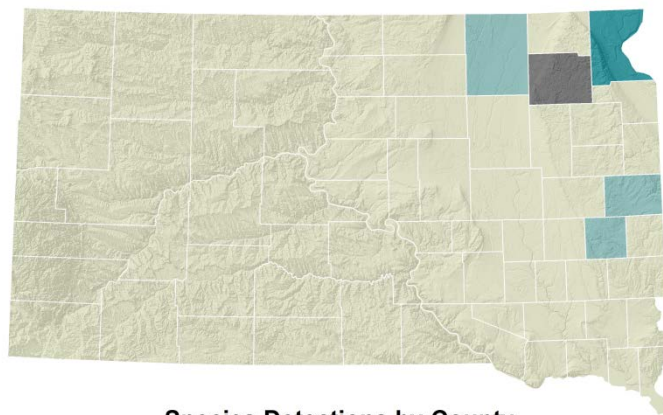
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	0	1
Probable	0	1	1
Possible	0	0	0
Observed	3	1	4
Total	4 (1%)	2	6

Bufflehead



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

HOODED MERGANSER

Lophodytes cucullatus

The scientific name of the Hooded Merganser means “hooded diver,” which describes this small duck’s foraging method to catch small fish, aquatic insects, and crayfish. Adaptations for diving include serrated edges on the bill for grasping fish, the ability to change the refractive properties of their eye for better underwater vision, and legs placed relatively far back on their body for more powerful swimming.

DISTRIBUTION AND STATUS

Hooded Mergansers breed in two areas in North America—the eastern and central U.S. and Canada, and the Pacific Northwest. In South Dakota, this duck is a rare and local breeder. The first known Hooded Merganser nest in the state occurred in 1980 on the Big Sioux River near Brookings (Smith 1981). In subsequent years, this area was the focus of merganser breeding in the state. The first Atlas reported the first breeding away from the Big Sioux River and, during the second Atlas, all reported broods and nests were away from this area. The second Atlas also documented the first known breeding west of the Missouri River, at the Belle Fourche sewage lagoons. This ongoing expansion is facilitated by the practice of erecting wood duck boxes.

HABITAT

Breeding pairs of Hooded Mergansers in South Dakota primarily inhabit riverine forests and wooded ponds. They may breed in more open marsh habitats if nest boxes are available. Second Atlas observations were in ponds (48%),

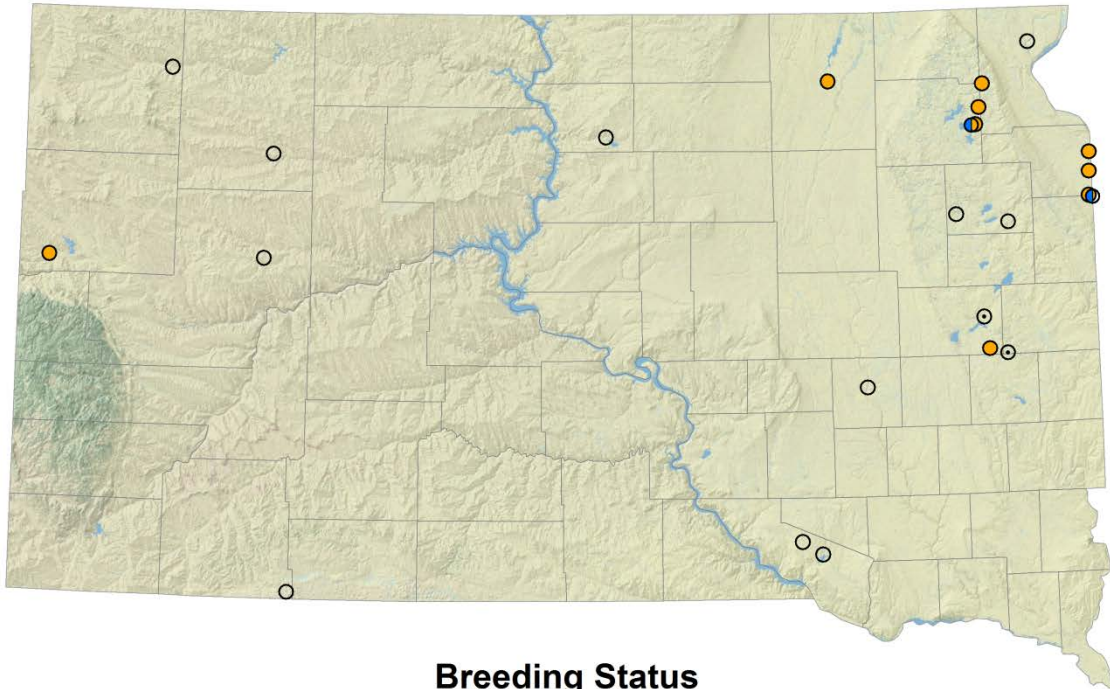
marshes (48%), and creeks (4%). At least two nests were in wood duck boxes – one along a river and one on a lake. Brood-rearing habitat is shallow water with abundant food. Second Atlas broods were in marshes (6 broods) and ponds (2 broods).

BREEDING BIOLOGY

In South Dakota, Hooded Mergansers nest in May and June and raise broods in June and July. A cavity nester, mergansers nest in natural tree cavities, or more commonly in South Dakota, in nest boxes next to water. They prefer nest boxes with wood shavings or boxes used the previous year. The female makes a depression in the shavings or debris at the cavity bottom and lines it with her down feathers. She lays a clutch of 10 to 13 white eggs. The eggs are unusual—almost spherically shaped and with extremely thick shells. Eggs hatch after 29 to 33 days. Within 24 hours, the downy ducklings jump up to the cavity entrance and jump out to the calling female below. Ducklings can dive, swim, and feed themselves. The young mergansers can fly when about 70 days old. (Dugger *et al.* 2009).

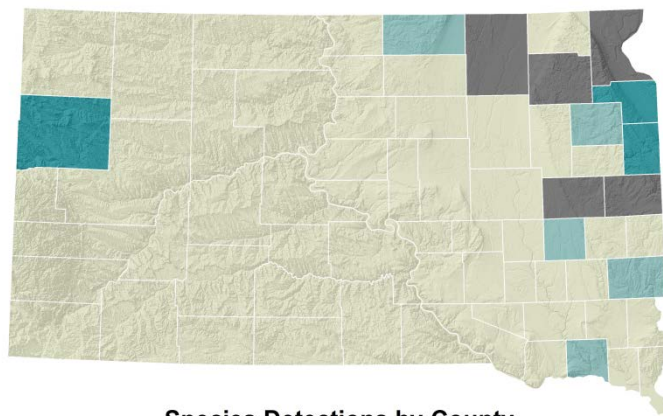
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	3	6	9
Probable	0	2	2
Possible	2	0	2
Observed	5	6	11
Total	10 (2%)	14	24

Hooded Merganser



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

COMMON MERGANSER

Mergus merganser

Known as the Goosander in northern Eurasia, the Common Merganser is our largest breeding diving duck. To enter the nest cavity, the hen approaches at high speed, then swoops up and stalls, grasps the lower lip of the entrance hole with her feet, and tucks her head into the hole.

DISTRIBUTION AND STATUS

In North America, the Common Merganser breeds throughout the forested regions of Canada and Alaska, the Pacific Northwest, northern Rocky Mountains, and New England. Scattered populations in the western Great Plains occur in Wyoming, Montana, and the Black Hills of South Dakota. In South Dakota, outside of a single record on the lower Missouri River, breeding has only been documented along lower Rapid Creek in the northeastern Black Hills. Mergansers were first confirmed breeding in 1985 (Baylor *et al.* 1987). Broods are seen every year in west Rapid City and on an upstream stretch along Rapid Creek. Because Rapid City has open water during winter, some mergansers are present and may be year-round residents, but this needs further study.

HABITAT

In the Black Hills, Common Mergansers breed along forested ponds and creeks. Females lead their broods downstream to larger rivers and lakes, choosing areas with clear water and plentiful small fish. Merganser broods were seen

on Rapid Creek and Canyon Lake in Rapid City during the second Atlas.

BREEDING BIOLOGY

Broods are seen in the Black Hills from mid-May through July, suggesting that females begin laying eggs in late March. A cavity-nester, the Common Merganser usually nests in a large tree cavity or nest box, but will nest in a rock crevice, undercut bank, under tree roots, or even in a building. The nest consists of wood chips and grass and is lined with down from the hen's breast. The hen lays a clutch of 6 to 17 white eggs, sometimes laying additional eggs in another merganser's nest. Females incubate the eggs for 28 to 35 days; the male usually abandons her during this time. About a day after hatching, the downy ducklings climb to the cavity entrance and jump to the ground. The female protects the ducklings and leads them to feeding areas for several weeks. Ducklings feed on aquatic insects at first, and then switch to fish when about 12 days old. Young mergansers can fly 65 to 70 days after hatching (Pierce *et al.* 2015).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	1	1
Probable	0	0	0
Possible	1	1	2
Observed	0	0	0
Total	1 (0.2%)	2	3

Common Merganser



Breeding Status

- Confirmed breeding
- Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

RUDDY DUCK

Oxyura jamaicensis

Unlike most waterfowl, Ruddy Duck pairs form on the breeding grounds. The loud courtship display of the male is a common sight and sound on prairie potholes. The eggs of females are very large relative to their body size, with a correspondingly high energetic cost of egg production.

DISTRIBUTION AND STATUS

This species breeds primarily in the prairie pothole region, although Ruddy Ducks also breed in southern Canada, the western United States, and well into Mexico. Most Ruddy Ducks in South Dakota nest in prairie potholes, which are most abundant east of the Missouri River. According to Breeding Bird Survey data, Ruddy Duck abundance is increasing in South Dakota (Sauer *et al.* 2014), but this trend does not seem to have translated into an expanded distribution. The second Atlas distribution is almost identical to that obtained during the first Atlas. The only change was in the Sandhill regions of Bennett and Tripp counties, where no Ruddy Ducks were reported during the second Atlas.

HABITAT

Ruddy Ducks breed in semipermanent or permanent wetlands and marshes. Second Atlas observations were in lakes and ponds (51%) and marshes (46%). Almost 30% of first Atlas observations were in man-made wetlands but Ruwaldt *et al.* (1979) found all of their

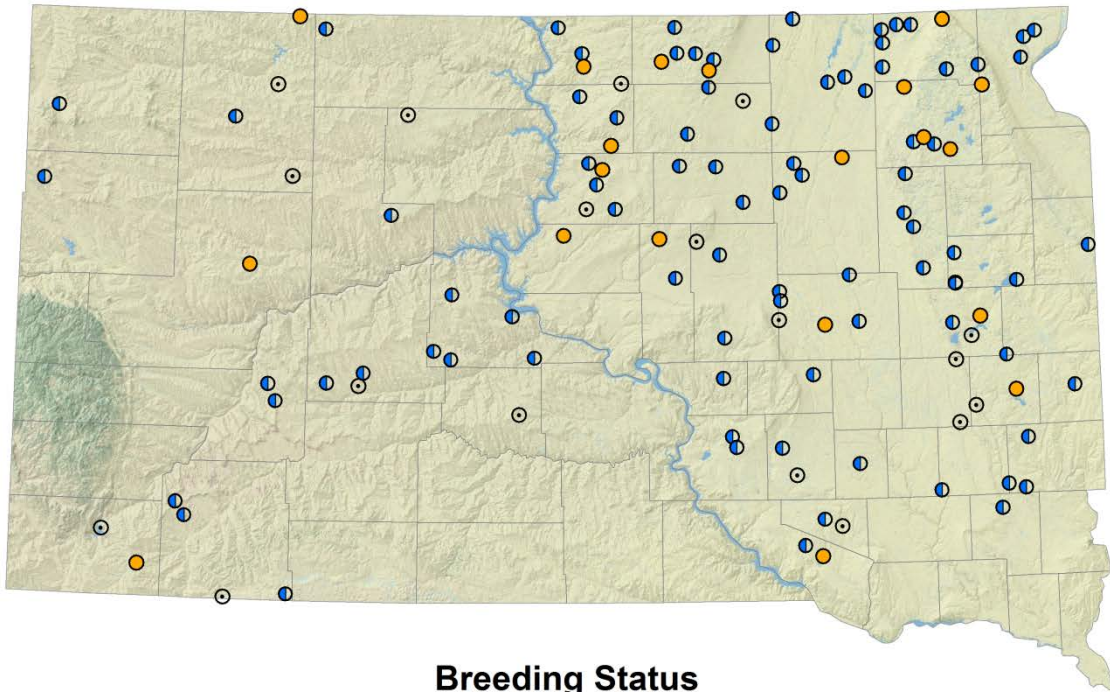
Ruddy Duck broods in semipermanent natural ponds and lakes.

BREEDING BIOLOGY

In South Dakota, Ruddy Ducks primarily nest in June and broods are raised during July. The latest second Atlas observation of a brood was on July 24. The nest, well-concealed in emergent vegetation over water, is made of plant materials. Clutch size is 3 to 13 white or off-white eggs. Larger clutches suggest that a second female laid eggs in the nest (Solberg and Higgins 1993). The female incubates her eggs for 20 to 26 days. The precocial ducklings leave the nest within 24 hours of hatching and can feed themselves. The female leads the brood to food and protects them from weather and danger. Ducklings typically are abandoned by the female before they can fly at 6 to 7 weeks (Brua 2002).

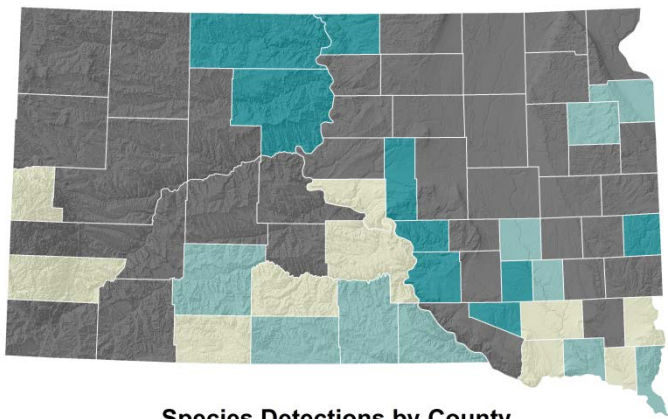
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	10	10	20
Probable	83	4	87
Possible	18	0	18
Observed	0	0	0
Total	111 (26%)	14	125

Ruddy Duck



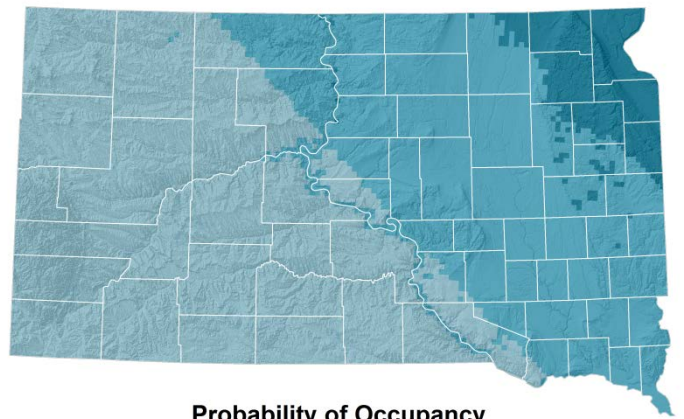
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

NORTHERN BOBWHITE

Colinus virginianus

The Northern Bobwhite is the only native quail species of South Dakota. When not nesting, bobwhites live in coveys of about a dozen birds. They roost together at night on the ground, arranging themselves in a circle with tails pointed inward and heads pointed out. This behavior may help them stay warm during cold nights.

DISTRIBUTION AND STATUS

South Dakota is at the northwestern tip of the Northern Bobwhites' distribution, which includes the eastern United States west to the Great Plains and north to the Corn Belt states. Bobwhite are rare year-round residents in the southeast corner of South Dakota. Historical records from the 1800s suggest that bobwhite may have been more abundant and occurred farther north and west than currently (Tallman *et al.* 2002). Bobwhite often are introduced outside of their native range for hunting. Usually these birds do not survive long. An exception may be at Lacreek National Wildlife Refuge, which has had a small breeding population since at least 1988. The South Dakota Department of Game, Fish, and Parks conducts annual calling surveys to monitor the state's population.

HABITAT

Ideal Bobwhite habitat is a mosaic of small patches of fields, brushy areas, cropland, and young forest. More than half (57%) of second Atlas bobwhite observations were in grasslands, including undisturbed grasslands (24% of all observations), pastures (14%),

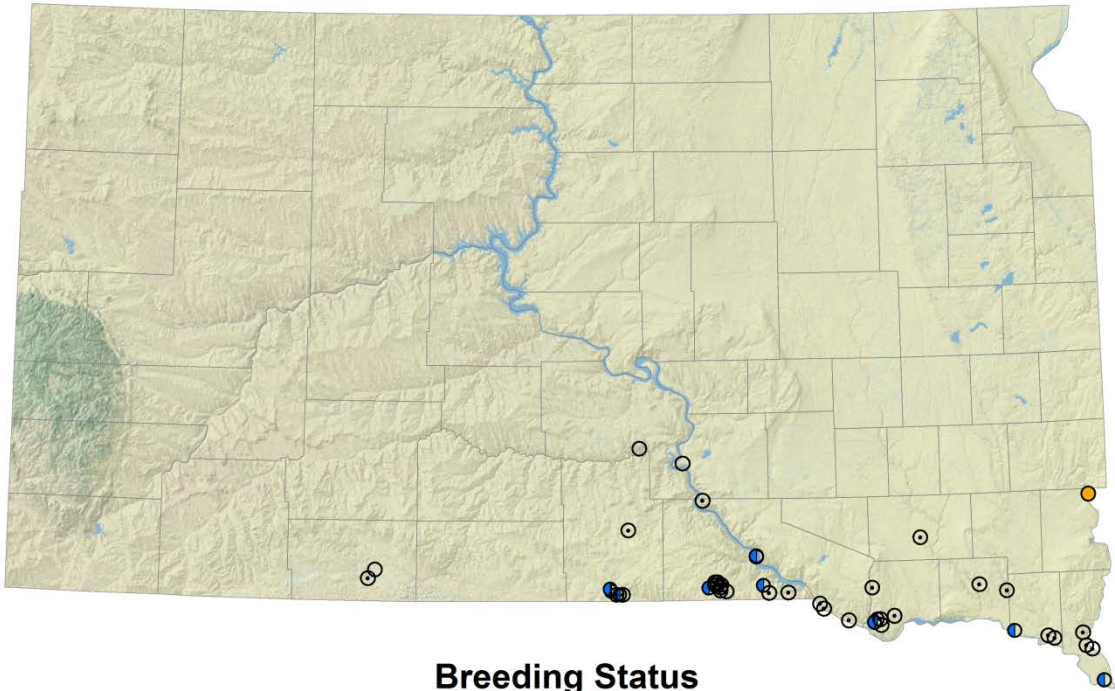
hayfields (10%), old fields (5%), and open areas with scattered trees (5%). Bobwhite also occurred in lowland woods (14%), cropland (10%), upland woods (9%), roadsides (5%), and shrublands (5%).

BREEDING BIOLOGY

In South Dakota, bobwhites nest in May and raise broods in June. One second Atlas nest with eggs was found May 25. The nest is built on the ground within dense growth. The adults line a shallow depression with leaves and grass, then weave more grass and weeds into a dome over the nest, with an entrance on the side. Both adults incubate the clutch of 12 to 16 white eggs for 23 to 24 days. The downy chicks dry off within an hour of hatching and can walk and feed themselves almost immediately. Parents lead the chicks to food, often pointing at a food item and giving a special 'food-finding' call. Adults also brood the chicks, which are not able to thermoregulate for almost 30 days. Chicks are full-grown several weeks after hatching but remain with their parents until late winter (Brennan *et al.* 2014).

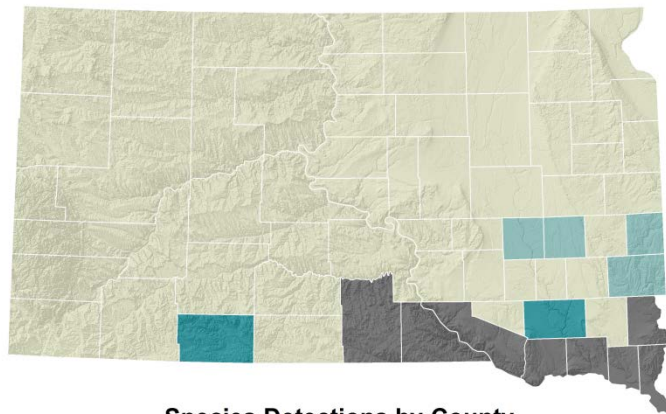
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	1	1
Probable	3	8	11
Possible	5	26	31
Observed	3	0	3
Total	11 (3%)	35	46

Northern Bobwhite



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

GRAY PARTRIDGE

Perdix perdix

A popular gamebird in its native Eurasia, the Gray Partridge was first brought to North America in the 1790s. As a result of multiple introductions in more than 30 states and provinces, the species is now well established on the continent.

DISTRIBUTION AND STATUS

North American Gray Partridge are concentrated in the northern Prairie states of the U.S. and southern Prairie Provinces of Canada. Partridge also are established in the Midwest and Great Basin regions. In South Dakota, Gray Partridge is resident throughout the state, except the Black Hills and the west-central region. Gray Partridge abundance and distribution changed noticeably between the first and second Atlases. In the 1980s, eastern South Dakota had some of the highest populations in North America (Carroll 1993). During the first Atlas, partridge were fairly common, detected on 38% of random survey blocks, primarily east of the Missouri River. Twenty years later, partridge were detected on just 14% of blocks, with most of the decrease occurring East River. The distribution of partridge shifted to the west and northwest, with current concentrations in Corson and Perkins counties, and just east of the Black Hills.

HABITAT

Second Atlas observers reported Gray Partridge in grasslands (54% of records), along roadsides (23%), in cropland (7%), farmsteads (6%),

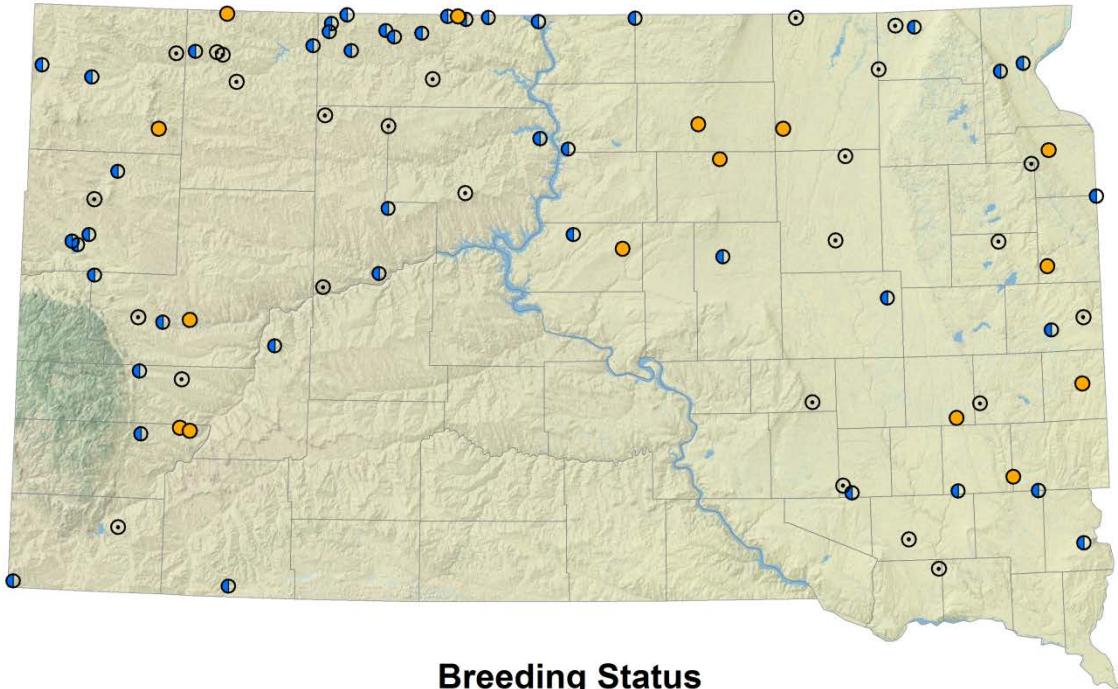
shelterbelts (4%), shrubland (3%), and wet meadows (1%). Of 15 second Atlas broods, 8 were in grasslands, 5 along roads, and 1 in a wet meadow.

BREEDING BIOLOGY

In South Dakota, Gray Partridge nest May through July and raise their broods June through August. The nest is a shallow scrape on the ground, lined with grass, weeds, and feathers. It is situated among dense cover, often in brush or a shelterbelt. The female lays one of the largest clutches of any bird species, generally 12 to 18 eggs, but sometimes 22 or more. In South Dakota, early clutches average 18 eggs (Carroll 1993). Only the female incubates the eggs; she develops a very large brood patch in order to cover the entire clutch. Eggs hatch after 25 days, usually all on the same day. The downy chicks leave the nest with the adults shortly after hatching. The parents protect and lead the chicks to food, but chicks feed themselves. Young partridge are fully grown at 3 to 4 months and remain with their parents until the following spring (Carroll 1993).

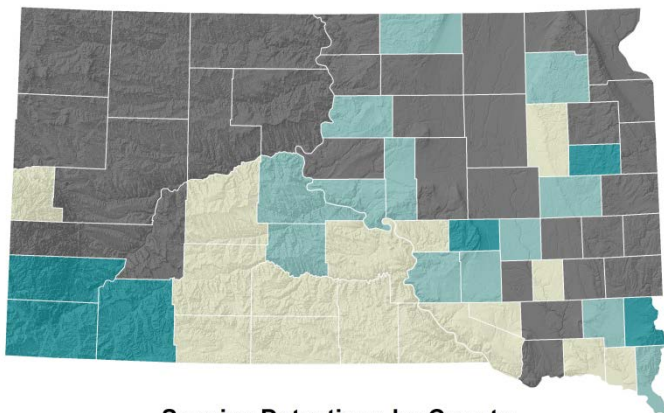
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	8	7	15
Probable	31	12	43
Possible	20	6	26
Observed	0	0	0
Total	59 (14%)	25	84

Gray Partridge



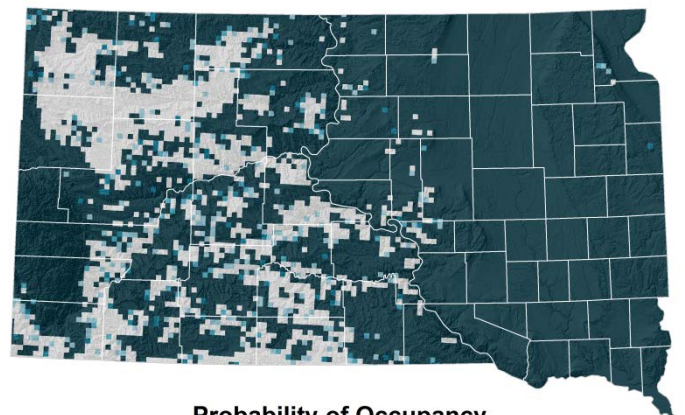
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

RING-NECKED PHEASANT

Phasianus colchicus

The Ring-necked Pheasant, a native of central Asia, was first successfully introduced into South Dakota in 1908. It was adopted as the state bird of South Dakota on February 13, 1943. In recent years, hunters harvested 1 to 2 million (out of a total population of 8 to 12 million) pheasants a year and contributed \$150 to \$220 million per year to the state's economy (Switzer 2009).

DISTRIBUTION AND STATUS

Established breeding pheasant populations extend from southern Canada south to Utah, Oklahoma, and Virginia. In South Dakota, Ring-necked Pheasants are common permanent residents in the eastern two-thirds of the state. Pheasants were detected on more survey blocks during the second Atlas (80% of blocks) than during the first Atlas (62% of random blocks). Most of the increase occurred in the northwest counties of Ziebach, Corson, Dewey, Perkins, and eastern Harding.

HABITAT

Pheasants inhabit agricultural areas with a mosaic of grasslands, cropland, and protective cover. Nesting hens in South Dakota select undisturbed grasslands with tall, dense grass. Hens also nest in fields of alfalfa or small grains, and roadside ditches. These nests are less successful because of mowing and farming activities. Second Atlas nests were in undisturbed grasslands (47 nests), hayfields (8), and pastures (4).

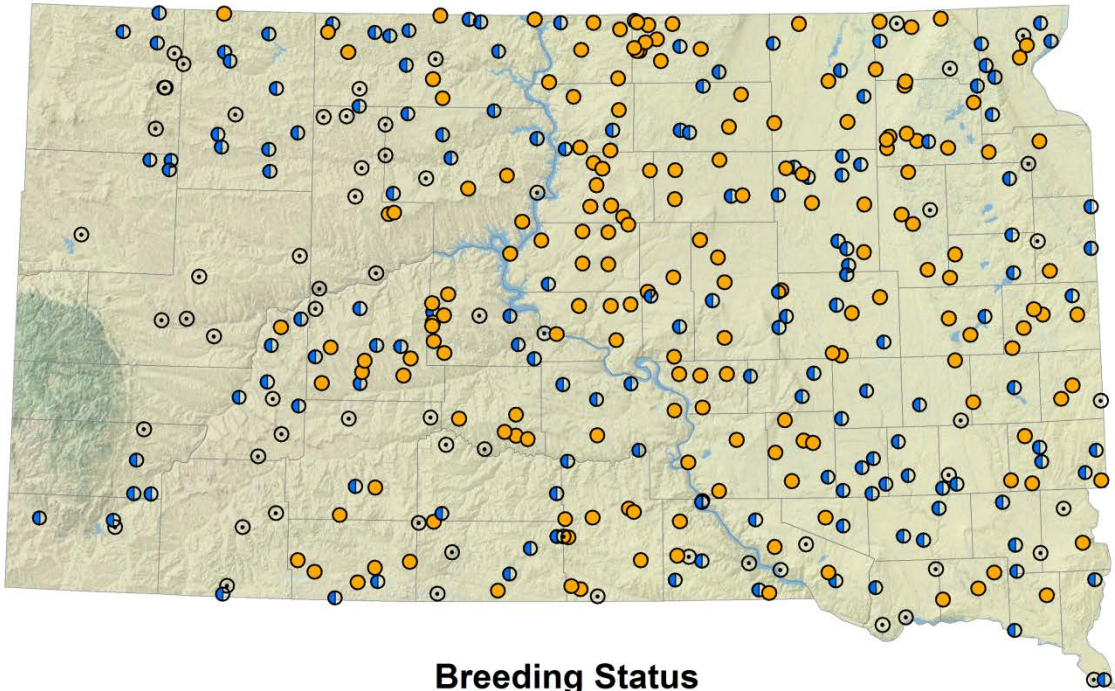
Second Atlas broods (217) were in roadsides (29%), undisturbed grassland (23%), pastures (21%), croplands (12%), hayfields (12%), and shrublands, marshes, and shelterbelts (3%).

BREEDING BIOLOGY

In South Dakota, nesting begins in mid-April, peaks in late May, and continues through August. Most brood rearing occurs from June through September (Leif 1995). The nest, built by the female, is a shallow depression on the ground. The nest is lined with grass, leaves, and weeds. The clutch is typically 10 to 12 eggs; 8 second Atlas nests contained 4 to 16 eggs. Females frequently lay eggs in the nests of other pheasants or ground-nesting species. Incubation, by the female only, is 22 to 24 days. Shortly after the eggs hatch, the female leads the downy chicks to feeding areas. Chicks forage for themselves, primarily eating grasshoppers and other insects. Chicks become independent of female protection when 70 to 80 days old (Leif 1996, Giudice and Ratti 2001).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	142	38	180
Probable	145	5	150
Possible	60	3	63
Observed	0	0	0
Total	347 (80%)	46	393

Ring-necked Pheasant



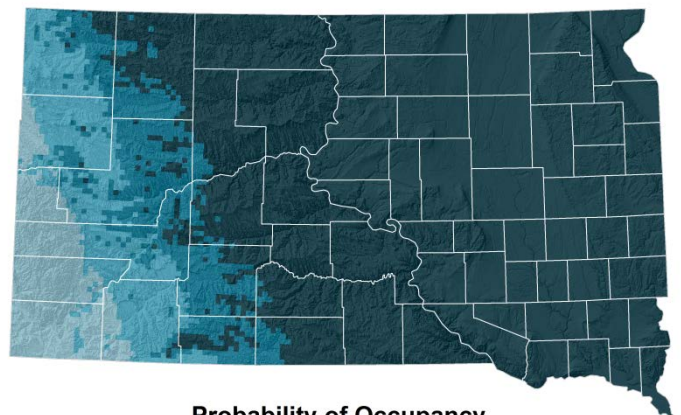
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

RUFFED GROUSE

Bonasa umbellus

Ruffed Grouse are named for their thick, black ruff of neck feathers, which males expose during their courtship displays.

DISTRIBUTION AND STATUS

Ruffed Grouse are residents of conifer forests throughout North America. South Dakota's population is isolated from the next nearest in northwest Wyoming. Formerly, Ruffed Grouse were abundant in the Black Hills. They also used to occur in the forested pine buttes of Harding County and, rarely, in the wooded coulees of the northeast Coteau region (Over and Thoms 1946, SDOU 1991). Currently, they are an uncommon permanent resident in the Black Hills, more numerous in the northern Hills and absent south of Highway 16. The Ruffed Grouse is a state Species of Greatest Conservation Need because of the decrease in the state's distribution and their reliance on aspen, an uncommon habitat in the state (SD GFP 20014).

HABITAT

In the Black Hills, Ruffed Grouse occur at all elevations in hardwood or mixed conifer-hardwood forests. They depend on multiple age-classes of aspen for food and cover, preferring early-succession aspen forest. Male territories typically include an aspen clump and one or more drumming sites. The drumming site usually is in an area with a high density of vegetation, especially 3' to 6' above ground (Hansen *et al.* 2011, Mehls *et al.* 2014). During the second Atlas, observers detected Ruffed Grouse in mixed conifer-deciduous forest (64%) and upland

conifer forest (36%). Of the four broods reported, three were in mixed forest and one in upland conifers.

BREEDING BIOLOGY

The breeding season in South Dakota is May through early August. A male advertises by drumming on logs or rocks within his territory. He rapidly flaps his wings, producing a loud thumping sound caused by air rushing to fill the vacuum created under the wings. Females visit one or more males. There is no pair bond; after mating, the female leaves to nest elsewhere and males do not provide any parental care. The female makes a depression on the ground, typically at the base of a tree, stump, or boulder, and lays 9 to 14 eggs. After a 24-day incubation period, the chicks hatch fully covered with down and eyes open. Within 24 hours, the female leads the brood to dense habitat where the chicks forage, initially on insects but later on plants. Within 5 to 7 days, chicks can fly short distances and they are independent by 12 weeks (Rusch *et al.* 2000).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	3	4
Probable	1	5	6
Possible	0	7	7
Observed	0	0	0
Total	2 (0.5%)	15	17

Ruffed Grouse



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

GREATER SAGE-GROUSE

Centrocercus urophasianus

A unique digestive system allows the sage-grouse to survive on a diet of normally toxic sagebrush leaves. They eat only the leaf tip. Digestive juices enter the leaf where it has been cut, digesting the inner leaf contents. The bird then expels the outer leaf shell, which contains the sage toxins.

DISTRIBUTION AND STATUS

Formerly widespread throughout the western United States, Greater Sage-Grouse now reside in pockets in the Great Basin, Rocky Mountain states, and western Great Plains. South Dakota is the eastern edge of their range. Historically in South Dakota, sage-grouse were resident throughout the western third of the state, outside of the Black Hills (reviewed in Smith *et al.* 2004). However by 1910, they only were common in Harding, Butte, and perhaps Fall River counties. Numbers in the northwest peaked again in the 1950s but have fallen steadily to the present. In Fall River County, sage-grouse were locally common near Ardmore and Edgemont (Rosche 1983). The first Atlas documented two display leks there, but by the second Atlas, these leks were inactive and only one bird was found in the southwest. The Greater Sage-grouse is a State Species of Greatest Conservation Need because it depends on a unique and declining habitat (SDGFP 2014, SDGFP 2014b).

HABITAT

Greater Sage-Grouse are only found in areas with adequate amounts of sagebrush habitat to meet their year-

round needs. Courtship leks in South Dakota typically are on large, sparsely-vegetated flats. Nests are in relatively thick vegetation. In South Dakota, tall grass (at least 10") and greater amounts of sagebrush increase nest success (Kaczor *et al.* 2011). South Dakota hens with broods select areas with less sagebrush, more herbaceous cover, and taller grass heights (at least 13") than surrounding areas (Kaczor *et al.* 2011b).

BREEDING BIOLOGY

Males in South Dakota begin to display on leks in early March. On the lek, they perform courtship displays to attract and mate with females. The nest is a shallow depression on the ground, lined with leaves, grass, and feathers. South Dakota sage-grouse begin laying eggs, on average, around April 24 and tend their broods until late August. South Dakota hens lay an average of 8.3 eggs for the first nesting attempt. Eggs hatch after 25 to 29 days and the downy chicks leave within a few hours. The hen leads the brood to feeding areas where the chicks forage on insects. Chicks are on their own by 10 to 12 weeks (Schroeder *et al.* 1999, Flake *et al.* 2010).

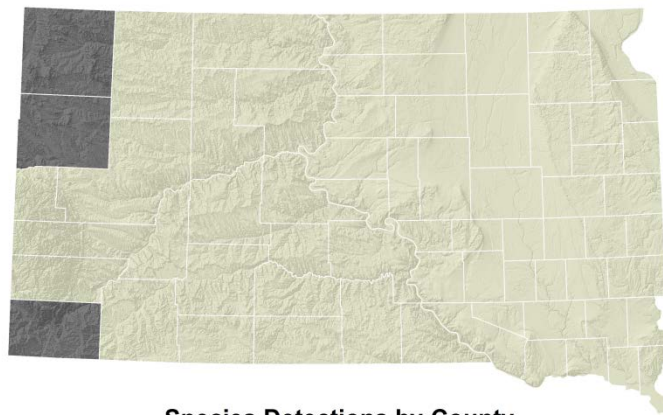
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	2	3
Probable	1	37	38
Possible	1	3	4
Observed	0	0	0
Total	3 (0.7%)	42	45

Greater Sage-Grouse



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

SHARP-TAILED GROUSE

Tympanuchus phasianellus

As with other native grassland grouse, male Sharp-tailed Grouse perform elaborate displays on communal mating grounds to attract females. During the Dance display, he stands erect with outstretched wings and upturned tail, inflates his purple air sacs, erects his yellow eye combs, rattles his tail feathers, and rapidly stomps his feet, all while making cooing, cackling, and popping sounds.

DISTRIBUTION AND STATUS

Sharp-tailed Grouse breed from the central Great Plains north into Canada and Alaska. In South Dakota, this grouse is a fairly common resident west of the Missouri River and on the Missouri and Prairie coteaus east of the River. These grouse were documented on more blocks during the second Atlas (37%) than during the first Atlas (31%). Most of the increase occurred in the northwestern quarter of the state. Breeding Bird survey data indicate a long-term positive trend in South Dakota's Sharp-tailed Grouse population (Sauer *et al.* 2014).

HABITAT

Sharp-tailed Grouse inhabit open grasslands mixed with shrubs and wooded draws. They require large amounts of grassland in the landscape to persist. Grasslands with a diversity of plant types, including stands of grass, shrubs, and forbs, provide the best nesting habitat. Broods depend on areas with abundant food (forbs and insects) and a mix of cover types for protection. Second Atlas broods (67)

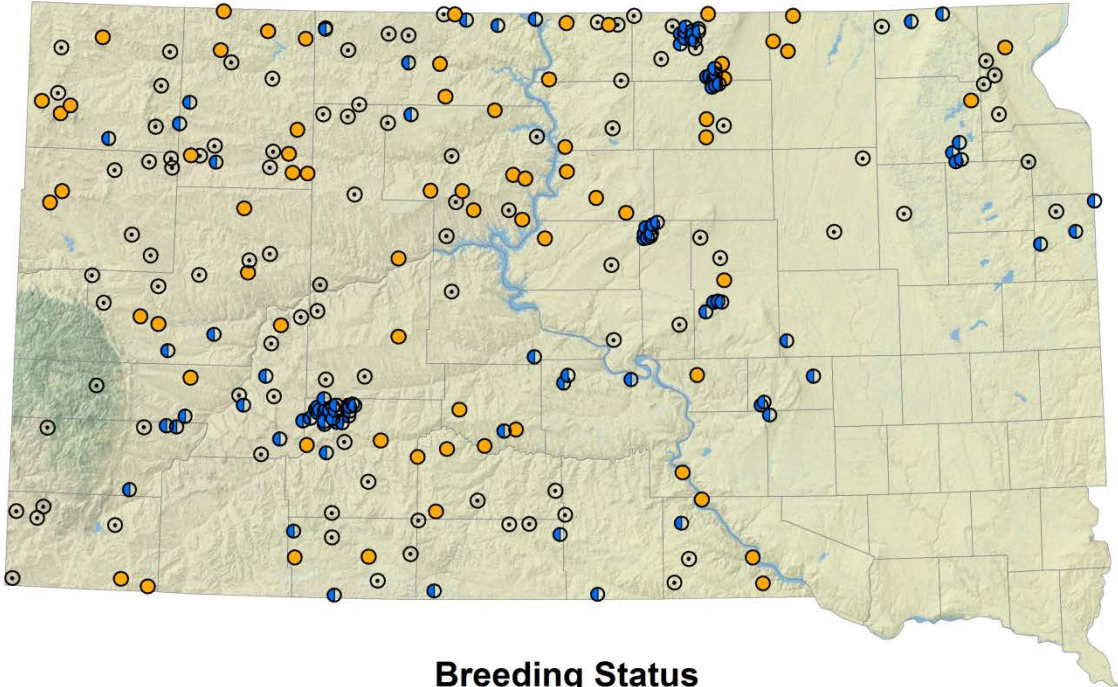
were in grasslands (85%), roadsides (12%), and windbreaks (3%).

BREEDING BIOLOGY

Male Sharp-tailed Grouse begin congregating on the dancing lek in late February. Dominant, older males have territories in the center of the lek and mate with the most females. A female may visit leks several times before mating. The peak visitation period by females in South Dakota is early April. After mating, the female leaves to nest and raise the brood by herself. Nesting in South Dakota begins in mid-April and renesting attempts last into June. The nest is built in a shallow depression on the ground under a grass clump, forb, or shrub. Clutch sizes in South Dakota average 11 to 14 eggs. The hen incubates the clutch for 23 days. The downy chicks stay in the nest for about a day before following the hen to foraging areas. The hen protects and leads the brood, but chicks feed themselves. By 10 days, chicks can make short flights but are not fully-grown until 8 to 10 weeks. The young grouse remain in loose family groups well into the fall (Connelly *et al.* 1998, Flake *et al.* 2010, SDGFP 2010).

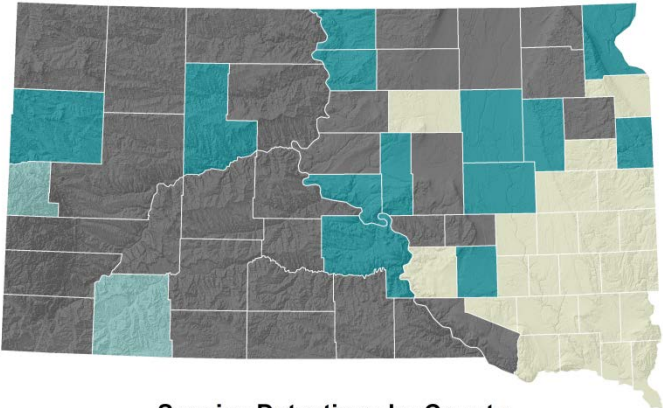
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	44	26	70
Probable	31	76	107
Possible	87	6	93
Observed	0	0	0
Total	162 (37%)	108	270

Sharp-tailed Grouse



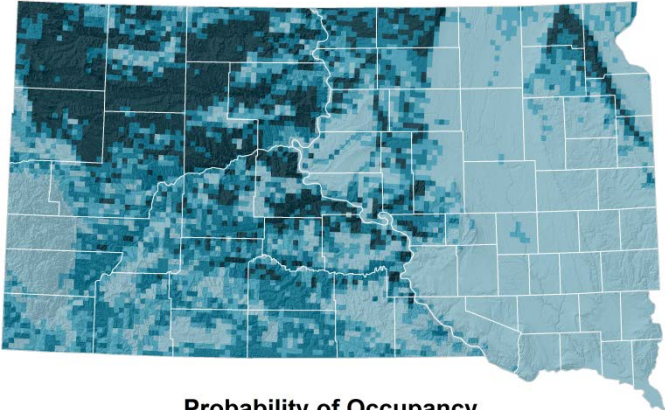
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

GREATER PRAIRIE-CHICKEN

Tympanuchus cupido

During the breeding season, males perform elaborate courtship displays on small display sites known as booming grounds or leks. Each male defends a small territory, but the dominant male occupies the best spot. Females visit several leks before choosing a male for mating. Once mating occurs, the female leaves to begin nesting, while the male continues to display to other females on his territory.

DISTRIBUTION AND STATUS

The Greater Prairie-Chicken is a year-round resident of mid-continent prairie states. As a result of habitat loss and degradation, this grouse now only occurs in isolated populations. The largest population extends from central South Dakota south to central Kansas. In South Dakota, prairie-chickens occur in the northeast, but the densest and most stable populations are around Fort Pierre National Grassland and south to Nebraska. The Greater Prairie-Chicken is a state Species of Greatest Conservation Need. To monitor the state's population, scientists count lekking males, using this count as an index of population change.

HABITAT

As a year-round resident, Greater Prairie-Chickens need large grassland spaces that are heterogeneous enough to provide the proper habitat for all aspects of their lives. A tallgrass prairie native, these grouse use areas with taller grass within South Dakota's mixed-grass prairies and pastures. For nests, hens choose grasslands with

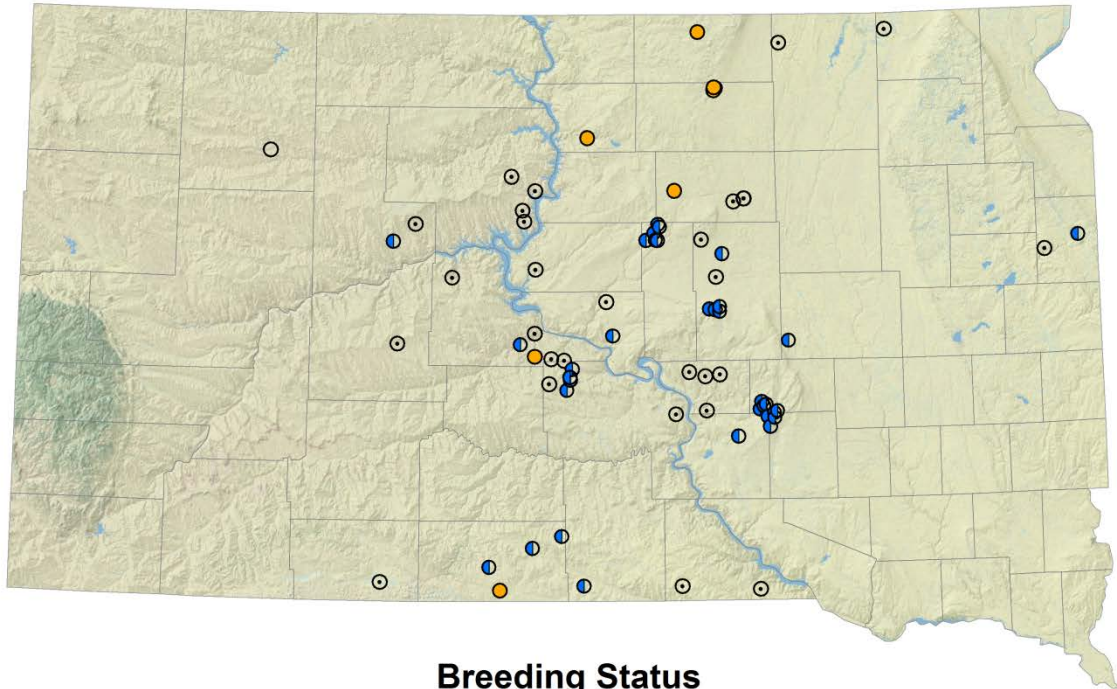
large amounts of dead standing grass that is 8" to 12" tall. Broods feed in herbaceous growth tall enough to provide shade, concealment, and abundant insects (Flake *et al.* 2010, Norton *et al.* 2010).

BREEDING

In South Dakota, the peak period for booming ground activity is late March to mid-April. Egg-laying begins early to mid-April and the brood-rearing period is June and July. Males do not help with nesting or brood-rearing. The female creates a depression in the vegetation and lines it with feathers, dried grass, leaves, and twigs. South Dakota nests average 13 to 14 eggs; 4 second-Atlas nests had 10 to 19 eggs. Ring-necked Pheasants often lay their eggs in prairie-chicken nests. About 7% of prairie-chicken nests in South Dakota have pheasant eggs, including 2 of the 4 nests found during the second Atlas. The female incubates her clutch for 23 to 25 days. The downy chicks leave the nest within 24 hours and begin to feed themselves. The hen protects the brood and leads them to areas with abundant insects. The young are on their own at 80 to 84 days (Flake *et al.* 2010, Norton *et al.* 2010, Johnson *et al.* 2011).

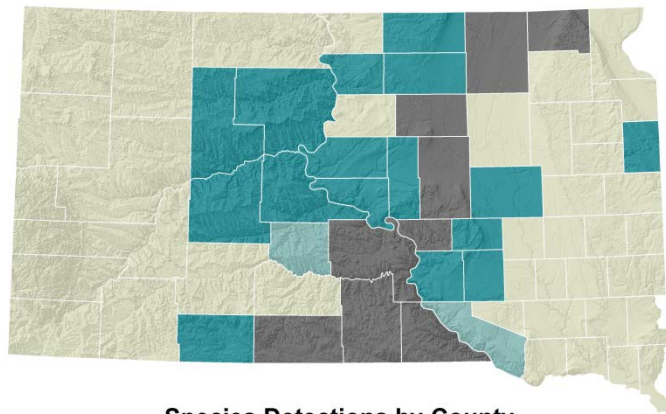
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	8	9
Probable	8	26	34
Possible	18	11	29
Observed	1	0	1
Total	28 (6%)	45	73

Greater Prairie-Chicken



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

WILD TURKEY

Meleagris gallopavo

In the U.S., the Wild Turkey was almost hunted to extinction by the 1930s. Programs to protect and re-establish wild populations have been extremely successful and Wild Turkeys can now be hunted in all of the lower 48 states.

DISTRIBUTION AND STATUS

The Wild Turkey is widely distributed throughout the United States and Mexico. In South Dakota, it is a fairly common year-round resident in wooded and semi-wooded areas. The eastern subspecies, *M. g. silvestre*, formerly was found along the Missouri River, but the last bird was shot before 1920 (Tallman *et al.* 2002). All current populations are the result of intentional releases. The Merriam's Turkey *M. g. merriami* was released in the Black Hills, the Rio Grande subspecies *M. g. intermedia* in the river bottoms of central and eastern South Dakota, and the Eastern subspecies into the northeast. Turkey distributions were similar during the first and second Atlases.

HABITAT

Wild Turkeys require woodlands for food, protection, and roost sites. In South Dakota, turkeys do well in areas with a mix of woodlands, grasslands, and cropland. Second Atlas observers recorded turkeys in woods (61%), grasslands (26%), cropland (9%), roadsides (3%), and wet meadows (1%). All 6 second Atlas nests were in grasslands. Broods (48) were reported by second Atlas observers in woodlands (67%), grasslands (21%), roadsides

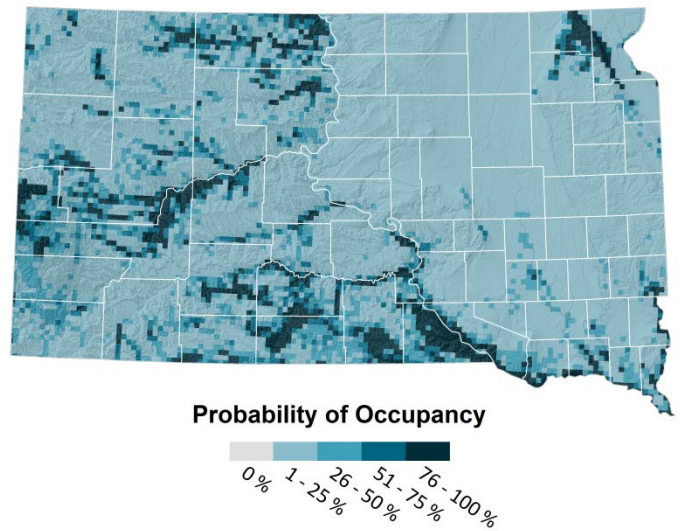
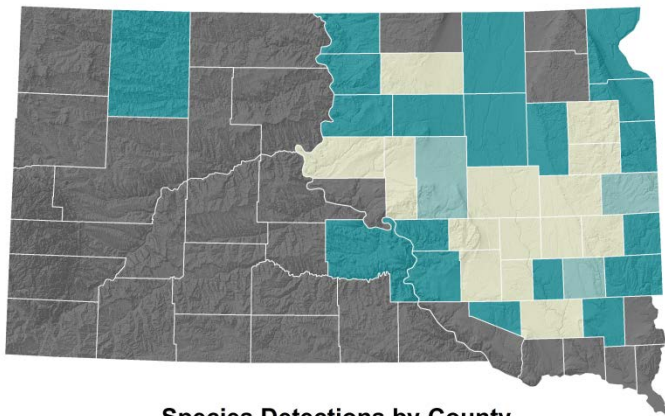
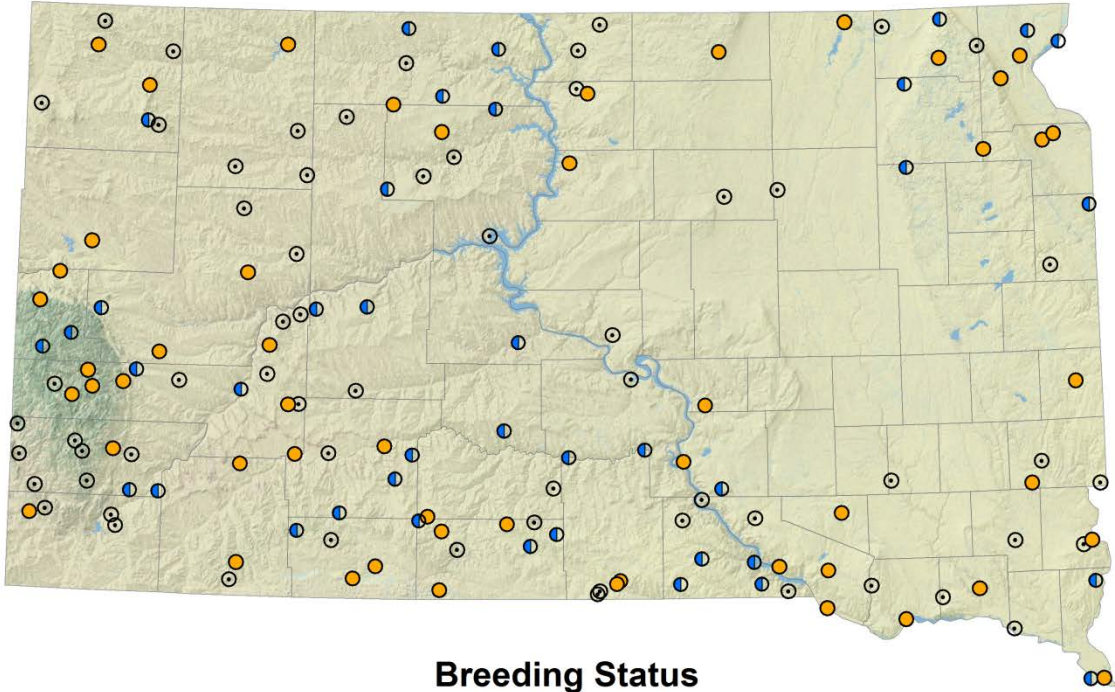
(8%), cropland (2%), and wet meadows (2%).

BREEDING BIOLOGY

Wild Turkeys in South Dakota nest from mid-April through June. Males establish a dominance hierarchy within breeding flocks. The most dominant male may mate with several females while lower-ranked males may not mate at all. The male does not provide any parental care. The hen builds a nest of grass and leaves on the ground, under a shrub, at the base of a tree, or in tall grass. She lays an average of 9 to 11 pale buff eggs over a 2-week period. Sometimes hens lay eggs in another turkey's nest. Eggs hatch after 26 days of incubation. Poults leave the nest within 24 hours, and within 2 days, are able to recognize the hen's call and imprint on her. She leads the brood to feeding areas and protects them. After 2 weeks, poults can make short flights up into trees where they are less susceptible to predators. Poults fly well by 8 weeks and begin gobbling by 11 weeks. Parental care lasts through the fall for male poults and extends to early spring for female poults (SDGFP 2001, McRoberts *et al.* 2014).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	28	25	53
Probable	39	0	39
Possible	58	3	61
Observed	0	0	0
Total	125 (29%)	28	153

Wild Turkey



COMMON LOON

Gavia immer

Common Loons are a long-lived waterbird. They live to be 25 to 30 years old and, on average, are 6 years old when they first breed.

an open view of their territory, and nearby vegetative cover.

DISTRIBUTION AND STATUS

A denizen of northern lakes, Common Loons breed in Alaska, Canada, and from New England, to northern Minnesota in the continental U.S. Their breeding range has contracted; Common Loons no longer breed in northern Iowa and southern Minnesota. In South Dakota, non-breeding birds occasionally are found during the summer in the Black Hills, the northeast, and along the Missouri River. The first confirmed breeding record in South Dakota occurred during the second Atlas with a sighting of a pair with very young chicks in 2011 in Marshall County. The other second Atlas sightings, also in 2011, were of birds in breeding plumage. One was observed in McPherson County, and two birds, perhaps a pair, were seen and heard on Stockade Lake in Custer State Park. The nearest breeding population to South Dakota is in western Minnesota.

BREEDING BIOLOGY

Pairs arrive at breeding lakes in May. The nest is built on the ground, in reed beds, on muskrat houses, or on logs. The loons begin by making a scrape. They grab nearby vegetation or pull debris from the lake bottom, and throw it sideways onto the nest. Both parents incubate the 2 olive-brown eggs for about 28 days. The black, downy chicks are semi-precocial but depend on their parents for food. Chicks are dry and active within an hour of hatching, can swim within hours, and leave the nest within a day. Chicks are brooded on the nest or on an adult's back for 2 weeks. At about 6 weeks chicks become more independent and by 11 weeks, can feed themselves (Evers *et al.* 2010).

HABITAT

During the breeding season, Common Loons reside on freshwater lakes. They nest on islands, preferring the sheltered side. If the lake has no islands, loons prefer to nest on the lee side of the mainland. They also require a nest-site adjacent to an underwater drop-off steep enough for underwater approach,

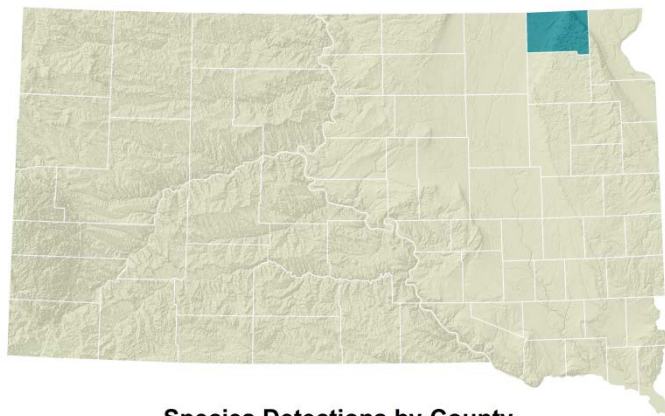
	Blocks	Extra Obs.	Total
Confirmed	1	0	1
Probable	0	1	1
Possible	0	0	0
Observed	0	1	1
Total	1 (0.2%)	2	3

Common Loon



Breeding Status

- Confirmed breeding
- ⦿ Possibly breeding
- ◐ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

PIED-BILLED GREBE

Podilymbus podiceps

Pied-billed Grebes dive or slowly sink underwater by expelling air from between their feathers and their air sacs. Unlike ducks, grebes lack tails and have unwebbed toes.

DISTRIBUTION AND STATUS

The Pied-billed Grebe has the widest distribution of any grebe in the Americas, breeding from northern Canada to southern South America. In South Dakota marshes, the Pied-billed Grebe is a common breeder, except in the Black Hills. This species is not colonial. High numbers, however, may breed in large marshes. The first Atlas, conducted during a dry period, recorded Pied-billed Grebe on just 19% of random blocks. In contrast, the second Atlas, conducted during a wet period, recorded it on 40% of all blocks. Breeding Bird Survey data show a stable population in the state since 1967 (Sauer *et al.* 2014).

HABITAT

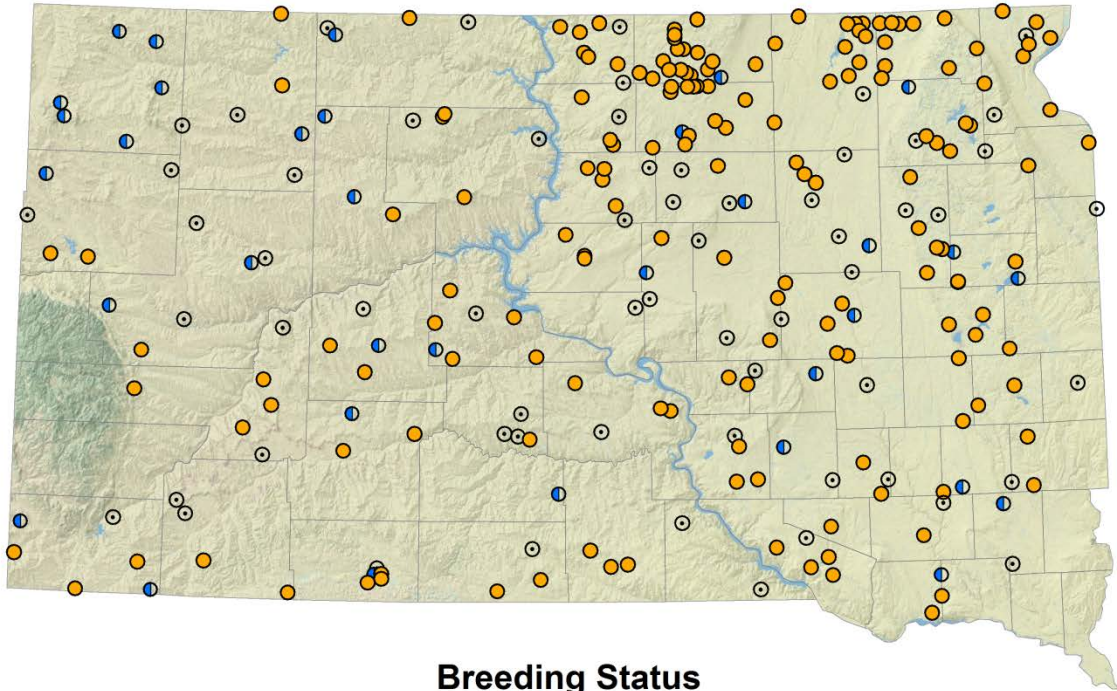
Pied-billed Grebes depend on large, shallow wetlands with emergent vegetation. One South Dakota study found this species in wetlands with an average minimum size of 14 acres (Naugle *et al.* 1999). Second Atlas observers recorded Pied-billed Grebes in marshes (62%), lakes and ponds (37%), and wet meadows (1%).

BREEDING BIOLOGY

In South Dakota, the breeding season is late April through August (second Atlas early and late dates: April 29 and August 30). The nest, usually anchored to vegetation, is a floating platform or mound in water. The nest is made of soft, flexible, fresh or partly decomposed plant material from the lake bottom. The rotting material may supply some warmth for the eggs while the adults are away. Females lay 3 to 8 eggs that are covered by a chalky layer for waterproofing. Both parents incubate the eggs and care for the chicks. Eggs hatch after 23 to 24 days of incubation. Chicks are covered in down and need to be fed by the parents. They move from the nest to the parent's back within an hour of hatching and spend most of the next 7 to 10 days on the parent's back to keep from drowning. For about 2 weeks, parents feed small aquatic prey to the chicks. Chicks are capable of flight when 5 weeks old and are completely independent at 4 to 8 weeks (Muller and Storer 1999).

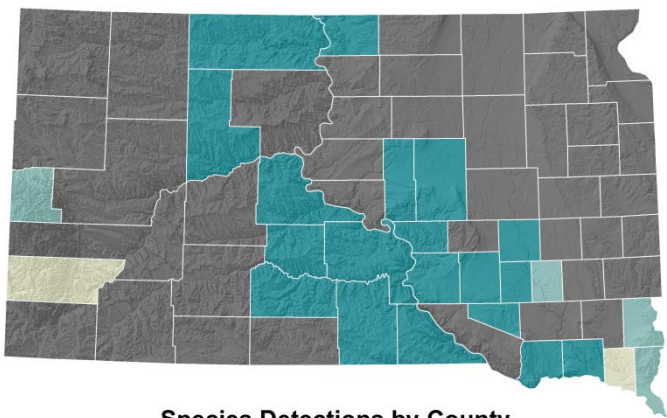
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	80	89	169
Probable	32	4	36
Possible	62	1	63
Observed	0	0	0
Total	174 (40%)	94	268

Pied-billed Grebe



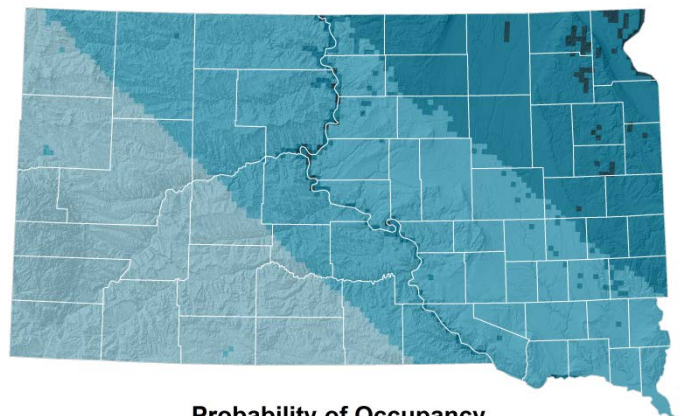
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

HORNE GREBE

Podiceps auritus

Among the courtship displays performed by Horned Grebe is the Weed Ceremony. Prospective pairs dive together to pull up weeds from the marsh bottom and then carry the weeds side-by-side, running across the water's surface.

DISTRIBUTION AND STATUS

The Horned Grebe is a localized and sporadic breeding waterbird in northeastern South Dakota. The state is at the extreme southeastern tip of the species' North American breeding range, which extends north and west through the northern Rocky Mountains, western Canada, and Alaska. This grebe has always been part of South Dakota's breeding avifauna (Duebbert and Lokemoen 1973). However, during dry climatic periods, breeding Horned Grebes disappear from the state. This was the case both during the first Atlas, which did not record any confirmed breeding, and 2005-2007 state-wide colonial waterbird surveys (Drilling 2007). Prolonged wet periods during the mid-1990s and 2000s have increased suitable breeding habitat in the state, and the second Atlas recorded three nests and three broods. The Horned Grebe's breeding range has been receding slowly to the northwest (Stedman 2000, Beyersbergen *et al.* 2004). Atlas data show that this same shift is occurring in South Dakota.

HABITAT

The Horned Grebe nests in shallow ponds and wetlands that have a mix of

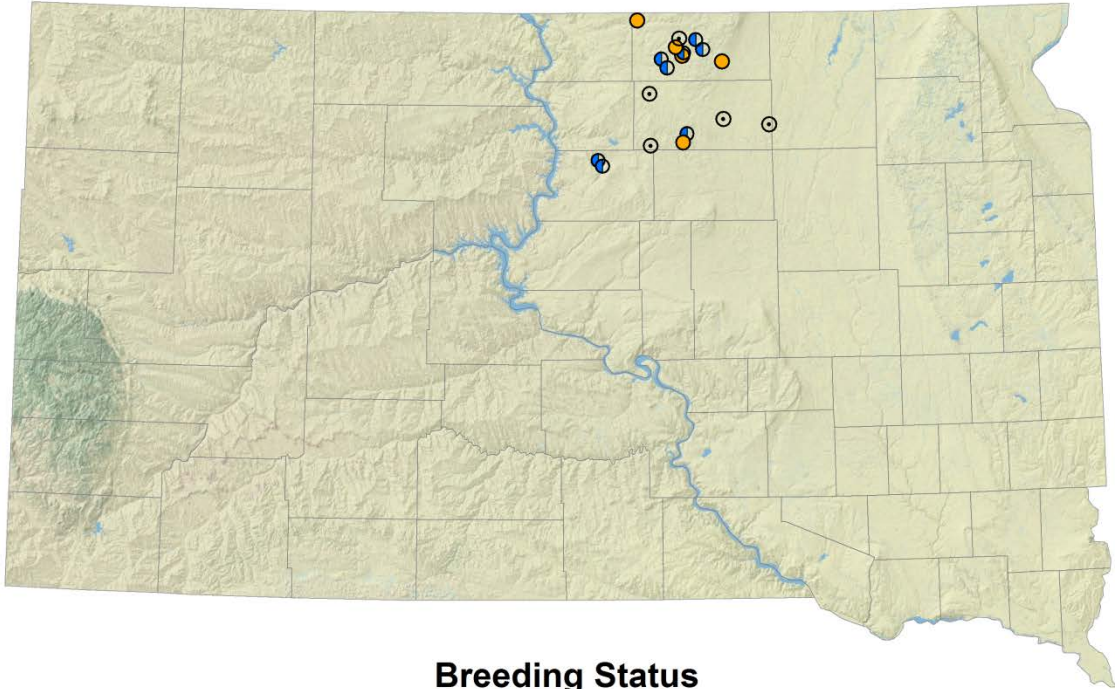
emergent vegetation and open water. Second Atlas observers recorded Horned Grebes in marshes (53%) and ponds (47%). All second Atlas nests and broods were found in marshes.

BREEDING BIOLOGY

The breeding season is late May to late July. Second Atlas nests dates ranged from May 30 to July 7 and broods were documented through July 26. Horned Grebes nest solitarily or in loose aggregations. They usually hide their floating nest, made of marsh vegetation, within reedbeds. Both sexes incubate the clutch of 3 to 8 eggs for 23 to 24 days. Chicks are precocial when they hatch, leaving the nest almost immediately. Parents carry the chicks on their backs and feed the chicks for 10 to 14 days. Young grebes are completely independent at 20 to 25 days and are able to fly at 41 to 50 days (Stedman 2000).

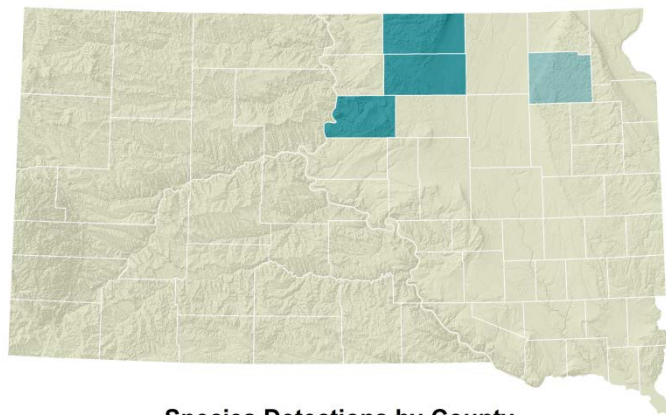
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	5	5
Probable	3	5	8
Possible	1	4	5
Observed	0	0	0
Total	4 (1%)	14	18

Horned Grebe



Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

RED-NECKED GREBE

Podiceps grisegena

The distinctive call of the Red-necked Grebe has been variously described as resembling a “rusty hinge” or an “angry crow”. These grebes aggressively defend their territory against other waterbirds by attacking from underwater.

enough food to support the adults and brood for approximately three months. Although generally a solitary breeder, larger, more productive lakes can support several pairs and their broods.

DISTRIBUTION AND STATUS

A circumpolar species, the Red-necked Grebe is an abundant breeder in western Canada, Alaska, and the northern portion of the western U.S., as well as throughout northern Eurasia. Northeastern South Dakota is the extreme southern edge of the species’ breeding range. This species’ breeding distribution in South Dakota shifts in response to water levels. Before the floods of the 1990s, Red-necked Grebes primarily were found in the Lakes region (Day, Codington, Lake counties) (Over and Thoms 1946, Lundquist 1952, Peterson 1960a). Two pairs and one nest were found in these counties during the first Atlas. After high water flooded out the Lakes region marshes in the 1990s, Red-necked Grebes shifted to the north into Marshall and Roberts counties (Drilling 2007). Since the mid-2000s, high waters have pushed some of these birds westward into McPherson and Potter counties.

BREEDING BIOLOGY

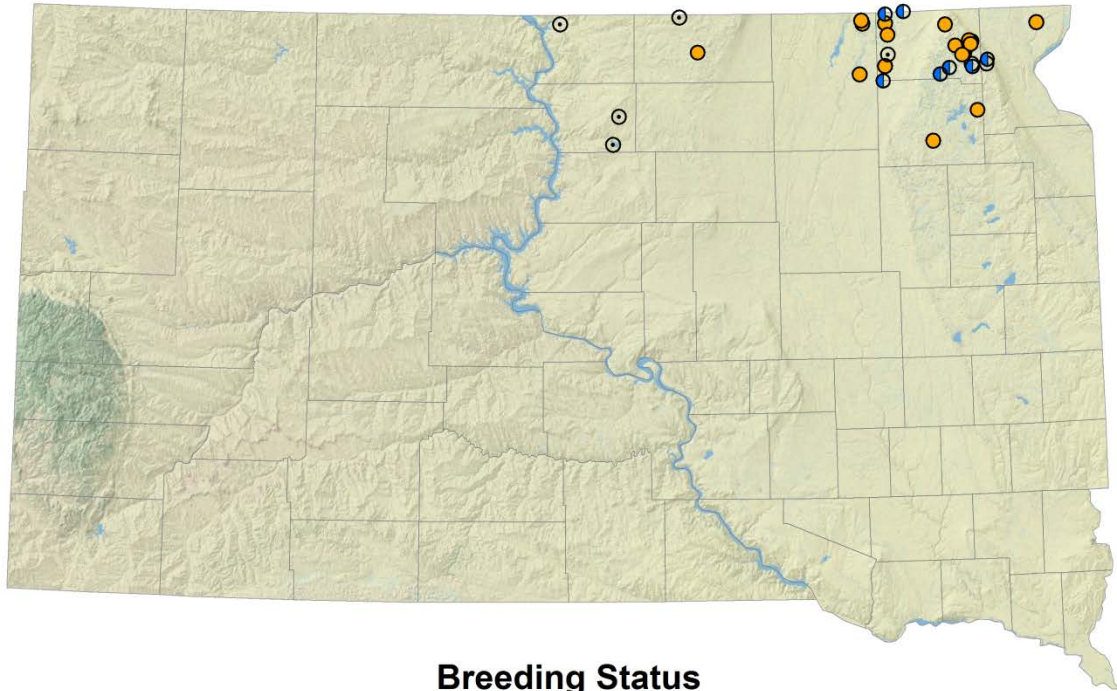
Red-necked Grebes are the earliest breeding grebe in South Dakota, usually starting nest building in late April. The platform nest is built in reed-beds, with a base made of piled-up reeds, rushes, sticks, and smaller plant material. The adults take turns incubating the clutch of 4 to 5 light blue eggs. Eggs hatch after 27 to 30 days. The semi-precocial, downy chicks climb onto their parents’ backs and are carried around the wetland for 10 to 17 days. Both adults feed and carry the chicks. If the brood is large, the adults may split the brood and each take care of half. Chicks are completely independent at 4 to 5 weeks and are able to fly at 7 to 9 weeks, when they leave their natal pond (Stout and Nuechterlein 1999).

HABITAT

Red-necked Grebes nest on permanent and semipermanent lakes and ponds that have emergent reed-beds and

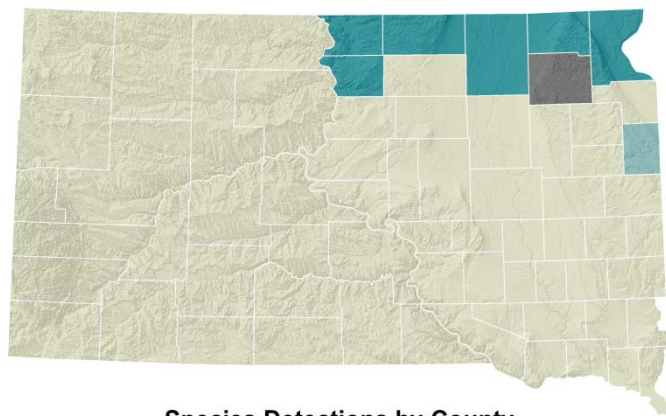
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	6	10	16
Probable	1	8	9
Possible	4	6	10
Observed	0	0	0
Total	11 (3%)	24	35

Red-necked Grebe



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

EARED GREBE

Podiceps nigricollis

Like other grebes, the Eared Grebe eats large quantities of its own feathers. Wads of feathers eventually are regurgitated as pellets, along with indigestible remains of food items.

DISTRIBUTION AND STATUS

Eared Grebes breed in wetlands throughout the interior of the western United States and the Northern Great Plains. In South Dakota, most Eared Grebe breeding colonies are east of the Missouri River, primarily in the Prairie Coteau, Prairie Pothole, and Lakes regions, but also as far south as Lake Andes. During periods of high water levels, this species also breeds throughout West River, as was documented during the second Atlas. The number of colonies throughout the state can range from 5 to almost 40, and the total estimated breeding population in the state can range from 280 to more than 2500 pairs (Drilling 2007, 2013b).

HABITAT

In South Dakota, Eared Grebes nest in shallow vegetated ponds and lakes. They are found more often in semipermanent rather than seasonal wetlands and larger rather than smaller ponds (Naugle *et al.* 1999). Grebe observations during the second Atlas were almost evenly split between ponds (50% of observations) and marshes (48%), with the remainder recorded in wet meadows. Second Atlas active breeding colonies were in marshes (35

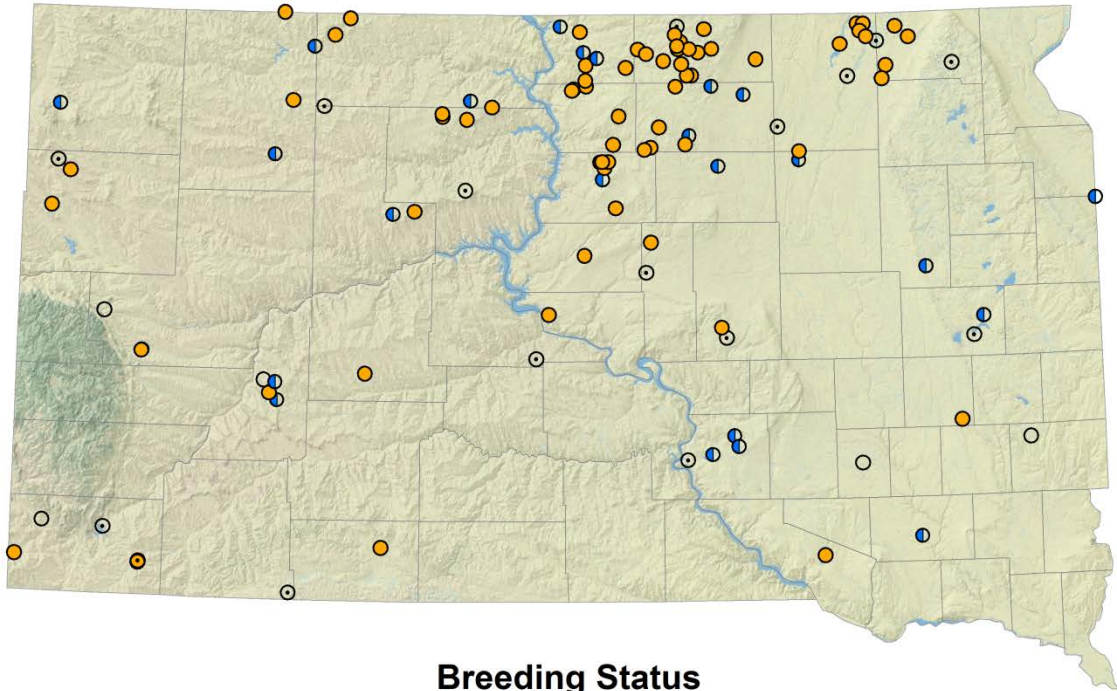
colonies), ponds (17 colonies), and a wet meadow (1 colony).

BREEDING BIOLOGY

In South Dakota, nesting occurs from late May throughout mid-July, and brood-rearing lasts into late August. Eared Grebes usually nest in dense colonies. Within a South Dakota colony, the number of nests ranges from 1 to 3000 nests (Russell and Harris 1990; Drilling 2007, 2013b). The pair build a soggy platform of marsh vegetation pulled up from the bottom of the marsh and piled in a heap. The top of the nest is slightly above the water's surface and nests often are destroyed by high waves during windstorms. The average clutch is 3 eggs. The lower half of the egg is always damp, but remains viable because of its waterproof coating. Eggs hatch after an incubation period of 20 to 23 days. The downy chicks leave after the last egg hatches. For the first few days, chicks are not waterproof and not able to feed themselves. Parents take turns carrying chicks on their back, while the free parent brings food. Chicks are independent from parents when about 20 days old (Cullen *et al.* 1999).

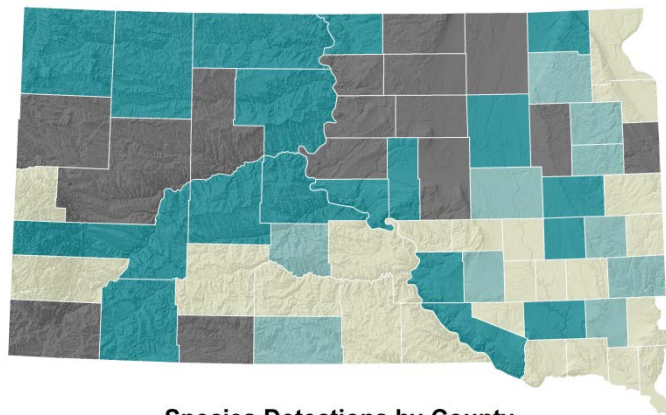
	Blocks	Extra Obs.	Total
Confirmed	11	59	70
Probable	17	8	25
Possible	11	5	16
Observed	5	0	5
Total	44 (10%)	72	116

Eared Grebe



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

WESTERN GREBE

Aechmophorus occidentalis

Western Grebes are best known for their elaborate courtship and greeting displays, among the most complex known among birds. During the Rushing Display, two birds rear up to an upright posture and side by side rush across the water's surface, with loud pattering of their feet, ending with a dive underwater. Other elaborate displays include Weed-dancing and Greeting ceremonies.

DISTRIBUTION AND STATUS

The breeding range of the Western Grebe is in western North America, from southern Canada to central Mexico. Western Grebes breed throughout South Dakota. They are most numerous in the eastern prairie potholes and during wet climatic periods. The species was rare and local during the first Atlas, which was conducted during a dry period. Surveys during 2005-2007 and 2012 were conducted within a wet period, and 40 to 45 colonies were found per year (Drilling 2007, 2013b). Although most South Dakota colonies are relatively small (less than 50 pairs), a 2012 colony in southwest Marshall County had at least 250 broods.

HABITAT

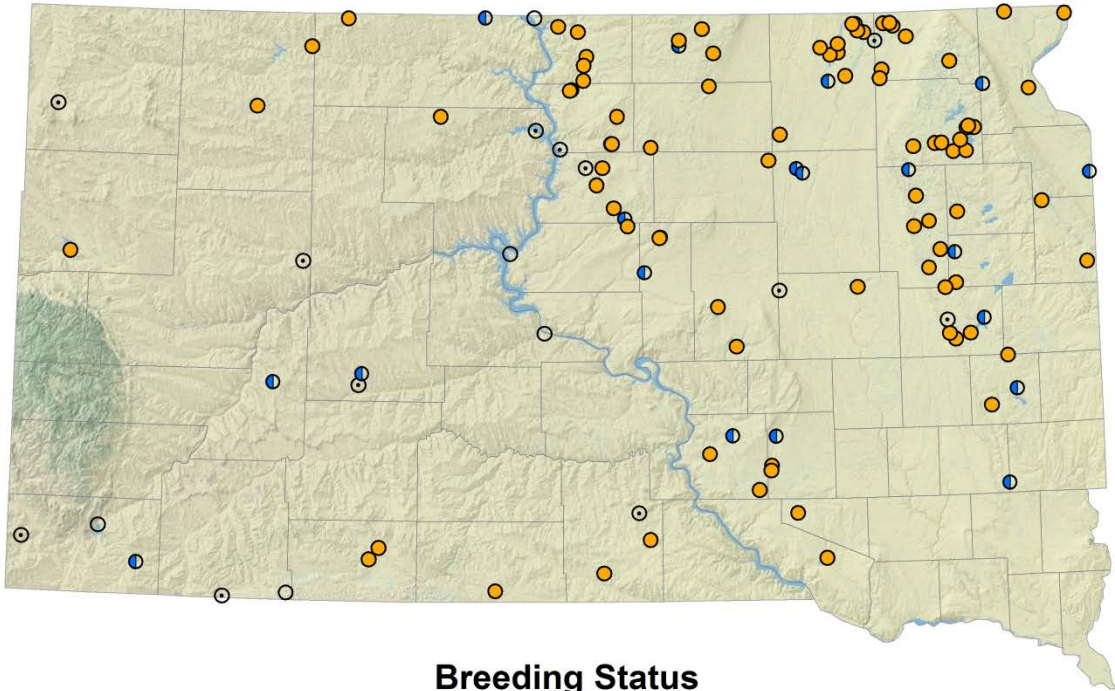
Western Grebes breed on any semipermanent or permanent wetland with reed beds. They use large areas of open water for foraging, and marsh vegetation for nesting.

BREEDING BIOLOGY

In South Dakota, Western Grebes nest during May and June and raise broods from June through August. They usually nest in colonies in shallow marsh vegetation. Colony establishment and growth is highly social, with first nests serving as epicenters around which the colony grows. The nest is built by both adults and is a floating pile of wet marsh vegetation anchored to reeds or cattails. The clutch usually is 2 to 4 pale blue eggs. Incubation begins between the laying of the 1st and 2nd egg and lasts 24 days. Hatching is not synchronized and the last egg may be abandoned in the nest. Chicks climb onto the back of a parent within minutes after hatching. The back-brooding parents may wander many miles away from the nesting colony to wherever food is most available. Chicks are fed by both parents. When a parent approaches with food, a bare patch of yellow skin on the chick's head turns scarlet red. Chicks begin diving and feeding themselves after several weeks. Foraging efforts gradually increase in frequency and success until about 10 weeks, when the young grebes are able to fly (LaPorte *et al.* 2013).

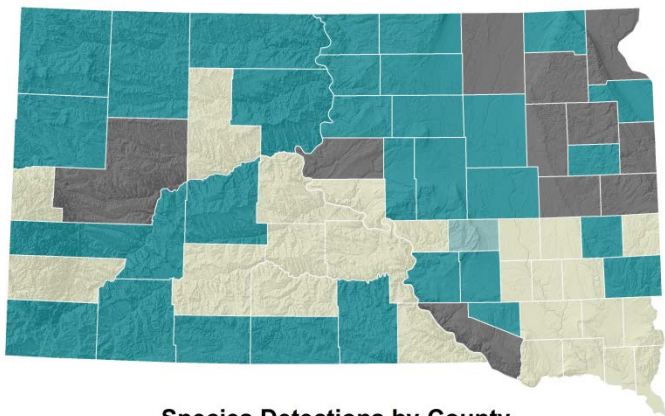
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	21	64	85
Probable	14	6	20
Possible	11	1	12
Observed	4	1	5
Total	50 (12%)	72	122

Western Grebe



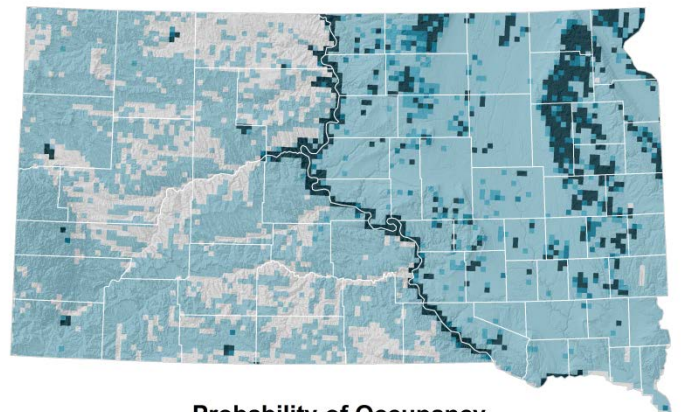
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

CLARK'S GREBE

Aechmophorus clarkii

The Clark's Grebe was long considered a color morph of the Western Grebe, but ornithologists now recognize two species. These two species rarely interbreed despite nesting in the same ponds. Differences in plumage and in the number of notes in their Advertising calls are enough for birds to choose their own species.

DISTRIBUTION AND STATUS

Clark's Grebe breeds throughout the interior of the western U.S., the northern and central Great Plains, and the southern Prairie Provinces of Canada. In South Dakota, Clark's Grebe is a rare breeder in Western Grebe colonies. This species was found over a wider area of the state during the second Atlas than during the first Atlas. The 2012 colonial waterbird surveys focused on rarer species and discovered Clark's Grebes breeding in 6 locations (Drilling 2013b).

HABITAT

The breeding habitat of Clark's Grebe is lakes and reservoirs with emergent vegetation. During the second Atlas, 77% of observations were at lakes and ponds, while 23% were in marshes.

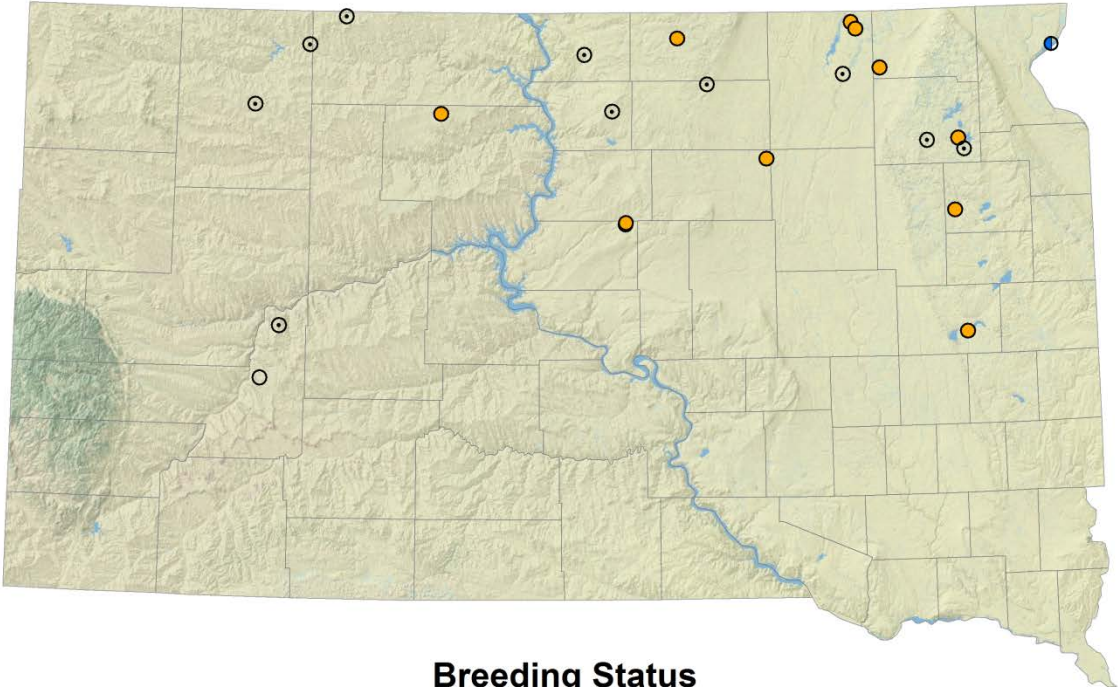
BREEDING BIOLOGY

Clark's Grebes nest during June and July. The nest site most often is in

flooded emergent vegetation, typically on floating mats. Using local plants, pairs build a mound. They often anchor the nest mound to emergent vegetation. Females lay an average of 2 to 3 pale blue eggs, which become white with age and staining. A second Atlas report of a nest with 8 eggs may have been the result of multiple females laying eggs in the same nest. Both the male and female incubate and raise the brood. Incubation lasts for 24 days. Newly-hatched chicks are covered in down and able to leave the nest within hours but must be fed and cared for by the parents. Parents feed aquatic invertebrates, small fish, and feathers to the chicks. Both adults carry chicks on their backs for several weeks. When the back-brooding period is over, parents split the brood, each taking half. Chicks are fed by their parents for about 8 weeks and then remain together until migration. (Storer and Nuechterlein 1992, LaPorte *et al.* 2013).

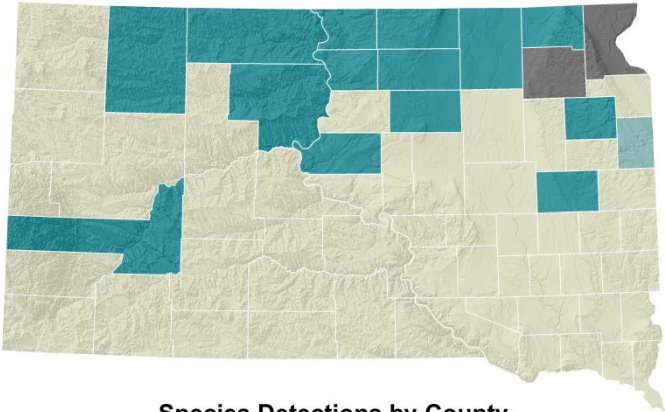
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	2	8	10
Probable	1	0	1
Possible	5	6	11
Observed	1	0	1
Total	9 (2%)	14	23

Clark's Grebe



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

DOUBLE-CRESTED CORMORANT

Phalacrocorax auritus

Cormorants hunt underwater for fish. To increase swimming power and speed, cormorants have water-permeable plumage to lower buoyancy and help stay underwater, a hooked nail on the tip of their bill to grasp fish, webbed toes for swimming, and powerful leg muscles that make up 5% of their weight.

DISTRIBUTION AND STATUS

Double-crested Cormorant colonies are distributed throughout North America. They are most numerous in Alaska, along the Pacific and Atlantic coasts, around the Great Lakes, and in Florida and the Caribbean. Cormorants have nested in South Dakota continuously for at least 130 years. The state hosted the largest and highest number of colonies in the United States in the 1920s (Lundquist 1949, Adolphson and Adolphson 1968). Colonial waterbird surveys during 2005 to 2007 found 96 cormorant colonies in 24 counties and about 9,100 breeding pairs (Drilling 2007b). Waterbird surveys in 2012, during the second Atlas, found 64 colonies in 23 counties and about 12,600 pairs.

HABITAT

Breeding Double-crested Cormorants inhabit ponds, artificial impoundments, lakes, and slow-moving rivers. Colonies are established at sites safe from ground predators and close to feeding areas. Second Atlas colonies (76) were in flooded trees (49%), lakes (46%), and marshes (5%). South Dakota colonies experience higher nest success with increased area of nearby open water

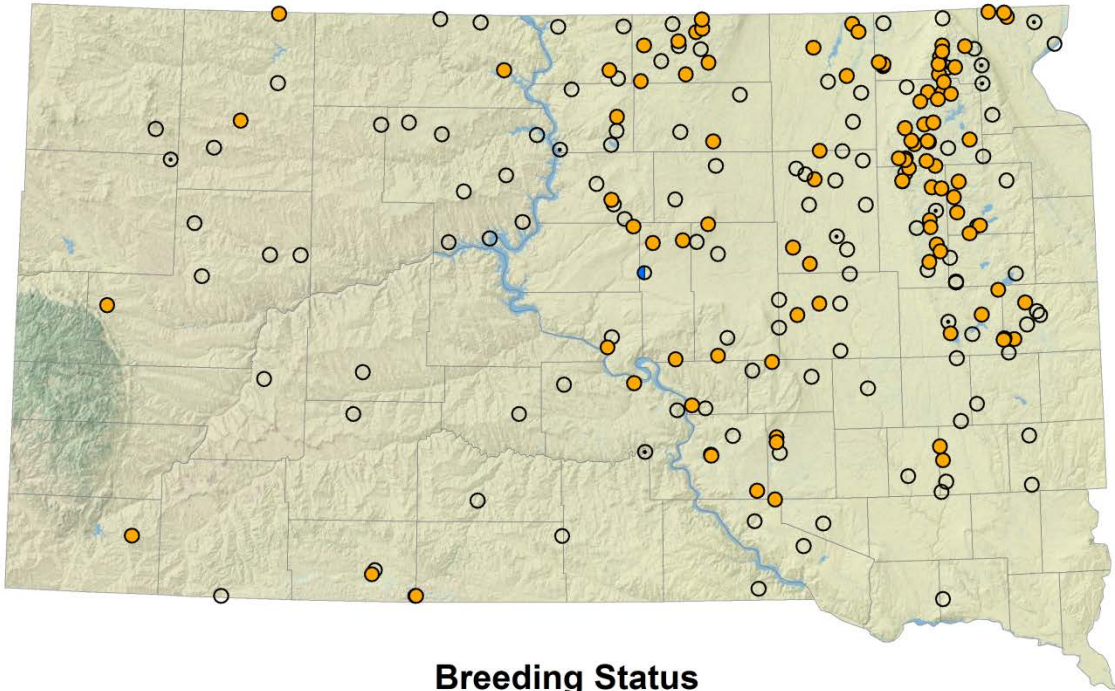
and higher number of marshes in the surrounding landscape (Baker *et al.* 2015).

BREEDING BIOLOGY

In South Dakota, nesting occurs from early April into August. Most cormorants first breed when they are three years old. They nest in colonies, often with Great Blue Herons, egrets, American White Pelicans, and gulls. In 2012, 38 colonies (59%) in South Dakota also had other nesting colonial waterbird species. Sizes of South Dakota colonies range from 1 to 2,100 cormorant nests. The stick nests are built in flooded trees, or on the ground on islands. Both adults incubate the clutch of 3 or 4 eggs by resting the eggs on top of their warm webbed feet and lowering their body to cover the eggs. At ground nests, chicks leave after 3 to 4 weeks and form crèches with other chicks, returning to the nest to be fed. Chicks in tree nests leave when they can fly, at 5 to 6 weeks. (Drilling 2013, Dorr *et al.* 2014, Baker *et al.* 2015).

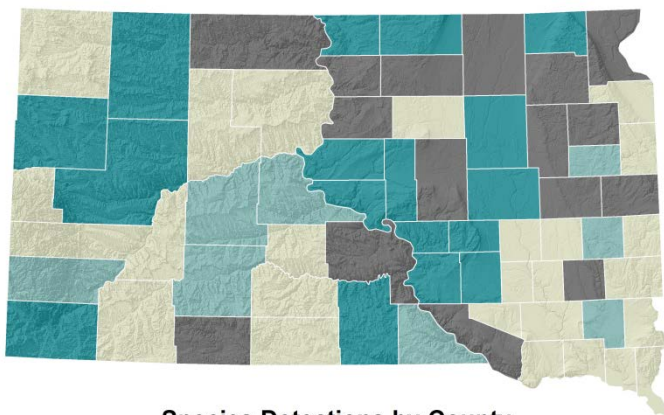
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	8	99	107
Probable	0	1	1
Possible	10	0	10
Observed	106	0	106
Total	124 (29%)	100	224

Double-crested Cormorant



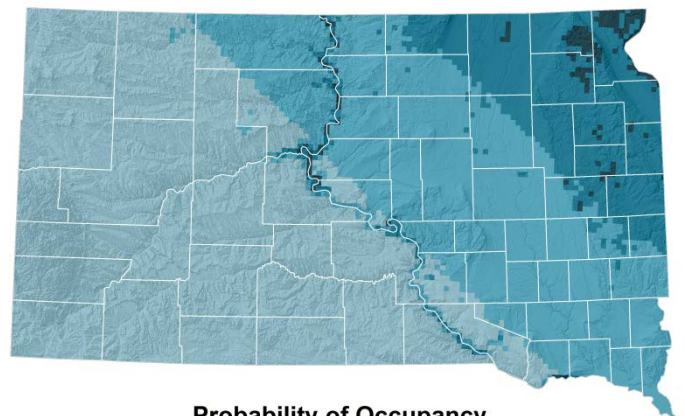
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

AMERICAN WHITE PELICAN

Pelecanus erythrorhynchos

American White Pelicans forage by dipping their bills into the water and scooping up fish, salamanders, and crayfish. Flocks of pelicans cooperate when foraging. A swimming group will encircle fish in shallow water and, by beating their wings, drive the prey towards shore where they are more easily caught.

DISTRIBUTION AND STATUS

The breeding range is the western and north-central United States and central Canada. South Dakota is the southeast corner of the white pelican’s breeding distribution. Historically, pelicans nested in South Dakota in large colonies, but these disappeared by 1900. Breeding pelicans returned to the state upon the creation of national wildlife refuges (Lacreek, Sand Lake, and Waubay) in the 1930s. Throughout the rest of the 20th century, including during the first Atlas, 1500 to 2000 pairs of pelicans nested at various lakes in the northeast and at Lacreek refuge (Adolphson and Adolphson 1968, McCrow 1974, Skadsen 1987, Peterson 1995, King and Anderson 2005). During the 2000s, pelicans have most reliably nested in two colonies—Lacreek refuge and Bitter Lake. The Bitter lake colony is one of the largest in the U.S. with 8,000 to 16,000 nests per year (Drilling 2005, 2013b, Sovada *et al.* 2013). However, pelican populations are vulnerable because a large proportion of the population nests at a very small number of sites. For this reason, American White Pelican is a state Species of Greatest Conservation Need (SDGFP 2014).

HABITAT

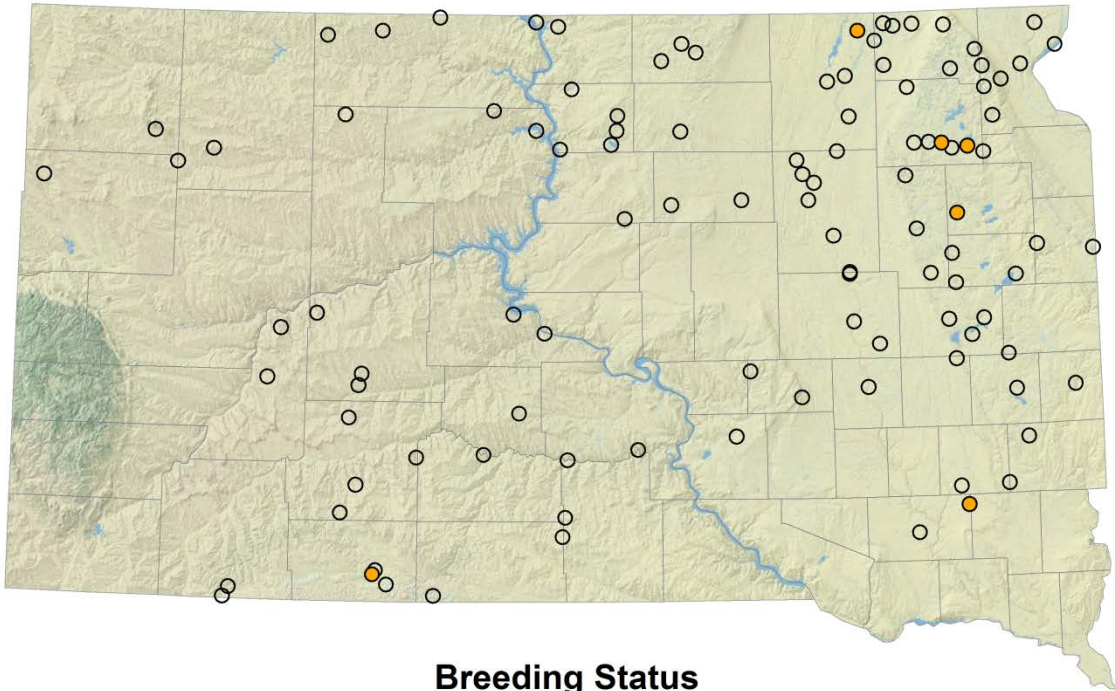
At South Dakota colonies, pelicans breed on islands in lakes and marshes. They forage on lakes up to 55 miles from the colony (Sovada *et al.* 2013).

BREEDING BIOLOGY

American White Pelicans in South Dakota begin nesting in early April, first chicks hatch in early May, and adults continue to feed chicks at the colony into August. Pelicans begin courtship as soon as they arrive at the colony. The nest is a shallow depression on the ground, with little if any lining. The female lays 2 eggs. Neither parent has a brood patch; they incubate by holding the eggs under their foot webs. The first egg hatches in about 30 days. Both parents regurgitate food for the chicks. As the chicks become older, both adults are gone foraging for long periods of time. When about 17 days old, groups of chicks begin to form crèches, or pods. A chick’s first flight is at 9 to 10 weeks, when they leave the colony to accompany their parents on foraging trips (Knopf and Evans 2004, Sovada *et al.* 2013).

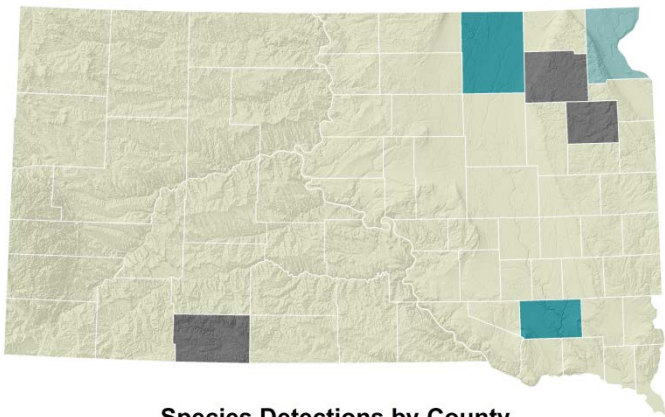
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	6	6
Probable	0	0	0
Possible	0	0	0
Observed	104	0	104
Total	104 (24%)	6	110

American White Pelican



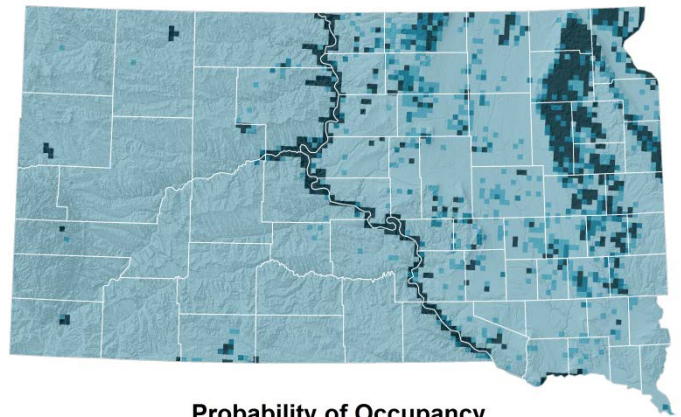
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

AMERICAN BITTERN

Botaurus lentiginosus

The American Bittern’s cryptic brown, streaked plumage is thought to decrease its visibility to prey while it stands motionless in the marsh waiting for unsuspecting fish, crayfish, frogs, and insects to pass by. This species is crepuscular, most active at dawn and dusk.

reports), with a small number seen in wet meadows (4%), ponds (2%), and grasslands (2%).

DISTRIBUTION AND STATUS

South Dakota is in the center of the American Bittern’s breeding range, which includes the northern half of the United States and most of Canada. Bitterns are uncommon in the wetlands east of the Missouri River, and rare and scattered west of the River. Abundance and distribution of American Bitterns were different during the two Breeding Bird Atlases. Compared to the first Atlas, fewer bitterns were detected West River during the second Atlas. In contrast, more bitterns were detected East River during the second Atlas, especially in the Missouri Coteau counties of Potter, Walworth, Campbell, McPherson, and Edmunds.

BREEDING BIOLOGY

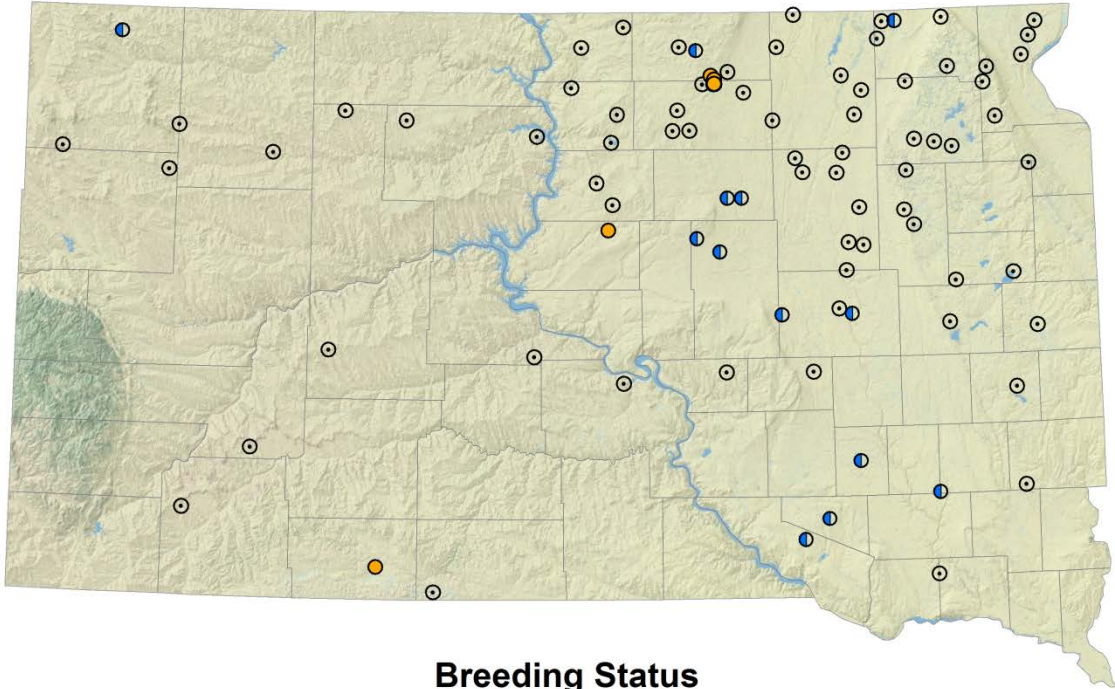
The breeding season in South Dakota is May through July. One second Atlas nest discovered on May 29 contained chicks that were at least 1 week old. Thus, this nest had to have been started in mid-April. Nests are built either in dense marsh vegetation over shallow water or on dry ground among dense grasses. Of 6 second Atlas nests, 1 was in marsh vegetation, while the rest were in upland grasslands. The pair bond is minimal. After mating, the male is not involved in nesting or raising the brood. The female builds the nest, a platform made of grasses, reeds, and cattails, and lays a clutch of 2 to 5 buff-brown eggs. She incubates the eggs for 24 to 28 days. She feeds the chicks by regurgitating partially digested fish, frogs, snakes, crayfish, and mice. Nestlings leave the nest after 1 to 2 weeks but are fed for another 2 to 4 weeks (Lowther *et al.* 2009).

HABITAT

American Bitterns inhabit large shallow wetlands with extensive stands of emergent vegetation. In South Dakota, bitterns are more abundant in semipermanent wetlands compared to seasonal wetlands, and in larger wetlands compared to smaller wetlands (Weber *et al.* 1982, Naugle *et al.* 1999b). Most second Atlas bittern detections were in marshes (91% of

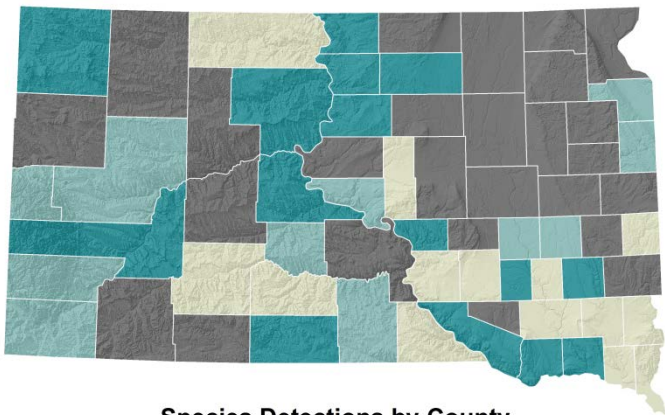
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	6	7
Probable	14	0	14
Possible	68	3	71
Observed	0	0	0
Total	83 (19%)	9	92

American Bittern



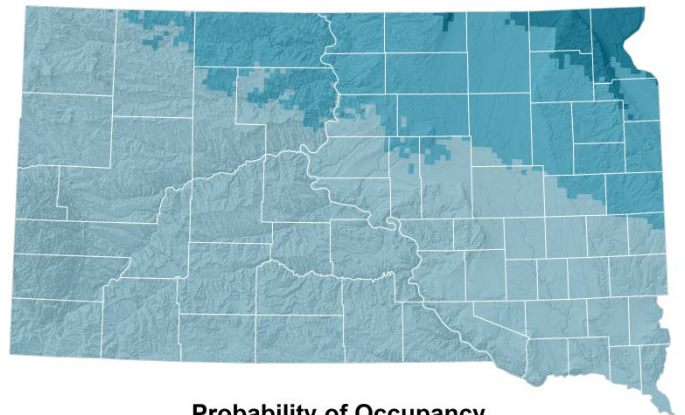
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

LEAST BITTERN

Ixobrychus exilis

The Least Bittern is the smallest member of the heron family. These birds move about their marsh habitat by grasping clumps of plants with their long curved claws, utilizing their extremely narrow body to slip through the dense vegetation. They build foraging platforms at productive feeding sites to catch small fish and insects.

DISTRIBUTION AND STATUS

The breeding range primarily is the eastern U.S and west to the edge of the Great Plains, with small isolated populations along the West coast. Eastern South Dakota is at the western edge of the primary range, where the species is local and uncommon. During the second Atlas, more Least Bitterns were detected in the Prairie Pothole and Prairie Coteau regions and fewer in the southeast, compared to the first Atlas. The species also was found at Lacreek National Wildlife Refuge in Bennett County during the second Atlas. Least Bitterns are very secretive and require special night time surveys to accurately assess their population status. Thus, it is difficult to know whether the differences noted between the two atlases are a result of an actual change in the population.

HABITAT

Least Bitterns live in marshes and sloughs with tall, dense emergent vegetation. They prefer large cattail stands in marshes that are half aquatic vegetation and half open water. All

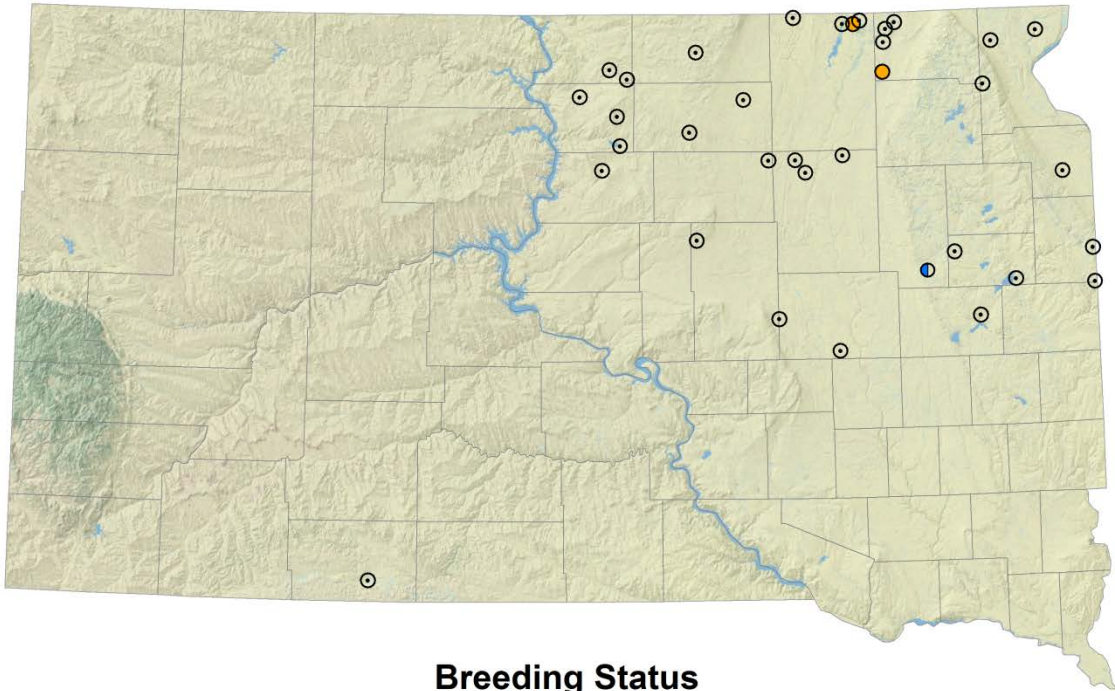
Least Bitterns observed during the second Atlas were in marshes.

BREEDING BIOLOGY

In South Dakota, Least Bitterns breed during June and July. They nest above water in dense tall stands of aquatic vegetation, such as cattails. The well-concealed nest is made of two parts – a platform and a canopy. To build the platform, the pair bend live and dead stalks of marsh vegetation and add short stems and sticks in a spoke-like pattern. They create the canopy by pulling surrounding vegetation over the nest. The nest gradually sinks under the weight of adults and nestlings. Both parents incubate the 4 to 5 pale green eggs for 17 to 20 days. Nestlings are semi-altricial at hatching and open their eyes within 10 minutes. They are able to flap their wing stubs on the 3rd day, grasp items well with their feet and assume “bittern stance” on the 4th day, and temporarily venture out of the nest on the 5th day. Chicks leave the nest at about 14 days and take their first flight at approximately 29 days (Poole *et al.* 2009).

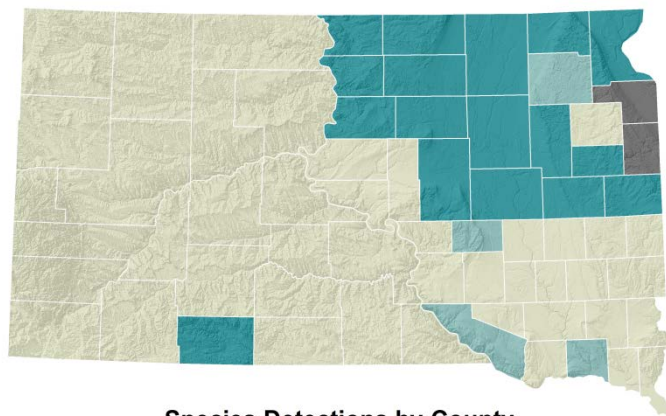
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	1	2
Probable	1	0	1
Possible	21	11	32
Observed	0	0	0
Total	23 (5%)	12	35

Least Bittern



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

GREAT BLUE HERON

Ardea herodias

The largest heron in North America, the Great Blue stands over 5' tall, has a wingspan of 4' to 5', and weighs 4.5 to 5.5 lbs. Males are significantly larger than females.

were in lowland woods along rivers and creeks (63%) or flooded trees or islands in lakes and ponds (30%). One nest was in a marsh and 6 colonies were on ridge-tops in ponderosa pines.

DISTRIBUTION AND STATUS

The Great Blue Heron breeds throughout most of Canada and the United States. These herons are common throughout South Dakota. They are the most widely distributed breeding colonial waterbird West River. A statewide colonial waterbird survey in 2012 documented 93 colonies of breeding herons, and a total of 1,547 breeding pairs in 39 counties. These numbers were similar to those in a survey done five years earlier (Drilling 2007). South Dakota's Great Blue Heron population is increasing at a significant rate, both over the short term and long term (Sauer *et al.* 2014). Biologists, however, are concerned about the future of the state's heron population. The number of fledglings produced per nest in some South Dakota colonies may be below the number needed to sustain the population (Baker *et al.* 2015).

BREEDING BIOLOGY

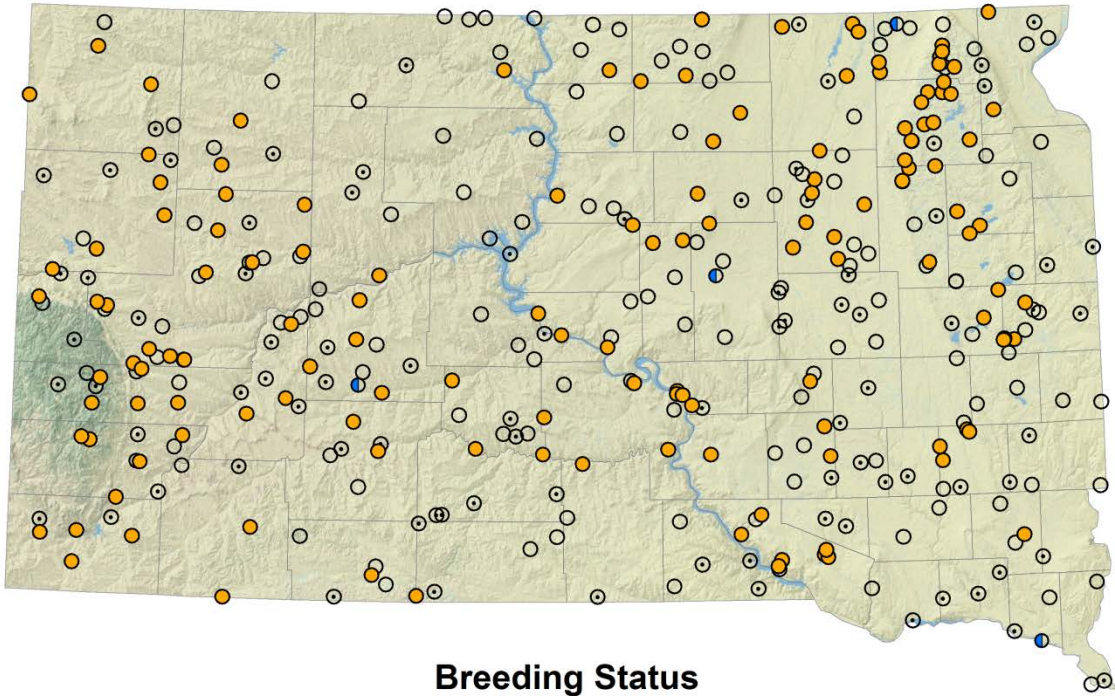
The breeding season is mid-March through late July. While Great Blue Herons will nest in multi-species colonies, 63% of the known 2012 colonies consisted of only this species. Colony size in South Dakota ranges from 1 to 150 heron nests. The nest, mostly built by the female, is a stick platform, sometimes quite large, built in a tree, shrub, or rarely in a marsh or on the ground. Three to 5 eggs are laid every other day and incubated by both adults for 25 to 30 days. Both parents feed regurgitated fish and other prey to the chicks. Chicks leave the nest at about 7 to 8 weeks. About 60% of South Dakota nests are successful, producing 1 to 4 fledglings per nest (Dowd and Flake 1984, Vennesland and Butler 2011, Baker *et al.* 2015).

HABITAT

Preferred breeding habitat in South Dakota includes nesting trees relatively far from human disturbance and safe from predators, and nearby foraging areas such as rivers, ponds, stock dams, marshes, and grasslands (Dowd and Flake 1985, Baker *et al.* 2015). Most colonies during the second Atlas

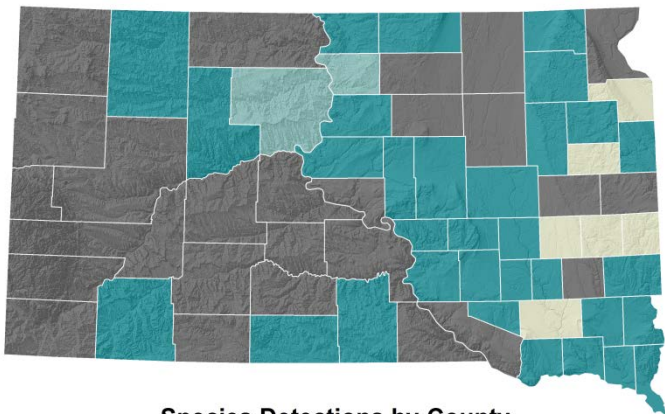
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	11	133	144
Probable	2	2	4
Possible	90	1	91
Observed	132	0	132
Total	235 (54%)	136	371

Great Blue Heron



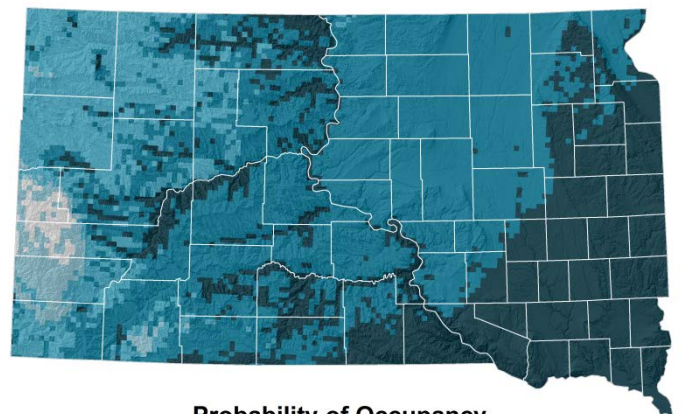
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

GREAT EGRET

Ardea alba

During courtship, Great Egrets conspicuously display their aigrettes, long plume feathers worn only during the breeding season. In the late 1800s, overhunting for these beautiful feathers reduced North American egret populations by 90% and led to the enactment of the Migratory Bird Treaty Act of 1913.

DISTRIBUTION AND STATUS

The North American breeding range includes the southeastern tier of U.S. states (north to Oklahoma and west to Texas) and up the East Coast to New England, with many scattered disjunct populations in the Southwest, Great Basin, and Midwest. Great Egrets also breed in Central and South America, southern Europe, Asia, Australia, and southern Africa. South Dakota's population, disjunct from the main breeding range, is a result of a relatively recent range expansion from the south. Great Egrets first bred in South Dakota in 1978. The first Atlas recorded 6 egret colonies in 4 counties. By 2007, 18 colonies and 2240 breeding pairs were censused (Drilling 2007). Waterbird surveys during 2012 documented 19 colonies and 3650 breeding pairs (Drilling 2013b).

HABITAT

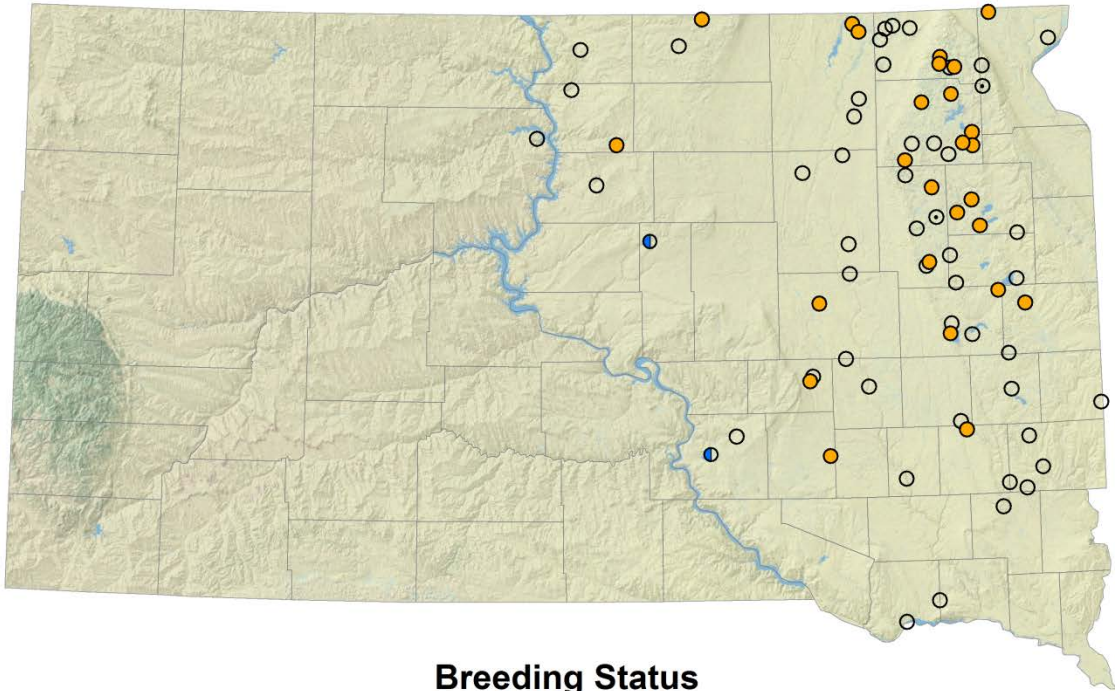
Second Atlas Great Egret observations were in marshes and wet meadows (56%), ponds and lakes (44%), and rivers and creeks (3%).

BREEDING BIOLOGY

In South Dakota, the breeding season is late April to late July. Great Egrets nest in mixed-species colonies, along with Great Blue Herons, cormorants and other egrets. The colony is located in areas protected from predators, such as an island or flooded trees. Males arrive first and begin to build nest platforms from which they court females. After a female is accepted, a trial pair bond may form, lasting up to 7 days. During these trials, mates cooperatively build nests and defend territories. Up to 20% of trial pair bonds dissolve before egg-laying. The large, stick platform nest typically is in a tree or shrub. Both adults incubate the average of 3 greenish-blue eggs. Incubation, which lasts 23 to 27 days, begins at the laying of the first egg, resulting in asynchronous hatching and chicks of different sizes. Parents feed by regurgitating boluses of small fish directly to the chicks or deposited on the nest floor. Chicks begin leaving the nest 21 days after hatching and are independent by 62 to 67 days (McCrimmon *et al.* 2011).

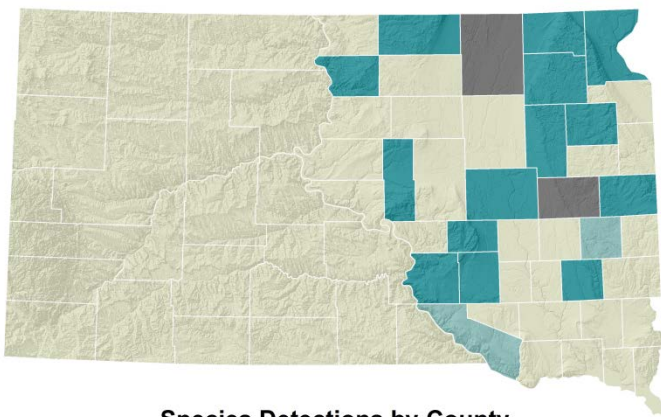
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	28	28
Probable	0	2	2
Possible	2	0	2
Observed	48	0	48
Total	50 (12%)	30	80

Great Egret



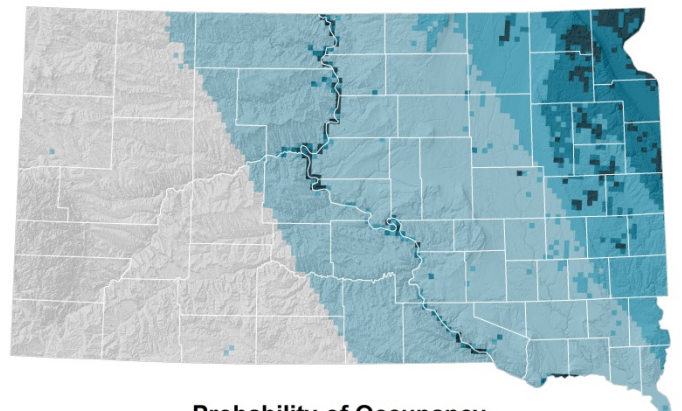
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

SNOWY EGRET

Egretta thula

Snowy Egrets, like all herons and egrets, have specialized feathers called powder down. These are modified down feathers that continually crumble at the tips, producing a fine powder. The bird uses the powder to clean and waterproof its feathers.

DISTRIBUTION AND STATUS

The primary breeding range of the Snowy Egret is along the East and Gulf Coasts, the lower Mississippi Valley, and the Great Basin. The species breeds in scattered locations elsewhere in the western U.S. and Great Plains, including the eastern Dakotas. The first known nesting by Snowy Egrets in South Dakota occurred at Sand Lake National Wildlife Refuge in 1977 (Waldstein 1977). Since then, it has nested primarily in the northeast, but also regularly at two southern refuges-Lacreek and Lake Andes. Snowy Egret is the least common of South Dakota's regularly breeding egret species. Just two colonies had nesting Snowy Egrets during the first Atlas, which occurred during an extended dry period. During 2005 to 2007, these egrets nested in three colonies, with 4 to 304 nests per colony (Drilling 2007). After several years of above-average precipitation, surveyors documented nine colonies with nesting Snowy Egrets during 2012 waterbird surveys (Drilling 2013b).

HABITAT

In South Dakota, Snowy Egrets nest in large marshes, flooded trees, or in trees and bushes on islands. They forage in the shallow waters of wetlands. During

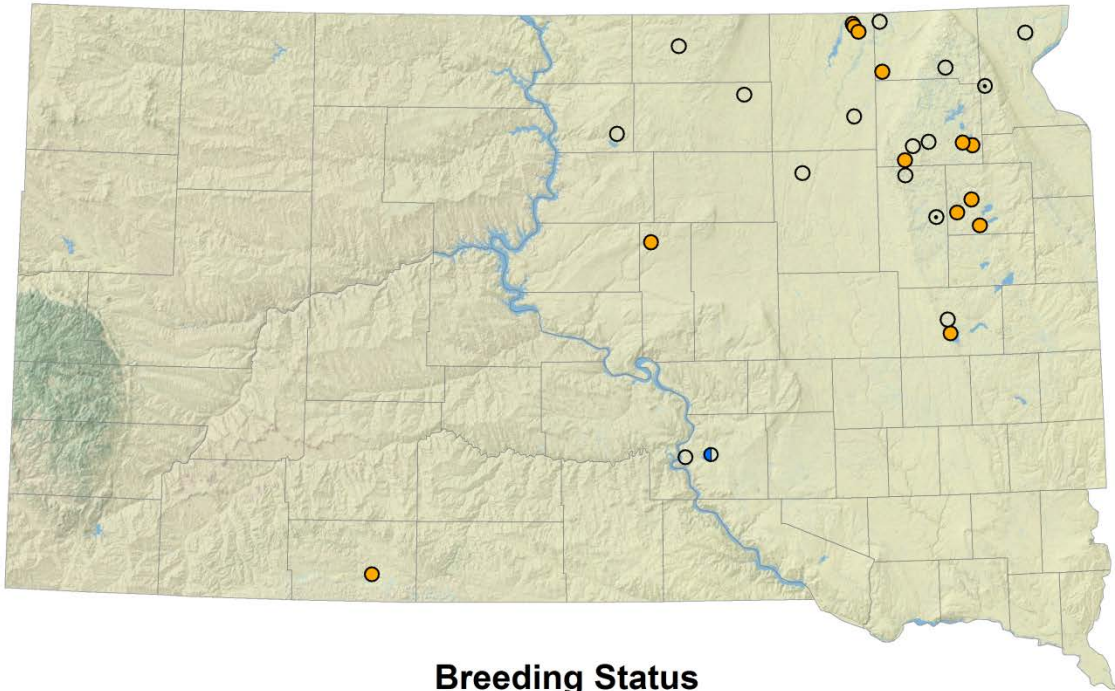
the second Atlas, egret sightings were in marshes (56% of reports), ponds (32%), and flooded pastures (8%).

BREEDING BIOLOGY

The breeding season in South Dakota is May through July. In some northeast island colonies, eggs hatch on average during the 3rd week of June and young egrets fledge, on average, the 3rd week of July (Baker *et al.* 2015). Snowy Egrets nest in mixed-species colonies. In South Dakota marsh colonies, they nest with Black-crowned Night-Herons, Cattle Egrets, and White-faced Ibis. In island colonies, Great Egrets, Great Blue Herons, and cormorants also may be nesting. In either type of colony, the nest is a loosely woven platform of twigs, sticks, or reeds. The male supplies the nesting material while the female builds the nest. The clutch usually is 3 to 5 eggs, incubated by both parents for 20 to 24 days. Both parents regurgitate fish, crayfish, frogs, and other prey for the nestlings. Chicks begin to climb out of the nest when 10 to 25 days old but are unable to fly until at least 30 days old. (Parsons and Master 2000).

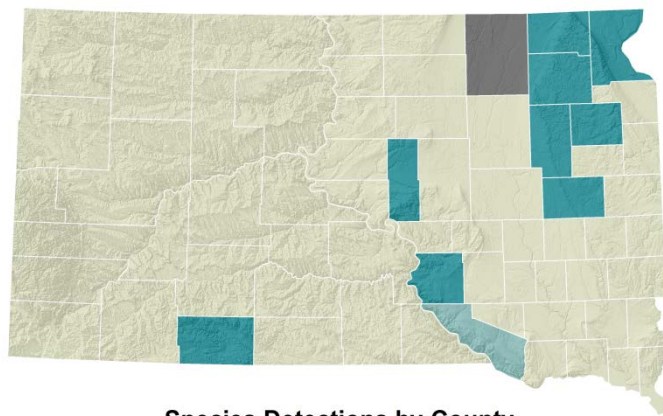
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	12	13
Probable	0	1	1
Possible	2	0	2
Observed	13	0	13
Total	16 (4%)	13	29

Snowy Egret



Breeding Status

- Confirmed breeding
- Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

LITTLE BLUE HERON

Egretta caerulea

During the breeding season, this small heron has long plumes on its back and crest, rather than the filamentous aigrette plumes of other herons. The Little Blue Heron also is unique among herons in having distinct color morphs for immature (white) and adult (blue-gray) plumages.

DISTRIBUTION AND STATUS

The main breeding distribution of the Little Blue Heron is the southeastern United States, east and west coasts of Mexico, and the Caribbean. It is a rare, but regular breeder in the prairie potholes of the Dakotas, western Iowa, and southwest Minnesota. Little Blue Herons first nested in South Dakota in 1980 at Sand Lake National Wildlife Refuge. Since then, the species has nested most frequently in Brown County, with sporadic nesting elsewhere east of the Missouri River. Second Atlas observations were at the same colonies as those documented during 2005 to 2007 waterbird colony surveys (Drilling 2007). Numbers of pairs breeding in South Dakota colonies range from 1 to 15 per colony (Naugle *et al.* 1996, Drilling 2007).

HABITAT

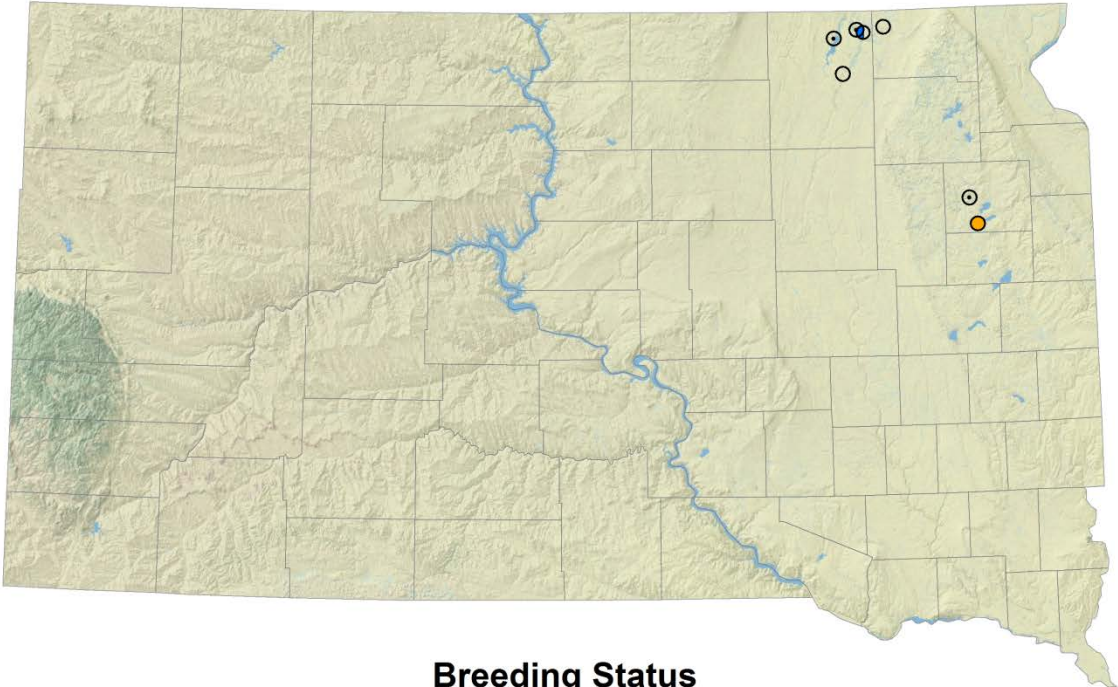
Little Blue Herons in South Dakota nest in two types of substrates--in shrubs and small trees in standing water and on islands, or in reedbeds. They forage in nearby shallow marshes and pond edges.

BREEDING BIOLOGY

In South Dakota, Little Blue Herons nest from June through August. They nest in colonies with cormorants, egrets, night-herons, and ibises. When nesting in a tree colony, Little Blues tend to nest in lower shrubs and branches. The nest is a platform of sticks built on a stable branch or thick marsh vegetation. The male gathers most of the twigs and passes them to the female, who constructs the nest and lines it with green vegetation. The clutch of 3 to 5 blue-green eggs is incubated by both parents for 22 to 23 days. At hatching, chicks' eyes are open but the chick is weak and mostly sleeps. Both parents regurgitate fish and other aquatic organisms for the chicks. Chicks are able to climb out of the nest after 2 to 3 weeks, are capable of short flights at 4 weeks, and are independent of parental feeding at 6 to 7 weeks. For several more weeks, fledglings follow their parents to foraging areas but return to the colony at night to roost (Rodgers and Smith 2012).

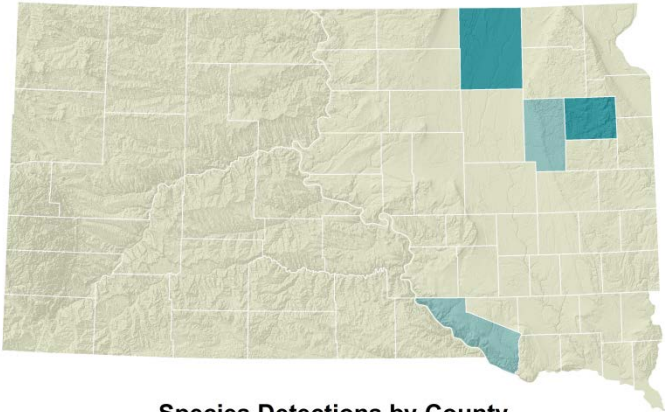
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	1	1
Probable	0	1	1
Possible	0	3	3
Observed	2	0	2
Total	2 (0.5%)	5	7

Little Blue Heron



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

TRICOLORED HERON

Egretta tricolor

The Tricolored Heron breeds in marshes along the Gulf Coast of the U.S. and Mexico, as well as the Caribbean islands. It first was reported in South Dakota in 1980 in Roberts County (Harris 1980b) and the first nesting was confirmed in 1986 in Kingsbury County (Skadsen 1986). Since then, there have been two confirmed nesting records. One was of a mixed Tricolored Heron-Snowy Egret pair with young at the Hecla marsh in Brown County (Meeks *et al.* 1996). No Tricolored Herons were reported during the first Atlas, but at least one bird was seen throughout the summer of 2012 near the Hecla marsh.



- Breeding Status**
- Confirmed breeding
 - Probably breeding
 - ⊙ Possibly breeding
 - Observed; not breeding at location

CATTLE EGRET

Bubulcus ibis

Cattle Egrets typically forage on dry land, often feeding on insects flushed by grazing animals. In North America, these egrets most often associate with cattle or horses. On other continents, they also follow elephants, camels, zebras, deer, and other wild animals. Cattle Egrets may even follow tractors or lawnmowers to forage on flushed insects.

DISTRIBUTION AND STATUS

Most North American Cattle Egrets breed in the southeastern United States, Mexico, and the Caribbean. The Dakotas' breeding population is one of many small isolated breeding locations outside of the main breeding range. After arriving in Florida in the 1940s, the first Cattle Egret reported in South Dakota was in 1961, and the first known nesting was in 1977. Cattle Egrets typically breed in 5 to 10 waterbird colonies in the state per year. The estimated total number of breeding pairs in South Dakota ranges from 700 to 1400 (Drilling 2007, 2013b). All colonies are east of the Missouri River, except the Lacreek National Wildlife Refuge colony in Bennett County.

HABITAT

South Dakota's Cattle Egrets nest in marshes and on islands. Nest success in northeast South Dakota tree colonies is higher in colonies with more wetlands in the surrounding area and with less vegetation under the nests (Baker *et al.* 2015). Observers during the second Atlas reported Cattle Egrets in marshes and wet meadows (39% of

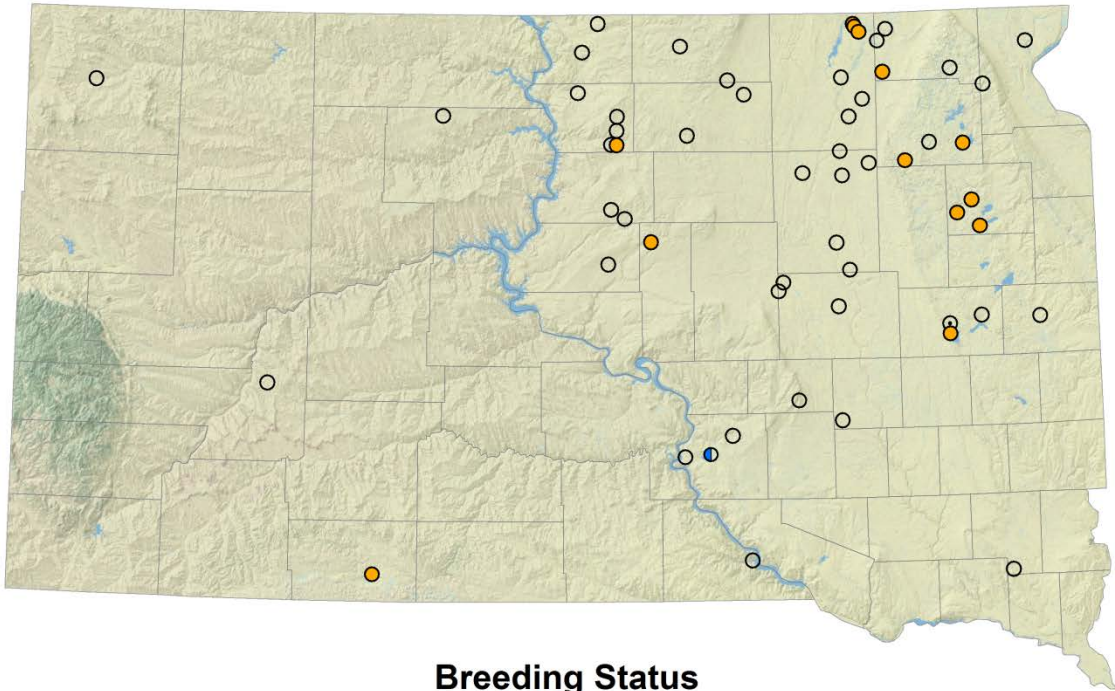
observations), pastures (24%), ponds (23%), and cropland (10%).

BREEDING BIOLOGY

Cattle Egrets in South Dakota breed from mid-May into early August. These birds usually first breed when they are 2 or 3 years old. They nest within dense shrubby thickets or reed beds, alongside night-herons, ibis, Snowy and Great egrets, Great Blue Herons, and cormorants. The nest, built by the female, is a platform or shallow bowl of sticks lined with green sprigs. It is placed in a tree or shrub or on bent-over marsh plants within the marsh. Pairs may refurbish old nests. Both adults incubate the clutch of 3 or 4 pale blue eggs during the 22 to 24 day incubation period. Both parents brood the young nestlings and regurgitate large insects for the chicks. After 14 to 21 days, the chicks climb out of the nest. They remain nearby and wait to be fed. The young egrets begin to fly when about 25 days old, become fully capable of flying by 35 days old, and are independent of their parents after 45 days (Telfair 2006).

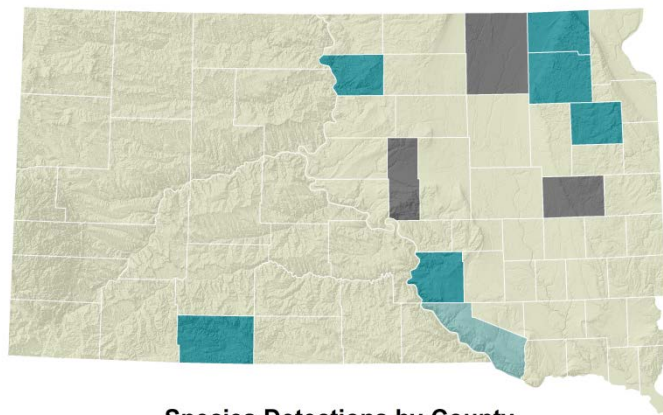
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	12	13
Probable	0	1	1
Possible	2	0	2
Observed	40	2	42
Total	43 (10%)	15	58

Cattle Egret



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

GREEN HERON

Butorides virescens

The Green Heron is one of our smallest herons. It also is one of the few bird species to use tools. While foraging, It places feathers, insects, earthworms, or other small, floating objects on the water's surface as bait to attract small fish into striking distance.

DISTRIBUTION AND STATUS

In North America, Green Herons breed throughout the eastern U.S. and west to the central Great Plains, the extreme west coast of the U.S., and Mexico. South Dakota is at the northwest edge of the species' range and, thus, the bird is most common in the southeastern part of the state. Green Herons also are common on the east side of the Prairie Coteau in Marshall, Roberts, and Day counties, where wetlands are more likely to be bordered by willows, shrubs, and woodland. Outside of these areas, especially farther west, the species is sporadic. A possible explanation for differences between the first and second Atlas distributions could be that Green Herons, in some counties, are uncommon, rather than an actual change in the breeding distribution between surveys.

HABITAT

Green Herons inhabit wetland thickets along creeks, rivers, marshes, ponds, and lakes. During the second Atlas, observers found this species at lakes and ponds (33%), marshes (22%),

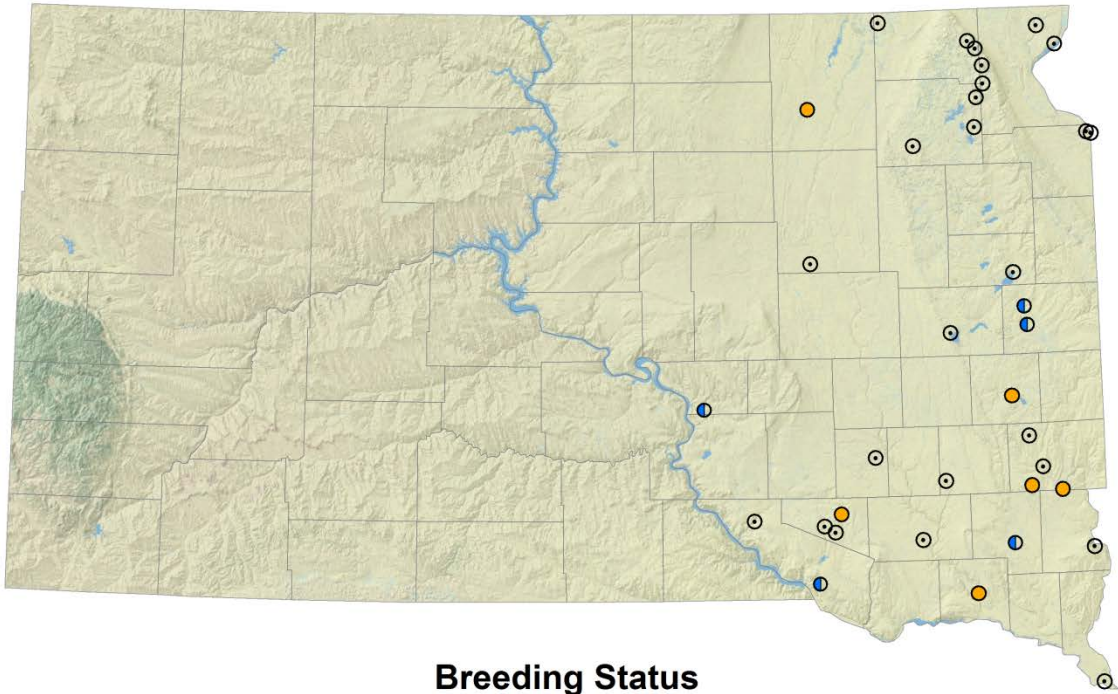
lowland riparian forest (18%) and rivers and creeks (9%).

BREEDING BIOLOGY

In general, the entire nesting cycle of the Green Heron in South Dakota is from mid-May until early August. Green Herons build their nests in trees in dense forests or thickets near water. The flat stick nest is unlined and is 8 to 12 inches in diameter. Both sexes participate in all facets of breeding. Both incubate the 3 to 5 pale green or blue eggs for 19 to 21 days. Newly-hatched herons are covered with down and their eyes are open, but they are weak and have difficulty lifting their heads. Both adults feed the nestlings by regurgitating fish and other animal matter. Young Green Herons leave the nest at 16 to 17 days old but are fed by the parents until independence at 30 to 35 days old (Davis and Kushlan 1994).

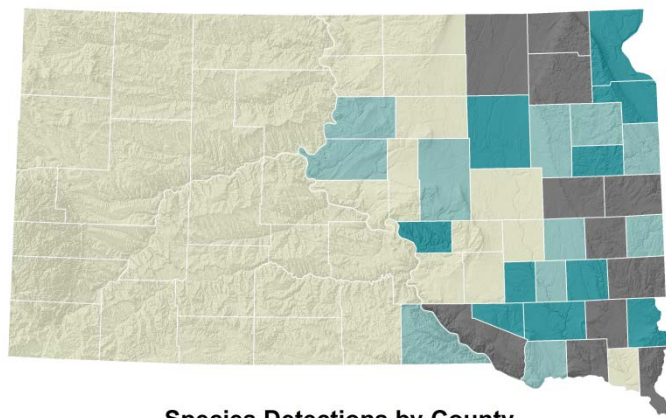
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	2	4	6
Probable	3	2	5
Possible	15	10	25
Observed	0	0	0
Total	20 (5%)	16	36

Green Heron



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

BLACK-CROWNED NIGHT-HERON

Nycticorax nycticorax

The Black-crowned Night-Heron is the most widespread heron in the world, living on every continent except Antarctica and Australia. As its name suggests, it is active at night. During the breeding season, this heron also forages during the day to feed its growing brood.

DISTRIBUTION AND STATUS

In North America, Black-crowned Night-Herons nest throughout much of North America, except in the mountains and in prairie Canada. In South Dakota, this heron breeds almost entirely in the northeastern quarter of the state. A traditional colony site also exists at Lacreek National Wildlife Refuge in the southwest. The distribution and abundance of Black-crowned Night-Herons were similar between the first and second Atlases. Night-herons, however, no longer nested at Lake Andes during the second Atlas. No population trend information is available. This species has low reproductive success in some colonies in northeastern South Dakota, which is a potential concern (Baker *et al.* 2015).

HABITAT

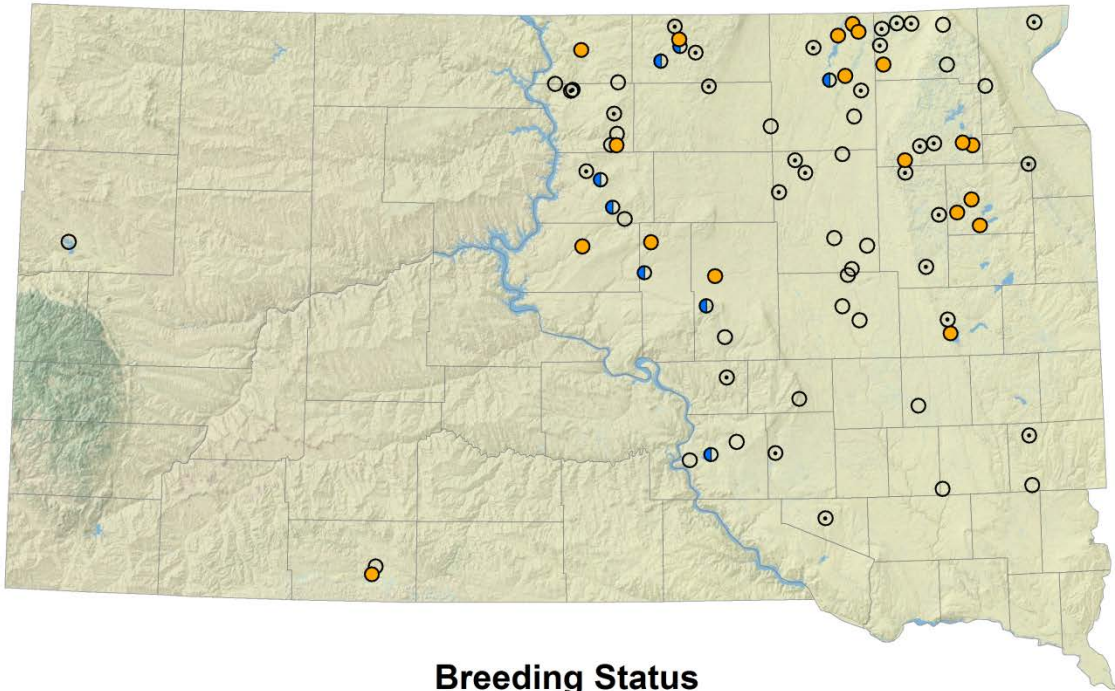
Black-crowned Night-Herons in South Dakota breed in marshes or on islands in large lakes. In northeastern South Dakota, nesting success is higher in colonies surrounded by a greater amount of wetlands, especially marshes (Baker *et al.* 2015). Successful island colony sites have bare ground under the nesting trees (Baker *et al.* 2015).

BREEDING BIOLOGY

The breeding season in South Dakota is May through July. The average hatching date in a group of northeastern South Dakota colonies was July 3 (Baker *et al.* 2015). This heron breeds in colonies, often with other species, including egrets, ibises, terns, and Franklin's Gulls. The number of night-herons nesting in South Dakota colonies typically ranges from 1 to 200 pairs (Drilling 2007, 2013b). Colonies are in areas protected from predators, such as islands or reedbeds in the middle of a marsh. The nest is a stick platform in a tree, shrub, or marsh vegetation. Although adults usually collect their own twigs, they may steal sticks from other nests. Every 2 days, the female lays a greenish-blue egg. The adults begin incubation when the first egg is laid, which hatches after 23 to 26 days. Both parents regurgitate fish, crayfish, frogs, and other prey for the chicks. After about 3 weeks, the chicks begin to clamber out of the nest and form flocks at feeding areas. After 6 to 7 weeks, chicks can fly and follow their parents to foraging areas, where the young beg for food (Hothem *et al.* 2010).

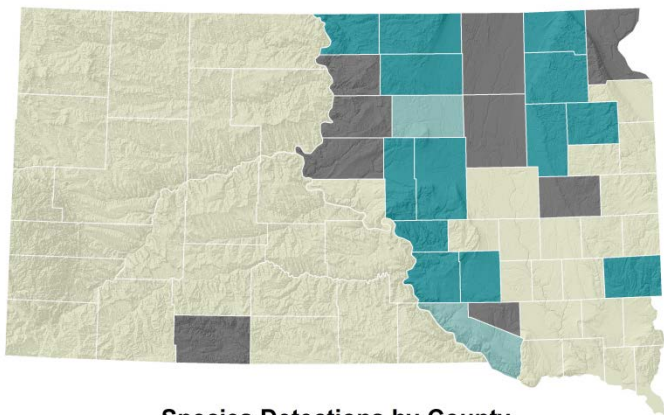
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	3	16	19
Probable	5	3	8
Possible	27	2	29
Observed	24	1	25
Total	59 (14%)	22	81

Black-crowned Night-Heron



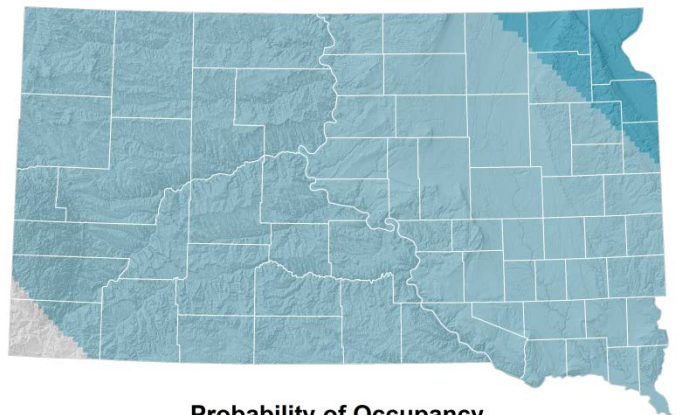
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

YELLOW-CROWNED NIGHT-HERON

Nyctanassa violacea

Breeding primarily in the southeastern United States and coastal Mexico, the Yellow-crowned Night-Heron also breeds in isolated populations in the Midwest, including the eastern Dakotas (Watts 2011). It nests in large marshes in colonies with other colonial waterbird species. Although there are a few summer records, this night-heron has never been confirmed breeding in South Dakota. Second Atlas sightings were of single birds in 2006 and 2009 at the Hecla colony in Brown County.



GLOSSY IBIS

Plegadis falcinellus

Widespread in the Old World, the Glossy Ibis may have reached North America via trade winds from West Africa. It was first recorded in 1817 in New Jersey and became established in Florida and the West Indies. Since the 1940s, Glossy Ibis have expanded rapidly into the rest of the United States (Patten and Lasley 2000).

DISTRIBUTION AND STATUS

The core of the Glossy Ibis' North American breeding range is the east and Gulf coasts of the U.S. and the Yucatan coast of Mexico. The first Glossy Ibis sighting in South Dakota was in June 2000 near Hecla in Brown County (Bardon 2001). First state records for Minnesota, Wyoming, and Nebraska occurred during the same time period. Since 2000, and especially since 2010, the species has been reported more frequently, especially in the Hecla area, at Blue Blanket Lake in Walworth County, Flight Lake in Potter County, and the large marshes of Hyde and Hand counties. The first breeding confirmations occurred in June 2012 at three colonies in Brown and Hyde counties. Each location had an estimated 1 to 5 nesting pairs.

HABITAT

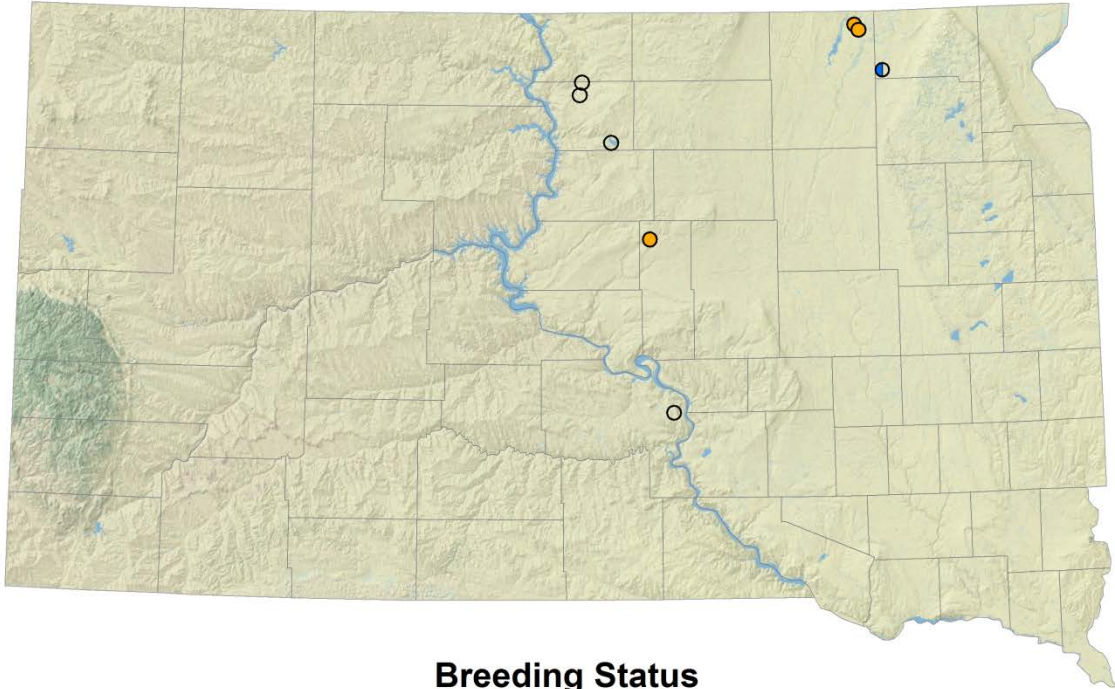
In South Dakota, Glossy Ibis nest in freshwater cattail marshes and forage in nearby shallow wetlands and flooded fields. All three second Atlas colonies were in cattail marshes.

BREEDING BIOLOGY

The breeding season probably is similar to that of White-faced Ibis, extending from late May through July. At the second Atlas colonies, birds were observed building nests on June 17, and incubating birds and nests with young were observed on June 18. Glossy Ibis in these colonies were nesting with Black-crowned Night-Herons, Cattle Egrets, White-faced Ibis, Forster's Terns, and in one colony, with Franklin's Gulls. Both adults construct the bulky platform nest of sticks and marsh plants. In cattail marshes, the birds bend the tops of cattails over and lay sticks on top. Clutch size is 3 or 4 pale blue-green eggs. The female incubates at night and part of the day, the male fills in when needed. The incubation period is about 21 days. Chicks insert their bills into the parent's throat to be fed insects and crayfish by regurgitation. During each feeding trip, the parent feeds the chicks in rotation, with each chick receiving up to 5 portions per parental visit. Chicks first attempt to fly at 4 to 5 weeks, and first start to accompany their parent's on foraging trips at 6 to 7 weeks (Davis and Kricher 2000).

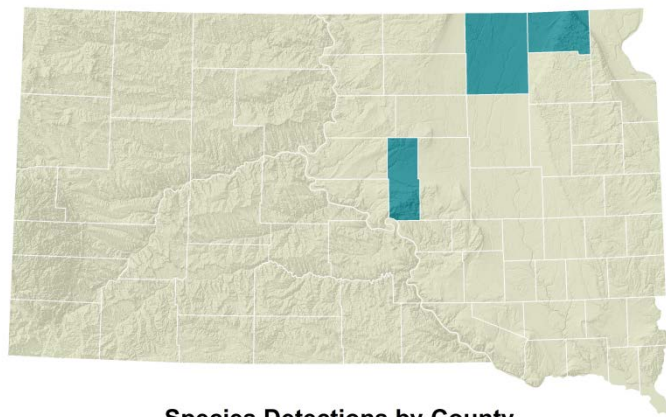
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	3	3
Probable	1	0	1
Possible	0	0	0
Observed	3	1	4
Total	4 (1%)	4	8

Glossy Ibis



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

WHITE-FACED IBIS

Plegadis chihi

The ibis uses its long decurved bill to probe in mud for prey. When the sensitive tip of the bill feels a prey item, the bill snaps shut and the bird pulls out its catch. Ibis use sight to locate above-ground prey. Their diet consists of earthworms, aquatic insects, leeches, snails, crayfish, small fish, and frogs.

DISTRIBUTION AND STATUS

The White-faced Ibis breeds in scattered locations throughout the western U.S. and Great Plains, along the Gulf Coast, southern California and south into Mexico and South America. First recorded breeding in South Dakota in 1978, White-faced Ibis breed in 1 to 5 colonies a year in the state, primarily east of the Missouri River. The second Atlas recorded the first West River colony, near Reliance in Lyman County. Numbers of breeding pairs and colonies fluctuate with climatic conditions. When a change in water level renders the previous year's breeding site unusable, ibis disperse in search of suitable breeding areas. During the 2000s, estimated numbers of breeding pairs in the state ranged from 50 in 2006 to 900 in 2012 (Drilling 2007, 2013b).

HABITAT

In South Dakota, White-faced Ibis nest in large cattail marshes. They forage in flooded pastures and hayfields, crop fields, damp meadows, and shallow marshes. During the second Atlas, 88% of ibis were found in marshes or margins of ponds and lakes, 3% in wet meadows, and 2% in pastures. All

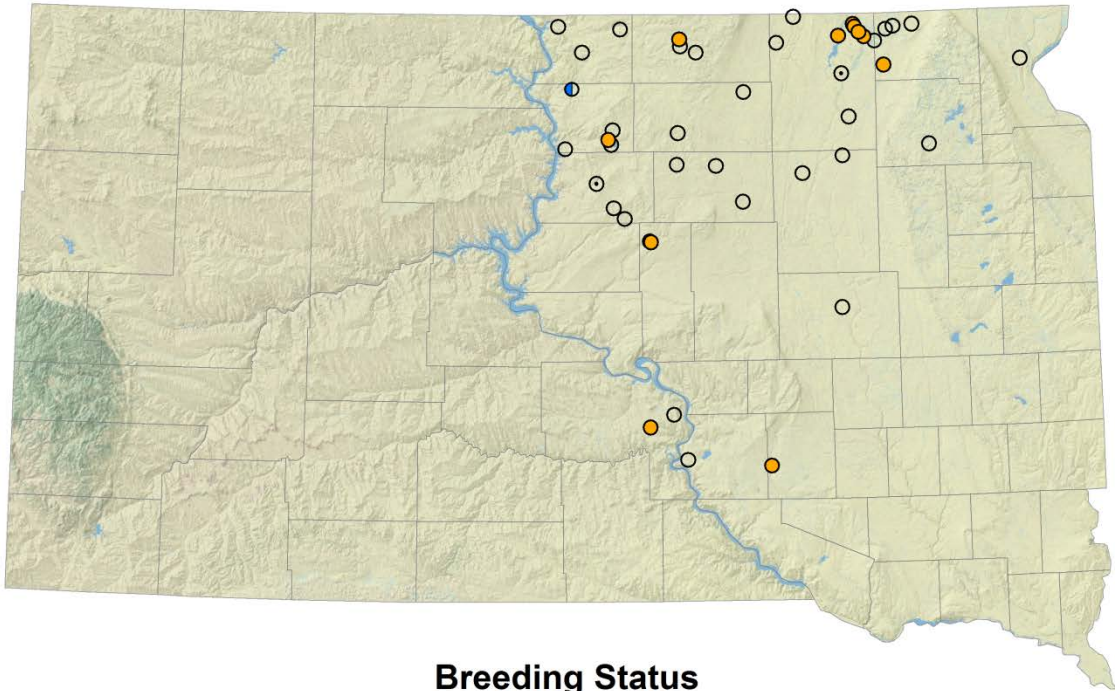
breeding colonies surveyed during the second Atlas were in cattail marshes.

BREEDING BIOLOGY

The breeding season in South Dakota is late May through July. White-faced Ibis breed in colonies with other colonial waterbirds such as Cattle and Snowy egrets, Franklin's Gulls, and Forster's Terns. Colony sizes range from 4 to 550 ibis nests, although usually fewer than 50. Ibis typically build their nest in marsh vegetation. Nest-building begins by bending cattail stems over and weaving them into a platform. The adults then collect nearby plant stems and add to the platform, create a depression in the middle, and line it with finer plant materials. The female lays an egg every 2 days until she has a clutch of 3 or 4 eggs. Both adults incubate the clutch for 21 or 22 days. Nestlings have relatively short, straight bills which they insert into their parents' throat to feed on regurgitated food. After 10 to 12 days, nestlings begin to wander, spending increasing amounts of time away from the nest. They leave the colony at 6 to 7 weeks and are independent of their parents at 8 weeks (Ryder and Manry 1994).

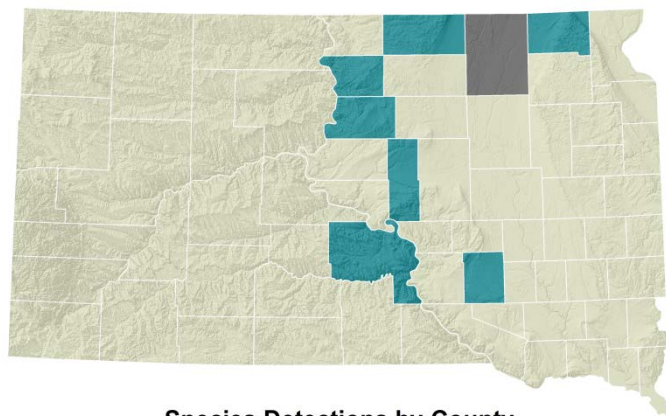
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	11	12
Probable	1	0	1
Possible	3	0	3
Observed	29	0	29
Total	34 (8%)	11	45

White-faced Ibis



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

TURKEY VULTURE

Cathartes aura

The scientific name *Cathartes* means 'purifier' which describes the beneficial effect that vultures have. The Turkey Vulture has an excellent sense of smell that enables it to locate carcasses on the ground under the forest canopy.

DISTRIBUTION AND STATUS

The Turkey Vulture is the most widely distributed vulture in the Western Hemisphere, breeding from southern Canada to the southern tip of South America. In the Great Plains, including in South Dakota, breeding is local and scattered. In the 1800s, Turkey Vultures were reported to be abundant but, after the demise of the bison, populations declined across the Great Plains (Igl *et al.* 2014). Most records during the first Atlas were in the western quarter of South Dakota and the species was described as uncommon and scattered. During the second Atlas, vultures were seen in more than half of the state, although much more commonly west of the Missouri River. Most second Atlas records were of single individuals, coded as 'Possible' breeders. According to Breeding Bird Survey data, South Dakota's vulture population has experienced a significant positive long-term increase of 6% per year over the past 45 years (Sauer *et al.* 2014).

HABITAT

Turkey Vultures inhabit areas with reliable sources of carcasses, roosting sites, and safe nest sites. During the second Atlas, vultures were observed over grasslands (57%), woodlands (24%), cropland (9%), residential areas

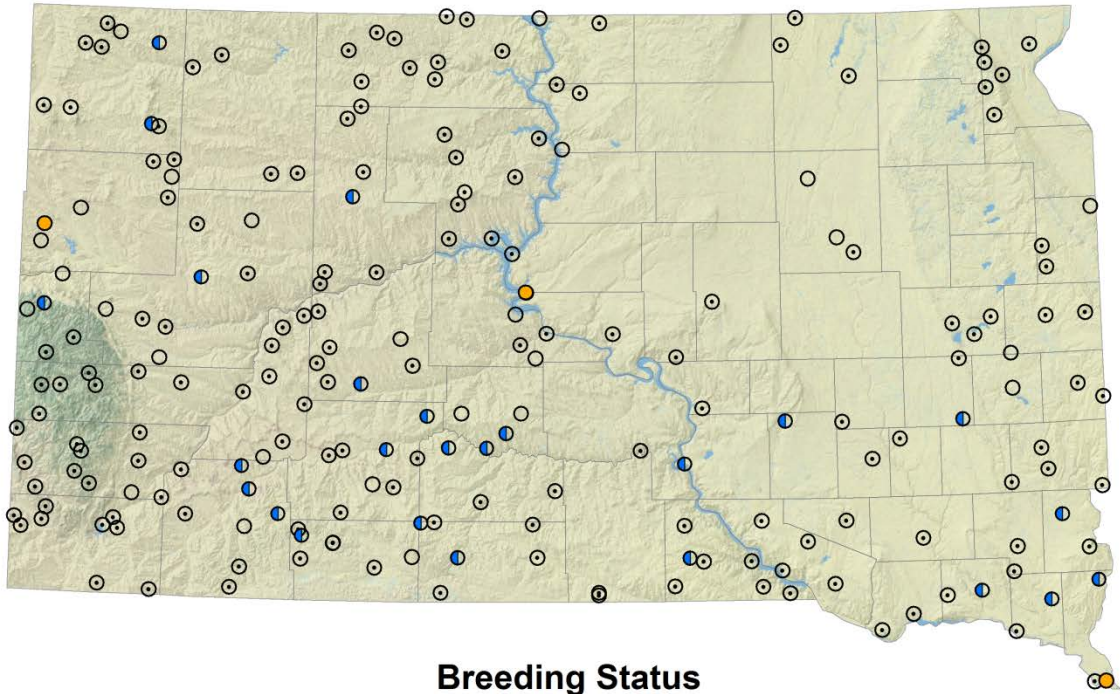
(5%), wetlands (2%), roadsides (2%), and cliffs (1%). These birds roost in large trees or on rock outcrops; many known roost sites in South Dakota are in towns and cities.

BREEDING BIOLOGY

Few breeding records exist for South Dakota but Turkey Vultures likely nest from April into August. Vultures mate for life and repeatedly use the same nest site year after year. The nest is in a dark sheltered spot. Known or suspected South Dakota nest sites include caves in cliffs and banks, brush piles, abandoned buildings, and an old abandoned car (Igl and Peterson 2010, Igl *et al.* 2014). Vultures do not build a nest; females lay their clutch of 2 eggs directly on the substrate. Both parents have 2 brood patches (1 on either side of the lower breast) and share incubation duties during the 34 to 41 day incubation period. Both parents feed the chicks by regurgitation. Fledging is a gradual process. The chick's first flight is at 9 to 10 weeks but it spends 1 to 3 weeks perched at the nest site being fed by its parents. It gradually explores the area and leaves its natal territory by 12 weeks of age (Kirk and Mossman 1998).

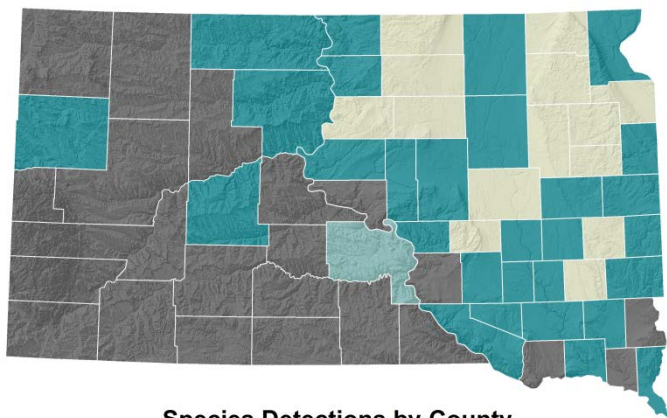
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	3	3
Probable	25	0	25
Possible	160	3	163
Observed	26	0	26
Total	211 (48%)	6	217

Turkey Vulture



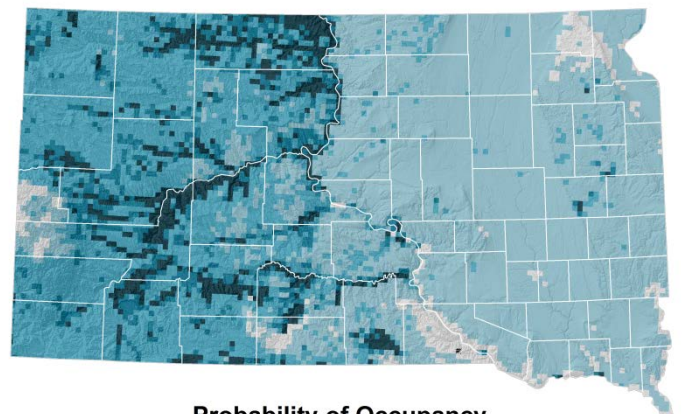
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

OSPREY

Pandion haliaetus

At least 99% of the Osprey's diet is live fish, which it captures by diving feet first into the water. Ospreys have a reversible hind toe and a foot-pad that is covered with small backward-facing barbs. Both adaptations help to capture and hold fish.

DISTRIBUTION AND STATUS

Found throughout the world, the main portion of the Osprey's North American breeding range is along the coasts, and in Alaska, Canada, the Rocky Mountains, and the Great Lakes. In South Dakota, Osprey recently have established a breeding population in the Black Hills. A pair built a nest near Pactola Reservoir in the east-central Hills in 1990 and returned in 1991 to successfully raise chicks. During the second Atlas, at least 16 nests were active. In the 1880s, Osprey nested in the southeastern corner of South Dakota along the Missouri River (Agersborg 1885). Efforts to reintroduce the Osprey in that area have not yet resulted in breeding (Anonymous 2011). The Osprey is a state Species of Greatest Conservation Need (SDGFP 2014).

HABITAT

Osprey breed near water. They choose areas with an elevated nest site that is protected from ground predators and an adequate supply of fish within commuting distance (less than 15 miles). Breeding pairs habituate quickly to human activity. In the Black Hills, Osprey nests reported during the second Atlas were in pine forests (5

nests), mixed deciduous-pine forest (3 nests), and in town (2 nests).

BREEDING BIOLOGY

In the Black Hills, Osprey begin nesting after ice-out in early April and nests may last into August. Natural Osprey nest sites are in trees or on rocky cliffs. During the second Atlas, all but two nests were on utility poles or artificial platforms. The remaining two were in trees. The nest is a bulky pile of sticks which the pair add to each year. Nests become huge after a few years and can host smaller cavity-nesting birds, such as Tree Swallows and House Sparrows, in the lower parts. Clutch size is 3 eggs; each egg is laid every 2 to 3 days. The male feeds the female during egg-laying and the following 38-day incubation period. When small, the nestlings are fed pieces of fish by an adult. Older chicks eat the fish by themselves. Chicks are 51 to 54 days old at first flight. Young Osprey are dependent on their parents for food for at least another 10 to 20 days. After migrating, first-year birds generally remain on the wintering grounds for 18 months, returning to breed when 3 years old (Poole *et al.* 2002).

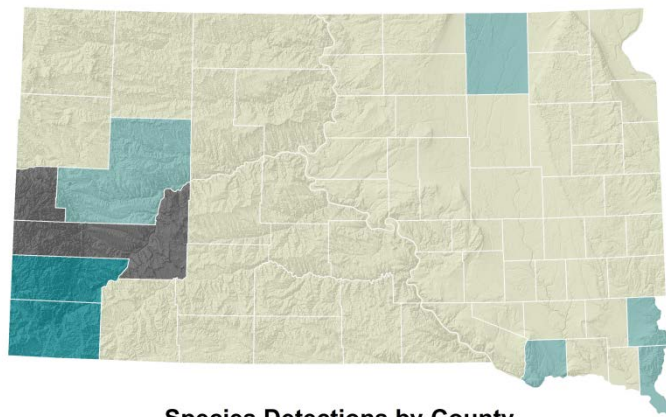
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	16	17
Probable	0	0	0
Possible	0	3	3
Observed	5	2	7
Total	6 (1%)	21	27

Osprey



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

BALD EAGLE

Haliaeetus leucocephalus

Despite their huge size, Bald Eagles are excellent and nimble fliers. Pairs engage in spectacular acrobatic courtship flights including the Cartwheel Display, Chase Display, and Roller-Coaster Flight.

DISTRIBUTION AND STATUS

Most Bald Eagles breed in Canada, Alaska, around the Great Lakes, and along all coasts of the U.S. Breeding populations are scattered elsewhere. Bald Eagles historically bred in southeastern South Dakota in the 1800s. In the 1900's, the first known nesting attempt occurred in 1992 at Sand Lake National Wildlife Refuge. This attempt failed, but in 1993, eagles successfully nested at Karl Mundt National Wildlife Refuge. Since then, numbers of nesting Bald Eagles in South Dakota have exploded. There were 10 nests in 1997, at least 40 active nests in 23 counties in 2004 and 2005, 107 known nests in 2009, and 179 known nests in 49 counties in 2012 (Buehler 2000, Aron 2006b, Huxoll 2015).

HABITAT

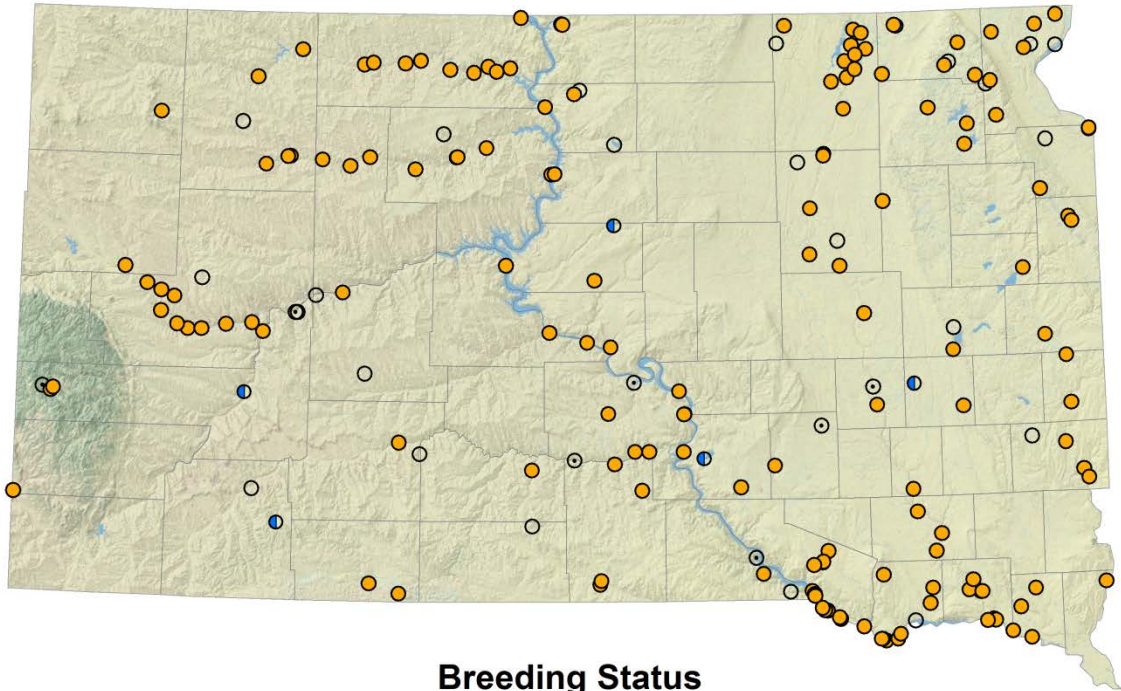
Bald Eagles nest in mature trees, usually near water. In South Dakota, the species is most strongly associated with large reservoirs and along rivers; 44% of second Atlas observations were along rivers and 24% in wetlands. However, Bald Eagles also may breed quite far from large water bodies, such as in shelterbelts, or isolated trees near small stock dams or prairie dog towns.

BREEDING BIOLOGY

During the second Atlas, Bald Eagle nests were active between February 17 and July 22. Bald Eagles usually first breed when they are 4 or 5 years old and mate for life. Pairs begin building nests 1 to 3 months prior to laying eggs, either starting from scratch or building on top of an existing nest. They build one of the largest nests of any bird species. Nests that have been used for several years may weigh several tons. Most nests are built in a very tall, sturdy tree. Both adults collect large sticks and place them in an interwoven pattern, which then is topped with a mat of grass. Adults continually add materials throughout the nesting cycle. Clutch size is 1 to 3 eggs. Adults begin incubating after the first egg is laid and, thus, eggs hatch over a period of several days and nestlings differ greatly in size. Both parents bring prey to the nest. When the chicks are small, parents tear the food into small pieces and directly feed; later adults drop whole items into the nest. Eaglets leave the nest at 10 to 12 weeks and are fed by their parents for another 6 weeks (Buehler 2000).

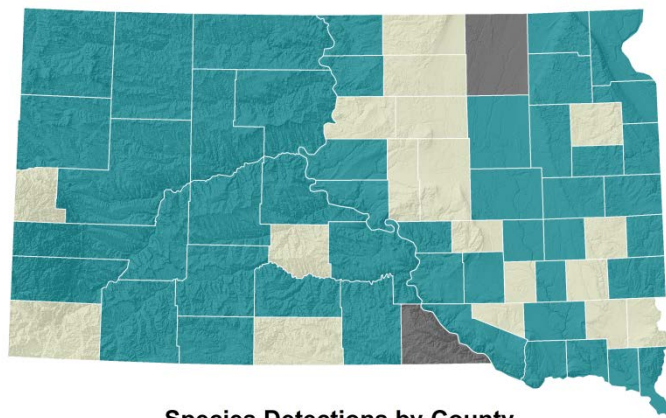
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	7	147	154
Probable	1	4	5
Possible	7	2	7
Observed	21	2	23
Total	36 (8%)	155	191

Bald Eagle



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

NORTHERN HARRIER

Circus cyaneus

Harriers are agile and graceful fliers, foraging low over the ground searching for small animal prey. Unlike other hawks, they often use auditory cues to detect their prey.

DISTRIBUTION AND STATUS

The Northern Harrier is the northernmost breeding harrier species, breeding throughout northern North America and Eurasia, where it is called the Hen Harrier. In North America, Northern Harriers breed from northern Canada and Alaska south to Nevada, Utah and the central Great Plains, northern Midwest states, and northeast states. The species is fairly common and widespread throughout South Dakota, except being less numerous in areas dominated by forest or row crops. The state's population has been stable since at least 1967 according to Breeding Bird Survey data (Sauer *et al.* 2014).

HABITAT

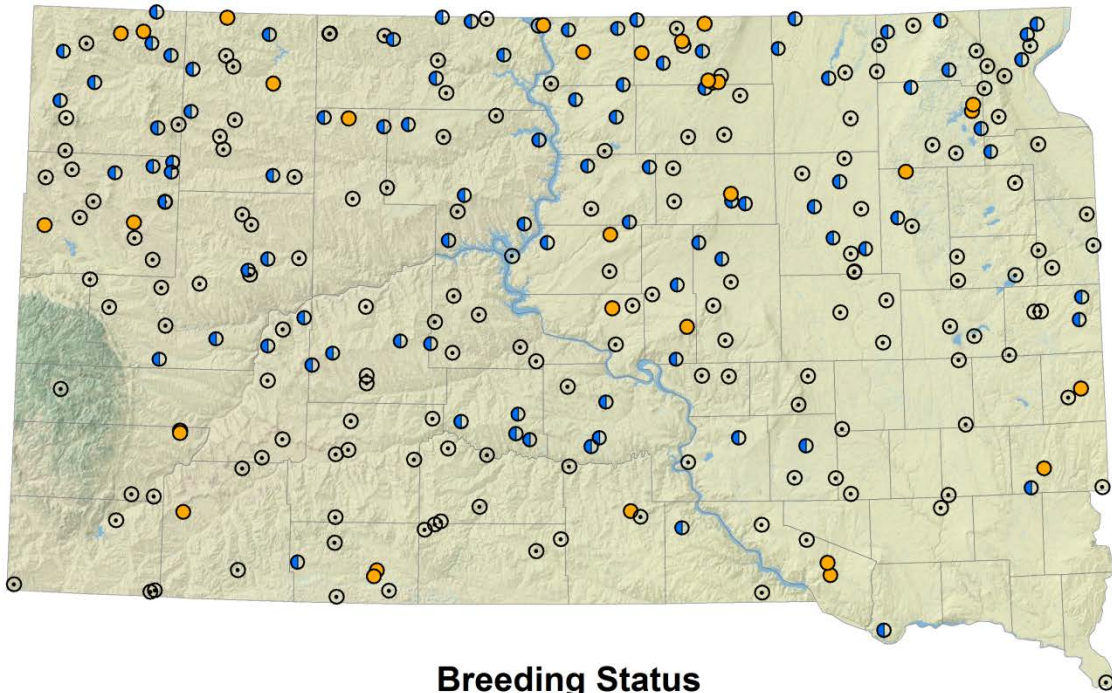
Northern Harriers occupy open, treeless habitats: wetlands, agricultural areas, wet meadows, pastures, fallow fields, and native prairies. In the Dakotas, harrier presence is positively related to the amount of grassland in the landscape (DeJong *et al.* 2005, Niemuth *et al.* 2005). During the second Atlas, observers recorded the species in grasslands (78%), agricultural fields (11%), and wetlands (6%). All 12 nests reported during the second Atlas were in grasslands.

BREEDING BIOLOGY

The South Dakota breeding season extends from late April into August. Males perform dramatic aerial courtship displays called 'sky-dancing', which consists of up to 70 U-shaped vertical undulating flights from 30' to 1000' above ground. Unusual for raptors, some males may be polygynous. Harriers nest on the ground within patches of dense vegetation, usually in a wet area. The male builds a platform of coarse plant materials, which stimulates the female to complete the nest with finer materials such as grasses and sedges. She lays 3 to 6 unmarked white eggs at 2-day intervals. The male provides all of the food to the female during the 30 to 32 day incubation period and almost all nestling food until the chicks are 10 to 14 days old. The nestlings are covered with short, white down when they hatch. They open their eyes within 24 hours, begin to walk around the nest area within a few days, start to fly in 4 to 5 weeks, and become independent of parents at 6.5 to 9.5 weeks (Smith *et al.* 2011).

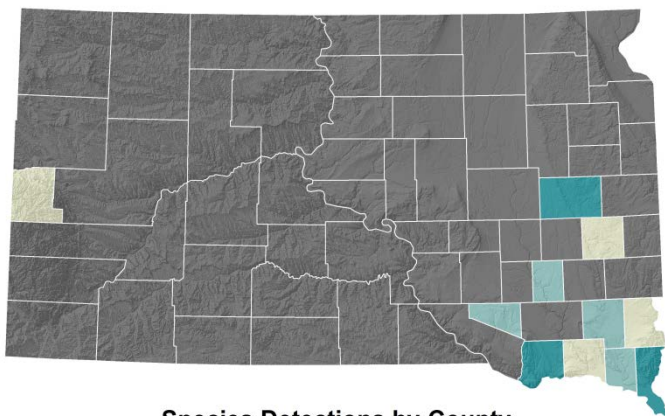
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	14	18	32
Probable	88	2	90
Possible	154	2	156
Observed	0	0	0
Total	256 (59%)	22	278

Northern Harrier



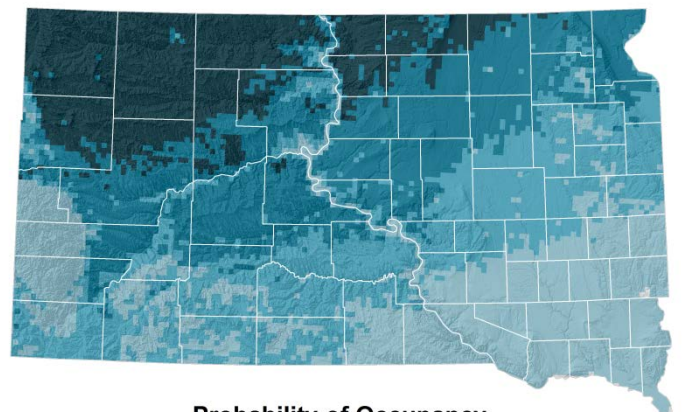
Breeding Status

- Confirmed breeding
- ◐ Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- -
 -
 -
 -
 -
- 0% 1-25% 26-50% 51-75% 76-100%

SHARP-SHINNED HAWK

Accipiter striatus

The smallest of our Accipiter hawks, the Sharp-shinned Hawk feeds almost entirely on small birds. They are named for their long, stick-like legs that are laterally compressed. The species has the most extreme size difference between the sexes of any North American raptor. Males, on average, weigh 57% of the weight of females.

DISTRIBUTION AND STATUS

The Sharp-shinned Hawk nests in the forests of Alaska, Canada, New England, the Appalachians, the upper Midwest states, the western U.S., and Mexico. In South Dakota, Sharp-shinned Hawks are rare and local. They breed in two areas – the southwest counties, and the forested buttes of Harding County. The Harding County birds are part of a population that extends north into western North Dakota, while the Black Hills Sharp-shins are part of a population that extends south into southern Wyoming. In the 1800s, this hawk bred east of the Missouri River (Tallman *et al.* 2002). It was considered a fairly common resident of the Black Hills in the 1960s and an uncommon Black Hills resident during the first Atlas (Pettingill and Whitney 1965, Peterson 1995). The distribution of the Sharp-shinned Hawk has not changed since the first Atlas. However, during the second Atlas, the species was less common in the Black Hills and may be declining there.

HABITAT

During the second Atlas, all Black Hills and Bennett County observations were

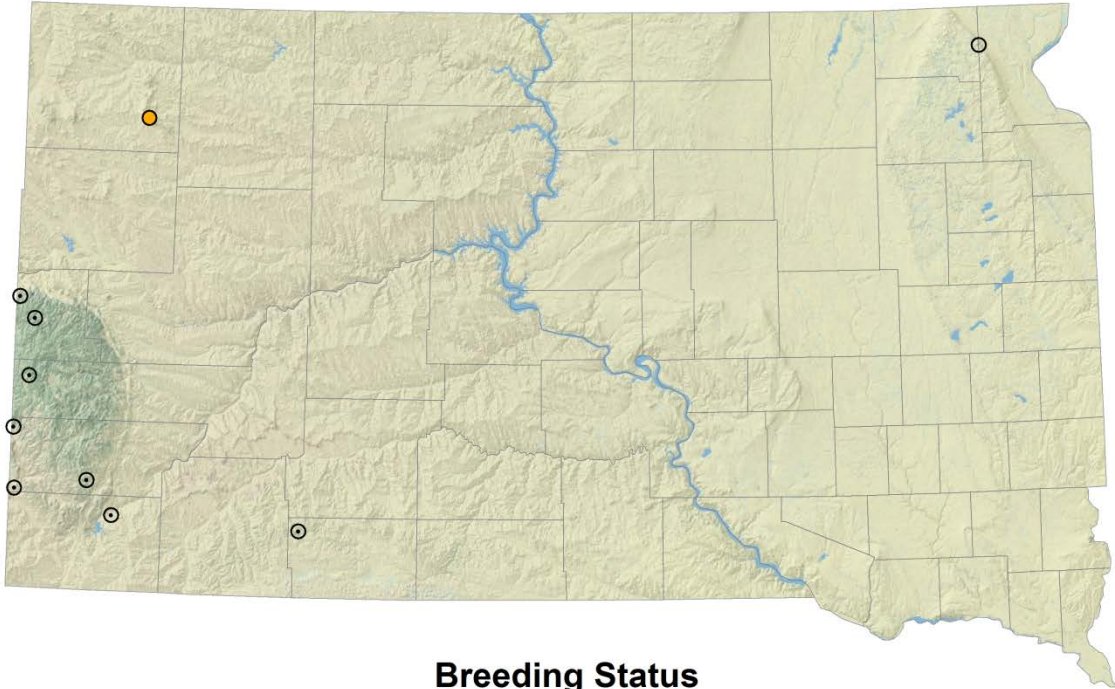
in coniferous forest. Both the Fall River County observation and the Harding County nest were in deciduous forest.

BREEDING BIOLOGY

The Sharp-shinned Hawk is the latest-nesting raptor in South Dakota, nesting from late May through July. The very well concealed nest is situated in the crown of a dense tree. The nest found during the second Atlas was in a large ash tree; previous nests reported in South Dakota have been in ponderosa pines. In addition to a nest, Sharp-shinned territories have one major plucking perch and several auxiliary perches for processing prey. The female builds a relatively large platform nest from sticks and bark strips. Clutch size usually is 4 to 5 eggs. The eggs, prized by egg collectors for their beauty and variability, are bluish-white, marked with splotches of light or dark shades of brown, maroon, violet, or hazel. Incubation, mostly by the female, lasts 30 to 35 days. Chicks leave the nest after 3 to 4 weeks; males leave sooner than females. The young hawks remain dependent on their parents for food for another 3.5 weeks (Bildstein and Meyer 2000).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	0	1
Probable	0	0	0
Possible	5	4	9
Observed	1	0	1
Total	7 (2%)	4	11

Sharp-shinned Hawk



Breeding Status

- Confirmed breeding
- Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

COOPER'S HAWK

Accipiter cooperii

Feeding mostly on birds and small mammals, the Cooper's Hawk hunts by sneaking through dense cover, then pouncing on its prey with a burst of power and speed.

woods (5 nests), conifer stands (4), mixed deciduous-conifer woods (2), and residential areas (2).

DISTRIBUTION AND STATUS

Breeding Cooper's Hawks occur throughout the United States, southern Canada, and northern Mexico. In South Dakota, this accipiter is found throughout the state, especially in areas with more extensive deciduous or mixed deciduous-conifer woodlands. This species' population appears to be increasing in South Dakota. During the first Atlas, Cooper's Hawks were detected on 7% of random blocks, almost all in the northeast corner or the counties along the western border. During the second Atlas, Cooper's Hawks were detected on twice as many survey blocks. Most of the increase occurred in towns, riparian zones along major rivers, and the woodlands of the south-central part of the state.

BREEDING BIOLOGY

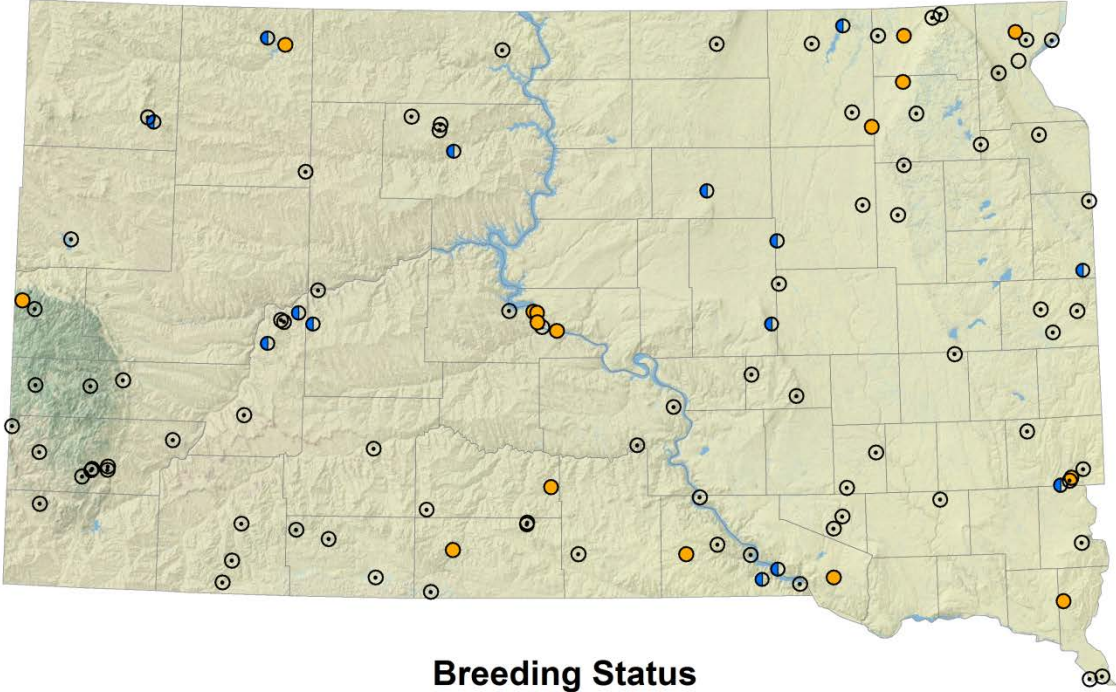
In South Dakota, Cooper's Hawks nest from April to August. The birds tend to pair by size - larger males tend to pair with larger females, smaller males with smaller females. The male feeds the female for up to a month before she begins laying eggs. The nest is placed in a main crotch about two-thirds of the way up a tall tree. Second Atlas nests were in bur oak, green ash, aspen, and ponderosa pine. The male builds the nest out of sticks and lines it with bark and green tree sprigs. The female lays 3 to 5 eggs, which she incubates for 34 to 36 days. The male does most of the hunting, especially early in the nestling period. He hands off prey to the female on the nest, who then feeds the chicks. The average food delivery rate during the nestling stage is 6 to 9 prey items a day. The young hawks climb out of the nest after about 4 weeks; parents continue to provide food for up to 7 weeks (Curtis *et al.* 2006).

HABITAT

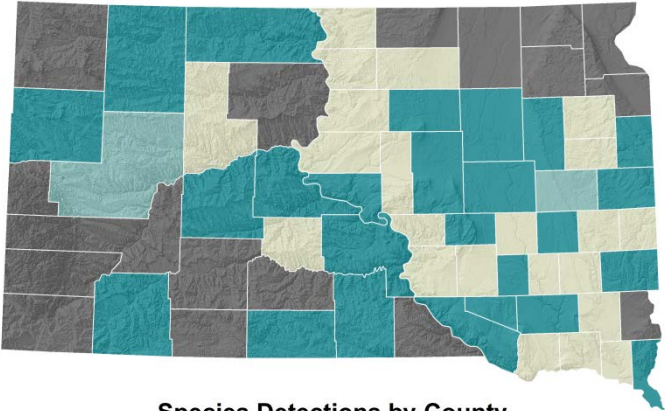
Breeding habitat is mature forest, open woodlands, large shelterbelts, riparian woods, or wooded residential areas. Observers during the second Atlas reported Cooper's Hawks in deciduous woods (40%), mixed deciduous-conifer woods (23%), ponderosa pine forests (17%), residential areas (6%), and grasslands (5%). The nest site can be in extensive forest, woodlots at least 10 acres in size, or occasionally, in isolated trees in more open areas. Second Atlas observers found nests in deciduous

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	6	10	16
Probable	5	9	14
Possible	50	29	79
Observed	1	0	1
Total	62 (14%)	48	110

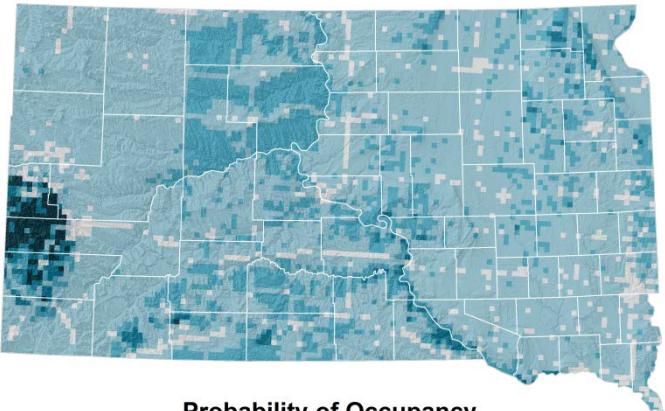
Cooper's Hawk



- Breeding Status**
- Confirmed breeding
 - ⊙ Possibly breeding
 - Probably breeding
 - Observed; not breeding at location



- Species Detections by County**
- First Atlas Only
 - Both Atlases
 - Second Atlas Only
 - Neither Atlas



- Probability of Occupancy**
- 0%
 - 1-25%
 - 26-50%
 - 51-75%
 - 76-100%

NORTHERN GOSHAWK

Accipiter gentilis

Largest of the North American accipiters, the Northern Goshawk is a powerful hunter of mammals and large birds. It can kill prey more than 2 times its weight. It is highly agile and fast, willing to twist among branches and crash through bushes when in pursuit of a meal.

DISTRIBUTION AND STATUS

Northern Goshawks are found throughout the Northern Hemisphere, including Eurasia, western North America, and central and eastern Canada south to Minnesota and Pennsylvania. This hawk is a rare resident of the Black Hills and possibly the pine forests of Harding County. In the Black Hills, about 30 territories were monitored from 2003 to 2009 (Knowles and Knowles 2010). Although Goshawks have been listed as a rare breeder in Harding County (Tallman *et al.* 2002), breeding has not been confirmed in recent times and occasional summer sightings may be of non-breeding birds. Although trend data do not exist, modeling efforts suggest that the Black Hills population is not self-sustaining and may have difficulty recruiting birds from other populations because of its isolation (Smith 2007, Klaver *et al.* 2012). Because of this, and its rarity, the Northern Goshawk is a state Species of Greatest Conservation Need (SDGFP 2014).

HABITAT

In South Dakota, breeding Northern Goshawks inhabit ponderosa pine

forest. They nest in mature stands that have a closed canopy, tall trees, and open understory.

BREEDING BIOLOGY

Goshawks in the Black Hills nest from mid-April through July. The female builds a platform stick nest in a ponderosa pine, usually one of the largest trees in the territory. Although pairs may use the same nest in consecutive years, they typically alternate among several nest trees in the nest area. The female lays 2 to 4 eggs, an egg laid every 2 to 3 days. She alone incubates the clutch for 30 to 38 days. The male provides food to the female throughout incubation and brooding and provides most of the food for the nestlings. The female stays with the chicks and aggressively defends the nest. Male nestlings take their first flight at 5 weeks, females at 6 weeks. The fledglings depend on their parents for food while their flight feathers harden and they learn to hunt. Most are independent and disperse from the nest area by 13 weeks (Squires and Reynolds 1997).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	2	11	13
Probable	0	16	16
Possible	1	14	15
Observed	1	0	1
Total	4 (1%)	41	45

Northern Goshawk



Breeding Status

- Confirmed breeding
- ◐ Possibly breeding
- ◑ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

BROAD-WINGED HAWK

Buteo platypterus

On the breeding grounds, Broad-winged Hawks spend much of their time sitting on a perch beneath the forest canopy, waiting for prey to pass by. They eat amphibians, reptiles, small mammals, and birds. These hawks are secretive when nesting, but can be detected by their high-pitched, whistled call.

DISTRIBUTION AND STATUS

The Broad-winged Hawk breeds throughout the boreal forests of Canada and the eastern United States. South Dakota is slightly west of the main breeding range. Broad-winged Hawks in South Dakota breed in two areas: the far eastern and northeastern counties and the Black Hills. In the Black Hills, a population that is disjunct from other breeding Broad-wings, breeding pairs are uncommon and found in the northern half. In the northeast part of South Dakota, Sica Hollow State Park and nearby areas along the Prairie Coteau support breeding Broad-winged Hawks. The first Atlas confirmed Broad-winged Hawk nesting in Minnehaha County, but no hawks were found during the second Atlas in the southeast region of the state.

HABITAT

Broad-winged Hawks nest in large tracts of deciduous or mixed conifer-deciduous forests with nearby openings and water. During the second Atlas, observers recorded Broad-wings in mixed ponderosa pine-deciduous forest (37.5% of records), deciduous forest

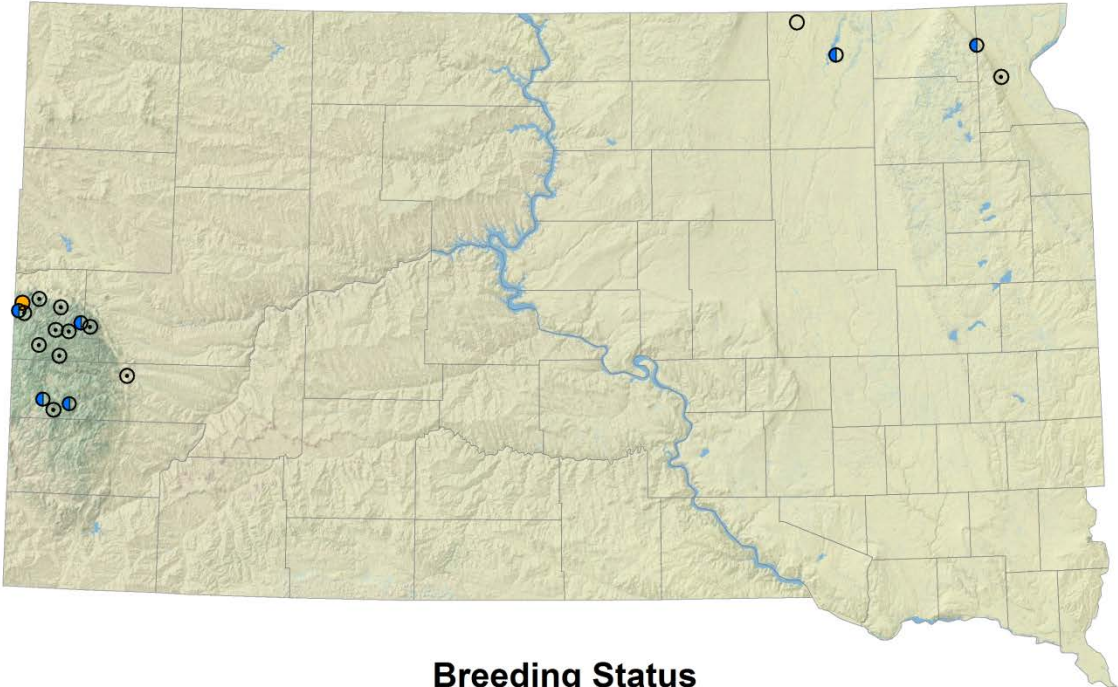
(31%), and ponderosa pine forest (19%). The remainder of observations were of foraging birds in other habitats.

BREEDING BIOLOGY

The breeding season in South Dakota is mid-May into August. One second Atlas nest had a downy chick on July 23. The nest is placed in the lower part of a large tree in the forest, often in the first main crotch or on a platform of horizontal branches. Both adults build the relatively small platform nest of sticks lined with leafy green sprigs and moss. Often, the pair will refurbish a pre-existing hawk or crow nest. The female incubates 2 to 3 eggs for 28 to 31 days. At hatching, nestlings' eyes are open and they are covered with thick white down. Both adults feed the nestlings. At 4 weeks, the chicks begin to climb out of the nest onto nearby branches and soon after, attempt their first flights. They stay close to the nest for the next 2 weeks as adults continue to bring food. At about 6 weeks, the fledglings can fly well and go out to intercept adults carrying prey. At 7 weeks, the young hawks start to capture their own prey (Goodrich *et al.* 2014).

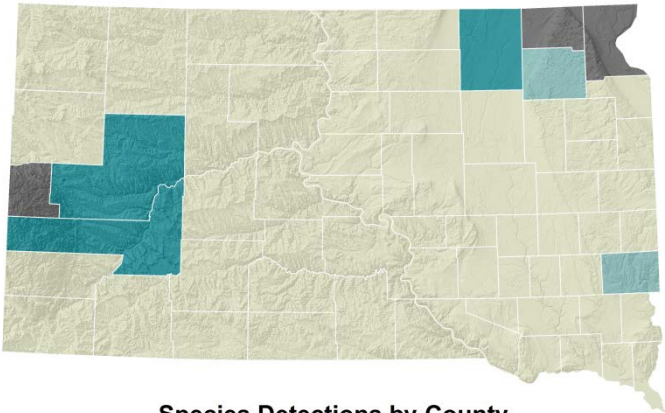
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	0	1
Probable	1	5	6
Possible	4	7	11
Observed	1	0	1
Total	7 (2%)	12	19

Broad-winged Hawk



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

SWAINSON'S HAWK

Buteo swainsoni

Swainson's Hawks are highly gregarious during the non-breeding season, migrating, foraging and roosting in groups of thousands. They undertake one of the longest migrations of any raptor species, migrating up to 6,500 miles to and from South America.

DISTRIBUTION AND STATUS

This wide-ranging species' breeding range extends from the central prairie provinces of Canada south through the Great Plains and into north-central Mexico. South Dakota is on the eastern edge of the Swainson's Hawk's range. It breeds throughout South Dakota, although less commonly in landscapes completely dominated by row crops, or in conifer-dominated areas such as the Black Hills. According to Breeding Bird Survey data, the breeding population in South Dakota has been stable since 1967 (Sauer *et al.* 2014).

HABITAT

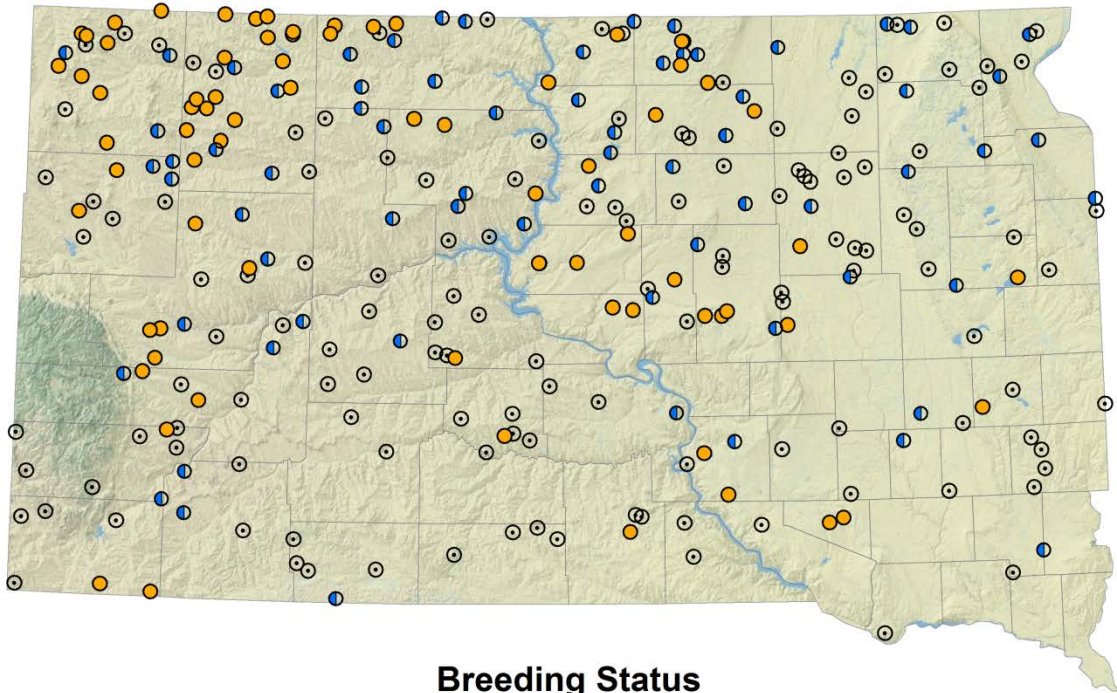
Swainson's Hawks are found in open prairie and agricultural areas that have some trees for nesting. This species was found in a wide variety of habitats during the second Atlas: in pastures, hayfields and grasslands (51%), single trees (13%), agricultural fields (12%), upland (11%) and lowland (4%) woodlands, and around ranches and farms (2%). Observers reported nests in shelterbelts, old farmsteads, and in single trees and bushes within grasslands, pastures, and roadside ditches.

BREEDING BIOLOGY

The nesting season in South Dakota is mid-April into early August. Swainson's Hawks typically build their nests below the canopy in a deciduous tree or bush. Nests during the second Atlas were in cottonwoods (9 nests), ash (2), and willow (1) at heights ranging from 5' to 28' (average of 18 nests: 18'). The bulky nest is constructed of sticks, twigs and debris, and lined with fresh leafy twigs, grass, and weed stalks. Both members of the pair build the nest, but the male brings most materials and does most of the construction. The female lays an average of 1 to 4 eggs, each egg laid two days apart. During the 34-day incubation period, the female does the majority of incubation while the male provides her with food. After the eggs hatch, the male provides most of the food (small mammals and reptiles) for the female and brood; the female hunts more frequently as the nestlings grow. Nestlings venture on to surrounding tree limbs when 27 to 33 days old and thereafter spend little time in the nest. Their first flight is at 38 to 46 days and they are reliant on the parents for food for another 3 to 5 weeks (Bechard *et al.* 2010).

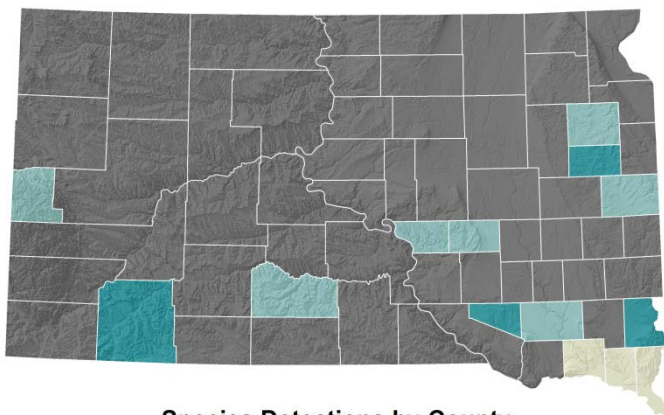
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	33	43	76
Probable	69	2	71
Possible	130	6	136
Observed	0	0	0
Total	232 (53%)	51	283

Swainson's Hawk



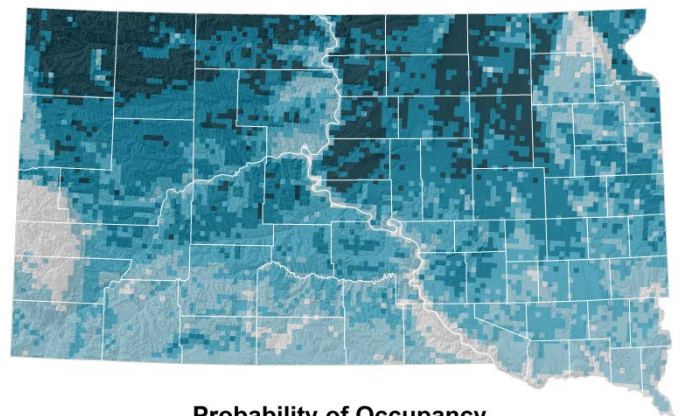
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

RED-TAILED HAWK

Buteo jamaicensis

The Red-tailed Hawk watches for prey from elevated perches with a wide, open view. Its diet includes small mammals, birds, reptiles, amphibians, and arthropods.

DISTRIBUTION AND STATUS

The Red-tailed Hawk is a common breeding bird throughout North and Central America, the Caribbean, and northern South America. It is the most common hawk in South Dakota, breeding in all 66 counties. According to Breeding Bird Survey data, the Red-tailed Hawk population in South Dakota is increasing at a significant rate, both over the longer term (3.5% per year since 1968) and short term (5% per year since 2002) (Sauer *et al.* 2014). This increase is reflected in the Atlas data: the first Atlas recorded Red-tailed Hawk in 68% of random blocks while the second Atlas detected the species on 90% of blocks.

HABITAT

Breeding habitat requirements include adequate open space and perch sites for hunting, and tall trees or other structures for nesting. Second Atlas observers reported Red-tailed Hawks in forests (36%), grasslands (34%), cropland (9%), open areas with scattered trees (7%), along roadsides (3%), and in prairie dog towns (1%). The nest site is elevated with unobstructed areas for access. Of 92 nests found during the second Atlas, 35% were in forests, 28% in open areas with scattered trees, including four nests in

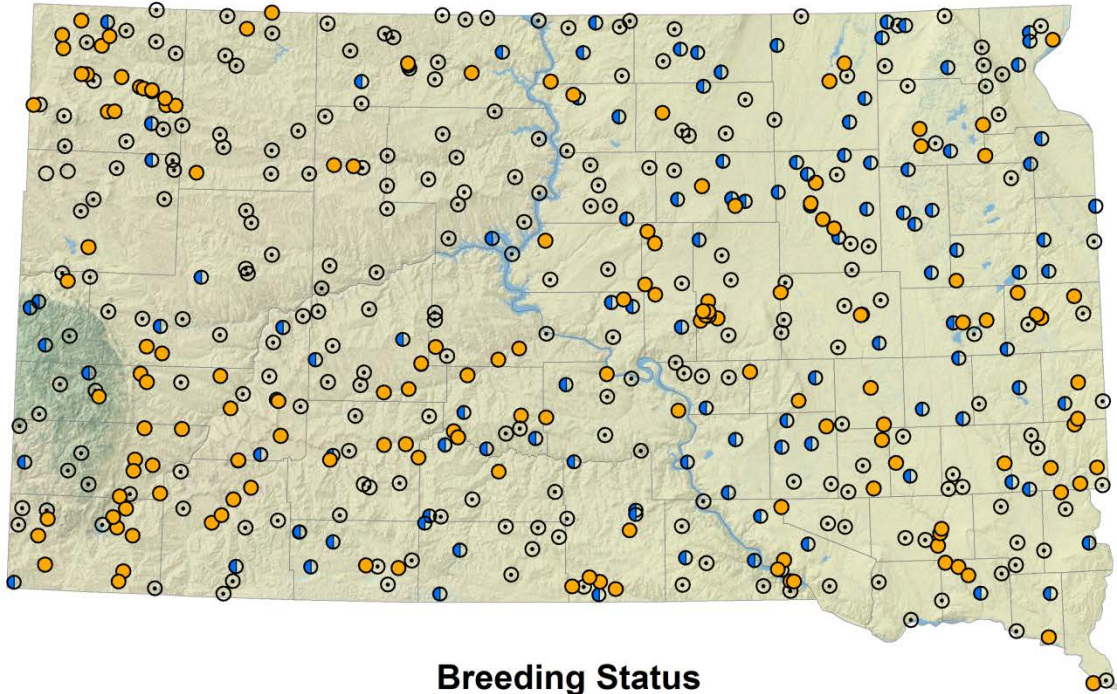
Great Blue Heron colonies, 6% in pastures, and three nests on cliff ledges.

BREEDING BIOLOGY

Second Atlas nest dates ranged from March 24 to July 27, the typical breeding season in South Dakota. Physical features such as roads, creeks, and forest edges define Red-tailed Hawk territories. They can remain stable for decades. Pairs may build several nests over their lifetimes. Nests from previous years may be refurbished and reused. Second Atlas tree nests were reported from cottonwoods (13 nests), dead trees (3), pines (2), and ash (1), at heights of 25' to 40' above ground (average of 30'). The large nest is made of sticks and twigs, and lined with softer plant materials. The female lays an egg every other day and incubates the clutch of 2 to 4 eggs for 28 days. The male provides most of the food for the female and brood. He brings prey 10 to 15 times a day. The female tears the prey into tiny pieces when the nestlings are small. Young Red-tails leave the nest 42 to 46 days after hatching and remain with their parents for up to 10 weeks (Preston and Beane 2009).

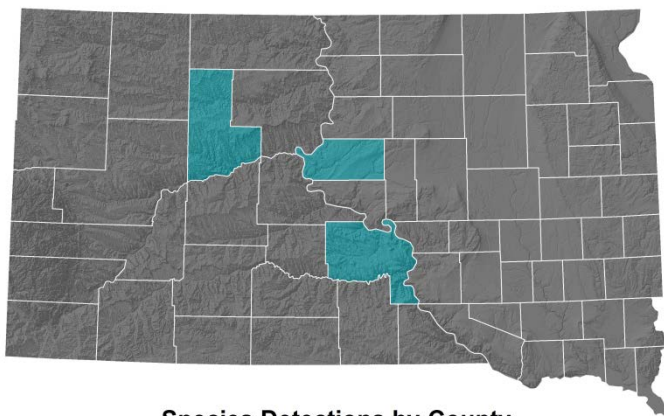
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	45	108	153
Probable	115	0	115
Possible	228	2	230
Observed	2	0	2
Total	390 (90%)	110	500

Red-tailed Hawk



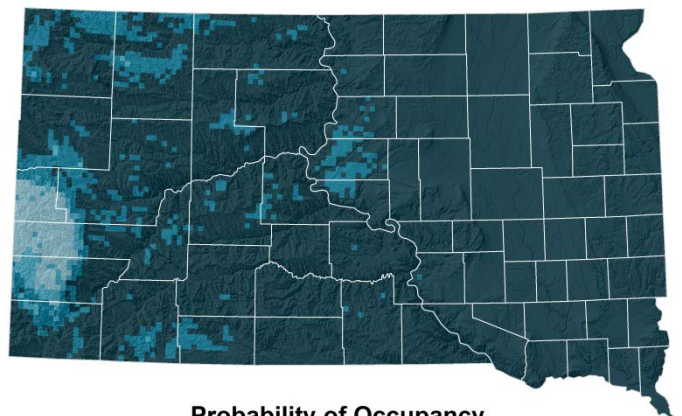
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

FERRUGINOUS HAWK

Buteo regalis

The primary prey of Ferruginous Hawks in South Dakota are ground squirrels, prairie dogs, and rabbits. Hawk populations and reproductive success fluctuate with the availability of these prey.

DISTRIBUTION AND STATUS

The Ferruginous Hawk is an uncommon breeder throughout the interior of the western U.S. and extreme south-central Canada. In South Dakota, which is on the eastern edge of the breeding range, Ferruginous Hawks are uncommon and scattered. They are most common in the northwest counties, especially Butte and Harding, in the southwest in Fall River County, and west of Pierre in Lyman and Stanley counties. The first Atlas obtained the same distribution, but hawk abundance was highest on the Missouri Coteau. Because of its reliance on grasslands and declining populations, especially on the Missouri Coteau, this hawk is a Species of Greatest Conservation Need in South Dakota (SDGFP 2014).

HABITAT

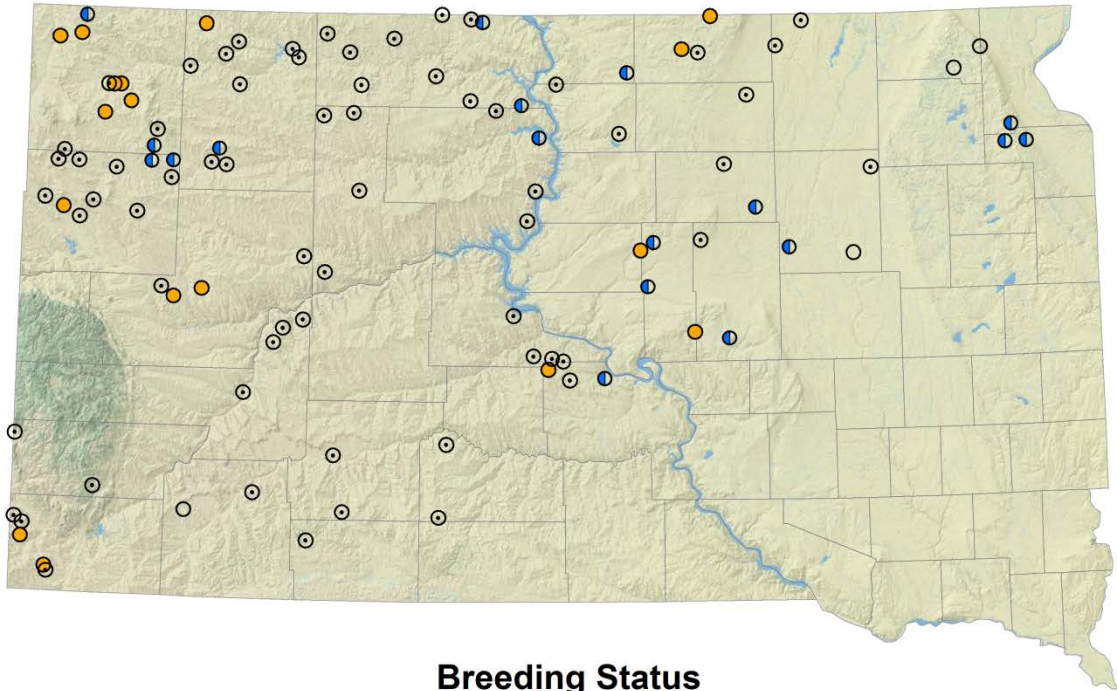
The breeding habitat is flat or rolling grasslands and shrublands, with elevated nest sites (buttes, badlands, knolls, trees, haystacks) and an abundance of mammal prey. Second Atlas observations were in grasslands (59%), prairie dog towns (19%), cropland (8%), open areas with scattered trees (7%), shelterbelts (3%), and residential areas (3%).

BREEDING BIOLOGY

In South Dakota, Ferruginous Hawks nest from early April to mid-July. Nest sites in South Dakota can be in trees, on buttes and badlands, or on a knoll on the ground. They do not seem to nest on cliffs in South Dakota, despite the abundance of cliffs in Harding County (O'Brien 1973, Baker 2011). The nest is a bulky platform of sticks and debris, lined with finer materials and cow dung. Historically, nests in the Great Plains were built of bison bones and lined with bison dung. Females lay 2 to 4 eggs but may lay 6 or more during times of plentiful prey. One egg is laid every other day and so hatching occurs over a period of several days, resulting in great size differences among chicks. At first, the male brings food and the female feeds it to the chicks. After 3 weeks, both parents hunt. Chicks leave the nest after 38 to 50 days; male chicks leave as much as 10 days before the females. Young hawks are proficient fliers in another 14 days. Fledglings as young as 52 days can kill prey, but they usually are dependent on their parents for food for several weeks (Lokemoen and Duebbert 1976, Blair and Schitoskey 1982, Bechard and Schmutz 1995).

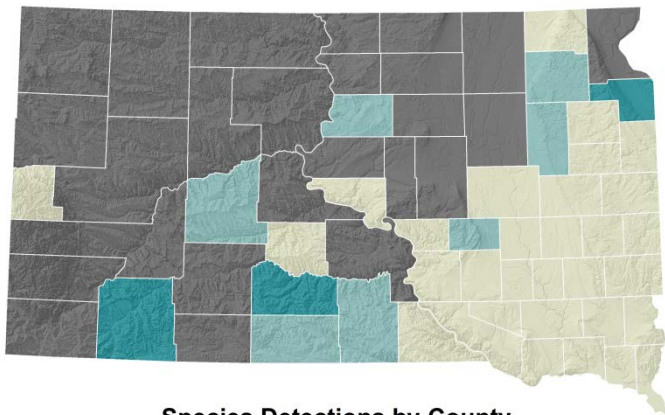
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	16	17
Probable	7	11	18
Possible	49	17	66
Observed	4	0	4
Total	61 (14%)	44	105

Ferruginous Hawk



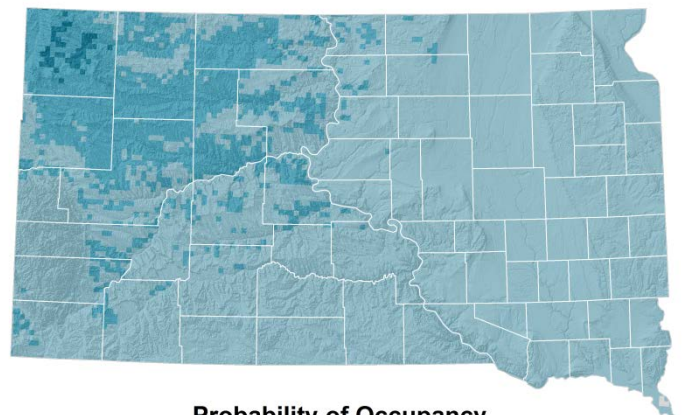
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

GOLDEN EAGLE

Aquila chrysaetos

The Golden Eagle is a long-lived, large predator. Each pair defends an area of 8 to 12 square miles in which they hunt for their main prey of rabbits, ground squirrels, and prairie dogs.

DISTRIBUTION AND STATUS

The Golden Eagle breeds throughout Europe, Asia, northern Africa, and west of the 100th meridian in North America. South Dakota is on the eastern edge of the North American breeding range. In South Dakota, both Breeding Bird Atlases and multiple surveys have confirmed that Golden Eagles breed west of the Missouri River (e.g., Pulkrabek and O'Brien 1974, Baker 2011). This eagle is most common along rivers and in Harding County. During the second Atlas, block survey data were supplemented by data from aerial surveys along rivers west of the Missouri River.

HABITAT

South Dakota's Golden Eagles breed in open and semi-open habitats and along rivers (Pulkrabek and O'Brien 1974, Baker 2011). During the second Atlas, surveyors reported eagles in grasslands (45% of observations), cliffs, buttes, and badlands (13%), river corridor forests (11%), upland woods (9%), and prairie dog towns (7%). The remainder of the observations were of flyovers.

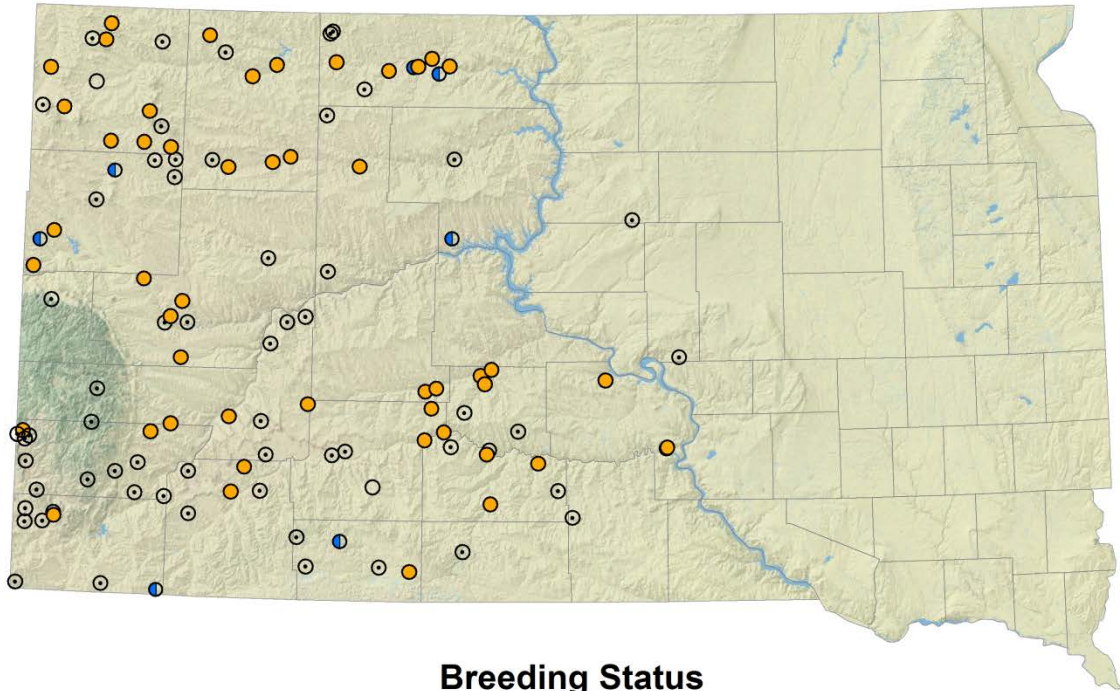
BREEDING BIOLOGY

Most Golden Eagles do not acquire a nesting territory until they are at least 4 years old. Once acquired, an eagle

tends to stay on that territory. A typical pair raises one young per year and up to 15 young over their lifetime. Pairs commonly refrain from laying eggs in years when prey is scarce. In South Dakota, Golden Eagles nest from March through mid-July. Second Atlas nests were on cliffs (6 nests), cottonwoods (7), and pines (2). Aerial surveys in 2011 found nests on cliffs (20) and in cottonwoods (11) (Baker 2011). Territories may have two or more alternate nest sites that are used in different years. The nest is a bulky platform of sticks, lined with weeds, grass, and leaves. Old nests are refurbished and new material added, so that the nest becomes huge. Females lay an egg every 3 to 5 days for a total clutch of 1 to 3 eggs. Incubation begins when the first egg is laid and lasts 41 to 45 days. The female remains with the eaglets when they are small. Initially, the male does all of the hunting; after about a month, both parents hunt. Meal size increases as the eaglets grow. Eaglets take their first flight when roughly 60 to 70 days old. The first flight is usually short, concluded by an uncontrolled landing. After leaving the nest, the eaglets remain with their parents for 1 to 6 months (Kochert *et al.* 2002).

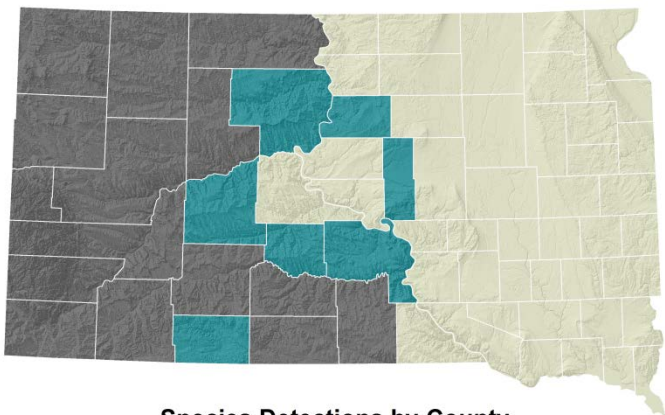
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	6	43	49
Probable	7	1	8
Possible	51	9	60
Observed	2	0	2
Total	66 (15%)	53	119

Golden Eagle



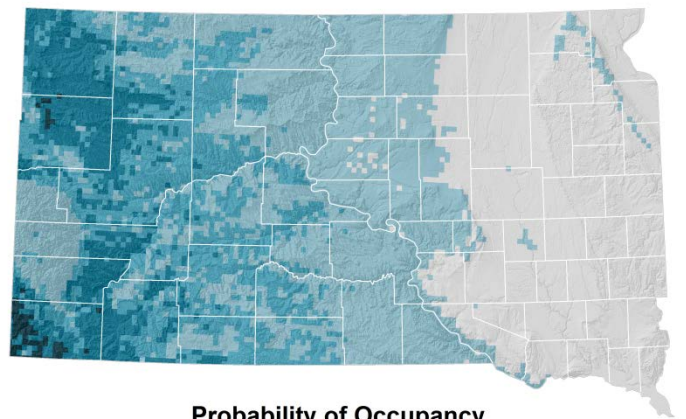
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

VIRGINIA RAIL

Rallus limicola

The Virginia Rail has several adaptations that allow it to easily move through the marsh. Its body is laterally compressed and has flexible vertebrae that allow it to slip through dense cattails. Long toes allow the bird to walk on mats of floating vegetation and mudflats. It uses a claw on the tip of its wing to climb up cattails or shrubs while foraging.

DISTRIBUTION AND STATUS

The Virginia Rail breeds in the western, central, and northern U.S. and southern Canada. In South Dakota, this marsh bird is most common in the pothole regions east of the Missouri River, and uncommon and scattered west of the River. Its abundance depends on climate conditions. During the first Atlas, which was conducted during a dry period, rails were detected on 7% of random survey blocks. During the second Atlas, which was conducted during a wet period, rails were detected on 19% of blocks. Much of the increase was in the central and east-central portions of the state.

HABITAT

In South Dakota, Virginia Rails breed in freshwater marshes (92% of second Atlas reports), wet meadows (5%), flooded ditches (3%), and creeks (1%). Virginia Rails occur more frequently in semipermanent versus temporary wetlands, and occur more frequently in larger wetlands (Naugle *et al.* 1999b). For breeding, they require shallow water, standing marsh vegetation, and a mix of open water and stands of marsh

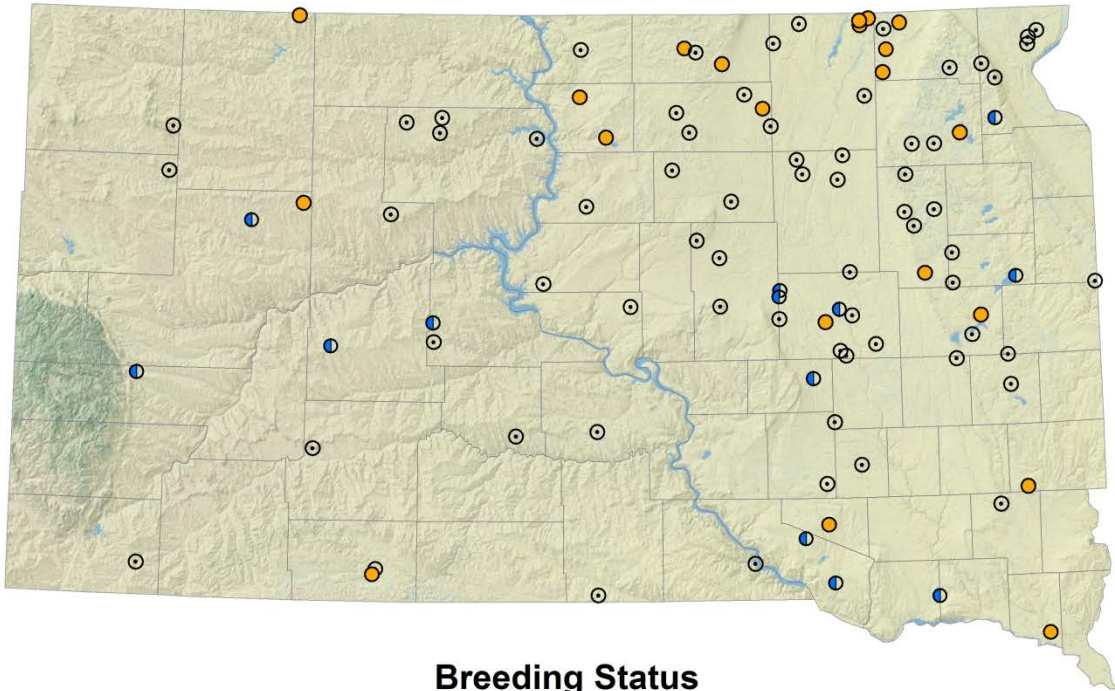
vegetation. During the second Atlas, all nests (2) and broods (20) were in marshes.

BREEDING BIOLOGY

Virginia Rails in South Dakota nest from late May to early July, and raise their broods in June and July. Adults build numerous “dummy” nests, which they do not use, in addition to their primary nest. The nest site is within robust marsh vegetation, such as cattails or bulrushes. The primary nest is placed slightly above the water’s surface. It is a loosely woven basket made of local plant materials, often with a canopy of adjacent plants bent over the top. The clutch of 8 to 9 eggs is incubated by both parents for 19 days. The downy chicks first leave the nest within 3 to 4 days, but the adults may bring the brood back to the nest at night. Both parents feed and brood the small chicks. Chicks start to forage for themselves within 7 days but usually are fed by the parents for 14 to 21 days. The young rails are able to fly at about 25 days. The family remains on the territory until the chicks are fully grown. The adults then leave while the young remain (Conway 1995).

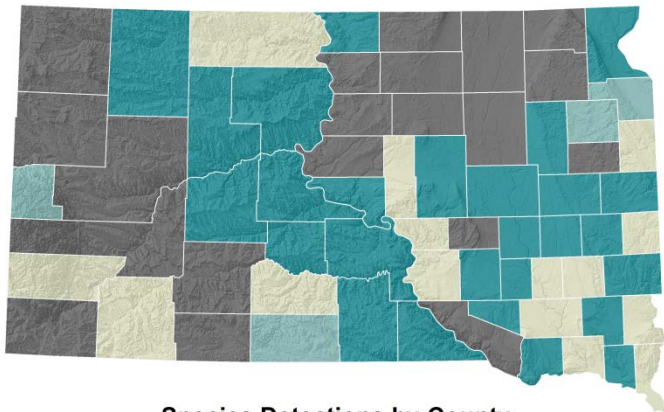
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	8	13	21
Probable	13	0	13
Possible	61	7	68
Observed	0	0	0
Total	82 (19%)	20	102

Virginia Rail



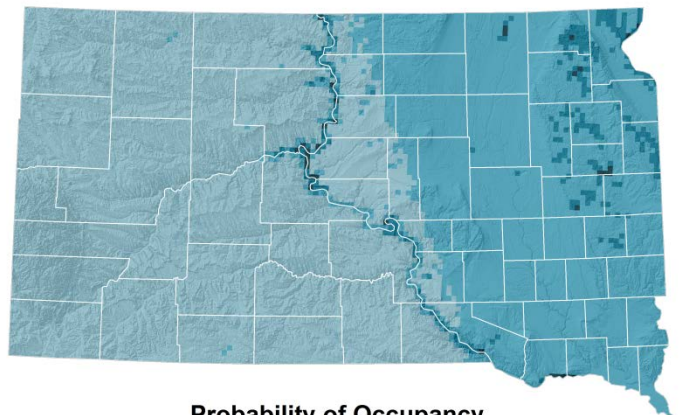
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

SORA

Porzana carolina

The distinctive loud, whinny call is usually the only clue of the presence of a Sora, a common but secretive marsh bird that is more often heard than seen.

DISTRIBUTION AND STATUS

The most abundant and widely distributed North American rail, Soras inhabit much of Canada and the United States except the southeastern U.S. states and the West Coast. Soras breed throughout South Dakota, but are more common east of the Missouri River where there are more marshes. Detections of Soras increased from 20% of random blocks during the first Atlas to 35% of blocks during the second Atlas. Most of the additional observations were west of the Missouri River, especially north of the Cheyenne River. South Dakota's Sora population has been stable over the past 45 years (Sauer *et al.* 2014).

HABITAT

Soras inhabit wetlands with emergent vegetation such as cattails, sedges, and bulrushes. Almost all second Atlas observations were in this habitat, with 81% occurring in marshes and 16% in wet meadows. All 7 broods reported during the second Atlas were seen in marshes while 1 second Atlas nest was in flooded wheat stubble.

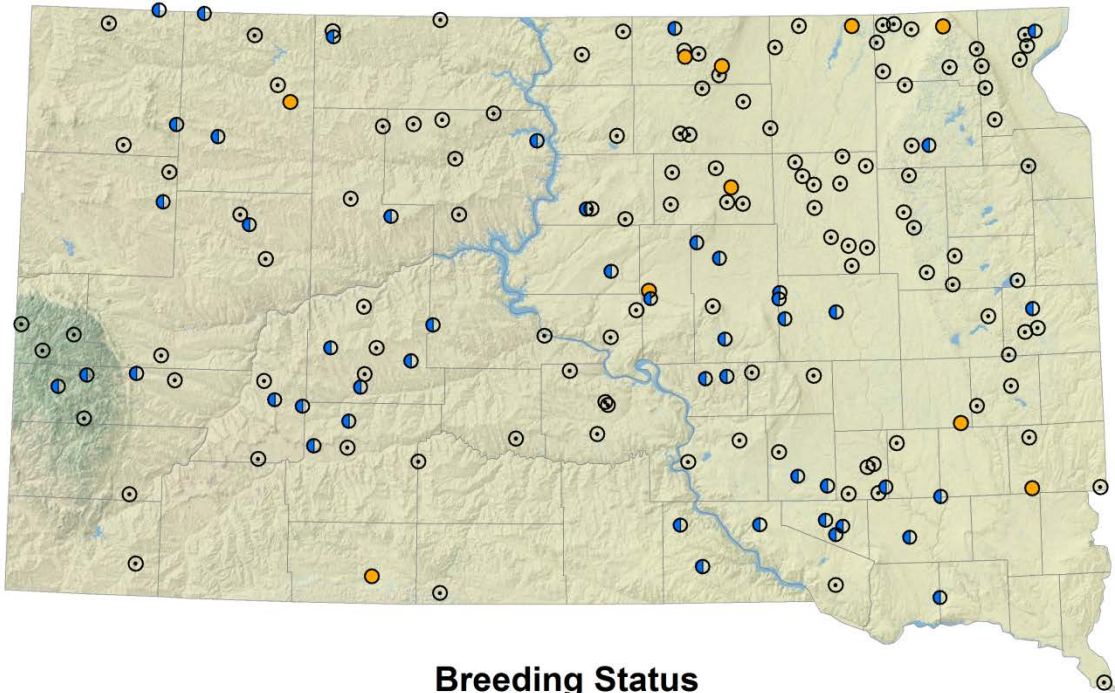
BREEDING BIOLOGY

Second Atlas nests were reported between May 23 and July 25. Soras sometimes raise two broods in a season. The nest site is in dense marsh

vegetation over shallow water, especially near patches of open water. The nest begins as a pile of vegetation. Both adults continue to build the nest of marsh vegetation as egg-laying proceeds. Eventually the nest becomes a well-built woven cup, lined with finer grasses. A runway leads to the top of the nest. Bending surrounding vegetation over and tucking it under the opposite rim makes an overhead canopy. The clutch of 8 to 11 buff-brown eggs can be too large for the nest, so the eggs are arranged in two layers. Incubation begins at least 3 days before the last egg is laid, therefore the eggs do not hatch at the same time. Chicks begin hatching in 18 to 20 days; one parent cares for the first-hatched chicks while the other parent continues to incubate. The precocial chicks leave the nest in 3 to 4 days and are fed by the parents for 2 to 3 weeks. Young Soras are independent around their fourth week and attain adult proportions by their sixth week (Melvin and Gibbs 2012).

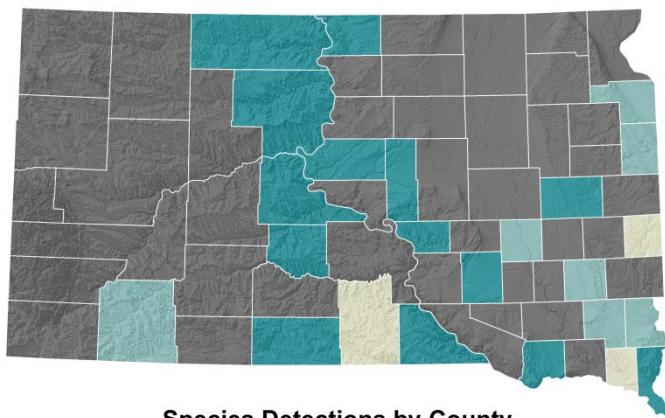
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	4	6	10
Probable	43	5	48
Possible	107	10	117
Observed	0	0	0
Total	154 (35%)	21	175

Sora



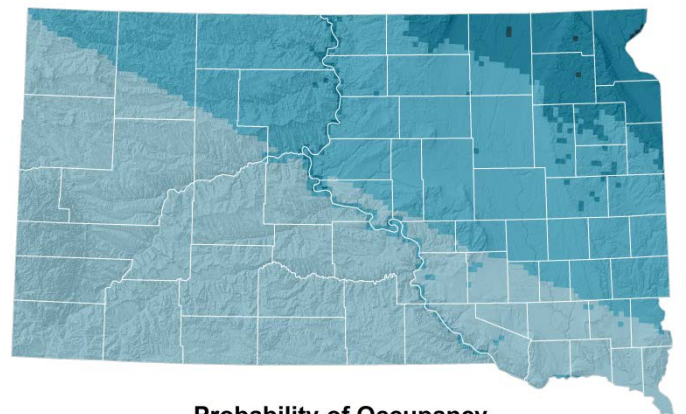
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

COMMON GALLINULE

Gallinula galeata

Common Gallinules engage in cooperative breeding, in which a female and one or more of her daughters from previous years share a mate, lay their eggs in the same nest, and together incubate the eggs and rear the chicks.

DISTRIBUTION AND STATUS

The Common Gallinule breeds in scattered locations throughout much of the eastern United States and locally in the southwest and central U.S. It also breeds throughout Mexico, the Caribbean, and Central and South America. In South Dakota, this species is a recent arrival and thus far, has been found breeding only in the northeast. The next nearest breeding population is in southern Minnesota. The first confirmed nesting in the state was in 1995 at Sand Lake National Wildlife Refuge (Meeks 1996). During the first Atlas, two reports of possible breeding came from Brown and Lake counties. All second Atlas records were of broods east of Hecla in Brown County.

HABITAT

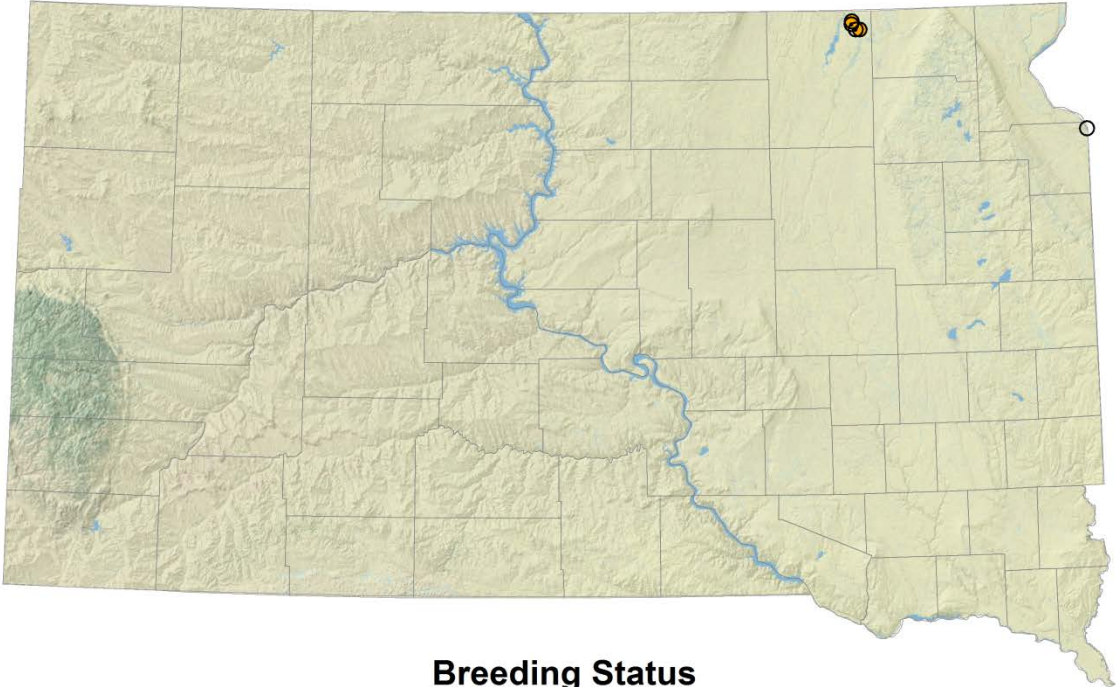
Common Gallinules breed in marshes with a mix of open water, dense cover along the shore, and open ground. Second Atlas broods were found in flooded ditches.

BREEDING BIOLOGY

All breeding records in South Dakota, including those of nests and broods, have been during July and early August. The nest, built in a marsh over shallow water, is a platform of cattails, bulrushes, and reeds, lined with sedges and grasses. The pair also builds similar platforms nearby for roosting and brooding. Clutch size typically is 8 to 11 eggs. Both parents incubate the eggs and brood the chicks. The chicks can swim well when just a few hours old and follow the adults around the territory. Chicks are fed by the parents, and sometimes, by older siblings from earlier broods. By about 3 weeks, chicks are mostly feeding themselves, and at 6 to 7 weeks, are capable of flight and are fully independent of adults (Bannor and Kiviat 2002).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	2	2
Probable	0	0	0
Possible	0	3	3
Observed	0	0	0
Total	0 (0%)	5	5

Common Gallinule



Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- ◐ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

AMERICAN COOT

Fulica americana

The American Coot is an excellent swimmer and diver but requires long running takeoffs across the water's surface to take flight.

DISTRIBUTION AND STATUS

Found throughout most of North America, the largest breeding concentrations of American Coot are in the Prairie Pothole region of the southern Canadian prairie provinces and eastern Dakotas. Coots were documented on just 25% of random blocks during the first Atlas compared to 44% of blocks during the second Atlas. Coot populations can fluctuate widely, depending on moisture levels. Breeding success increases during wet periods because of more ponds and stable water levels during brood-rearing. Because of prolonged wet periods during the 1990s and 2000s, water levels in eastern South Dakota during the second Atlas were much higher than during the first Atlas. This may account for the higher numbers recorded during the second Atlas.

HABITAT

Breeding American Coots inhabit ponds and marshes with emergent vegetation. Highest densities usually are on semipermanent and seasonal ponds which have standing water that lasts through the breeding season. Second Atlas observers reported coots in marshes (58% of records), ponds (36%), wet meadows (4%) and creeks and rivers (1%). Most second Atlas nests were in marshes (38 nests) or ponds (19 nests). Similarly, most

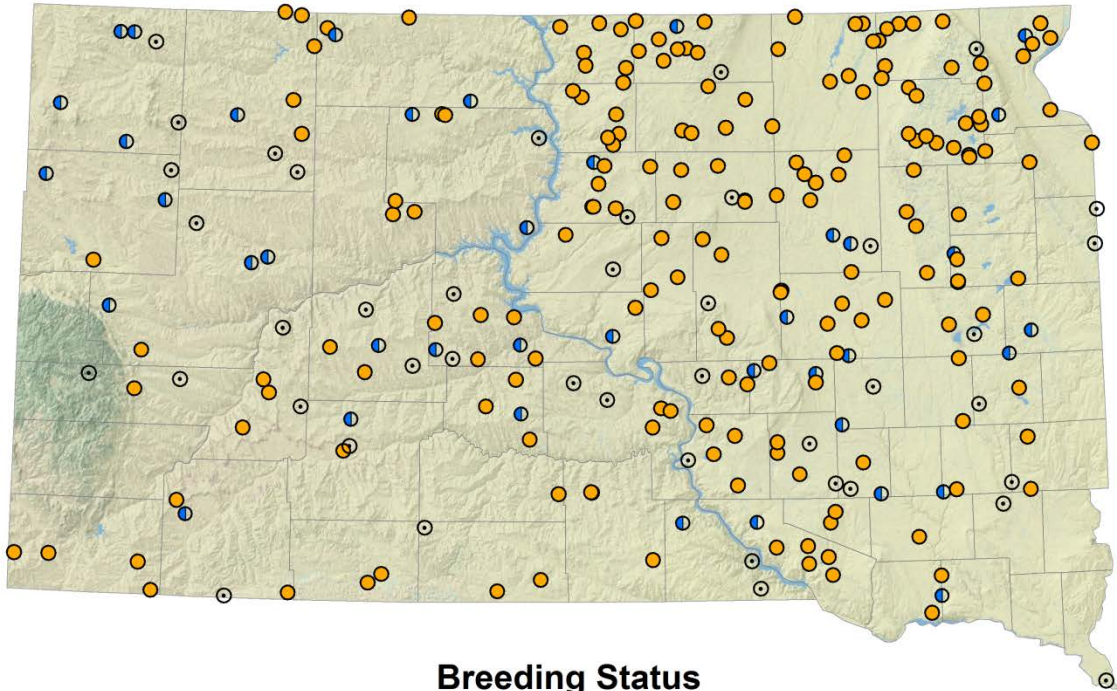
second Atlas broods were in marshes (169 broods) or ponds (70 broods), with another 6 broods in wet meadows and 2 broods in roadside ditches.

BREEDING BIOLOGY

During the second Atlas, coots nested between May 12 and July 20, while brood-rearing occurred May 21 to August 19. The pair build up to seven floating platforms within cattails or other wetland vegetation. Eventually one is chosen to be the nest platform. Platforms are built of coarse plant stems and are attached to standing live plants. For the nest, the female weaves plant materials into a basket and lines it with finer materials. She lays 8 to 12 eggs; 8 second Atlas nests had an average of 9 eggs (range 8 to 11 eggs). Both parents incubate the eggs and continually repair the nest as it becomes waterlogged and gradually sinks during the 23 to 25 day incubation period. In larger clutches, first-laid eggs may hatch up to 1 week earlier than last-laid eggs, resulting in different-sized chicks in the brood. Chicks hatch covered in down and eyes open. Parents escort the chicks from the nest and feed and protect them for about 28 days (Brisbin *et al.* 2002).

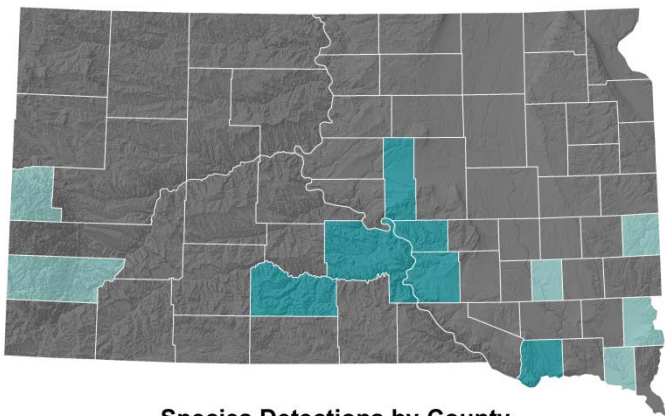
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	113	74	187
Probable	37	3	40
Possible	40	2	42
Observed	0	0	0
Total	190 (44%)	79	269

American Coot



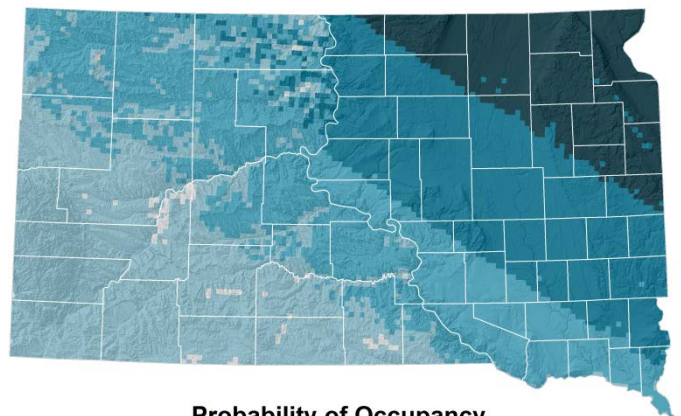
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

SANDHILL CRANE

Grus canadensis

During migration, Sandhill Cranes fly an average of 150 miles per day at speeds of 15 to 50 mph, preferring to migrate with tailwinds. To conserve energy, they circle on rising thermal currents, then glide on outstretched wings down to an adjacent thermal, where they are again lifted high to repeat the process.

DISTRIBUTION AND STATUS

The main portion of the Sandhill Crane's breeding range occurs in Siberia, Alaska, Canada, and the northern Midwest, with isolated populations in the Southwest, Rocky Mountains, and southeastern U.S. In South Dakota, the Sandhill Crane is an extremely rare breeder, with just three reported breeding attempts (two successful) in the 21st century (Weins and Krueger 2009). All recent records, including a successful nest in Butte County during the second Atlas, have been west of the Missouri River. In the 1800s, cranes nested commonly in the Black Hills, and were recorded breeding east of the river (Tallman *et al.* 2002). The nearest breeding population is in northern Minnesota.

HABITAT

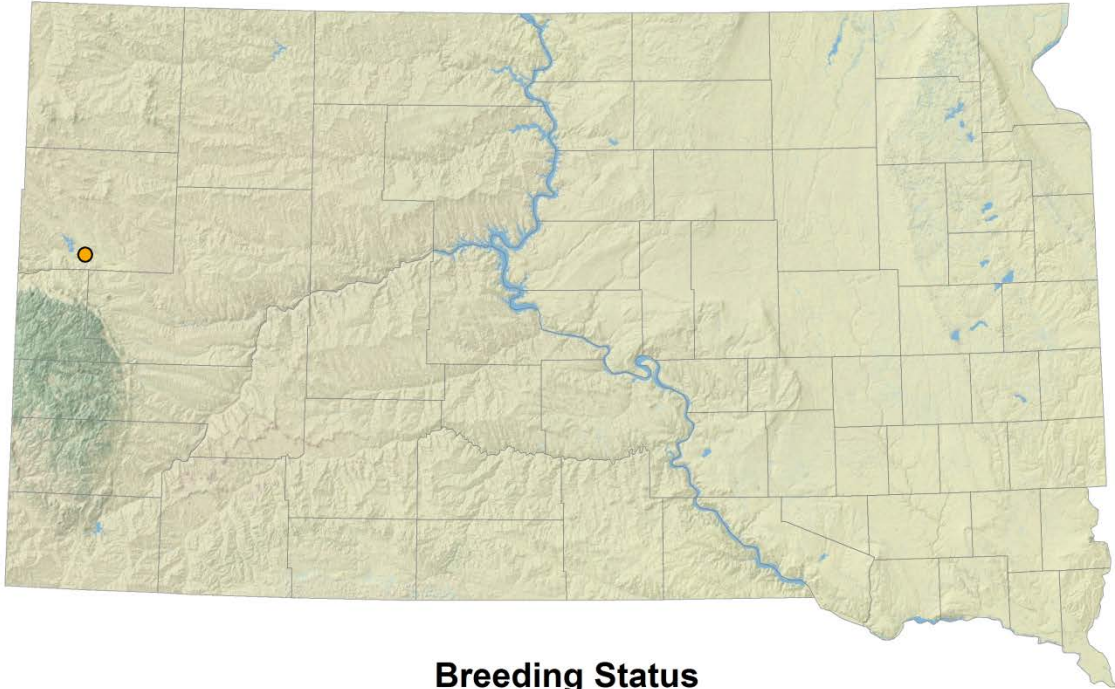
Sandhill Cranes in the prairie region nest in wetlands and wet meadows, and forage in nearby marshes and agricultural fields. The second Atlas nest was in a marsh.

BREEDING BIOLOGY

Recent breeding records in South Dakota have been of chicks with adults, observed from mid-May to late June. Sandhill Cranes begin breeding when they are 4 to 5 years old. Both adults participate in constructing the nest, which is a floating mat or mound of vegetation in the marsh. They collect nest material from the immediate area and toss it over their shoulders into a pile, forming a characteristic vegetation-free zone around the nest. The female lays 2 eggs at 2-day intervals, which both parents incubate for about 30 days. Within 24 hours of hatching, chicks leave the nest with their parents. At first, parents feed the chicks, but the young gradually learn to feed themselves. Young cranes first fly when 65 to 75 days old. Although they can care for themselves, the young rely on their parents for 9 to 10 months for protection and better feeding opportunities. Family groups migrate south and spend the winter together. Juveniles become independent during spring migration and join other immatures in non-breeding flocks. Sandhill Cranes can live for over 35 years in the wild (Gerber *et al.* 2014).

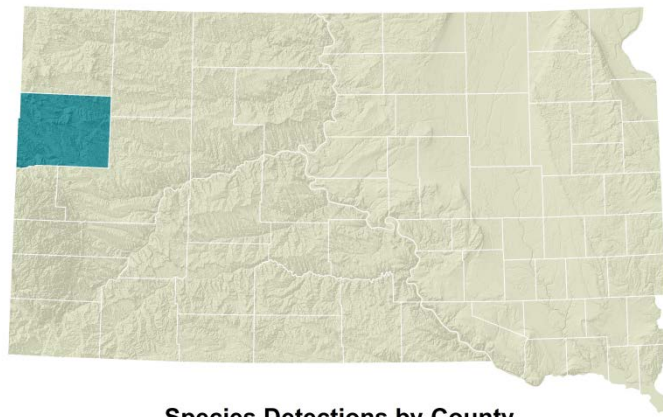
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	1	1
Probable	0	0	0
Possible	0	0	0
Observed	0	0	0
Total	0 (0%)	1	1

Sandhill Crane



Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- ◐ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

BLACK-NECKED STILT

Himantopus mexicanus

Black-necked Stilts wade in shallow water to forage for aquatic insects and small fish. Proportionally, this species has the second-longest legs of any bird, exceeded only by flamingos.

DISTRIBUTION AND STATUS

The Black-necked Stilt breeds in the western United States to Central and South America, with isolated populations along the U.S. east coast, Florida, and Texas. The Black-necked Stilt's range has recently expanded in the prairie region, including into South Dakota. There were less than 10 sightings of stilts before 1990 and none reported during the first Atlas. Confirmed breeding observations between the first and second Atlases include the first state nest record (Brown County, Tallman and Williams 1994), an undocumented nest in 2004 (Brown County), and a brood in 2007 (McPherson County). Second Atlas records further document the expansion of Black-necked Stilt in South Dakota with a nest in Sully County, a brood in Marshall County, and a probable breeding pair west of Huron.

HABITAT

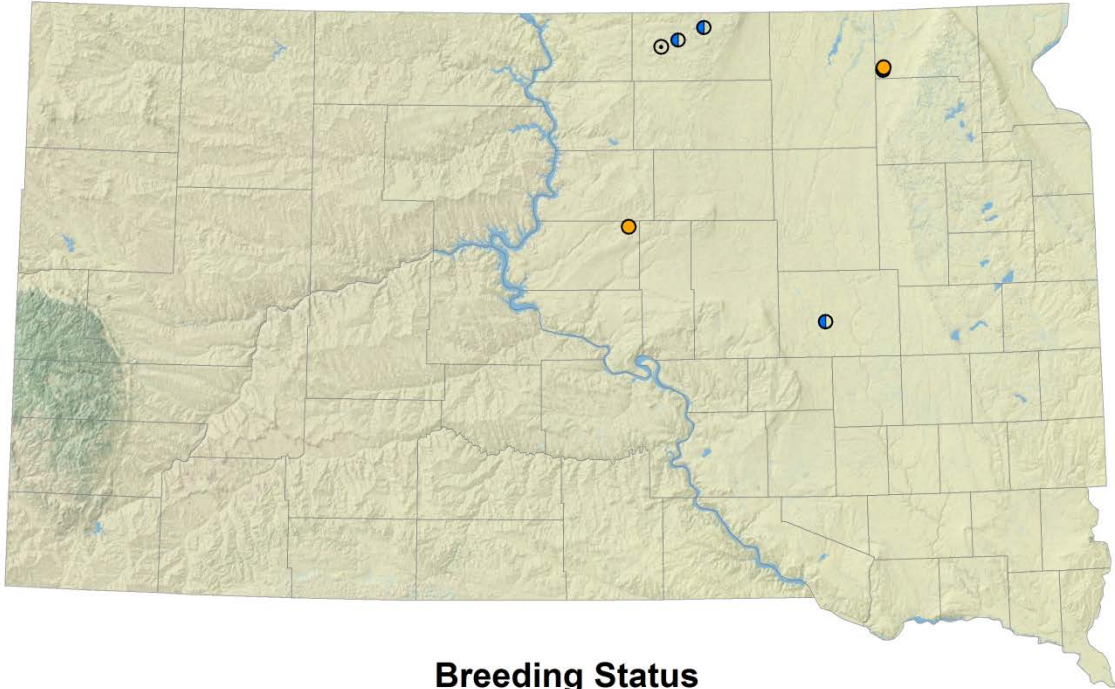
During the breeding season, Black-necked Stilts in South Dakota inhabit shallow wetlands with emergent vegetation, including permanently flooded pastures and crop fields. Stilts build their nests on the ground along the water's edge in short vegetation, on dikes, islands, or high spots with sparse vegetation.

BREEDING BIOLOGY

According to the breeding records to date, the South Dakota breeding season is late May to mid-July. To build the nest, either adult scrapes a depression on the ground with its feet and breast and then tosses in small pieces of plants, rocks, shells, and feathers for lining. Most lining is added during incubation or if the water rises, so that eventually, the nest is slightly elevated above the ground. During the 22-day incubation period, the male and female alternate incubating the 4 eggs. Chicks in the eggs begin to vocalize 1 to 3 days before hatching. The precocial chicks are downy and alert when they hatch and leave the nest within 24 hours. Adults lead the chicks to the brood territory, where the chicks feed on small invertebrates, protected by the adults. Chicks begin to make short hopping flights when 22 days old and are capable of sustained flight at 27 to 31 days. Family groups remain together well beyond this time and sometimes migrate together in late summer (Robinson *et al.* 1999).

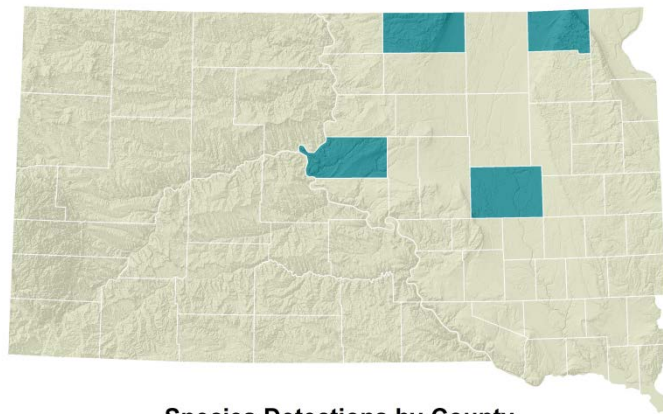
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	2	2
Probable	1	3	4
Possible	0	1	1
Observed	0	0	0
Total	1 (0.2%)	6	7

Black-necked Stilt



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

AMERICAN AVOCET

Recurvirostra americana

The American Avocet is one of four Avocet species in the world. The name Avocet comes from the Italian *avosetta*, meaning 'graceful bird'. A distinctive feature of this large shorebird is its long up-turned bill, used for feeding on aquatic invertebrates.

The ground nest usually is on bare ground or in areas with short, sparse vegetation. Broods are reared in 'nursery' areas, which consist of shallow water with vegetation for cover. Vegetation at these areas is shorter than the adults, but taller than the chicks. It is somewhat open to allow chicks to move freely while foraging.

DISTRIBUTION AND STATUS

The American Avocet breeds throughout the interior of the western U.S., northern prairie regions, and south-central Canada. In South Dakota, Avocets nest throughout the state except the Black Hills and the southeast. It is most abundant in the prairie pothole region, which has the highest density of shallow wetlands favored for breeding. The breeding distribution has changed little since the first Atlas. Minor differences reflect the tendency of this species to shift breeding areas in response to ephemeral habitat conditions. Breeding Bird Survey data indicate a stable population in the state over the past 45 years (Sauer *et al.* 2014).

BREEDING BIOLOGY

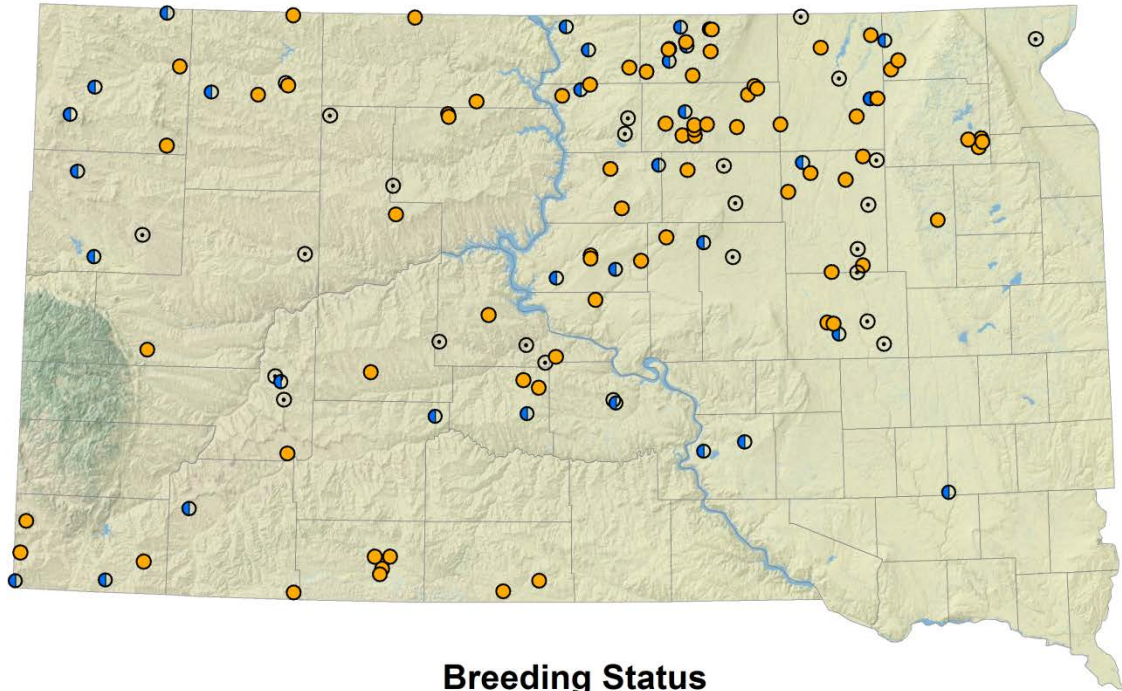
Avocets often arrive at breeding areas several weeks before nesting. Nesting occurs mid-May into July (second Atlas early and late dates for 14 nests: 5/25 and 6/24). The nest is a scrape on the ground and is either unlined or well-lined with whatever material is nearby. Both adults build the nest, incubate the 3 to 4 pinkish eggs during the 24-day incubation period, and care for the chicks. At hatching, the downy chicks are precocial and leave the nest within 24 hours. Parents lead the broods to nursery areas and protect the chicks as they forage (Ackerman *et al.* 2006).

HABITAT

In South Dakota, American Avocets most often breed at ephemeral or temporary ponds, including those in tilled areas or pastures. They rarely are found on permanent ponds or stock ponds (Weber *et al.* 1982). Second Atlas observers reported Avocets in marshes (50% of reports), ponds (32%), shorelines and islands (9%), and wet meadows (4%). Avocets prefer to nest on islands as protection from predators.

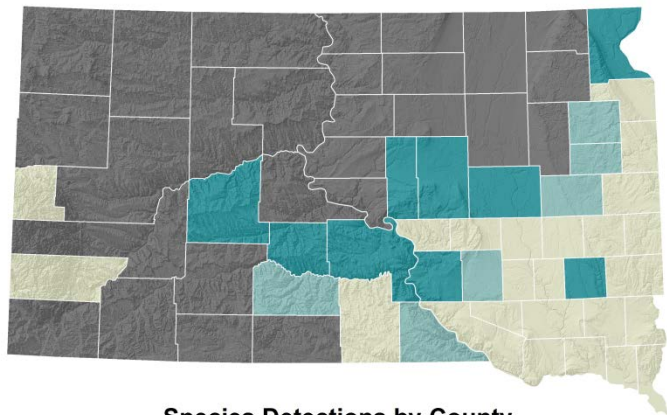
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	19	58	77
Probable	23	8	31
Possible	24	1	25
Observed	0	0	0
Total	66 (15%)	67	133

American Avocet



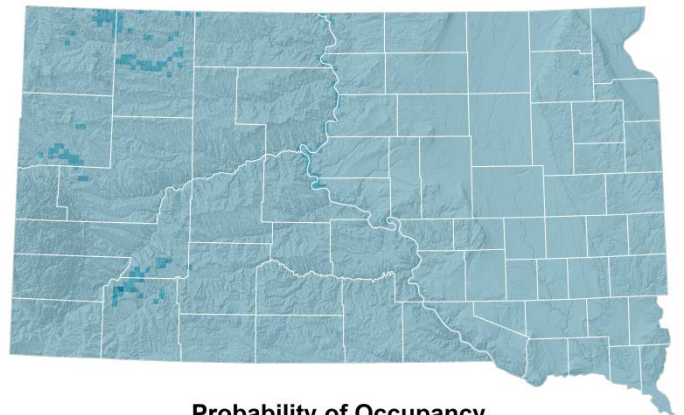
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

SNOWY PLOVER

Charadrius nivosus

While incubating eggs under the hot sun, Snowy Plovers use a variety of tactics to stay cool. They pant, erect their back and crown feathers, stand in water, and soak their belly feathers. Belly-soaking not only cools the adult bird, but also cools overheated eggs during incubation.

DISTRIBUTION AND STATUS

Snowy Plovers breed along the Pacific and Gulf coasts, on Caribbean islands, and at scattered locations in the western U.S. and Great Plains. They have very recently begun to breed in the Dakotas (Aron *et al.* 2008). The first confirmed breeding in South Dakota was in 2007 at Stone Lake in Sully County when 3 to 4 pairs successfully raised chicks (Olson 2008). Adults returned to that location the following year but did not nest. Snowy Plovers began breeding on sandbars of the Missouri River below Gavins Point dam in 2008 (Hunt *et al.* 2013). These birds returned to breed on the sand bars every year during the second Atlas, possibly representing a range expansion for this species.

HABITAT

In South Dakota, Snowy Plovers nest on the shores of alkali lakes or Missouri River sandbars (Olson 2008, Hunt *et al.* 2013).

BREEDING BIOLOGY

During the second Atlas, plovers were observed on Missouri River nests between June 1 and August 19. Snowy

Plovers nest in loose colonies with other Snowies, as well as Piping Plovers and Least Terns. In some populations, females are polyandrous (mate with more than one male) but this has not been confirmed to occur in South Dakota. Nests are on the ground and are simple scrapes lined with grass, pebbles, and other debris. Males make multiple scrapes; the scrape selected by the female for mating usually becomes the nest. The typical clutch size is 3 eggs. Females incubate during the day and males incubate during the night. The downy chicks leave the nest a few hours after the last egg hatches. Chicks walk, run, and swim well and forage for themselves. Adults brood the chicks for several days. Parents also alert the chicks of potential predators and perform distraction displays. Chicks are able to fly when 28 to 32 days old. Snowy Plovers frequently lose their nests to predators or weather, but they re-nest rapidly (Page *et al.* 2009).

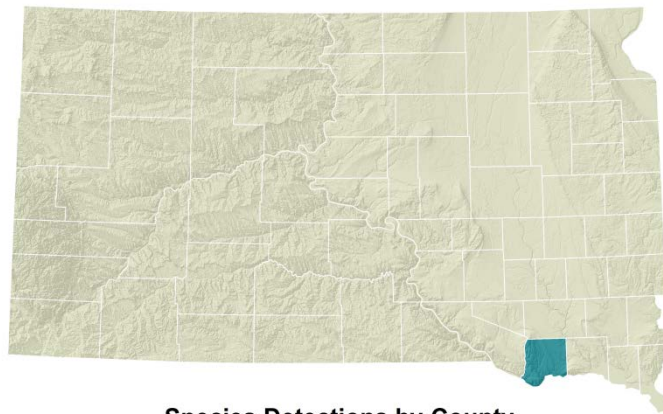
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	4	4
Probable	0	0	0
Possible	0	0	0
Observed	0	1	1
Total	0 (0%)	5	5

Snowy Plover



Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- ◐ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

PIPING PLOVER

Charadrius melodus

This shorebird is named after its clear melodic, whistled call, which it gives during courtship flights, encounters with each other, and when alarmed.

DISTRIBUTION AND STATUS

South Dakota's Piping Plovers are part of the interior subpopulation, which breeds from the southern Prairie provinces of Canada south to Nebraska and Iowa. Two other subpopulations breed along the Atlantic Coast and around the Great Lakes. In South Dakota, Piping Plovers primarily breed along the Missouri River, with a very small number of pairs (generally less than 10) breeding elsewhere on alkali lakes. Piping Plover is a federally threatened species and a state Species of Greatest Conservation Need. The interior subpopulation is declining amid habitat loss and low reproductive success (Elliott-Smith and Haig 2004, Aron 2006). Breeding plovers are censused every year along the Missouri River and every five years during a global international census (Elliott-Smith *et al.* 2015).

HABITAT

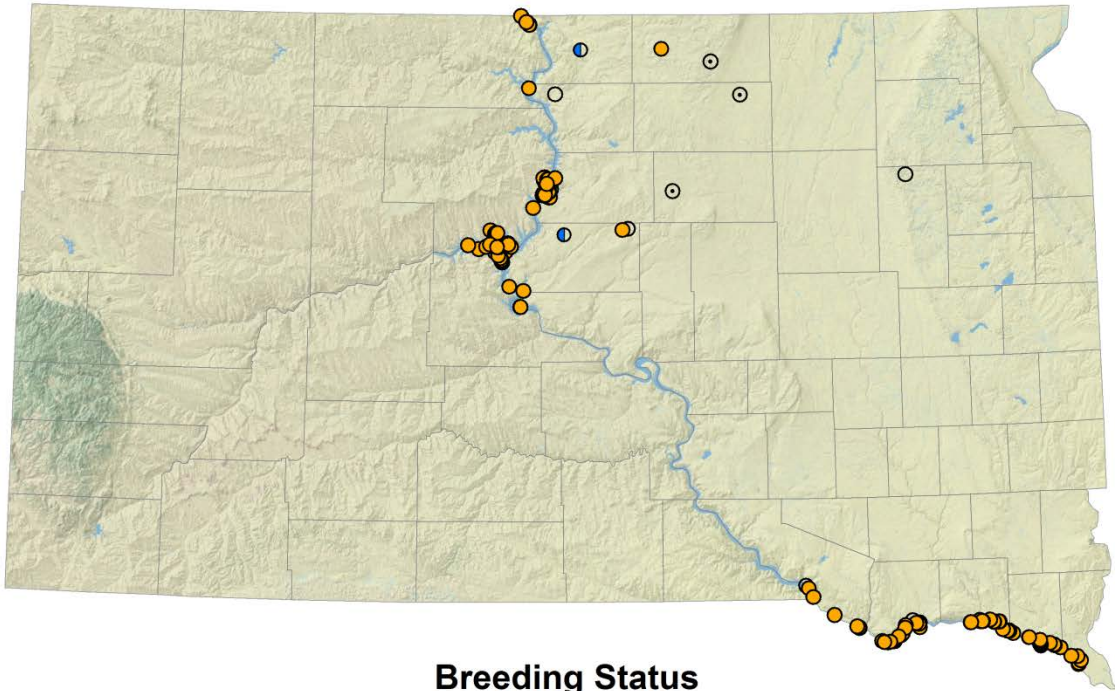
Missouri River plovers nest on barren natural or artificial sandbars and islands, or along the river's edge where there is little vegetation. South Dakota's wetland-breeding plovers use sparsely vegetated, open sand flats and pond edges. Broods are raised in the same habitats.

BREEDING BIOLOGY

In South Dakota, Piping Plovers begin nesting in mid-April and rear broods until mid-August. Males court females with displays both in flight and on the ground. During display flights, the male circles his territory with slow wingbeats, calling persistently. On the ground, he stands upright in front of the female with his neck stretched and rapidly stamps his feet with a high-stepping gait. The nest site is open sand or gravel soils on an elevated area at some distance from water. The nest is a scrape in the sand, sometimes lined with shells or pebbles. The female lays 3 to 4 eggs which are incubated by both adults for 28 days. At hatching, chicks are precocial and downy. Within a few hours, they can leave the nest and feed themselves. Both parents brood the chicks during cool weather. Females often desert the brood after a few days, leaving the male to protect the brood. Chicks are able to fly at 21 to 35 days (Elliott-Smith and Haig 2004, Aron 2006).

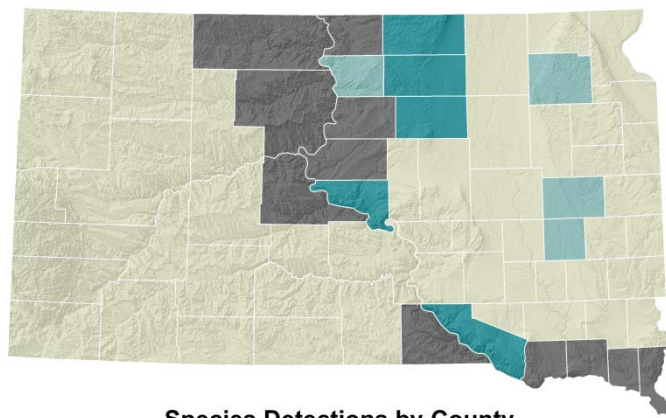
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	3	181	184
Probable	1	1	2
Possible	2	4	6
Observed	1	1	2
Total	7 (2%)	187	194

Piping Plover



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

KILLDEER

Charadrius vociferous

The Killdeer has an arsenal of histrionic and loud displays to lure a predator, or person, away from its nest. These include a dramatic "broken-wing" act, "false brooding", in which the parent pretends to be sitting on a nest that is not there, and running just ahead while calling and twittering loudly.

DISTRIBUTION AND STATUS

The Killdeer breeds throughout the United States, Canada, southeast Alaska, the Caribbean, and northern Mexico. It is abundant and widespread in South Dakota except in the Black Hills. During both Atlases, Killdeer was one of the top 10 most abundant species, detected in at least 95% of survey blocks and all 66 counties. The Killdeer population in South Dakota is stable, according to Breeding Bird Survey data (Sauer *et al.* 2014).

HABITAT

Killdeer breed in any open areas with little vegetation, including mudflats, agricultural fields, gravel roads, airports, short-grass meadows, gravel rooftops, ball fields, golf courses, and lawns. They are most often found near water of some sort, even if it is a lawn sprinkler. Second Atlas nests were located in pastures (15 nests), sides of gravel roads (7), and the edge of a lake (1). Broods during the second Atlas were along roadsides (40 broods), in grasslands (36), on mudflats and shorelines (56), in marshes and wet meadows (47), in croplands (18), in

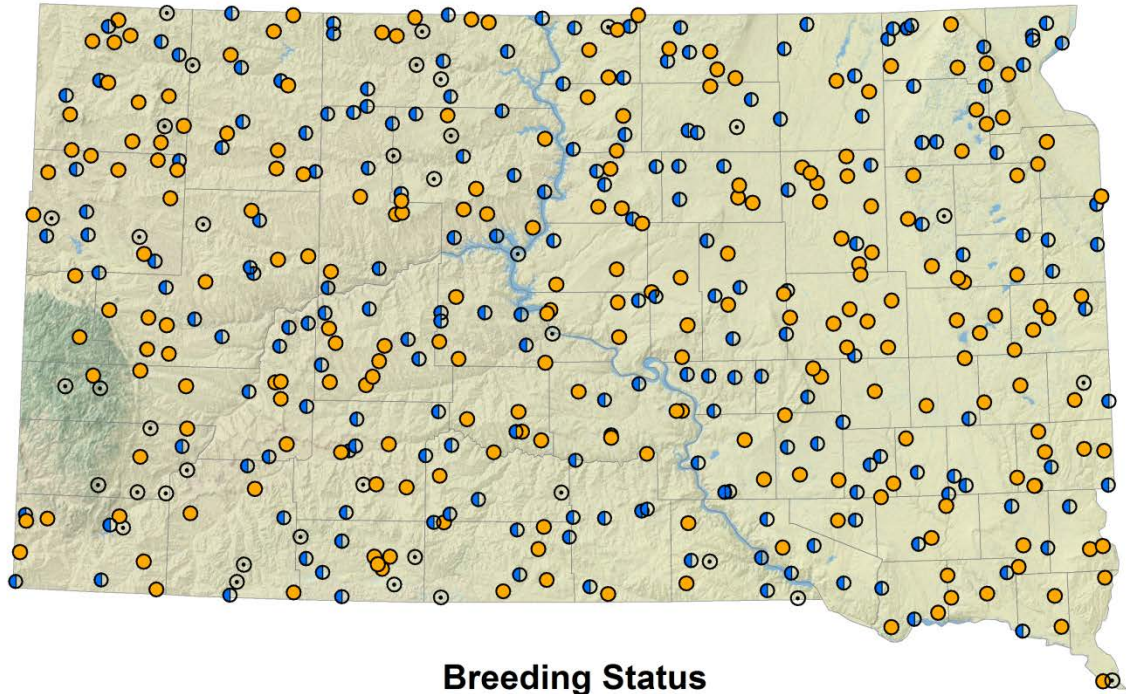
residential areas (11), and along creeks (4).

BREEDING BIOLOGY

In South Dakota, Killdeer begin nesting in mid-April (first second Atlas nest on April 13), and finish raising broods in August (last second Atlas brood sighting on August 10). The nest is on the ground in an area with sparse, short vegetation or entirely bare. A pair may make several scrapes on the ground, eventually choosing one for the nest site. During laying and incubation, the pair may add twigs, pebbles, and grass to the nest, showing a strong preference for white-colored objects. The usual clutch size is 4 eggs. Eggs are incubated by both parents for 24 to 28 days. In very hot weather, adults may soak their belly feathers in water to help cool the eggs. The downy chicks leave the nest soon after hatching. The parents protect and lead the brood to feeding areas but chicks feed themselves. Young Killdeer are able to fly when about 25 days old (Jackson and Jackson 2000).

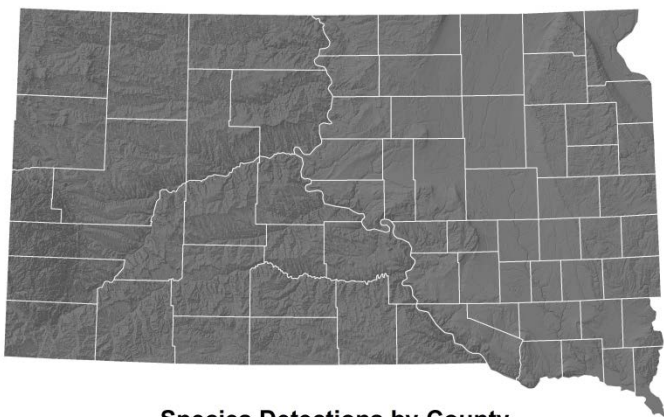
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	183	51	234
Probable	195	3	198
Possible	35	2	37
Observed	0	0	0
Total	413 (95%)	56	469

Killdeer



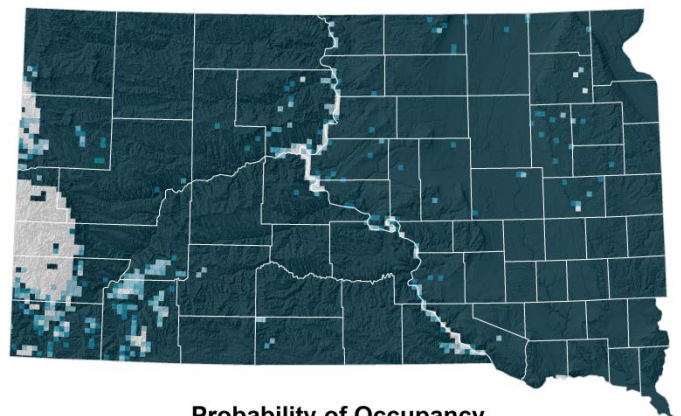
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy



SPOTTED SANDPIPER

Actitis macularius

Spotted Sandpipers are among a small minority of birds that have reversed sex roles. Females, larger than males, arrive first, establish and defend a territory, and court and mate with up to four males. Males assume most or all of the parental duties including incubation and brood-rearing. At the beginning of the season, females pair with just one male and may share parental duties. As additional males arrive on the breeding grounds, females compete over them.

DISTRIBUTION AND STATUS

The breeding range of this widespread shorebird encompasses the northern three-quarters of the contiguous U.S., Canada, and Alaska north to the Arctic Ocean. It is found throughout South Dakota. Fewer Spotted Sandpipers were recorded during the first Atlas compared to the second. During the first Atlas, when climatic conditions were dry, Sandpipers were found on 15% of random blocks in 46 counties. During the second Atlas, when climatic conditions were wet, they were found on 28% of blocks in 57 counties. Breeding Bird Survey data show a stable population in the state and across the breeding range (Sauer *et al.* 2014).

HABITAT

Spotted Sandpipers inhabit all types of waterbodies, only requiring bare shorelines or islands. Examples of breeding habitat include lake and pond shorelines, riverbanks, stream banks, city ponds, and sewage lagoons.

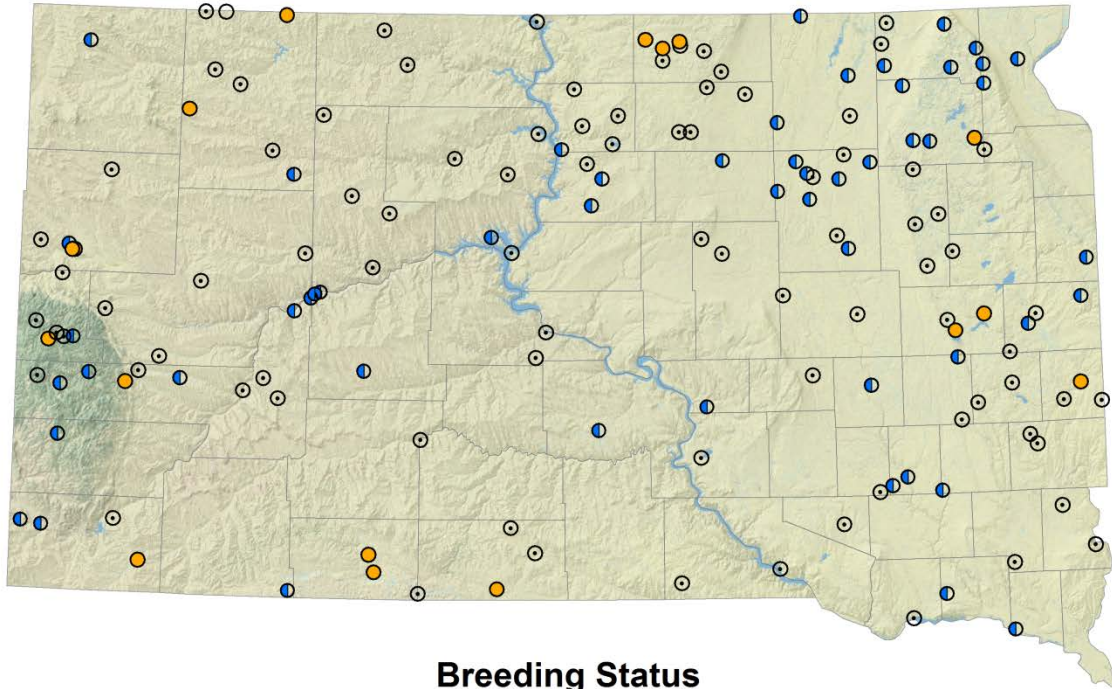
Second Atlas observers found this species on lakes and ponds (36% of records), marshes (27%), on islands and non-vegetated shorelines (21%), and along rivers and creeks (11%).

BREEDING BIOLOGY

The breeding season in South Dakota is during June and July. The nest, made of grass or small twigs, is on the ground near water, normally under or next to vegetation that provides some shade. The female lays 2 to 4 eggs. Each egg weighs approximately 20% of her body weight. Incubation averages 21 days. Depending on circumstances, incubation is by both parents or by the male alone. The precocial chicks are completely covered with down when they hatch. They can 'teeter' at 30 minutes, feed themselves at 2 hours, and walk at 4 hours. They usually leave the nest within a day. Chicks forage for themselves, choosing small, soft-bodied terrestrial arthropods. The parent, usually the male, protects the chicks and leads them to foraging areas (Reed *et al.* 2013).

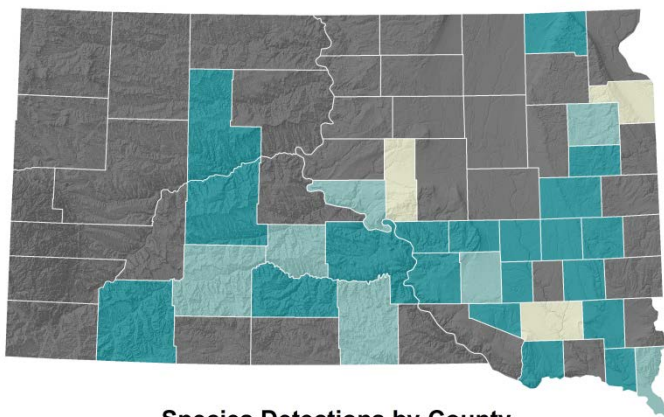
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	2	15	17
Probable	45	8	53
Possible	74	12	84
Observed	1	0	1
Total	122 (28%)	35	157

Spotted Sandpiper



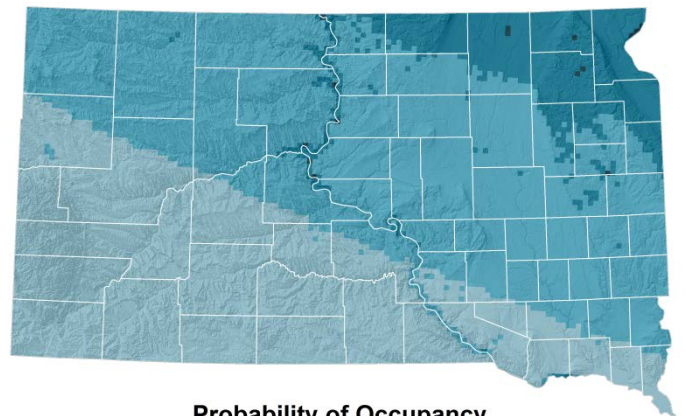
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

WILLET

Tringa semipalmata

The Willet is a large but unremarkable-looking shorebird until it opens its wings, revealing a striking broad white wing-stripe bordered in black.

DISTRIBUTION AND STATUS

The subspecies that breeds in South Dakota is the Western Willet, *Tringa semipalmata inornatus*. It breeds locally in the Great Basin and the northern Great Plains of the U.S. and Canada. South Dakota is on the southeastern edge of the breeding range. Most Willets in South Dakota breed in the potholes of the Missouri and Prairie coteaus or the Sandhills along the Nebraska border. Elsewhere this species is rare. It is a state Species of Greatest Conservation Need because South Dakota represents a significant portion of the Willet's breeding range and because of concerns over the loss of its wetland breeding habitat (SDGFP 2014).

HABITAT

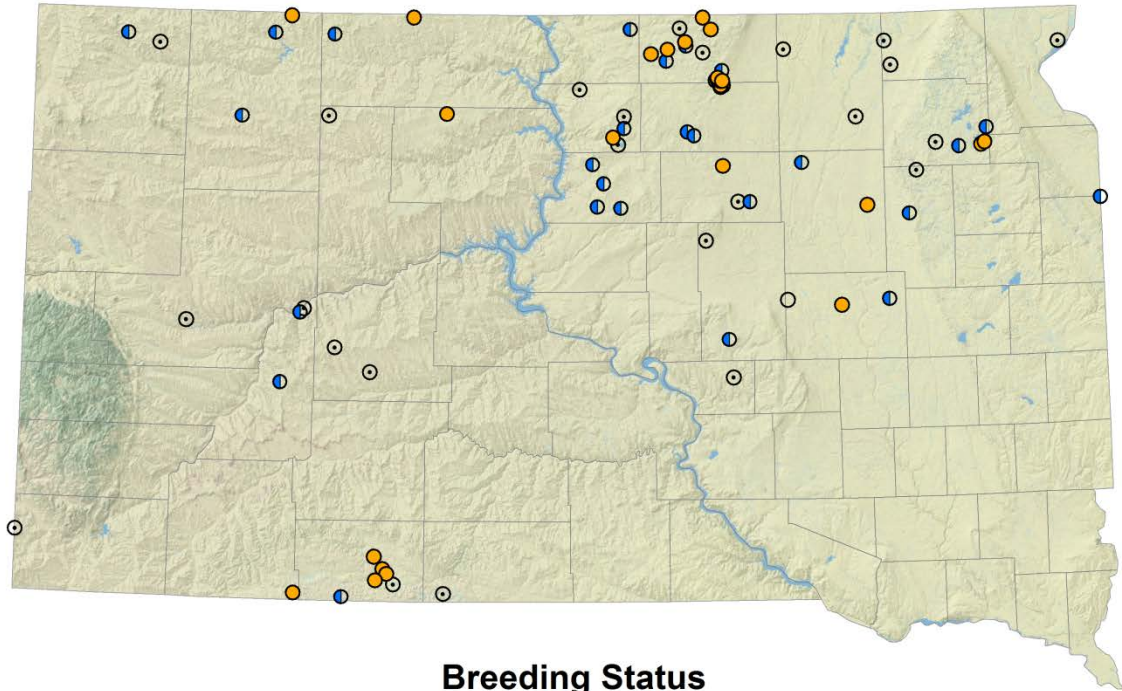
Willetts nest in grasslands near shallow wetlands. Pairs prefer more ephemeral wetlands with open water, and prefer to nest in pastures with short, native grasses (Ryan and Renkin 1987, Kantrud and Higgins 1992). Second Atlas observations of adult Willets were in marshes (51%), ponds and lakes (22%), along shorelines (10%), in pastures (7%), wet meadows (6%), and croplands (2%). Second Atlas broods were in marshes (12 broods) and along shorelines (5 broods).

BREEDING BIOLOGY

In South Dakota, Willets nest from mid-May through June and raise broods during June and July. The nest is on the ground in dense, short grass. It almost always is near a piece of wood, cow pie, rock, or other landmark. The male makes several scrapes and one is chosen by the female. She sits in the depression and pulls at nearby vegetation, bending it over to form a foundation. She then lines the structure with finer grasses and pebbles. Clutch size typically is 4 eggs. During the second Atlas, 8 nests contained 4 eggs and 1 nest contained 3. Both parents incubate the eggs during the 22 to 29 day incubation period. The downy chicks leave the nest 1 to 2 days after hatch. They are led by their parents to the nearest marsh. As wetlands flood or dry out, the family moves to the next suitable marsh, sometimes walking several miles over land. The chicks feed themselves, primarily eating flies. Adults lead the chicks to food, brood them during cold weather, and mob predators. The female abandons the brood after 2 weeks but the male continues to care for the chicks for another 2 weeks (Lowther *et al.* 2001, Gardner *et al.* 2008b).

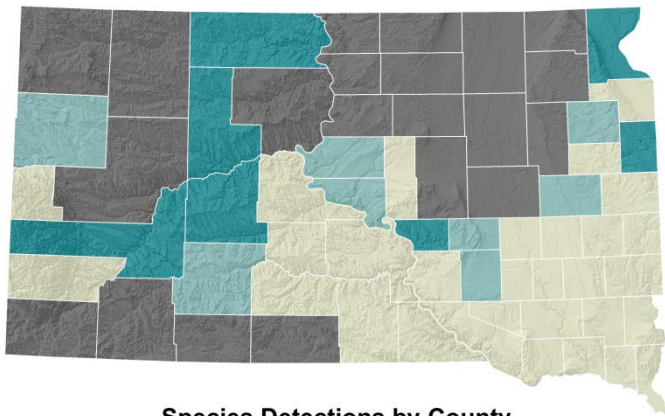
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	5	23	28
Probable	23	4	27
Possible	22	2	24
Observed	1	0	1
Total	51 (12%)	29	80

Willet



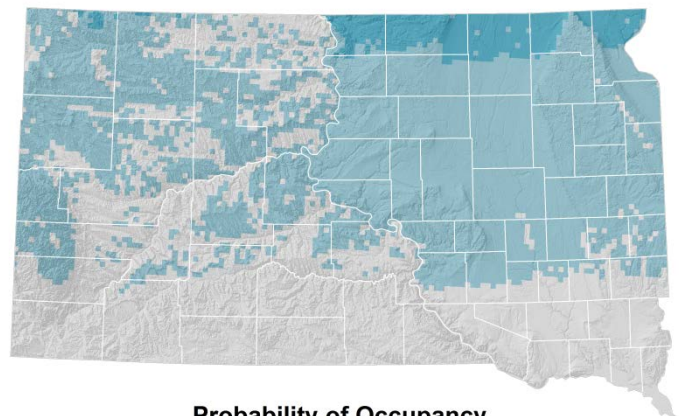
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

UPLAND SANDPIPER

Bartramia longicauda

Unlike most shorebirds, the Upland Sandpiper is associated with dry grasslands. As an obligate grassland species, it is an indicator of prairie quality. This species is truly a long-distance migrant, some flying as far as the southern tip of Argentina to spend the winter on the grasslands of South America.

DISTRIBUTION AND STATUS

The breeding range extends from southern Canada south to the central U.S. and from the Rocky Mountains to the Appalachian Mountains. Almost 70% of the breeding population is located in the Dakotas, Nebraska, and Kansas. The Upland Sandpiper was the most frequently reported shorebird during both the first and second Atlases. It breeds in all parts of South Dakota except the Black Hills and areas with large proportions of the landscape in row crops. The percentage of Atlas blocks where this species was observed increased from 77% of random blocks in the first Atlas to 86% in the second Atlas. Breeding Bird Survey data indicate that Upland Sandpiper populations in South Dakota increased 1.6% per year between 2002 and 2012 (Sauer *et al.* 2014).

HABITAT

Upland Sandpipers prefer large (250 acres or more) grasslands that offer a mix of vegetation heights. The species typically requires perches and low vegetation for visibility during courtship, higher vegetation to hide the nest, and

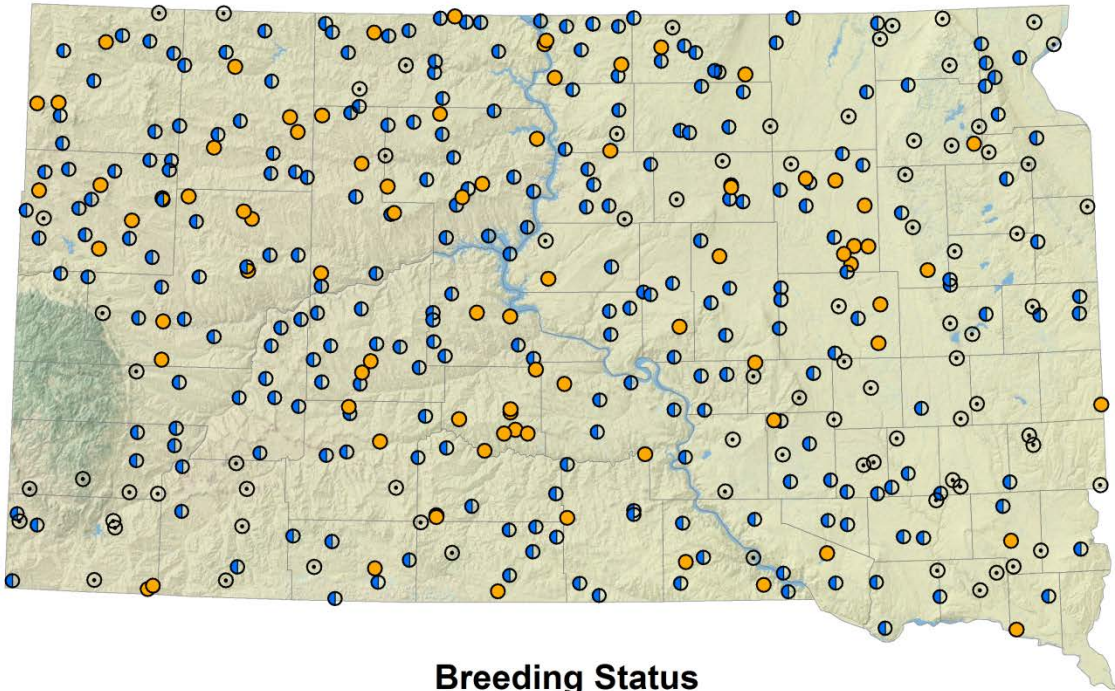
lower vegetation while raising the brood. Optimal habitat consists of grasses ranging from 12" to 24' tall (Dechant *et al.* 1999). During the second Atlas, 55% of the observations were in pastures, 11% in undisturbed or Conservation Reserve (CRP) fields, 11% in cropland, and 8% in hayfields. All four reported nests were in grass: one was in pasture, two in CRP, and one in a road ditch. Broods were reported in a wider variety of habitats: 51% in grasslands, 31% along roads, and 9% in cropland.

BREEDING BIOLOGY

The breeding season begins in mid-May and most chicks are independent by the end of July. The nest is on the ground and usually has a canopy of vegetation over it. Nests are either entirely unlined or well-lined with leaves and twigs. Four nests with eggs reported during the second Atlas had 3 (one nest) or 4 (three nests) eggs. The downy chicks hatch after 23 to 24 days and leave the nest almost immediately with the male, who leads them to feeding areas and protects them. The chicks feed themselves and begin to fly at around 30 days old (Houston *et al.* 2011).

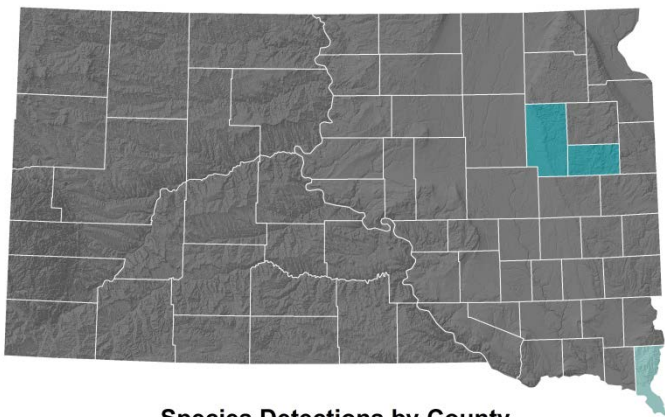
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	55	28	83
Probable	243	2	245
Possible	78	1	79
Observed	0	0	0
Total	376 (86%)	31	407

Upland Sandpiper



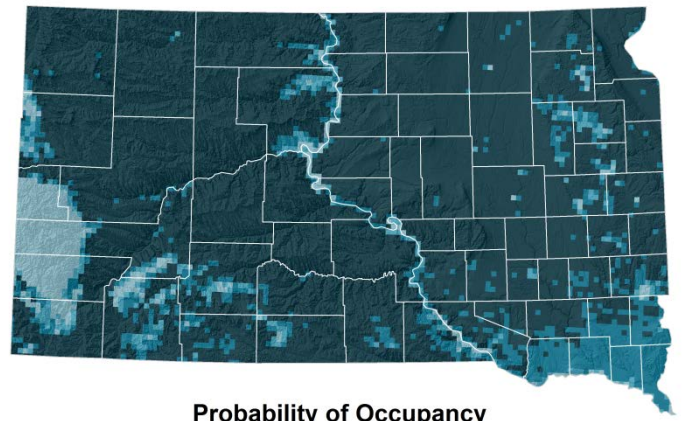
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

LONG-BILLED CURLEW

Numenius americanus

The Long-billed Curlew is the largest shorebird in North America, standing 20” to 24” tall. Curlews use their very long (4.5” to 8.5”) downward curving bills to reach into holes for spiders, crabs, and other underground prey.

DISTRIBUTION AND STATUS

The Long-billed Curlew breeds in the Great Plains, Great Basin, and intermountain valleys of the western U.S. and southwestern Canada. In South Dakota, curlews primarily occur west of the Missouri River, but historically also were commonly found east of the River (Fellows and Jones 2009). Curlews are an uncommon breeder, although locally common in some areas. First and second Atlas breeding distributions were similar. South Dakota’s curlew population is decreasing at a negative, but non-significant, rate (Sauer *et al.* 2014). Long-billed Curlew is a state Species of Greatest Conservation Need because of its decreasing population, low densities, and reliance on native grasslands.

HABITAT

Curlew breeding habitat in South Dakota is mixed-grass prairie, including cattle and horse pastures, and mowed wet meadows. The species is absent on non-native grasslands and sheep pastures. Most second Atlas reports were in grasslands (70% in pasture, 8% undisturbed grasslands, 6% hayfield). Curlews also were in prairie dog towns (7%), wet meadows (5%), and cropland (1%). Of 16 brood reports, 12 were in

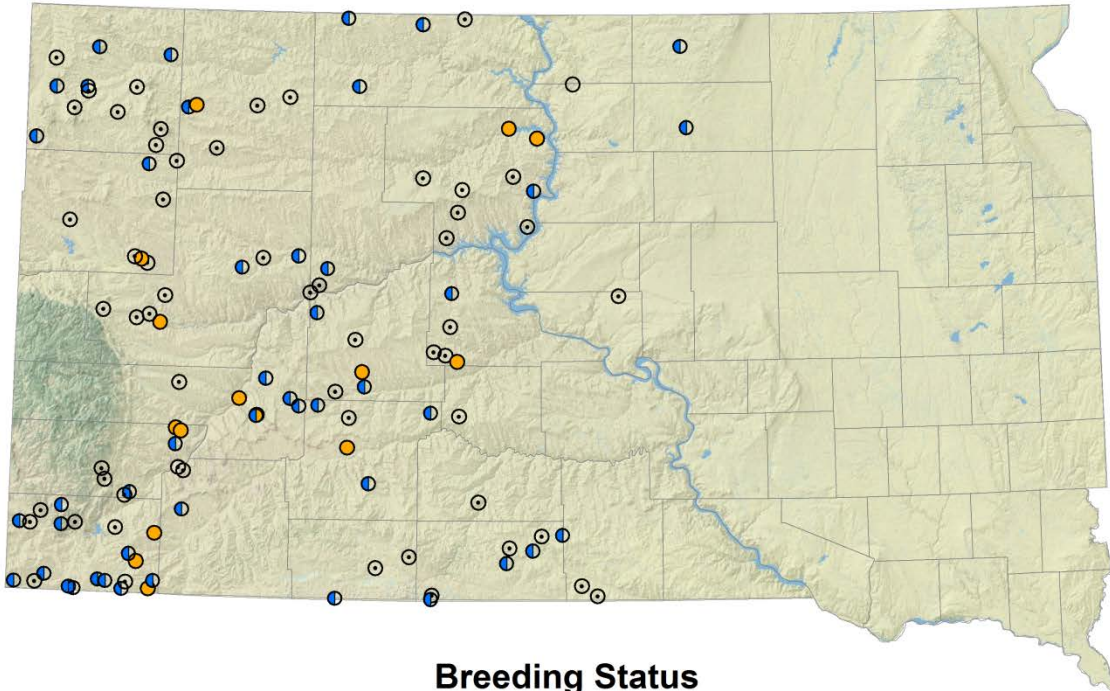
pastures, 2 in prairie dog towns, 1 in a hay field and 1 in undisturbed grassland.

BREEDING BIOLOGY

Long-billed Curlews arrive in South Dakota in late March and April and begin nesting in May. Mate fidelity from the previous year is quite high, but if need be, new pairs form after conspicuous aerial courtship displays. Curlews nest on the ground, often near a conspicuous rock, mound, or dung pile. The nest is a shallow scrape with a sparse lining of grass, small rocks, or small pieces of manure. Both parents incubate the clutch of 4 eggs for 27 to 30 days. Chicks are precocial and covered in down when they hatch. They leave the nest within a few hours and feed themselves. Both adults defend the chicks and lead them to feeding areas. After about 10 days, the family begins to move up to 1 mile in search of food. The female abandons the brood 2 to 3 weeks after hatching, leaving brood care to the male (Dugger and Dugger 2002, Clarke 2006).

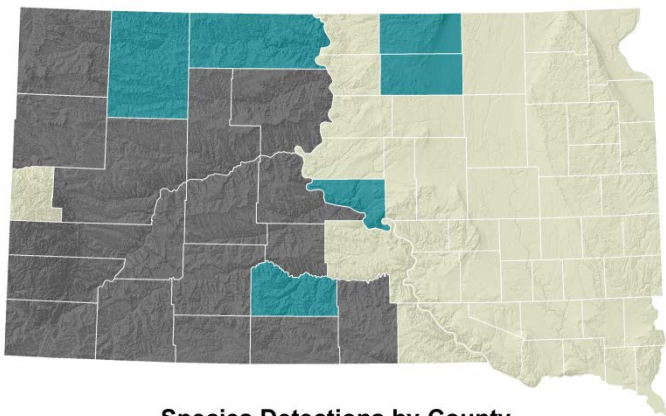
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	8	8	16
Probable	26	20	46
Possible	26	32	58
Observed	0	0	0
Total	60 (14%)	60	120

Long-billed Curlew



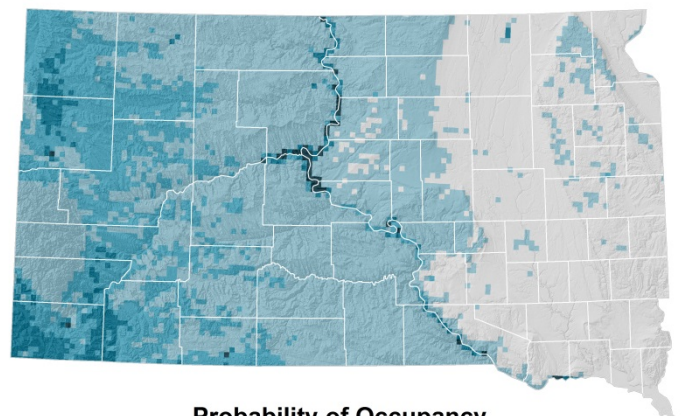
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

MARBLED GODWIT

Limosa fedoa

This large shorebird uses its long bill to probe the mud for insects, aquatic plant roots, leeches, and small fish.

DISTRIBUTION AND STATUS

The Marbled Godwit is a shorebird of the northern prairies including northeast Montana, the Dakotas, northwest Minnesota and the southern regions of the Canadian prairie provinces. In South Dakota it is an uncommon breeder, primarily in the northern and central part of the state. It is not found in regions of extensive cropland, such as the southeast or the James River valley, nor in areas with few wetlands, such as the Black Hills and adjacent Badlands region. During the first Atlas, godwits were recorded on 24% of random blocks while during the second Atlas, the species was recorded on 33% of blocks. Most of the increase occurred in the northwest, especially in Perkins (increase from 3 observations to 15), Corson (from 1 observation to 16), and Harding and Butte (from 0 to 7 observations) counties. Breeding Bird Survey data indicate a significant positive population trend (more than 3% per year) in South Dakota since 1967 (Sauer *et al.* 2013). Nonetheless, Marbled Godwit is a state Species of Greatest Conservation Need because of concerns about continuing habitat degradation and loss (SDGFP 2014).

HABITAT

Optimal breeding habitat for Marbled Godwits in South Dakota contains relatively large contiguous blocks (>250 acres) of short, sparsely to moderately

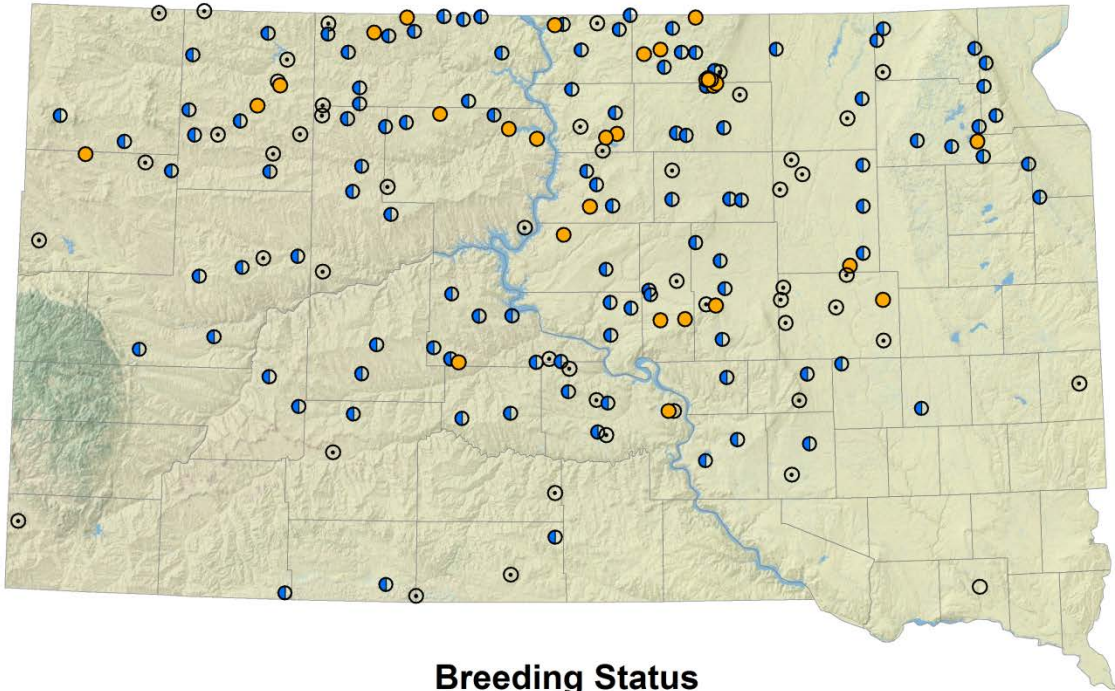
vegetated, pastures intermixed with wetland complexes (Gardner *et al.* 2008). They prefer temporary ponds with mud shorelines as well as native grassland (Weber *et al.* 1982, Kantrud and Higgins 1992). During the second Atlas, Marbled Godwits were found in grasslands (47%), marshes and wet meadows (20%), ponds (15%), cropland (4%), and shorelines (4%).

BREEDING BIOLOGY

In South Dakota, Marbled Godwits breed from May to July (second Atlas nest with eggs - May 5 to June 2, 9 nests; dependent brood dates – June 16 to July 16, 21 broods). Pairs defend multiple-use territories that include nesting, feeding, and brood rearing habitats. The male makes a scrape on the ground to which both birds add a bit of grass or lichens. Second Atlas nests contained 3 or 4 eggs (8 nests). At hatching, chicks are precocial (able to walk, peck at insects) and nidifugous (covered in down and eyes open). Chicks soon leave the nest with their parents. Parents do not feed the chicks but protect and guide chicks to food until chicks can fly at 30 days (Gratto-Trevor 2000).

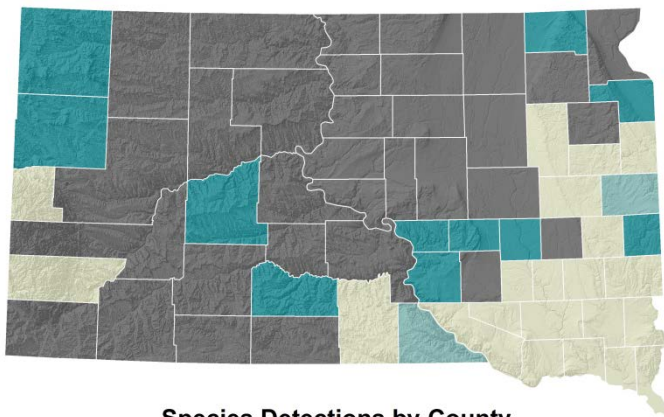
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	7	25	32
Probable	97	11	108
Possible	40	8	48
Observed	1	0	1
Total	145 (33%)	44	189

Marbled Godwit



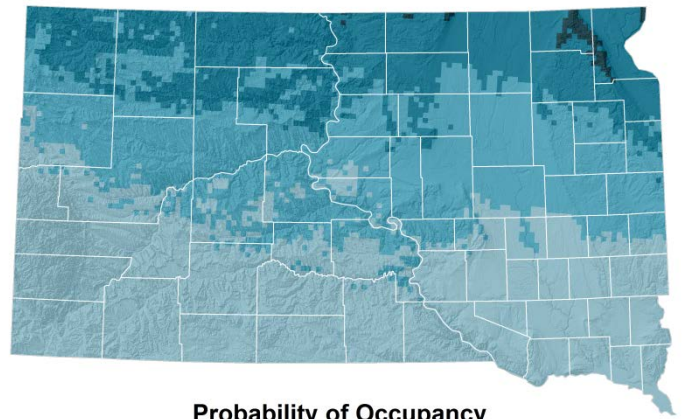
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

WILSON'S SNIPE

Gallinago delicata

Formally called the Common Snipe, the name “snipe” is derived from a variant of “snout,” referring to this shorebird’s long bill. The distinctive winnowing sound heard during the aerial breeding display is produced by air flowing over the male’s outspread outer tail feathers.

meadows (15%), and grasslands (45%). Snipe nest in wet locations, very close to or even surrounded by water. All nests and broods reported during the second Atlas were in wet meadows or marshes.

DISTRIBUTION AND STATUS

Wilson’s Snipe breeds throughout Canada and Alaska south into the northern quarter of the U.S. South Dakota is at the southern edge of the species’ breeding range. Wilson’s Snipe is relatively common in areas with adequate numbers of shallow wetlands, especially the prairie pothole region East River and the northern and southern edges of the state west of the Missouri River. A number of records exist from wet meadows of the Black Hills. Few snipe breed in the southeast, where there are few wetlands and extensive cropland. Distribution and abundance were different during the first Atlas, when snipe were recorded on only 4% of random blocks, with no records in the Black Hills, and few in the Missouri Coteau or northwest quadrant of the state. According to the Breeding Bird Survey, Wilson’s Snipe populations are increasing at a rate of 8.5% a year (1967 to 2012) in South Dakota.

BREEDING BIOLOGY

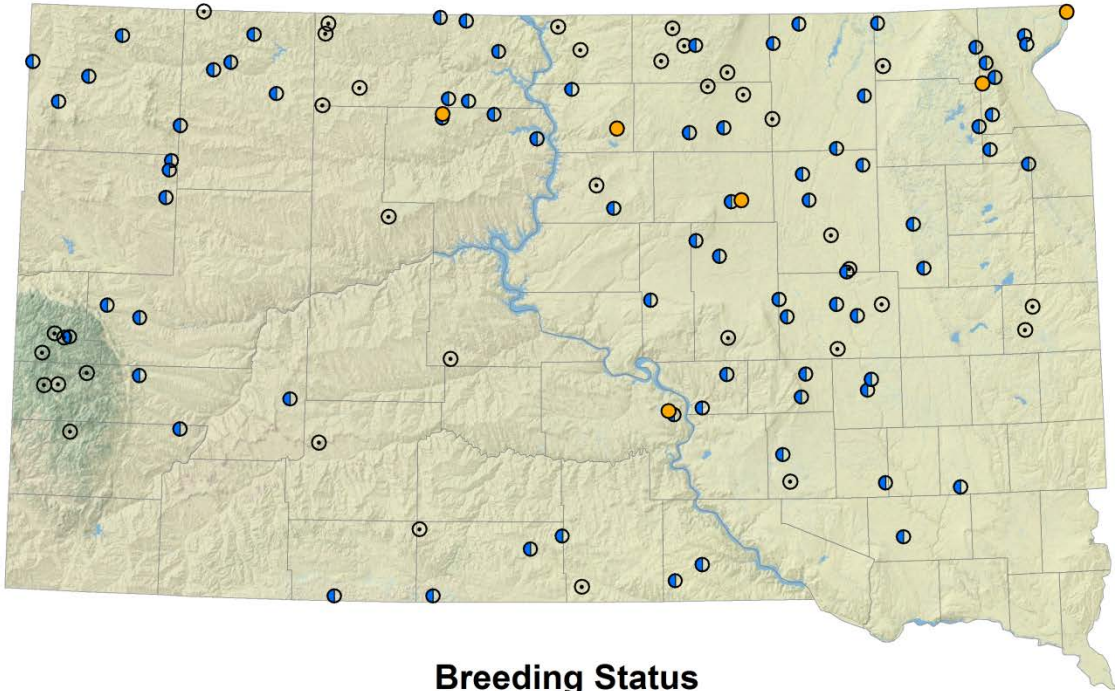
Nesting begins in mid-May. Wilson’s Snipe females make an unusually elaborate nest for a shorebird. Placed on the ground, the nest is made of woven grass, with coarser grass on the outside and a lining of finer grasses. The female incubates the 4 brown eggs for 10 to 20 days. At hatching, chicks are covered with down, and have a remarkably short bill, stubby wings, long legs, and huge feet. In about an hour, each parent takes two chicks and leads them to wet areas with soft, organic soil. Parents feed the young, bill to bill, smashing insect and aquatic prey before delivery. Young also peck at food on their own, gradually increasing their foraging rate. Parents continue to feed until chicks can fly at 19 to 20 days (Mueller 1999).

HABITAT

This shorebird inhabits wet meadows with short to medium-height vegetation. Second Atlas observers recorded Wilson’s Snipe in marshes (37%), wet

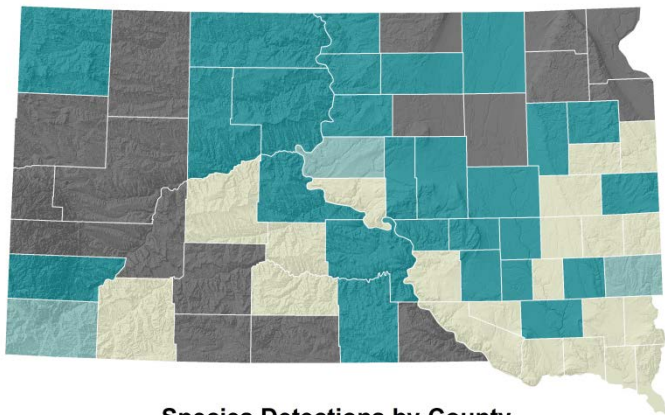
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	4	3	7
Probable	67	9	76
Possible	29	7	36
Observed	0	0	0
Total	100 (23%)	19	119

Wilson's Snipe



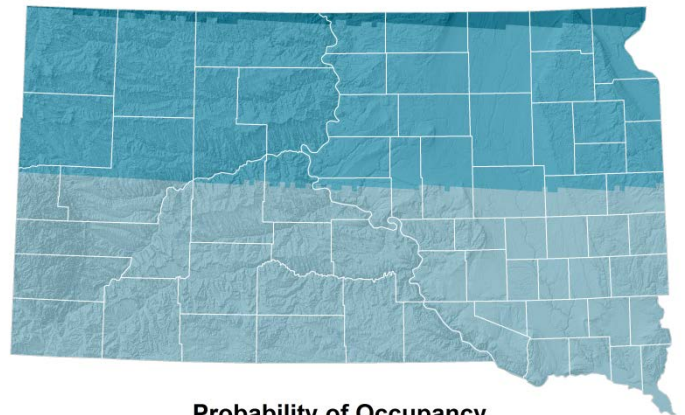
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- Second Atlas Only
- First Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

AMERICAN WOODCOCK

Scolopax minor

The American Woodcock is a forest-dwelling shorebird with a long bill uniquely specialized for feeding on earthworms. In early spring, males display on courtship grounds at dusk and dawn, alternating between ground 'peent' displays and spiraling aerial displays.

DISTRIBUTION AND STATUS

This species breeds in southeastern Canada and throughout the eastern U.S. west to the Great Plains. In South Dakota, American Woodcock is a rare and local breeding species in the extreme eastern part of the state and along the Missouri River north to the Pierre area.

HABITAT

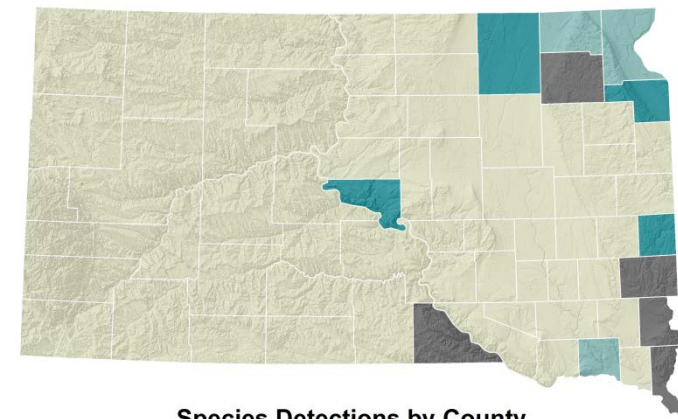
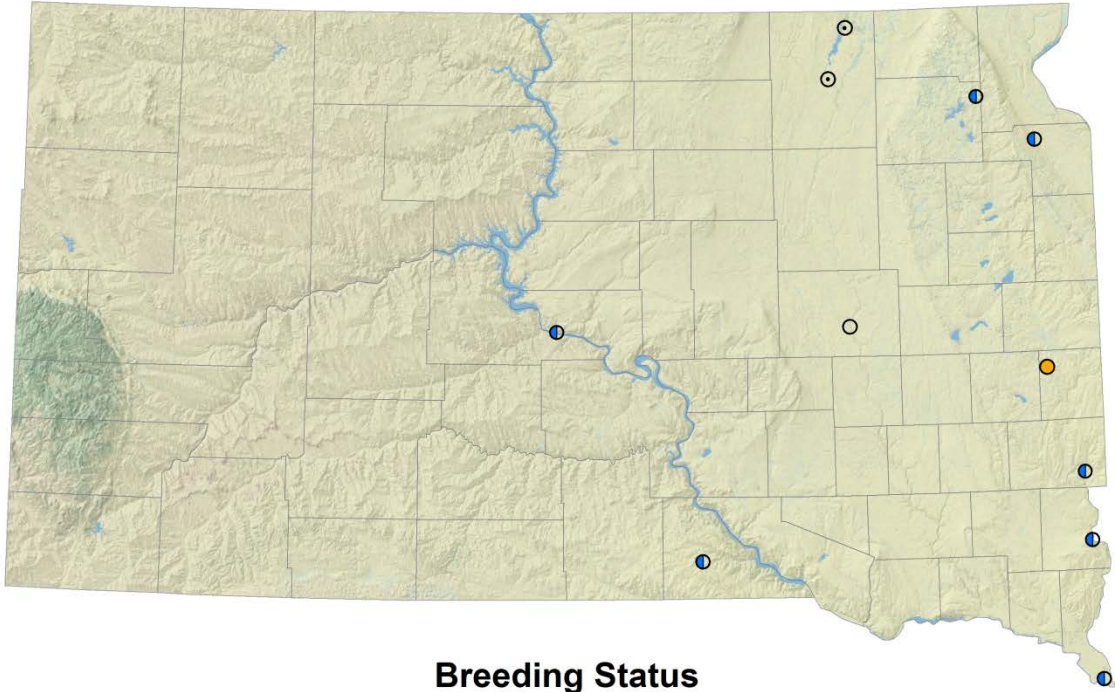
Woodcock breeding areas incorporate habitats needed for courtship, nesting, brood-rearing, and roosting (Kelley *et al.* 2008). Males display in open areas such as forest openings, roads, pastures, and old fields. The display ground usually is within 100 yds of roost sites (old fields or young forest), feeding sites (moist woodlands), and nesting areas (young second-growth hardwood stands). Brood habitats are dense woodlands or shrublands with an abundance of earthworms. In South Dakota, woodcock are most often found in mixed forest-agricultural habitats, including suburban areas. Most second Atlas observations were in woodlands (62.5%), with additional records from pasture, marsh, and urban areas.

BREEDING BIOLOGY

One of the earliest migrants to breed, American Woodcock in South Dakota nest from April through June. A second Atlas nest was found on May 29th. Males display on courtship grounds mid-March into May. Females visit courtship grounds to choose a mate, sometimes visiting four sites before mating. Males mate with multiple females but provide no parental care. After mating, females nest in nearby forest. Nests are a simple scrape on the ground in leaves and twigs. She lays an average of 4 eggs, which she incubates for 20 to 22 days. The precocial chicks leave the nest within a few hours of hatch. Females feed the chicks for about 1 week until chicks can probe for earthworms on their own. The female continues to lead and protect the chicks for 31 to 38 days. Broods break up in mid-summer and immature birds disperse 3 to 8 weeks later (McAuley *et al.* 2013).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	1	1
Probable	2	5	7
Possible	1	1	2
Observed	0	1	1
Total	3 (0.7%)	8	11

American Woodcock



WILSON'S PHALAROPE

Phalaropus tricolor

During the breeding season, female phalaropes are larger and more brightly colored than males. In a reverse of roles, the female competes for males while males provide all of the parental care.

DISTRIBUTION AND STATUS

The Wilson's Phalarope breeds in the northern Great Plains and inland areas of northwestern United States and southwestern Canada. Phalaropes are found on wetlands and stock ponds throughout South Dakota, except in the Black Hills and cropland regions of the southeast. As with many wetland-dwelling birds, phalarope numbers fluctuate with pond numbers, which fluctuate with wet-dry climate cycles. The first Atlas occurred during a dry period and phalaropes were detected on 24% of random blocks. The second Atlas occurred during a wetter period and phalaropes were observed on 39% of blocks. The overall distribution in the state did not differ between Atlases. Wilson's Phalarope is a state Species of Conservation Concern because of concerns about the loss of wetlands.

HABITAT

Breeding Wilson's Phalaropes in South Dakota inhabit shallow ponds and marshes, wet meadows, and wet ditches. They are found more often in seasonal wetlands than semipermanent wetlands (Naugle *et al.* 1999). During the second Atlas, most phalarope observations were in marshes (44%), ponds (33%), or wet meadows (18%), with small numbers along creeks (2%)

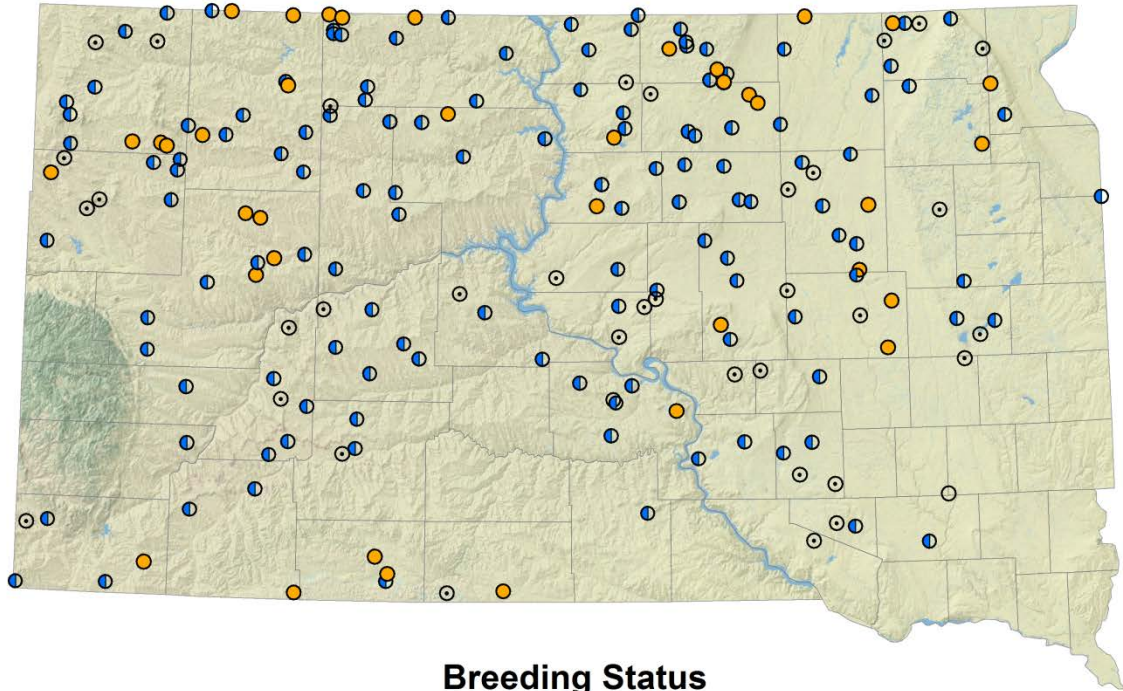
and roadsides (1%). One atlas nest was along the edge of a pond, while broods were in marshes (25 broods), ponds (6 broods), a roadside ditch (1 brood) and a creek (1 brood).

BREEDING BIOLOGY

In South Dakota, phalaropes nest from mid-May through June and raise broods from June through mid-July. Females compete for males and perform courtship displays. A female may mate with more than one male during the season. The nest is a scrape on the ground within tall dense vegetation. It usually is within 100 yds. of a wetland, or sometimes, in a marsh just inches above water. Both adults start making the scrape; the male finishes and adds vegetation. The female lays a clutch of 4 eggs but has no role in incubation and brood-rearing. The male incubates the eggs for about 23 days. Chicks are precocial when they hatch and leave the nest within a day. The male broods and protects the chicks but the chicks feed themselves (Colwell and Jehl 1994).

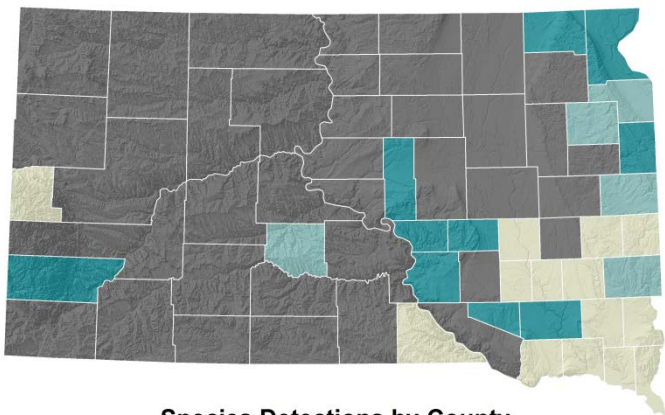
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	16	24	40
Probable	119	8	127
Possible	32	4	36
Observed	1	0	1
Total	168 (39%)	36	204

Wilson's Phalarope



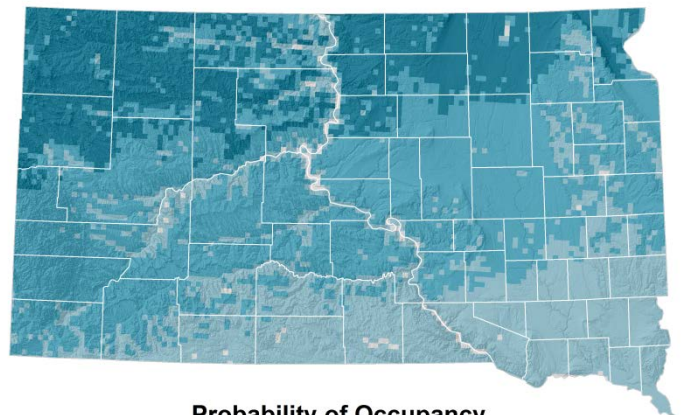
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

FRANKLIN'S GULL

Leucophaeus pipixcan

Early ornithologists dubbed the Franklin's Gull the rosy dove or prairie dove, because of its light, buoyant flight and pink blush on the breast feathers. The pinkish color comes from carotenoid pigments obtained from the gull's invertebrate diet. The color disappears within 2 to 4 weeks of arriving on the breeding grounds because prey in their summer diet lack these compounds.

DISTRIBUTION AND STATUS

Franklin's Gulls breed in the northern Great Plains, from Alberta to eastern South Dakota. This gull is a conspicuous but localized breeder in South Dakota. In any particular year, up to 4 colonies are active in the state, with the largest and most stable colonies located in the northeast (Peterson 1995, Drilling 2007, 2013b). Colony size can be extremely large; over 125,000 pairs nested at one South Dakota colony in 1994 (Schultze 1994). However, numbers vary dramatically, depending on water levels. In addition, locations of nesting colonies shift from year to year with changes in marsh conditions. Thus, tracking population trends is difficult.

HABITAT

Breeding habitat in South Dakota is extensive marshes with fairly deep water. Nesting Franklin's Gulls forage in nearby croplands, grasslands, and wetlands. Second Atlas observers noted Franklin's Gulls in marshes (40% of observations), ponds and lakes (36%),

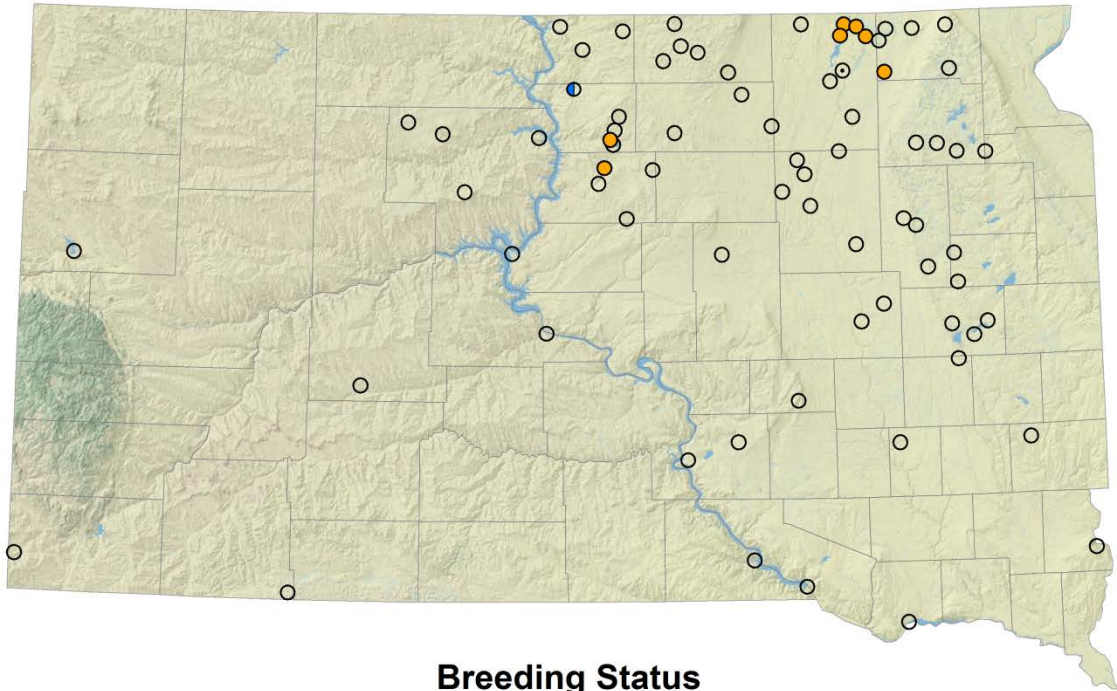
cropland (8%), grasslands (5%), and shorelines (5%).

BREEDING BIOLOGY

The breeding season in South Dakota is from May into early July. Franklin's Gulls nest in colonies, with almost all nests within a colony initiated at the same time. The nest site is in sparse stands of emergent vegetation where the water is several feet deep. The nest is a large floating mass of bulrushes, cattails, and other plant material, often anchored to standing vegetation. Both adults collect wet green vegetation, cutting it into short strands. As nesting proceeds, the nest slowly sinks and requires continual addition of new material. Adults try to steal nest material from neighbors rather than cut their own. Older chicks also add nest material from near the nest. Both adults incubate the clutch of 3 eggs for 23 to 26 days. Nestlings begin making short forays off the nest to drink, bathe, or pick up nest material at 20 days. Chicks leave the nest when 32 to 35 days old, but are fed by the parents for at least another week (Burger and Gochfeld 2009).

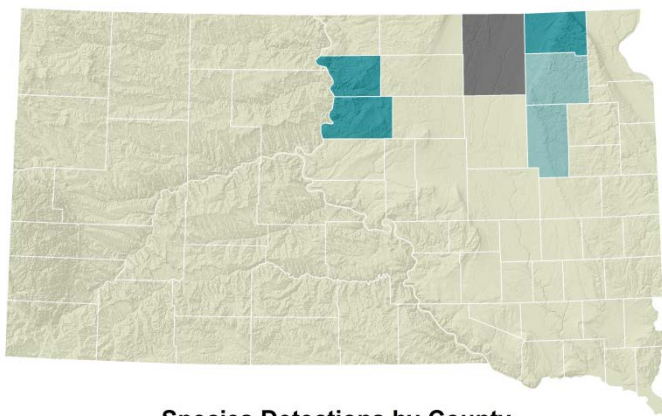
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	6	7
Probable	1	0	1
Possible	2	0	2
Observed	61	5	66
Total	65 (15%)	11	76

Franklin's Gull



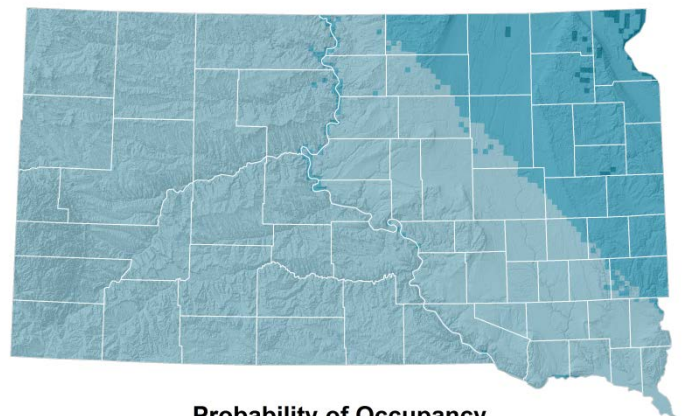
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

RING-BILLED GULL

Larus delawarensis

Ring-billed Gulls are the most common 'white-headed' gulls in South Dakota. They were nearly wiped out in North America between the 1840s and 1920s by hunting for their white feathers for the millinery trade, gathering eggs for food, and destruction of nesting habitat.

DISTRIBUTION AND STATUS

Ring-billed Gulls breed in the northern portion of the U.S. except New England, and across southern Canada. This gull is a very local colonial breeder in South Dakota. Colonies usually are located in the prairie pothole and northeastern lake regions. Up to 4500 pairs breed in the state in any particular year (Tallman *et al.* 2002, Drilling 2007, 2012). Individual colonies are transitory and overall numbers fluctuate because of frequent water level changes. Nesting islands can become inundated, too heavily vegetated, or connected to the mainland, forcing gulls to colonize new areas. Thus determining population trends can be difficult. Since the first Atlas, Ring-billed Gull colonies have been discovered on and near the Missouri River and at Belle Fourche Reservoir in Butte County (Drilling 2007). These may represent a range expansion in the 21st century.

HABITAT

These gulls nest in colonies on sparsely vegetated islands in lakes, reservoirs, and large rivers. Of the 11 colonies reported during the second Atlas, one was on the Missouri River, one on a

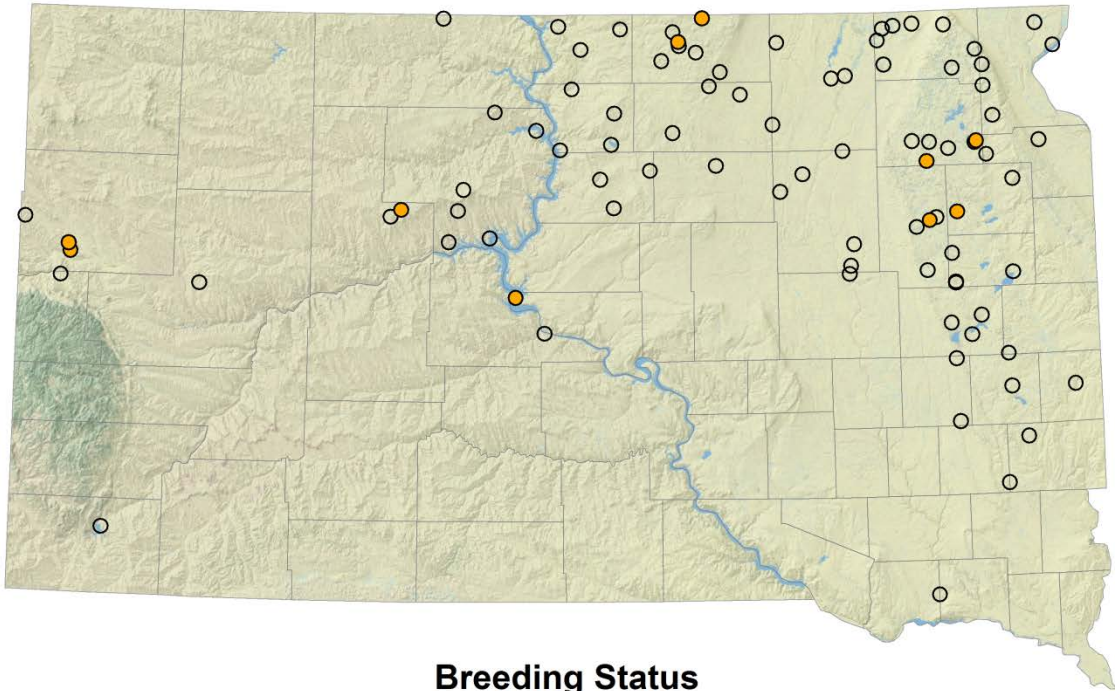
reservoir, and nine on natural potholes and lakes.

BREEDING BIOLOGY

In South Dakota, Ring-billed Gulls nest in mixed-species colonies, along with California and Herring gulls, and Caspian, Common, and Forster's terns. Second Atlas colony sizes ranged from 3 to 220 Ring-billed Gull nests. The breeding season is mid-May to late July (second Atlas nest dates: May 19 to July 15, 9 colonies). Pairs defend small territories, about 1 to 6 sq. yds. The nest, made of vegetation, moss, and lichens, is on the ground in low areas with sparse vegetation, next to or under low plants. Both parents incubate the 2 to 4 brown and lavender eggs. Chicks are semi-precocial and are down-covered. They stay in the nest until able to walk, and are fed by their parents. Chicks may leave the nest and, if the natural parents are poor providers, are adopted by foster parents. Chicks can fly at 35 to 38 days and leave the colony when they are about 45 days old (Pollet *et al.* 2012).

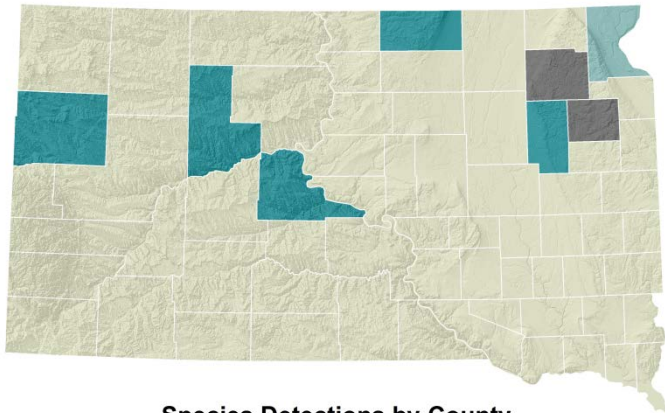
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	11	11
Probable	0	0	0
Possible	0	0	0
Observed	79	0	79
Total	79 (18%)	11	90

Ring-billed Gull



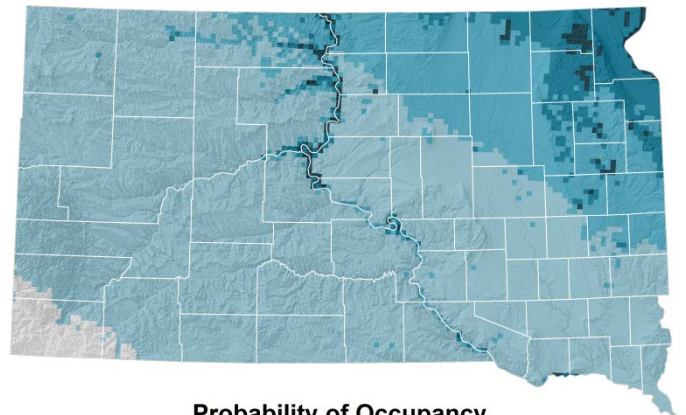
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

CALIFORNIA GULL

Larus californicus

In Salt Lake City, a large sculpture of a gull commemorates the occasion when California Gulls helped rid early settlers' crops of locust plagues.

DISTRIBUTION AND STATUS

The California Gull breeds throughout the interior portions of the western United States, northern Great Plains states, and Prairie Provinces of Canada. South Dakota is at the extreme southeastern edge of the species' breeding range. Nesting California Gulls are uncommon in the state, with only 1 to 3 colonies active per year. These birds forage up to 40 miles from the nesting colony, which accounts for many observations away from water. South Dakota's first confirmed nesting was at Waubay Lake, Day County in 1981 (Harris 1982). Throughout the 1980's, this gull nested in the northeastern counties of Roberts, Day, and Marshall (Skadsen 1987). During the first Atlas, just one colony was found, in Day County. In 2005, during a statewide Colonial Waterbird survey, the species was found nesting in two new areas: on islands in the Missouri River and at Belle Fourche Reservoir in Butte County (Drilling 2007, Olson 2007). Both of these colonies were well-established when discovered. The Belle Fourche colony is the largest, with up to 330 nests; other colonies usually have less than 50. The Meade County colony documented during the second Atlas was abandoned within a month of becoming established and the wetland has since dried out.

HABITAT

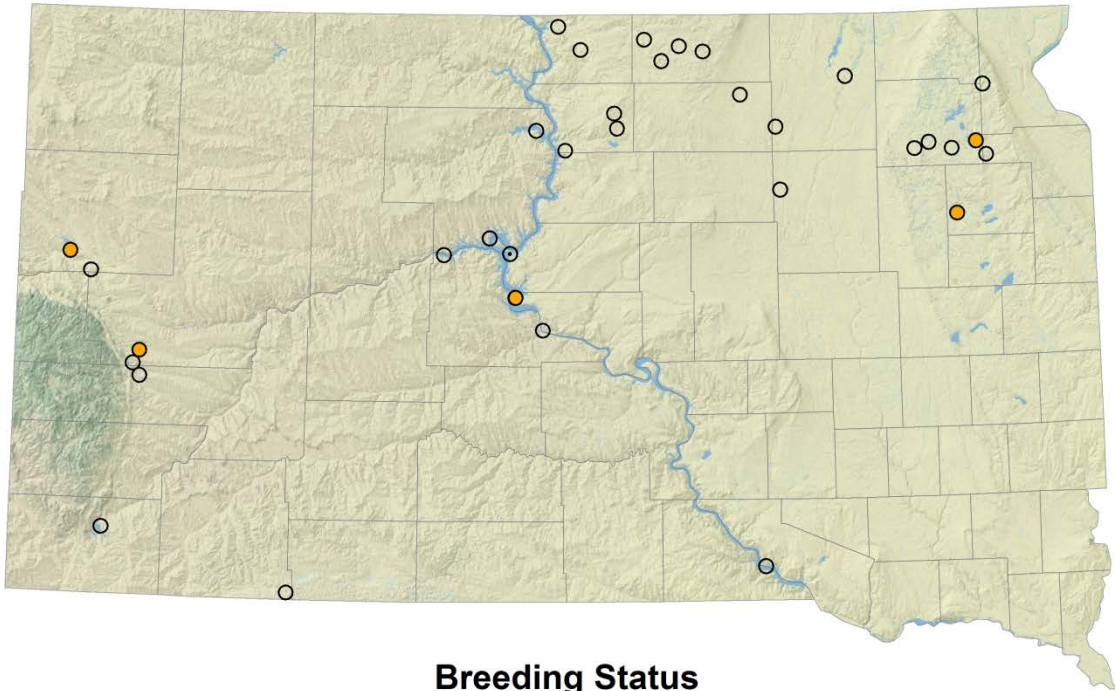
In South Dakota, California Gulls nest on sparsely-vegetated islands in larger lakes (2 colonies), reservoirs (1 colony), and the Missouri River (1 colony). They shift breeding sites if the nesting island becomes too vegetated or inundated by rising waters, or if the wetland dries out. When foraging away from the colony, they are seen in many types of open habitats including cropland, marshes, meadows, and parks.

BREEDING BIOLOGY

California Gulls nest in mixed-species colonies, along with Ring-billed Gulls, Common Terns, and Caspian Terns. They lay 2 to 3 eggs in a simple scrape on the ground that is lined with bones, feathers, and vegetation. Eggs hatch after 24 to 26 days. Chicks stay in the nest for about 3 days and then begin to walk around the colony. Both adults feed regurgitated food until the chicks are independent at 40 days (Winkler 1996).

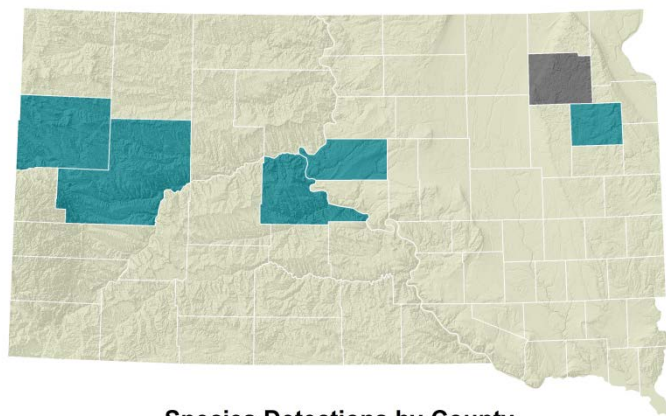
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	6	6
Probable	0	0	0
Possible	1	0	1
Observed	23	5	28
Total	24 (6%)	11	35

California Gull



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

HERRING GULL

Larus argentatus

Herring Gulls have a large repertoire of behaviors and calls to communicate with one another. They have at least 11 types of displays and at least 8 different types of calls. The same call may have different meanings, depending on the context and body posture of the bird.

DISTRIBUTION AND STATUS

The Herring Gull breeds across the Northern Hemisphere. In North America, this gull's breeding range extends from southern Alaska across Canada to Hudson Bay and south along the east coast to North Carolina. It also breeds around the Great Lakes, which is the next nearest breeding population to South Dakota. Always an uncommon migrant and winter resident, Herring Gulls have recently begun nesting in South Dakota. The first confirmed breeding record was in 2007, when 3 pairs nested on an island in Lake Oahe (Olson 2008). This same island was used in 2008, the first year of the second Atlas, but was subsequently inundated by floods and not used for nesting again. The second Atlas also documented breeding at Bitter Lake in Day County and Belle Fourche Reservoir in Butte County.

HABITAT

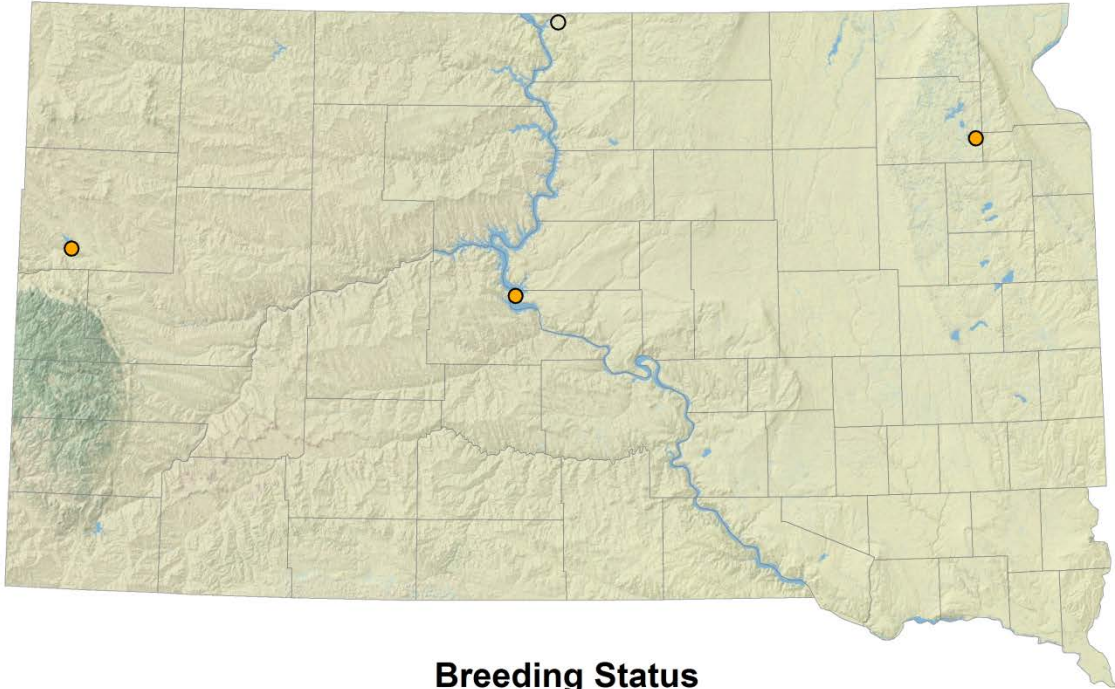
South Dakota's Herring Gulls nest on islands in lakes, reservoirs, and large rivers. Nest-site requirements include an area inaccessible to ground predators and sites sheltered from the prevailing wind.

BREEDING BIOLOGY

During the second Atlas, nests were reported between May 20 and June 22. Herring Gulls usually are 4 or 5 years old when they first breed. These gulls mate for life. In South Dakota, Herring Gulls nest in mixed-species colonies, with Ring-billed Gulls, Caspian Terns, and Common Terns. Pairs make several scrapes on the ground within their territory before choosing one for the nest. They line the scrape with vegetation, feathers, and debris. The female lays 3 buff-colored eggs at 2-day intervals. Both parents incubate the eggs for 30 to 32 days. At hatching, chicks are covered with thick gray down and their eyes are open. They may walk away from the nest within two days but remain in the immediate area. Both parents regurgitate aquatic invertebrates and fish for the chicks. Chicks often are adopted if they wander into a neighboring territory. They are capable of flight when 45 to 50 days old but still are fed on the territory for another 6 or 7 weeks. The family leaves the territory in early fall. Some young remain with their parents for several more months (Pierotti and Good 1994).

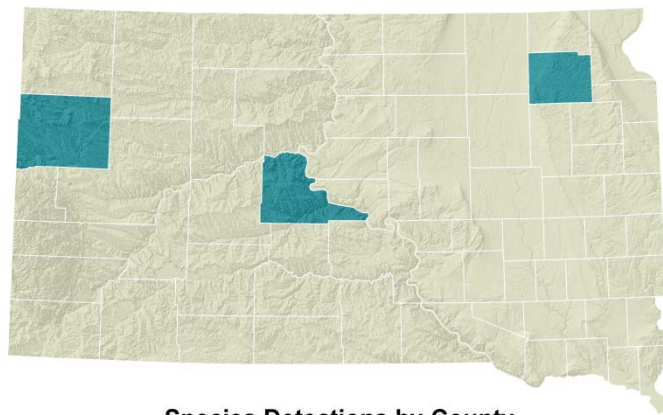
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	3	3
Probable	0	0	0
Possible	0	0	0
Observed	1	0	1
Total	1 (0.2%)	3	4

Herring Gull



Breeding Status

- Confirmed breeding
- ⦿ Possibly breeding
- ◐ Probably breeding
- Observed; not breeding at location



Species Detections by County

- ◌ First Atlas Only
- ◌ Second Atlas Only
- ◌ Both Atlases
- ◌ Neither Atlas

LEAST TERN

Sternula antillarum

The Least Tern is the smallest tern in North America. An excellent flyer, the male tern performs an elaborate and vocal aerial courtship display, after which he offers a fish to the female. If she accepts, they become a pair.

DISTRIBUTION AND STATUS

In North America, the Least Tern has three breeding populations: along the Atlantic and Gulf Coasts, along the California coast, and along major river systems in the Great Plains. The interior river population, which includes those nesting in South Dakota, is federally endangered. Historically in South Dakota, Least Terns nested on the Missouri and Cheyenne Rivers. Since 1986, when annual surveys began, the number of terns along the Missouri River in South Dakota has fluctuated between 158 and 521 birds (Aron 2006). Populations along the Cheyenne River have decreased. There were 13 colonies and 27 birds along the Cheyenne in 1986 and 1987, and seven colonies during the first Atlas (Schwalbach 1988, Peterson 1995). By 2012, just one colony remained in the upper reaches of the Cheyenne River, with 1 to 3 nests. Unnatural water-flow schedules, high predation rates, and human recreation along the rivers continue to affect breeding Least Terns. Thus, it is a state Species of Special Conservation Need (SDGFP 2014).

HABITAT

In South Dakota, Least Terns nest and raise their broods on sparsely-vegetated sandbars along the Missouri River and

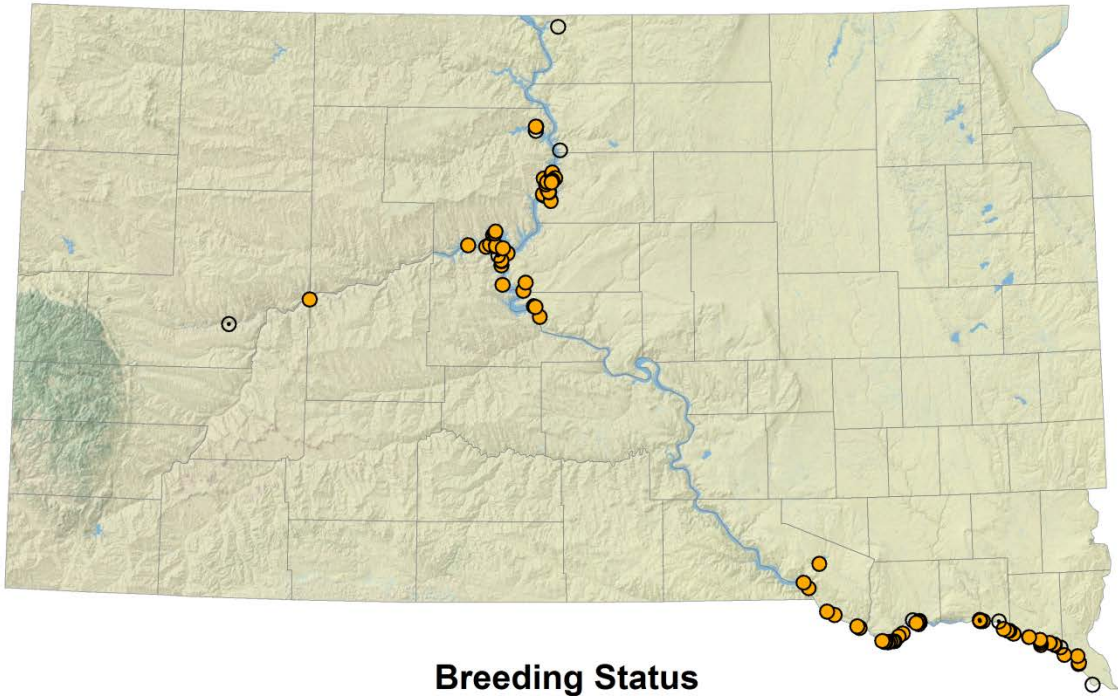
on gravel bars along the Cheyenne River. The ideal nest site is above high water level and safe from ground predators.

BREEDING BIOLOGY

Least Terns arrive in South Dakota in mid-May and begin to pair up within a week. Most nests are started between the last week of May and mid-July (Dirks 1990). Renests and brood-rearing may last until late August. The nest is a shallow scrape on the ground, sometimes lined with pebbles, grass, or debris. The pair make several scrapes; the female selects the one that will become the nest. The female lays 1 to 3 eggs. Incubation is by both sexes and lasts 10 to 25 days. In very hot weather, the adult may soak its belly feathers in water to cool themselves and the eggs. The downy chicks leave the nest when 2 days old but remain nearby. Both parents feed small fish to the chicks, bringing one fish per feeding trip. First flight is at 20 days. Parents continue to feed the young terns for several weeks and the family may remain together for another 1 to 2 months (Thompson *et al.* 1997).

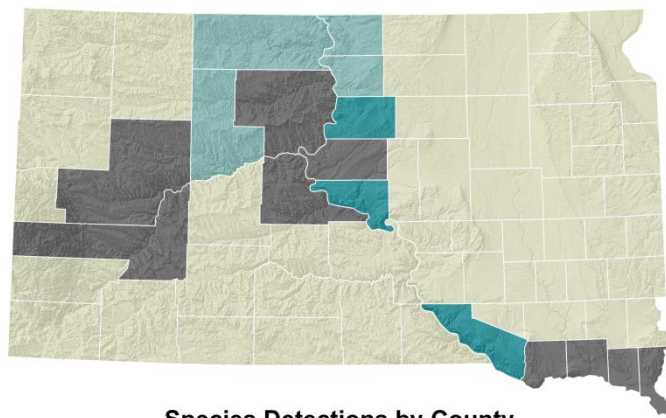
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	3	93	96
Probable	0	1	1
Possible	2	9	11
Observed	3	0	3
Total	8 (2%)	103	111

Least Tern



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

CASPIAN TERN

Hydroprogne caspia

The Caspian Tern is known for its extremely long period of parental care, with chicks dependent on their parents for up to 8 months. Even in late winter, chicks from the previous nesting season still may beg for food from their parents.

DISTRIBUTION AND STATUS

A cosmopolitan species, the Caspian Tern nests on five continents. In North America, it breeds along the Pacific, Atlantic, and Gulf Coasts, and at scattered localities inland in the west, Great Plains, Prairie Provinces of Canada, and along the Great Lakes. In South Dakota, this tern is a rare breeder on large lakes, reservoirs, and the Missouri River (Lake Oahe). During the 1990s, Caspian Terns were regularly seen during the summer, including a mating pair in Fall River County during the first Atlas. The first breeding record for the state was in 1996 on an island in Lake Oahe (Harris and Betts 1998). Since then, nesting continues on Lake Oahe islands when water levels are appropriate (e.g., Olson 2007), including during the second Atlas. Nesting on Bitter Lake in Day County was first noted in 2000 (Tallman *et al.* 2002). This colony was still active during the second Atlas. The first West River breeding record occurred during the second Atlas at Belle Fourche Reservoir, Butte County. Sizes of South Dakota colonies range from 1 to 22 pairs (Drilling 2007, 2013b).

HABITAT

Caspian Terns in South Dakota nest on islands in rivers, lakes, and reservoirs.

Fish-eaters, they forage in nearby waters.

BREEDING BIOLOGY

At South Dakota colonies, Caspian Terns nest from late May through July. They typically nest on a ridge or high spot on a sparsely-vegetated island. In South Dakota, Caspian Terns usually share the island with other ground-nesting gull and tern species. The nest, built by both adults, is a depression on the ground and usually has a rim made of pebbles or debris. Both adults incubate the clutch of 1 to 3 eggs. Newly-hatched chicks are covered with down and can leave the nest as soon as they are dry. If not disturbed, they may stay in the nest until they are ready to fly. Both parents feed fish to the chicks, adjusting the size of the fish to the age of the chick. Chicks begin to fly at 30 to 35 days and shortly begin to accompany their parents on fishing trips. A long period is needed to perfect fishing skills—chicks may fish independently at 60 days but rarely are successful (Cuthbert and Wires 1999).

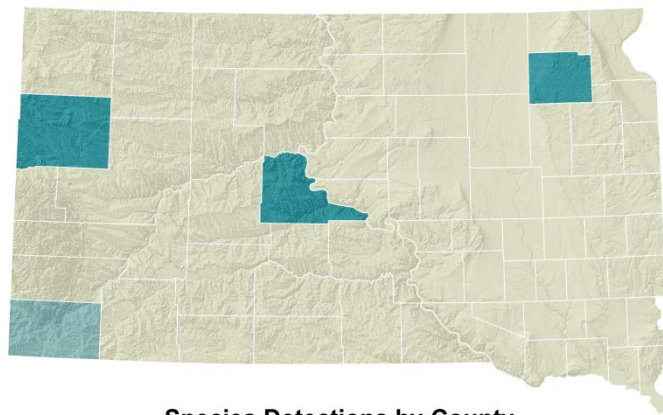
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	3	3
Probable	0	0	0
Possible	0	0	0
Observed	3	1	4
Total	3 (0.7%)	4	7

Caspian Tern



Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

BLACK TERN

Chlidonias niger

In the summer, the Black Tern is an inhabitant of inland freshwater marshes while in the winter, it becomes a seabird along Central American tropical coasts.

DISTRIBUTION AND STATUS

The Black Tern breeds locally from the north-central United States north through central Canada. The core of its abundance is in the Prairie Provinces of Canada, the Dakotas, and Minnesota. In South Dakota, breeding Black Terns are most abundant in prairie pothole regions of the northeast and east-central portions of the state. South Dakota's Black Tern population is decreasing significantly, at a rate of almost 6% a year (Sauer *et al.* 2014). The loss and degradation of wetlands, both on the breeding grounds and along migration routes, are the greatest threats to Black Tern populations (Naugle 2004). For this reason, Black Tern is a Species of Greatest Conservation Need in South Dakota.

HABITAT

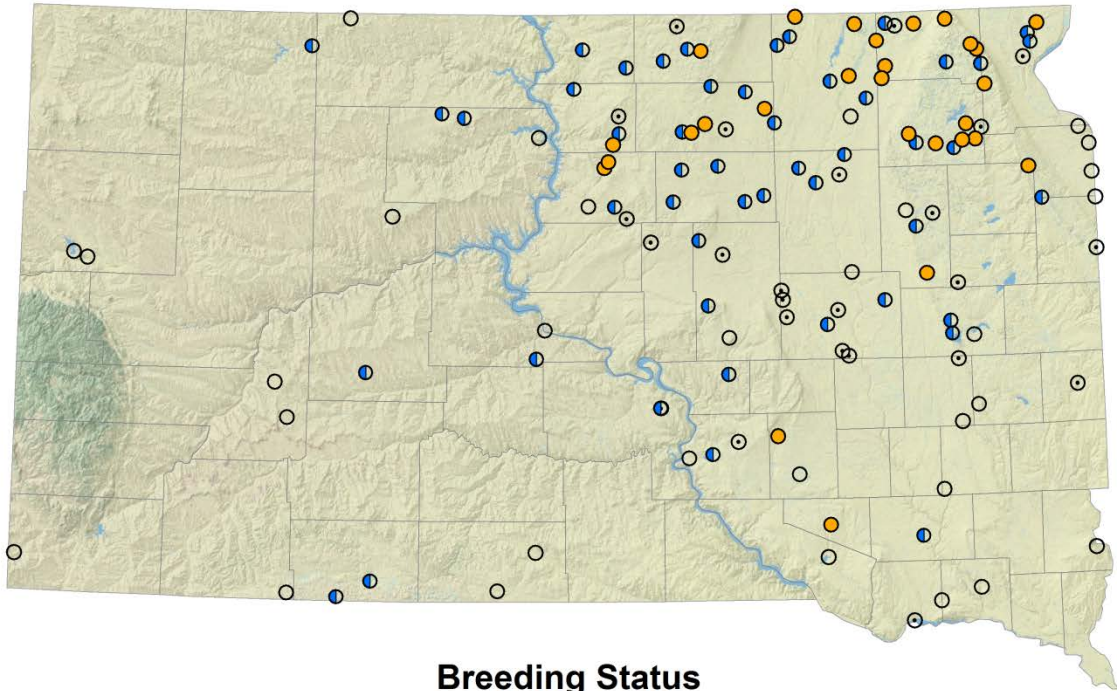
Black Terns in South Dakota nest in large marshes with regenerating or degenerating vegetation. Because they forage up to 2.5 mi away from the nest, Black Tern nesting marshes are located within a landscape of high wetland density, especially semipermanent wetlands, and low amounts of cropland (Naugle *et al.* 1999, Naugle *et al.* 2000).

BREEDING BIOLOGY

Black Terns in South Dakota nest between mid-May and mid-July. In favorable habitat, terns may nest in loose colonies of up to 35 pairs (Drilling 2007). Nests are built on a floating mat of plant material or root masses, muskrat houses, or a board. Often the surrounding marsh vegetation is very short at nest-building but grows quickly to cover the nest. Both adults build the flimsy nest by tossing nearby dead vegetation towards the nest site and arranging it into a small pile with a shallow cup. The nest, very close to the water's surface, is easily destroyed by wind or changing water levels. Eggs in the 2 to 4 egg clutch have more pores than usual, an adaptation to lying in a wet nest. The incubation period is 21 to 23 days. Chicks develop rapidly; after 2 to 3 days they wander from the nest but remain nearby. Both adults feed insects and fish to the chicks. Small chicks are fed directly but larger chicks are fed by dropping food items from the air. Chicks are able to fly at 19 to 25 days but are fed by the parents for another 10 to 14 days. (Heath *et al.* 2009).

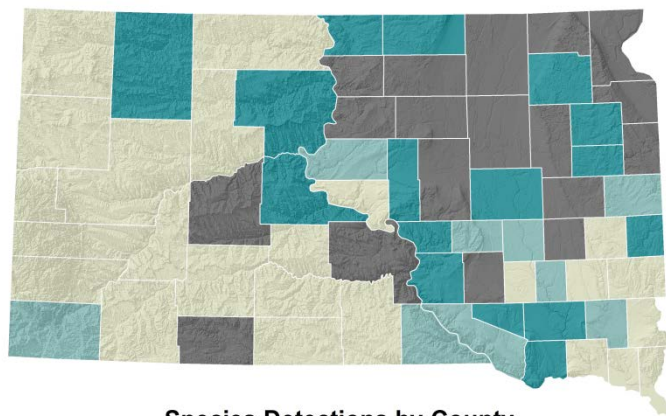
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	16	12	28
Probable	37	13	50
Possible	23	2	25
Observed	17	14	31
Total	93 (21%)	41	134

Black Tern



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

COMMON TERN

Sterna hirundo

This graceful tern catches prey by “aerial plunge-diving.” The tern hovers over water until suitable prey is located, and then swoops down, either leveling out to pick prey from the surface, or folding its wings to dive into the water.

DISTRIBUTION AND STATUS

In the Old World, Common Terns breed throughout temperate Eurasia and into the Middle East. In North America, they breed in Canada east of the Rockies, south to northern South Dakota and the Great Lakes, and down the Atlantic coast to South Carolina. In South Dakota, Common Terns are very local breeders. They are most common in the northeast counties of Roberts, Day and Clark (e.g., Peterson 1960b, SDOU 1991). The statewide breeding population is around 40 to 90 pairs (Drilling 2007). During the first Atlas, breeding was confirmed at one colony, in Roberts County, but observers also found probable breeding pairs at Belle Fourche Reservoir in Butte County. Colonial waterbird surveys during 2005 to 2007 confirmed Common Tern breeding at Belle Fourche Reservoir and on islands in the Missouri River (Drilling 2007, Olson 2007). Most of these colonies persisted into the second Atlas survey period, although the Missouri River colonies most likely were flooded out by high waters in 2011.

HABITAT

During the second Atlas, observers recorded Common Terns at lakes and ponds (44%), shorelines and islands (31%), and marshes (13%). Nesting

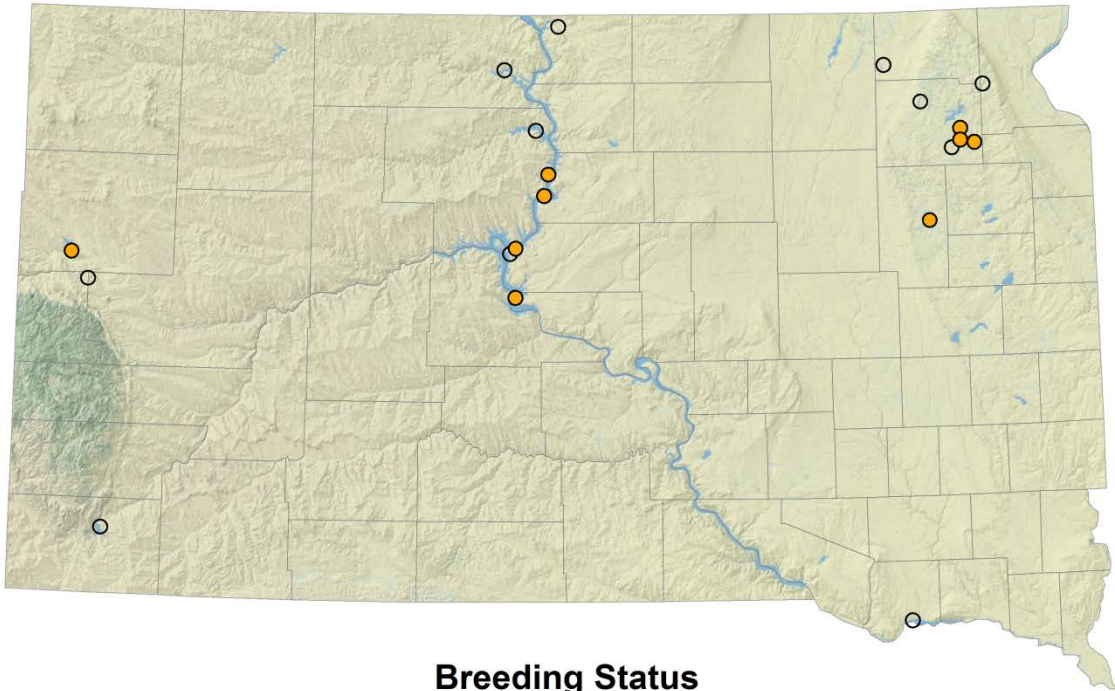
habitat is islands, or more rarely peninsulas, with little vegetation (10 to 40% vegetation cover) on reservoirs, lakes, or rivers. The breeding territories usually are in open areas with loose substrate (sand, gravel, or shells) and scattered vegetation in which chicks can hide. Common Tern nests often are grouped together because of their preference for nesting at the edges of vegetation patches. When foraging, they can range up to six miles from the colony.

BREEDING BIOLOGY

The breeding season in South Dakota is from mid-May into July. This species nests in mixed-species colonies with gulls and other terns. The number of Common Tern nests per colony during the second Atlas was 5 to 33 nests. The ground nest is made of stones, shells, vegetation, or human refuse. Both adults take turns incubating the 1 to 4 eggs for about 21 to 25 days. Hatchlings are semi-precocial (downy, eyes open). After two to three days, chicks start to wander about but still are fed by the adults until independence at 22 to 29 days (Nisbet 2002).

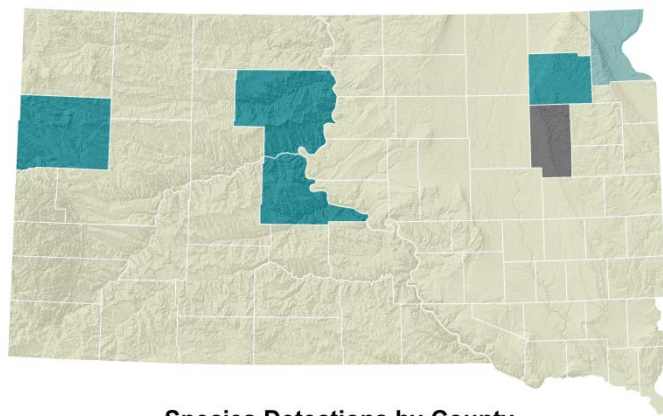
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	9	9
Probable	0	0	0
Possible	0	0	0
Observed	9	2	11
Total	9 (2%)	11	20

Common Tern



Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- ◐ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

FORSTER'S TERN

Sterna forsteri

While foraging for small fish, Forster's Terns fly about 3' to 10' over the water with their bills pointing downward and feet folded against their body. When they spot a small fish near the surface, they either plunge directly into the water, or hover briefly before diving.

DISTRIBUTION AND STATUS

Forster's Tern primarily breeds in the interior of North America, especially in the Canadian Prairie provinces, northern Plains states, and the Great Basin. Northeast South Dakota is at the southern end of the central prairie population. This tern's South Dakota distribution reflects the distribution of marshes and wetland complexes in the state. The species is most common in the Prairie Pothole, Prairie Coteau, and Missouri Coteau regions, with scattered observations in the southeastern and western portions of the state. Colonial waterbird surveys conducted in the mid-2000s and 2012 found from three to nine colonies in the state (Drilling 2007, 2013b).

HABITAT

In South Dakota, Forster's Tern inhabits marshes or the marshy borders of lakes, islands, and creeks. Most second Atlas observations were in marshes (51%) or ponds and lakes (46%), with a few birds recorded along rivers and creeks (3%). For nesting, this tern tends to nest in the deeper portions of the marsh, or in wetlands with a mixture of open water,

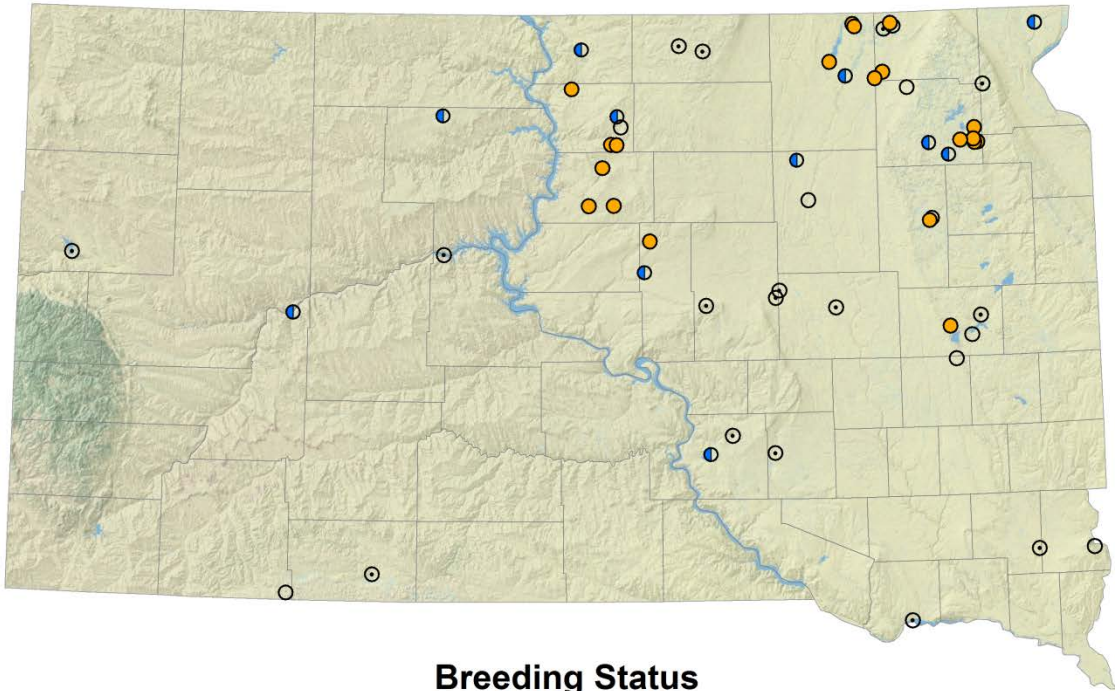
large stands of cattails, and mats of floating vegetation.

BREEDING BIOLOGY

The breeding season in South Dakota extends from late May to late July. In South Dakota, Forster's Terns nest singly or in colonies of up to 75 pairs (Drilling 2007). Nests are built within marsh vegetation, on muskrat lodges, heaps of washed-up vegetation, or floating vegetation mats. The nest may be a floating nest made of marsh plants, or a sparsely lined scrape in the mud or sand. The female lays a clutch of 3 eggs and both adults incubate the eggs for 24 to 25 days. At hatching, nestlings' eyes are open, they are covered with down, and they are able to walk. They stay in the nest for up to 7 days. Both adults feed the young terns; the size of the fish increases as the terns grow larger. Young terns can fly when about 4 to 5 weeks old but usually are fed by the parents for an additional unknown period of time (McNicholl *et al.* 2001).

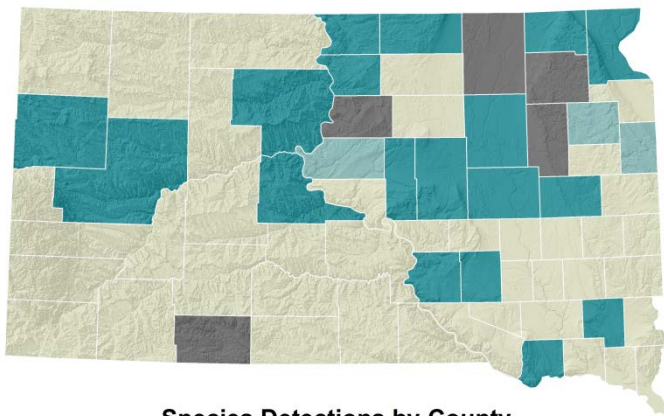
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	6	14	20
Probable	7	4	11
Possible	14	4	18
Observed	5	2	7
Total	32 (7%)	24	56

Forster's Tern



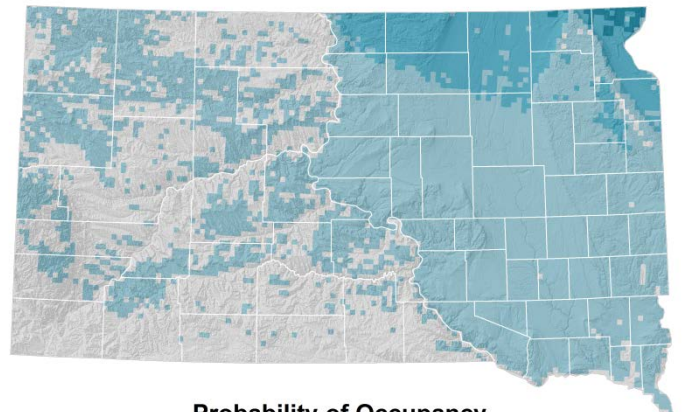
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

ROCK PIGEON

Columba livia

The Rock Pigeon, a native of Eurasia, was first introduced to North America around 1606 by colonists who brought domestic pigeons to Atlantic coast settlements.

DISTRIBUTION AND STATUS

Rock Pigeons are locally common throughout the world. This pigeon is a relatively common year-round resident in South Dakota. Rock Pigeon was detected on 46% of random blocks during the first Atlas, compared to 57% of survey blocks during the second Atlas. The increases occurred in the northwest quarter of the state, where just seven observations were made during the first Atlas, and the northern Missouri Coteau region of Potter, Walworth, Campbell, McPherson, Faulk, and Edmunds counties, where just three observations were made during the first Atlas.

HABITAT

Primarily residing in cities, towns and farms with livestock, Rock Pigeons increasingly are using highway infrastructures, such as overpasses and bridges. In western South Dakota, pigeons also live on cliffs and badlands. Second Atlas observations were in residential areas (57%), cropland (12%), grasslands (11%), and near roads and bridges (7%). Observers reported nests in residential settings (6 nests, 2 of which were in barns), near roads (4 nests: 1 under a bridge, 1 under an

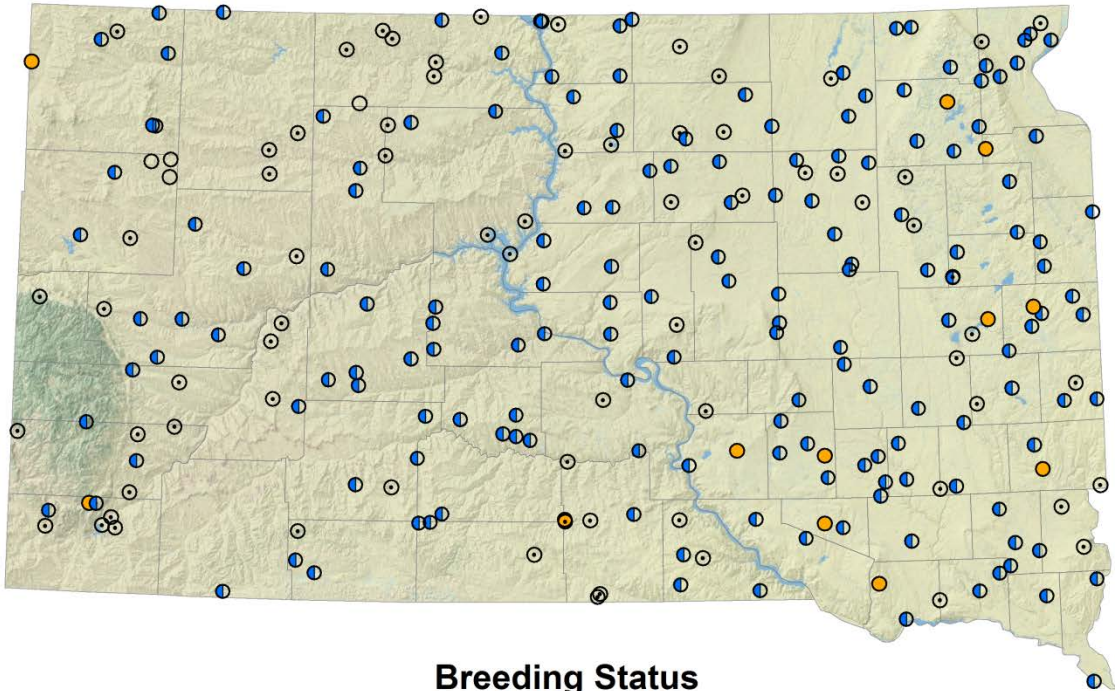
interstate underpass), and in a cliff (1 nest).

BREEDING BIOLOGY

Pigeons may raise up to five broods per year. Nest dates in South Dakota range from March 10 to November 7, but pigeons probably also nest during the winter. During the summer, a pair will begin laying eggs for the next nest while still feeding chicks in the previous nest. Pigeons mate for life. They nest on any flat surface that provides shelter. The nest, built by the female with materials supplied by the male, is a platform of twigs and grass. The pair may repeatedly use the same site, each time building on top of the previous nest. The female lays a clutch of 2 white eggs, which both parents incubate for 16 to 19 days. For the first 4 days after hatching, the squabs are fed crop milk, a secretion from the lining of the crop that is high in fat and protein. Gradually, seeds are mixed with the milk until day 9, after which parents feed only seeds. Squabs leave the nest after 25 to 32 days in the summer and up to 45 days in the winter (Lowther and Johnston 2014).

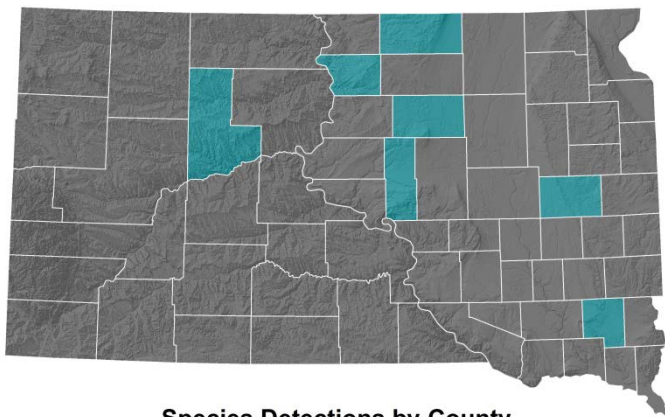
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	7	5	12
Probable	162	3	165
Possible	73	1	74
Observed	4	0	4
Total	246 (57%)	9	255

Rock Pigeon



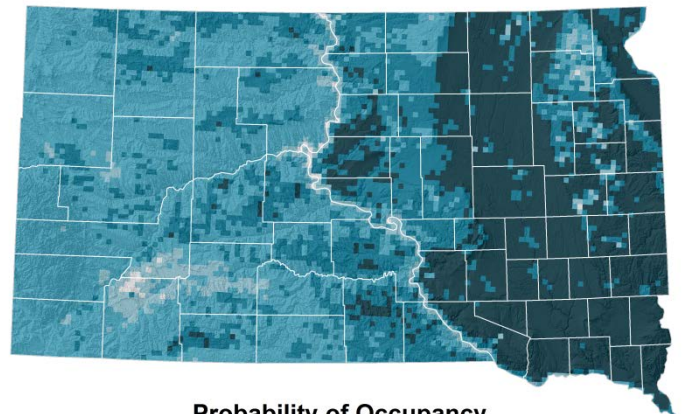
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

EURASIAN COLLARED-DOVE

Streptopelia decaocto

The Eurasian Collared-Dove, a native of India, is one of the champion colonizers of the bird world. During the 20th century, it colonized most of Europe and Asia. In 1974, it escaped from a breeder in the Bahamas during a burglary and soon spread to Florida. It colonizes new areas in a jump dispersal pattern, in which individuals, usually immature birds, disperse a great distance into new regions to establish a new population, and additional birds later ‘backfill’ the intervening areas.

DISTRIBUTION AND STATUS

This dove is found throughout the lower 48 states of the U.S., except in the northeast, and southwest Canada north to southeast Alaska. The first dove report in South Dakota was in Edmunds County in 1996 and the first nest confirmation in the state was at the same location in 2003 (Zimmer 1997, 2004). By the end of the second Atlas in 2008, Eurasian Collared-Doves had been reported from 64 of South Dakota’s 66 counties and were confirmed breeding in 15 counties.

HABITAT

Eurasian Collared-Doves are closely associated with humans. They inhabit agricultural, rural, and urban areas that have a combination of trees and open habitats. During the second Atlas, Collared-Doves were reported in residential areas (68% of observations), deciduous windbreaks (20%), mixed conifer-deciduous shelterbelts (6%), grasslands (3%), and cropland (3%). These doves primarily nest in trees near

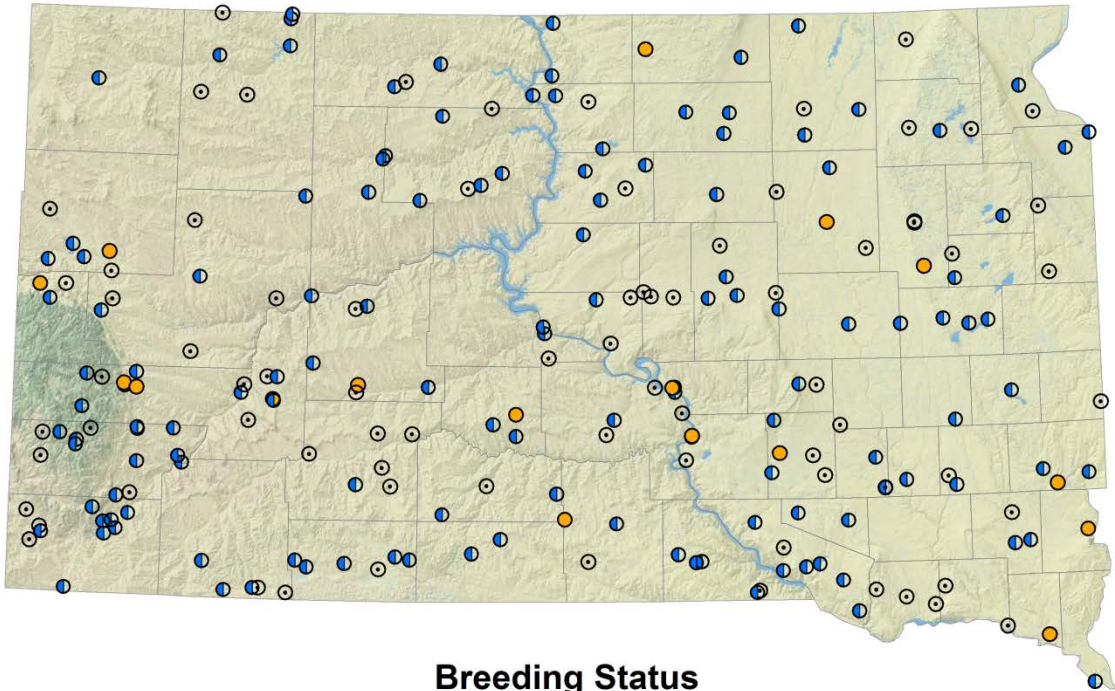
human habitation; second Atlas nests were in residential areas (8 nests) and deciduous woodlots and shelterbelts (8 nests).

BREEDING BIOLOGY

In South Dakota, Eurasian Collared-Doves raise multiple broods per year. The breeding season is late February through August. The male leads the female to potential nest sites, and she then chooses a specific spot. Second Atlas observers reported nests in junipers (2 nests), blue spruce (2 nests), an elm (1 nest), and a willow (1 nest). The male gathers sticks and twigs, which the female uses to build a flimsy, messy platform. Pairs often reuse old nests. The female lays 2 white eggs; the first egg is significantly larger than the second. Both adults incubate the clutch for 14 to 18 days. Both parents feed crop milk to the nestlings, a substance rich in fats and proteins produced from their crop. Young Collared-Doves leave the nest at about 15 to 20 days and are fed by their parents for another 7 days. Usually, the female lays another clutch of eggs while still caring for the fledglings (Romagosa 2012).

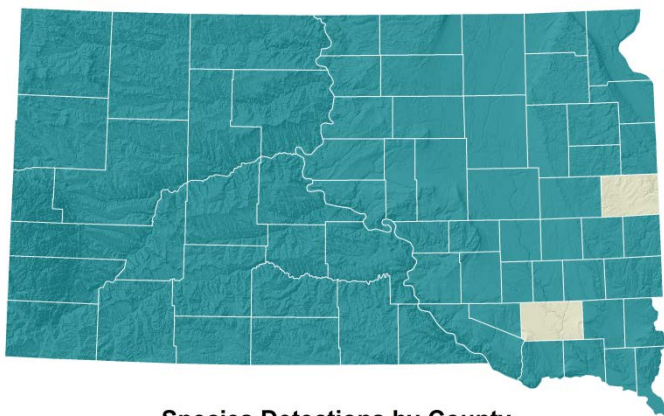
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	6	12	18
Probable	47	85	132
Possible	24	53	77
Observed	0	0	0
Total	77 (18%)	150	227

Eurasian Collared-Dove



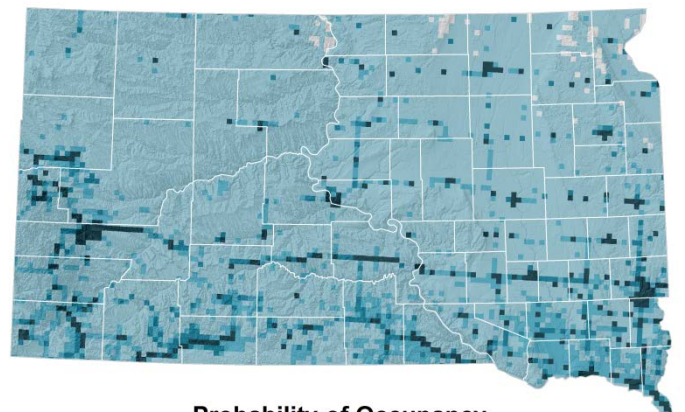
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

MOURNING DOVE

Zenaida macroura

One the most abundant and widespread land birds in North America, the number of Mourning Doves in the U.S. is an estimated 274 million birds (Seamans 2015). This dove is a short-lived species, with an average adult life span of about one year.

DISTRIBUTION AND STATUS

The Mourning Dove breeds in southern Canada, the U.S., Mexico and the Caribbean. South Dakota is in one of several regions with high densities (Otis *et al.* 2008). Mourning Doves were one of the most numerous and widespread breeding birds during both Atlases, which documented doves on 98% of blocks and in all 66 counties. The Mourning Dove population in South Dakota is stable, according to Breeding Bird Survey data (Sauer *et al.* 2014).

HABITAT

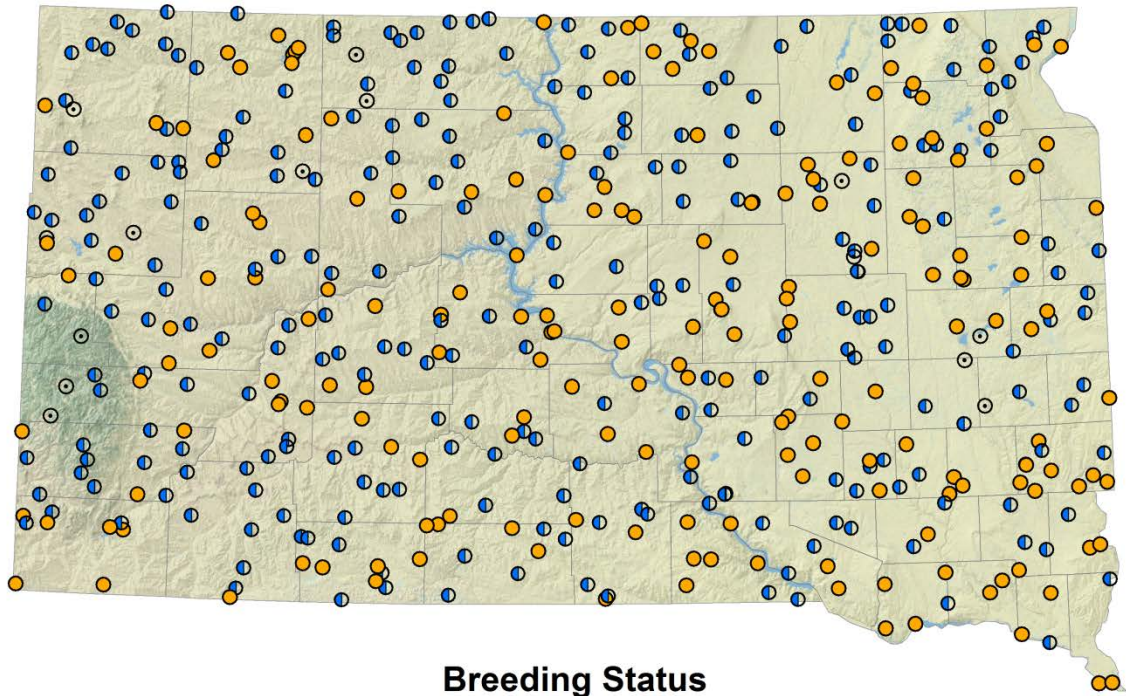
Breeding Mourning Doves prefer open habitats, both rural and urban. They were reported in every habitat type during the second Atlas, most frequently in shelterbelts and woodlots (38% of reports), grasslands (22%), riverine corridors and wooded draws (16%), residential areas (13%), and cropland (6%). Second Atlas nests (242) were in deciduous woods and shelterbelts (57%), mixed conifer-deciduous woods (14%), residential areas (12%), grasslands (7%), shrublands (5%), conifer woods (5%), and in a marsh (1 nest).

BREEDING BIOLOGY

The breeding strategy of Mourning Doves is to raise multiple small broods over a protracted breeding season. In South Dakota, they nest between early April and late September, with up to a quarter of the season's chicks fledging after September 1 (Adolphson and Adolphson 1966, Drewien and Sparrowe 1966). During the second Atlas, most nests (76) were in trees and shrubs (juniper, willow, elm, ash, box elder, mulberry, plum, cottonwood, lilac, Russian olive, pine, oak, maple, locust), 9 nests were on the ground, and 1 nest on a window ledge of an abandoned church. Nests above ground averaged 10' high (range 2' to 35'). The nest is a flimsy platform of twigs. The male brings twigs to the female, passing them to her while standing on her back. Although they do not have brood patches, both parents incubate the 2-egg clutch for 14 days. The squabs, fed 'pigeon milk' by both parents, fledge after 15 days. They are fed by the male for another 12 days while the female begins a new clutch (Otis *et al.* 2008).

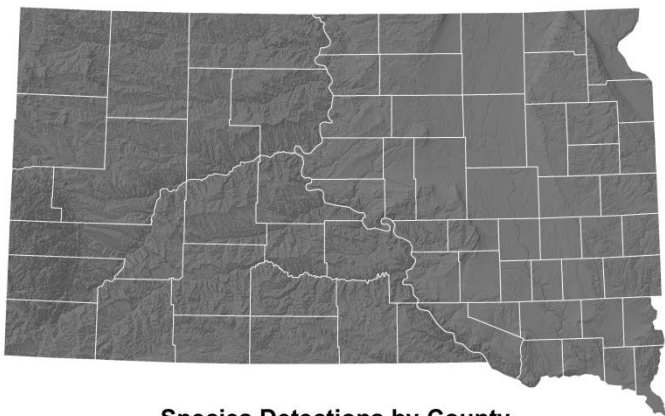
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	161	36	197
Probable	250	9	259
Possible	13	1	14
Observed	0	0	0
Total	424 (98%)	46	470

Mourning Dove



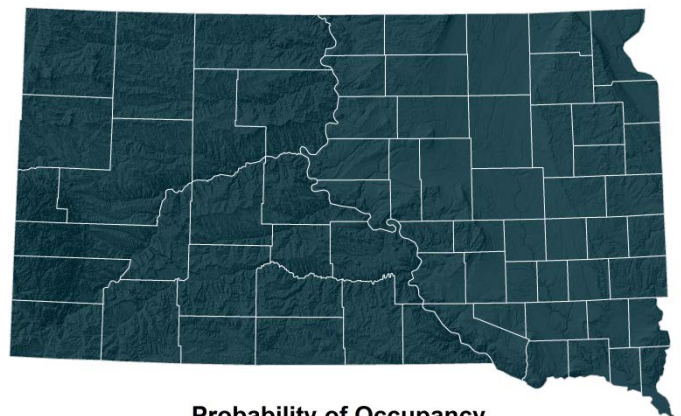
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

YELLOW-BILLED CUCKOO

Coccyzus americanus

More often heard than seen, the Yellow-billed Cuckoo is nicknamed the Rain Crow because it tends to call more frequently on cloudy days.

DISTRIBUTION AND STATUS

Yellow-billed Cuckoos breed throughout the eastern U.S., west through the Great Plains and south into Mexico. This species is found breeding in scattered locations throughout South Dakota, excluding the Black Hills. East of the Missouri River, they are mainly found in riparian forests, such as along the Missouri, Big Sioux, Vermillion, and James rivers. West of the Missouri River, they are also found in wooded draws and along smaller, wooded creeks. During the first Atlas, more birds were reported in the southeast part of the state. During the second Atlas, cuckoos were also reported in appropriate habitat throughout West River. This difference probably does not represent an increase in the West River population, but rather an increased effort to find this furtive species. Second Atlas occupancy analyses calculated that, if the birds are present, a 25% probability exists of detecting Yellow-billed Cuckoos. Cuckoos, furthermore, breed in areas with caterpillar infestations. As a result, cuckoos are unevenly distributed and are easy to miss during bird surveys.

HABITAT

Breeding habitats typically are riparian, closed-canopy forests with well-

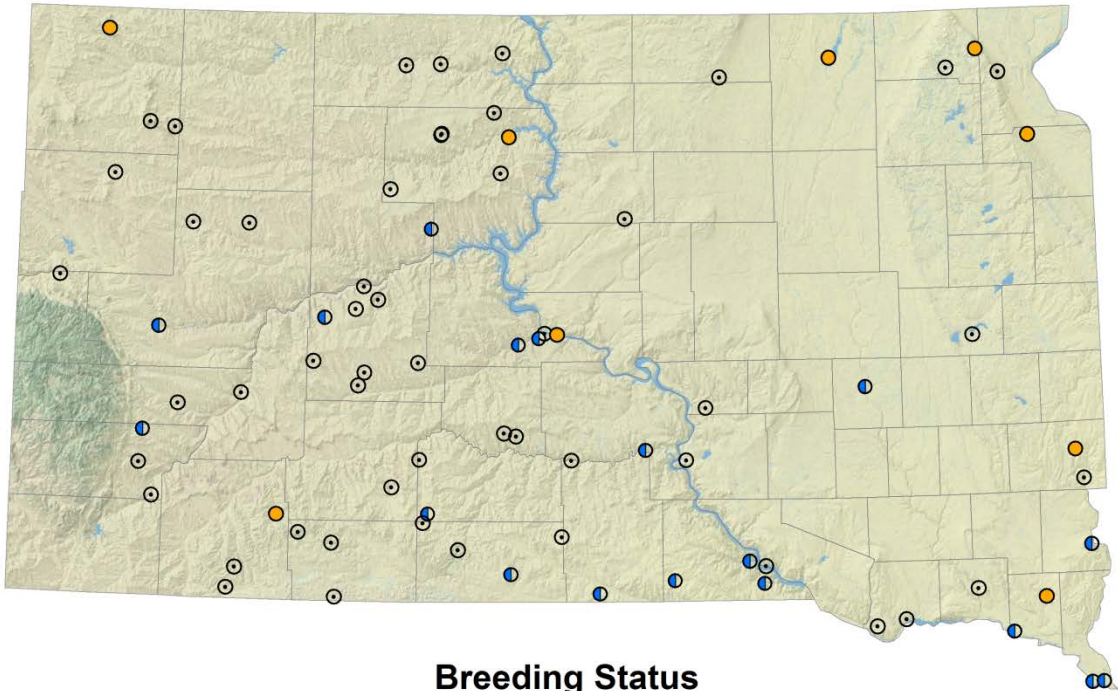
developed understory (throughout South Dakota) or wooded draws (West River). During the second Atlas, 66% of observations were in lowland deciduous or mixed-forest habitats (which include wooded draws), with another 25% reported from upland deciduous forests.

BREEDING BIOLOGY

The onset of breeding is apparently triggered by an abundant food supply. Most South Dakota breeding records are in June and July, but the only nest ever reported had three eggs on August 17, 2010. The nest is a small platform of twigs. Eggs or young may be seen through the bottom. The nesting cycle is extremely rapid, only 17 days is required from egg-laying to nest-leaving (Hughes 1999). Because they can burst their feather shafts, nestlings can become fully feathered in two hours. Both adults incubate the eggs (average of 3 to 4), as well as brood and feed the young. Occasionally cuckoos will lay eggs in other species' nests, although this behavior is unreported in South Dakota.

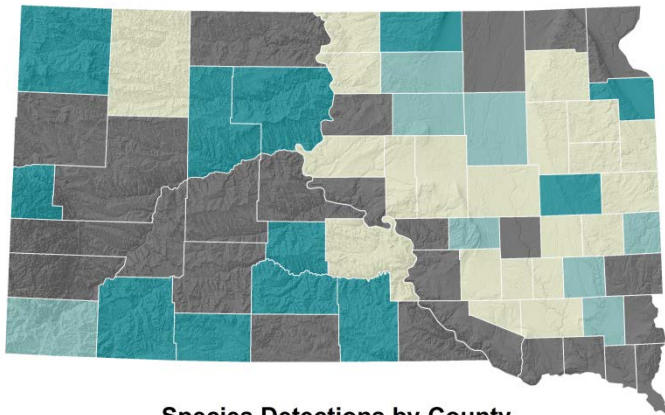
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	3	6	9
Probable	13	6	19
Possible	44	8	52
Observed	0	0	0
Total	60 (14%)	20	80

Yellow-billed Cuckoo



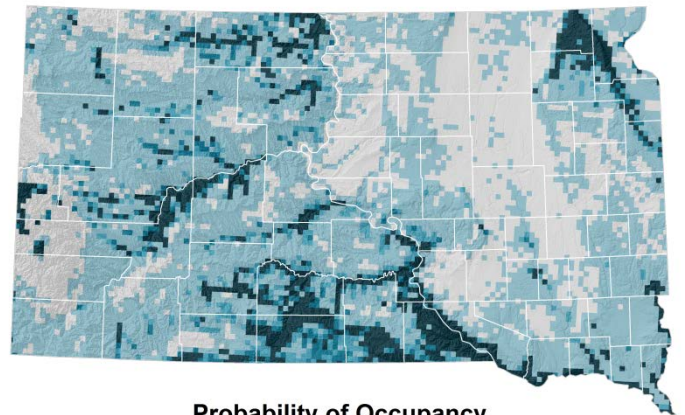
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BLACK-BILLED CUCKOO

Coccyzus erythrophthalmus

Although they will eat any type of insect, Black-billed Cuckoos strongly prefer caterpillars. A cuckoo eats thousands of caterpillars per season, sometimes eating 10 to 15 per minute. The bristly spines of hairy caterpillars may pierce the cuckoo's stomach lining. When the furry mass obstructs digestion, the entire stomach lining is sloughed off and regurgitated as a pellet.

DISTRIBUTION AND STATUS

The Black-billed Cuckoo breeds in the northeastern U.S., Midwest, northern Great Plains, and southeastern Canada. The distribution and abundance of cuckoos in South Dakota differed between the first and second Atlases. The first Atlas documented Black-billed Cuckoo on 32% of random blocks while the second Atlas detected this species on just 15% of blocks. A major decline occurred east of the Missouri River. The first Atlas found the cuckoo to be fairly common and widespread in the east while the second Atlas found about one-quarter as many birds. Supporting the atlas data, Breeding Bird survey data show that the cuckoo population in South Dakota decreased significantly over the past 45 years (Sauer *et al.* 2014).

HABITAT

Second Atlas observers reported Black-billed Cuckoos in deciduous shelterbelts and woods (75% of observations), mixed deciduous-conifer woods (19%), shrublands (1%), and residential areas (1%). Cuckoos nest in thickets and shrubs. One nest reported during the

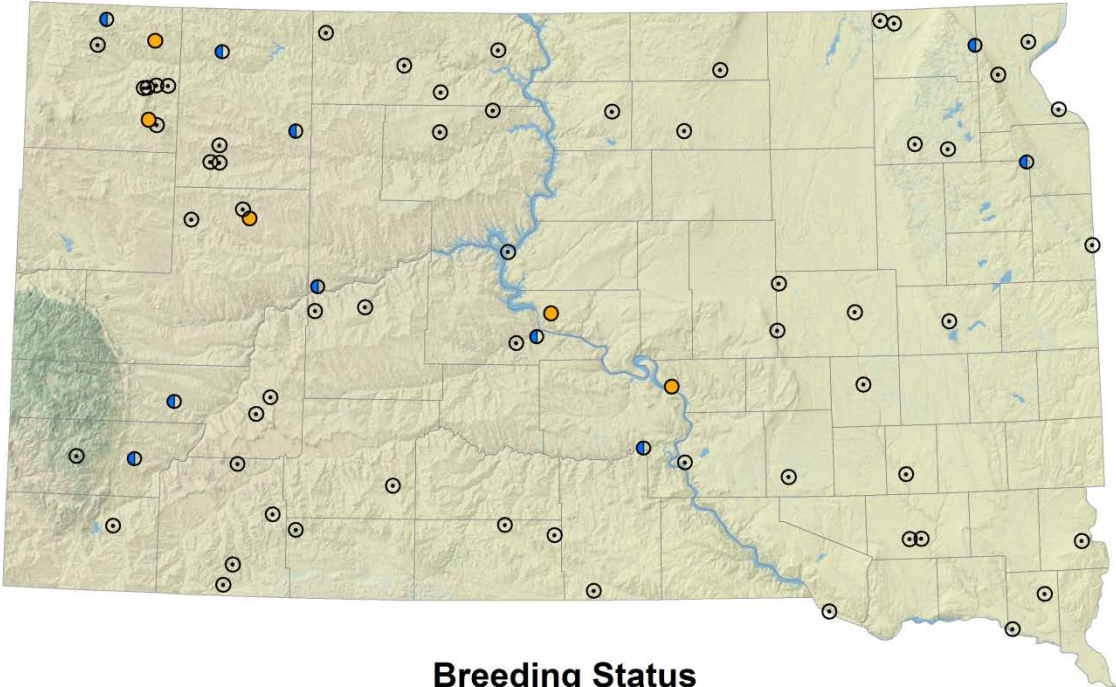
second Atlas was in a Russian olive tree in a shelterbelt.

BREEDING BIOLOGY

Nesting times can vary, depending on the timing of caterpillar outbreaks. The breeding season in South Dakota typically is June and July. The nest is flat or cup-shaped, composed of twigs and grasses and lined with a variety of soft plant materials. The female lays 2 to 3 eggs during an average year, 4 to 5 eggs in years when caterpillars are abundant. Both adults incubate the eggs for 10 to 11 days. Embryo and nestling growth are extremely rapid. Total time from the start of incubation to leaving the nest is about 17 days, among the shortest interval for any altricial species. Chicks are weak when they hatch but within 3 hours, can pull themselves up onto twigs with their feet and bills. Nestlings mature rapidly; at 7 days, their feather sheaths burst open and the chick is fully feathered. Chicks leave the nest when 6 to 7 days old but cannot fly. The young cuckoos are agile and can hop and climb rapidly through the vegetation. They begin to fly when 21 to 24 days old (Hughes 2001).

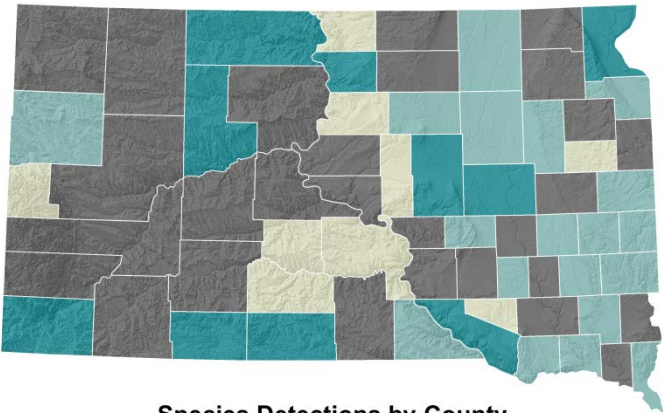
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	3	2	5
Probable	8	2	10
Possible	52	9	61
Observed	0	0	0
Total	63 (15%)	13	76

Black-billed Cuckoo



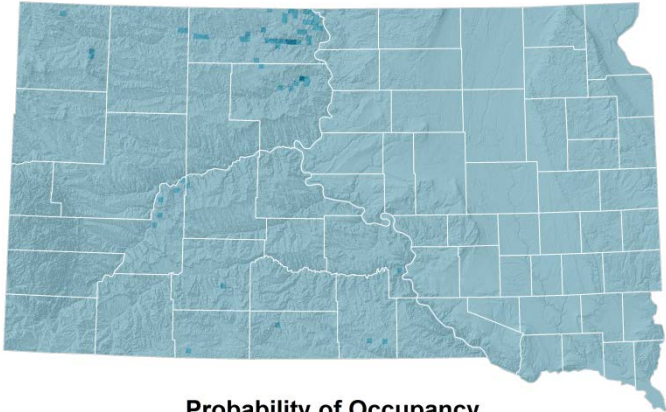
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BARN OWL

Tyto alba

The Barn Owl is an active hunter – flying low and slow over open areas in search of its prey, primarily voles and other rodents. It has excellent vision in low light levels and its hearing, the most accurate ever tested, is so precise that it can strike prey in total darkness.

DISTRIBUTION AND STATUS

The Barn Owl is the most widely distributed owl in the world, found throughout the Americas, Europe, Africa, Australia, the Middle East, south Asia, and many islands. In North America, it is found throughout Mexico and the lower 48 U.S. states except for the northern tier. It is not tolerant of extreme cold, which limits northern expansion. South Dakota is at the northern edge of the Barn Owl's range and, historically, the species was limited to the southern 1/3rd of the state. Surveys along the upper Missouri River (Lake Oahe) during the second Atlas significantly expanded the known breeding range in South Dakota northward, to the North Dakota border (Olson 2009). They are common in holes in river banks along Lake Oahe in cliffs along the lower Missouri River below Gavin's Point. The middle section, Lake Sharpe, has not been surveyed but presumably also has nesting Barn Owls. As a result of these surveys, Barn Owls were documented in 18 counties during the second Atlas compared to 4 counties during the first Atlas. Away from the River, the species is uncommon in the Pine Ridge escarpment, Sandhills, and Fall River County, and rare elsewhere.

HABITAT

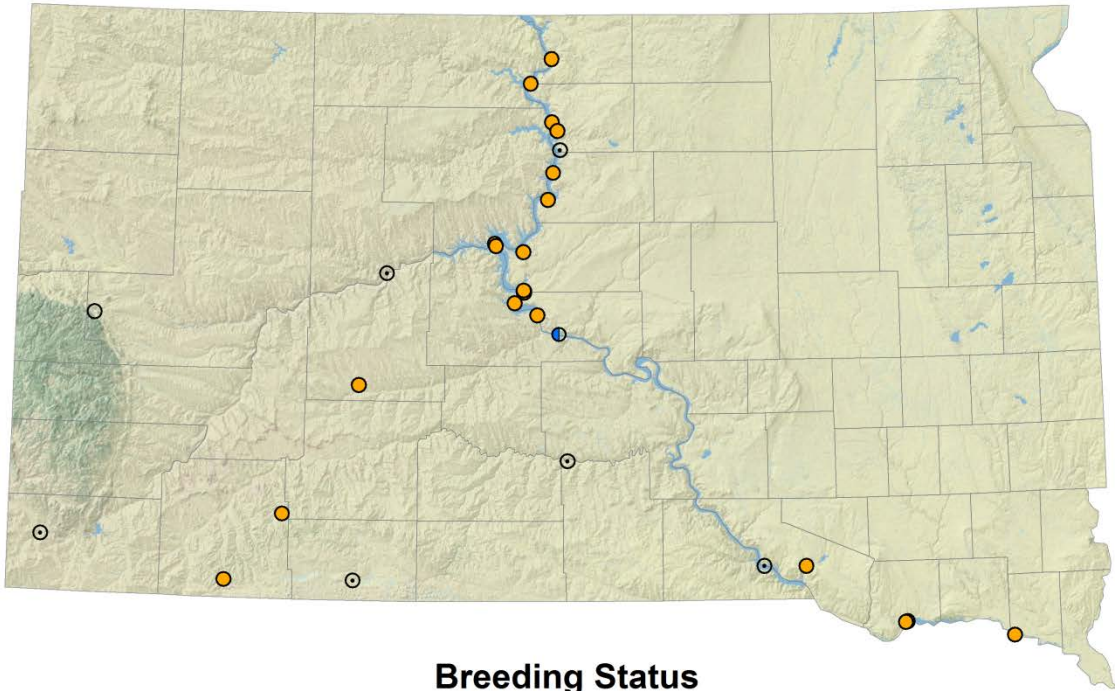
Barn Owls are found in open habitats. A cavity-nester, they nest in hollow trees, under bridges, in old buildings, or in holes that they excavate in dirt banks. Nest site selection is strongly influenced by the type of site in which the owls were raised. In the second Atlas, 23 of 25 nests were in dirt cliffs, 1 was in a grain elevator, and 1 under a bridge. Nesting cliffs were characterized by a layer of sand at least 2' to 3' deep near the top (Olson 2009).

BREEDING BIOLOGY

Pairs begin roosting together in potential nest sites in November. Barn Owls generally nest March to October; second Atlas nest dates were between April 1 and Sept. 1. The female incubates an average of 7 eggs for 29 to 34 days. The male feeds her during incubation and while she broods the young chicks. He also brings food for her to feed to the young. The owlets can fly at 50 to 60 days but are dependent on their parents until 12 to 13 weeks old. Possibly some pairs raise two broods per season under ideal conditions (Marti *et al.* 2005).

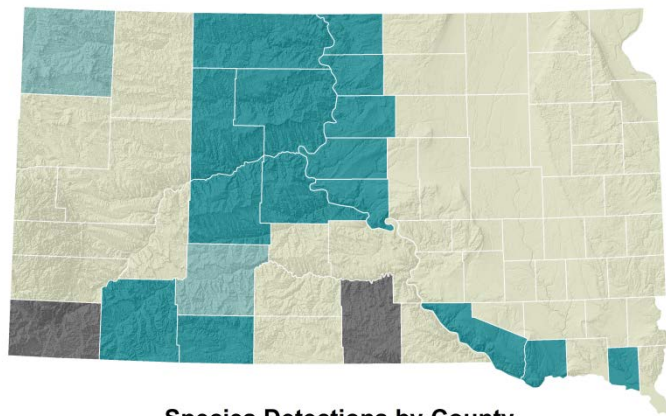
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	24	25
Probable	0	1	1
Possible	3	4	7
Observed	0	1	1
Total	4 (1%)	30	34

Barn Owl



Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- ◐ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

EASTERN SCREECH-OWL

Megascops asio

The Eastern Screech-Owl has two color-morphs, rufous and gray. The gray morph is more numerous in South Dakota. No other North American owl has such distinctive differences in plumage.

DISTRIBUTION AND STATUS

Eastern Screech-Owl is distributed throughout the eastern U.S. east of the Rocky Mountains, from south of the Canadian boreal forest to northeastern Mexico. In South Dakota, the species is a fairly common and widespread year-round resident in wooded or residential areas. In the Black Hills, these owls generally are found below 4700' elevation, although rarely up to 5500'. Because these birds are strictly nocturnal, special efforts or nighttime surveys are needed to detect them. Such efforts during the first Atlas detected the species on 31% of random blocks. During the second Atlas, special surveys only occurred in the Black Hills, and thus the species was detected with less frequency elsewhere. There is no evidence of a population decline in the state and in general, populations are thought to be stable (Gehlbach 1995).

HABITAT

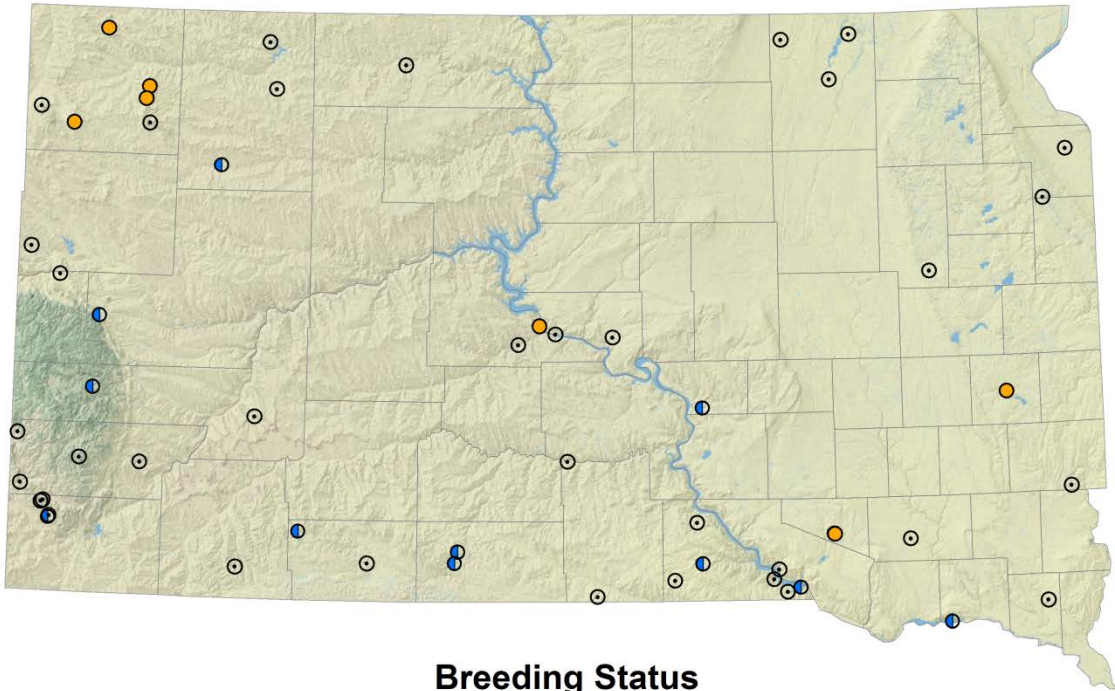
Eastern Screech-Owls occupy a variety of woodland habitats including wooded suburban and urban areas. Second Atlas observers reported these owls in deciduous woodlands (51%), mixed deciduous-conifer forests (31%), ponderosa pine forests (10%), and residential areas (8%).

BREEDING BIOLOGY

The nesting season in South Dakota is April through early June, with fledglings dependent on adults into July. Eastern Screech-Owls form life-long pair bonds with same-aged individuals. The live in 'polyterritories' in which they defend multiple cavities and immediate areas but do not defend the area between cavities. Polyterritories can be interspersed with the polyterritories of adjacent pairs. They nest in tree cavities constructed by other species, natural cavities, or nest boxes. The female chooses a nest cavity from among the alternatives in the polyterritory, based on past nesting success and food stored there by the male. She stays in the nest cavity 6 days before laying an average of 4 white eggs directly on the cavity floor. The male feeds her throughout the 30-day incubation period and the first 6 days of the nestling stage. Both parents hunt when the nestlings are larger. Nestlings leave the nest after 28 days but are underdeveloped and cannot fly for the first few days. The brood stays together in tree roosts and are fed by both parents until they are capable of hunting on their own at about 8 to 10 weeks (Gehlbach 1995).

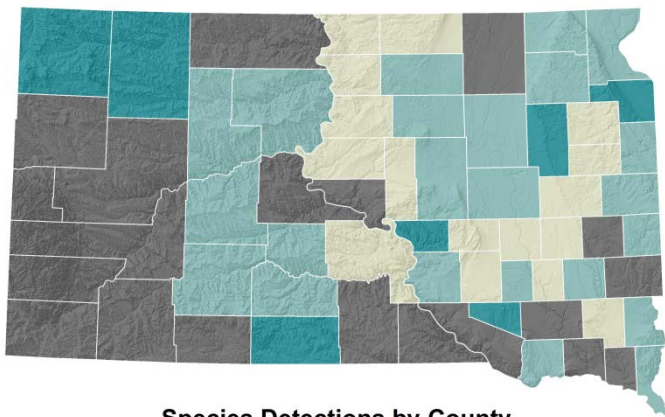
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	8	8
Probable	7	5	12
Possible	20	18	38
Observed	0	0	0
Total	27 (6%)	31	58

Eastern Screech-Owl



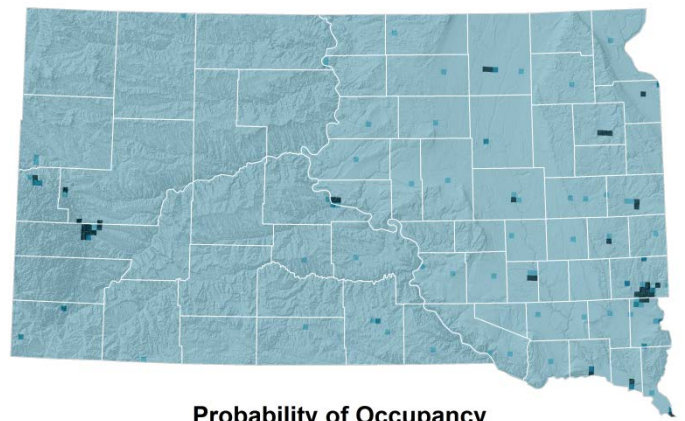
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

GREAT HORNED OWL

Bubo virginianus

The Great Horned Owl hunts from perches, taking an exceptionally wide variety and size of prey, primarily mammals and birds. Their acute hearing, large eyes, silent flight, and powerful talons enable successful nighttime hunting

DISTRIBUTION AND STATUS

Great Horned Owls breed throughout the Americas. This permanent resident is the most common and widespread owl in South Dakota. The species was reported in fewer atlas blocks during the second Atlas (47%) than during the first Atlas (62% of random blocks).

HABITAT

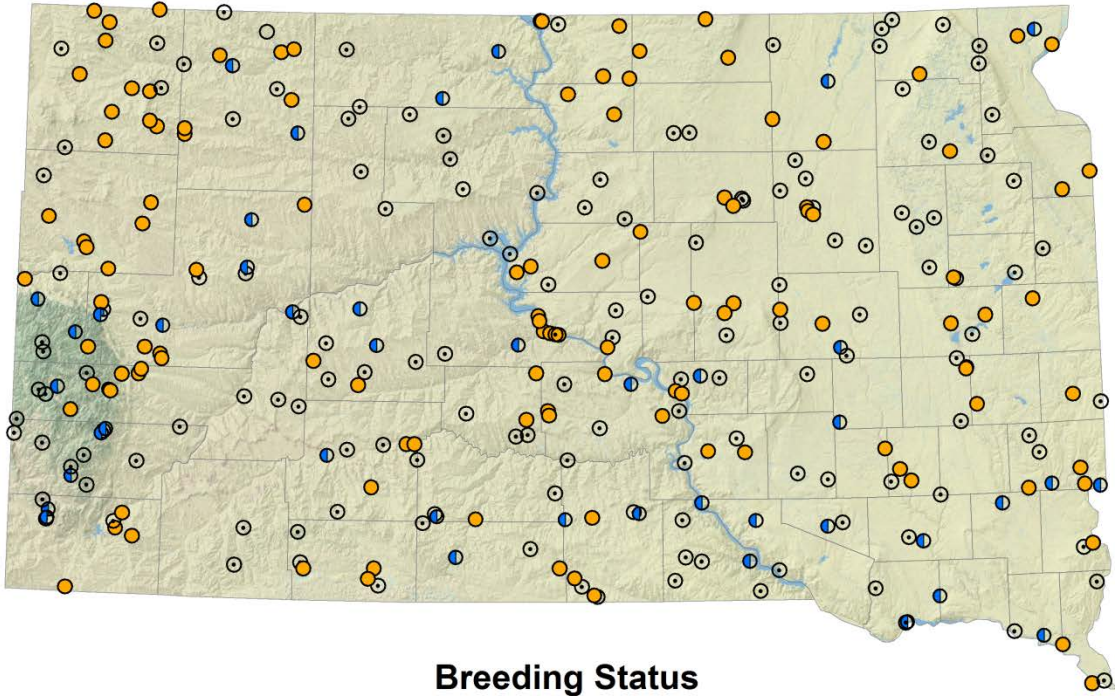
Found in any forest type, and in residential and agricultural areas, the Great Horned Owl's home range usually includes some open habitat for hunting. During the second Atlas, Great Horned Owl was reported in every habitat category, with most records in upland (41%) or lowland woodland (32%), single trees in open areas (13%), residential areas (7%), and grasslands (5%). Atlas observers also reported nests in a variety of habitats including single trees in open areas (39%), lowland (27%) and upland woodlands (25%), residential areas (4%), and wetlands (4%). Tree nests were reported in willow (1), green ash (2), cottonwood (6), and pine (2).

BREEDING BIOLOGY

Mated pairs establish and maintain their territories year-round by hooting 'contests' with adjacent pairs. Pairs remain together for many years and possibly for life; wild Great Horned Owls can live for 25 to 30 years. In South Dakota, the Great Horned Owl is one of the earliest breeding species. Nesting begins in January and lasts into June (second Atlas early and late dates: January 28 to June 27). These owls use nests constructed by other species (second Atlas nest reports in former Red-tailed Hawk (1), Northern Goshawk (1), Bald Eagle (2), Great Blue Heron (1), Barn Owl (1) nests), or other types of cavities such as tree cavities (1 second Atlas record), broken off stumps (1), cliffs (1), banks (1), deserted buildings, or even on the ground (1). The male feeds the female while she incubates up to 5 white eggs for around 33 days. The young owls climb out of the nest at 6 weeks, can fly somewhat well at 7 to 8 weeks, but remain dependent on their parents into September or October (Artuso *et al.* 2014).

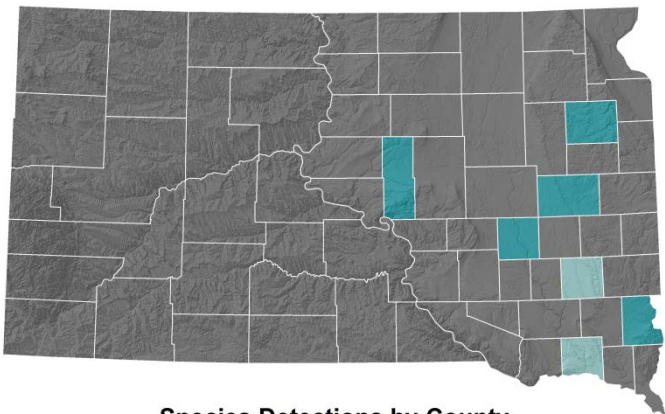
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	29	89	118
Probable	36	8	44
Possible	137	13	150
Observed	1	0	1
Total	203 (47%)	110	313

Great Horned Owl



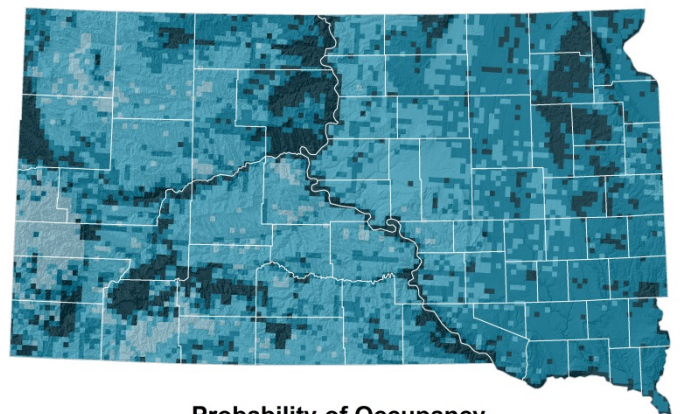
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BURROWING OWL

Athene cunicularia

Unlike most owls, Burrowing Owls are active both day and night. They hunt small mammals in darkness and insects in daylight.

DISTRIBUTION AND STATUS

Burrowing Owls breed in the northern Great Plains, the western U.S., and Florida. They are locally common west of the Missouri River in South Dakota and uncommon to rare east of the River. The state's owl population has been declining slightly over the past 45 years (Sauer *et al.* 2014). This owl experienced a notable distribution shift between the first and second Atlases. During the first Atlas, owls were recorded in at least 15 locations in McPherson, Edmunds, and Faulk counties, while only 4 locations were reported in these counties during the second Atlas. Because of research that occurred during the second Atlas, more breeding owls were reported on tribal lands during the second Atlas, especially in Dewey, Corson, and Lyman counties (Thiele *et al.* 2013). The current owl distribution mirrors the distribution of large prairie dog colonies in the state (Kempema *et al.* 2014). The Burrowing Owl is a state Species of Greatest Conservation Need because it depends on a unique habitat, namely colonies of burrow-dwelling mammals.

HABITAT

Burrowing Owls nest in grasslands with few trees. In South Dakota, these owls typically inhabit prairie dog towns larger than 25 acres (Griebel and Savidge 2007, Thiele *et al.* 2013). Second Atlas

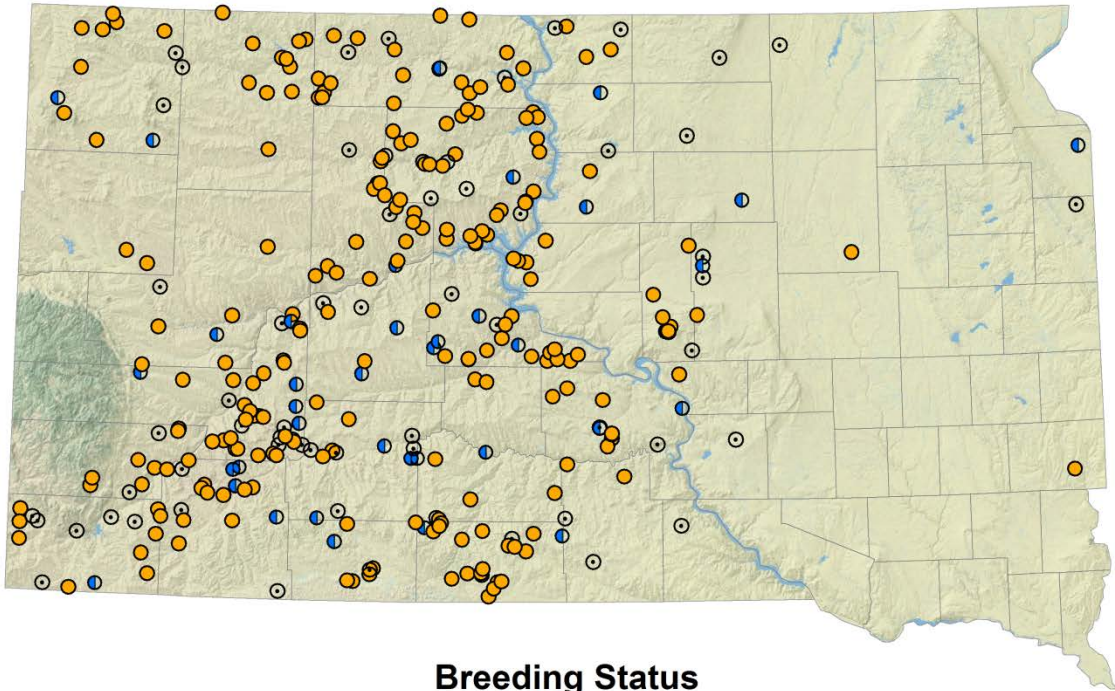
observers reported owls in prairie dog towns (69% of reports), pastures (25%), roadsides (3%), and cropland (2%). While most second Atlas nests were in prairie dog towns (82 nests), some were reported in grasslands (10), cropland (3) and roadsides (1).

BREEDING BIOLOGY

The breeding season in South Dakota is mid-May to early August. South Dakota owls nest in the abandoned burrows of black-tailed prairie dogs, badgers, skunks, Richardson's ground squirrels, and swift fox (e.g., Shaffer and Thiele 2013). On Buffalo Gap National Grassland, owls lay an average of 7.2 eggs (range 3 to 10 eggs) and raise an average of 2.6 fledglings per nesting attempt (Griebel and Savidge 2007). The first egg hatches after 28 to 30 days of incubation. The last egg may hatch 7 days later, resulting in a large size difference among nestlings. Both adults hunt for insects and small mammals, caching extra food in nearby burrows. Chicks emerge from the burrows after about 2 weeks. They move among several burrows, waiting to be fed. Young owls fledge when they are about 7 weeks old (Poulin *et al.* 2011).

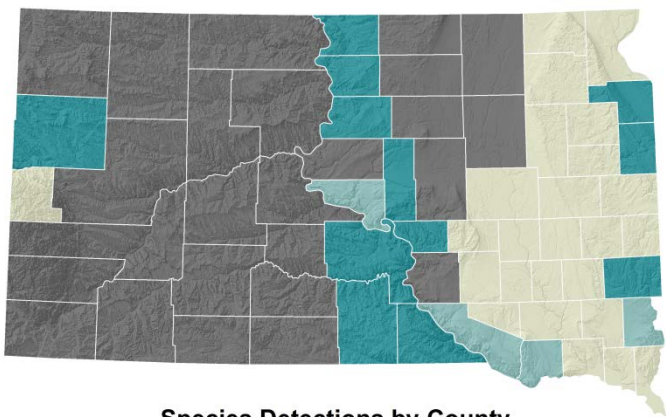
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	40	182	222
Probable	23	15	38
Possible	26	39	65
Observed	0	0	0
Total	89 (21%)	236	325

Burrowing Owl



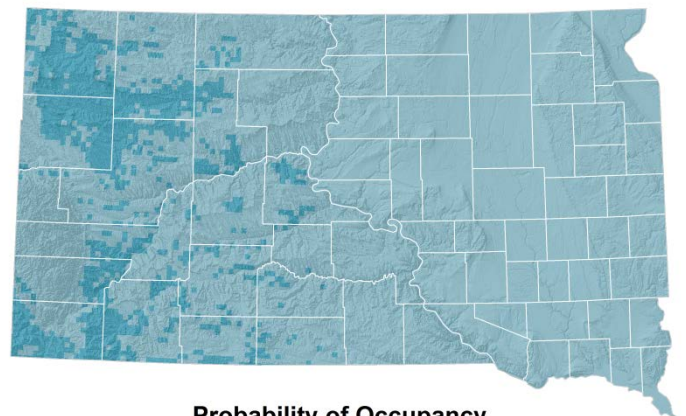
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BARRED OWL

Strix varia

Barred Owls use a variety of techniques while hunting. Most commonly, they watch from a perch or fly low through the forest searching for prey. They also have been seen diving into water after fish, wading in water to catch fish and crayfish, and walking on the ground hunting reptiles and amphibians.

DISTRIBUTION AND STATUS

The Barred Owl is a resident of the eastern United States west to the Great Plains, and in the conifer forests of Canada and the Pacific Northwest. Most records in South Dakota are in the southeast along the Big Sioux River or along the Missouri River downstream from Yankton. Barred Owls also regularly occur in Sica Hollow State Park on the Roberts-Marshall County border. Elsewhere, the species has been found in the Black Hills and in Todd County but without evidence of breeding in these areas.

HABITAT

In South Dakota, the Barred Owl inhabits mature deciduous or mixed coniferous-deciduous forests. Second Atlas records were in lowland deciduous forest (both of the confirmed breeding records), lowland mixed forest (2 records), and upland deciduous forest (1 record).

BREEDING BIOLOGY

The Barred Owl is territorial throughout the year. Territory boundaries remain relatively stable from year to year and territories can be occupied for 2 to 3 decades. Nesting in South Dakota probably begins in April. During the second Atlas, dependent fledglings were reported in late May and June. Barred Owls nest in tree cavities, nest boxes, or old stick nests of other species. The female alone incubates the clutch of 2 to 3 white eggs. The male feeds her throughout the 28 to 33 day incubation period and for the first 2 weeks of the nestling stage. When the owlets are small, the female tears the prey into bite-sized pieces to feed the young. At about 2 to 3 weeks of age, the nestlings eat prey without assistance. When the young owls leave the nest at 4 to 5 weeks, they initially climb out onto a branch of the nest tree. They eventually drop to the ground and climb a nearby tree to perch. They begin short flights at 10 weeks of age and can fly well at 12 weeks. Parents provide food for about 4 or 5 months (Mazur and James 2000).

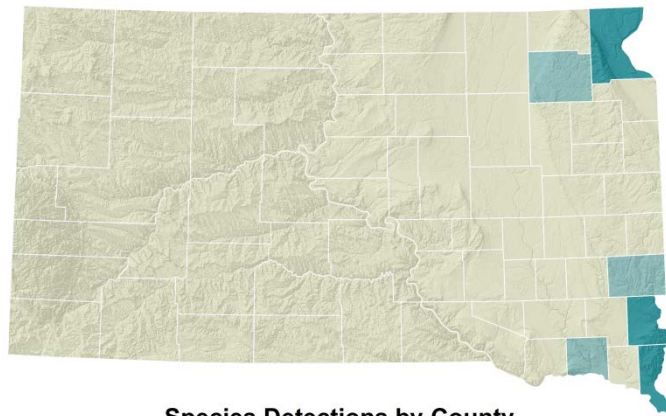
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	2	2
Probable	1	0	1
Possible	0	0	0
Observed	2	0	2
Total	3 (0.7%)	2	5

Barred Owl



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

LONG-EARED OWL

Asio otus

The Long-eared Owl is so named because of the two sets of erect feather tufts on top of its head that look like ears. These feather tufts have nothing to do with hearing. They can be raised and lowered, signaling when an owl is afraid, upset, or excited. An owl's real ears are on the side of its head, hidden beneath feathers.

DISTRIBUTION AND STATUS

In North America, the Long-eared Owl breeds throughout the interior of Canada, the western U.S., the Upper Midwest, and New England. In South Dakota, Long-eared Owls are an erratic and localized breeder. Almost all nesting records, including those during both atlases, have been west of the Missouri River. However, breeding Long-eared Owls may have been common in some years east of the River, prior to the 1980s (Backlund and Olson 1999).

HABITAT

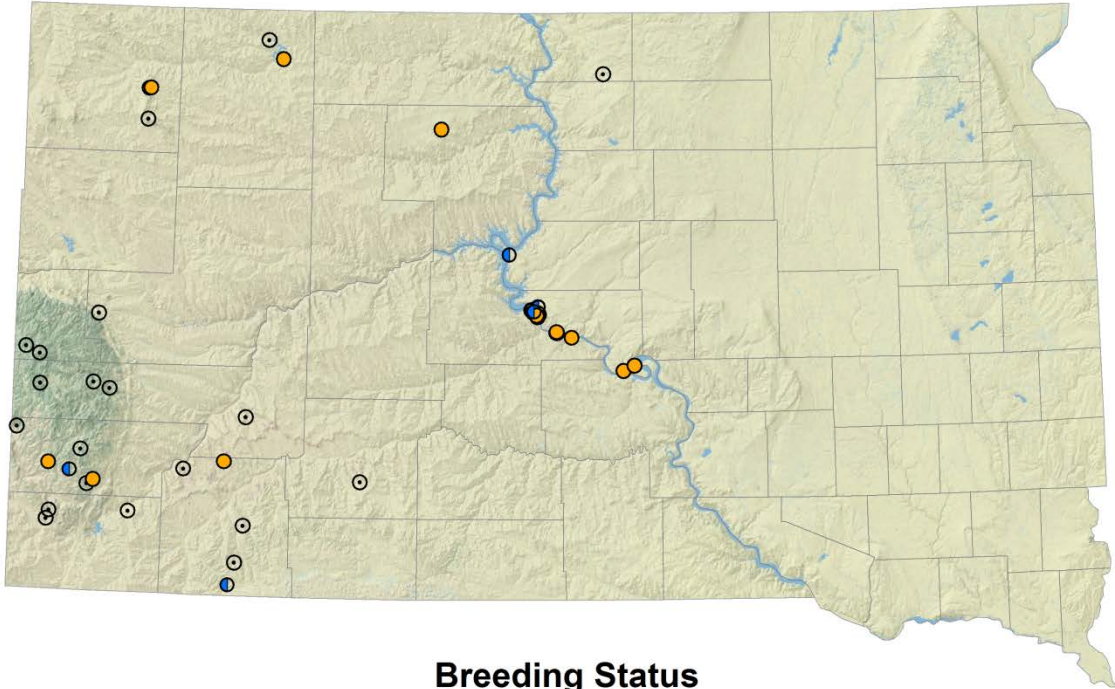
Long-eared Owls nest and roost in dense vegetation and hunt in nearby open country. Second Atlas observers reported these owls in mixed deciduous-conifer woods (53%), conifers (33%), deciduous trees (4%), and 1 brood roosting on a cliff. In South Dakota, nests often are found in juniper or red cedar thickets (Paulson and Sieg 1984, Backlund 1995, Peterson 1995). Nests reported during the second Atlas were in a wider variety of habitats: 5 nests were in deciduous woods, 12 in mixed conifer-deciduous woods and wooded draws, and 5 in coniferous woods.

BREEDING BIOLOGY

Nest records during the second Atlas ranged from March 12 to June 10. Long-eared Owls use tree nests built by other birds, especially those of magpies, crows, and hawks, as long as the nest site is in dense foliage. They also will use nest baskets (Backlund 2009); all second Atlas nests in Harding County and along the Missouri River were in baskets. The typical clutch size is 4 to 6 eggs, but may be smaller or larger depending on prey abundance. Eggs are laid every 2 days and hatch asynchronously, resulting in different sized owlets within the brood. Only the female incubates the eggs and broods the nestlings. The male brings food to her throughout incubation and brooding. Both adults hunt during the second half of the nestling period. Owlets climb out of the nest on to nearby branches after about 21 days. The young 'branchers' spread out from the nest and do not roost together. They can make short flights at about 35 days, after which they roost together. The young owls begin hunting forays at 55 to 65 days but are also fed by the male until they are 70 to 80 days old (Marks *et al.* 1994).

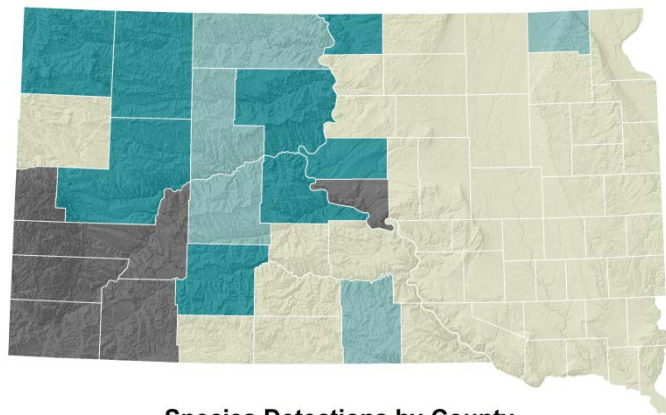
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	26	26
Probable	3	5	8
Possible	11	9	20
Observed	0	0	0
Total	14 (3%)	40	54

Long-eared Owl



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas

SHORT-EARED OWL

Asio flammeus

Short-eared Owls are often diurnal and can be seen perched on fence posts or hunting over grasslands before sunset and after sunrise. They are most active on calm days.

and tundra. Most (85%) second Atlas observations were in grasslands (pasture 44%, hayfield 12%, undisturbed or Conservation Reserve Program plots 29%).

DISTRIBUTION AND STATUS

Short-eared Owls are distributed widely throughout the world, including in North America, Eurasia, South American grasslands, and Atlantic and Pacific islands. In South Dakota, the species breeds in grasslands, both West River and on the Missouri and Prairie coteaus in East River. Short-eared Owls are nomadic. Their populations depend on the abundance of voles, their main prey. Thus their populations fluctuate greatly from year to year (e.g., Harris 1980). During the second Atlas, most records were from 2008 (28% of all observations) and 2011 (40%); 2010 had the fewest (8%). During the first Atlas, owls were found in southeastern South Dakota, but none were found in this region during the second Atlas. Determining population trends is difficult for such an irruptive species. However, as more grassland is converted to cropland, Short-eared Owl populations will suffer.

HABITAT

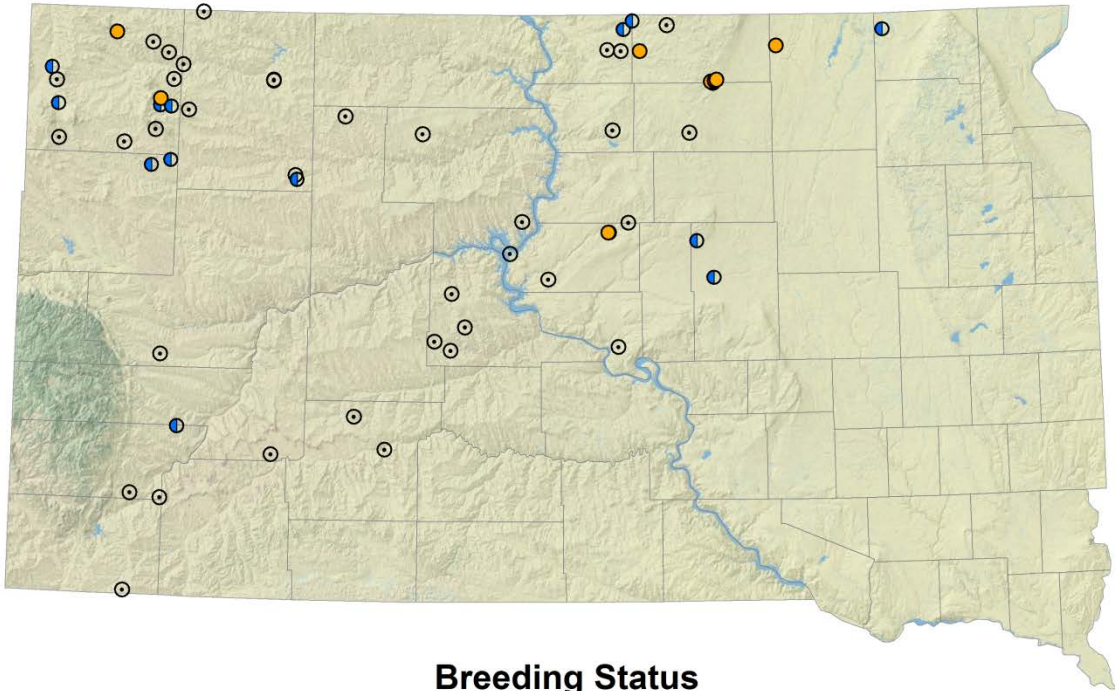
Short-eared Owls inhabit open natural habitats such as marshes, grasslands,

BREEDING BIOLOGY

Short-eared Owls in South Dakota start nesting in the second week of May; second Atlas nest dates ranged from May 21 to June 10. They are one of the few owl species that build their own nest. They make a scrape on the ground within dense vegetation. The nest is made of grass and feathers. Nests reported during the second Atlas had an average of 5.8 white, chalky eggs (range 4 to 7 eggs, 5 nests). Only the female incubates the eggs and broods the chicks. Males feed their mates and the chicks. Chicks leave the nest at age 12 to 18 days and wander on foot until they can fly when about 28 to 35 days old (Wiggins *et al.* 2006).

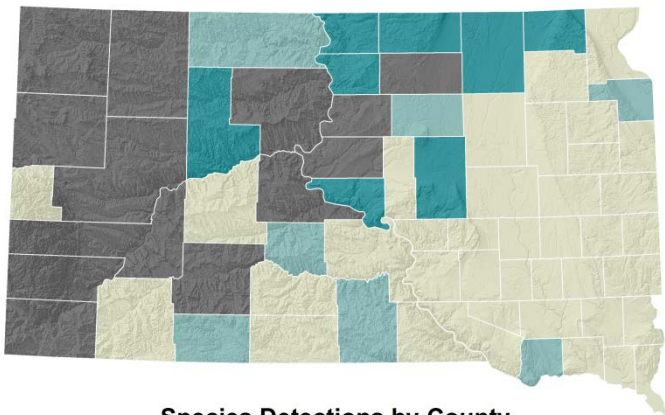
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	2	8	10
Probable	8	5	13
Possible	23	13	36
Observed	0	0	0
Total	33 (8%)	26	59

Short-eared Owl



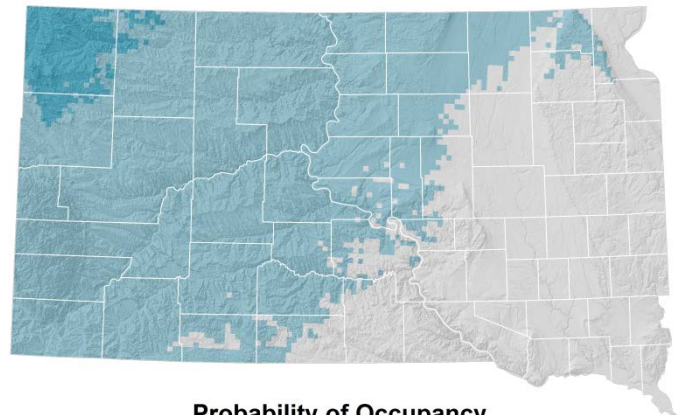
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

NORTHERN SAW-WHET OWL

Aegolius acadicus

The smallest owl that regularly occurs in South Dakota, this secretive owl not only breeds in the state, but also is a common migrant and wintering bird.

DISTRIBUTION AND STATUS

Saw-whet Owls breed in coniferous forests across North America. In South Dakota, this owl breeds in ponderosa pine forests in Harding County, the Black Hills, and the Pine Ridge Escarpment of Bennett and Todd counties. Immature birds also have been found in an isolated pine forest in eastern Meade County (Tallman *et al.* 1983). It was the most common owl found during breeding owl surveys in 2009 to 2011 in the Black Hills. The second Atlas observations on the Pine Ridge Escarpment were the first known records for that area. This species is a common breeder in nest boxes located on the buttes of Custer National Forest in Harding County (Miller 2010). Without special surveys or nest boxes, this secretive bird is hard to detect. No 20th century confirmed breeding records existed until 1993, when a nest was discovered in Custer County (Peterson 1995). Saw-whet Owl breeding populations fluctuate greatly between years, possibly because of their prey's population cycles.

HABITAT

Northern Saw-whet Owls primarily breed in coniferous or mixed coniferous-

deciduous forests, but also occasionally in deciduous forests. During the second Atlas, 66% of records were in mixed ponderosa pine-deciduous forests, while 34% were in ponderosa pine forests. The deciduous component mostly was green ash, aspen or bur oak, with an understory of grasses, forbs and shrubs.

BREEDING BIOLOGY

This small owl nests in cavities, especially those created by Northern Flickers, or in nest boxes. In nest boxes located in Harding County, first eggs generally are laid in March; late nests can begin in June (late date: June 25). During the second Atlas, females laid an average of 5 eggs (range 2 to 8, 89 nests) (Drilling 2013a). Females incubate the eggs for 27 to 30 days and brood the young for at least 2 weeks. The male does all of the hunting. Owlets are able to fly when they leave the nest after 28 to 32 days, but are reliant on their parents for food for another 6 to 8 weeks (Rasmussen *et al.* 2008).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	4	33	37
Probable	7	1	8
Possible	8	18	26
Observed	0	0	0
Total	19 (4%)	52	71

Northern Saw-whet Owl



Breeding Status

- Confirmed breeding
- Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas

COMMON NIGHTHAWK

Chordeiles minor

The Common Nighthawk can be seen flying over towns and grasslands, sitting on gravel roads at night, or roosting parallel to a tree branch or fencepost. This aerial feeder is most active at dawn or dusk, scooping up insects on the wing with their huge mouths. The display flights of males end with a distinctive “boom” at the bottom of their dive – a loud sound produced by air rushing through his wing feathers.

DISTRIBUTION AND STATUS

Common Nighthawks breed in the southern half of Canada, and throughout the U.S., except the desert southwest. In South Dakota, the species is most common west of the Missouri River and in grasslands East River. They are curiously uncommon in the Missouri Coteau grassland areas of McPherson, Faulk, Edmunds, Walworth, Campbell, Potter, and Sully counties. Nighthawks are almost entirely absent in regions dominated by row crops, such as the James River Valley and the extreme southeast. Although Common Nighthawk populations are decreasing in the eastern U.S., the South Dakota population appears to be stable (Sauer *et al.* 2014) and little change was noted in distribution from the first Atlas.

HABITAT

An open-habitat species, more than half of the observations during the second

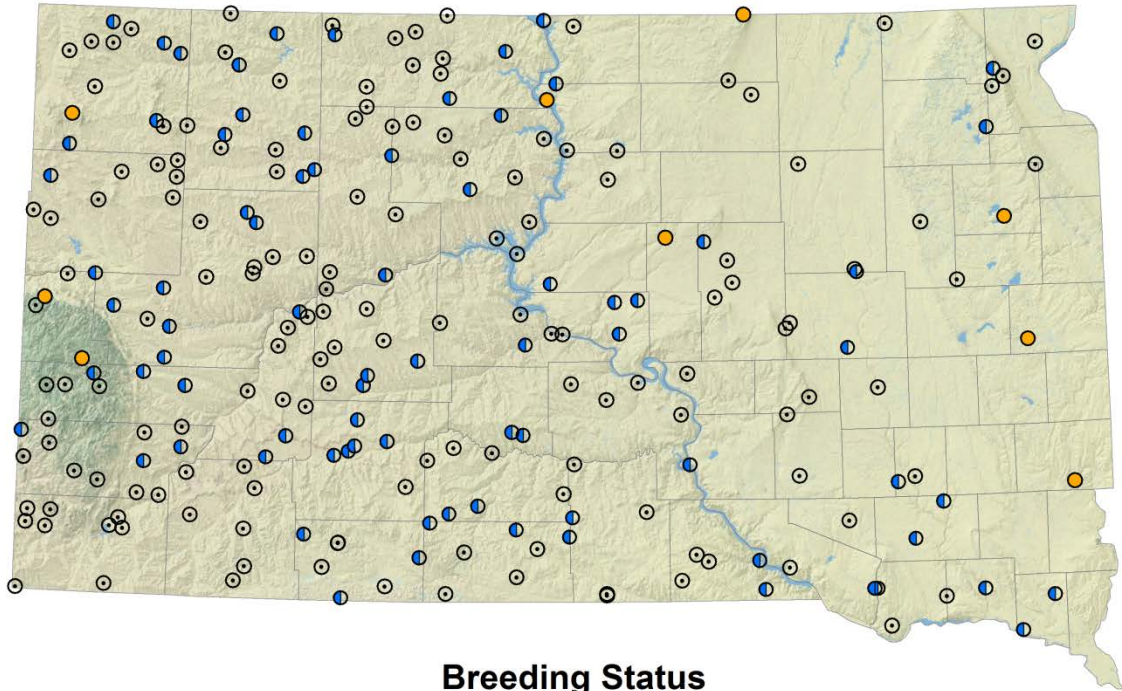
Atlas were in grasslands (54%). Birds also were observed over upland (13%) and lowland woodlands (8%), cropland (5%), and towns (4%). Of the six nests reported during the second Atlas, two were in open forests in the Black Hills, three were in grasslands, and one was on a hotel roof in Sioux Falls.

BREEDING BIOLOGY

Common Nighthawks nest during June and July (second Atlas nest dates: June 6 to July 27, 6 nests). They lay their two camouflaged eggs directly on the ground on moss, soil, rock, gravel, or on flat gravel roofs of buildings. The female incubates and broods the chicks, which hatch after 18 to 20 days. Chicks can walk around at about one day old but generally stay near the nest. They are fed regurgitated insects by both parents until they are independent at 18 to 30 days old (Brigham *et al.* 2011).

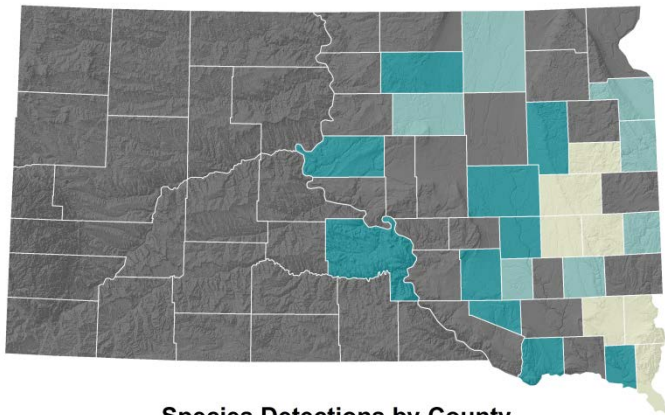
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	8	9
Probable	76	3	79
Possible	147	5	152
Observed	0	0	0
Total	224 (52%)	16	240

Common Nighthawk



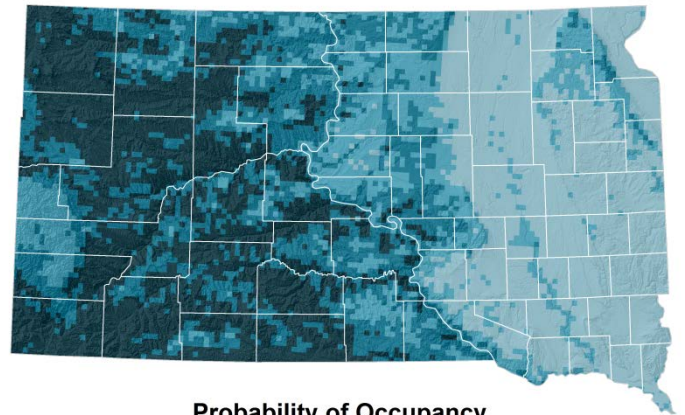
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

COMMON POORWILL

Phalaenoptilus nuttallii

This nocturnal bird is often seen in car headlights at night as it rests on gravel roads. It eats night-flying insects which it chases from a low perch or from the ground. With its immense gape, Common Poorwills can swallow whole insects as large as 1.5" long.

DISTRIBUTION AND STATUS

The breeding range of the Common Poorwill includes the western U.S. and western Great Plains, east to the Missouri River. In South Dakota, it is generally found west of or along the Missouri River. The core of the Common Poorwill's South Dakota distribution is the southwest part of the state and Harding County. In the Black Hills, the species is particularly common on the limestone ridges of the southern Hills. The species formerly nested in the southeastern part of the state (Tallman *et al.* 2001). One bird was observed east of the Missouri River during the first Atlas. The Common Poorwill's distribution in the state seems to have expanded northeast of its core area since the first Atlas. During the second Atlas, several were heard calling along the Missouri River and in Corson and Dewey counties.

HABITAT

In South Dakota, Common Poorwill are associated with dry rocky areas with open forest or shrubland, including slopes of breaks, badlands, canyons and buttes. During the second Atlas,

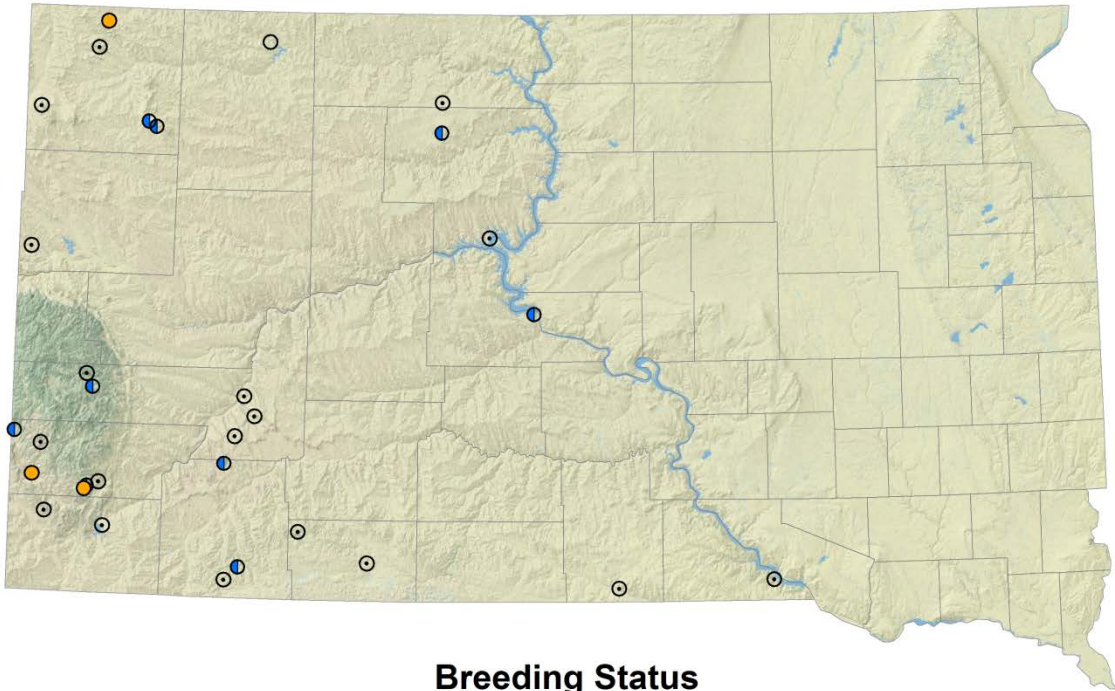
Poorwills were reported from upland (72%) and lowland (11%) woodlands, grasslands (6%), badlands (3%), burned forests (3%), and shrublands (3%).

BREEDING BIOLOGY

Common Poorwills nest from late May through July in South Dakota (second Atlas nest dates: May 29 to July 18). Pairs probably raise two broods when possible. They do not construct a nest but lay their two white eggs on the ground in a slight hollow scraped in bare earth, or on leaf litter, usually in a shady spot. After 20 to 21 days incubation, the semi-precocial chicks hatch. Covered with buff-colored down and with their eyes open, chicks are able to move short distances within two days. Chicks move or are moved by their parents frequently during the nestling stage. Both parents feed the chicks by regurgitating food. A different nest site is used for the second brood but it usually is within 100 yds of the first site. Chicks attempt their first flight when 20 to 23 days old (Woods *et al.* 2005).

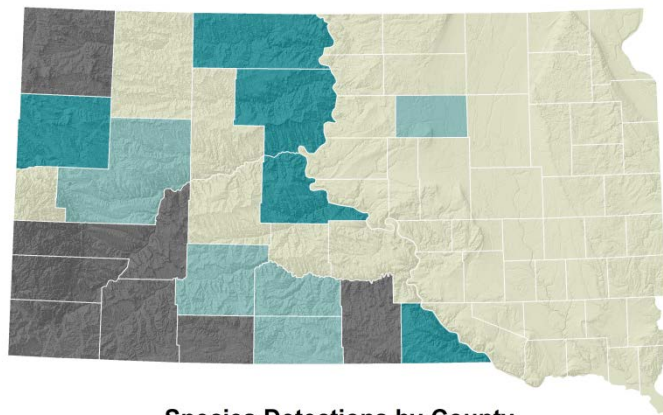
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	2	3
Probable	6	3	9
Possible	9	10	19
Observed	0	1	1
Total	16 (4%)	16	32

Common Poorwill



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



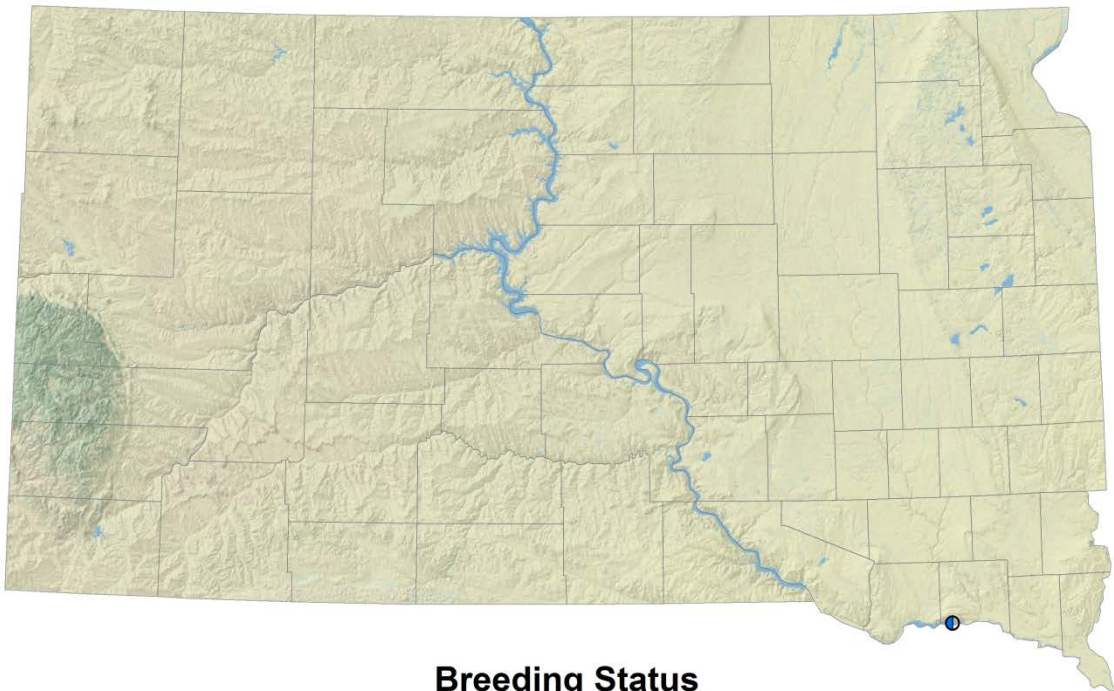
Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

CHUCK-WILL'S-WIDOW

Antrostomus carolinensis

The Chuck-Will's-Widow breeds in forests throughout the southeastern U.S. Its breeding range is expanding north and west (Straight and Cooper 2012). First reported in 1967 in South Dakota, this nightjar is an accidental summer resident along the Big Sioux and Missouri rivers (Tallman *et al.* 2002). After several summers of calling birds near Pierre, the species finally was confirmed breeding in the state in 2000 (Backlund 2000). During the second Atlas, a bird called throughout the summers of 2010, 2011, and 2012 at Gavin's Point Recreation Area in Yankton County.



Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- ⦿ Probably breeding
- Observed; not breeding at location

EASTERN WHIP-POOR-WILL

Antrostomus vociferous

Active at night, the Eastern Whip-poor-will captures moths and other insects on the wing in its wide, gaping mouth. Often heard but rarely seen, the Whip-poor-will endlessly calls its name on summer nights. By day, the bird sleeps on the forest floor, or on a horizontal log or branch.

DISTRIBUTION AND STATUS

The Eastern Whip-poor-will's breeding range extends from southeast and central Canada south to the Gulf Coast states and west to the eastern Great Plains. It has a very limited distribution in South Dakota, only occurring regularly along the Missouri and Big Sioux rivers in the southeast. Within this limited area, they are quite common. Prior to 2000, this species occasionally was recorded during the summer in other parts of the state. Just two nests have ever been found in South Dakota, in 1994 in Clay County, and 1999 in Lincoln County (Dean *et al.* 1995, Tallman *et al.* 2002).

HABITAT

Breeding habitat is deciduous or mixed coniferous-deciduous forest with little to no understory. Key elements include shade, proximity to open areas for foraging, and fairly sparse ground cover. Of 10 observations during the second Atlas, 4 were in lowland deciduous forest, 3 in upland deciduous forest, and 3 in upland mixed deciduous-conifer forest. The nest site is in shady woods

but often near the edge of a clearing, on open soil covered with dead leaves.

BREEDING BIOLOGY

In some regions, Whip-poor-wills raise two broods during the summer but this has not been confirmed in South Dakota. The two South Dakota nest records were on May 26th and June 12th. This species does not build a nest. The female lays her clutch of two eggs on top of the leaf litter. Both adults incubate the eggs. After 19 to 21 days, chicks hatch covered in down with eyes open. Adults feed the chicks by regurgitating insects. Chicks can move to new locations by themselves during the nestling stage. When about 7 days old, after the chicks have molted into their black-speckled, camouflaged feathers, chicks are led to denser cover. At this time, the female often leaves them in the care of the male and begins a new clutch nearby. The chicks' first flight occurs at about 20 days (Cink 2002).

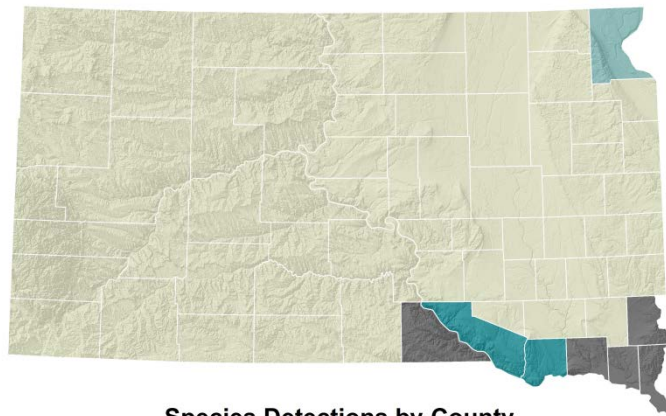
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	0	0
Probable	1	3	4
Possible	1	2	3
Observed	0	0	0
Total	2 (0.5%)	5	7

Eastern Whip-poor-will



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

CHIMNEY SWIFT

Chaetura pelagica

Originally, Chimney Swifts in North America nested in hollow trees and caves. As early as 1672, swifts readily adopted chimneys as nesting structures and nested almost exclusively in chimneys by the 1790s. An agile flier, Chimney Swifts fly head-first at high speeds into larger openings and then quickly flip over to tail-first once inside. They enter smaller openings tail-first.

DISTRIBUTION AND STATUS

The breeding range includes regions east of the Rocky Mountains in the United States and southern Canada. However, Chimney Swifts are uncommon and local between the Rocky Mountains and Missouri River. In South Dakota, Chimney Swifts are common east of the Missouri River, and scattered and uncommon west of the River. Compared to the first Atlas, the second Atlas found Chimney Swifts in more towns west of the River.

HABITAT

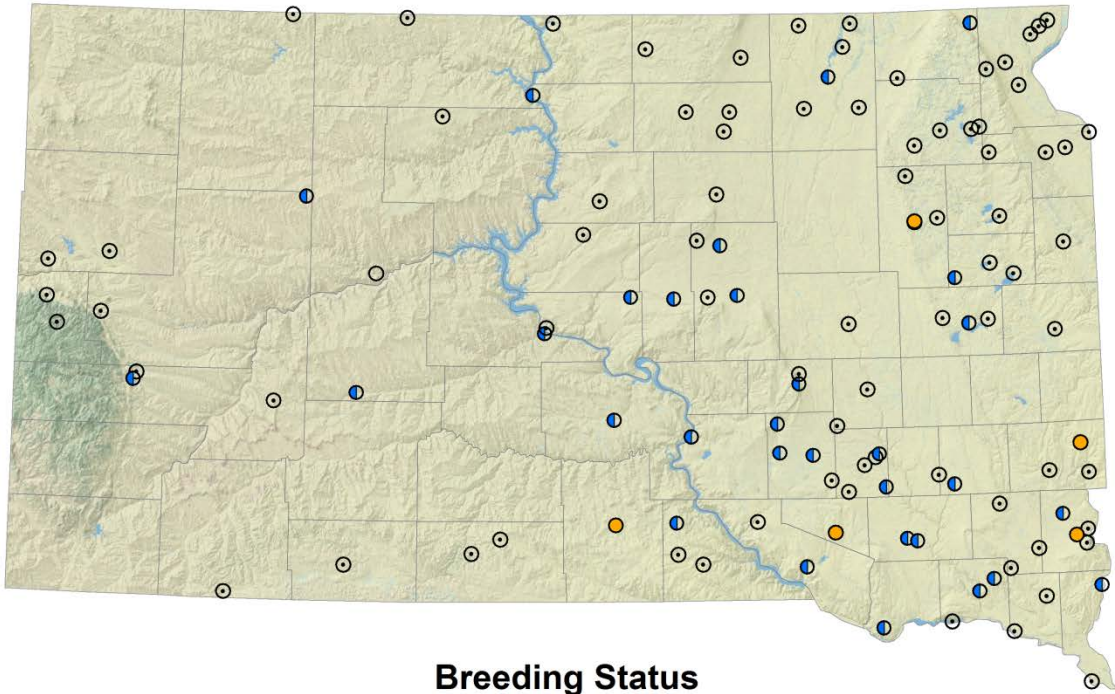
Because Chimney Swifts mostly nest in human dwellings, most observations are in inhabited areas. However, swifts will forage over most habitat types. Second Atlas reports were in residential areas (73%), grasslands (6%), forests (2.5%), lakes and ponds (3%), cropland (1%), shrublands (1%), and unspecified habitat flyovers (9%).

BREEDING BIOLOGY

In South Dakota, Chimney Swifts nest during June and July. Swifts primarily nest in chimneys or walls of abandoned buildings, but may also nest in hollow trees or caves. The nest is shaped like half a saucer and composed of loosely woven twigs held together with the birds' glue-like saliva. Saliva also is used to adhere the nest to the wall. Adults collect nesting material by breaking off small twigs with their feet as they fly through branches. Both parents incubate the clutch of 4 to 5 white eggs for 19 to 20 days. Parents feed nestlings by regurgitating insects. Nestlings in broods of 4 or more outgrow the nest in about 14 days. Their eyes are not open yet but they begin to perch on the wall next to the nest. In smaller broods, nestlings begin moving off the nest around 19 days. The brood remains close together on the wall, joined by their parents at night. Young swifts are about 30 days old when they make an initial flight out of the chimney. After the initial flight, families regularly return to the chimney to roost together, but fledglings are no longer fed by the parents (Steeves *et al.* 2014).

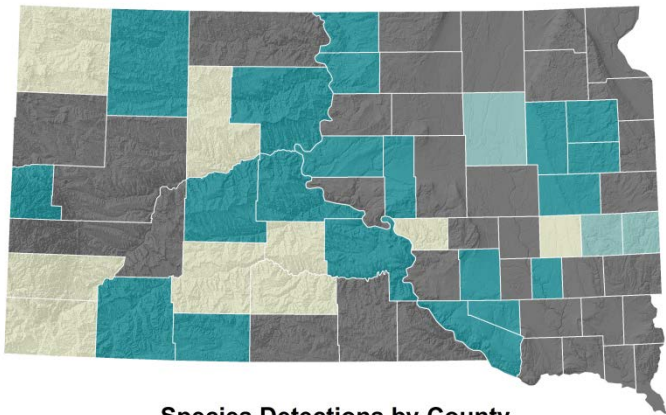
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	5	5
Probable	15	17	32
Possible	33	46	79
Observed	1	0	1
Total	49 (11%)	68	117

Chimney Swift



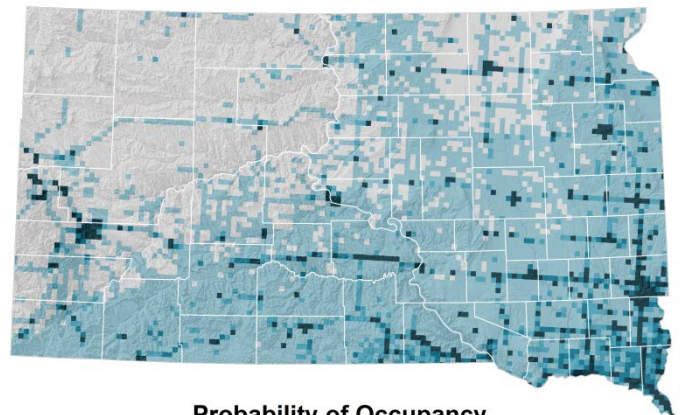
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

WHITE-THROATED SWIFT

Aeronautes saxatalis

The scientific name *Aeronautes* means “sky sailor.” A spectacular flyer, White-throated Swifts rarely land except to nest or roost. They forage, eat, drink, bathe, preen, chase, and perform courtship displays on the wing.

DISTRIBUTION AND STATUS

South Dakota is at the extreme northeast edge of the breeding range, which is the western U.S. from the southern interior of British Columbia south to Mexico and Honduras. Within South Dakota, the distribution and abundance of White-throated Swift appears to be similar between the first and second Atlases. These swifts are fairly common in the Black Hills, although they tend to be less common around higher peaks such as Harney Peak. Elsewhere, White-throated Swifts are local around limestone or sandstone cliffs and buttes in Harding County, the Pine Ridge Escarpment, and the Badlands of Pennington, Jackson, and Oglala Lakota counties.

HABITAT

White-throated Swifts occupy mountainous and hilly terrain, foraging over ridgelines, canyons, cliffs, and adjacent open or forested country. During the second Atlas, these birds were recorded flying over cliffs (27%), conifer forests (27%), burned forests (17%), mixed conifer-deciduous forests

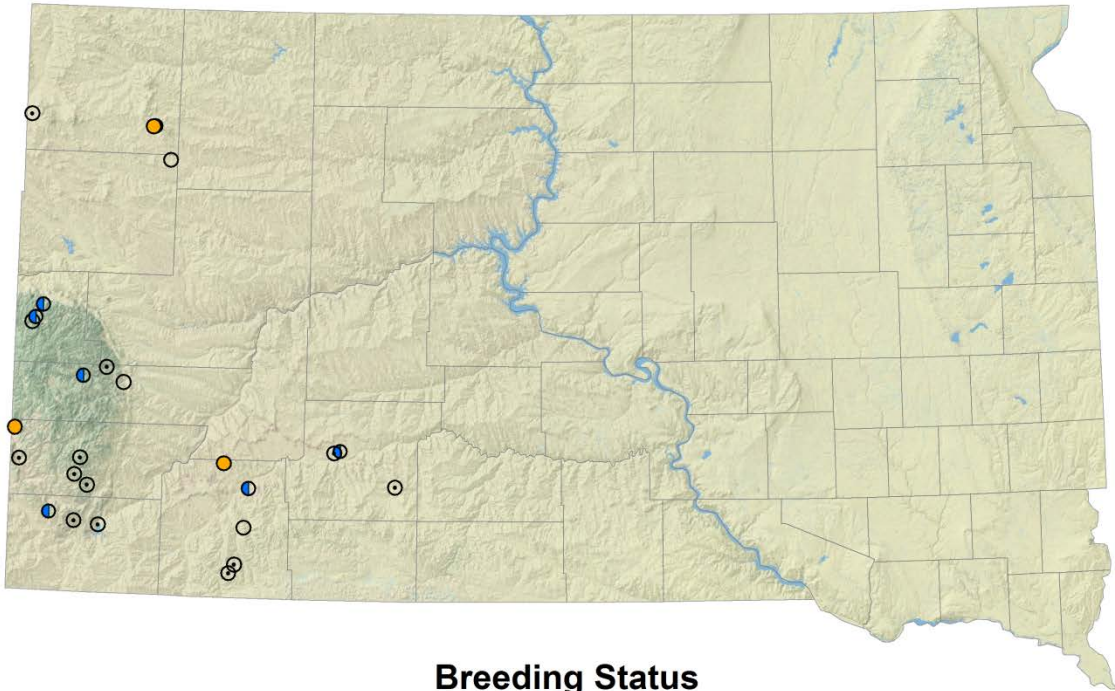
(8%), grasslands (8%), ponds (4%), and shrublands (2%).

BREEDING BIOLOGY

The breeding season in South Dakota generally is late May to mid-July. Second Atlas breeding dates ranged from May 28 to July 19. White-throated Swifts nest in high cliffs or rocky faces of rugged countryside, in crevices, fissures, and shelves of cliffs, canyon walls, pinnacles, and large rocks. Pairs may nest singly or semi-colonally with up to 20 other pairs. Adults collect plant materials, feathers, and moss on the wing. The material is held together with saliva to create a shallow, saucer-shaped nest in which the female lays 4 to 5 unmarked white eggs. Because nests are so difficult to access, there is little information about the nesting cycle. Eggs hatch after about 24 days. Both parents appear to feed the nestlings; insect food is carried as a large bolus in the mouth of the parent. Nestlings appear to leave the nest at about 40 to 46 days but nothing is known about the remainder of their dependent period (Ryan and Collins 2000).

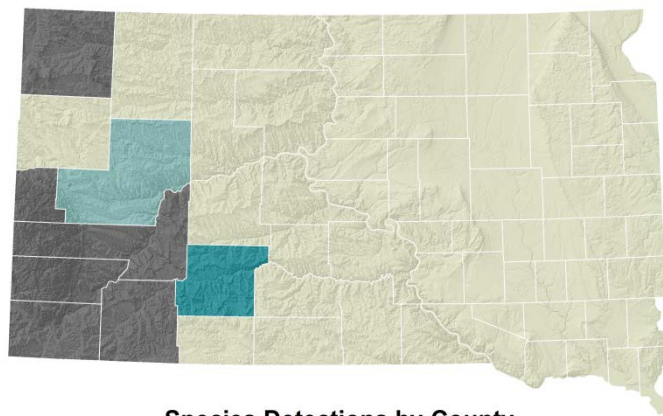
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	2	1	3
Probable	6	1	7
Possible	8	5	13
Observed	2	1	3
Total	18 (4%)	8	26

White-throated Swift



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

RUBY-THROATED HUMMINGBIRD

Archilochus colubris

Female Ruby-throated Hummingbirds weigh just 0.12 oz., while adult males are 0.10 oz. Despite their size, many fly nonstop across the Gulf of Mexico during migration, a round-trip of more than 1,000 miles.

also were in these habitats; in addition, 10% were in mixed deciduous-coniferous forest and 1 report of birds foraging on wildflowers in a field.

DISTRIBUTION AND STATUS

This species occupies the largest breeding range of any North American hummingbird, from central Canada to the Gulf Coast. In the United States the western boundary is a remarkably straight north-south line east of the 100th meridian, which conforms closely to the range of the eastern deciduous forest. In South Dakota, Ruby-throated Hummingbirds are rare breeders in the extreme eastern part of the state. This distribution has not changed since the 1980's (Harris 1987). The few summer records before that time, which were not confirmed as breeding, were concentrated in the extreme northeastern counties. Second Atlas observers reported several hummingbirds west of the usual range, but it is not clear whether these records represent a range expansion.

BREEDING BIOLOGY

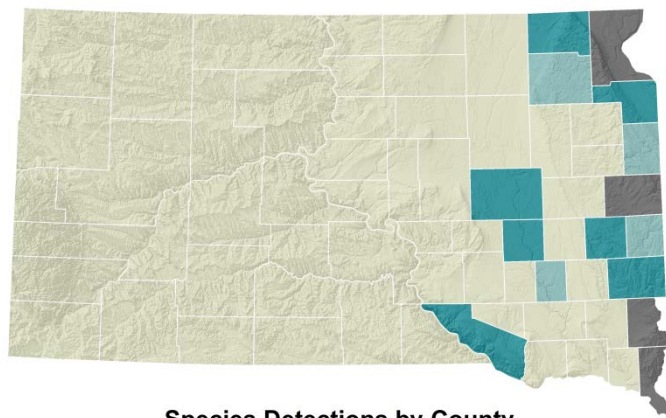
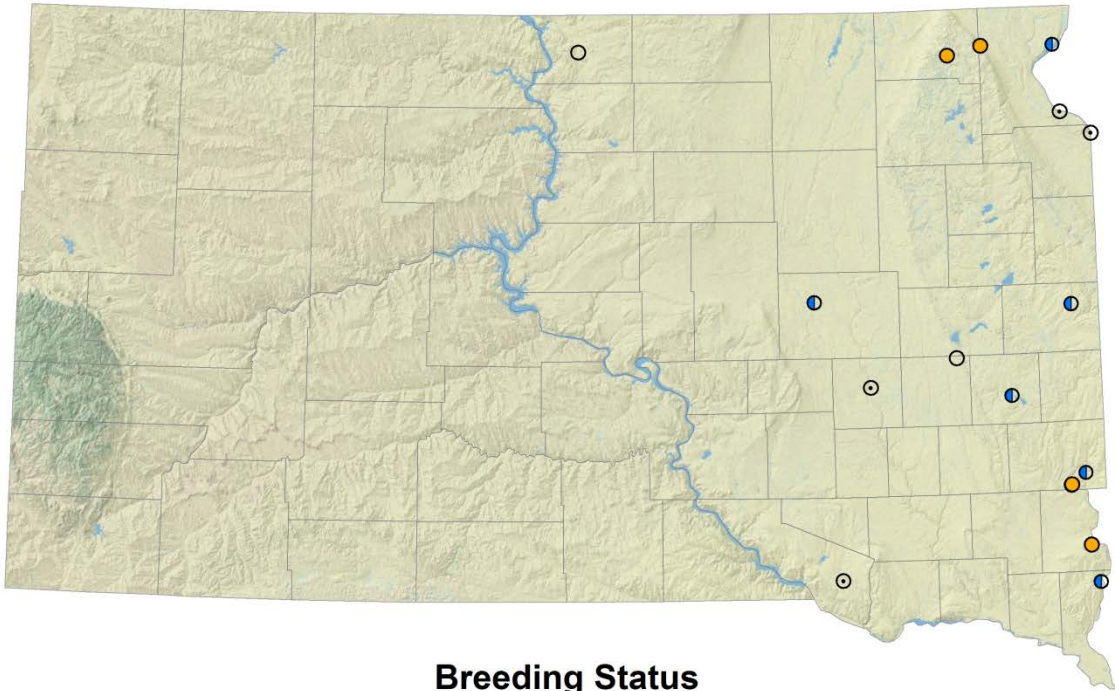
The breeding season is early June through late August. The male's territory is centered on a food source, with a space for mating being a secondary function. The male and female remain together only for courtship and mating. The female does all of the parental duties, including selecting the nest-site, building the nest, incubating the eggs, and raising the young. The bowl-shaped nest is about 2" wide and 1.5" tall. It is made of thistle, dandelion down, and spider webbing and decorated on the outside with lichens. The nest is usually located near the tip of a down-sloping branch, with a fairly open area beneath. The female lays 1 to 3 white, unmarked eggs, which she incubates for 15 days. She feeds small insects to the nestlings until they leave the nest at 18 to 22 days and continues until they are independent, in another 4 to 7 days (Weidensaul *et al.* 2013).

HABITAT

In South Dakota, these hummingbirds reside in deciduous or mixed deciduous-coniferous forests, including forested residential areas. Of second Atlas confirmed breeding reports, 2 were in lowland forest, 1 in upland forest, and 1 in a residential area. Other observations

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	3	4
Probable	2	4	6
Possible	1	4	5
Observed	2	0	2
Total	6 (1%)	11	17

Ruby-throated Hummingbird



- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

BROAD-TAILED HUMMINGBIRD

Selasphorus platycercus

Courting male Broad-tails perform spectacular aerial displays—repeated climbs high up in the air followed by steep dives, accompanied by a loud wing trill. The trill is caused by pulsations of the specialized tapered wing tip of the male.

DISTRIBUTION AND STATUS

The Broad-tailed Hummingbird breeds at higher elevations of the southern and central Rocky Mountains, eastern California, and Central America. In South Dakota, this hummingbird is restricted to the Black Hills. The nearest breeding population is in the Bighorn and Laramie mountain ranges of Wyoming. Historical records report nesting hummingbirds in the Black Hills in the 1870s (Over and Thoms 1946). Few breeding season hummingbirds were reported during the 20th Century until the first Atlas, which documented a bird near Bear Mountain in Pennington County. The first breeding confirmation since 1900 was a nest discovered in Hell Canyon, Custer County in 2010 (Olson 2010). This nest site also was active in 2011 and 2012. In addition, residents living in the Black Hills reported visits by fledglings to their nectar feeding stations.

HABITAT

In the Black Hills, Broad-tailed Hummingbirds inhabit riparian areas and open pine forest with a well-developed shrub understory and an abundance of wildflowers. These birds are difficult to detect in the wild and most second Atlas observations (71%)

occurred at residential feeding stations, with additional sightings in ponderosa pine and mixed deciduous-pine woods.

BREEDING BIOLOGY

Broad-tail Hummingbird nests in the Black Hills are in ponderosa pine trees. The breeding season is late May to July. During the second Atlas, a female was carrying nest material on May 28 and a bird was still on a nest on June 26. Pair bonds are not formed in this species. The male displays every day on his territory and mates with all females that visit. He has no role in nesting or raising the young. The cup-shaped nest is built on a horizontal tree branch, usually sheltered by an overhanging branch or leaves. The nest is made of spider webs and plant down and camouflaged on the outside with lichens, bark, and moss. The female incubates the clutch of 2 white eggs for 16 to 19 days. The nest stretches as the nestlings grow, eventually flattening out into a platform where the nestlings preen and exercise their wings. The young hummingbirds first fly at 21 to 26 days (Camfield *et al.* 2013).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	2	3
Probable	0	2	2
Possible	3	3	6
Observed	0	0	0
Total	4 (1%)	7	11

Broad-tailed Hummingbird



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

BELTED KINGFISHER

Megaceryle alcyon

The Belted Kingfisher captures fish swimming near the surface of a creek or pond by diving into the water with eyes closed and grabbing the fish in its bill with a pincer-like action. Kingfishers regurgitate undigested bones and scales in pellets near their feeding perches.

DISTRIBUTION AND STATUS

The Belted Kingfisher breeds throughout North America except in the desert southwest and southern Texas. In South Dakota, kingfishers are scattered throughout the state. They are less common in areas with few water bodies that are bordered with vertical dirt banks. Kingfishers were reported on 13% of first Atlas random blocks compared to 22% of second Atlas blocks. The reasons for the difference are not clear; Breeding Bird Survey data show the state's population has not changed over the past four decades (Sauer *et al.* 2014).

HABITAT

Essential requirements for Belted Kingfisher breeding habitat include clear waters that support small fish, and nearby vertical dirt banks for nesting. The surrounding area can be almost any habitat but breeding pairs are sensitive to human presence and rarely breed in urban areas. Second Atlas observers reported kingfishers along creeks and rivers (40% of observations), ponds and lakes (31%), riparian forests (13%), marshes and wet meadows (10%), bridges (2%), and dirt banks (2%). One second Atlas nest was in a riverbank

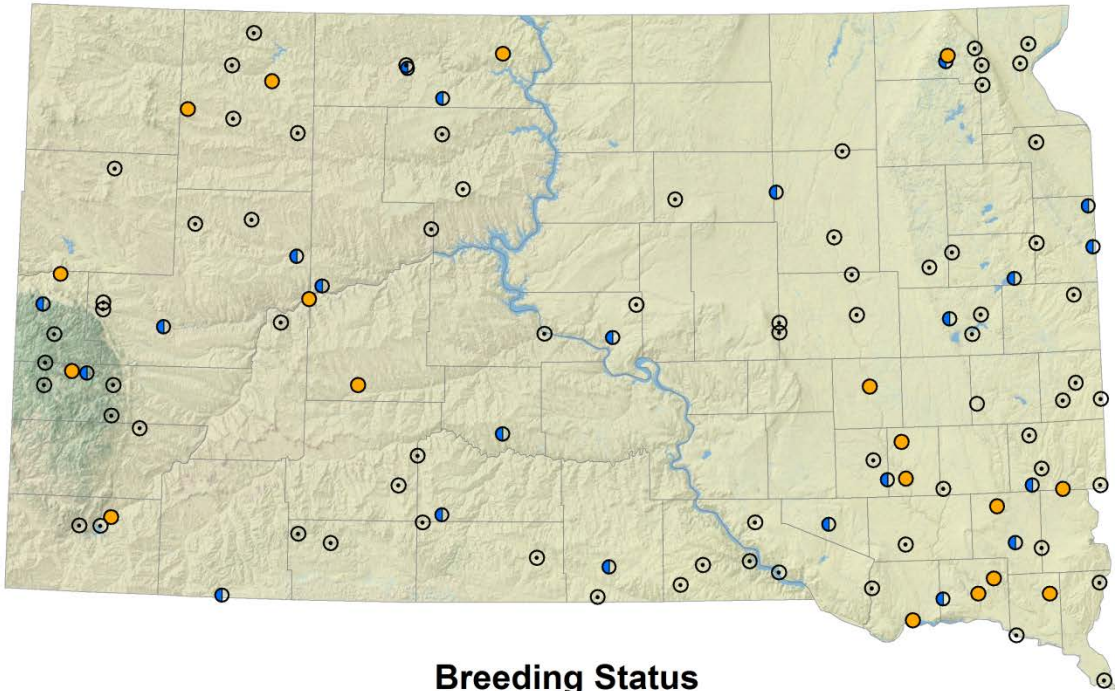
and another was in a dirt bank next to a stock dam.

BREEDING BIOLOGY

In South Dakota, Belted Kingfishers nest from early May into July, with some pairs still feeding chicks into mid-August. Kingfishers nest in burrows that they dig in vertical dirt banks, preferably near water, but also farther away in road cuts, ditches, or sand and gravel pits. Both sexes dig the burrow, which is completed in 3 to 7 days, the male spending about twice as much time as the female. The burrow extends 3' to 6' into the bank and ends in an unlined nest chamber. Both parents incubate the clutch of 6 to 7 white, unmarked eggs for 22 to 24 days. For the first 3 or 4 days after hatching, nestlings are fed a regurgitated oily ball of partially digested fish. After 5 days, nestlings eat whole fish. Chicks leave the nest 27 to 29 days after hatching, often enticed out of the burrow by an adult holding a fish and calling from outside. Young kingfishers do not capture live fish for at least a week after leaving the nest, and are dependent on food from their parents for about 3 weeks (Kelly *et al.* 2009).

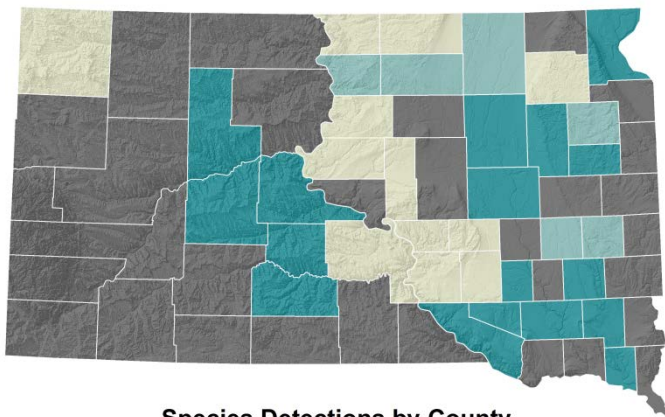
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	13	5	18
Probable	22	1	23
Possible	59	11	70
Observed	1	0	1
Total	95 (22%)	17	112

Belted Kingfisher



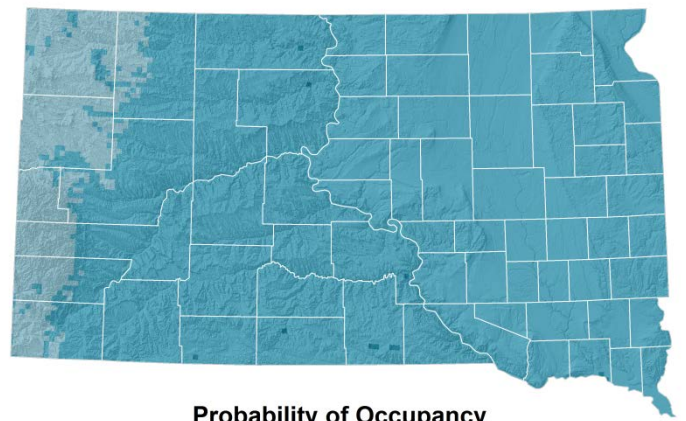
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

LEWIS'S WOODPECKER

Melanerpes lewis

This bird is named after Meriwether Lewis, who discovered the species in Montana in 1805 during the Lewis and Clark expedition. It has several unusual characteristics for a woodpecker such as its green, red, and pink plumage, a flight pattern more like that of a crow, and its habit of flycatching for insects from a perch.

west-central Black Hills, the Westberry Burn on the western edge of Rapid City, several burns in the southern Hills, and a small burn in the Cave Hills in Harding County. The Harding County sighting was rare but not surprising because the species occurs just over the Montana border to the west (Montana Bird Distribution Committee 2012).

DISTRIBUTION AND STATUS

Lewis's Woodpecker is found throughout the western U.S. wherever there are open or burned forests. South Dakota has the eastern-most population. This species is a burn specialist in the Black Hills, with very rare occurrences in pine forests in other parts of the state such as in Harding County. It also is commonly found in riparian oak woodlands just north of the Black Hills in Lawrence and Meade counties. It is an uncommon species; a 2002 - 2005 study in the southern Black Hills found a nest density of less than one nest per acre (Gentry and Vierling 2008). Because of its rarity, it is a state Species of Greatest Conservation Need (SDGFP 2014).

BREEDING BIOLOGY

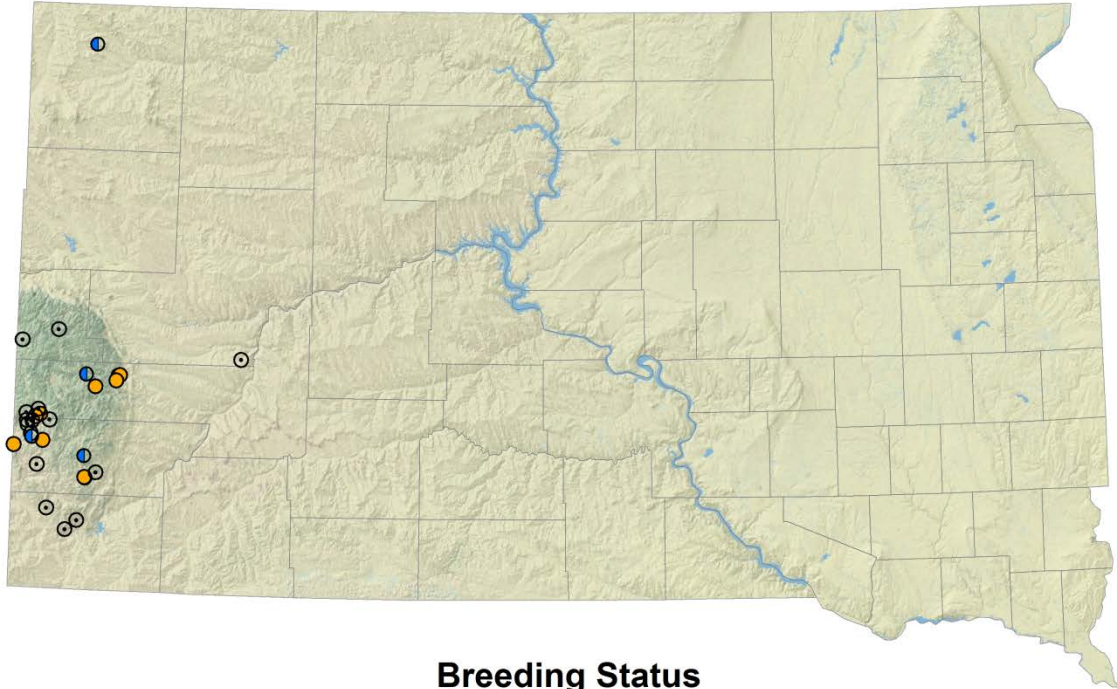
South Dakota Lewis's Woodpeckers nest from late May to mid-July (second Atlas nest dates: May 28 to July 21). They nest in cavities near the tops of dead trees or limbs. Because this species is not anatomically specialized for excavating wood, the nesting tree generally is well decayed or has an existing cavity. A 2002 - 2005 study in southern Black Hills burned forests found an average of 5.2 eggs in 55 nests; these produced an average of 3.1 fledglings per nest (Gentry and Vierling 2007). Both the female and male share parental duties of incubating eggs and feeding the brood until the chicks leave the nest at 28 to 34 days (Vierling *et al.* 2013).

HABITAT

Lewis's Woodpeckers breed in a variety of open forest types: open ponderosa pine, streamside oaks or cottonwoods, or burned forests. More than half (54%) of second Atlas records were in open burned forests with scattered burned snags – such as the Jasper Burn in the

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	3	6	9
Probable	2	2	4
Possible	1	15	16
Observed	0	0	0
Total	6 (1%)	23	29

Lewis's Woodpecker



Breeding Status

- Confirmed breeding
- Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

RED-HEADED WOODPECKER

Melanerpes erythrocephalus

The Red-headed Woodpecker is one of the most omnivorous woodpeckers. Its diet includes nuts, seeds, fruit, berries, insects, earthworms, spiders, small animals, and even bark. It also is one of the few woodpeckers that commonly stores its food, initially storing food items in a single covered location and later moving the items to separate locations scattered around its territory.

DISTRIBUTION AND STATUS

The Red-headed Woodpecker breeds throughout the eastern United States and Great Plains. In South Dakota it is common and widespread, except uncommon in the northwest where there are fewer trees for nesting. Abundance and distribution were the same between the first and second Atlases. Breeding Bird Survey data confirm that the state's Red-headed Woodpecker population has been stable over the past 45 years, although the species is declining range-wide (Sauer *et al.* 2014).

HABITAT

Red-headed Woodpeckers inhabit open areas with trees, including large dead trees. During the second Atlas, these birds were recorded in every habitat category that includes trees: deciduous (primarily shelterbelts) (65% of observations), mixed deciduous-conifer (12%), residential areas (9%), open areas with scattered trees (3%), coniferous (2%), and burns (1%). They also were recorded foraging in grasslands (4%) and cropland (3%).

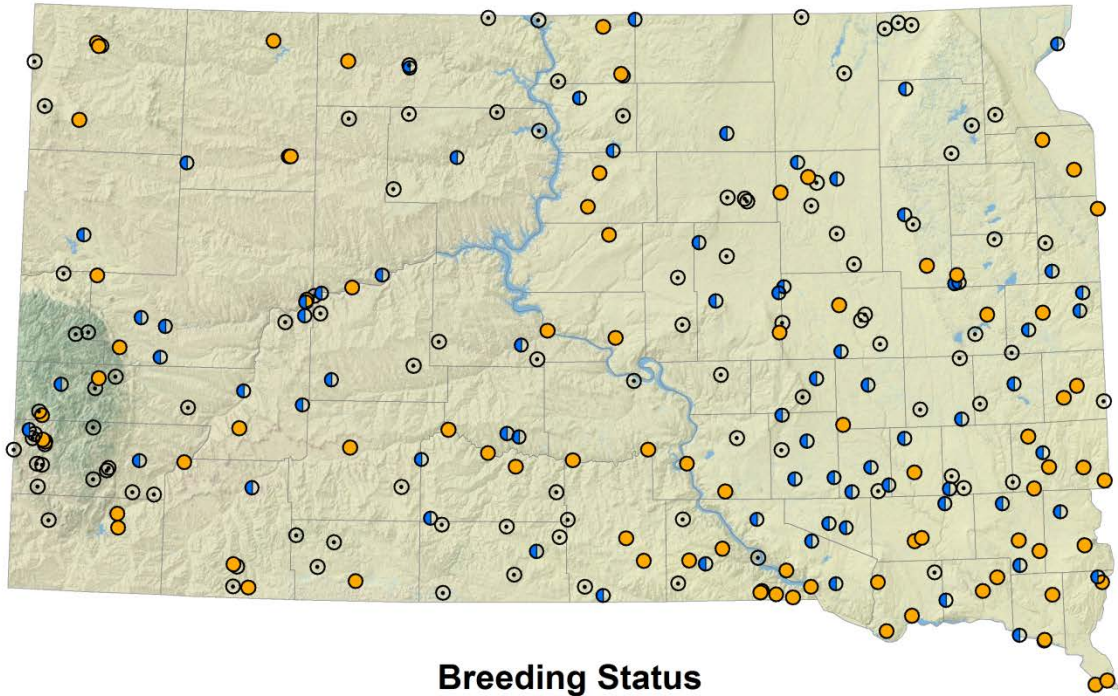
Second Atlas nests were in deciduous shelterbelts and riparian forest (62% of 42 nests), mixed forest (12%), conifers (5%), burned forest (9%), residential areas (7%), and open areas with scattered trees (5%).

BREEDING BIOLOGY

One of the latest nesting woodpeckers, Red-headed Woodpeckers in South Dakota nest from late May through July (second Atlas nests: May 21 to July 30). The male excavates a cavity in a dead tree or dead portion of a live tree. The female indicates that she accepts the cavity by tapping on the tree. She lays an average of 5 white eggs in the wood chips at the bottom of the cavity. Both adults incubate the eggs during the 12 to 13 day incubation period, adding wood chips to the nest as needed. Nestlings are fed by both parents and leave the nest at about 27 to 31 days. When they leave the nest, the young woodpeckers already are strong fliers and capable of fly-catching. In about 25 days, the young birds are chased off the territory by their parents (Frei *et al.* 2015).

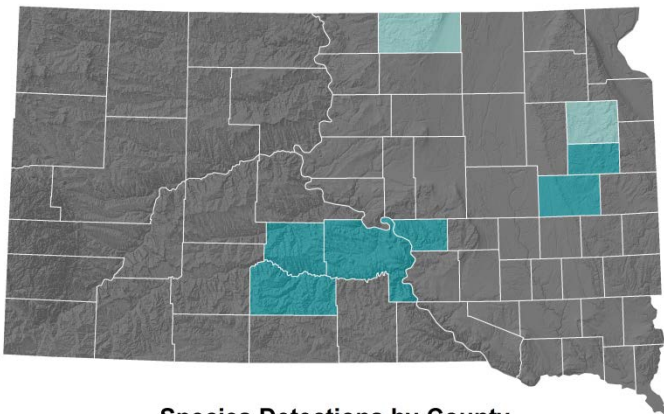
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	48	34	82
Probable	70	5	75
Possible	79	20	99
Observed	0	0	0
Total	197 (45%)	59	256

Red-headed Woodpecker



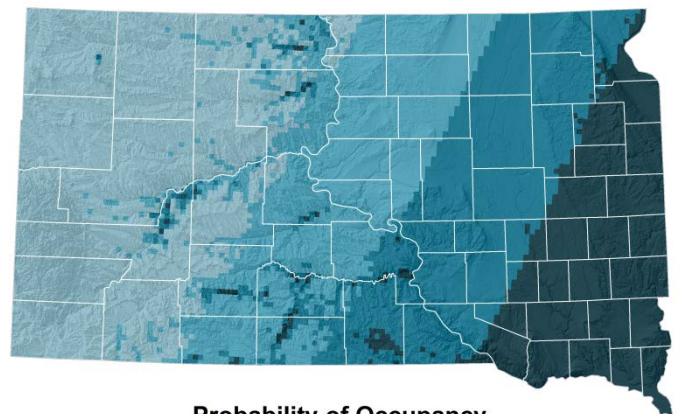
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

RED-BELLIED WOODPECKER

Melanerpes carolinus

As its name suggests, the Red-bellied Woodpecker has red on its belly. However, the coloration is limited to a small section between the legs and is rarely visible in the field.

DISTRIBUTION AND STATUS

The Red-bellied Woodpecker is a year-round resident of the eastern half of the U.S., west to the Great Plains. South Dakota is at the northwestern edge of the range. Red-bellied Woodpeckers are most common in the southeastern counties. It also occurs along rivers radiating from the southeast, including the Missouri River north to Pierre, the Big Sioux River north to Brookings, and the James River north to Forestburg. It breeds in the northeast in Roberts County, connected to populations in Minnesota. West of the Missouri River, this woodpecker has expanded since the first Atlas. Individuals were found scattered throughout the southern counties, especially south of the White River. During the second Atlas, first known sightings were documented for 9 counties (Fall River, Pennington, Oglala Lakota, Todd, Campbell, Buffalo, Hand, Davison, and Hanson).

HABITAT

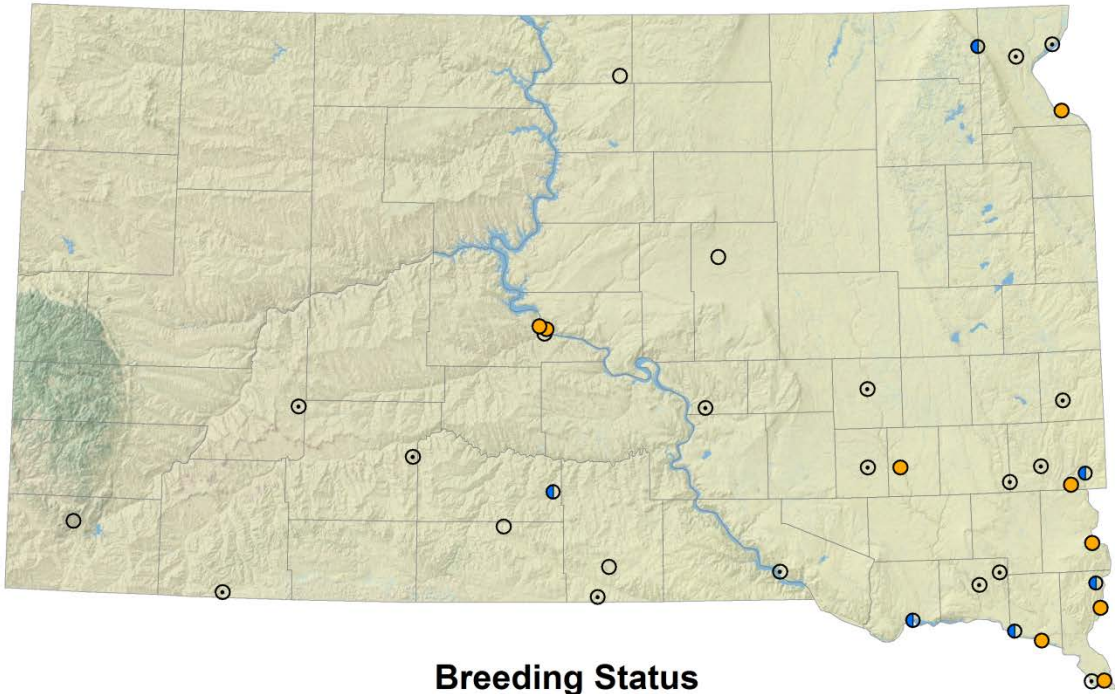
Red-bellied Woodpeckers are most common in deciduous forest, especially along rivers. They are tolerant of human activity and nest in wooded towns, parks, and farmsteads. Second Atlas observations were in lowland woods (61%), upland woodlands (31%), and residential areas (7%).

BREEDING BIOLOGY

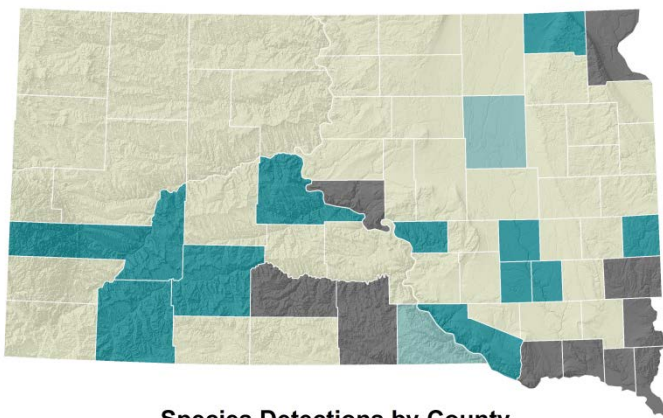
The breeding season in South Dakota is May to early July (second Atlas nest dates: May 13 to July 4). In early spring, the male advertises for a mate by tapping, calling, and drumming. He starts excavating several holes; the female taps next to the cavity of her choice. The nest cavity is excavated in dead wood, usually a snag or dead limb in a live tree, but occasionally in a utility pole or fence post. In subsequent years, the male will excavate below the current nest on the same tree or pole. The female lays a clutch of 4 to 5 eggs directly on the wood chips at the bottom of the cavity. Both adults incubate the eggs for 12 days. Nestlings are fed a varied diet of insects, fruit, and small prey by both parents. The first food items are small insects, which the adults crush and break up before feeding. The nestlings are fed progressively larger insects and fruit as they grow. Chicks leave the nest after 24 to 27 days. Parents usually divide the brood and continue to feed the young woodpeckers for up to 6 more weeks. Eventually, the adults, especially the male, drive the juveniles from the territory (Shackelford *et al.* 2000).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	9	9
Probable	5	1	6
Possible	17	0	17
Observed	3	2	5
Total	25 (6%)	12	37

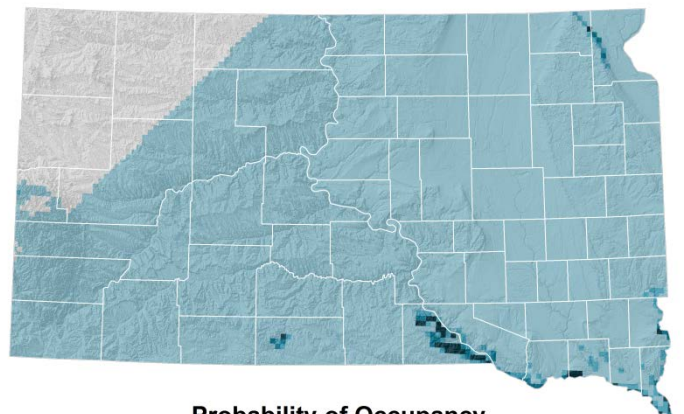
Red-bellied Woodpecker



- Breeding Status**
- Confirmed breeding
 - Probably breeding
 - Possibly breeding
 - Observed; not breeding at location



- Species Detections by County**
- First Atlas Only
 - Second Atlas Only
 - Both Atlases
 - Neither Atlas



- Probability of Occupancy**
- 0%
 - 1-25%
 - 26-50%
 - 51-75%
 - 76-100%

YELLOW-BELLIED SAPSUCKER

Sphyrapicus varius

Sapsuckers are one of the most migratory of woodpeckers, with almost no overlap between their wintering grounds in the southern U.S., Caribbean, and Central America and their breeding grounds. On average, females migrate farther south than do males.

DISTRIBUTION AND STATUS

Yellow-bellied Sapsuckers breed throughout Canada, New England, and the northern Midwest. South Dakota is at the southern edge of the breeding range. This sapsucker breeds only in the easternmost counties of the state, where it is uncommon in forested habitats. Sapsucker distribution and abundance were very similar during the two Atlases.

HABITAT

Sapsucker breeding habitat is deciduous forest, typically near creeks and rivers. During the second Atlas, 55% of sapsucker observations were in upland forests, 40% in lowland forests, and 5% in residential areas. All four nests discovered during the second Atlas were in deciduous forest--one in upland and three in lowland forests.

BREEDING BIOLOGY

South Dakota's Yellow-bellied Sapsuckers breed from May through July. Sapsuckers nest in cavities

excavated in a decaying deciduous tree or limb. A pair will often excavate in the same tree in consecutive years. While excavating, the male strikes the wood at a rate of 100 to 300 strikes per minute, stopping periodically to remove chips. The male sleeps in the nest cavity during excavation, incubation, and when the nestlings are small. The female roosts outside of the cavity. The female lays a clutch of 5 or 6 white eggs on the wood chips left over from cavity excavation. Both parents incubate the eggs, which hatch after 12 to 14 days. Between feedings, one of the chicks is usually vocalizing and positions itself near the entrance. When an adult brings food, all of the chicks call, but the chick nearest the entrance is loudest and thus, is usually fed. After several feedings, siblings displace this chick and in turn, are fed. Nestlings leave the nest 25 to 29 days after hatching. Adults entice the young outside by calling and withholding food. The nestlings stretch from the cavity entrance, eventually falling out and fluttering to a nearby branch. Parents feed the fledglings for another 10 days (Walters *et al.* 2002).

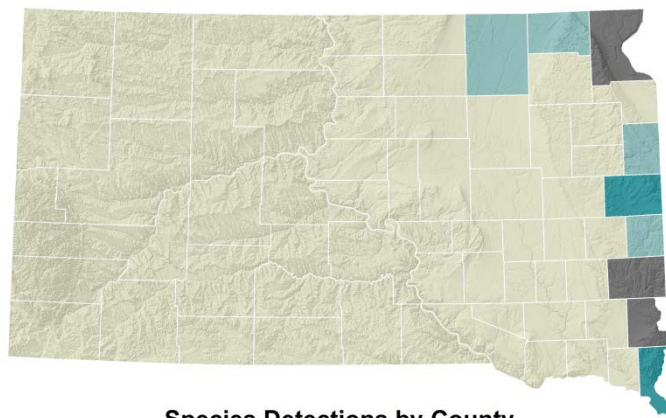
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	8	8
Probable	4	1	5
Possible	0	3	3
Observed	2	0	2
Total	6 (1%)	12	18

Yellow-bellied Sapsucker



Breeding Status

- Confirmed breeding
- ◐ Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

RED-NAPED SAPSUCKER

Sphyrapicus nuchalis

Sapsuckers drill shallow holes, called sap wells, into the bark of woody plants and feed on the sap produced at these wells. The birds create and maintain an elaborate system of wells to ensure a continuous supply of sap. Other species use the wells, especially hummingbirds, which rely on the wells as a food source. Hummingbirds often nest nearby, and may time their migration to coincide with the availability of sap wells.

found in aspen or birch stands. In addition, sapsucker abundance is strongly correlated with density of aspen and birch snags, especially snags with a large diameter (Mills *et al.* 2000). During the second Atlas, observers found most sapsuckers in either deciduous forests (59%) or mixed coniferous-deciduous forests (26%), with fewer observations in ponderosa pine forest (10%).

DISTRIBUTION AND STATUS

The Red-naped Sapsucker is a western species, breeding in the southern Rocky Mountains of Canada, interior of the western U.S., and south into Mexico. In South Dakota, this species is an uncommon breeder in the Black Hills, with rare sightings in other areas of the western third of the state. Observers during the second Atlas recorded Red-naped Sapsuckers in southern Custer County and south into Fall River County, areas where the species was not recorded during the first Atlas. This suggests a southward extension of the species' Black Hills distribution since the first Atlas. Breeding Bird Surveys have found a significant increase (5.4% per year) in South Dakota's Red-naped Sapsucker population between 1967 and 2012 (Sauer *et al.* 2014).

BREEDING BIOLOGY

South Dakota's Red-naped Sapsuckers breed during June and July. They nest in tree cavities that they excavate, preferring large diameter trees that are decaying or dead. During the second Atlas, 8 nests were in aspen, 1 in a dead Ponderosa Pine, and 1 in a snag. The male does most of the cavity excavation. Inside, the female lays 4 or 5 white eggs on a bed of wood chips created by pecking the sides and bottom of the cavity. Both parents incubate the eggs, which hatch in about 10 days. Nestlings leave the nest about 28 days after hatching (Walters *et al.* 2014).

HABITAT

In the Black Hills, Red-naped Sapsuckers are almost exclusively

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	7	7	14
Probable	5	3	8
Possible	0	10	10
Observed	0	0	0
Total	12 (3%)	20	32

Red-naped Sapsucker



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

DOWNY WOODPECKER

Picoides pubescens

The smallest woodpecker in North America, the Downy Woodpecker is named for the soft feathers on its lower back. Males tend to forage on smaller branches, while females tend to forage on larger branches and tree trunks.

DISTRIBUTION AND STATUS

Downy Woodpeckers are year-round residents throughout Canada and the United States. In South Dakota, this woodpecker is fairly common and widespread. They are less common in the northwest quarter of the state, which has fewer trees and residential areas. Downy Woodpeckers were reported on more random blocks during the first Atlas (45%) compared to the second Atlas (36%). A possible explanation may be the long-term decline of the quality and quantity of windbreaks and riparian forests in the state (Piva *et al.* 2013).

HABITAT

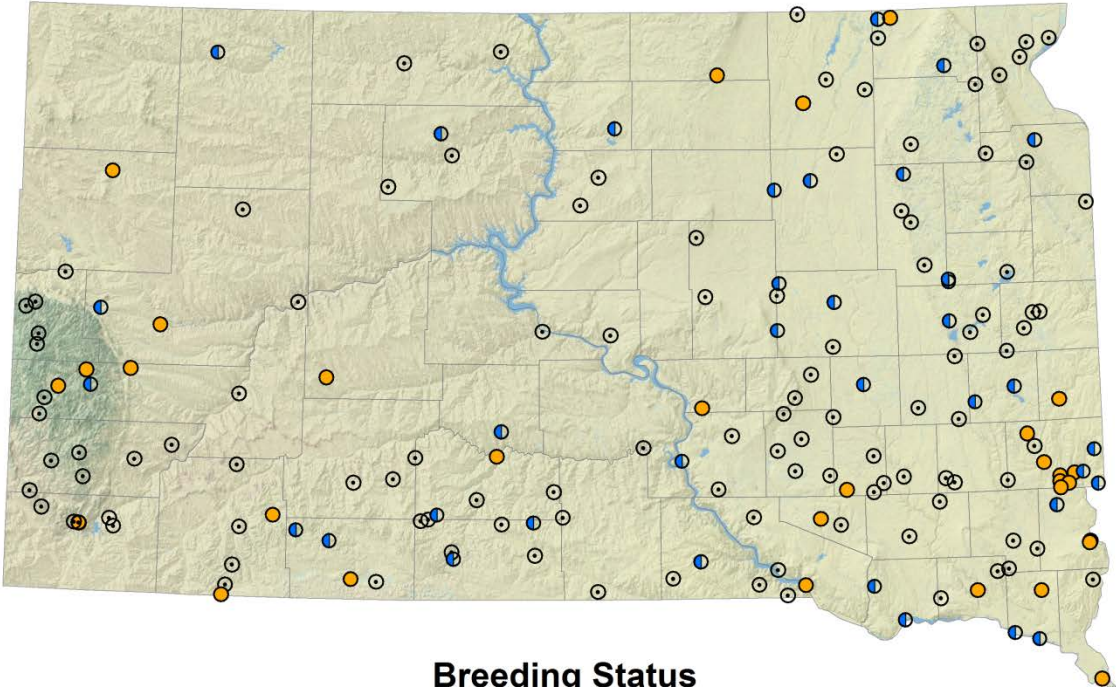
Downy Woodpeckers prefer deciduous trees in open woodlands, ranging from urban areas to wilderness areas. Observers during the second Atlas recorded these woodpeckers in deciduous woods and shelterbelts (70% of reports), mixed conifer-deciduous woods (19%), conifer woods (4%), and residential areas (4%). Second Atlas nests were in deciduous shelterbelts (4 nests), riparian woods (4 nests), and a mixed forest (1 nest).

BREEDING BIOLOGY

A few Downy Woodpeckers in South Dakota may begin breeding in April, more typically, nesting occurs from May through July. In fall and early winter, males and females have separate feeding areas. In late winter, both sexes start drumming loudly in their separate territories. The male enters a female's territory and a pair bond is formed. The pair excavates a nest cavity in a slanted dead limb or dead tree, typically in wood with an advanced stage of heart rot. Usually the cavity entrance is on the underside of the limb. After about 16 days, the excavation is finished. The female lays 4 to 5 white eggs directly on the wood chips on the bottom of the cavity. Incubation, by both adults, lasts 12 days. Both parents feed insects to the chicks. Nestlings leave the nest when 18 to 21 days old, and within 2 or 3 days, follow the parents and aggressively beg for food. For at least another 21 days, parents feed the chicks, lead the chicks to food and backyard feeders, and warn of predators (Jackson and Ouellet 2002).

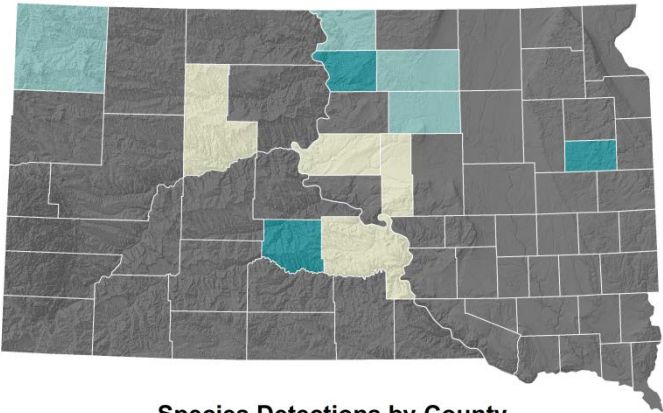
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	18	13	31
Probable	33	4	37
Possible	106	6	112
Observed	0	0	0
Total	157 (36%)	23	180

Downy Woodpecker



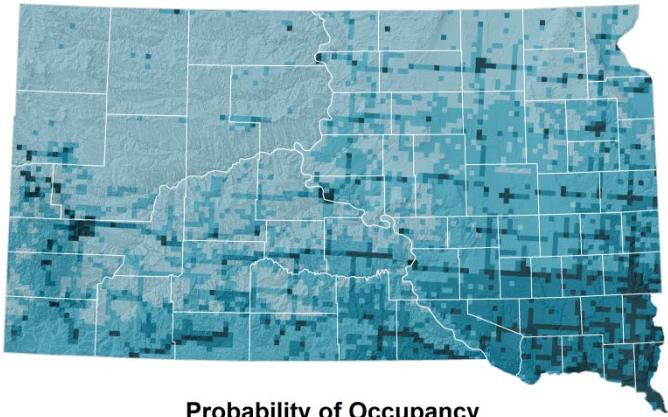
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

AMERICAN THREE-TOED WOODPECKER

Picoides dorsalis

Most woodpeckers have four toes, but the American Three-toed Woodpecker is lacking the hallux and has only three toes: two forward and one backward. This is thought to help the bird apply greater force when striking a tree surface during excavation or drumming. This adaption comes at a cost—Three-toeds use more energy while climbing trees compared to woodpeckers that possess four toes.

DISTRIBUTION AND STATUS

Breeding farther north than any other woodpecker, Three-toeds are residents of boreal forests of Canada and Alaska, and mountain forests of the western U.S. In South Dakota, this woodpecker is a rare permanent resident, mainly inhabiting the Limestone Plateau of the northern Black Hills (Ervin 2011). American Three-toed Woodpeckers in the Black Hills are of particular conservation concern because they are isolated by at least 150 miles from the nearest population in Wyoming's Big Horn Mountains, they are sedentary, and they are found exclusively in spruce forests, which are rare in the Hills. The Black Hills population also shows some genetic differentiation from other North American populations (Ervin 2011). Thus, this woodpecker is a state Species of Greatest Conservation Need (SDGFP 2014).

HABITAT

In the Black Hills, American Three-toed Woodpeckers are almost always found in white spruce habitat. Unlike other Three-toed populations, Black Hills'

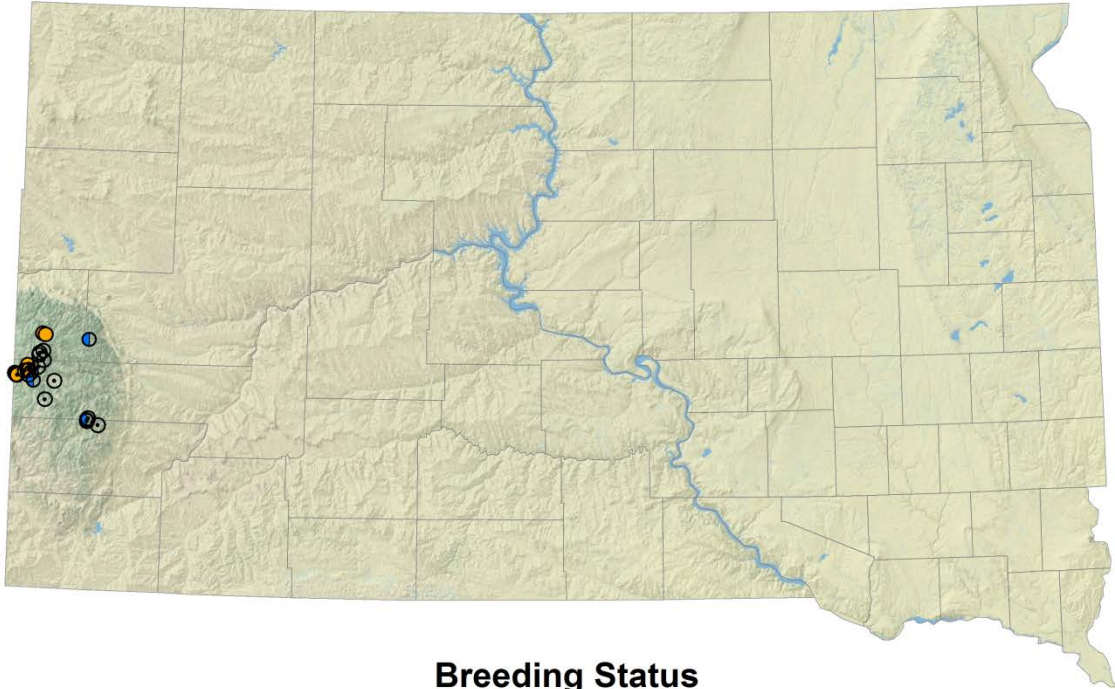
Three-toeds are not found in burned forests. Black Hills' Three-toeds prefer nest sites within or close to aspen groves (Ervin 2011).

BREEDING BIOLOGY

In South Dakota, Three-toeds nest from late May through July. Both members of a pair excavate the nest cavity. In a Black Hills study, nests were in living trees (spruce - 2 nests, pine - 1 nest, aspen - 10 nests) and dead snags (spruce snag - 6 nests, pine snag - 2 nests, aspen snag - 7 nests) (Ervin 2011). Heights of those cavities ranged from 3.7' to 37'. The female lays 3 to 6 eggs; the average clutch size for completed clutches in the Black Hills study was 3.4 eggs (Ervin 2011). The incubation period is 12 to 14 days. Both parents feed the nestlings. At first, adults enter the cavity to feed. After about 16 days, the chicks wait at the cavity entrance and are fed there. Chicks leave the nest when about 22 to 26 days old and may remain with their parents for another 28 to 42 days (Leonard 2001).

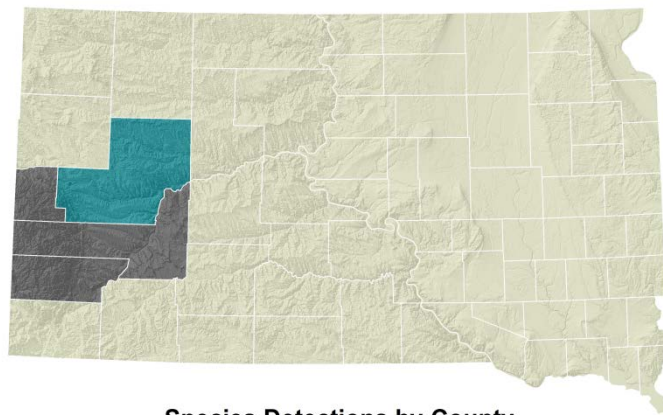
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	6	6
Probable	0	3	3
Possible	2	13	15
Observed	0	0	0
Total	2 (0.5%)	22	24

American Three-toed Woodpecker



Breeding Status

- Confirmed breeding
- ⦿ Possibly breeding
- ◐ Probably breeding
- Observed; not breeding at location



Species Detections by County

- ◻ First Atlas Only
- ◻ Second Atlas Only
- ◻ Both Atlases
- ◻ Neither Atlas

HAIRY WOODPECKER

Picoides villosus

The Hairy Woodpecker is so named because of the long, filamentous white feathers in the middle of its back.

DISTRIBUTION AND STATUS

The Hairy Woodpecker is a resident of forests throughout North and Central America. In South Dakota, the Hairy Woodpecker is a fairly common and widespread year-round resident, reaching highest densities in the Black Hills. The breeding distributions obtained during the two Atlases were essentially the same. The Hairy Woodpecker population in South Dakota has been increasing at a significant rate over the past 45 years (Sauer *et al.* 2014).

HABITAT

Hairy Woodpeckers inhabit a wide variety of habitats as long as large trees are present. Second Atlas observers reported these woodpeckers in deciduous woods (62% of reports), mixed deciduous-conifer woods (19%), coniferous forest (15%), and residential areas and parks (3%). Of 13 second Atlas nests, 7 were in deciduous woods, 4 in conifer woods, and 2 in mixed deciduous-conifer stands.

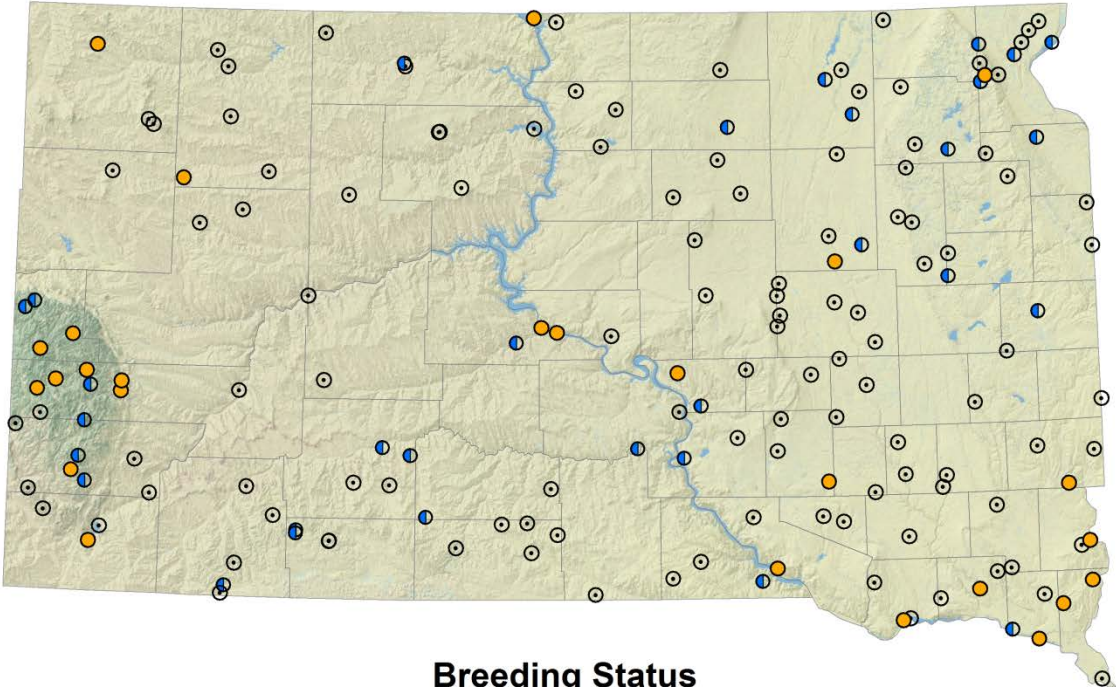
BREEDING BIOLOGY

Male and female Hairy Woodpeckers have separate early winter territories,

but when they pair in mid-winter, the female territory becomes the nest territory. In South Dakota, Hairy Woodpeckers nest from mid-May into August. The nest is in a cavity excavated by both adults in a live or dead tree. The female lays a clutch of 3 to 7 white eggs on the floor of the cavity. During the 14-day incubation period, the male incubates at night and the female during the day. Both parents feed the nestlings by regurgitating insects. At times, the male forages farther from the nest than the female, making fewer feeding trips but with more food each trip. Nestlings stay in the nest cavity for 28 to 30 days. As the time for leaving approaches, nestlings spend more time sitting at the cavity entrance and lean farther and farther out to intercept the parents returning with food. After leaving the nest, the young woodpeckers are fed by their parents for several weeks, often remaining on the same trunk or branch for hours waiting for food (Jackson *et al.* 2002).

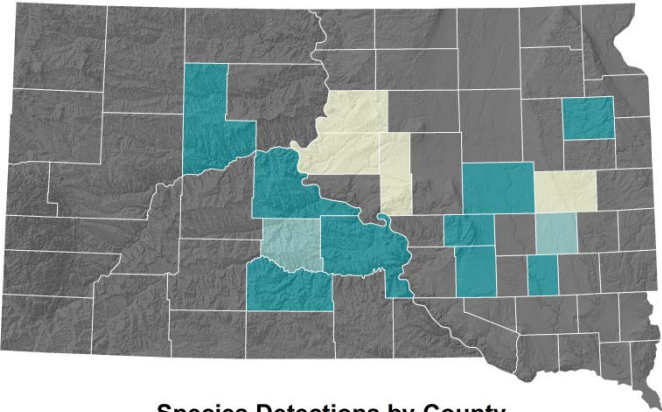
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	14	12	26
Probable	31	2	33
Possible	110	5	115
Observed	0	0	0
Total	155 (36%)	19	174

Hairy Woodpecker



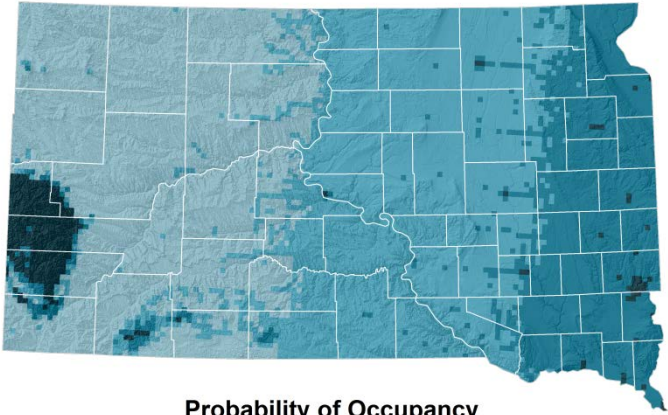
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BLACK-BACKED WOODPECKER

Picoides arcticus

The main diet of the Black-backed Woodpecker is the larvae of wood-boring beetles, especially long-horned, jewel, engraver, and bark beetles. The birds' typical foraging behavior involves methodically flaking the bark off of dead trees, listening and searching for the grubs tunneling through the wood.

DISTRIBUTION AND STATUS

The South Dakota population of Black-backed Woodpeckers is isolated from the main breeding population, which is distributed throughout the northern conifer forests of North America. This woodpecker is a rare to uncommon permanent resident in the higher elevations of the Black Hills. Its numbers fluctuate, depending on the availability of recently burned forest or mountain bark beetle-killed stands. First Atlas observers found Black-backs in just 8 locations. The second Atlas occurred after several large early-2000s fires and during a bark beetle outbreak. As a result, woodpeckers were reported in more than 40 locations. Because of its rarity and reliance on an ephemeral habitat, the Black-backed Woodpecker is a state Species of Greatest Conservation Need (SDGFP 2014).

HABITAT

Black Hills Black-backed Woodpeckers occur in ponderosa pine (69% of second Atlas reports), mixed pine-deciduous (8%) forests, and forests disturbed by fire or bark beetles (23%). The highest densities of these woodpeckers typically are in forests that were burned 1 to 2 years previously. In the Black Hills, birds

in these recent burns experience the highest survival and nest success compared to beetle-kill or undisturbed forests (Rota *et al.* 2014). Second Atlas nests were in burned forests (2 nests) and bark beetle infested forest (1 nest). In Black Hills beetle-killed forest, these woodpeckers prefer to nest in the midst of high densities of dead snags and trees currently infested with wood-boring insects (Bonnot *et al.* 2009).

BREEDING BIOLOGY

Second Atlas nest dates ranged from May 16 to July 9. The pair excavate a cavity in a live or dead tree. In the Black Hills, they nest in small-diameter pine snags or aspen (Vierling 2002, Bonnot *et al.* 2009). Usually the birds remove all of the bark around the cavity entrance. Black Hills females lay an average of 4 white eggs per nest (range 3 to 5 eggs), which both adults incubate for an average of 9.4 days. The average length of the nestling stage in Black Hills nests is 22 days. Black Hills nests produce an average of 1.4 to 2.4 fledglings, depending on the year (Millsbaugh *et al.* 2005, Bonnot *et al.* 2008, Dixon and Saab 2000).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	3	4
Probable	1	1	2
Possible	3	35	38
Observed	0	0	0
Total	5 (1%)	39	44

Black-backed Woodpecker



Breeding Status

- Confirmed breeding
- ◐ Possibly breeding
- ◑ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

NORTHERN FLICKER

Colaptes auratus

Northern Flickers play a central role in the ecology of woodlands. The cavities they drill are later used by many other species. For example, in the Black Hills, at least four bird species, five mammals, and a variety of insects use flicker cavities during the winter (Gentry and Vierling 2008).

DISTRIBUTION AND STATUS

Northern Flickers occur throughout most of North America. Both the red-shafted and yellow-shafted races of Northern Flicker occur in South Dakota; flickers in the Black Hills mostly are hybrids of the two races (Pettingill and Whitney 1965). Both South Dakota Atlases found flickers to be the most abundant breeding woodpecker in the state. The species was detected on slightly fewer blocks during the second Atlas (78%) compared to the first Atlas (83% of random blocks). According to Breeding Bird Surveys, the Northern Flicker population in South Dakota has been stable over the past 45 years (Sauer *et al.* 2013).

HABITAT

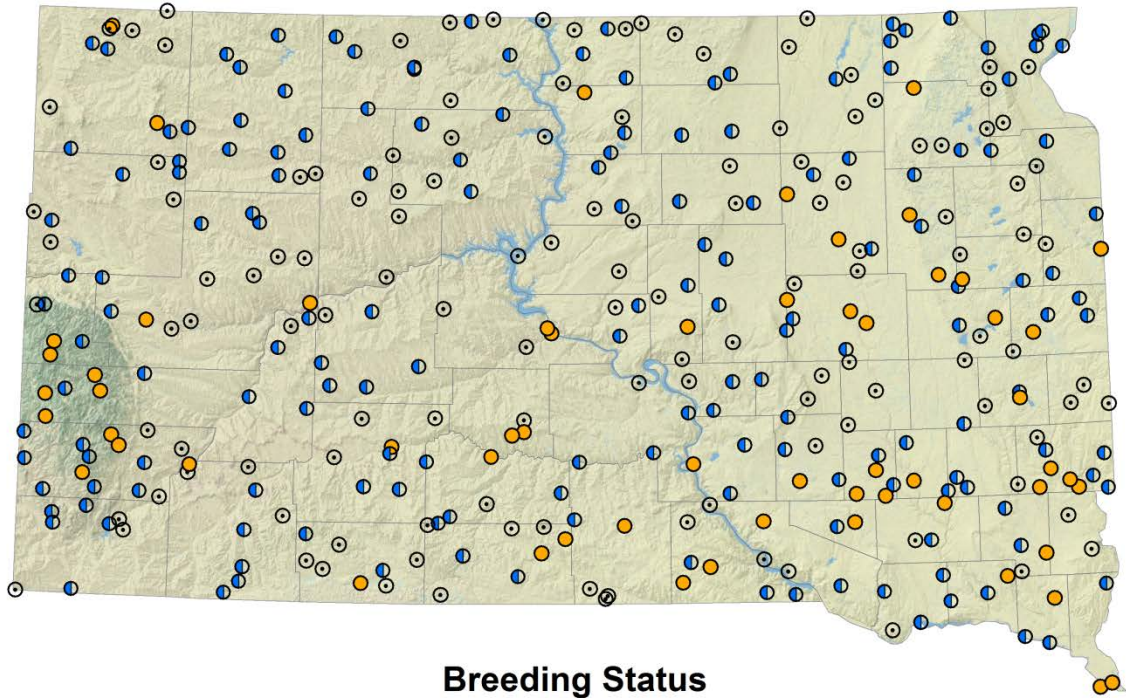
These woodpeckers inhabit a wide variety of forested habitats, but show a preference for forest edges or open forests. During the second Atlas, flickers were recorded in upland (51%) and lowland (28%) woods, grasslands (7%), residential areas (6%), and open areas with scattered trees (5%).

BREEDING BIOLOGY

In South Dakota, Northern Flickers nest from late April to late July, with an exceptionally late date of August 8 recorded during the second Atlas. Flickers nest in tree cavities that the pair excavates in dead or diseased tree trunks or branches. During the second Atlas, flicker nests were reported in ash (3 records), dead ponderosa pine (4), dead cottonwood (1), and broken-off snags (4). The nest cavities were from 8' to 80' high (average height 26'). The cavity usually is cylindrical with an entrance just large enough for an adult to pass. An average of 7 white, unmarked eggs are laid directly on a bed of wood-chips. During the 12-day incubation period, the male does all nighttime incubating, while the sexes share incubation duty during the day. Both parents feed the nestlings by regurgitating insects and ant larvae that they have stored in their pharynxes. Nestlings leave the nest when 24 to 27 days old and only remain dependent on adults for a few days after fledging (Wiebe and Moore 2008).

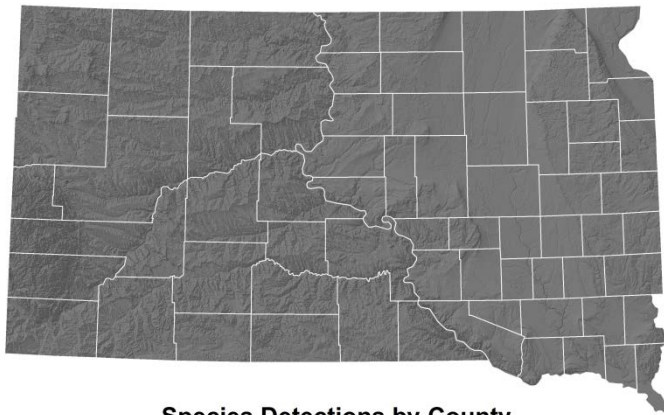
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	47	12	59
Probable	162	8	170
Possible	131	2	133
Observed	0	0	0
Total	340 (78%)	22	362

Northern Flicker



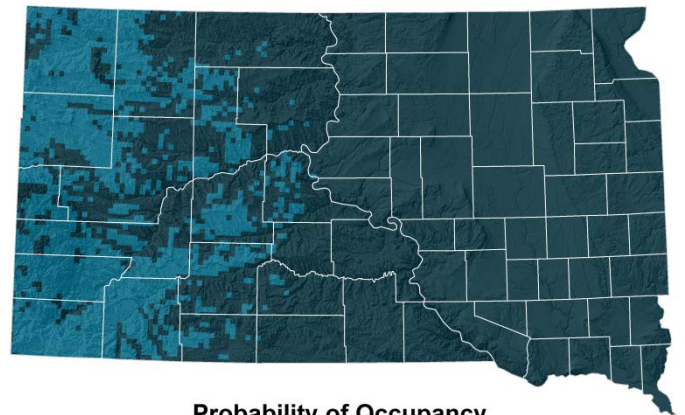
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1 - 25%
- 26 - 50%
- 51 - 75%
- 76 - 100%

PILEATED WOODPECKER

Dryocopus pileatus

The Pileated Woodpecker is the largest woodpecker in most of North America, second only to the Ivory-billed Woodpecker, and the sixth largest woodpecker in the world.

DISTRIBUTION AND STATUS

South Dakota is on the extreme southwestern edge of the Pileated Woodpecker's distribution, which includes the Pacific Northwest, the northern Rocky Mountain region, eastern United States, and southern Canada. This species is a rare permanent resident in the forested areas of extreme northeastern South Dakota, primarily Roberts County, with scattered observations in Grant and Marshall counties. Outside of the two Atlas periods, Pileated Woodpeckers also have been sighted in Deuel, Brookings, Day, Clay, and Minnehaha counties (Tallman *et al.* 2002).

HABITAT

In South Dakota, Pileated Woodpeckers inhabit mature deciduous forests. Second Atlas sightings were in upland deciduous forests (3 records), lowland deciduous forests (1), and upland mixed deciduous-conifer forests (1).

BREEDING BIOLOGY

Only one nest has ever been documented in the state; this nest was

active mid-April through mid-June, 1994 (Harris 1995). The pair defends their territory year-round. Both sexes excavate nest and roost cavities, creating a characteristic oval-shaped entrance hole. They excavate in dead or deteriorating live trees, either in a large dead branch or the trunk of the tree. The female typically lays 4 white, unmarked eggs on a layer of wood chips lining the bottom of the cavity. Both adults incubate the eggs and nestlings hatch after 15 to 18 days. Adults feed by regurgitating invertebrates into the young woodpecker's throat. After 24 to 30 days, nestlings leave the nest but they are awkward and weak fliers. Once the fledglings can fly well, they follow the adults everywhere. The young woodpeckers depend on their parents for food and help finding food for several months. In the fall, the young birds leave their parent's territory and wander until spring, when they attempt to acquire a territory and a mate (Bull and Jackson 2011).

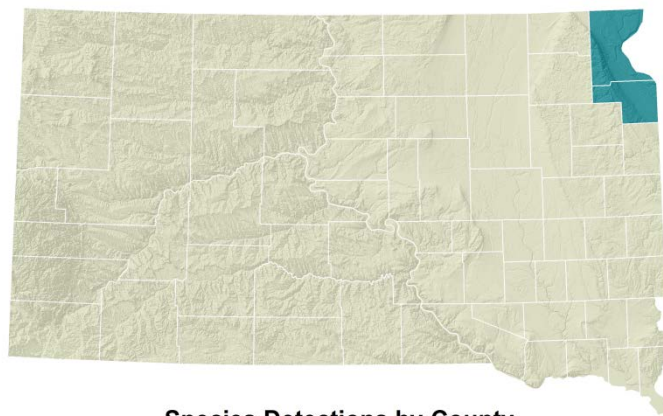
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	0	0
Probable	0	2	2
Possible	3	0	3
Observed	0	0	0
Total	3 (0.7%)	2	5

Pileated Woodpecker



Breeding Status

- Confirmed breeding
- ◉ Possibly breeding
- ◐ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas

AMERICAN KESTREL

Falco sparverius

Formerly known as the Sparrow Hawk, the sexes of this falcon differ. The male, with blue-gray wings and a single black band across the tip of his rufous tail, is about 10% smaller than the female. The female's wings and tail are rufous with multiple black bars.

habitat and perches where the falcons can watch for prey in adjacent open areas. Observers during the second Atlas reported this species in a wide variety of habitats: woodlands (39%), grasslands (36%), residential areas (8%), cropland (6%), and other (scattered trees or burned areas, 9%).

DISTRIBUTION AND STATUS

The American Kestrel is the smallest, most numerous, and most widespread North American falcon, breeding throughout Central America, the Caribbean, the U.S., and Canada north to tree line. It also is the most common and widespread falcon in South Dakota. Although statewide distributions were similar during the first and second Atlases, the American Kestrel was reported in fewer second Atlas blocks (51%) compared to the first Atlas (56% of random blocks). According to Breeding Bird Survey data, kestrel populations in South Dakota declined during 2002 to 2012 (-1.2% per year) (Sauer *et al.* 2014). Because the availability of suitable nesting cavities can limit kestrel populations, conservationists often erect kestrel nest boxes on the back of road signs along highways. In South Dakota, one such project can be seen along sections of Interstate 29.

HABITAT

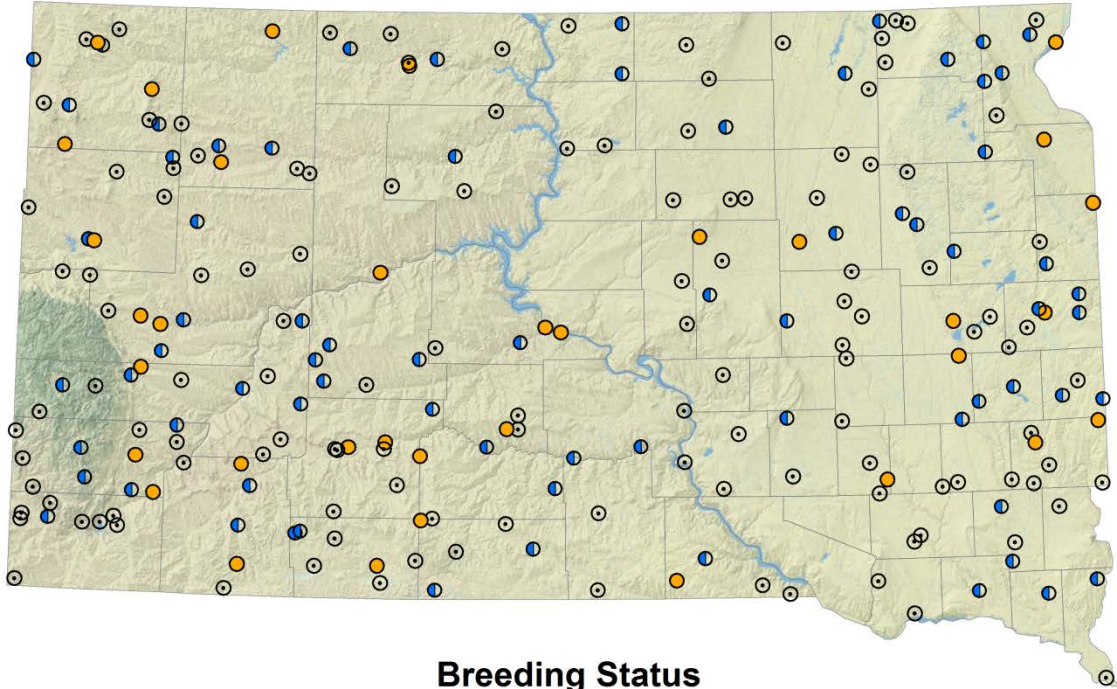
Kestrels breed in habitats that feature a mixture of woodland and open grasslands. Trees provide nesting

BREEDING BIOLOGY

Nest dates during the second Atlas, ranged from April 26 to July 20. Kestrels nest in woodpecker-excavated or natural cavities in large trees, crevices in rocks, and nooks in buildings and other structures. Reports during the second Atlas included one nest in a nestbox, three in natural tree cavities, and one in a cliff face. The pair does not add any material to the cavity, but they may make a scrape in loose material at the bottom in which to lay 4 to 5 eggs. Both parents incubate the eggs; nestlings hatch after about 30 days. The young leave the nest in 18 to 21 days and then spend another 2 to 3 weeks dependent on the parents (Smallwood and Bird 2002).

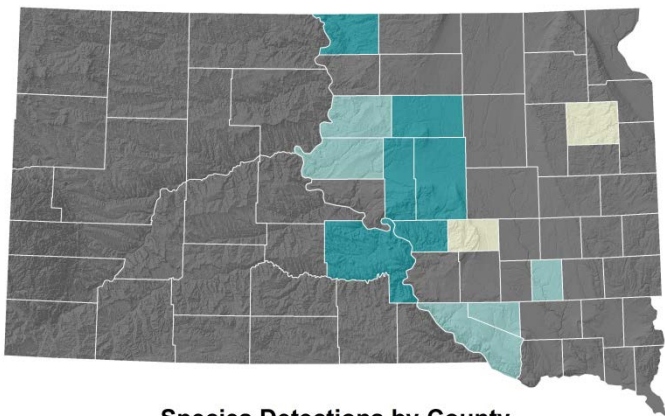
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	28	7	35
Probable	71	2	73
Possible	121	7	128
Observed	0	0	0
Total	220 (51%)	16	236

American Kestrel



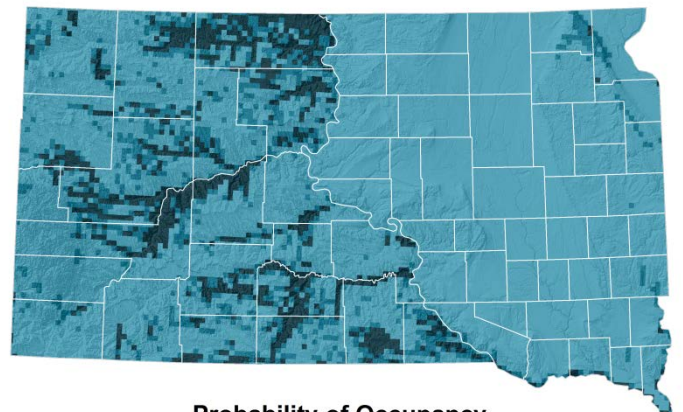
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

MERLIN

Falco columbarius

The Merlin subspecies found in South Dakota is the “Prairie” Merlin (*F. c. richardsonii*), which is paler than other North American subspecies. These small predators focus on one or two locally abundant small bird species, capturing their prey in mid-air attacks.

DISTRIBUTION AND STATUS

A circumboreal species, Merlin breed throughout northern Europe and Asia, the northern half of the western United States, and throughout Canada and Alaska. The Prairie subspecies occurs in the northern Great Plains of the U. S. and Canada, including the Dakotas and northwest Nebraska. As breeding birds, Merlin are uncommon to rare in South Dakota, found only in ponderosa pine-dominated areas. In the Black Hills, this falcon always has been rare (Pettingill and Whitney 1965, Tallman et al. 2002). Merlin formerly were common in Custer National Forest in Harding County: raptor surveys during the 1970s estimated 44 – 54 breeding pairs (Pulkabrek and O’Brien 1974, Sharps 1978). All but 5 Merlin records during the first Atlas also were in Harding County. However, during the second Atlas, only three Merlin pairs were observed in Harding County and relatively more observations were in the Black Hills and Pine Ridge Escarpment. Reasons for the decline of breeding Merlins in Custer National Forest are not known.

HABITAT

Merlins in South Dakota breed in coniferous or mixed conifer-deciduous

stands near grasslands. During the second Atlas, 42% of observations were in ponderosa pine stands, 34% in mixed ponderosa pine-deciduous woods, and 24% in grasslands.

BREEDING BIOLOGY

Nesting in South Dakota generally occurs from May into July. A nest with young was discovered on July 4 during the second Atlas. Merlins do not build their own nests but use nests constructed by other species, especially by American Crows and Black-billed Magpies. The female lays an egg every two days and begins incubation before the last of up to 8 eggs are laid. The male feeds the female; while she takes the food nearby to eat, he incubates the eggs. The male provides most of the food for the brood, handing off prey items to the female who then feeds the chicks. Young Merlins leave the nest at about 29 days old but remain near the nest and are dependent upon the adults for food for another 1 to 4 weeks (Warkentin et al. 2005).

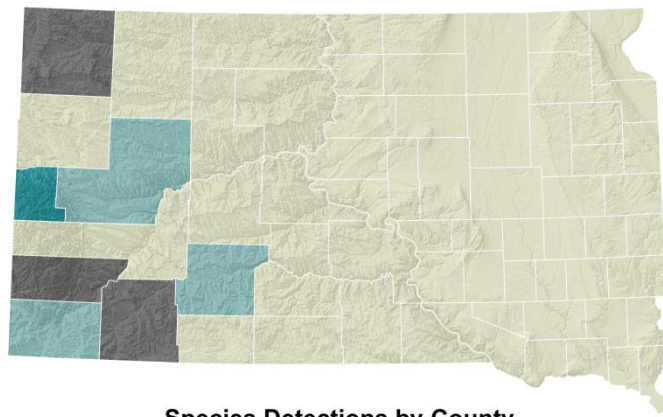
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	1	2
Probable	0	0	0
Possible	5	4	9
Observed	3	1	4
Total	9 (2%)	6	15

Merlin



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

PRAIRIE FALCON

Falco mexicanus

After breeding is finished in late June, Prairie Falcons west of the Continental Divide move east to the northern Great Plains for 1 to 4 months before migrating south. The Great Plains also is a key falcon migration pathway and wintering area.

DISTRIBUTION AND STATUS

South Dakota is on the eastern edge of the Prairie Falcon's breeding range, which includes the western United States and Great Plains, and northern Mexico. This species is an uncommon breeder in western South Dakota. During the 1970s, researchers in the forested buttes of Harding County found 25 to 40 active nests, depending on the year (O'Brien 1973, Good 1977). In 2011, just 14 active nests were found in the same area (Baker 2011). The first Atlas documented Prairie Falcons in 9 counties but confirmed breeding only in the Badlands, Black Hills, and buttes of Harding County. The second Atlas confirmed breeding only in Harding County and the southern Black Hills. Falcons were not found in the northern or central Black Hills during the second Atlas. During the first Atlas, the same area had at least 5 detections (3 confirmed breeding). Second Atlas falcon observations in Dewey and Corson counties occurred during mid-July and probably were post-breeding birds.

HABITAT

Breeding habitat is open country with cliffs for nesting and nearby grasslands for hunting. During the second Atlas,

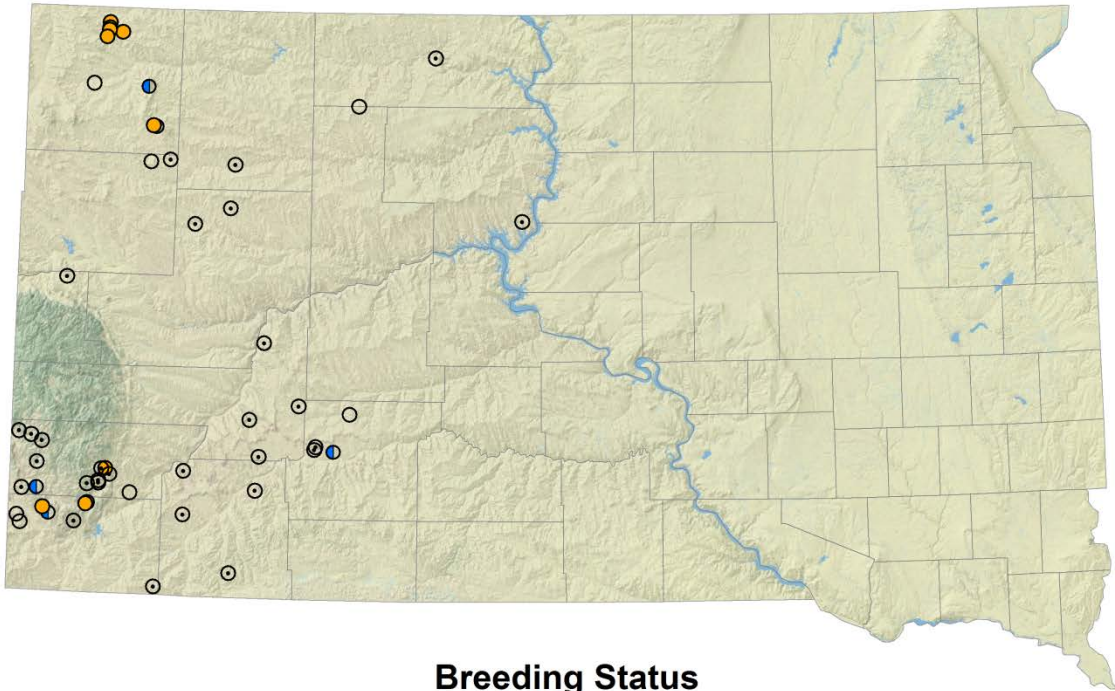
43% of reported Prairie Falcons were at cliffs, 40% in grasslands, and 17% in forest.

BREEDING BIOLOGY

Prairie Falcons time their nesting to coincide with peak abundances of their small mammal and bird prey. Second Atlas nest dates ranged from May 7 to July 4. All 10 nests reported during the second Atlas were on a cliff ledge or in the recess of a cliff. The pair make a simple scrape at the nest site or use an old hawk or eagle nest. Clutch size averages 5 eggs. Incubation is mostly by the female and lasts 31 days. The male brings food to the female during incubation and the first 4 weeks of the nestling stage. After nestlings are 4 weeks old, both adults hunt, leaving the prey at the nest for the chicks to feed themselves. The adults remove any uneaten remains and cache fresh prey in nearby crevices. Chicks leave the nest when about 6 weeks old and disperse from the territory after another 2 weeks (Steenhof 2013).

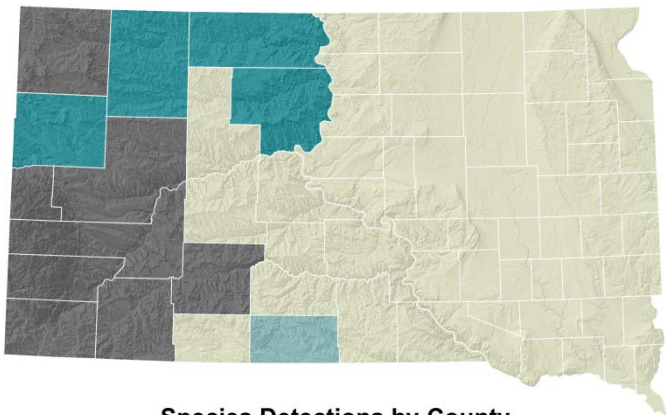
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	3	7	10
Probable	4	1	5
Possible	14	15	29
Observed	7	0	7
Total	28 (6%)	23	51

Prairie Falcon



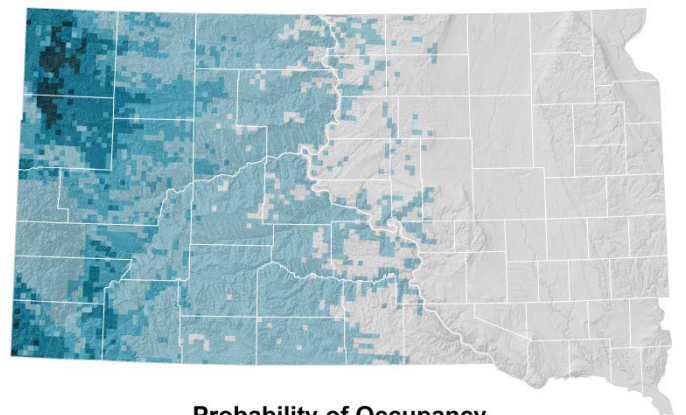
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

WESTERN WOOD-PEWEE

Contopus sordidulus

Western Wood-Pewees hunt for flying insects by sitting on an exposed perch and waiting for an insect to fly by. They sally out to capture the prey, often returning to the same perch to wait for the next prey to fly by.

deciduous and mixed deciduous-conifer woods (32%), upland woods (27%), and residential areas (2%). Second Atlas nests were in deciduous woods (4 nests), ponderosa pine woods (1 nest), and mixed deciduous-conifer woods (3 nests).

DISTRIBUTION AND STATUS

South Dakota is the eastern edge of the Western Wood-Pewee's breeding range, which includes all of the western United States and Canada, and south into Mexico. The species is common in the Black Hills and uncommon in the northwest and south-central portions of the state. Compared to the first Atlas, the second Atlas documented an increase in the number of detections in Harding County. In addition, second Atlas observers discovered breeding birds in northern Perkins County. The eastern-most observation during the second Atlas, just northeast of Mission in Todd County, also had singing Eastern Wood-Pewees. This observation possibly is the first time these two species have been documented together on breeding territories in South Dakota. The breeding population in the state is stable (Sauer *et al.* 2014).

BREEDING BIOLOGY

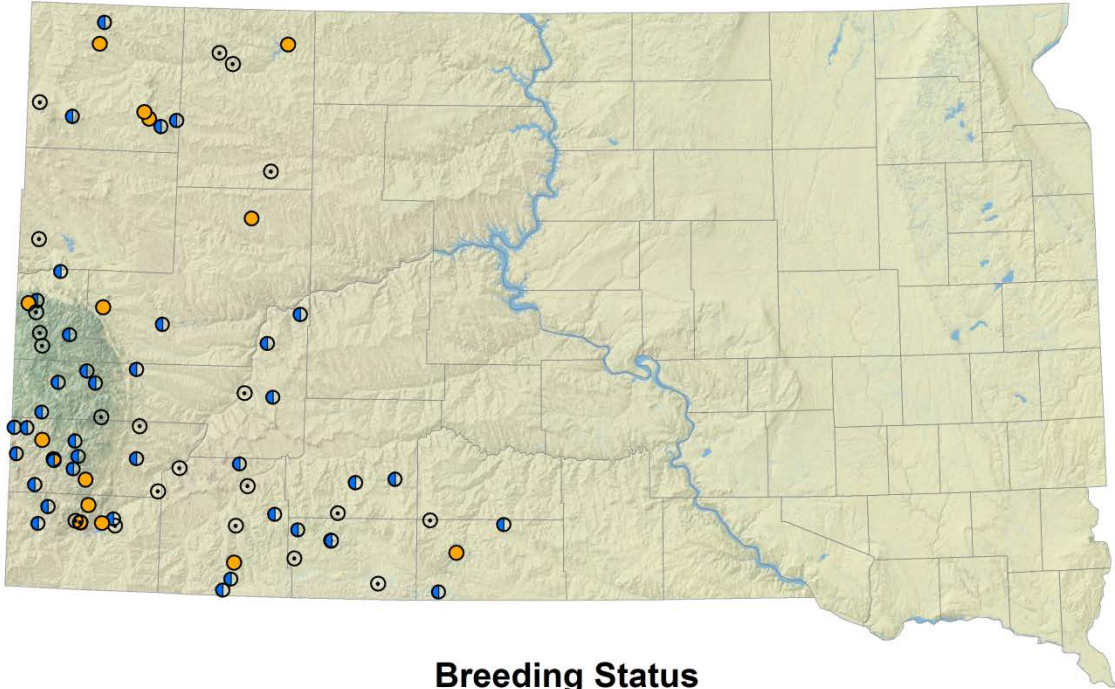
In South Dakota, the nesting season is early June through July. During the second Atlas, nests were found in ponderosa pines and bur oaks. The female builds a cup-shaped nest on a horizontal tree limb. The nest is constructed of grass, plant fibers, and plant down held together with spider webs, and lined with finer plant materials and hair. Often the outside of the nest is decorated with lichens, buds, or moss. Only the female incubates the clutch of 2 to 4 white eggs. Eggs hatch after about 15 days. Both parents feed the nestlings, regurgitating insects when the nestlings are small. The young pewees leave the nest at 14 to 18 days (Bemis and Rising 1999).

HABITAT

The Western Wood-Pewee's breeding habitat is open forest, forest edge, and riparian zones. Second Atlas observations were in ponderosa pine forests (32% of observations), riparian

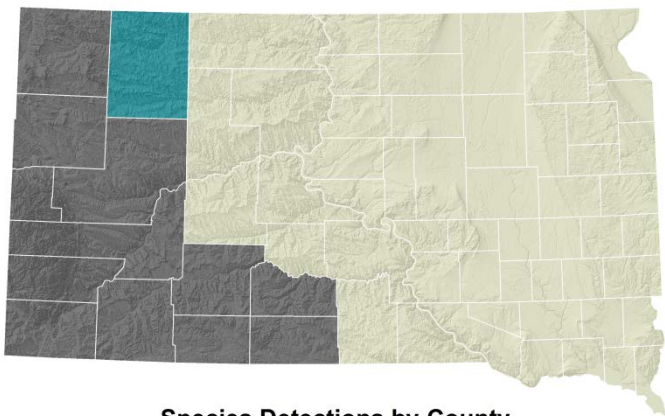
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	9	6	15
Probable	34	5	39
Possible	17	7	24
Observed	0	0	0
Total	60 (14%)	18	78

Western Wood-Pewee



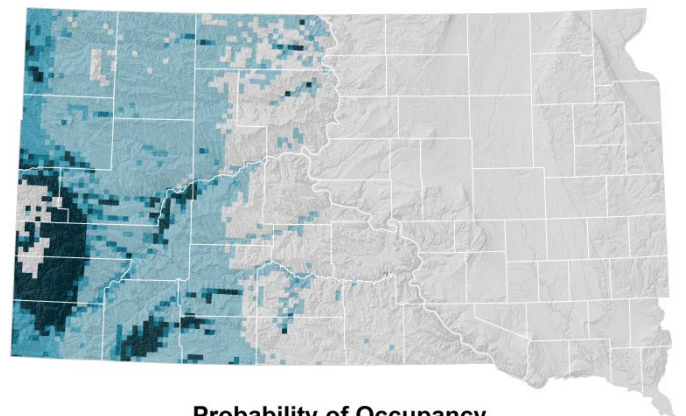
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

EASTERN WOOD-PEWEE

Contopus virens

The Eastern Wood-Pewee gives its distinctive ‘pee-o-wee’ song from a perch under the forest canopy. It sings most often at dawn and dusk, and frequently continues to sing through the night.

South Dakota, these flycatchers prefer natural riparian corridors to small woodlots, and, in riparian areas, older stands of trees to younger stands (Gentry *et al.* 2006, Benson *et al.* 2013).

DISTRIBUTION AND STATUS

The breeding distribution of the Eastern Wood-Pewee includes the eastern and central United States and southeastern Canada. South Dakota is on the western edge of the breeding range. Eastern Wood-Pewees in South Dakota generally are uncommon and scattered east of the Missouri River and very rare west of the River. The westernmost observation during the second Atlas, a survey block just northeast of Mission in Todd County, also had singing Western Wood-Pewee, possibly the first time these two species have been documented on breeding territories in the same area. This observation also represents a westward expansion of Eastern Wood-Pewee since the first Atlas.

BREEDING BIOLOGY

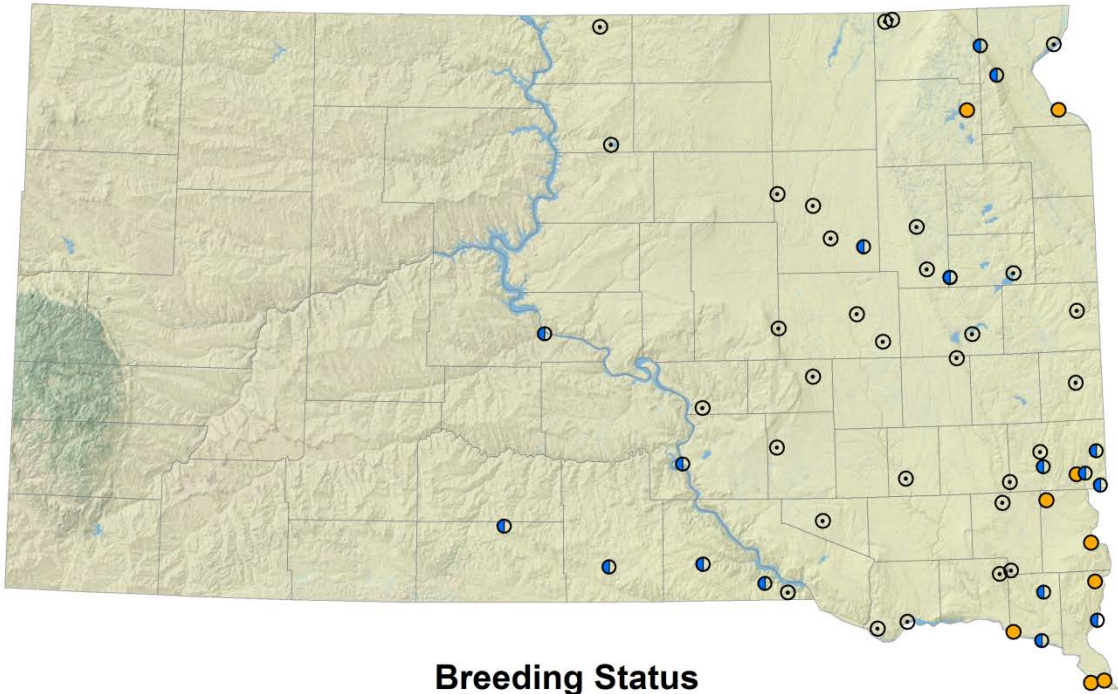
A relatively late spring migrant, Eastern Wood-Pewees begin nesting around June 5 and continue into August. The nest is high in a deciduous tree, saddled on a horizontal branch. It consists of grass, plant fibers, and spider webs woven into a compact shallow cup and lined with moss, lichens, and hair. Clutch size typically is 3 eggs, which are white to off-white with a wreath of purple or brown markings at the large end. The female incubates the eggs and broods the young nestlings, while both parents feed the chicks. Nestlings leave the nest at 14 to 18 days. Nothing is known about the post-fledging period (McCarty 1996).

HABITAT

During the second Atlas, Eastern Wood-Pewees were recorded in many forest types: upland deciduous woods (45%), riverine deciduous woods (23%), upland mixed woods (14%), mixed deciduous-conifer riparian areas and wooded draws (13%), and conifers (1%). In

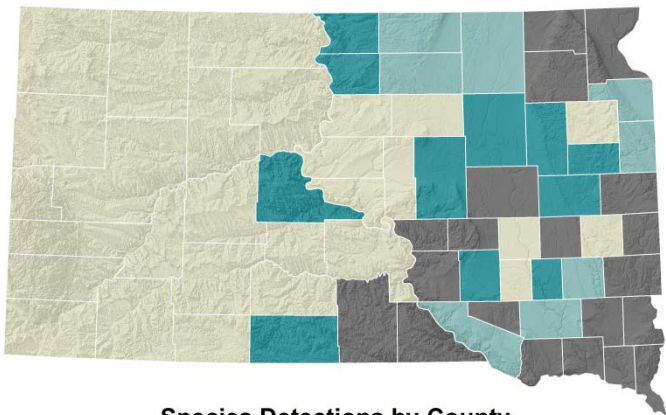
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	3	6	9
Probable	12	6	18
Possible	31	0	31
Observed	0	0	0
Total	46 (11%)	12	58

Eastern Wood-Pewee



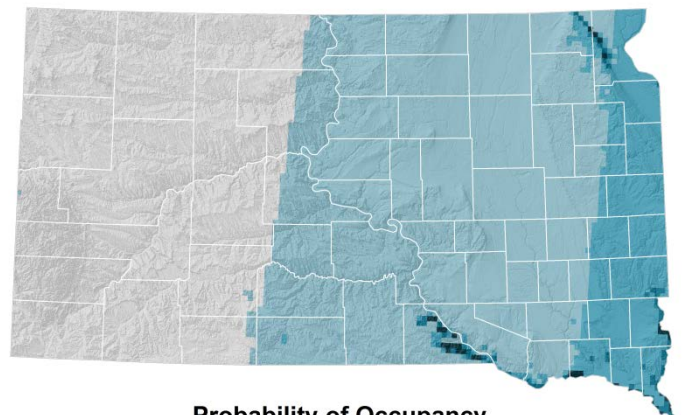
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

ALDER FLYCATCHER

Empidonax alnorum

Alder Flycatchers breed in wet shrubby areas within the boreal forests of Canada, New England and the Northwoods of Minnesota and Wisconsin (Lowther 1999). During the second Atlas, Alder Flycatchers were singing in willow thickets along Rapid Creek near Mystic in Pennington County. The birds were recorded singing in the same locations over the course of 3 weeks in 2012. Before the second Atlas, territorial birds were singing along Rapid Creek in June 2006 and Little Spearfish Creek, Lawrence County, in July 2004.



- Confirmed breeding
- ⊙ Possibly breeding
- ◐ Probably breeding
- Observed; not breeding at location

WILLOW FLYCATCHER

Empidonax traillii

The Willow Flycatcher is a long-distance migrant that spends the winter in Central America and northern South America. It migrates relatively late in spring (mid- to late May) and early in fall (late July to August).

DISTRIBUTION AND STATUS

Willow Flycatchers breed throughout southern Canada and the United States except in the Great Plains. In South Dakota, they are common breeders east of the Missouri River and uncommon west of the River. Their breeding distributions were similar between the two Atlases. Abundance west of the River was higher during the second Atlas. South Dakota's Willow Flycatcher population has significantly increased over the past 45 years (Sauer *et al.* 2014).

HABITAT

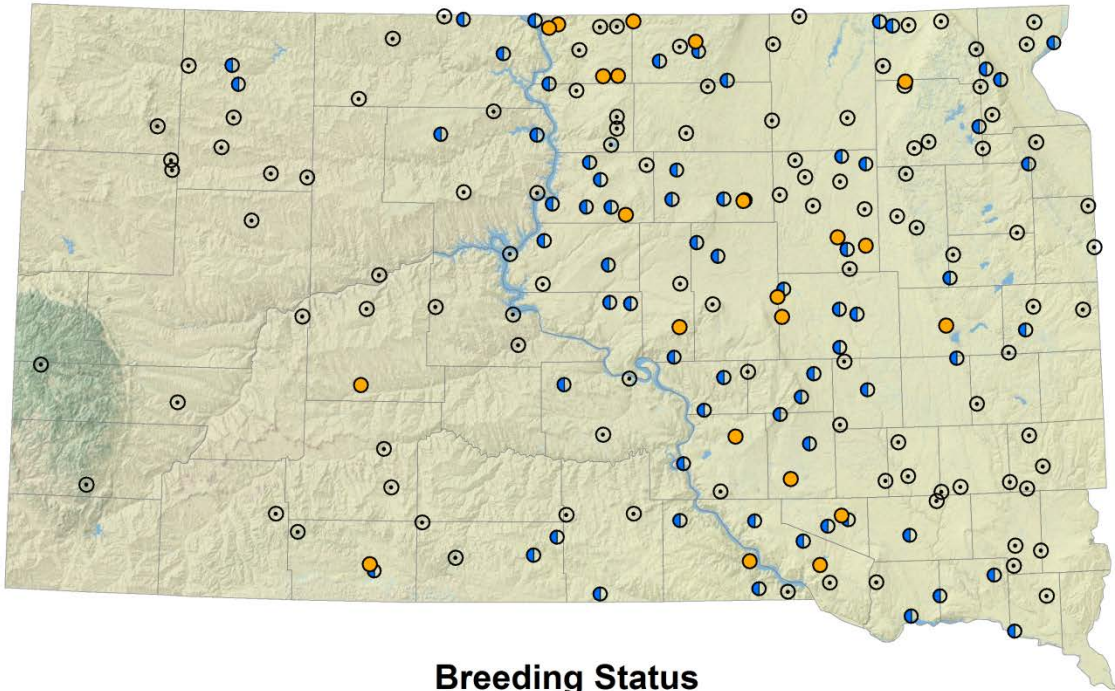
In South Dakota, Willow Flycatchers inhabit woodland edges, thickets, and shrubby areas along streams, rivers, and moist coulees. During the second Atlas, 62% of observations were in upland woods and shelterbelts, 19% in riparian areas, 14% in shrublands, 2% in marshes and wet meadows, and 2% in grasslands. Second Atlas nests were in upland shelterbelts (5 nests), shrubland (2), and riparian areas (1).

BREEDING BIOLOGY

The breeding season in South Dakota is June and July; second Atlas nests were found between June 7 and July 14. Nests are low in a bush or thicket, often near water. Second Atlas nests were in Russian olives (3 nests) and an ash sapling (1) at heights of 8" to 6'. The cup nest is made of grass, strips of bark, and plant fibers and lined with hair, plant down, lichens, and feathers. Clutch size is 3 to 5 eggs. Brown-headed Cowbirds often lay their eggs in Willow Flycatcher nests. One second Atlas nest had a cowbird nestling and 2 flycatcher eggs. Egg incubation, only by the female, lasts 12 to 15 days. Both parents bring food for the nestlings, at a rate of 20 to 25 trips per hour. Chicks leave the nest when 14 to 15 days old. The fledglings huddle together on the same perch for 3 or 4 days, then follow their parents to be fed for another 5 to 7 days (Sedgwick 2000).

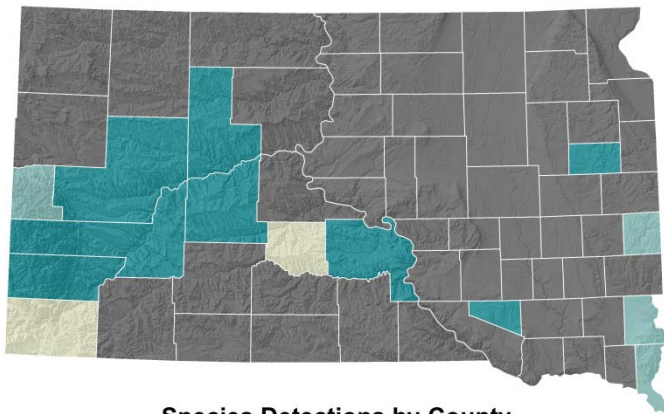
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	16	7	23
Probable	67	2	69
Possible	106	2	108
Observed	0	0	0
Total	189 (43%)	11	200

Willow Flycatcher



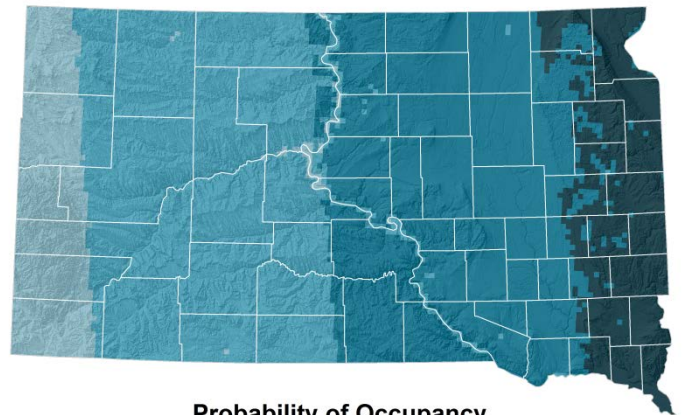
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

LEAST FLYCATCHER

Empidonax minimus

Male Least Flycatchers defend typical songbird territories. However, their territories are clustered in dense aggregations, with no territories in nearby suitable habitat. Females strongly prefer the clustered males and shun solitary territorial males.

deciduous woods (19%), ponderosa pine woods (2%), shrublands (3%), residential areas (3%), and marshes (2%). Of 7 second Atlas nest reports, 3 were in upland woods and shelterbelts, 3 in lowland mixed deciduous-conifer woods, and 1 was in ponderosa pine.

DISTRIBUTION AND STATUS

The breeding distribution of the Least Flycatcher includes Canada, southeast Alaska, and the northern tier of states in the United States. South Dakota forms part of the southern edge of the breeding range. Least Flycatchers are found throughout South Dakota, but are most common in the northern third of the state. Least Flycatcher detections increased from 13% of random blocks during the first Atlas to 31% of second Atlas blocks. The increase occurred throughout the state, most notably in the east-central and northwest regions, and the Black Hills. Least Flycatcher populations increased significantly in the northern Great Plains over the past decade (Breeding Bird Survey Badlands and Prairie, Prairie Pothole region, Sauer *et al.* 2014).

HABITAT

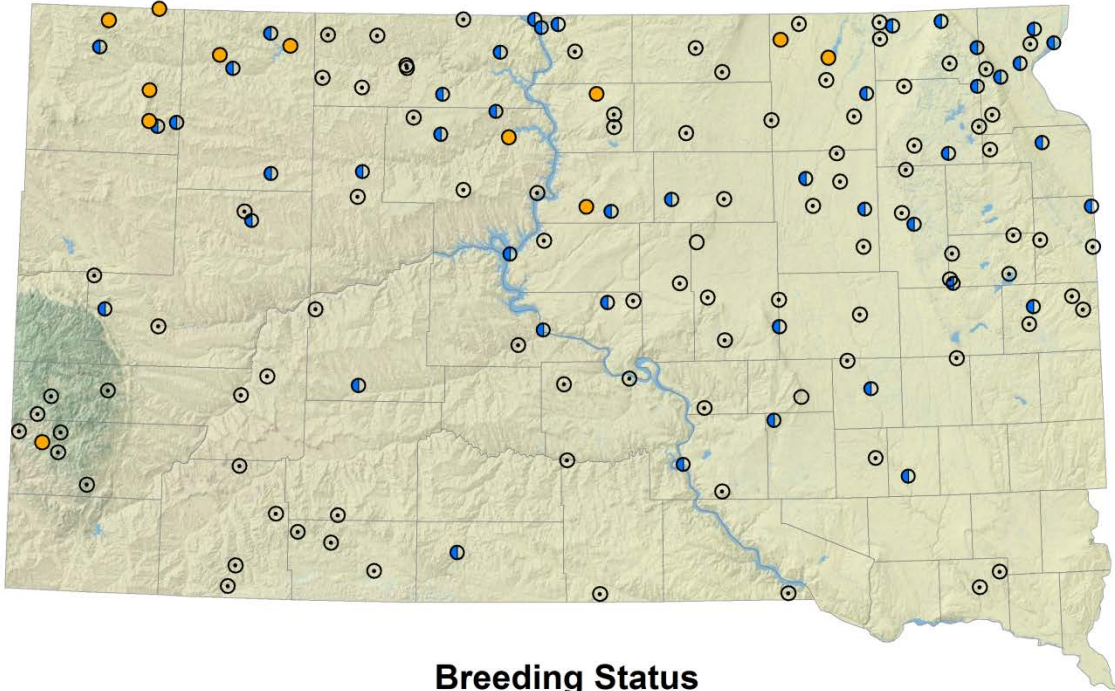
Breeding Least Flycatchers inhabit a variety of habitats including open woods, shelterbelts, and low-level human development, such as parks and campgrounds. Second Atlas Least Flycatcher observations were in deciduous woods (72%), mixed conifer-

BREEDING BIOLOGY

Least Flycatchers in South Dakota breed from late May to mid-July. The nest usually is in a vertical fork or crotch of a small tree. Two second Atlas nests were reported, one in a small green ash and one in a small pine tree. The female builds a neat, compact cup nest by weaving together strips of bark, grass, plant down, twigs, lichens, and spider webs, and lining the cup with fine grasses, plant down, feathers, and animal hair. The clutch, usually 4 creamy white eggs, is incubated by the female for 13 to 15 days. Both parents feed the nestlings. Nestlings leave the nest at 12 to 17 days and may be fed by their parents for another 2 to 3 weeks (Tarof and Briskie 2008).

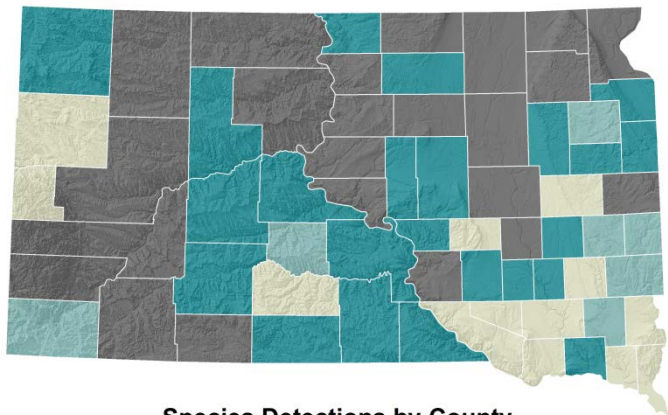
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	5	7	12
Probable	43	2	45
Possible	85	5	90
Observed	2	0	2
Total	135 (31%)	14	149

Least Flycatcher



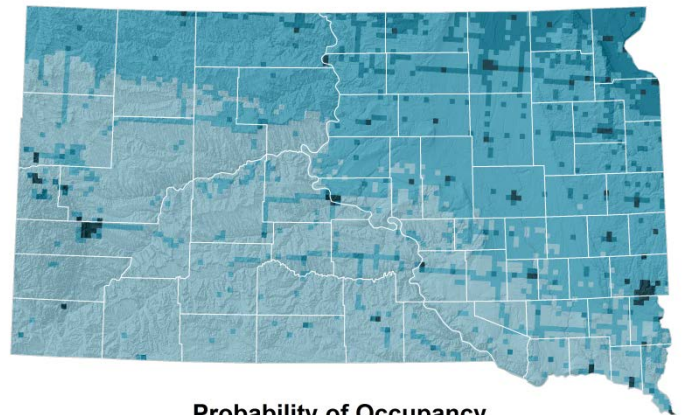
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- Second Atlas Only
- First Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

DUSKY FLYCATCHER

Empidonax oberholseri

Dusky Flycatchers are consummate aerial predators, sallying from an exposed perch to catch insects. They also pounce on insects on the ground.

DISTRIBUTION AND STATUS

The breeding range of the Dusky Flycatcher includes the Rocky Mountains, Great Basin, and western coastal mountain ranges of Canada and the United States. The South Dakota population, restricted to the Black Hills, is disjunct from the main breeding range. The nearest breeding populations are in central Wyoming. Within the Black Hills, Dusky Flycatcher is a fairly common breeding bird. Its distribution and abundance did not change between the two Atlases.

HABITAT

Dusky Flycatchers in the Black Hills occupy open deciduous forests with dense understory, mixed aspen-birch stands of all ages, or shrubby habitats, including mountain mahogany stands (Pettingill and Whitney 1965, Mills *et al.* 2000, Peterson 2005). Second Atlas Dusky Flycatcher observations were in mixed pine-deciduous forest (63% of reports), conifer stands (26%), deciduous woods (8%), and shrubland (2%).

BREEDING BIOLOGY

In the Black Hills, Dusky Flycatchers nest from late May through July. Nest dates during the second Atlas ranged from May 30 to July 31. They typically nest in deciduous trees and shrubs 3' to 6' above the ground. The cup-shaped nest is placed in an upright tree fork within dense foliage. The female weaves together grasses, weeds, and bark strips to form the cup and lines it with finer plants, hair, and feathers. If weather conditions are too cold or wet, egg laying may not begin until up to 2 weeks after the nest is complete. The average clutch size is 2 to 4 dull white eggs. Only the female incubates the eggs throughout the 15 to 16 day incubation period. Chicks are brooded by the female and fed insects by both parents. Chicks leave the nest 15 to 20 days after hatching. Young flycatchers can catch some of their own food within 10 days but still are dependent on adult feedings for 21 days after leaving the nest (Pereyra and Sedgwick 2015).

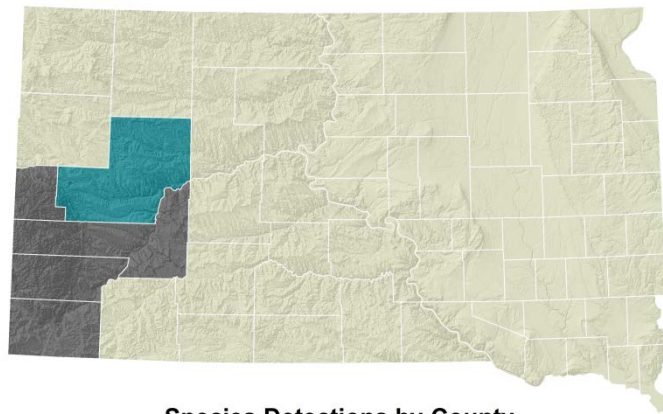
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	3	4
Probable	10	14	24
Possible	3	32	35
Observed	0	0	0
Total	14 (3%)	49	63

Dusky Flycatcher



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

CORDILLERAN FLYCATCHER

Empidonax occidentalis

With its oval-shaped eye-ring, large peaked head, and loud squeaky calls, this western flycatcher is an easily recognizable denizen of mid-elevation mountain regions. Formerly, this species and the Pacific-slope Flycatcher were considered one species – the Western Flycatcher.

DISTRIBUTION AND STATUS

Cordilleran Flycatchers breed in the Rocky Mountain region, from Idaho and western Montana south to the Mexican border. In South Dakota, this flycatcher is restricted to the Black Hills, a distribution that does not appear to have changed in the past 50 years. It was described as ‘common to very common throughout the Black Hills’ by Pettingill and Whitney (1965), but is more accurately described as locally common in its preferred habitat (Peterson 1995), being largely concentrated in shady woodlands near water.

HABITAT

Cordilleran Flycatchers breed in cliffs and rocks in shady wooded areas in the Black Hills. During the second Atlas, 46% of all observations were from mixed ponderosa pine-deciduous mixed forests with another 25% in pure ponderosa pine stands. This species will also nest on buildings near the forest; 8% of second Atlas records were in residential areas.

BREEDING BIOLOGY

South Dakota nesting records of Cordilleran Flycatchers are evenly distributed throughout June and July; the earliest date for the second Atlas was an incubating bird on June 4, and a nest with chicks was reported as late as July 29. These birds build their nests on surfaces that provide support below and behind, such as tree forks, rock crevices, cliff ledges, and buildings. Usually there is protection above, such as rock overhangs, thick vegetation, or eaves. Of seven nests described during the second Atlas, three were 3’ to 6’ high in limestone cliffs along a stream, one was 25’ high in the fork of a paper birch, and three were on garages. The nest is a small cup made of fine plant materials, green moss, spider webs, and animal fur. The typical clutch size is 2 to 5 eggs. The species is parasitized by Brown-headed Cowbirds; one nest reported during the second Atlas had two flycatcher eggs and one cowbird egg. The female incubates the eggs for about 15 to 17 days. Chicks are fed by both parents until they leave the nest when about 15 days old (Lowther 2000).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	2	8	10
Probable	6	4	10
Possible	5	23	28
Observed	0	0	0
Total	13 (3%)	35	48

Cordilleran Flycatcher



Breeding Status

- Confirmed breeding
- Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

EASTERN PHOEBE

Sayornis phoebe

In the 19th century, the Eastern Phoebe was nicknamed the “barn pewee” or “bridge pewee” because of its habit of nesting on human dwellings and under bridges.

DISTRIBUTION AND STATUS

The Eastern Phoebe’s breeding distribution includes the eastern United States except the southern tier, the Great Plains, and southeastern to northwestern Canada. In South Dakota, phoebes are widely distributed in the southern half of the state and the northeast. In certain areas, such as the southeast, they are relatively common, while they are uncommon elsewhere. Eastern Phoebe is expanding its range and becoming more common in the state. The first Atlas recorded phoebes on 3% of random blocks, while they were recorded on 16% of blocks during the second Atlas. This expansion is most apparent in the Black Hills, where the species formerly was considered rare (Pettingill and Whitney 1965, Tallman *et al.* 2002), and the east-central part of South Dakota.

HABITAT

Breeding Eastern Phoebes require suitable nest sites and some woody vegetation nearby. They typically are found in riparian forests or forest edges near water. During the second Atlas, 34% of phoebe reports were in upland forests, 31% in lowland forests and shrublands, 16% in residential areas and parks, 11% at bridges, and 5% in grasslands. Eastern Phoebes nest on

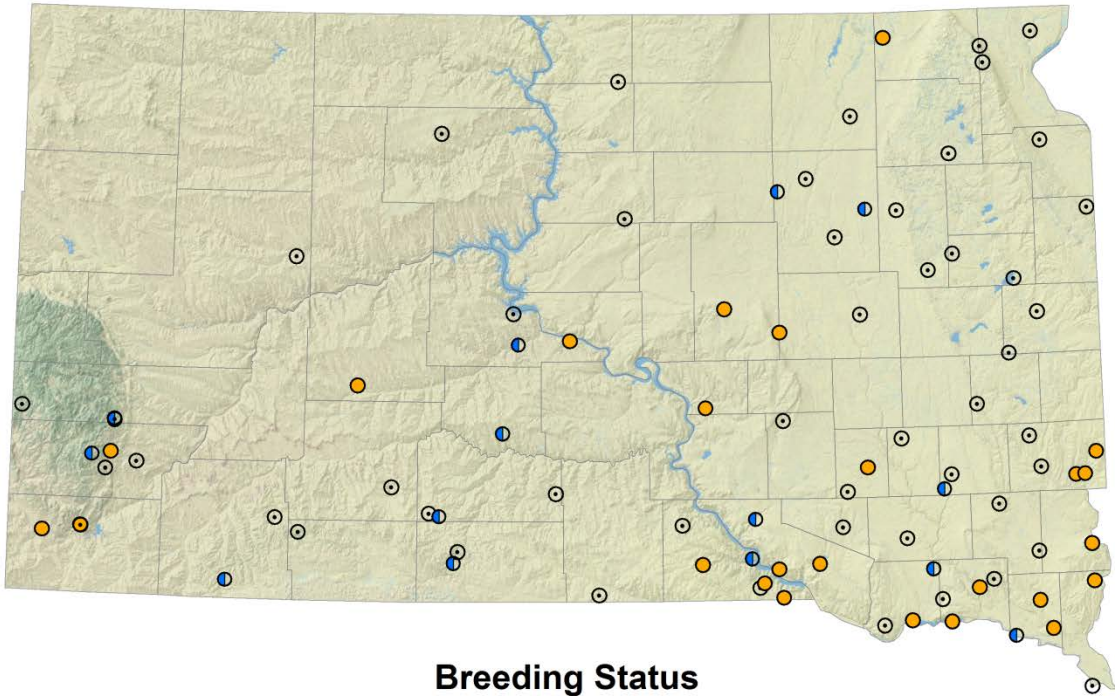
cliffs and rock outcroppings, buildings, bridges, and culverts. Of second Atlas nest reports, 9 were in residential areas and parks, 3 on bridges, 1 in a culvert, and 2 on cliffs along creeks. The residential nests were under the roofs of picnic shelters (4 nests) and fish-processing huts (2 nests), in building eaves (1 nest), in a shed (1 nest), and on a light above a door (1 nest).

BREEDING BIOLOGY

Our earliest nesting flycatcher, Eastern Phoebes in South Dakota raise two broods between early April and mid-July. The open-cup nest, built by the female, is made of mud, moss, and leaves, and is lined with fine grass stems and hair. In early spring, nest-building is a leisurely affair, taking up to 2 weeks to finish. The completed nest may stand empty for another 2 weeks before egg-laying. Alternatively, old nests may be renovated with the addition of green moss and a new lining. The female incubates the clutch of 5 eggs for 16 days. Both adults feed insects to the chicks during the 16 to 18 day nestling stage and for 2 weeks after fledging (Weeks 2011).

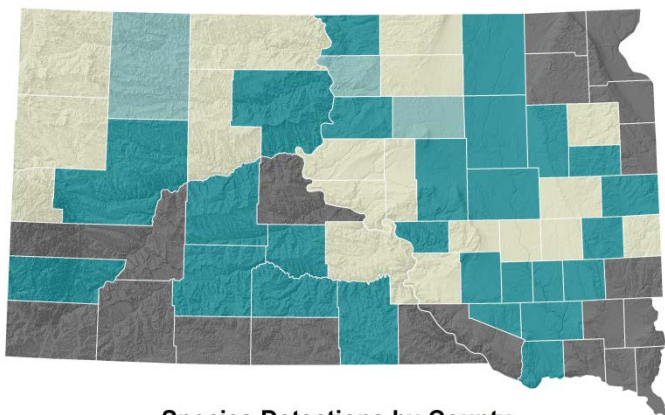
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	12	13	25
Probable	11	3	14
Possible	47	5	52
Observed	0	0	0
Total	70 (16%)	21	91

Eastern Phoebe



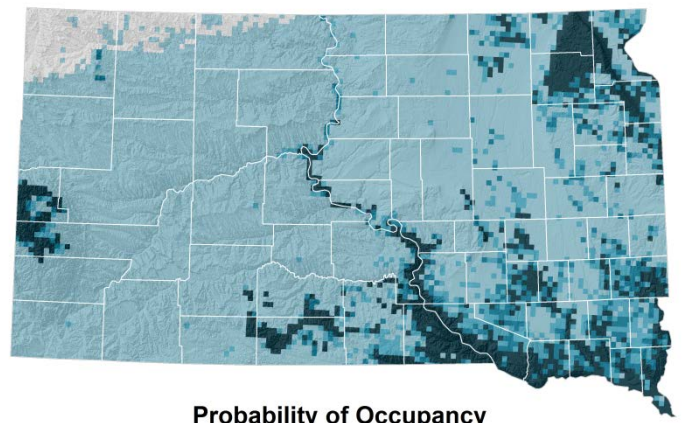
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

SAY'S PHOEBE

Sayornis saya

An open country grassland bird of the western United States, the muted colors of the Say's Phoebe allow it to blend into its breeding habitat of grasslands, badlands, and open canyons.

DISTRIBUTION AND STATUS

This phoebe has a disjunct distribution, with one population in northwest Canada and central Alaska, and the second throughout the interior of the western U.S. east to the Great Plains and south into Mexico. The Missouri River roughly marks the eastern edge of Say's Phoebe's breeding in South Dakota, with fewer records the farther east one goes. It is relatively common west of the River. It does not occur in the Black Hills, except in the open grasslands of the southern edge. Say's Phoebe also is relatively uncommon in the counties southwest of the Missouri (Gregory, Tripp, Jones, Mellette, and Todd). First and second Atlas statewide distributions are almost identical West River. The second Atlas recorded more phoebes on the east side of the Missouri River. Breeding Bird Survey data indicate a slight, but insignificant, increasing population trend in South Dakota (Sauer *et al.* 2014).

HABITAT

The Say's Phoebe's habitat is open grassland with few trees or shrubs, pastures, badlands, cliffs, buttes, and rocky unshaded canyons. This species will nest around human settlements, if grasslands are nearby. More than half of

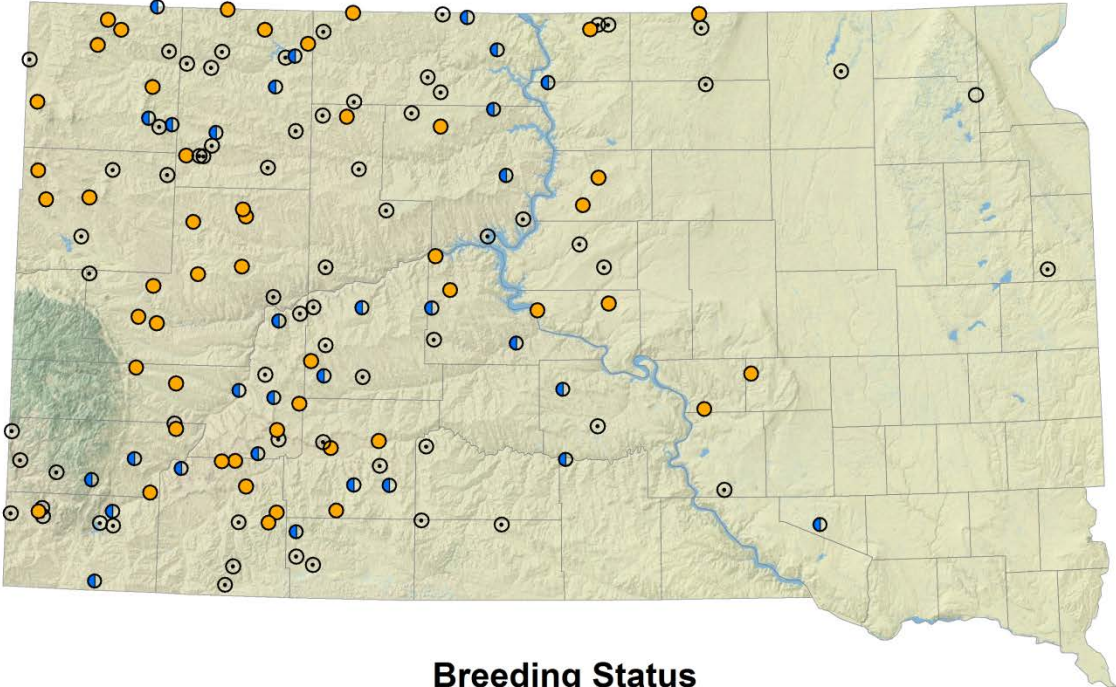
Say's Phoebe observations during the second Atlas were near human structures (52%); the species also was recorded in grasslands (19%), shelterbelts (13%), and badlands or cliffs (10%).

BREEDING BIOLOGY

The main nesting season is late May through late July (second Atlas nest dates June 6 to July 19, 19 nests). Possibly some pairs raise two broods, but this behavior has not been documented in South Dakota. The Say's Phoebe build its nest on a ledge with a protective ceiling, such as in cliffs, rock piles, or on human-made structures. During the second Atlas, nests were found on a bridge (1), old buildings (12) (barn, shed, outhouse, chicken coop, house, trailer), in cliffs (2), in a rock pile (1), and in a "mud cavern" (1). The nest is made of fibrous plant materials, unlike Eastern Phoebes, which rarely use mud. The 3 to 7 white eggs are incubated for 15 days and the chicks leave the nest when around 17 days old (Schukman and Wolf 1998).

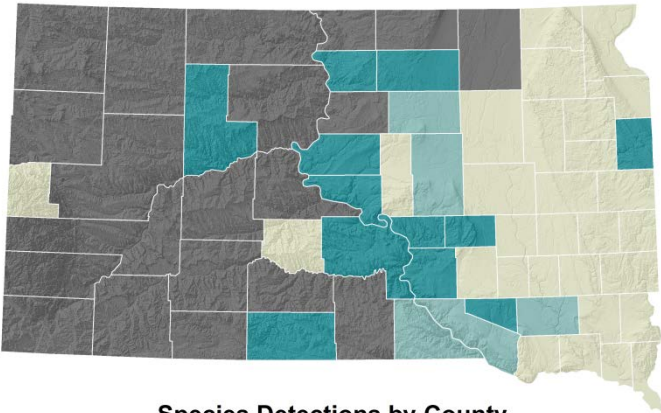
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	32	17	49
Probable	28	3	31
Possible	52	13	65
Observed	0	1	1
Total	112 (26%)	34	146

Say's Phoebe



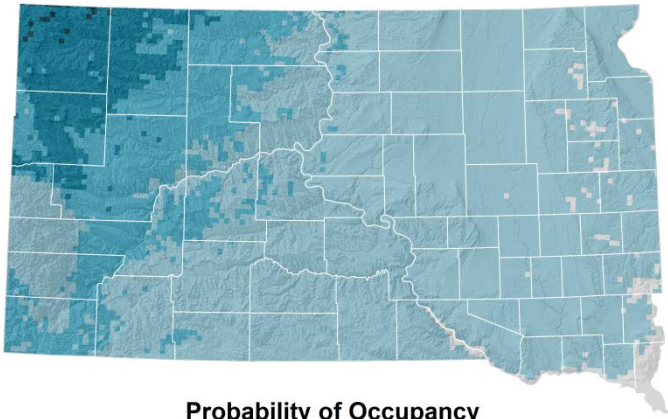
Breeding Status

- Confirmed breeding
- ◐ Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

GREAT CRESTED FLYCATCHER

Myiarchus crinitus

Male Great Crested Flycatchers vigorously defend their territories with rapid chases, loud calling, and if necessary, body attacks, which can include tearing out the intruder's feathers and tumbling on the ground.

DISTRIBUTION AND STATUS

The Great Crested Flycatcher breeds throughout the eastern United States, including the eastern Great Plains, and the southern Canadian provinces. South Dakota is on the western edge of the breeding distribution. Thus, it is surprising that this flycatcher is most widely distributed in the southwest quarter of the state. The first and second Atlas breeding distributions were almost identical, with minor differences because of outliers. The species is uncommon in South Dakota, observed on 14% (first Atlas) and 16% (second Atlas) of blocks, primarily in more wooded regions of the state, especially near creeks and rivers.

HABITAT

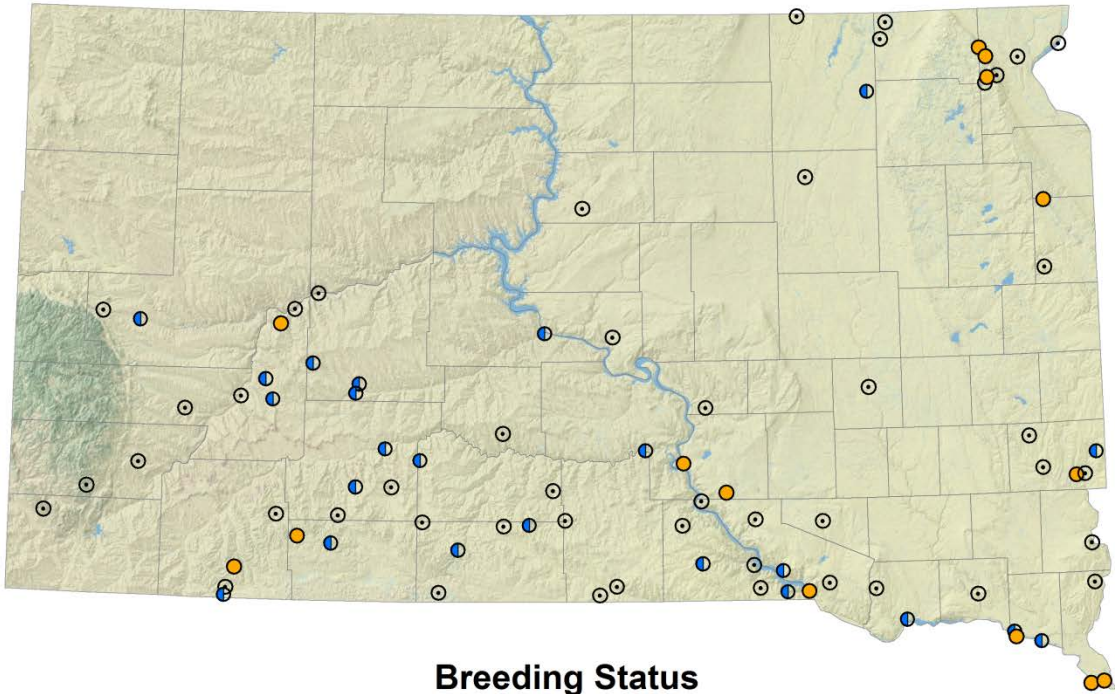
During the second Atlas, observers recorded most Great Crested Flycatchers in deciduous (68%) and mixed deciduous-conifer (23%) woodlands, with a small proportion in conifer forests (6%) or open areas with scattered trees (2%). These woodlands generally were bur oak or green ash-filled wooded draws, or riparian strips of woodland consisting of bur oak or cottonwood. Two second Atlas nests were found in upland deciduous woods.

BREEDING BIOLOGY

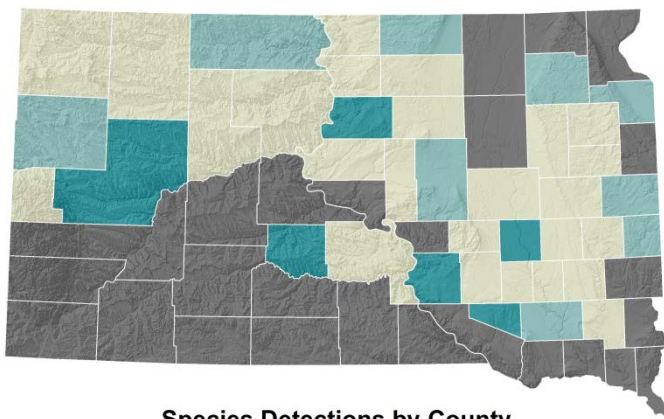
The breeding season in South Dakota is late May through July; second Atlas nest dates ranged from May 22 to July 15. The Great Crested Flycatcher nests in tree cavities, the only cavity-nesting flycatcher of eastern North America. It uses a wide variety of cavities, including natural cavities such as knotholes and crevices or those created by woodpeckers. The pair fills deeper cavities with debris so that the nest is within 12" of the cavity opening. The bulky cup nest is made of coarse plant materials, hair, feathers, dried manure, human trash, and shed snakeskin. This species is renowned for frequently incorporating snakeskin, or similar-looking materials such as wrinkly plastic, into the nest, but the function of this behavior is unknown. The female incubates an average of 5 eggs for 14 days. The nestlings are noisy and restless throughout the 15 days they are in the nest. When they leave the nest, fledglings can fly quite well but both adults continue to provide food and defend the fledglings for up to 3 more weeks (Miller and Lanyon 2014).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	8	7	15
Probable	19	4	23
Possible	42	6	48
Observed	0	0	0
Total	69 (16%)	17	86

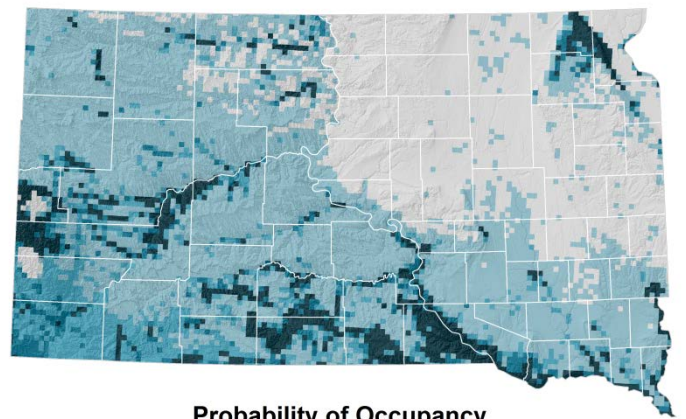
Great Crested Flycatcher



- Breeding Status**
- Confirmed breeding
 - Probably breeding
 - Possibly breeding
 - Observed; not breeding at location



- Species Detections by County**
- First Atlas Only
 - Second Atlas Only
 - Both Atlases
 - Neither Atlas



- Probability of Occupancy**
- 0%
 - 1-25%
 - 26-50%
 - 51-75%
 - 76-100%

CASSIN'S KINGBIRD

Tyrannus vociferans

This kingbird's common name honors John Cassin (1813–1869), an eminent Philadelphia ornithologist. The scientific name describes the Cassin's Kingbird's *modus operandi*—vocal and assertive, with other kingbirds and potential predators.

DISTRIBUTION AND STATUS

Most Cassin's Kingbirds breed in the southwestern United States and Mexico. A disjunct population occurs in an area that includes eastern Wyoming, the Nebraska panhandle, southeast Montana, and southwest South Dakota. This species was first confirmed nesting in South Dakota in 1990 during the first Atlas (Peterson and Peterson 1990). It is most common in a localized area of south-central Oglala Lakota (formerly Shannon) County, and uncommon in other areas of the Pine Ridge Escarpment. In the 2000s, Cassin's Kingbirds have been seen regularly in southwestern Custer County of the southern Black Hills, but breeding has not been confirmed there.

HABITAT

In South Dakota, Cassin's Kingbirds are found in open dry ponderosa pine woods or ponderosa pine – grassland edges. During the second Atlas, a pair of Cassin's Kingbirds was observed foraging in a pasture and carrying

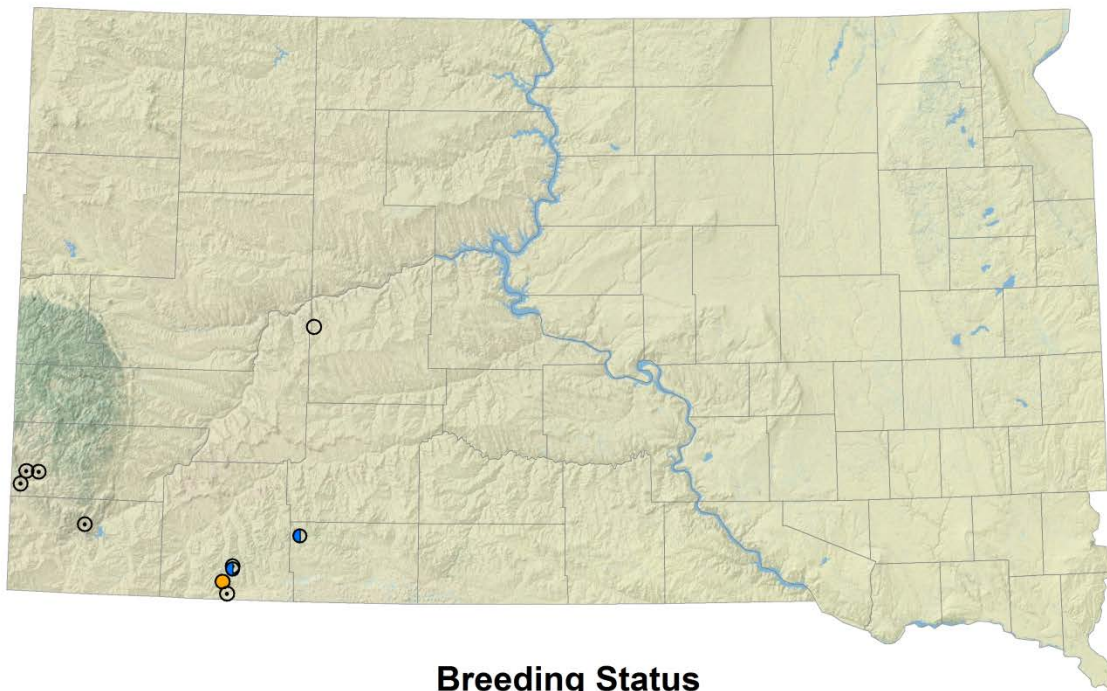
insects into a stand of ponderosa pines where they presumably were nesting.

BREEDING BIOLOGY

The breeding season in South Dakota is late May into July; adults were carrying food on June 10 during the second Atlas. The nest is built on a horizontal branch or in the fork of a large tree. All nests that have been found in South Dakota have been in ponderosa pine. The bulky cup nest, built by the female, is made of twigs, weed stems, rootlets, and debris, and lined with finer plant fibers and feathers. The female incubates the clutch of 3 or 4 eggs for 14 to 16 days. Both parents feed the nestlings, although the female spends twice as much time feeding than does the male. The young kingbirds leave the nest in 14 to 17 days, and are fed by their parents for at least 2 more weeks (Tweit and Tweit 2000).

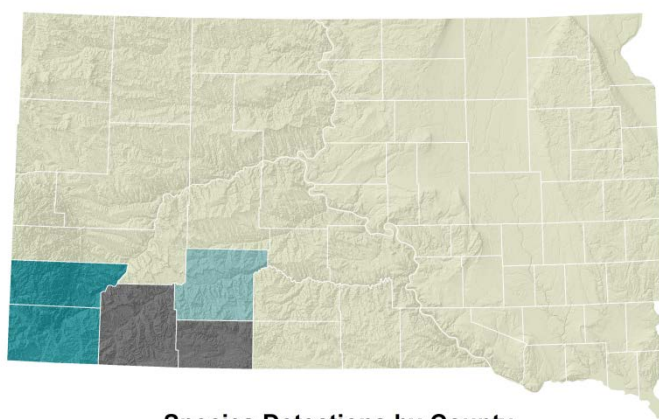
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	1	1
Probable	2	1	3
Possible	0	6	6
Observed	0	1	1
Total	2 (0.5%)	9	11

Cassin's Kingbird



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

WESTERN KINGBIRD

Tyrannus verticalis

Western Kingbirds vigorously defend their nests against other birds and potential predators. Despite this behavior, predation is a significant cause of egg and nestling mortality.

DISTRIBUTION AND STATUS

The Western Kingbird is found in the western U.S. and north into adjacent parts of southern Canada. Since the late 1800s, its breeding range has expanded eastward across the northern Great Plains, probably because of tree plantings and the proliferation of human-made structures. South Dakota is at the eastern edge of the Western Kingbird's range. This species is widespread and abundant in the state, reported in almost 90% of blocks during both Atlases and in all 66 counties. Western Kingbird is less common in the Black Hills and the southeast, where it possibly is decreasing (Tallman *et al.* 2002). The South Dakota population is experiencing a slight annual decrease since 2002, according to Breeding Bird Survey data (Sauer *et al.* 2014).

HABITAT

Western Kingbirds are found in a wide variety of open habitats, such as grasslands, pastures, cropland, and urban areas. Key features of the breeding habitat include open areas for feeding, and trees, shrubs, or tall human-made structures for nesting and perching. This breeding habitat diversity was seen during the second Atlas when 37% of observations were in upland woodlands and shelterbelts, 27% in grassland, 14% in lowland woods and

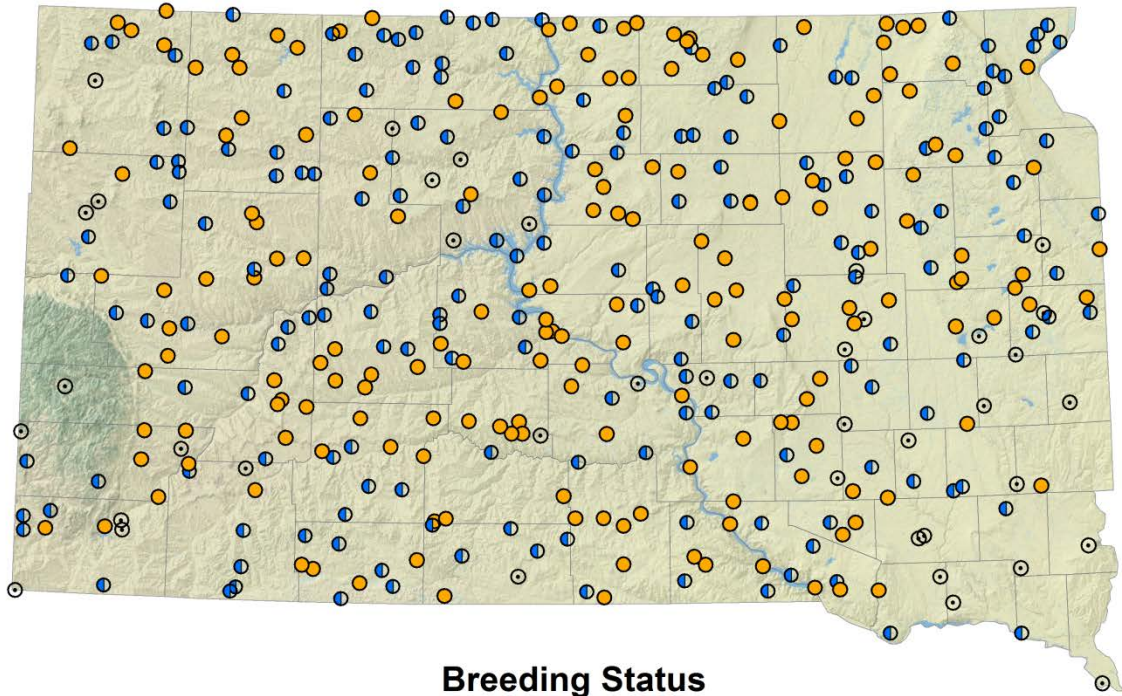
shelterbelts, 8% in residential areas, and 8% in open areas with scattered trees. Of 156 nests for which habitat was recorded during the second Atlas, 75% were in deciduous and mixed deciduous-coniferous woodlots, 16% in open areas with scattered trees, 6% in human development (yards, cemeteries, and golf courses), 2% in grasslands, and 1% in shrublands.

BREEDING BIOLOGY

Breeding takes place mid-May through July (second Atlas nest dates: May 16 to July 31). Nests are built on a variety of natural and human-made structures. During the second Atlas, observers reported nests in cottonwood (7 nests), green ash (7), elm (5), spruce (2), Russian olive (2), willow (2), plum (1), cherry (1), locust (1), and dead trees (6), ranging in height from 3 to 35 feet (average 14.7', 42 nests). Females build a bulky, cup-shaped nest and incubate an average of 4 eggs for 14 days. Chicks leave the nest when around 16 days old but are dependent on parents for food for another 2 to 3 weeks (Gamble and Bergin 2012).

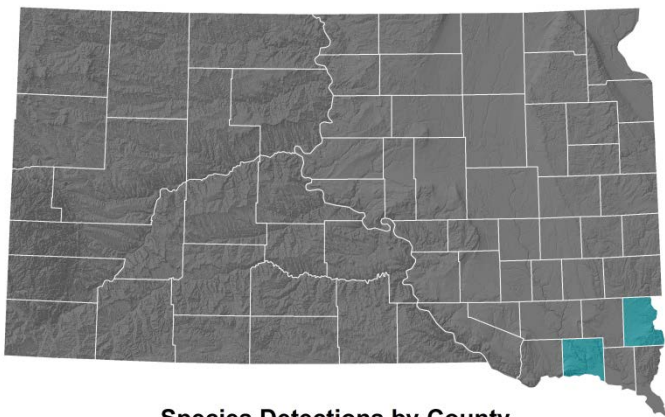
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	155	31	186
Probable	185	0	185
Possible	38	1	39
Observed	0	0	0
Total	378 (87%)	32	410

Western Kingbird



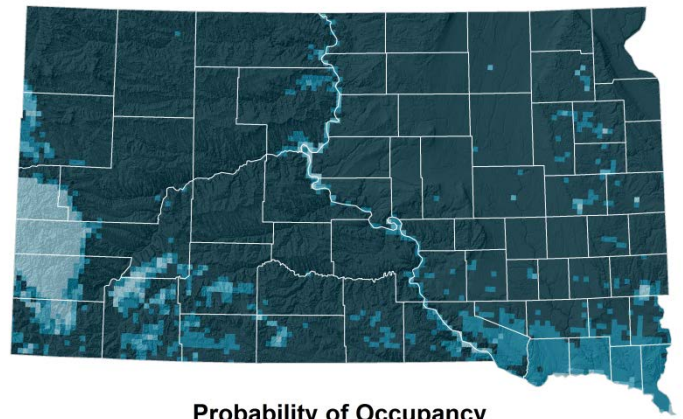
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

EASTERN KINGBIRD

Tyrannus tyrannus

Eastern Kingbirds acquired the name *Tyrannus*, which means “tyrant” or “king,” because of their pugnacious attacks on potential predators and domination of other birds. Their aggressiveness increases the chance that nests will successfully fledge young.

DISTRIBUTION AND STATUS

The Eastern Kingbird breeds throughout Canada north to tree line and the United States, except Alaska, the Pacific coast, and southwest. This kingbird is one of the most abundant and widespread breeding species in South Dakota, found in every county and on 96% of Atlas survey blocks. It is slightly less abundant in the Black Hills. Abundance and distribution were the same during the first and second Atlases. South Dakota’s Eastern Kingbird population is stable (Sauer *et al.* 2014).

HABITAT

Breeding Eastern Kingbirds require open spaces for hunting and trees for nesting. Second Atlas nests were found in shelterbelts and woodlots (67% of 134 nests), open areas with scattered trees (16%), grasslands (9%), shrublands (6%), and wetlands (1%).

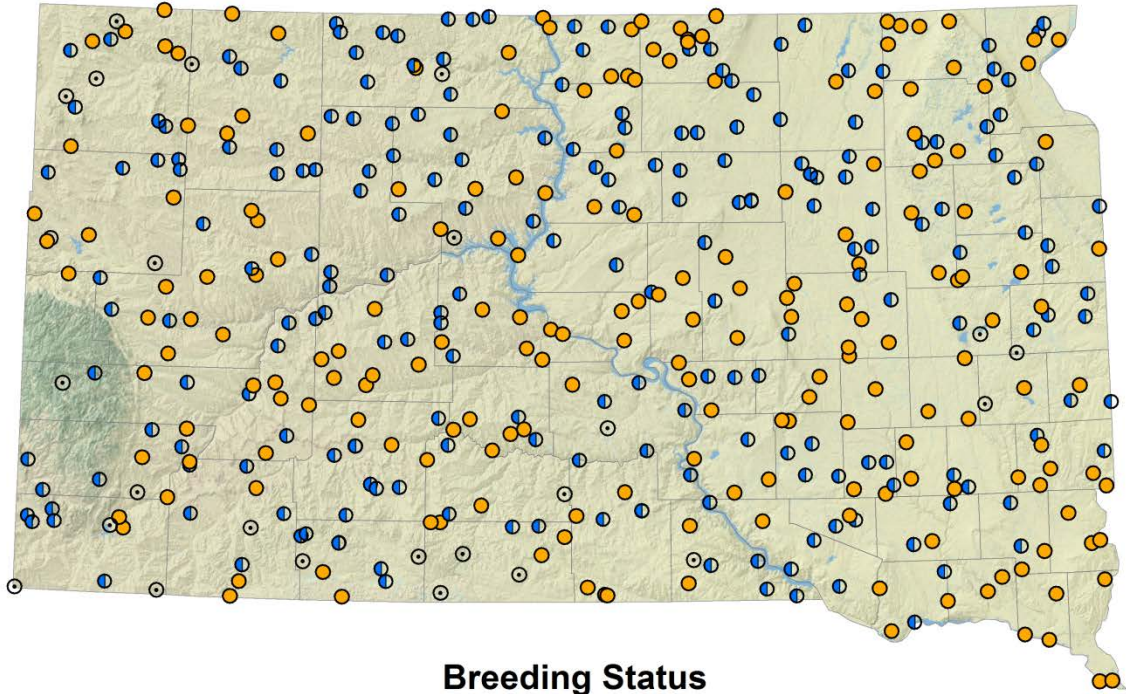
BREEDING BIOLOGY

In South Dakota, Eastern Kingbirds nest from mid-May through August. Second

Atlas nest dates ranged from May 19 to July 21. The nest is built in a tree or similar structure. During the second Atlas, nests were found in cottonwoods (9 nests), willows (6), dead trees (7), shrubs (5), green ash (5), elms (4), junipers (3), mulberries (2), plums (2), hawthorn (1), conifer (1), Russian olive (1), and on a telephone pole box (1). The bulky, sturdy nest is composed of twigs, roots, weeds, and bark strips and lined with softer plant materials. Clutch sizes reported during the second Atlas were 3 or 4 eggs and averaged 3.6 (9 nests). Only the female incubates, for 14 to 17 days. To feed the nestlings, adults kill large insects, including bees and wasps after the stingers have been removed. When chicks leave the nest at 16 or 17 days, they are capable of weak, but sustained flight. Young kingbirds begin to eat fruit and pick small insects off leaves by 25 days old, but continue to be fed at a high rate until about 35 days old. Parental feeding and defense against predators continues, but gradually declines, for about 2 more weeks (Murphy 1996).

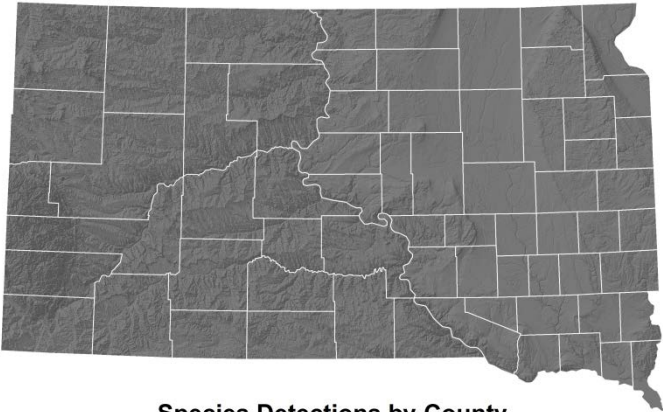
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	178	25	203
Probable	212	4	216
Possible	26	0	26
Observed	0	0	0
Total	416 (96%)	29	445

Eastern Kingbird



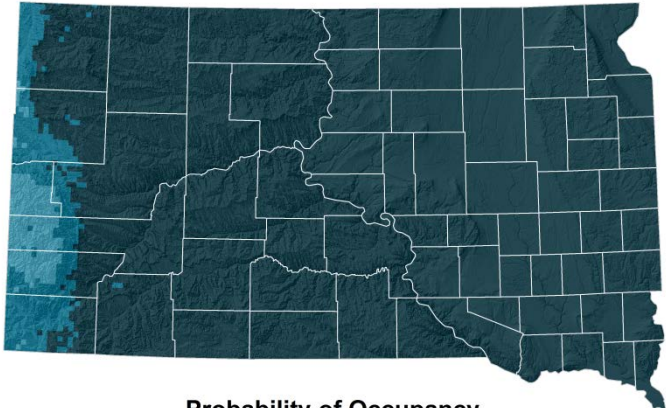
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

LOGGERHEAD SHRIKE

Lanius ludovicianus

The Loggerhead Shrike is a small songbird predator that hunts a variety of invertebrate and vertebrate prey. Because their feet are too small to hold large items, shrikes impale their quarry on sharp objects, such as thorns and barbed wire. The thorns hold the food while feeding and are used to store the left-overs for later consumption.

DISTRIBUTION AND STATUS

The breeding range includes Mexico, the southern half of the U.S., and extending north into the Great Basin, northern Great Plains, and Canadian Prairies. In South Dakota, Loggerhead Shrikes are fairly common west of the Missouri River but uncommon and declining east of the River. The first Atlas recorded shrikes on 49% of random blocks while the second Atlas detected shrikes on just 32% of blocks. The change is because of a dramatic decline in the Missouri Coteau region, especially in McPherson, Edmunds, Faulk, and Hand counties, areas with high grassland conversion to row-crops (Wright and Wimberly 2013). Breeding Bird Survey data confirm that the shrike population is decreasing in the state, at a significant rate of 2.9% per year over the past 45 years (Sauer *et al.* 2014).

HABITAT

Shrikes breed in open habitat with scattered trees and shrubs, usually in grassy areas. They often perch on fences or power lines while hunting. During the second Atlas, shrikes were recorded in grasslands (48% of observations), woodlands (32%), open

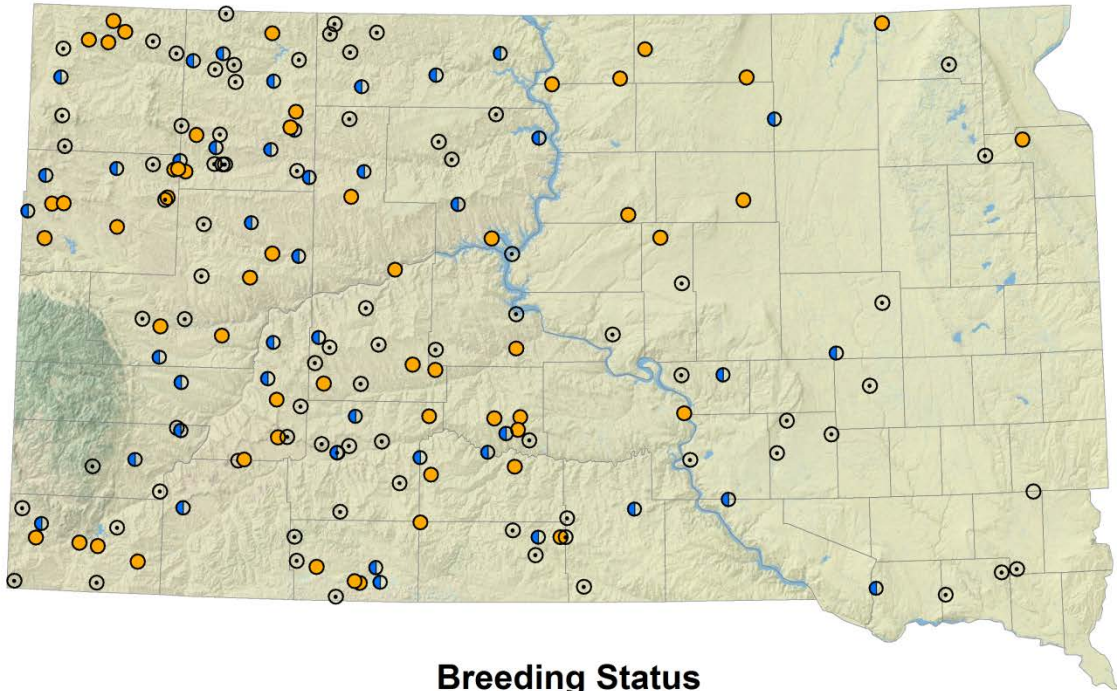
areas with scattered trees (7%), cropland (7%), shrublands (5%), and roadsides (5%). Second Atlas nests were in areas with scattered trees (3 nests), mixed conifer-deciduous woodlots (3), pastures (2), deciduous woodlots (2), and shrubland (1).

BREEDING BIOLOGY

In South Dakota, the breeding season is late April through July. Loggerhead Shrikes build their nests in thick bushes or small trees; second Atlas nests were found in buffaloberry, juniper, Russian olive, and green ash. The nest is a bulky large cup made of twigs and coarse plant parts, and lined with softer materials such as grass, moss, and fur. Females lay a clutch of 5 or 6 eggs which they incubate for about 16 days. Nestlings are fed by both parents and leave the nest in 17 to 20 days. During the next 4 to 6 weeks, young shrikes develop their hunting skills until they are able to survive on their own. They progress from pecking at objects and chasing, to catching small insects, to grasping objects and attempting to place them, to successfully impaling and wedging objects (Yosef 1996).

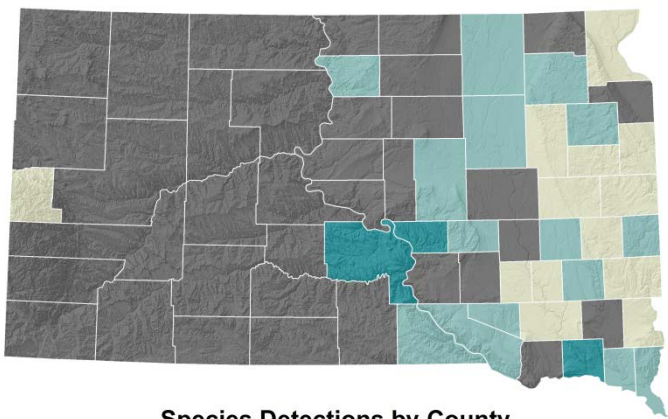
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	33	24	57
Probable	38	4	42
Possible	65	12	77
Observed	1	0	1
Total	137 (32%)	40	177

Loggerhead Shrike



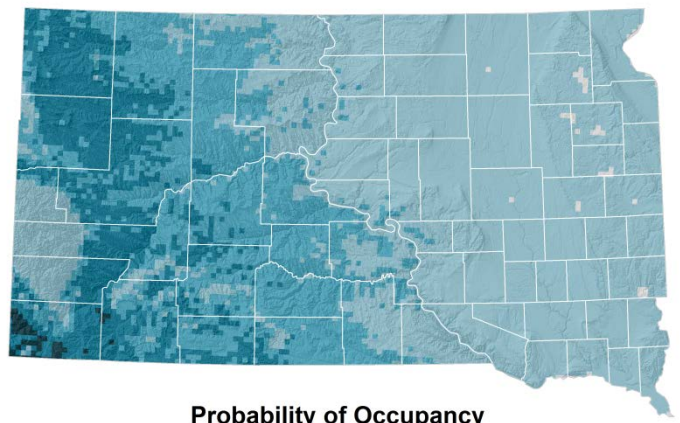
Breeding Status

- Confirmed breeding
- ◐ Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BELL'S VIREO

Vireo bellii

John James Audubon discovered this vireo in Missouri during his 1843 expedition up the Missouri River. He named it for his friend and travelling companion, taxidermist John Bell.

DISTRIBUTION AND STATUS

Bell's Vireos breed in the central and southwestern United States and northern Mexico. South Dakota is part of the northern edge of the breeding range. In South Dakota, Bell's Vireos are fairly common in the south-central counties and along the Missouri River. Their distribution within the state stayed essentially the same between the first and second Atlases. However, the second Atlas recorded this species on more Atlas blocks. This increase was most noticeable along the Missouri River north of Pierre; the first Atlas found just 3 sites with Bell's Vireo north of the Cheyenne River. There also was a noticeable increase south of the White River, in Mellette, Todd, Jackson and Bennett counties.

HABITAT

Breeding habitat always includes dense low vegetation, such as that found in shrubby fields, stream-side willow thickets, young forest, or scrub. Second Atlas records were in shelterbelts and upland deciduous woodlands (34% of records), lowland woodlands and riparian areas (31%), shrublands (28%), and shrubby fields (9%). Of 8 nests reported during the second Atlas, 4

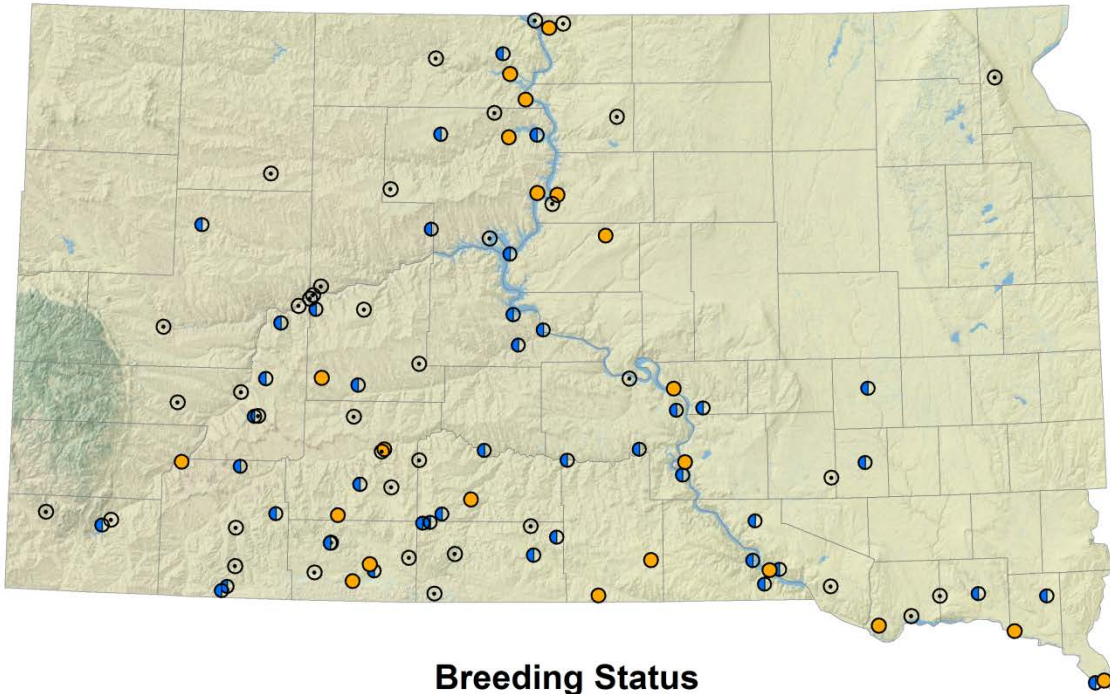
were in riparian areas and 4 were in upland woodlands or shelterbelts.

BREEDING BIOLOGY

Bell's Vireos in South Dakota breed from late May into mid-July. The nest is placed 2' to 5' above ground in a low shrub or sapling. The nest, built by both adults, is a small hanging cup suspended from the fork of a horizontal twig. It is made of grasses, stems, leaves, and strips of bark, bound together by spider webs, and lined with feathers, moss, and fine grass. The female lays a clutch of 3 or 4 eggs, which both adults incubate for 14 days. The adults partially crush insects or regurgitate food to newly-hatched vireos; later they deliver whole insects. If nestlings have difficulty swallowing prey, the adults will eat the food themselves. Young vireos leave the nest 10 to 12 days after hatching and are fed by their parents for at least another 3 weeks (Kus *et al.* 2010). Although Brown-headed Cowbirds frequently lay their eggs in Bell's Vireo nests, no instances were observed during the second Atlas.

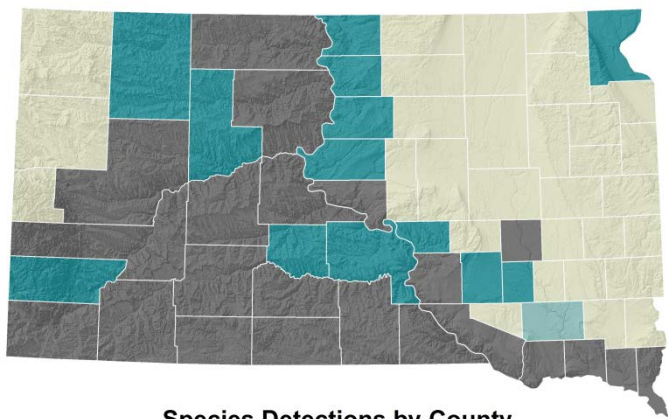
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	10	13	23
Probable	39	3	42
Possible	32	7	39
Observed	0	0	0
Total	81 (19%)	23	104

Bell's Vireo



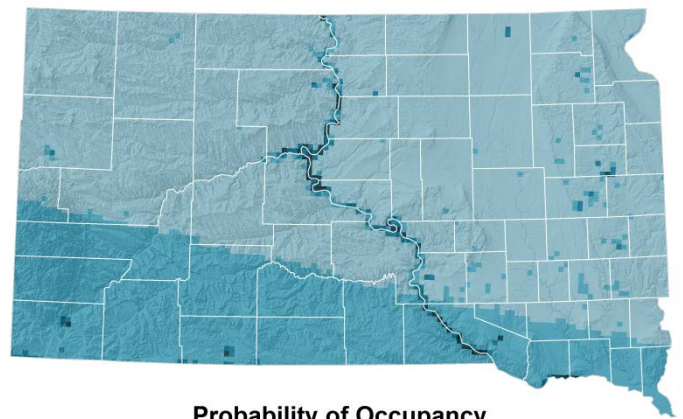
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

YELLOW-THROATED VIREO

Vireo flavifrons

The Yellow-throated Vireo is the most brightly-colored vireo in South Dakota. Both sexes have a yellow head, throat, and breast, a white belly, white wing bars, and distinctive yellow 'spectacles' around the eyes.

DISTRIBUTION AND STATUS

South Dakota is on the extreme western edge of the Yellow-throated Vireo's breeding range, which includes the eastern states and eastern prairie region of the United States, and southeastern and south-central Canada. A westward extension of the range follows the Platte, Missouri, and Big Sioux Rivers into Nebraska and South Dakota. The northeastern South Dakota breeders are an isolated population. Generally uncommon throughout its breeding range, this vireo is rare and local in South Dakota, with the species being reported on just 1% of survey blocks during both the first and second Atlases.

HABITAT

This vireo breeds at the edges of mature deciduous and mixed deciduous-coniferous forests. While usually associated with forest edges, Yellow-throated Vireos apparently require large blocks of forest or a high percentage of regional forest cover to breed successfully. Second Atlas detections all were in forest habitats - upland deciduous (70%), lowland mixed conifer-deciduous (15%), upland mixed conifer-deciduous (10%), and lowland deciduous (5%).

BREEDING BIOLOGY

Primarily nesting during late May to early July, a second Atlas observation of a Yellow-throated Vireo on a nest on May 21 is a record early date for the state. The nest usually is in the upper branches of a deciduous tree. One Atlas nest was found in a hackberry. Both adults build the nest. It is a rounded open cup, suspended by its rim from the fork of a small branch and made of a variety of plants, moss, lichen, insect silk, wasp's nest paper, spider webs, and hair. Construction usually takes about 8 days. Both male and female incubate the 4 eggs during the 13-day incubation period. However the female does the majority of incubation and always at night. Both adults feed the nestlings a diet of caterpillars and other small, soft-bodied insects. Chicks leave the nest after about 13 days, but are unable to fly well. Each parent takes half of the brood and go their separate ways. The chicks are totally dependent on adults for food for another 2 weeks, and, although they gradually become more independent, continue to beg for food for up to 1 month (Rodewald and James 2011).

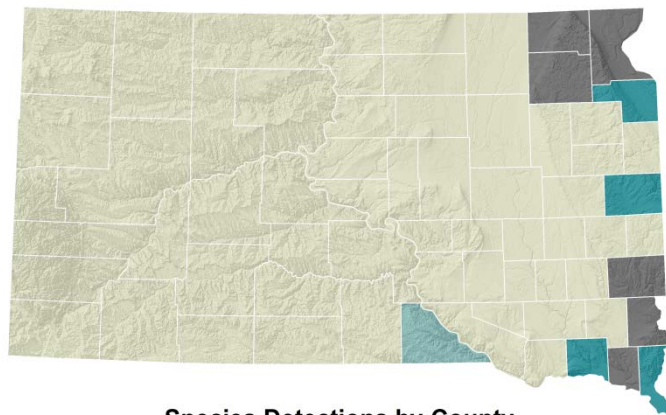
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	2	3	5
Probable	0	4	4
Possible	2	6	8
Observed	0	0	0
Total	4 (1%)	13	17

Yellow-throated Vireo



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

PLUMBEOUS VIREO

Vireo plumbeus

Unpaired Plumbeous Vireo males often build “nest starts.” These are nest-like structures that resemble shallow hammocks. Nest starts are not used after pairing, but they may provide a platform to display to newly-arrived females. They also may be a source of nesting materials.

DISTRIBUTION AND STATUS

Plumbeous Vireos breed throughout the interior, mostly mountainous regions, of the western United States and Central America. Wyoming, Nebraska, and South Dakota have isolated populations. In South Dakota, this vireo is common in the Black Hills and uncommon in the forested buttes of Harding County. First and second Atlas breeding distributions were essentially the same. However, South Dakota’s Plumbeous Vireo population is increasing at a significant rate according to Breeding Bird Survey data (Sauer *et al.* 2014).

HABITAT

Breeding habitat is warm, dry mountain forests dominated by ponderosa pine. More than half of second Atlas Plumbeous Vireo sightings were in ponderosa pine stands (56% of all observations). Vireos also were in mixed pine-deciduous woods (32%), and deciduous woods (12%). Observers reported second Atlas nests in

deciduous woods (2 nests) and mixed deciduous-pine woods (1 nest).

BREEDING BIOLOGY

In South Dakota, the breeding season is from mid-May to early July. The nest is an open cup hanging by its rim from a horizontal fork of a branch low in a tree or shrub. Both adults build the nest from grasses, bark strips, soft plant fibers, rootlets, string, and animal hair. Often the exterior is camouflaged with moss or lichens. The female lays a clutch of 4 whitish eggs that are lightly spotted with brown and black. The pair share all parental duties, including incubation, brooding, defense, and feeding the nestlings and fledglings. Eggs hatch after 12 to 14 days of incubation, and nestlings leave the nest after about 13 to 14 days. The young vireos are fed by both parents for at least another 2 weeks (Goguen and Curson 2012).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	4	3	7
Probable	8	6	14
Possible	6	4	10
Observed	0	0	0
Total	18 (4%)	13	31

Plumbeous Vireo



Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

WARBLING VIREO

Vireo gilvus

Two subspecies of Warbling Vireo breed in South Dakota. The western *V. g. brewsteri* is found only in the Black Hills. The eastern *V. g. gilvus* is found throughout the rest of the state. The two subspecies' songs, sizes, and plumages are noticeably different. Some ornithologists think that they may be two different species.

DISTRIBUTION AND STATUS

The eastern subspecies is found in the northern two-thirds of the U.S., west to central Montana and Alberta. The western subspecies breeds from southeast Alaska south into Mexico and east through the Rocky Mountains, including disjunct mountain ranges such as the Black Hills. In South Dakota, Warbling Vireos are the most common vireo. They are recorded in all 66 counties and 63% of atlas blocks. These vireos are less common in areas with little woodland, such as the northwest section of the state. The current distribution is similar to that of the first Atlas, when the species also was the most commonly reported vireo, found on 65% of random blocks.

HABITAT

This species occupies a variety of deciduous forest habitats, especially those in riparian zones, and at all elevations, except the very highest parts of the Black Hills. During the second Atlas, Warbling Vireos were reported from deciduous (65%) and mixed deciduous-conifer (33%) woodlands. In

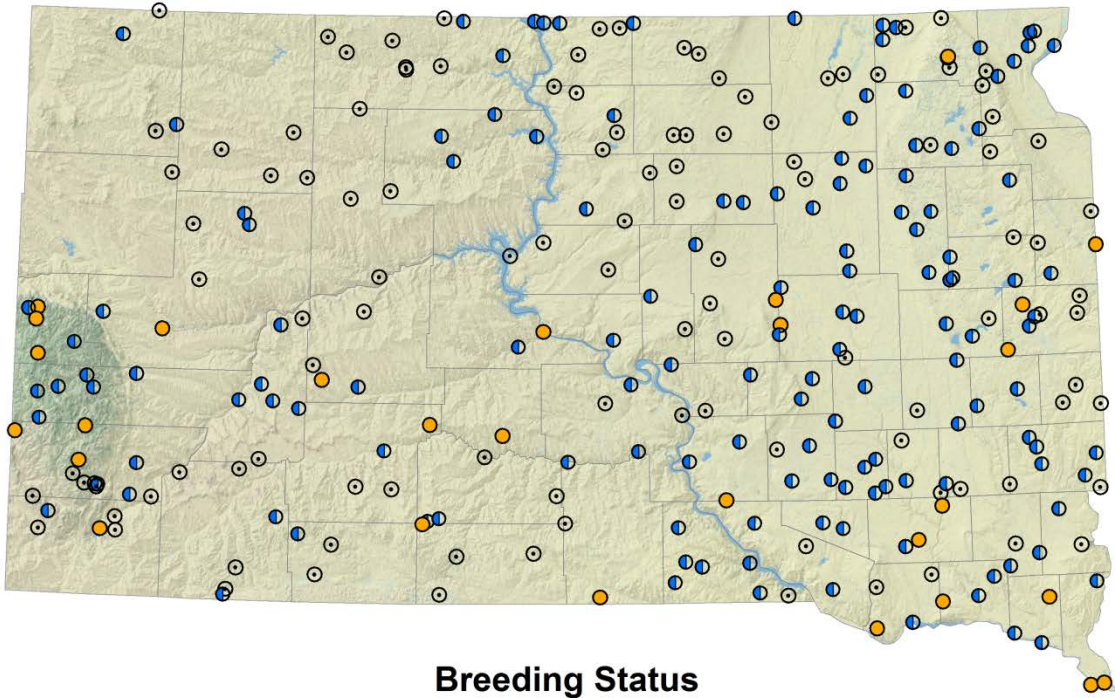
general, presence of tall, primarily deciduous trees appears to be a requirement of breeding habitat. Of the 11 nests reporting habitat during the second Atlas, 6 were in lowland deciduous habitat, 2 each in upland deciduous and upland mixed forest, and 1 in lowland conifers.

BREEDING

Warbling Vireos in South Dakota nest from late May until late July (second Atlas nest dates: 5/23 to 7/28). The nest is a rough cup made entirely out of fibrous plant materials, lichen, spider web, and hair. It usually is suspended from the fork of horizontal twigs 1 to 50 feet above the ground. The female lays an average of 4 eggs, which are white with red, brown, or black marks. She does the majority of incubation and brooding of the nestlings, while the male assists with feeding. The young leave the nest at about 13 days and are fed by their parents for another 2 weeks (Gardali and Ballard 2000). The species often is parasitized by Brown-headed Cowbirds. The second Atlas had one report of a Warbling Vireo feeding a fledgling cowbird.

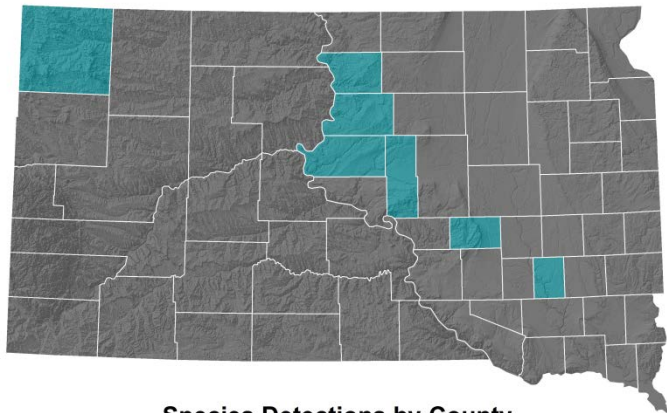
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	23	7	30
Probable	139	5	144
Possible	111	3	114
Observed	0	0	0
Total	273 (63%)	15	288

Warbling Vireo



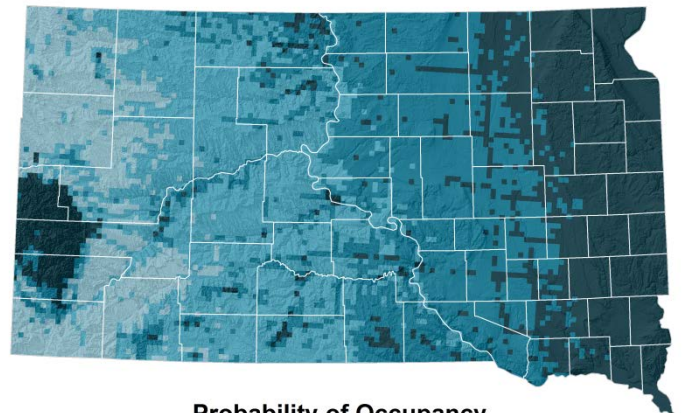
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

RED-EYED VIREO

Vireo olivaceus

The Red-eyed Vireo is a Neotropical migrant that overwinters in the Amazon basin of South America. It migrates at night, using an internal magnetic compass to orient.

Atlas found vireos in deciduous forests (lowland -42% of reports, upland-26%), mixed conifer-deciduous woods (lowland-16%, upland 11%), and conifer woods (5%).

DISTRIBUTION AND STATUS

This vireo breeds across Canada, and the eastern, central, and northwestern United States. In South Dakota, Red-eyed Vireo has a rather clumped distribution, found most commonly in regions with the most forest cover. These include the eastern forest remnants of the northeast and southeast, the forested buttes of Harding County, the oak woodlands and Pine Ridge Escarpment in south-central South Dakota, and low to mid-elevation mixed forest in the Black Hills. In these major regions, results of the first and second Atlases were essentially the same. South Dakota's Red-Eyed Vireo population is decreasing at a slight rate (Sauer *et al.* 2014).

HABITAT

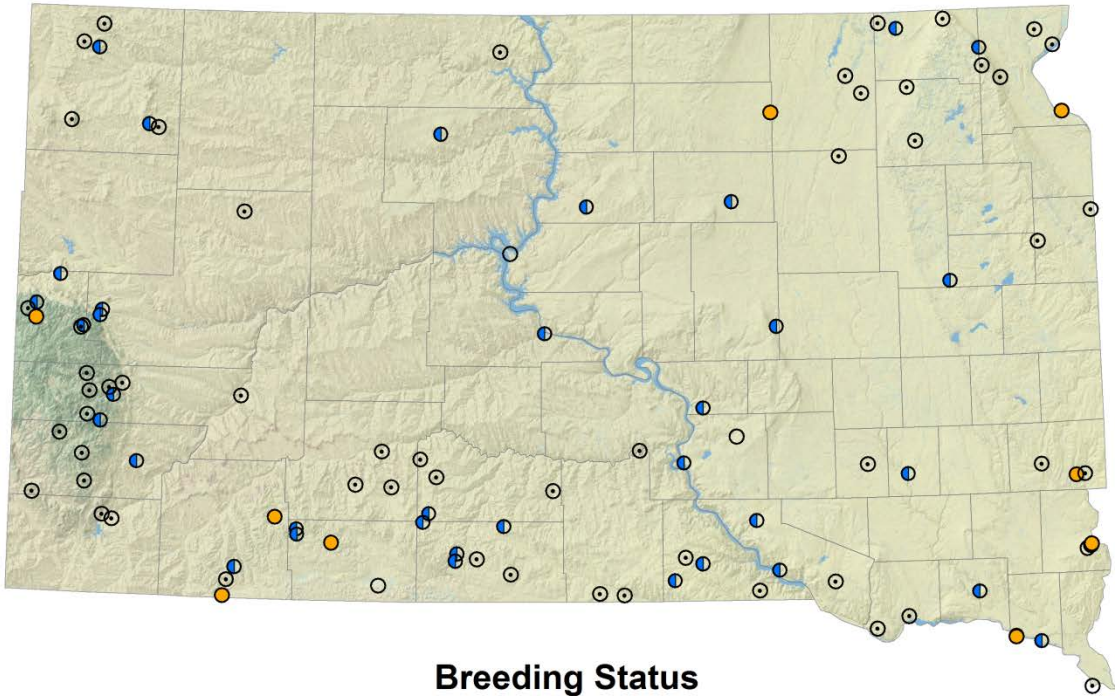
Red-eyed Vireos breed in forests with a well-developed shrub layer. In South Dakota, it is found in natural woodlands rather than shelterbelts (Gentry *et al.* 2006). Observers during the second

BREEDING BIOLOGY

In South Dakota, Red-eyed Vireos nest in June and July. The nest is in a shrub or small tree in the forest, suspended from a fork in a branch. It is cup-shaped and made of bark strips, grass, wasp-nest paper, and weeds, held together with spider-web and cocoon adhesives. The female lays 2 to 5 eggs; a second Atlas nest had 5 eggs. Incubation, by the female only, lasts for 12 to 14 days. Nestlings are fed by both parents and leave the nest when 10 to 12 days old (Cimprich *et al.* 2000).

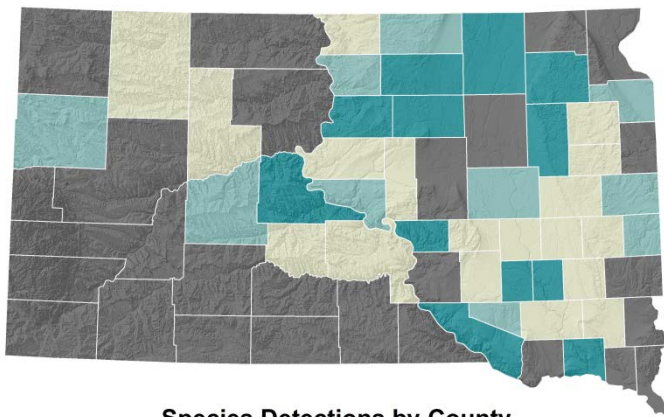
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	3	7	10
Probable	31	6	37
Possible	44	12	56
Observed	3	0	3
Total	81 (19%)	25	106

Red-eyed Vireo



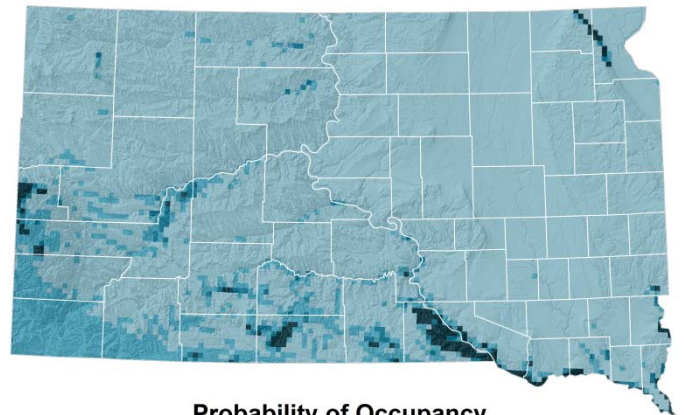
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

GRAY JAY

Perisoreus canadensis

In summer, the Gray Jay stores excess food in bark crevices for retrieval during the winter. Jays coat food items with their sticky saliva before depositing the food under bark, in bunches of conifer needles, or tree forks. They may also cover the food with bark or lichen to conceal it. Gray Jays often carry large food items with their feet, which is unusual for songbirds.

DISTRIBUTION AND STATUS

The Gray Jay is a year round resident from tree line in Alaska and Canada south through the Rocky Mountains to New Mexico, and to New England and the upper Midwest. Isolated populations occur in New York, Arizona, and the Black Hills of South Dakota. In the Black Hills, Gray Jays are fairly common at mid- to high elevations. The distribution of Gray Jays in the Black Hills did not change between the first and second Atlases.

HABITAT

Gray Jays inhabit coniferous or mixed deciduous-coniferous forests, showing a preference for spruce. In the Black Hills, Gray Jays inhabit mature, multi-storied ponderosa pine or mixed conifer-deciduous forest (Mills *et al.* 2000). Observers during the second Atlas reported Gray Jays in conifer forests (79% of observations), mixed conifer-deciduous forests (17%), and residential areas, campgrounds, and picnic areas (4%).

BREEDING BIOLOGY

One of the earliest nesting songbirds in the state, Gray Jays begin nesting in late February and finish in May. Mated pairs stay together all year and defend large permanent territories, 60-200 acres in size. The nest is in a dense conifer close to the trunk; a second Atlas nest was 10' high in a white spruce. It is built by both members of the pair and is a bulky cup of twigs and bark strips, with lichens and insect cocoons stuck into gaps. The nest is lined with softer materials, especially feathers from a variety of bird species. The female incubates the 2 to 5 eggs for about 18 days. During the nestling period, chicks trample and flatten the cup nest. To counter this, the female vigorously jabs at the lining and bottom to deepen and enlarge the nest. Each jabbing session may involve tens of thousands of jabs and females may perform jabbing sessions over 5000 times during the nestling period. Chicks leave the nest at about 22 to 24 days and remain with the parents for at least another month (Strickland and Ouellet 2011).

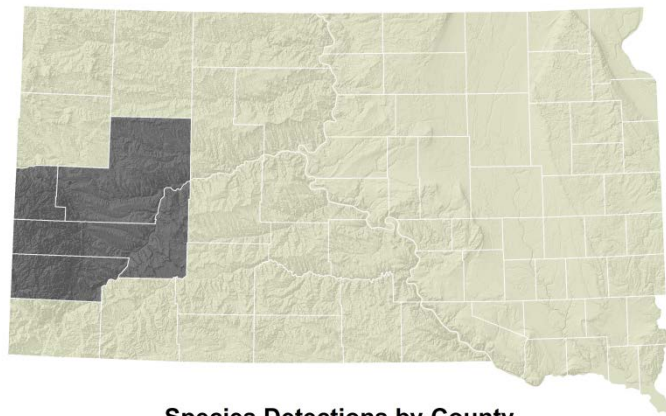
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	2	3
Probable	6	19	25
Possible	5	19	24
Observed	0	0	0
Total	12 (3%)	40	52

Gray Jay



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

PINYON JAY

Gymnorhinus cyanocephalus

Pinyon Jays are extremely social and do everything in flocks, which consist of family clans. These birds are famous for their ability to fill their expandable esophagus with pine seeds, which they cache in various places within the flock's home range.

DISTRIBUTION AND STATUS

The core of the Pinyon Jay's range is the southwestern U.S. north into the northern Rocky Mountains, with isolated populations in California, Oregon, and the western Great Plains. South Dakota is at the extreme northeast edge of the range. The Pinyon Jay is a rare to uncommon permanent resident in scattered locations in the Black Hills and southern Pine Ridge Escarpment. This species has experienced one of the greatest population decrease of any of the state's breeding species in the past 25 years. Before the mid-20th century, Pinyon Jays were locally abundant in the Black Hills and Harding County pine forests (Over and Thoms 1946). From the 1960s into the early 1990s, including during the first Atlas, the species was a common resident in the Black Hills and continued to occur in Harding County (Pettingill and Whitney 1965, Rosche 1982, South Dakota Ornithologists' Union 1991). By the 21st century, Pinyon Jays were uncommon and had disappeared from Harding County (Tallman *et al.* 2002). Most of the species' South Dakota population was, and is, in the southwestern Black Hills; other current Black Hill's observations are of small numbers of birds at scattered locations.

HABITAT

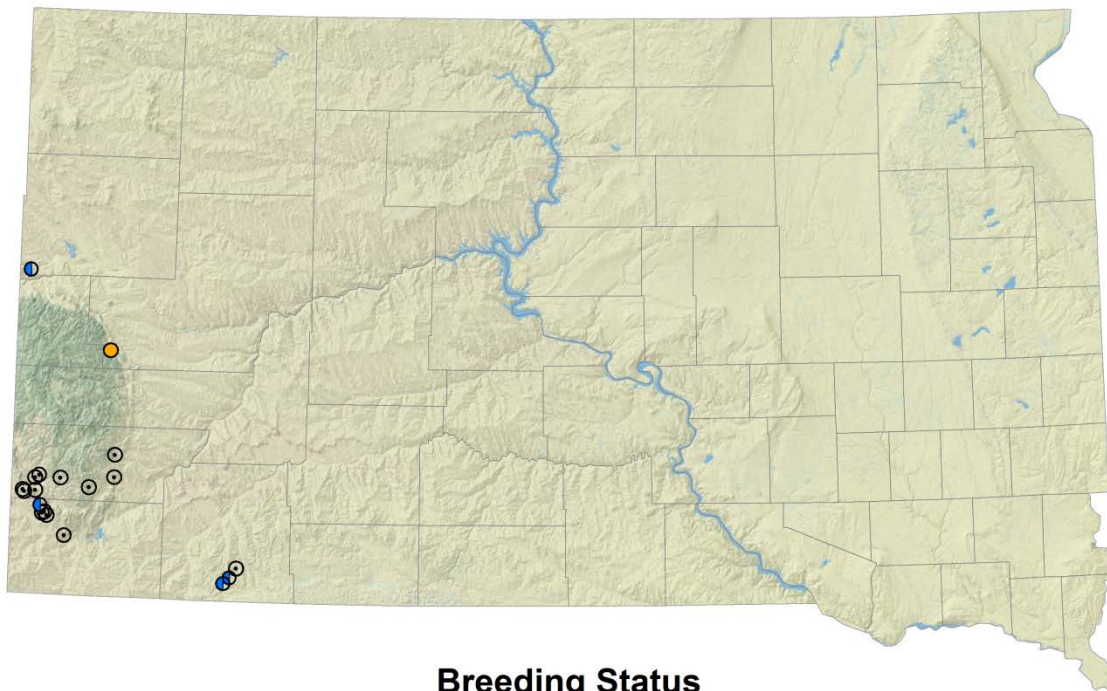
In South Dakota, Pinyon Jay habitat is low elevation (3500' to 4500'), dry, sparse ponderosa pine woodlands and scrublands, often with considerable amounts of interspersed grassland. All second Atlas observations were in ponderosa pine forest.

BREEDING BIOLOGY

South Dakota's Pinyon Jays nest from April through mid-June. Nesting is highly synchronous within the flock; all pairs build nests, lay eggs, and raise chicks at the same time. The nest, built in a pine tree, is a fairly large and bulky open cup, made of sticks and lined with finer plant materials, human refuse, feathers, or hair. Females incubate the 3 to 5 eggs for 17 days. Both parents care for the chicks, which depart the nest at 22 to 23 days. Young birds form nursery crèches until they can feed themselves in 6 to 8 weeks, at which time they join the main flock. Most remain in their natal flock their entire lives and, once they choose a mate, mate for life (Balda 2002).

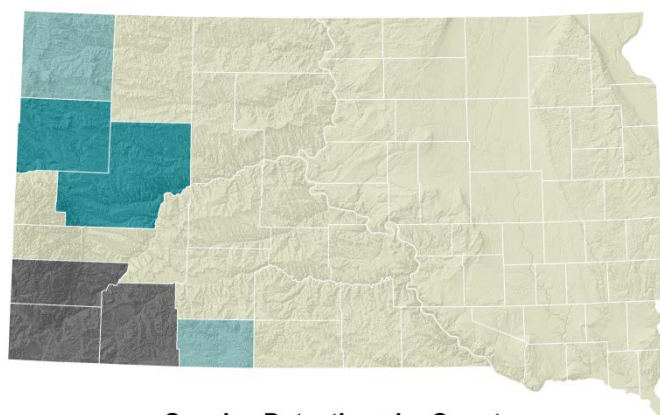
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	1	1
Probable	0	4	4
Possible	3	11	14
Observed	0	0	0
Total	3 (0.7%)	16	19

Pinyon Jay



Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- ◐ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

BLUE JAY

Cyanocitta cristata

Although omnivorous, Blue Jays have a fondness for acorns and other nuts, some of which they cache for later consumption.

DISTRIBUTION AND STATUS

Blue Jays breed in eastern North America west to the western Great Plains. In South Dakota, the species occurs at lower elevations of the Black Hills and across the southern and eastern regions of the state. They are rare in the northwest quarter of the state and uncommon in the Missouri Coteau region, perhaps because of a lack of woodland habitat in these areas. Many of South Dakota's Blue Jays are year-round residents but some migrate (Tallman *et al.* 2002) The first Atlas recorded Blue Jays in 63% of random blocks while the second Atlas detected the species on 40% of the blocks. The most obvious change in distribution in the 20 years between Atlases occurred in the northwest quarter of the state, where the species has almost disappeared. During the same time, Blue Jay population numbers in South Dakota have been decreasing significantly, at a rate of 4.4% per year (Sauer *et al.* 2014).

HABITAT

Blue Jays inhabit deciduous or mixed deciduous-conifer woodlands, and forested residential areas. During the

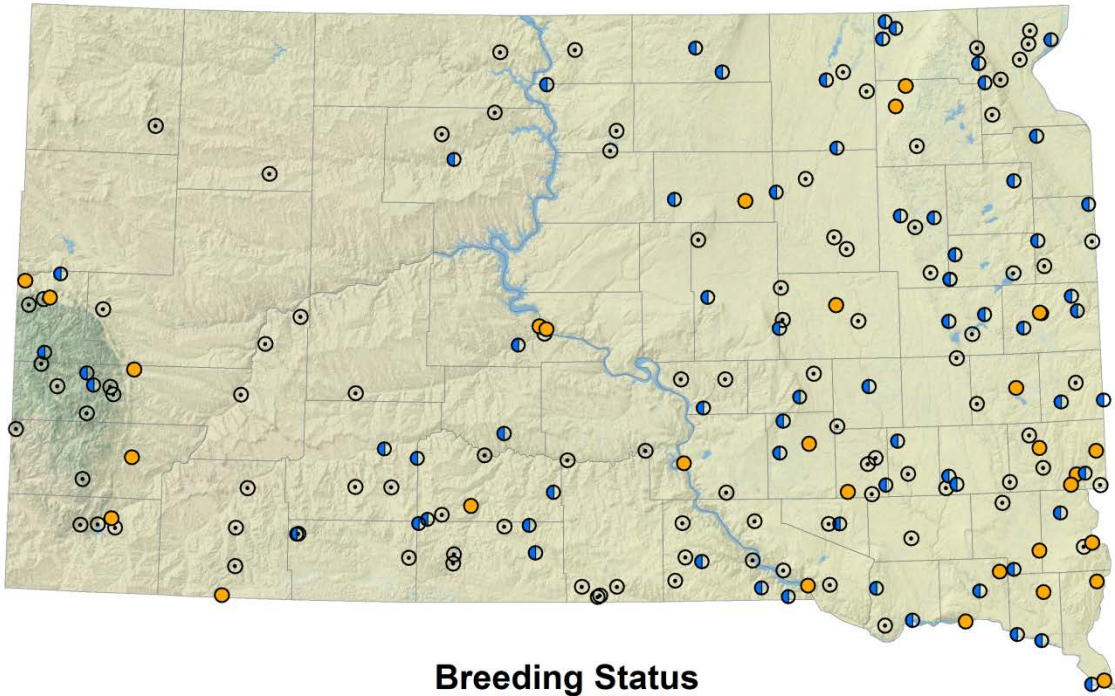
second Atlas, 89% of Blue Jays were observed in woodlands, with another 7% in residential areas. By woodland type, 62% were in deciduous forest, 21% in mixed forest, and 5% in conifer forests. Observers reported Blue Jay nests in elm, cottonwood, bur oak, and juniper, at heights ranging from 5' to 25'.

BREEDING BIOLOGY

In South Dakota, Blue Jays begin breeding in May. They build somewhat bulky stick nests, lined with finer plant materials, moss, mud, or human trash. The male gathers the materials, while the female does most of the nest construction. Female Blue Jays lay 2 to 7 blue to brown eggs with red or brown marks, and incubate the eggs for 17 to 18 days. The nestlings remain in the nest for 17 to 21 days and may remain with the parents for another 2 months (Smith *et al.* 2013).

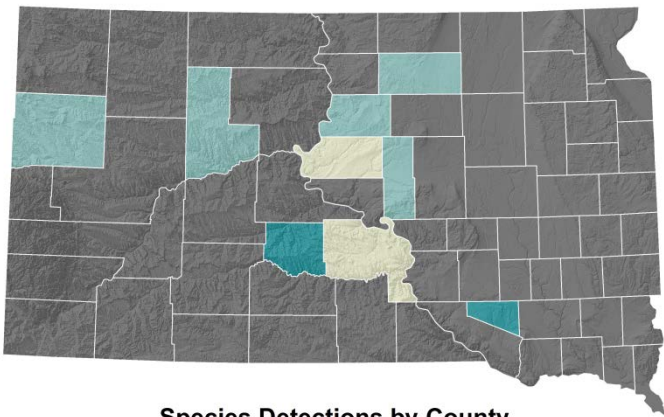
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	19	13	32
Probable	67	2	69
Possible	87	8	95
Observed	0	0	0
Total	173 (40%)	23	196

Blue Jay



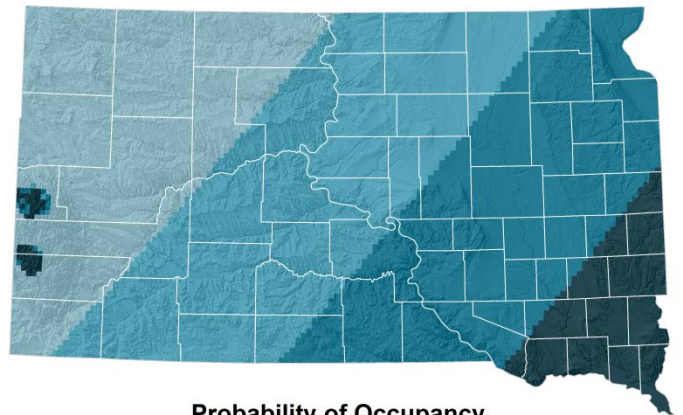
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

CLARK'S NUTCRACKER

Nucifraga columbiana

This corvid is named after Captain William Clark, who, in 1805, mistook his first sighting of a nutcracker for a woodpecker during the Lewis and Clark Expedition. Its diet consists of fresh and stored pine seeds. In the fall, nutcrackers bury tens of thousands of the seeds. Because of their remarkable spatial memory, nutcrackers are able to relocate the hidden caches nine months after burial.

DISTRIBUTION AND STATUS

Clark's Nutcrackers inhabit mountain regions throughout the western United States and Canada. Populations fluctuate in response to the production of conifer cone crops. In South Dakota, nutcrackers are a rare resident in the Black Hills. They are present every year, but can be irruptive in years and regions with an excellent ponderosa pine cone crop (Peterson 1985). Although found throughout the Black Hills, all documented nesting activities have been in southwestern Custer County (e.g., Peterson 1987). Nutcracker distribution and abundance in the Black Hills were similar between the two breeding bird Atlases.

HABITAT

Nutcrackers reside in open ponderosa pine forest at all elevations of the Black Hills. They also associate with juniper stands and old burns. Confirmed breeding has been documented in ponderosa pine-grassland edges or mixed juniper-pine-grassland areas. Second Atlas observers reported nutcrackers in conifer woods (46% of

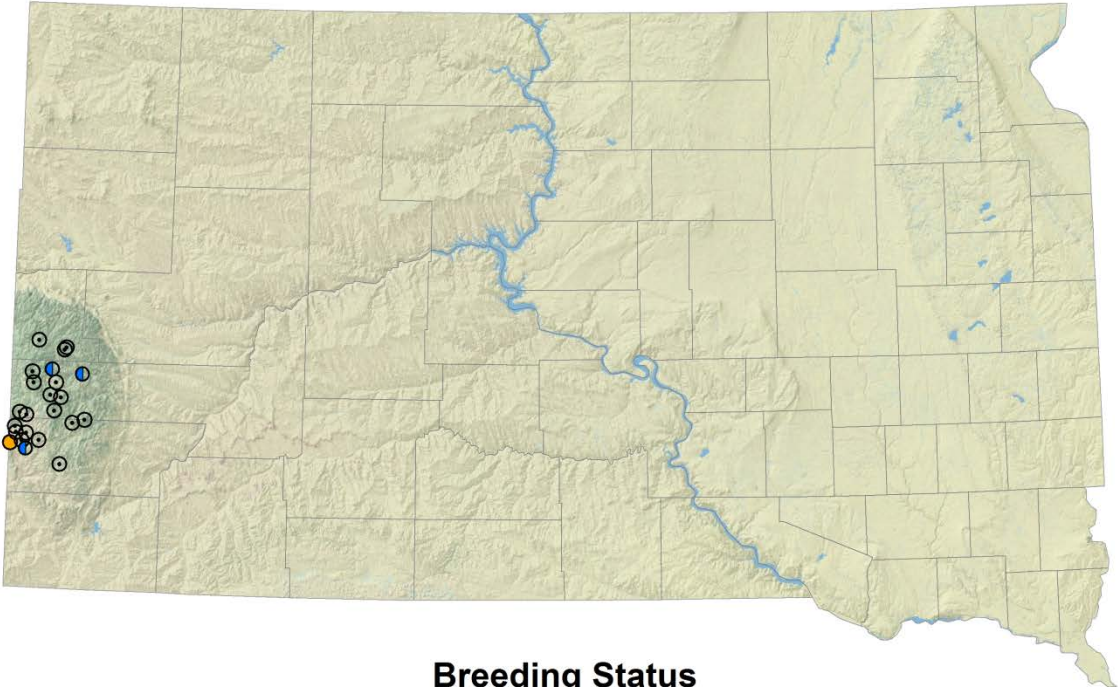
observations), burned forest (15%), residential areas (15%), deciduous and mixed deciduous-conifer woods (16%), and grassland (8%).

BREEDING

In the Black Hills, nutcrackers begin nesting in March. All Black Hills nests have been reported in ponderosa pine trees, but Black Hills nutcrackers may also nest in junipers (Peterson 1985). Both adults gather nest material and build the nest, usually near stored food caches. The nest consists of large sticks placed on a horizontal branch. The inner cup of the nest is lined with a thick layer of fine grass, moss, and hair. Clutch size typically is 3 eggs. Both parents have brood patches and incubate the eggs, although the male primarily incubates only when the female goes off to feed. Nestlings are fed shelled pine seeds retrieved from buried stores cached the previous fall. Nestlings leave the nest in about 18 days. The family moves among food caches, retrieving the previous year's seeds. Fledglings become independent when a new seed crop is ripe and they can make their own caches, when about 3.5 to 4 months old (Tomback 1998).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	1	1
Probable	1	2	3
Possible	3	17	20
Observed	0	0	0
Total	4 (1%)	20	24

Clark's Nutcracker



Breeding Status

- Confirmed breeding
- ◐ Possibly breeding
- ◑ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

BLACK-BILLED MAGPIE

Pica hudsonia

Lewis and Clark first encountered this conspicuous corvid in 1804 near present-day Chamberlain. The bold birds took food from the hand and entered tents to steal meat. The explorers subsequently sent four live magpies to President Jefferson.

DISTRIBUTION AND STATUS

The magpie's distribution correlates well with the boundaries of a cold, dry-steppe climate regime (Bock and Lepthien 1975). This includes interior portions of the western United States and Canada. In South Dakota, which is on the extreme eastern edge of the range, magpies are a year-round resident, primarily in the western quarter of the state. The species is most abundant in the southern Black Hills and the Pine Ridge Escarpment in Oglala Lakota and Bennett counties. Magpie distribution changed little between the first and second Atlas, except for more observations in Corson and Dewey counties during the second survey. However, South Dakota's magpie population has experienced a significant decrease in the past 45 years (-6.4% a year, Sauer *et al.* 2014).

HABITAT

Magpie territories include isolated stands of trees or large bushes, and open areas for foraging. During the second Atlas, 63% of observations were in woodlands, 23% in grassland, 6% in open areas with scattered trees, and 5% in human-dominated areas such as parks and residential areas. In Wind Cave National Park, magpie nests are in

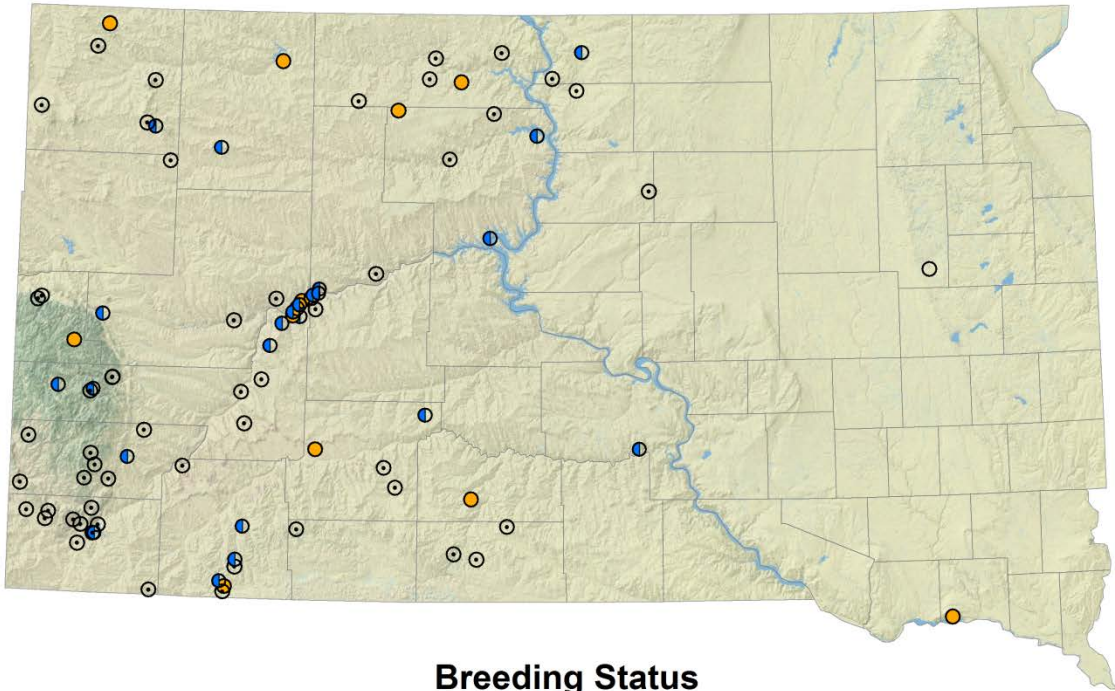
tree clumps close to water and food sources, such as picnic areas and roadkills on highways (Buitron 1988). Second Atlas nests were in upland deciduous (3 nests), mixed conifer-deciduous (1), and conifer (1) woods.

BREEDING BIOLOGY

Nest building begins in February, with the peak of nest-starts in March. Magpie pairs often mate for life. During the breeding season, pairs only defend their nest tree; away from the nest, adjacent pairs have communal feeding grounds within overlapping home ranges. Both adults build the nest in a tree or large shrub. The nest is an elaborate sturdy stick dome lined with grass, rootlets, and hair, and attached to the branch with a mud cup. Often, the new nest is built on top of an old one, so it appears to be several feet high. Females incubate an average of 6 eggs for about 18 days. Hatching is asynchronous – one to three chicks hatch on the first day, with the rest hatching in subsequent days. Chicks leave the nest 24 to 30 days after hatching and depend on the parents for food for another 6 to 8 weeks (Buitron 1988, Trost 1999).

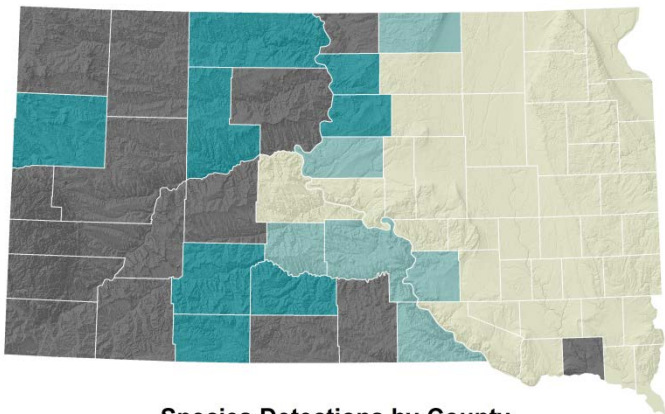
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	4	7	11
Probable	15	8	23
Possible	31	24	55
Observed	1	0	1
Total	51 (12%)	39	90

Black-billed Magpie



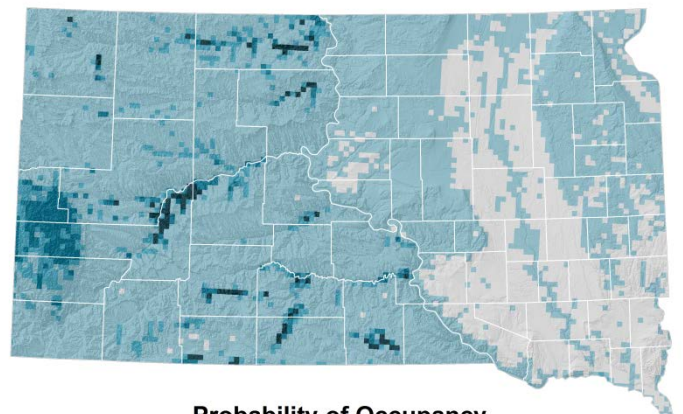
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

AMERICAN CROW

Corvus brachyrhynchos

The adaptable American Crow is omnivorous and will eat about anything, as long as the food can be collected on or near the ground. Its diet includes invertebrates, amphibians, reptiles, small birds and mammals, birds' eggs, seeds, fruit, carrion, and discarded human food.

DISTRIBUTION AND STATUS

The American Crow occurs throughout most of the United States and southern Canada. It is found throughout South Dakota; both the first and second Atlases documented American Crow on about half of the Atlas blocks. Crows are less common in areas of the state with fewer trees for nesting. According to Breeding Bird Survey data, American Crow populations in South Dakota have been stable over the past 40 years (Sauer *et al.* 2014).

HABITAT

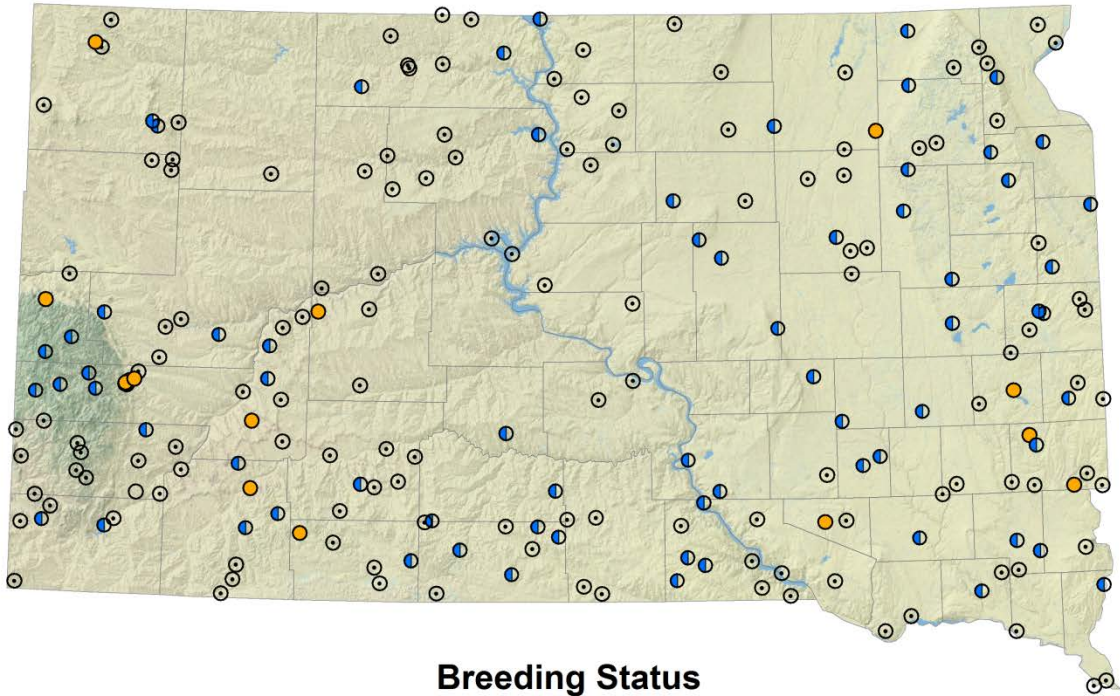
American Crows live in open habitats with scattered trees, woodlots, shelterbelts, and forest edges. During the second Atlas, crows were documented in upland forests (35% of records), grasslands (29%), lowland forests (14%), cropland (11%), residential areas (4%), and open habitats with scattered trees (3%). Of the 4 reported nests during the second Atlas, 1 was in planted conifers, 1 in lowland forest, and 2 in towns.

BREEDING BIOLOGY

In South Dakota, American Crows nest from late March to July. Second Atlas nest dates ranged from March 23 to July 12. The stick nest is built in a tree, usually near the top, and well hidden in a crotch or on a horizontal limb. To create a soft interior cup, the pair lines their nest with soft plant materials, hair, mud, cow dung, and human trash. The female typically lays 5 blue-green eggs. While she incubates, she is fed by the male, who carries food to the nest in a pouch at the base of his throat. Nestlings hatch after 17 to 19 days and are cared for by both parents and, sometimes, by additional birds that are related to the pair. Adults wet the nestling food with saliva or by dunking the food in water. Nestlings leave the nest after 30 to 36 days and are completely dependent on the adults for food for another 2 to 3 weeks. Gradually, the young crows begin to look for their own food and the adults eventually ignore begging by the young. The young crows are completely independent 1 to 2 months after leaving the nest (Verbeek and Caffrey 2002).

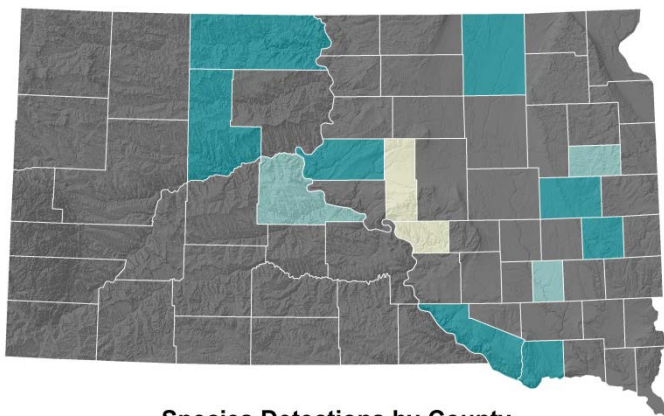
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	8	9	17
Probable	70	0	70
Possible	131	3	134
Observed	2	0	2
Total	211 (49%)	12	223

American Crow



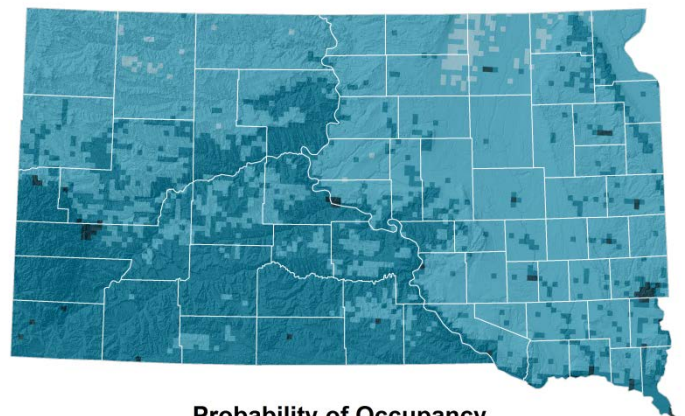
Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

HORNE LARK

Eremophila alpestris

The 'horns' of a Horned Lark are feather tufts, which are most often seen on males during the breeding season.

DISTRIBUTION AND STATUS

This common species breeds throughout much of North and Central America, and across northern Eurasia in the Old World. In South Dakota, Horned Larks are abundant and widespread, found in every county. There was no discernable change in distribution between the first and second Atlases. However, according to Breeding Bird Survey data, South Dakota's population decreased at a rate of 1.4% per year since 1967 (Sauer *et al.* 2013).

HABITAT

Horned Larks inhabit open areas with little vegetation and no trees, such as short grass pastures, agricultural fields, or disturbed areas. During the second Atlas, 43% of reports were in pastures, 28% in cropland, 8% along roads, and 5% in hayfields. For the nest site, larks prefer bare ground with some tufts of grass or rocks to provide protection for the nest. Of the 13 second Atlas nests reporting habitat, 11 were in pastures, one in a row crop field, and one in a prairie dog town.

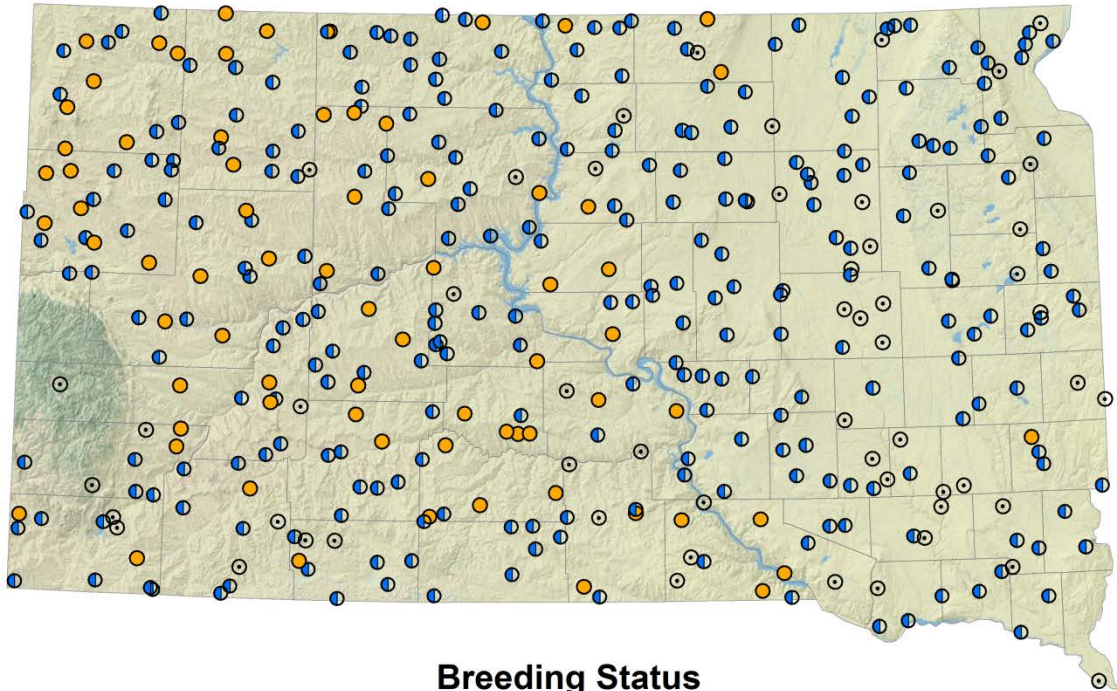
BREEDING BIOLOGY

Horned Larks breed from April through July, usually raising at least two broods.

The female digs a depression in the soil in which to build her nest. She uses her bill to loosen the soil and flip it aside or her feet to kick out the dirt. Digging takes 1 to 2 days. In another 2 to 4 days, she builds a nest inside the depression by weaving fine plant materials into a cup shape. Many nests have a collection of objects (dirt clods, corncobs, cornstalks, cow dung, pebbles) placed beside the nest, which seem to function as a cover for the soil that was excavated from the cavity. Ten nests reported during the second Atlas had an average of 3 eggs (ranging from 1 to 5). Eggs hatch in 11 days, chicks leave the nest in 10 days, and are independent in another 3 weeks (Beason 1995). Brown-headed Cowbirds often lay their eggs in Horned Lark nests; 4 of 12 nests with eggs reported during the second Atlas contained a cowbird egg. Cowbird nestlings often are left behind in the nest because Lark chicks develop faster. One second Atlas report, however, was of an adult Horned Lark's feeding a fledged cowbird.

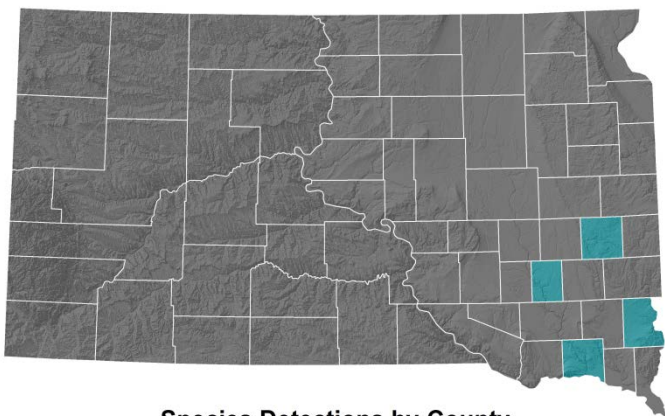
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	65	7	72
Probable	266	2	268
Possible	55	0	55
Observed	0	0	0
Total	386 (89%)	9	395

Horned Lark



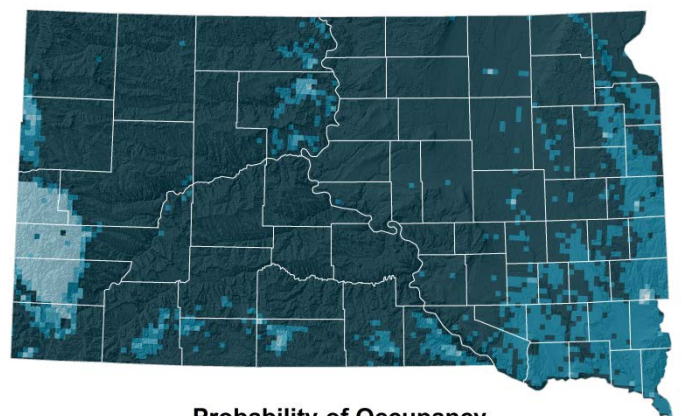
Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

PURPLE MARTIN

Progne subis

The Purple Martin is the largest swallow in North America. Since 1900, martins in eastern North America have bred almost entirely in backyard bird houses. Human ‘landlords’ that host martin colonies can increase nest success by erecting houses with larger cavities (6” x 12” or larger), using gourds, installing owl and snake guards, modifying entrance holes to exclude starlings, preventing or evicting nesting House Sparrows, and replacing nest material annually to reduce parasite loads.

DISTRIBUTION AND STATUS

Purple Martins breed in the southern Canadian Prairie Provinces, the eastern U.S. and Great Plains, and scattered isolated areas of the western U.S. and Mexico. In South Dakota, almost all Purple Martins breed east of 100.5° longitude. The first Atlas found Purple Martins nesting west of this line, in Bennett and Todd counties, but currently, the western-most known colonies are in Pierre and Fort Pierre. According to Breeding Bird Survey data, South Dakota’s martin population is experiencing a long-term decline (4% per year) (Sauer *et al.* 2014).

HABITAT

Purple Martins in South Dakota breed in semi-open areas with available nest sites, especially near water. Second Atlas observers reported martins in residential areas (80% of observations),

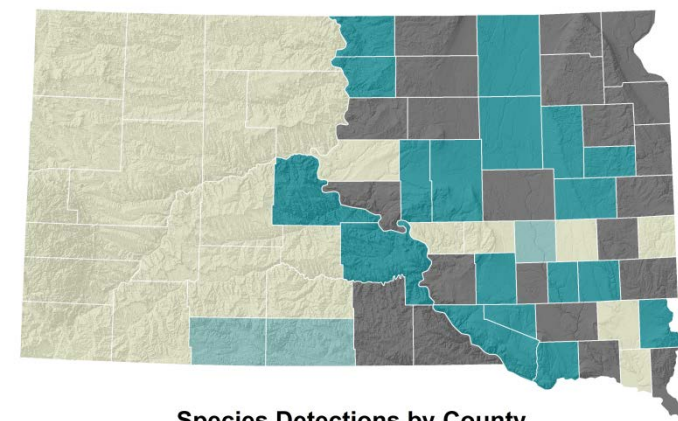
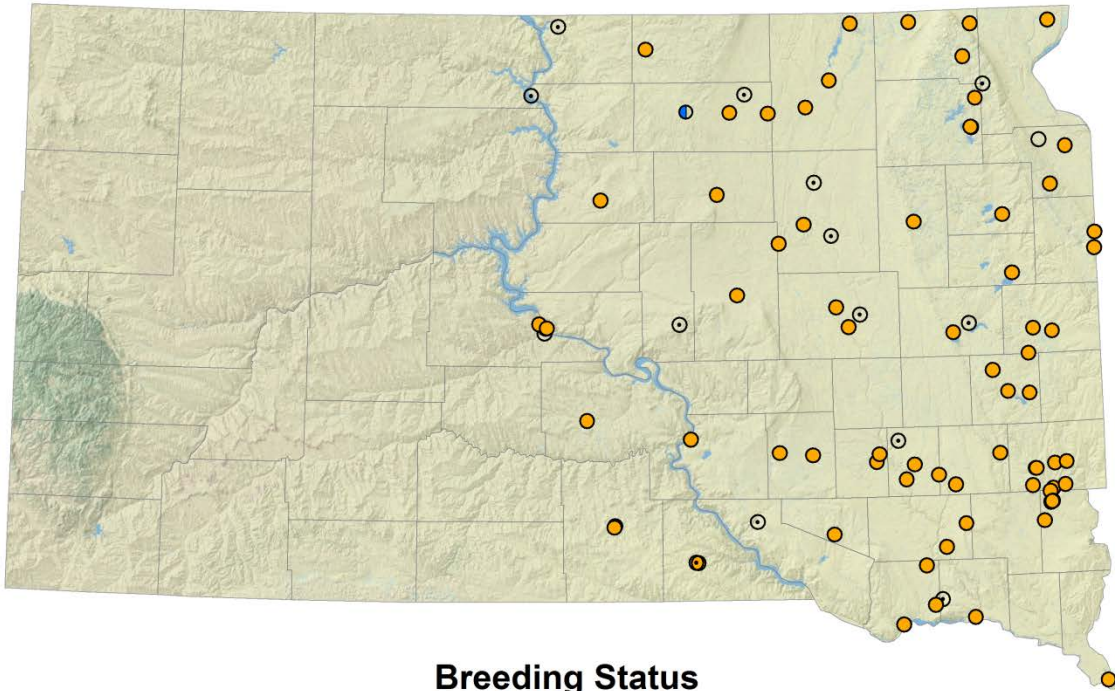
marshes (8%), grasslands (4%), and ponds and lakes (4%).

BREEDING

During the second Atlas, active nests were between April 14 and July 27. Purple Martins in South Dakota nest colonially in nest boxes. The nest is made of twigs, grass, and mud picked up from the ground. Both adults place green leaves in the nest bowl and over the eggs. The reason for this behavior is unknown. The female lays 3 to 6 white eggs, which she incubates for 15 to 18 days. Both parents feed insects to the young martins, both in the nest and 5 to 7 days after the nestlings fledge. Chicks leave the nest about 26 to 31 days after hatching, but broods often return to sleep for several nights. Parents lead the brood away from the colony to a fixed area where the juveniles remain together to be fed. As the young martins become better fliers, the entire family leaves the assembly area. Juvenile martins may begin fall migration as soon as 14 days after leaving the nest (Tarof and Brown 2013).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	11	60	71
Probable	0	1	1
Possible	11	3	14
Observed	1	0	1
Total	23 (5%)	64	87

Purple Martin



TREE SWALLOW

Tachycineta bicolor

Tree Swallows are adept fliers and spend much of their time in flight. They even bathe in flight, by crashing into the surface of a pond and then continuing their flight while shaking off the water drops.

woodlots (52%), grasslands (17%), wetlands (16%), and residential areas (15%).

DISTRIBUTION AND STATUS

Tree Swallows breed throughout Alaska, Canada, and the northern three-fourths of the United States. These swallows are common or fairly common throughout South Dakota except Harding and Butte counties in the northwest. This species' numbers increased dramatically between Atlases. The first Atlas recorded Tree Swallows on 25% of random blocks, with almost no West River records outside of the Black Hills. Twenty years later, Tree Swallows were recorded on 62% of survey blocks, with most of the increase occurring West River. Breeding Bird Survey data concur, showing a significant increase in the state's Tree Swallow population at a rate of 8% to 10% per year over the past 45 years (Sauer *et al.* 2014).

BREEDING BIOLOGY

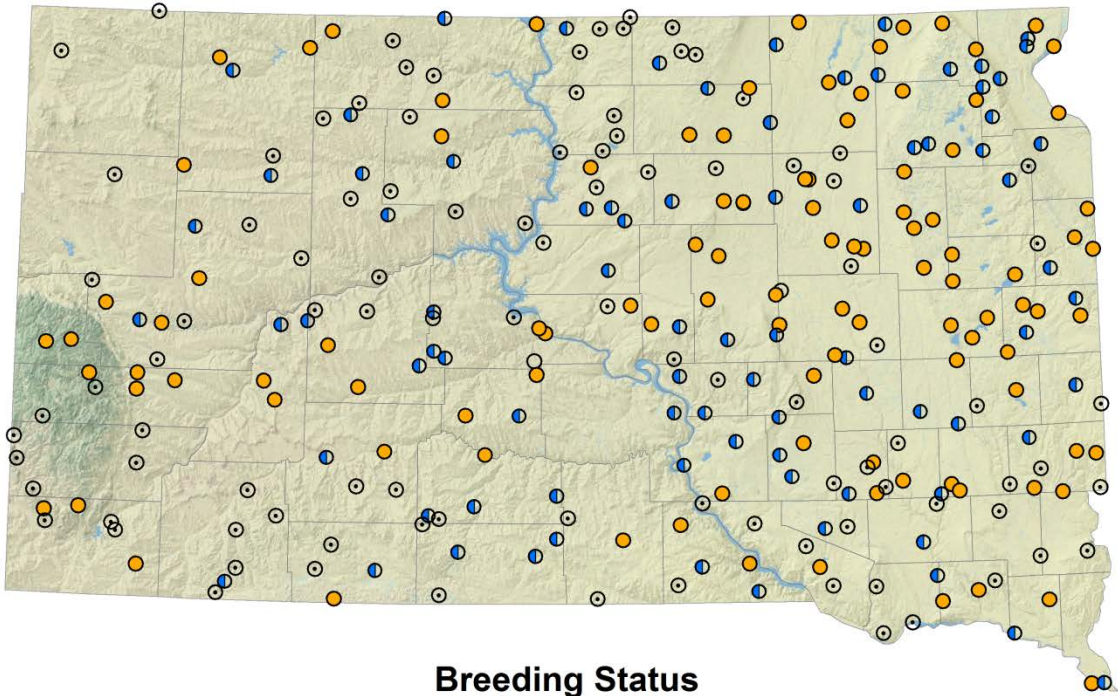
Second Atlas nest dates ranged from April 24 to July 27. Tree Swallows nest in cavities or nest boxes. Second Atlas observers found nests in dead trees (21 nests), nest boxes (20), a gourd (1), a mailbox (1), and a cliff (1). The female builds a cup nest of grass or other plant materials and usually lines it with an abundance of feathers from other species. The feathers are thought to keep the nestlings warm. She lays an average of 4 to 7 white eggs and incubates them for 13 to 14 days. Both adults feed nestlings; at peak nestling demand, the pair averages 10 to 20 trips per hour and may bring as many as 6000 to 7000 insects in a day. Nestlings leave the nest in 18 to 22 days and rely on the adults for food for just a few days longer (Winkler *et al.* 2011).

HABITAT

Despite its name, the Tree Swallow is not a forest bird but rather a bird of open fields, grasslands, and marshes. It requires a cavity to nest in and nearby water or open areas over which to forage for insects. During the second Atlas, Tree Swallows were reported flying over every habitat type. Second Atlas nests (95 nests) were in forest or

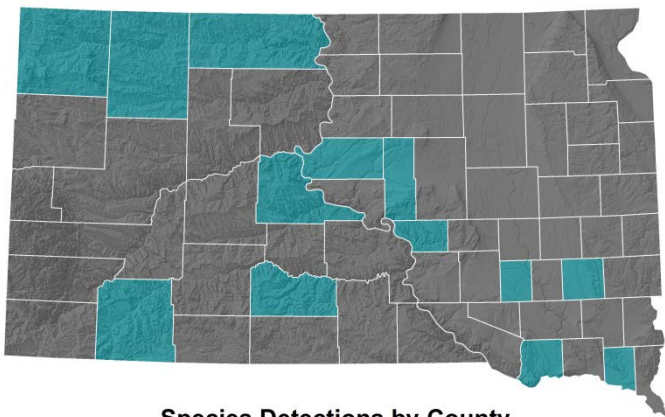
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	89	21	110
Probable	81	1	82
Possible	100	0	100
Observed	1	0	1
Total	271 (62%)	22	293

Tree Swallow



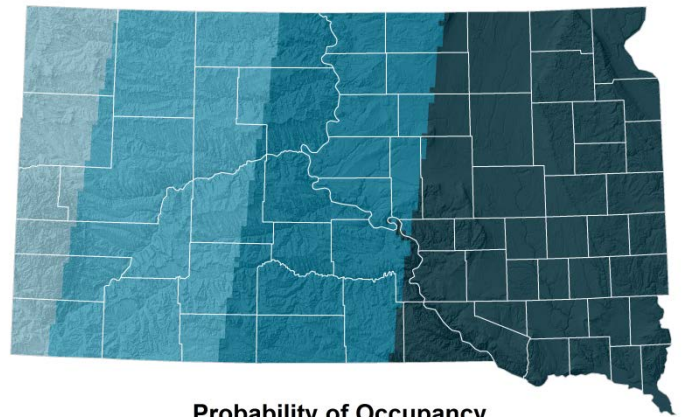
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- -
 -
 -
 -
- 0% 1-25% 26-50% 51-75% 76-100%

VIOLET-GREEN SWALLOW

Tachycineta thalassina

Like all swallows, Violet-green Swallows catch and eat insects on the wing. They feed at various heights, often at higher altitudes than other swallows. They also drink on the wing by flying close to the water's surface and drawing up mouthfuls of water.

DISTRIBUTION AND STATUS

The western counterpart of the Tree Swallow, this species breeds in southeastern Alaska, the western quarter of Canada, throughout the western U.S. and south into Mexico. South Dakota is at the extreme eastern edge of the breeding range. Violet-green Swallows in South Dakota are strongly associated with cliffs and canyons in the western quarter of the state. They are common in the Black Hills and uncommon in the Badlands, Pine Ridge Escarpment, and buttes of Harding County. The first Atlas did not report this species in the Pine Ridge area nor in eastern Pennington County, suggesting a range expansion. Results of Breeding Bird Surveys show that the Violet-green population in South Dakota increased significantly between 2002 and 2012 (5% per year) (Sauer *et al.* 2014).

HABITAT

Breeding Violet-green Swallows occur in coniferous, deciduous, or mixed conifer-deciduous forests. They usually are associated with cliffs and canyons. Second Atlas observations were in cliffs

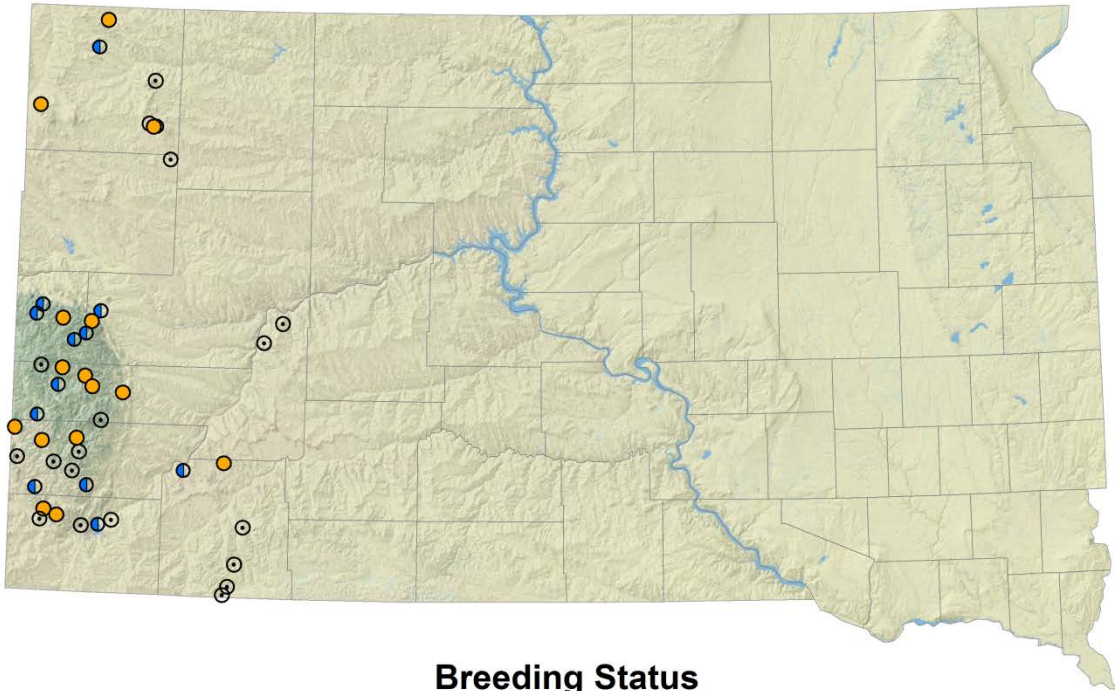
(23%), conifer (14%) or mixed conifer-deciduous forest (11%), residential areas (11%), and grasslands (8%).

BREEDING BIOLOGY

Second Atlas nest dates ranged from May 25 to July 25. These swallows nest both solitarily and in colonies of up to 25 pairs, although no colonies were reported during the second Atlas. They nest in various types of cavities, including those found in trees, cliffs, and nest boxes. During the second Atlas, nests were reported in cliff and canyon walls (10), nestboxes (6), a road cutbank (1), and in the drainage hole of a cement wall (1). Inside the cavity or crevice, the nest is constructed of various plant materials topped with a thick layer of feathers. Although females generally lay 4 to 6 white unmarked eggs, second Atlas reports were of nests with 3 eggs. Eggs hatch after 15 days of incubation and nestlings leave the nest at 23 to 24 days (Brown *et al.* 2011).

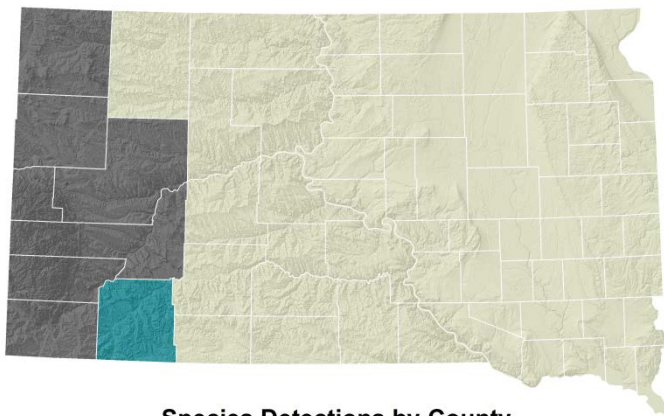
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	6	9	15
Probable	11	2	13
Possible	13	5	18
Observed	0	0	0
Total	30 (7%)	16	46

Violet-green Swallow



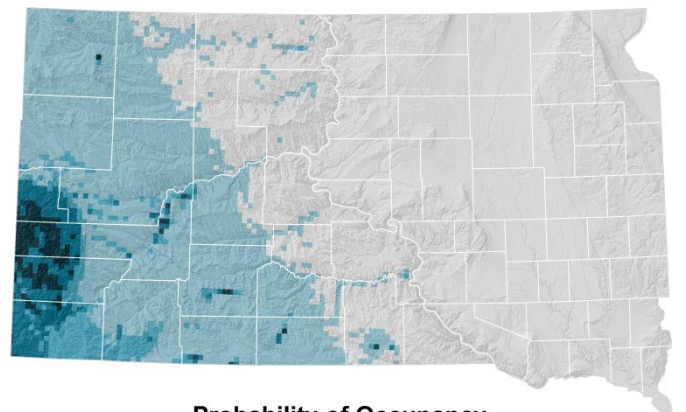
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

NORTHERN ROUGH-WINGED SWALLOW

Stelgidopteryx serripennis

The scientific name *Stelgidopteryx* means “scraper wing” while *serripennis* means “saw feather.” These names refer to the leading edge of the wing, which feels rough when running a finger along the feather. The roughness is because of unique endings on the stiffened barbs of the outer primary feather. On males, the barb endings curve to form tiny hooks; on females, the barbs are pointed. The function for this unique feather feature is not known.

DISTRIBUTION AND STATUS

The Northern Rough-winged Swallow breeds throughout the U.S. and the southern edge of Canada. In South Dakota, this swallow is fairly common and widespread. It is more common in the western part of the state because of a greater availability of nest sites. Neither the distribution nor abundance of this species appeared to have changed substantially between the first and second Atlases.

HABITAT

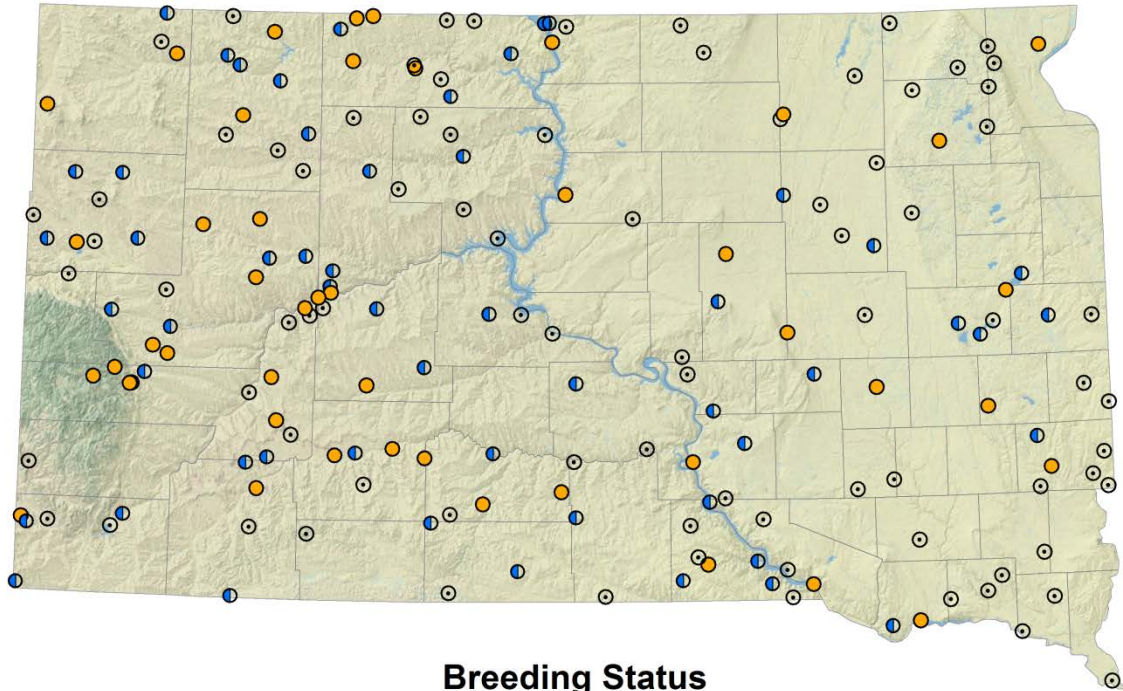
Northern Rough-winged Swallows nest in burrows in exposed banks, such as those found along rivers or stock dams, road cuts, railroad embankments, and gravel pits. They forage over any type of adjacent habitat. Second Atlas observations were in grasslands (31%), ponds and marshes (18%), forest and shrubland (12%), cliffs and banks (12%), rivers (11%), residential areas and farmsteads (7%), cropland (1%), and quarries and gravel pits (1%).

BREEDING BIOLOGY

Most second Atlas nest records occurred from mid-May to mid-July, with one active nest found at the late date of August 6. Rough-winged Swallows nest in burrows, either singly or in small colonies of up to 25 pairs. They typically nest in vertical banks of clay, sand, or gravel, but may use any cavity or crevice in a vertical surface. They often use burrows excavated by other species, such as those dug by Bank Swallows, kingfishers, or small mammals. The nest, often visible from the outside, is a loose pile of plant materials with a lining of finer grasses, dung, and fur. The female incubates the 4 to 8 white, unmarked eggs for 16 days. She begins feeding the nestlings as soon as they hatch, but the male may delay feeding for up to 3 days. The chicks can fly when they leave the nest at 19 days, but the first flight is weak. No information exists on how long the young swallows are dependent on their parents after fledging (DeJong 1996).

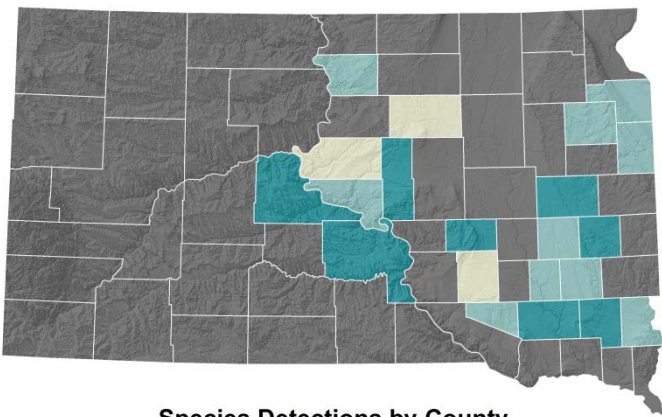
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	29	17	46
Probable	55	1	56
Possible	80	4	84
Observed	0	0	0
Total	164 (38%)	22	186

Northern Rough-winged Swallow



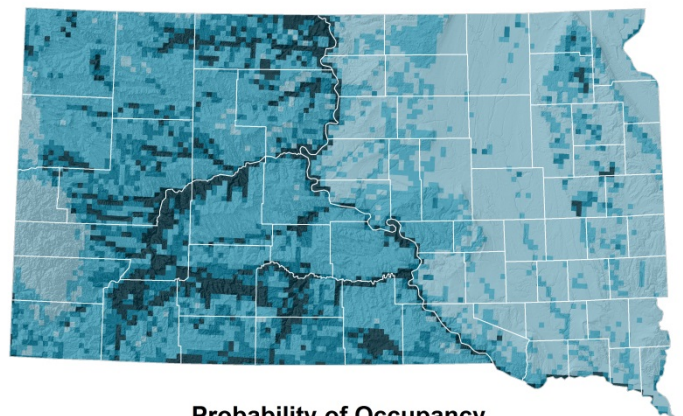
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BANK SWALLOW

Riparia riparia

Found throughout the Northern Hemisphere, the Bank Swallow, known as the Sand Martin in the Old World, has one of the widest distributions of any swallow. This species is highly social and breeding colonies can be as large as 2,000 active nests.

longevity of colony sites depend greatly on the softness and erosion rate of the banks' soil substrate. Colonies in human-created habitat are vulnerable to human disturbance.

DISTRIBUTION AND STATUS

In North America, Bank Swallows breed throughout Canada, Alaska and the northern two-thirds of the U.S. South Dakota is in the middle of the species' North American breeding range. This swallow is found throughout South Dakota, but is surprisingly rare in the southwest quarter of the state, even though suitable banks and cliffs for nesting are plentiful. This same pattern was observed in the first Atlas, but the reason for their absence in this areas is unknown.

BREEDING BIOLOGY

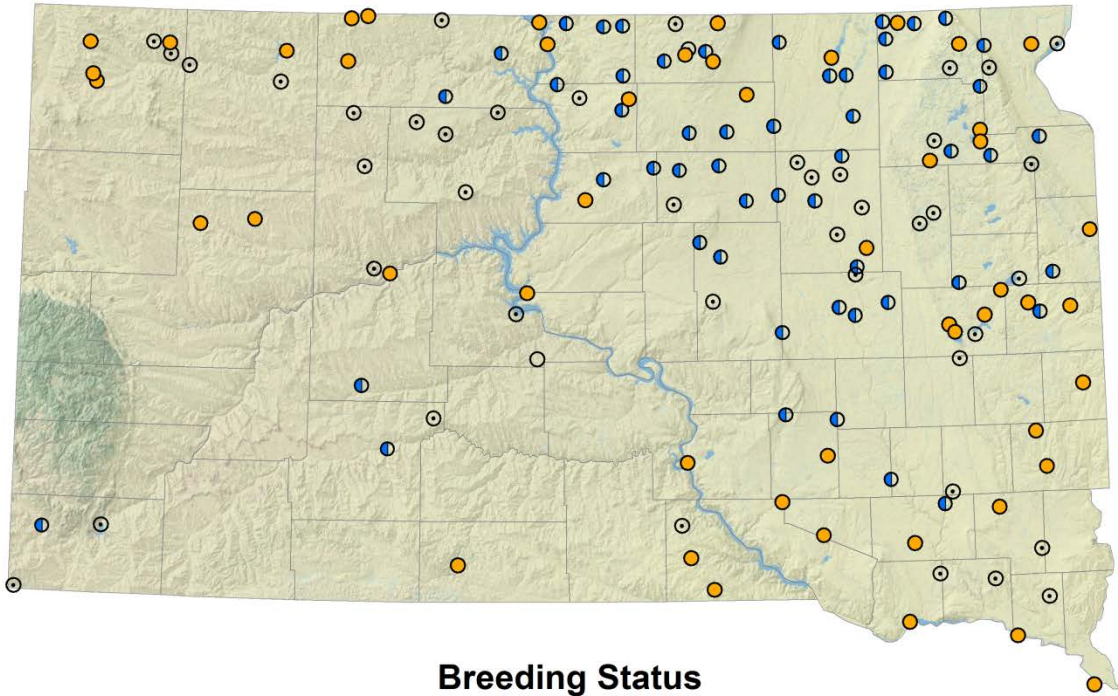
The nesting season in South Dakota is mid-May into early August. South Dakota colonies tend to be relatively small (second Atlas average colony size: 117 nests, range 6–600 nests, 9 colonies). During the second Atlas, the only colony larger than 150 pairs was at a Brookings County gravel pit that had approximately 600 active nests. Inside the cavity, the pair construct a nest from plant materials and feathers. Clutch size is 2 to 8 white eggs. The female does the majority of incubation and brooding, but the male assists. Both adults feed the nestlings by compressing multiple insects into a bolus and sticking the bolus into the young bird's mouth. Nestlings leave the nest at 18 to 21 days and are fed by their parents for another 5 days (Garrison 1999).

HABITAT

Bank Swallows nest in banks and bluffs along rivers, streams and wetlands. During the second Atlas, 32% of Bank Swallow reports were in wetland or riverine habitats. In addition, observers reported 4 colonies in banks and bluffs along rivers or creeks, 10 colonies in banks at the edge of lakes, and 12 in hillside banks with no water nearby. The species also has adapted to human development; 9 colonies were reported in the erodible sides of sand and gravel pits, 1 colony in a road cut-bank, 1 in an old SDDOT stockpile of dirt, and 2 in culverts under roads. The size and

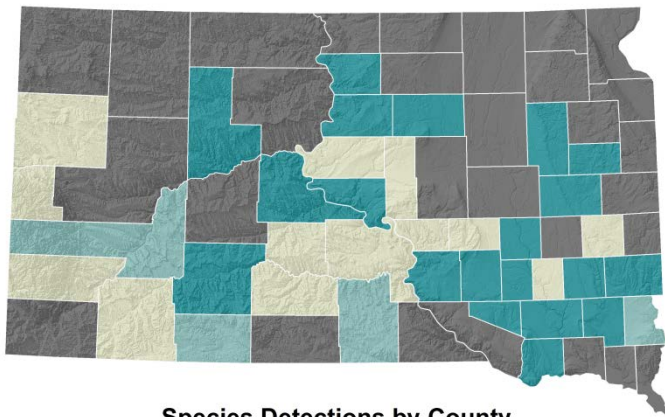
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	22	28	50
Probable	54	0	54
Possible	43	0	43
Observed	1	0	1
Total	120 (28%)	28	148

Bank Swallow



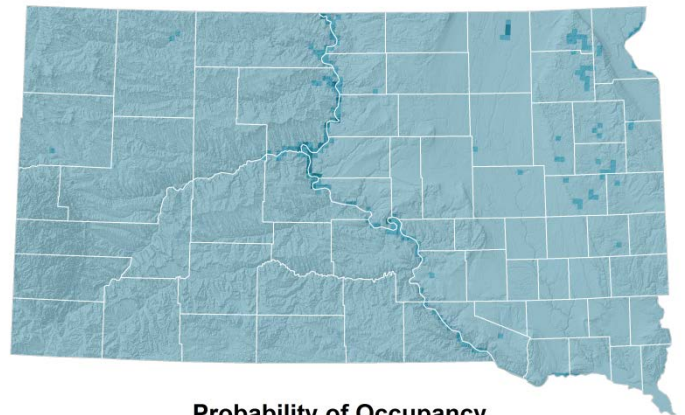
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

CLIFF SWALLOW

Petrochelidon pyrrhonota

Cliff Swallows have developed some unusual behaviors because of living in dense breeding colonies. Females often lay eggs in neighboring nests and may even carry an egg in their bill to another nest. Young swallows have unique vocalizations that allow the parents to distinguish their own among the crowd. Swallows watch each other and follow any bird behaving as if it knows the location of food.

DISTRIBUTION AND STATUS

The Cliff Swallow breeds throughout North America from tree line in Alaska and Canada south to Virginia and southern Mexico. Cliff Swallows are common breeders throughout South Dakota. This species was recorded on more survey blocks during the second Atlas (65%) compared to the first Atlas (56%). South Dakota's Cliff Swallow population has been increasing at a significant rate (>6% per year) over the past 45 years (Sauer *et al.* 2014).

HABITAT

Cliff Swallow breeding requirements include nest-sites, open areas for foraging, and a source of mud for nest-building. Second Atlas colonies were on road structures (77% of 383 colonies), in residential areas (14%), and on cliffs, buttes, and dirt banks along rivers (8%).

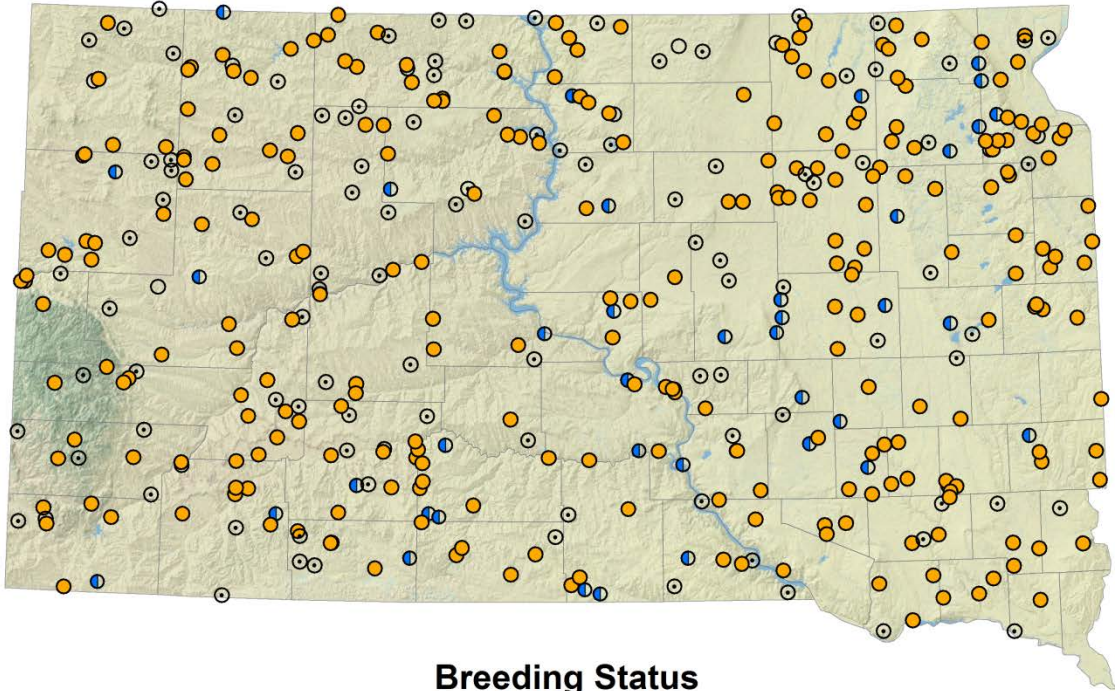
BREEDING BIOLOGY

In South Dakota, Cliff Swallows nest from early May through July (range of second Atlas nests: May 5 to August 3).

Cliff Swallows typically nest in colonies. The largest second Atlas colony was 140 nests but South Dakota colonies can have up to 1,000 pairs (Peterson 1995). Nests are built on a sheltered vertical surface. Natural sites used in South Dakota include buttes and cliffs (8% of 183 second Atlas colonies) and dirt banks, usually along rivers (2%). Human-made structures hosting second Atlas colonies included bridges (55%), culverts (11%), road underpasses (13%), buildings (10%), a picnic shelter (1 colony), and a rodeo amphitheater (1 colony). The nest is shaped like a gourd and made of dried mud, lined with grass. Adults gather mud and carry it back to the nest; the average nest contains 900 to 1,200 mud pellets. Both adults incubate the 3 to 5 eggs for 14 to 16 days. Nestlings are fed boluses of tightly-compressed insects. Chicks leave the nest at 21 to 25 days and immediately join with other fledglings to form crèches. For 2 to 5 days, parents feed their own chicks in the crèche and lead chicks back to the nest to sleep at night. Both adults and juveniles visit multiple colonies in the fall to investigate potential future nest sites (Brown and Brown 1995).

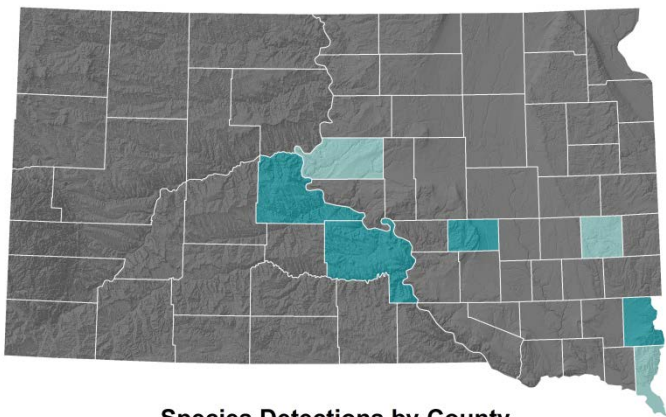
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	131	138	269
Probable	40	0	40
Possible	113	0	113
Observed	3	0	3
Total	287 (66%)	138	425

Cliff Swallow



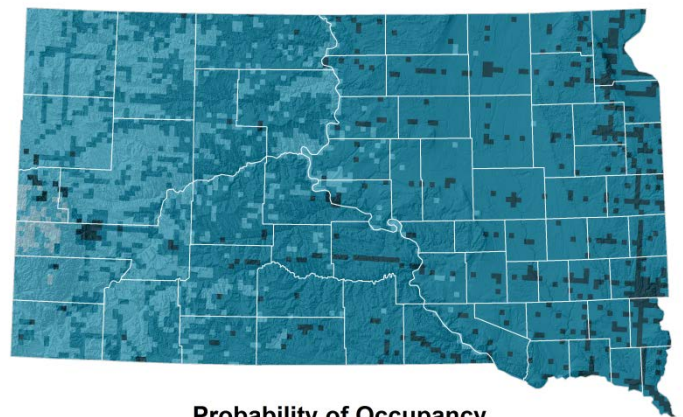
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BARN SWALLOW

Hirundo rustica

The Barn Swallow, locally known as the Mud Dauber, is the most widely distributed and abundant swallow in the world. Females choose a mate based on the length and symmetry of the long outer tail-streamers. Males with longer or more symmetrical tails are first to acquire a mate, pair with females that produce more young, and have fewer ectoparasites.

DISTRIBUTION AND STATUS

Barn Swallows breed throughout most of North America, Europe, and Asia, and winter in South America, Africa, and Australia. Barn Swallows are a widespread and abundant breeder in South Dakota. Swallow abundance and distribution did not appear to change between the first and second Atlases.

HABITAT

Breeding habitat requirements include open areas for foraging, vertical substrates for nesting, and a source of mud for nest-building. Barn Swallows were reported in every habitat category during the second Atlas. Of 267 second Atlas breeding colonies, 88% were in residential areas, 9% around culverts, bridges, and highway underpasses, 1.5% in grasslands and marshes, and 1.5% in woods.

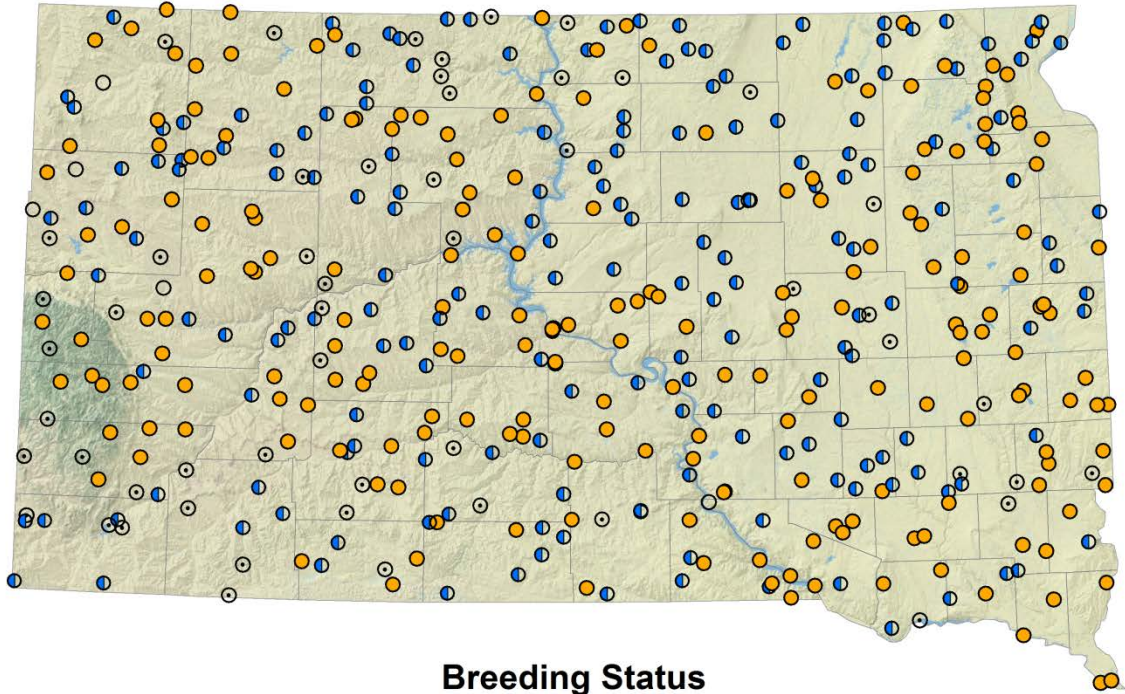
BREEDING BIOLOGY

Barn Swallows may raise two broods per season. During the second Atlas,

nesting were active between May 7 and September 7. Barn swallows nest as individual pairs or in small colonies of up to 25 pairs. The nest is a cup of mud and dried grass, attached to a vertical surface underneath an overhang. Second Atlas nests were under building eaves, in culverts, under bridges, inside barns, sheds, and old houses, and on a cliff face (1 report). During egg-laying and incubation, nests often are lined with a thick layer of feathers. Females lay 4 or 5 eggs, which both adults incubate for 14 days. Both adults feed insects to the nestlings. Extra adults may help with nest-building, incubation, and nest defense. Some are not related to the parents, and seem to contribute little. Some, however, are offspring of the parents from a previous nest, and may provide substantial help. After 20 or 21 days, nestlings leave the nest. At first, parents feed the fledglings when perched. Later, fledglings accompany the parents and are fed mid-air. At night, parents lead the brood back to the nest to sleep. Young swallows achieve independence about a week after leaving the nest (Brown and Brown 1999).

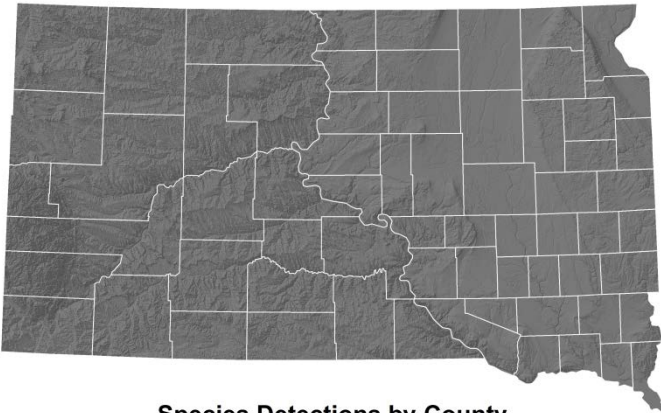
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	169	41	210
Probable	182	2	184
Possible	52	2	54
Observed	5	0	5
Total	408 (94%)	45	453

Barn Swallow



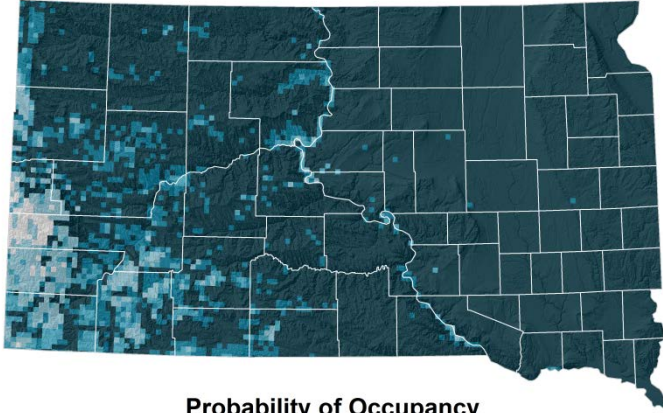
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BLACK-CAPPED CHICKADEE

Poecile atricapillus

Black-capped Chickadees are very social, forming both mixed and single-species flocks. They lead mixed-flock movements and serve as the nuclear species. Chickadee-only flocks are made up of local breeders and unrelated juveniles that hatched some distance away.

DISTRIBUTION AND STATUS

This species is a common non-migratory resident coast-to-coast, including the northern half of the U.S., the southern half of Canada, and southern Alaska. In South Dakota, chickadees are a permanent resident and commonly found in all types of woodlands. They are most abundant in the Black Hills and least abundant in areas with few natural wooded areas, such as the prairie pothole region and extensive rangelands. South Dakota's population has been decreasing in recent years. During the first Atlas, chickadees were recorded at 51% of random blocks, compared to only 33% of blocks during the second Atlas. Breeding Bird Survey data show that the state's population decreased at a rate of 1.3% per year between 2002 and 2012 (Sauer *et al.* 2014).

HABITAT

Black-capped Chickadees breed in all types of woodlands, showing a strong preference for natural areas (Peterson 1995). They also are found in urban parks and residential areas. During the second Atlas, 62% of chickadee records were in upland forests, evenly split

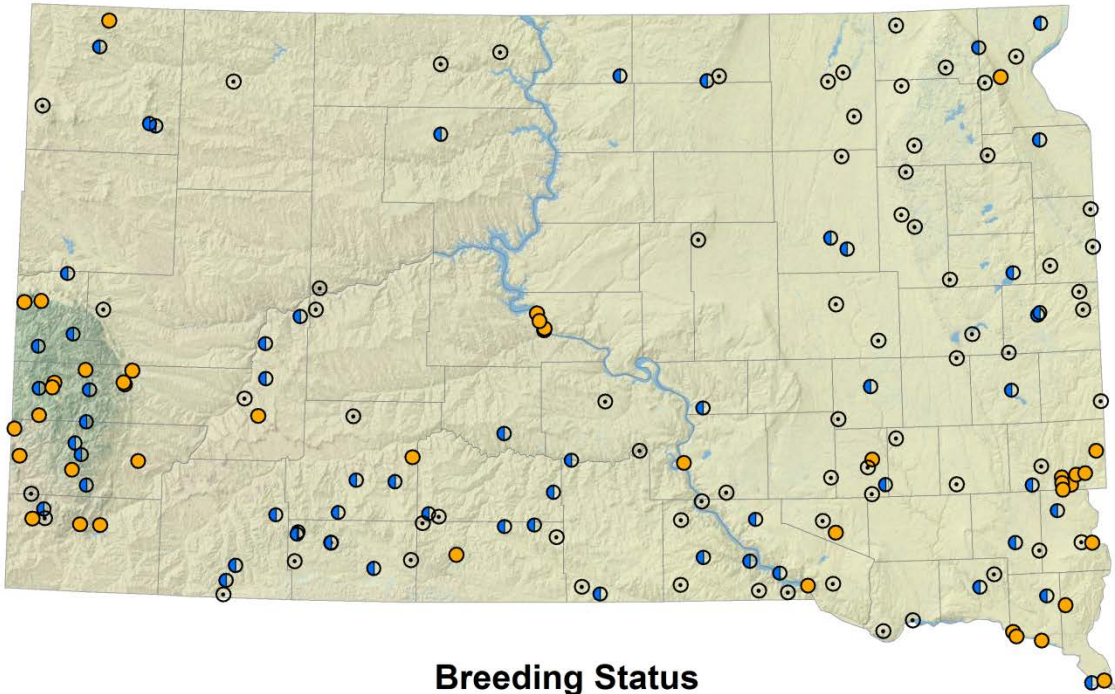
between deciduous, coniferous, and mixed deciduous-coniferous forests, while 32% of observations were in lowland forests.

BREEDING BIOLOGY

The breeding season in South Dakota extends from mid-April through July (second Atlas nest dates: May 16 to July 24). Chickadees nest in cavities in stumps, trees, and nest boxes. They are more likely to use boxes if natural cavities are scarce. During the second Atlas, observers reported seven nests in natural cavities (in green ash, ponderosa pine, and dead snags) and one nest in an urban nest box. Both adults excavate cavities, but will also use existing holes created by other species. The female lays 6 to 8 white eggs in a nest of coarse plant materials lined with hair or fur. Chicks hatch after 12 to 13 days and are fed insects by both parents until the young leave the nest at 16 days old. They stay with their parents another three to four weeks, after which they wander with other juveniles for a few days before settling down with a new flock (Foote *et al.* 2010).

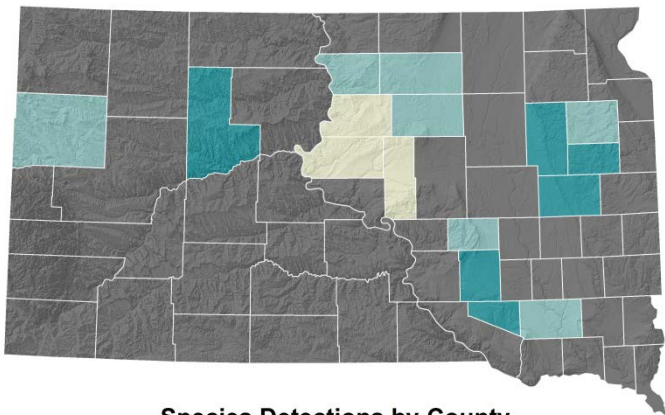
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	19	23	42
Probable	56	3	59
Possible	69	1	70
Observed	0	0	0
Total	144 (33%)	27	171

Black-capped Chickadee



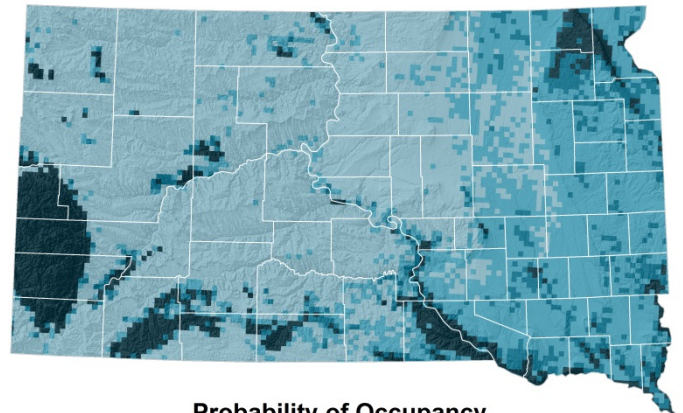
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

RED-BREASTED NUTHATCH

Sitta canadensis

A unique feature of a Red-breasted Nuthatch cavity nest is the large amount of sticky sap smeared around the cavity entrance. The adults carry globs of resin on the tips of their bills or on a small piece of bark that functions as an applicator. The sap may deter predators or competitors from entering the cavity. The nuthatches avoid the sap by diving at high speeds into the cavity with great precision.

DISTRIBUTION AND STATUS

The Red-breasted Nuthatch breeds in most conifer and mixed-conifer forests throughout Canada and the United States. In South Dakota, this nuthatch is most numerous in the Black Hills, where densities can be as high as anywhere on the continent (BBS data cited in Ghalambor and Martin 1999). Red-breasted Nuthatches also breed on the pine-covered buttes of Harding County. Both Atlases recorded several observations of this species on the Pine Ridge Escarpment of Oglala Lakota, Bennett, Jackson, and Todd counties, but neither Atlas confirmed breeding in this region. South Dakota's population has been increasing significantly over the long and short term (Sauer *et al.* 2014).

HABITAT

Nesting habitat almost always has conifers, usually in mature forest. In the Black Hills, Red-breasted Nuthatch abundance is strongly correlated with the number of dead snags and amount

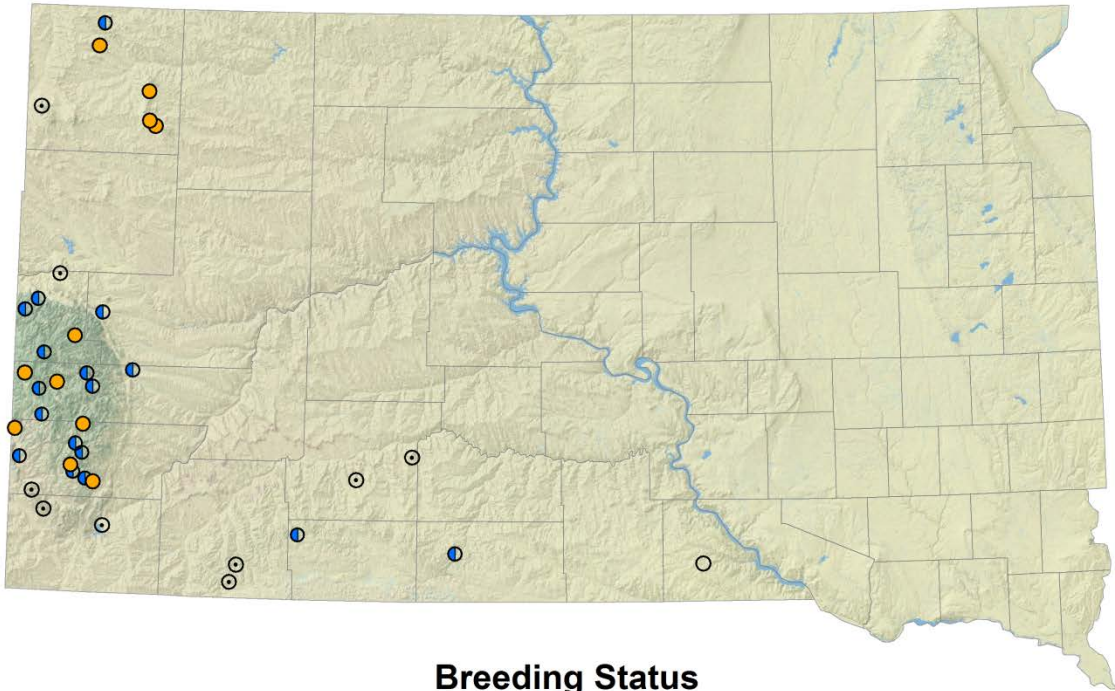
of bark on the snags (Mills *et al.* 2000). Second Atlas nuthatch observations were in pine woods (63%), mixed pine-deciduous woods (33%), deciduous woods (2%), and residential areas (2%).

BREEDING BIOLOGY

Second Atlas nest dates ranged from April 12 to July 30. Red-breasted Nuthatches excavate cavities in soft wood, usually a rotten snag. During excavation, the nuthatch throws sawdust out of the cavity entrance using its bill. Inside the cavity, the female builds a nest of grass, moss, and bark strips, and lines it with fine grass, hair and feathers. The clutch typically is 5 to 8 eggs. During the 12-day incubation period, the male brings food to the female as she incubates. Both parents feed insects and spiders to the nestlings. Chicks leave the nest after 18 to 21 days. On the day of fledging, parents place small clumps of fur around the inner rim of the entrance to prevent the chicks from getting stuck in the sticky pitch as they leave. The young nuthatches are fully independent about 14 days after fledging (Ghalambor and Martin 1999).

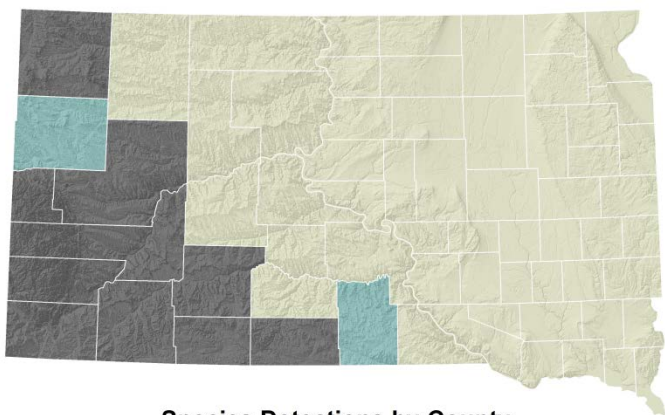
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	6	5	11
Probable	17	1	18
Possible	9	0	9
Observed	1	0	1
Total	33 (8%)	6	39

Red-breasted Nuthatch



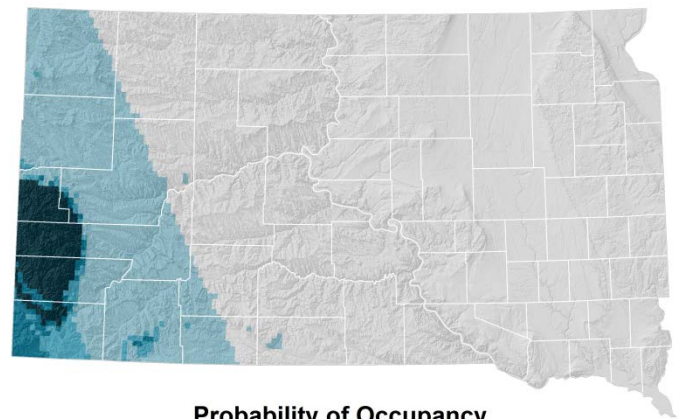
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

WHITE-BREASTED NUTHATCH

Sitta carolinensis

Nuthatches walk downward on large branches and trunks, searching in cracks and under bark for insects. They often jam large seeds and nuts into crevices, which they hack open with their bill. This behavior may be the source of their name.

DISTRIBUTION AND STATUS

The White-breasted Nuthatch lives in wooded regions throughout the U.S., southern Canada, and central Mexico. According to both the first and second South Dakota Atlases, nuthatches are most common in the Black Hills, the south-central counties, and the eastern quarter of the state. Elsewhere, the species is scattered and less common. The White-breasted Nuthatch population in South Dakota has been increasing at a significant rate (5.8% per year) since 1967 according to Breeding Bird Survey data (Sauer *et al.* 2014).

HABITAT

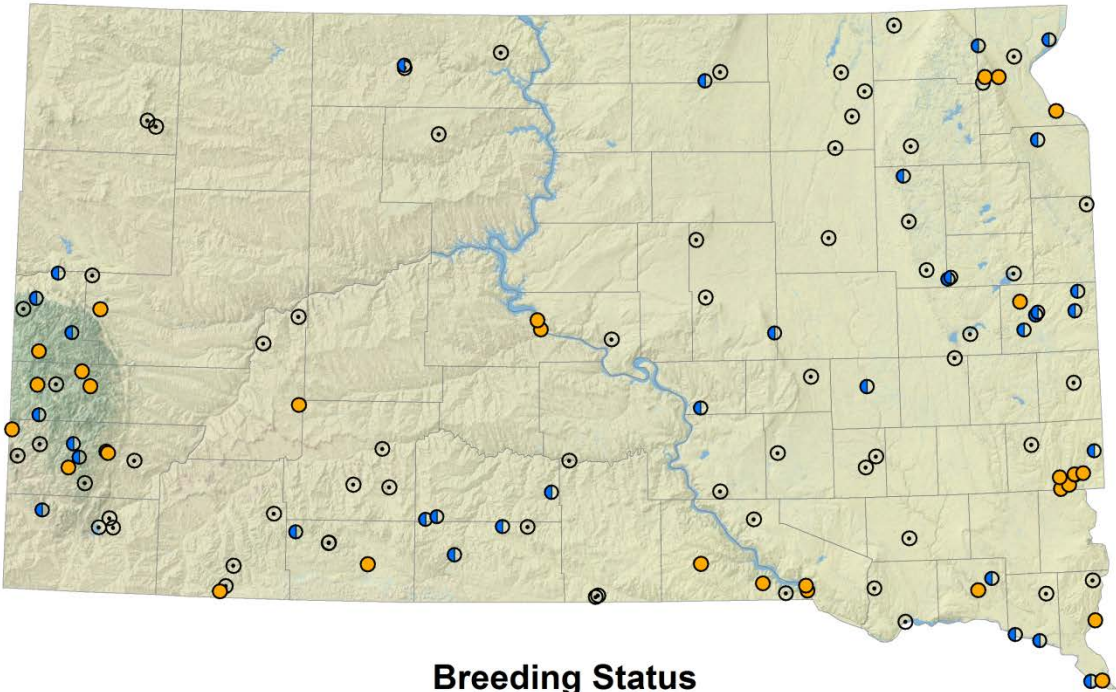
White-breasted Nuthatches typically are found in mature deciduous woodland, but also inhabit mixed deciduous-conifer and coniferous forests, or suburbs and parks if large trees are present. Observers during the second Atlas reported these nuthatches in deciduous forests (55% of observations), pine forests (19%), mixed conifer-deciduous woods (18%), and residential areas (7%). Nests were in deciduous woods (5 nests), pine woods (2 nests), and mixed conifer-deciduous woods (1 nest).

BREEDING BIOLOGY

Second Atlas nesting records ranged from May 5 to July 11. Pairs live together on permanent territories throughout the year, and individuals may spend their entire lives on the same territory. Nuthatches nest in large natural cavities, old woodpecker holes, or occasionally, nest boxes. Three second Atlas nests were in cavities in snags and 1 nest was in a nest box. White-breasted Nuthatches generally do not excavate their own cavity but may enlarge an existing one. Inside the cavity, the female builds a cup nest of bark, grasses, twigs, and hair. Often the adults sweep the inside and outside of the nest with a crushed odoriferous insect in their bills. Possibly the insect's chemical secretions repel predators. The average clutch size is 6 eggs, which the female alone incubates for 12 to 14 days. During incubation, she is fed by the male. Both parents feed the nestlings. Nestlings leave the nest after 26 days and stay with their parents for several more weeks before dispersing (Grubb and Pravosudov 2008).

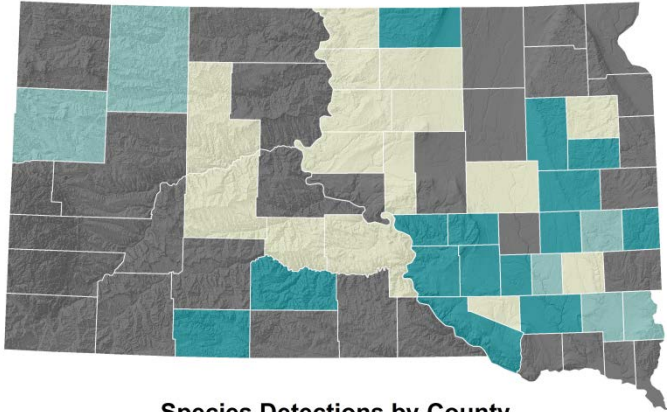
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	13	18	31
Probable	32	3	35
Possible	60	2	62
Observed	0	0	0
Total	105 (24%)	23	128

White-breasted Nuthatch



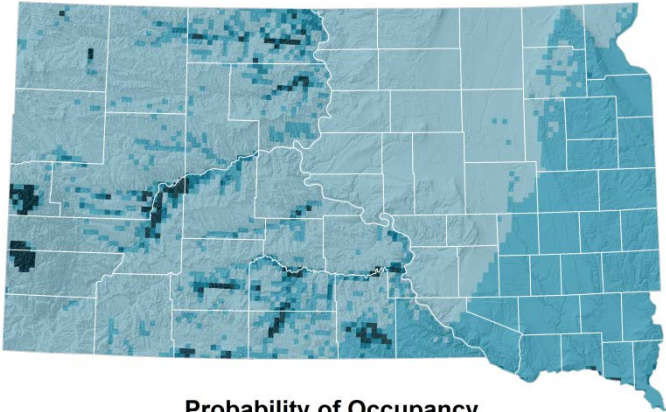
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

PYGMY NUTHATCH

Sitta pygmaea

Highly sociable, family flocks of the Pygmy Nuthatch, our smallest nuthatch, join other flocks on cold winter nights to roost communally in cavities, resulting in significant thermal savings.

DISTRIBUTION AND STATUS

Isolated populations of Pygmy Nuthatch occur from southern British Columbia, throughout the western U.S., and into central Mexico. In South Dakota, it is an uncommon but widespread permanent resident below 5,500' elevation in the southwest. Second Atlas records from the Pine Ridge Escarpment (Oglala Lakota, Bennett counties) are the first known South Dakota records outside of the Black Hills. However these records are not surprising because the species is found just to the south in Nebraska (Mollhoff 2001). Historically, Pygmy Nuthatch was considered rare or locally uncommon in the canyons south of Hot Springs (Pettingill and Whitney 1965, Rosche 1982, SDOU 1991). In addition, it was considered rare and local with only four records during the first Atlas (1988-1992), and none during a 1992-1993 study of Black Hills cavity-nesters (Mills *et al.* 2000). Second Atlas results show that the species is more widespread and common than ever before recorded. This probably is a combination of an actual population increase and more reports from newly surveyed areas.

HABITAT

Preferred habitat is mature, open-canopy ponderosa pine forest, with clusters of large, standing trees for

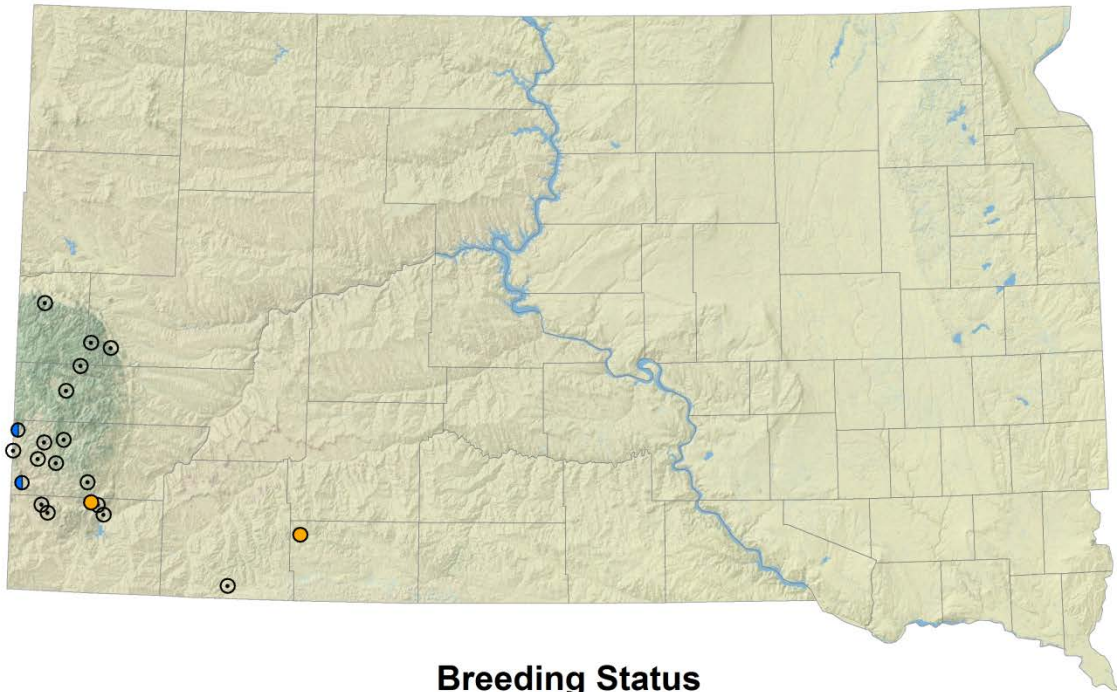
foraging for insects and pine seeds, and dead trees (snags) for nesting. These requirements make Pygmy Nuthatches sensitive to activities that reduce the number of large trees or snag availability. Second Atlas observations were in ponderosa pine forests (69%) and mixed deciduous-pine stands (31%).

BREEDING BIOLOGY

South Dakota Pygmy Nuthatches nest from late March through mid-July. At some nests, one or more 'helpers' assist the parents in raising the chicks. This cooperative behavior, unusual among North American songbirds, increases the chances of breeding success. Most helpers are yearling males who are helping a parent. This species builds its nest in a natural cavity or nest box. The nest is made of fine strands of plant materials, hair, moss, or snake skin; these same materials may be used to fill cracks to weatherproof the cavity. Only the female incubates the average of 7 eggs but the male and helper will often stay in the cavity with her at night. The chicks leave the nest when 14 to 22 days old. The family remains together through the winter (Kingery and Ghalambor 2001).

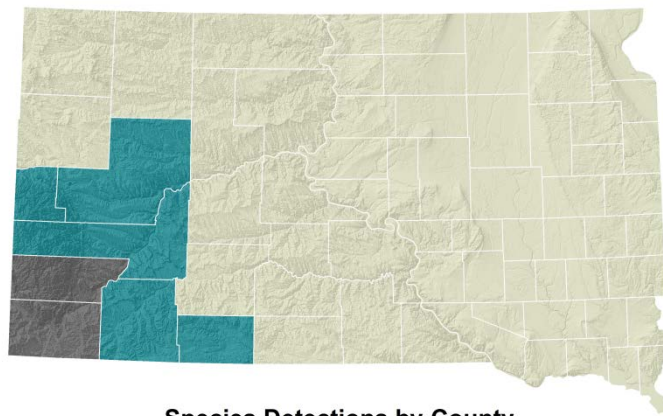
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	2	1	3
Probable	2	1	3
Possible	4	12	16
Observed	0	0	0
Total	8 (2%)	14	22

Pygmy Nuthatch



Breeding Status

- Confirmed breeding
- Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

BROWN CREEPER

Certhia americana

This small treecreeper uses its long, stiff tail as a prop to climb tree trunks while searching in the bark for insects. Starting at the bottom, its usual foraging pattern is to spiral upward around the trunk until it nears the top, and then flies to the base of another tree to repeat the process.

DISTRIBUTION AND STATUS

The breeding distribution is complex, but creepers primarily breed in coniferous forests throughout North America, from southeast Alaska east to Newfoundland and south to Nicaragua. The South Dakota breeding distribution is almost entirely limited to ponderosa pine forests in two areas - the Black Hills, where Brown Creepers are uncommon, and Harding County, where they are rare. There is only one confirmed breeding east of this area, an observation of adults feeding fledglings in Stanley County in 2004. Although the breeding distributions were essentially the same during the first and second Atlases, observers reported more Brown Creepers in the Black Hills during the second Atlas.

HABITAT

In the Black Hills, Brown Creepers show a strong preference for dense, old-growth stands of ponderosa pine with dead or dying trees for nesting and large trees for foraging (Dykstra 1996, Rumble *et al.* 1999, Mills *et al.* 2000). Second Atlas observers reported Brown Creepers in ponderosa pine forests (78%) and mixed pine-deciduous forests (16%).

BREEDING BIOLOGY

Before 2005, all confirmed breeding records were during June through mid-August. During the second Atlas, observers witnessed Brown Creepers building nests in mid-April. The female builds a hammock-like nest behind a loosened flap of bark on a large dead or dying tree. The two nest openings usually are oriented sideways and are just large enough for the bird to pass through. The base is constructed of twigs and other coarse plant materials woven together. The female does not attach the nest to the trunk but rather uses insect cocoons and spider-egg cases to adhere the nest to the inner surface of the bark. The nest cup is made of fine plant materials, hair, feathers, lichens, or moss. A nest can be made of hundreds of pieces of material and take 6 to 7 days to build. Females lay an average of 5 to 6 eggs, which they incubate for 15 days. While feeding chicks, adults usually enter the nest from the bottom and exit out the top. Chicks leave the nest at 15 to 17 days but remain with their siblings for several weeks. At night, the young birds roost together in a circle with their heads facing inward (Poulin *et al.* 2013).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	1	2
Probable	4	19	23
Possible	6	46	52
Observed	0	0	0
Total	11 (3%)	66	77

Brown Creeper



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

ROCK WREN

Salpinctes obsoletus

The Rock Wren often builds a trail of small pebbles that leads to the entrance of its nest in a rock crevice. In addition, the wrens build a stone foundation for the nest, which can consist of over a thousand pebbles and other small hard objects.

DISTRIBUTION AND STATUS

The Rock Wren occurs throughout the western U.S. and Mexico. South Dakota is on the east edge of the Rock Wren's breeding range. It is most common in the southern Black Hills, which are more arid than the rest of the Black Hills, and in the Badlands. Other breeding locations include the Pine Ridge Escarpment and the limestone buttes of Harding County. In addition, the second Atlas discovered Rock Wrens to be locally common along most river systems west of the Missouri River, including the Grand, Moreau, Cheyenne, and White Rivers, as well as a small number of birds along the Missouri River. Outside of these areas, most observations were at gravel pits. According to the Breeding Bird Survey, South Dakota's Rock Wren population is decreasing but not significantly (Sauer *et al.* 2014).

HABITAT

Rock Wrens in South Dakota are found in relatively dry areas that have barren areas for foraging and crevices for nesting. During the second Atlas, wrens were found in cliffs, canyons, badlands, gravel pits, rip-rap along dams, and dirt

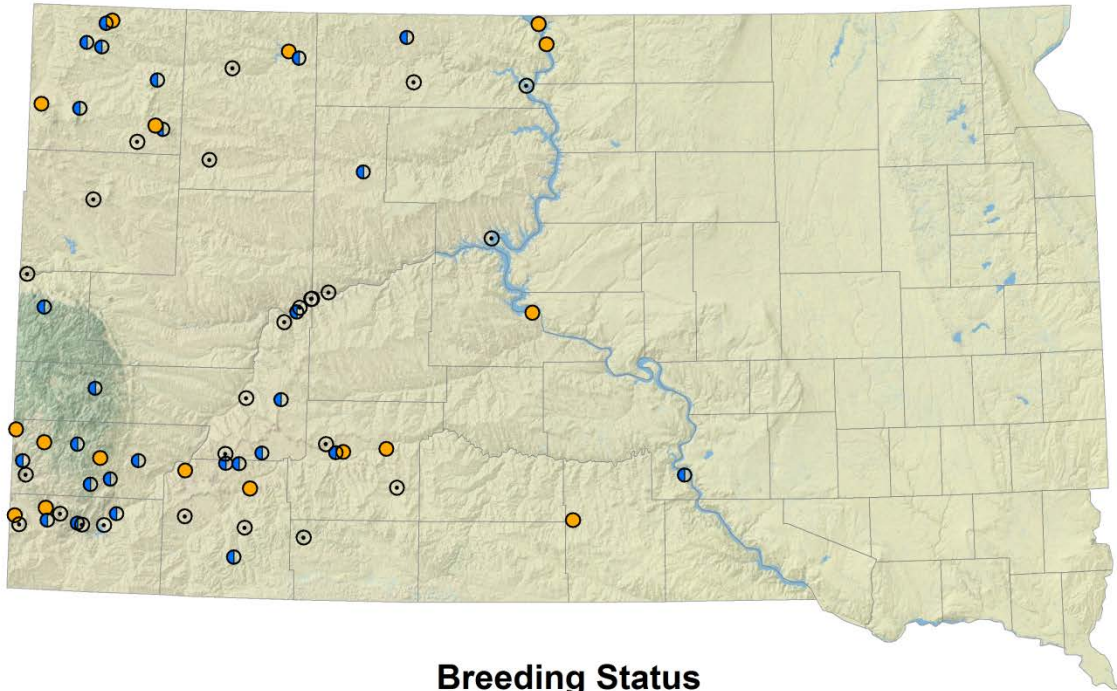
embankments of rivers. Five second Atlas nests were in cliffs, 1 in a jumble of rocks at a gravel pit, and 1 in a large brush pile on the banks of Lake Oahe.

BREEDING BIOLOGY

South Dakota Rock Wrens nest from mid-May into July. The nest is built in a crevice, under a rock overhang, or in a similar sheltered site. The pair build the rock 'trail' and stone foundation first. The female then constructs the cup-shaped nest out of weeds, grass, and twigs, and lines it with spider webs, feathers, and animal hair. Clutch size usually is 5 or 6 eggs and the incubation period is about 14 days. Both parents feed insects to the nestlings. After 14 to 16 days, the adults call and use food to coax the nestlings out of the nest. Individual nestlings leave at various times and in different directions over the course of 2 days, so the adults feed fledglings in several different locations. Fledglings are fed by the adults for an additional 1 to 3 weeks and remain on the territory for about 4 weeks (Lowther *et al.* 2000).

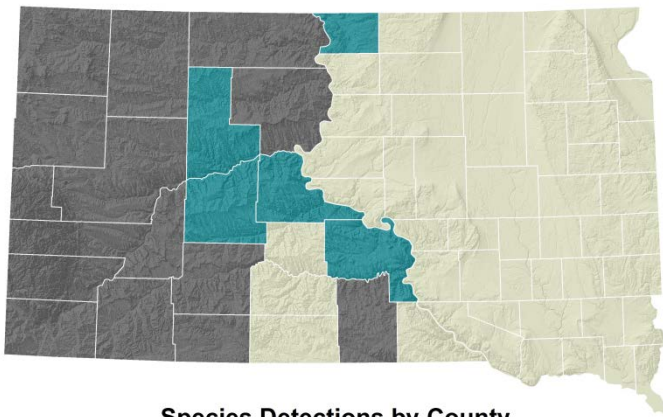
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	12	5	17
Probable	15	12	27
Possible	10	15	25
Observed	0	0	0
Total	37 (9%)	32	69

Rock Wren



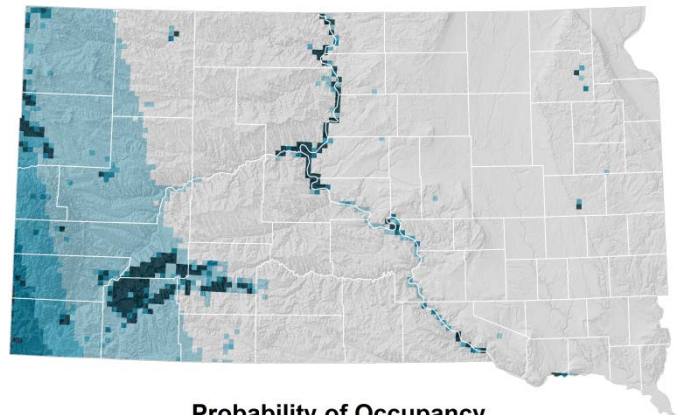
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

CANYON WREN

Catherpes mexicanus

Canyon Wrens are well adapted to foraging and moving around their cliff habitat. They have relatively short legs which lowers their center of gravity, and large feet with a long hallux and strongly decurved claws with sharp tips. They use their long, decurved bill and flattened head to probe for spiders and insects in rock crevices.

DISTRIBUTION AND STATUS

South Dakota's Canyon Wren population is disjunct from the main population in western North America, which extends north into British Columbia and south into Central America. This species is a locally uncommon, year-round resident in the Black Hills. An observer during the first Atlas found a singing wren in the Badlands, but the species is a vagrant there and none were detected during the second Atlas. Breeding Bird Survey data suggest that the Canyon Wren population in the Black Hills is increasing (Sauer *et al.* 2014).

HABITAT

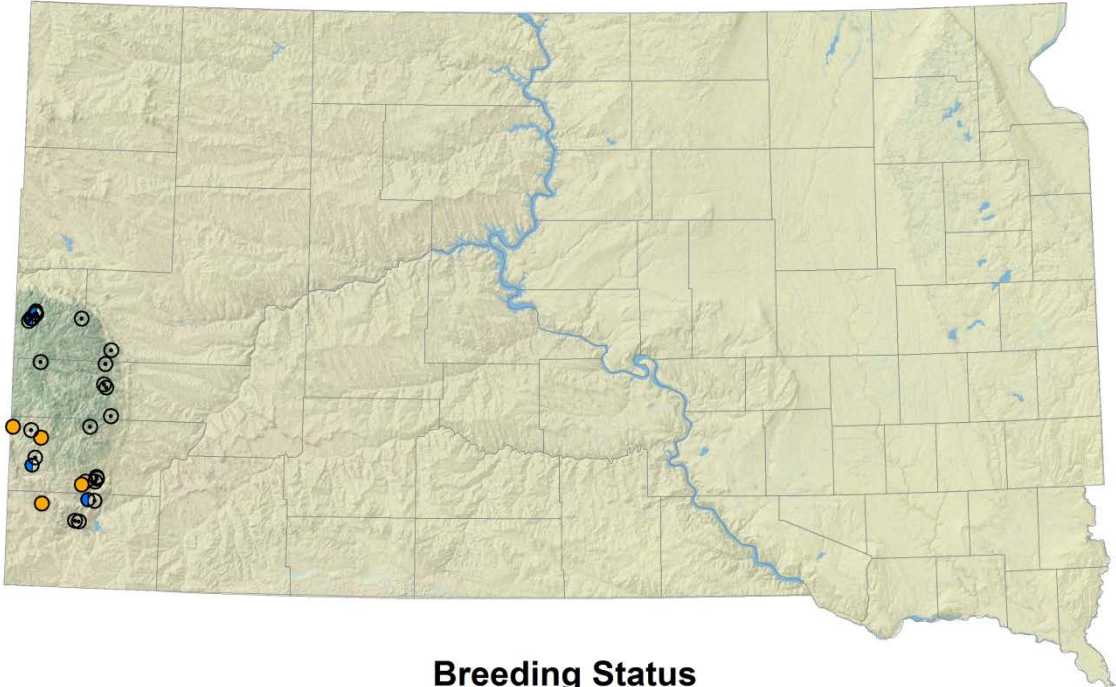
Canyon Wrens are restricted to rocky, usually sandstone vertical cliffs and steep canyons in the Black Hills. The cliffs, often 50' to 100' high or more, are steeper and higher than those used by Rock Wrens.

BREEDING BIOLOGY

Because of the Canyon Wren's inaccessible nest site and relative rarity, there are few breeding records in South Dakota. However, the breeding season appears to be April into July. Probably some pairs raise 2 broods per season. Pairs remain together throughout the year on their territory. Both male and female build the nest, usually in a sheltered rock crevice high on a cliff. Sometimes the nest is attached to a rock face inside a cave. The nest is made of coarse plants and lined with finer plants, fur, feathers, and other soft materials. The female lays 3 to 6 white eggs with red or brown markings. The male does not incubate the eggs, but regularly feeds the female as she incubates throughout the 16-day incubation period. Both parents feed the nestlings until they leave the nest after 15 days. Adults then feed the fledglings at least another 5 to 10 days. Family groups may stay together on the territory for several weeks to several months (Jones and Dieni 1995).

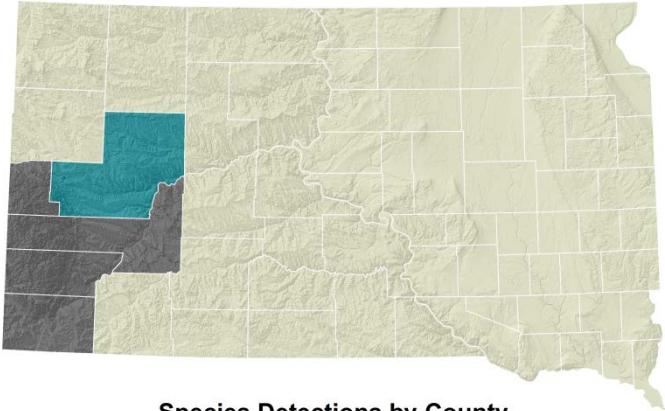
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	2	2	4
Probable	0	4	4
Possible	1	21	22
Observed	0	0	0
Total	3 (0.7%)	27	30

Canyon Wren



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

HOUSE WREN

Troglodytes aedon

The House Wren makes up for its small size and dull plumage with an energetic, even pugnacious personality and a loud, bubbly song.

DISTRIBUTION AND STATUS

House Wrens breed in south-central Canada, throughout the U.S., except the southern tier of states, and south into Central and South America. They occur throughout South Dakota, except in areas with few deciduous trees, such as West River areas that are predominantly grasslands and higher elevations of the Black Hills. The species is common and widespread. In some surveys, it is the most abundant species in woodlots (e.g., Gentry *et al.* 2006). During the second Atlas, House Wrens were reported from all 66 counties and from 77% of all atlas blocks. Similar results were obtained during the first atlas. Breeding Bird Survey data show a significant increasing population trend over the past 45 years (Sauer *et al.* 2014).

HABITAT

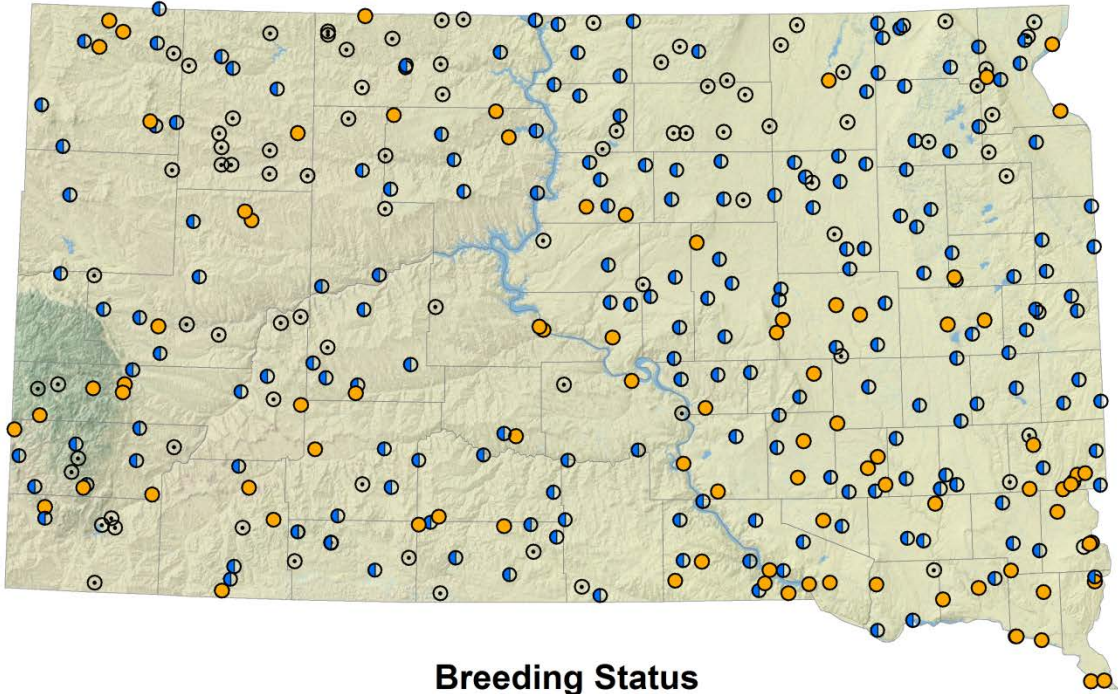
An edge species, House Wrens are found in any open deciduous cover that is interspersed with other open habitat types. During the second Atlas, 91% of House Wren observations were in upland (60%) or lowland (30%) woodlands, with another 5% reported in residential areas.

BREEDING BIOLOGY

In South Dakota, House Wrens begin nesting in mid-May (second Atlas early date: May 19). They often raise two broods per season; three nests with nestlings were reported in August during the second Atlas. An obligate cavity-nester, House Wrens utilize a wide variety of cavities, sometimes evicting the previous occupants. Second Atlas observers reported cavity nests in dead portions of cottonwood, willow, green ash, and elm trees, in cliff faces, nest boxes, gourds, and the top of a light pole. The male places sticks, sometimes hundreds of them, in potential cavities in his territory. The female chooses one and then adds plant materials, fur, spider egg cases, and feathers. For 12 to 14 days, the female incubates 4 to 8 pinkish eggs with brown markings. Both parents feed the nestlings, which leave the nest when 15 to 17 days old. Although rarely parasitized by Brown-headed Cowbirds (Johnson 1998), wrens were observed feeding a cowbird fledgling in Harding County during the second Atlas.

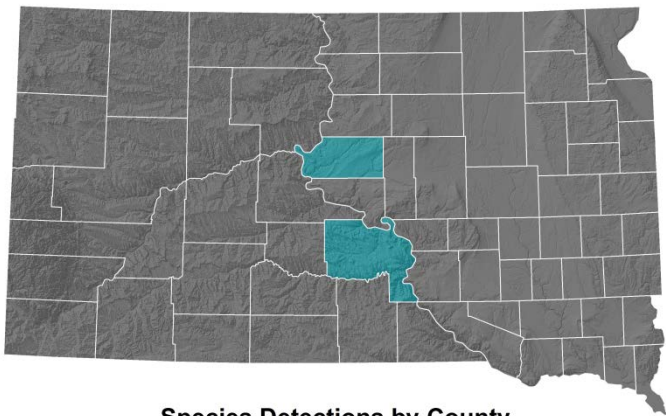
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	66	24	90
Probable	185	5	190
Possible	85	2	87
Observed	0	0	0
Total	336 (77%)	31	367

House Wren



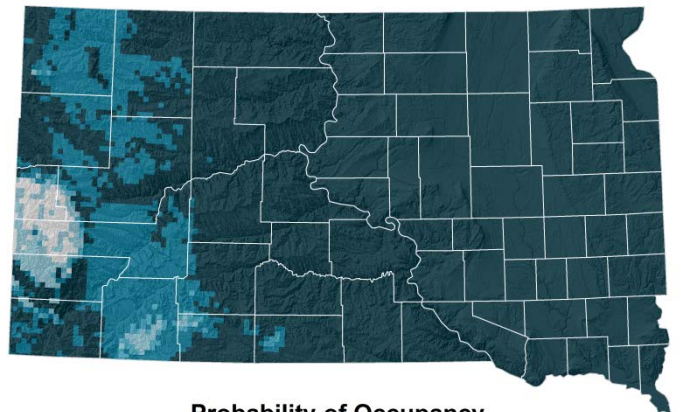
Breeding Status

- Confirmed breeding
- ◐ Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

PACIFIC WREN

Troglodytes pacificus

A superb songster, the secretive Pacific Wren is more often heard than seen. Each male has a large and complex song repertoire. He begins his song with a short introduction. He will use this same introduction up to 80 times. Eventually, he switches to a series of songs with another introduction, then another, until he reveals, over several days and hundreds of songs, that he has a number of such introductions. Then, for each introduction, he can sing many conclusions.

DISTRIBUTION AND STATUS

Pacific Wrens breed west of the eastern foothills of the Rocky Mountains, from California to the southern coast of Alaska and the Aleutian Islands. In South Dakota, breeding season Pacific Wrens occur at the higher elevations of the Black Hills in Lawrence and Pennington counties. All second Atlas records, and the single first Atlas record, were of singing males. Pacific Wren has been confirmed breeding once in the Black Hills, a June 2007 sighting of very young fledglings in Ward Draw, Lawrence County (South Dakota Bird Notes 64(3): 58).

HABITAT

Pacific Wrens breed in coniferous or mixed coniferous-deciduous forests near streams. They are more common in old-growth forests because these have abundant snags, root masses, and downed trees, which the wrens require for nesting, foraging, and roosting. Forest fragmentation affects Pacific Wrens. Their numbers are greater in

larger (>50 acres) forests and areas surrounded by late successional forest than in smaller areas surrounded by clear-cut edges.

BREEDING BIOLOGY

In South Dakota, males sing on territories from early May to early August. In most parts of their range, Pacific Wrens raise two broods per season. The male builds several unlined nests; the female chooses one by adding a lining of feathers and animal hair. The nest site is highly variable. It could be an existing natural cavity close to the ground (among upturned trees, holes in rotted stumps, rock crevices, or in woodpecker cavities) or a free-hanging nest on a tree limb. If a cavity nest, the wren adds rootlets, twigs, and grass. A free-hanging nest is a domed structure made of plant materials with a small side entrance. The female lays 5 to 7 eggs which she incubates for 14 to 17 days. Both parents feed the young wrens, during both the nestling and fledgling stages. Young wrens stay in the nest for 16 to 18 days and remain in family groups on the territory for another 6 to 36 days (Toews and Irwin 2012).

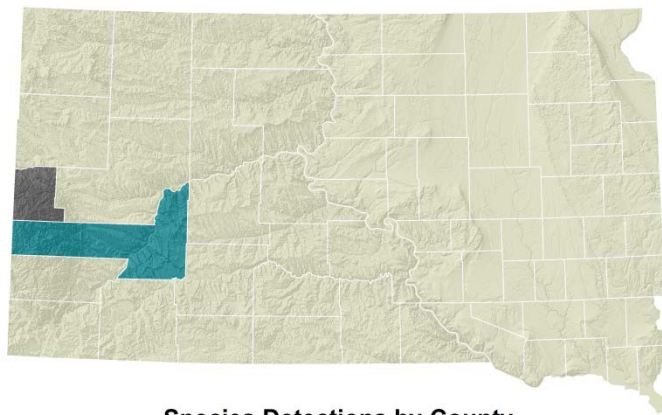
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	0	0
Probable	0	3	3
Possible	0	2	2
Observed	0	0	0
Total	0 (0%)	5	5

Pacific Wren



Breeding Status

- Confirmed breeding
- ◐ Probably breeding
- ◑ Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

SEDGE WREN

Cistothorus platensis

An erratic and nomadic breeder, the Sedge Wren shifts its breeding range depending on climatic conditions and time of year. The species begins the summer by breeding in the northern parts of its range, and then shifts south as the summer progresses. On a local scale, Sedge Wrens will nest in one place for several years, and then disappear.

DISTRIBUTION AND STATUS

South Dakota is on the western edge of the breeding range, which extends from central Alberta southwest to the northern Midwest states and east to New York. The species is an erratic breeder in South Dakota; rather common during wet climatic periods and rare to absent during dry periods. The first Atlas occurred during a dry period and Sedge Wrens were detected on just 6% of random blocks. Conditions were much wetter during the second Atlas and wrens were reported from 36% of blocks. According to Breeding Bird Survey data, the Sedge Wren population in South Dakota has been increasing significantly at a rate of almost 9% per year since 1967 (Sauer *et al.* 2014).

HABITAT

Sedge Wrens breed in wet meadows with tall grasses and sedges, hayfields, and fallow grasslands. They favor large grassland patches and avoid edges with trees (Johnson and Igl 2001, Bakker *et*

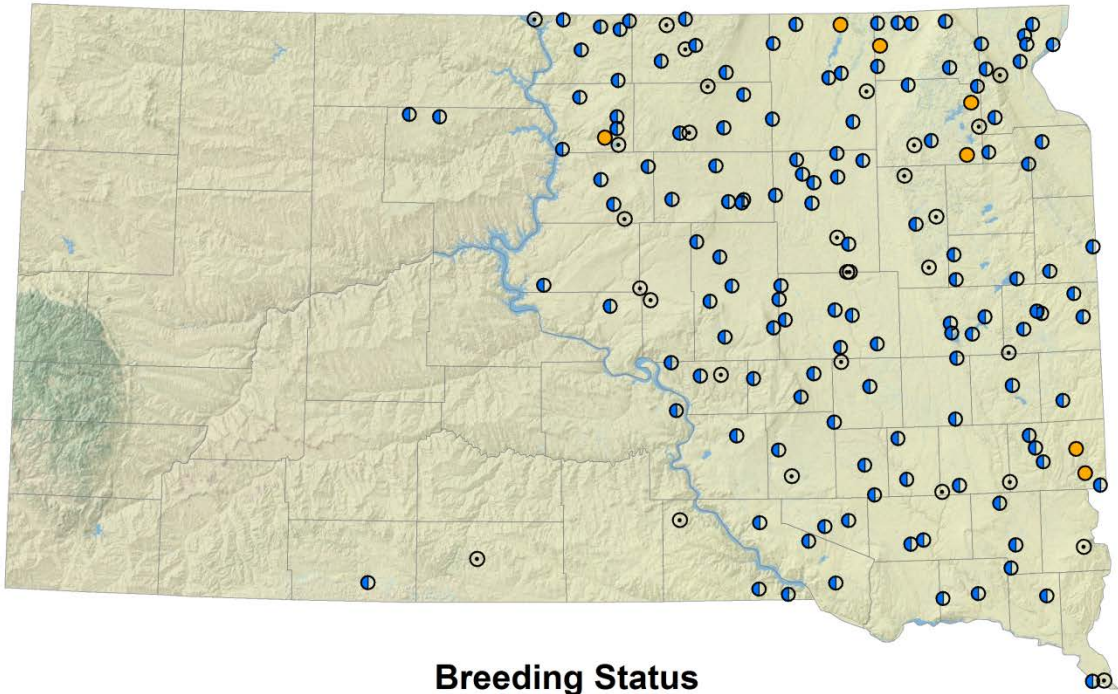
al. 2002). During the second Atlas, Sedge Wrens were reported in undisturbed grasslands (52%), marshes (14%), wet meadows (13%), pastures (13%), and hay fields (5%).

BREEDING BIOLOGY

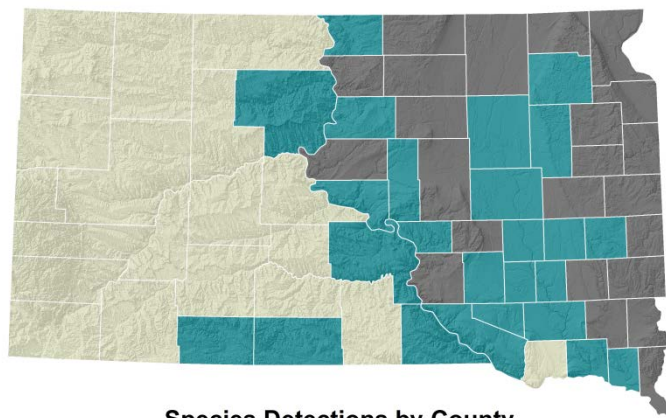
In South Dakota, nests have been found in June and July, and evidence of breeding has been observed from early June to mid-August. Males build up to 13 incomplete "dummy" nests in tall, dense vegetation within their territory. The nests are ball-shaped with a small entrance on the side, and woven of sedges and grasses. The female chooses one of the nests and lines it with sedges and other fine grasses. She lays a clutch of 6 to 8 white eggs which she incubates for 14 days. Although the male occasionally feeds the nestlings, the female provides almost all parental care. Nestlings leave the nest about 12 to 14 days after hatching. Nothing is known about the rest of the young wrens' dependent period (Herkert *et al.* 2001).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	6	7
Probable	129	4	133
Possible	26	3	29
Observed	0	0	0
Total	156 (36%)	13	169

Sedge Wren



- Breeding Status**
- Confirmed breeding
 - Probably breeding
 - Possibly breeding
 - Observed; not breeding at location



- Species Detections by County**
- First Atlas Only
 - Second Atlas Only
 - Both Atlases
 - Neither Atlas

MARSH WREN

Cistothorus palustris

Songs of Marsh Wrens in western North America are harsher, longer, and more variable than songs of eastern Marsh Wrens. These two types of singers meet in the Great Plains, including in South Dakota (Kroodsma 1989).

DISTRIBUTION AND STATUS

Marsh Wrens breed in the northern half of the United States and the southern and central Canadian Prairie Provinces. In South Dakota, Marsh Wrens are fairly common in marshes east of the Missouri River. West River, they are uncommon in the Sandhills along the Nebraska border, and rare and sporadic elsewhere. During the first Atlas, which largely occurred during a dry period, Marsh Wrens were detected on just 19% of random blocks. The second Atlas occurred during and after a wet period, which may explain the increased number of sightings (33% of blocks). In addition, Breeding Bird Survey data show that the Marsh Wren population in South Dakota has been increasing at a significant rate over the past 45 years (Sauer *et al.* 2014).

HABITAT

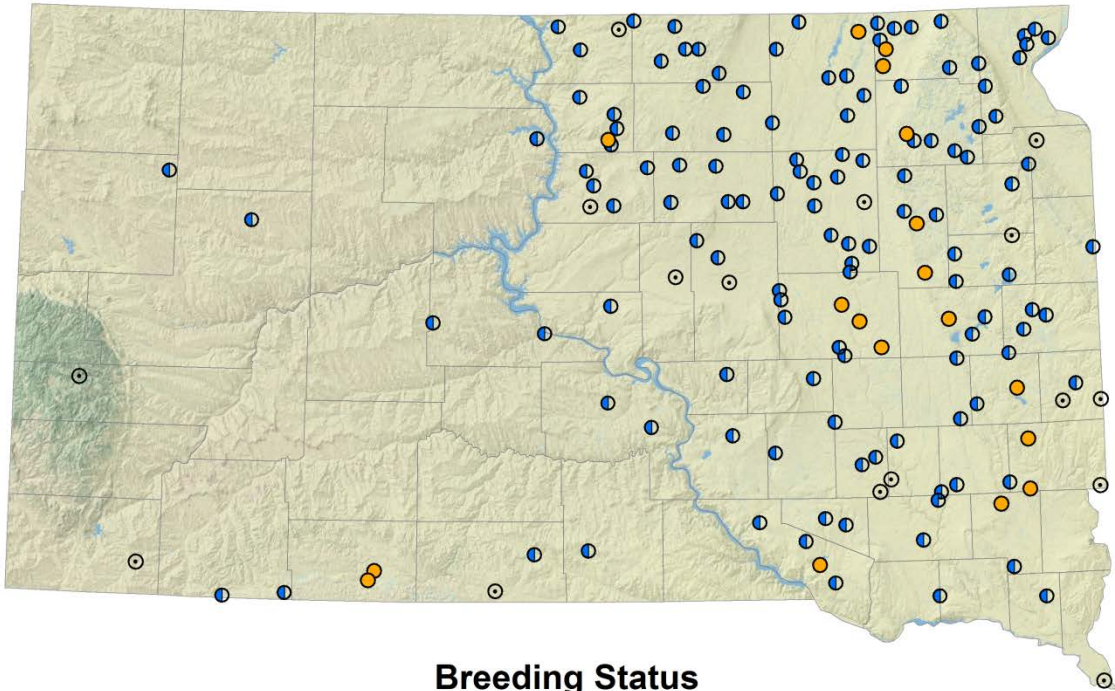
As their name implies, Marsh Wrens inhabit marshes (97% of second Atlas records). In South Dakota, these wrens are found on marshes larger than 8 acres, and are more likely to be found on marshes larger than 50 acres (Naugle *et al.* 1999b).

BREEDING BIOLOGY

Marsh Wrens in South Dakota nest from May into early July. Females may raise 2 or 3 broods a year. One male may simultaneously have up to three mates and broods. At the beginning of the season, the male builds up to 20 incomplete or 'dummy' nests in his territory. These are football-shaped masses of woven grass, cattails, and rushes anchored to standing cattails about 1' to 3' above water. Most will never be used for raising young, but wrens may sleep in them during other seasons. The female inspects all of the dummy nests and chooses one by adding a lining of soft materials. When completed, the nest has a shelf of lining material that protrudes into the nest on one side, forming a small tunnel. The female incubates the clutch of 4 to 5 eggs for 13 to 16 days. Both parents feed the nestlings, but if the male has another brood, the female does more. When the chicks leave the nest at 13 to 15 days, their legs are well-developed and they drop down into the cattails, scurrying for cover. Adults care for the young wrens for another 14 days (Kroodsma and Verner 2014).

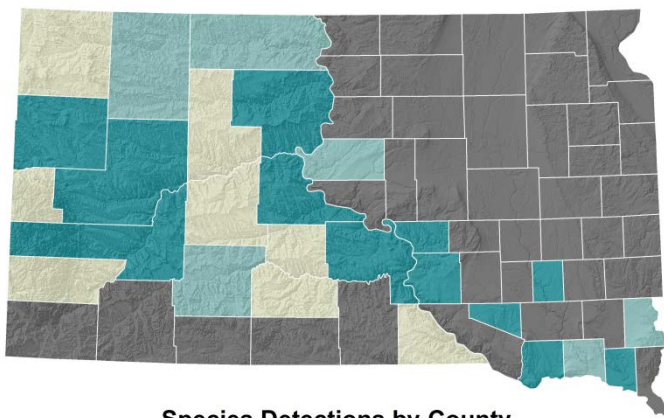
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	12	6	18
Probable	121	5	126
Possible	12	4	16
Observed	0	0	0
Total	145 (33%)	15	160

Marsh Wren



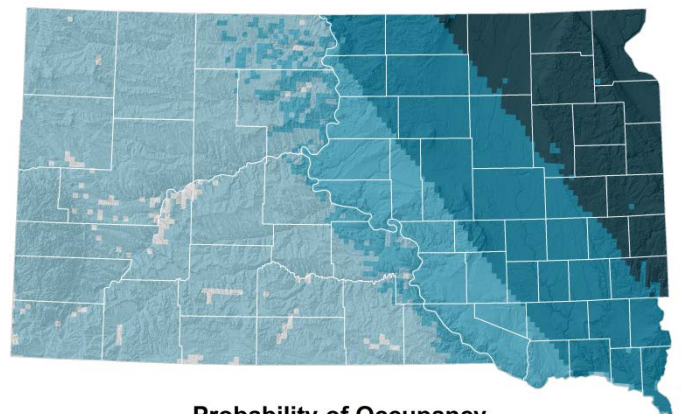
Breeding Status

- Confirmed breeding
- ◐ Probably breeding
- ◑ Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BLUE-GRAY GNATCATCHER

Polioptila caerulea

Despite its very small size, the Blue-gray Gnatcatcher is pugnacious and aggressive towards much larger birds, even attacking hawks and owls that venture near its territory.

DISTRIBUTION AND STATUS

The Blue-gray Gnatcatcher breeds in the United States throughout the East and Southwest, and from South Dakota south through the southern Great Plains and into Mexico. The species' range is expanding to the north and west (Hitch and Leberg 2007). Gnatcatchers recently began breeding in South Dakota and are expanding rapidly in all four corners of the state. The first documented breeding was in Newton Hills State Park, Lincoln County, in 1986 (Skadsen 1987). Until 2004, all documented breeding occurred in Lincoln and Minnehaha counties, including the state's first reported successful nest during the first Atlas. Starting in 2004, gnatcatchers were observed nesting in the northeast (Roberts County), southeast (Union County), and southwest (Custer County). The second Atlas documented even more expansion, with nesting confirmed in the northwest (Harding County), Badlands National Park, Fall River County, and along the Missouri River in the Fort Randall area.

HABITAT

In South Dakota, gnatcatchers inhabit shrubby areas, forest edges, and open forests with dense understory. Second Atlas observers recorded gnatcatchers in mixed deciduous-conifer woods (38%

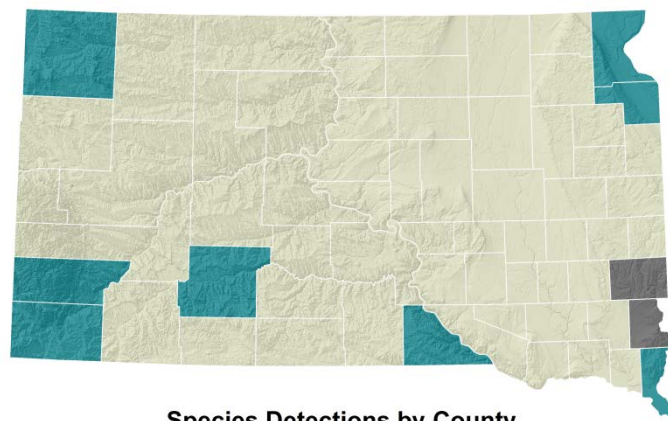
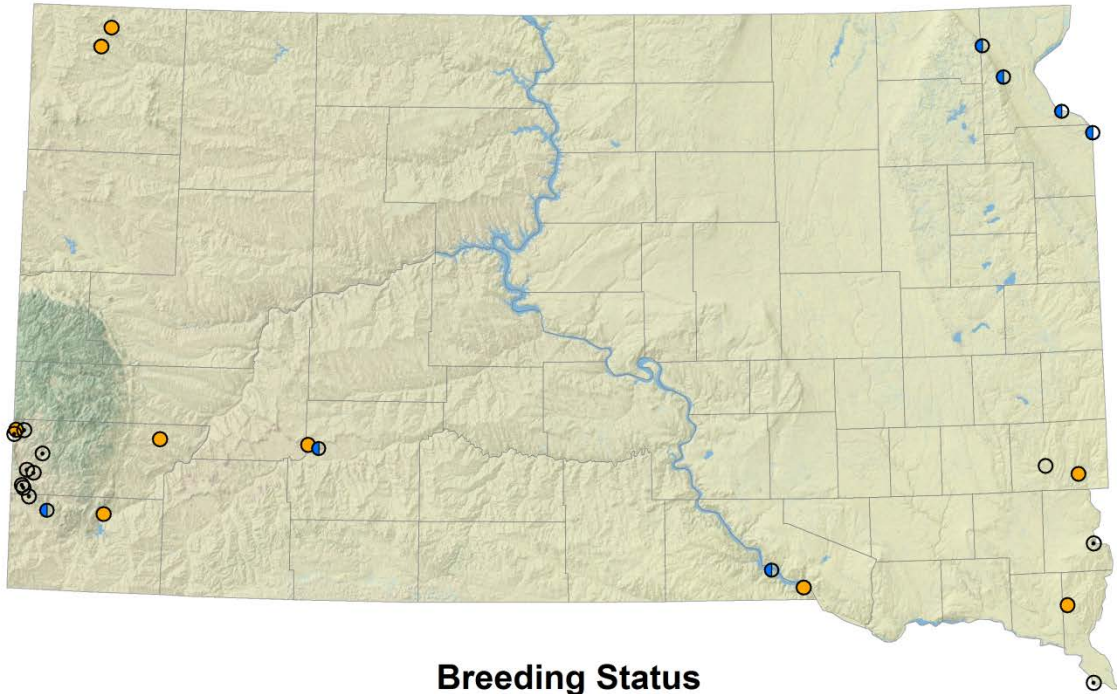
of observations), shrublands (27%), deciduous woods (15%), brushy fields (11%), pine forest (4%), and residential areas (4%). Second Atlas nests were in upland deciduous forest (1 nest) and mixed-deciduous-conifer woodland (2).

BREEDING BIOLOGY

A relatively early breeder, second Atlas nest records ranged from May 12 to August 1. Both sexes build the tall, cup-shaped nest, which usually is saddled on the side limb of a tree. The nest is built in layers of progressively finer plant materials, held together with spider webbing, and decorated on the outside with lichens. The female lays an average of 5 pale blue eggs. Both sexes share incubation duties during the 13-day incubation period. Both parents feed the nestlings through the 13-day nestling period and up to 3 weeks after the young leave the nest. Brown-headed Cowbirds often lay eggs in gnatcatcher nests. As one of the smallest cowbird hosts, gnatcatchers have no ability to eject or puncture cowbird eggs, and so respond by abandoning the nest (Kershner and Ellison 2012). This sequence of events was observed during the second Atlas at a nest in Harding County.

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	2	7	9
Probable	3	4	7
Possible	1	9	10
Observed	1	0	1
Total	7 (2%)	20	27

Blue-gray Gnatcatcher



AMERICAN DIPPER

Cinclus mexicanus

American Dippers walk, dive, and swim underwater in fast-moving mountain streams to feed on aquatic insects and small fish.

DISTRIBUTION AND STATUS

American Dippers reside in the western mountains and along the west coast of North America. In South Dakota, dippers are resident in the Black Hills. They are an isolated population and are genetically distinct from dippers in other areas (Anderson *et al.* 2008). The Black Hills' dipper population has severely declined because of sedimentation, pollution, and dams. Historically, dippers were found on all of the major streams of the Black Hills (reviewed in Backlund 2010). By the first Atlas, dippers were documented only on Spearfish, Whitewood, and Rapid creeks in the northern Hills. During the second Atlas, most dippers were in the Spearfish Creek and central Whitewood Creek watersheds. Observers detected dippers on Rapid Creek during the second Atlas but breeding was not confirmed. The 2004-2009 Black Hills population was estimated to be 57 to 66 adults (Palmer and Javed 2014). These birds may not be producing enough young to sustain the population over the long term (Palmer and Javed 2014). The dipper is a state Species of Greatest Conservation Need (SDGFP 2014).

HABITAT

In the Black Hills, dippers inhabit swift, clear, rocky streams that have either natural or human-made structures for nesting.

BREEDING BIOLOGY

Black Hills' dippers begin nesting in mid-March, with second nests finished by mid-July. Nesting at higher elevations begins slightly later than at lower elevations. Most Black Hills' pairs remain together for multiple years. Dippers nest near or over water. During a 2005-2009 Black Hills study, dippers built their nests (65 nests) in nest boxes (41%), under bridges (31%), on streamside rocks (12%), on midstream rocks (6%), on cliff ledges (5%), and behind waterfalls (5%) (Lovett 2010). The nest is a large, domed, ball-shaped structure with a side entrance facing towards the water. It consists of an outer layer of moss and an inner cup of pine needles, grass, and leaves. Nest materials are wetted before being added to the nest. Dippers may reuse an old nest by replacing the inner cup. The female lays a clutch of 4 or 5 white eggs, which she incubates for 14 to 17 days. Chicks leave the nest when about 24 to 26 days old and are fed by their parents for another 4 to 35 days (Lovett 2010, Willson and Kingery 2011).

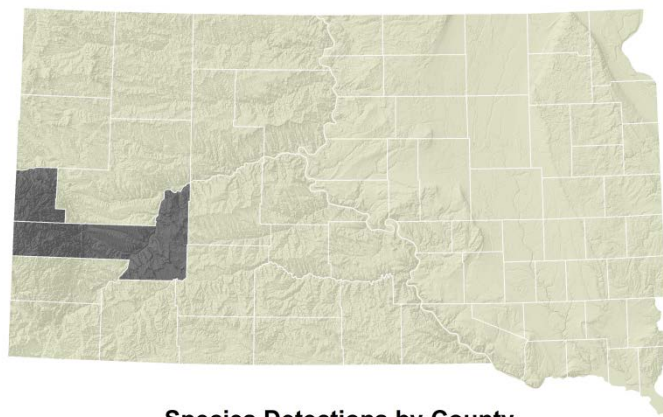
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	33	33
Probable	0	2	2
Possible	0	3	3
Observed	0	0	0
Total	0 (0%)	38	38

American Dipper



Breeding Status

- Confirmed breeding
- Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

GOLDEN-CROWNED KINGLET

Regulus satrapa

The male's yellow and orange crown-patch contains a mix of eight different carotenoid pigments, while the female's yellow-only crown contains only one.

DISTRIBUTION AND STATUS

Golden-crowned Kinglets breed in boreal forests across North America, including Canada, Alaska, New England, most U.S. mountain ranges, and the northern Midwest. In South Dakota, these kinglets breed at the higher elevations of the Black Hills. This population is isolated; the nearest breeding population occurs in the Big Horn Mountains in Wyoming. Kinglet distribution and abundance were similar between the two Atlases.

HABITAT

Black Hills kinglets breed in dense spruce or or mixed spruce-deciduous forests. During the second Atlas, observers found kinglets in coniferous forests (58% of reports) and mixed conifer-deciduous forests (42% of reports).

BREEDING BIOLOGY

Despite the short window for breeding at high elevations, most kinglet pairs raise two broods per year. The Black Hills breeding season is mid-May through July. Most nests are in spruce trees; the nest found during the second Atlas was

about 20' up in a spruce. Both adults build the nest, a deep hanging cup suspended from a stem or twig fork. It is made of small twigs, moss, lichens, and dead grass, and lined with fine strands, hair, spider webs, and insect cocoons. The female lays 8 or 9 eggs, sometimes up to 11 eggs, a surprising number for such a small bird. The male feeds the female while she incubates the eggs for 14 to 15 days. Both adults feed the nestlings. As the nestlings grow, the nest stretches and flattens. By day 16, nestlings begin to crawl out of the nest and perch nearby. Parents feed them but prefer those still in the nest. All chicks leave the nest by day 19. For the first day, both parents feed the fledglings. The female then leaves to initiate her second clutch while the male continues to care for the first brood. By the time the first brood can care for themselves (17 days out of the nest), the eggs of the second clutch have hatched. Both parents feed the second brood until the end of the breeding season (Swanson *et al.* 2012).

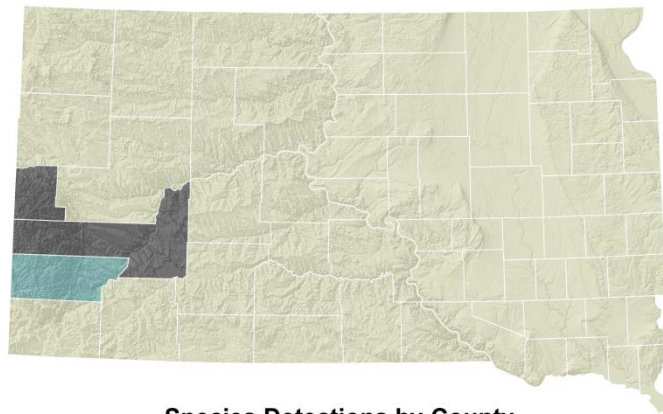
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	2	2
Probable	3	3	6
Possible	2	6	8
Observed	0	0	0
Total	5 (1%)	11	16

Golden-crowned Kinglet



Breeding Status

- Confirmed breeding
- Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

RUBY-CROWNED KINGLET

Regulus calendula

The Ruby-crowned Kinglet is one of North America’s smallest songbirds. Only the male has a ruby crown, which is usually hidden unless he is excited or performing courtship displays.

DISTRIBUTION AND STATUS

In South Dakota, the Ruby-crowned Kinglet breeds in the Black Hills. This population is disjunct from the main kinglet breeding range, which includes Canada, Alaska, and the mountainous regions of the western U.S. Within its limited distribution in South Dakota, the Ruby-crowned Kinglet is fairly common. South Dakota’s kinglet population is increasing at a significant rate (4.3% per year) according to Breeding Bird Survey data (Sauer *et al.* 2014).

HABITAT

In the Black Hills, Ruby-crowned Kinglets prefer white spruce forest, but also breed in ponderosa pine and mixed conifer-deciduous forests. Observers during the second Atlas reported kinglets in mixed forests (upland 46% of observations, lowland 6%), conifer forests (upland-37%, lowland-10%), and residential areas (2%).

BREEDING BIOLOGY

The breeding season in South Dakota is mid-May through July; sometimes adults

are still feeding fledglings in August. The female builds a deep, hanging cup nest attached to twigs below a horizontal branch and well-protected by overhanging foliage. The nest, usually high in a spruce, is composed of moss, lichens, bark strips, spider webs, twigs, rootlets, and conifer needles, and lined with feathers, plant down, and animal hair. Female Ruby-crowned Kinglets lay the largest clutches for their size of any North American songbird. Clutch size usually is 7 to 10 eggs, but 12-egg clutches have been documented. Incubation is by the female only and lasts about 13 to 14 days. The male may feed the female during incubation. Parents feed small insects and spiders to nestlings. The nest stretches to accommodate growing nestlings. Young kinglets leave the nest at about 16 days (Swanson *et al.* 2008).

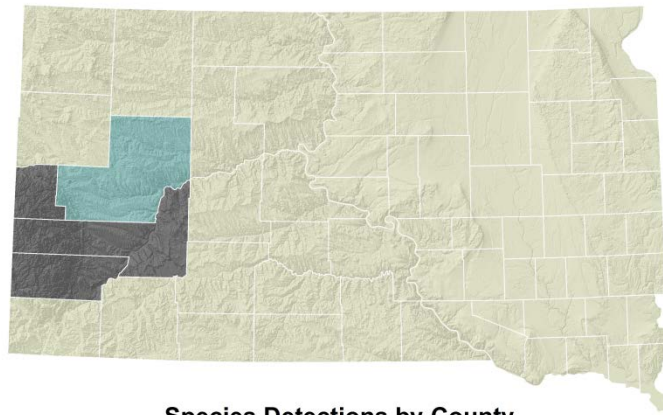
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	2	3
Probable	8	8	16
Possible	1	7	8
Observed	0	0	0
Total	10 (2%)	17	27

Ruby-crowned Kinglet



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

EASTERN BLUEBIRD

Sialia sialis

Bluebird trails are transects of bluebird nest boxes that are constructed and maintained by volunteers. Found throughout North America, including in South Dakota, they aim to bolster bluebird and other cavity-nester populations. Data from these trails have contributed greatly to our understanding of bluebird biology and behavior.

DISTRIBUTION AND STATUS

South Dakota is on the western edge of the Eastern Bluebird’s breeding range, which includes the eastern and central regions of the United States, southeastern Canada, and Central America. Eastern Bluebirds breed throughout South Dakota. The second Atlas found more Eastern Bluebirds west of the Missouri River and fewer on the Missouri Coteau than did the first Atlas. South Dakota’s Eastern Bluebird population is increasing at a significant rate (Sauer *et al.* 2014).

HABITAT

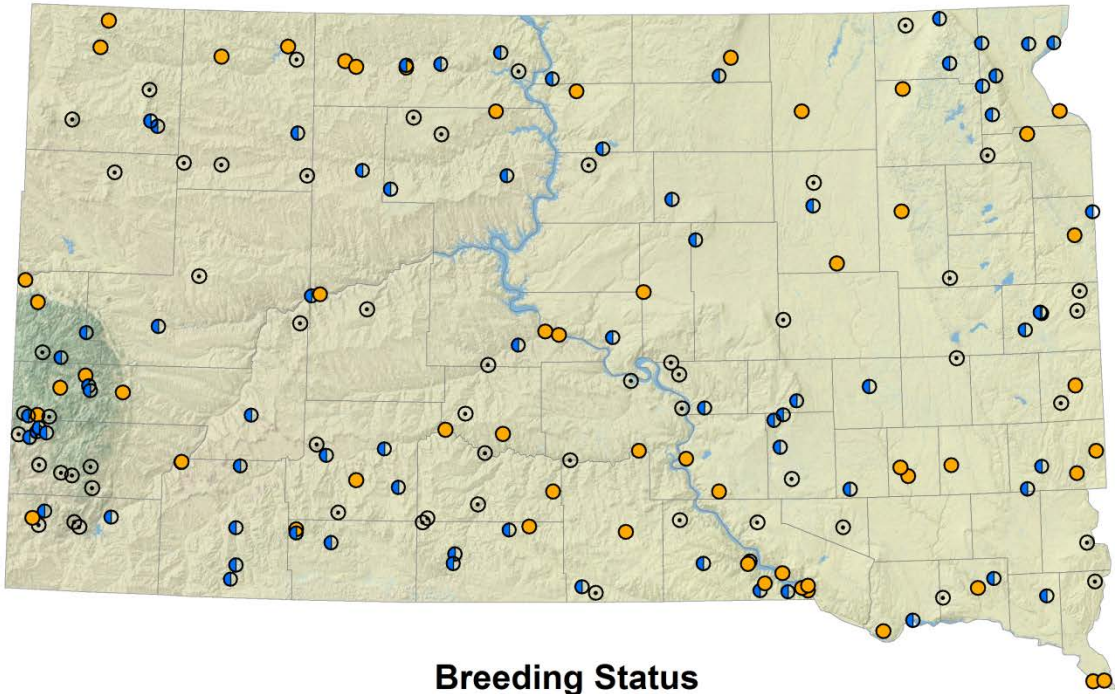
Eastern Bluebirds breed in semi-open habitats, such as open forests with little or no understory, cut-over or burned areas, forest clearings and edges, grasslands, parks, and golf courses. Most second Atlas bluebird observations were in woodlands (63%) or grasslands (24%), with the remainder in residential areas (7%), cropland (2%), and burned forest (1%).

BREEDING BIOLOGY

The breeding season in South Dakota is April to mid-August, during which pairs attempt to raise at least two broods. Eastern Bluebirds nest in cavities, either natural or artificial. Second Atlas nests were in nest boxes (2 nests), wooden fence posts (2 nests), and natural cavities in trees (3 nests). Inside the cavity, the female builds a loose cup of weeds, twigs, dry grass, pine needles, hair, and feathers. She lays 4 to 5 pale blue eggs and incubates them for 14 days. Both parents feed the nestlings, primarily insects and fruit. Chicks leave the nest after 18 to 19 days. After another 2 weeks, young bluebirds can fly and feed themselves, but their insect-capturing skills are not as proficient as adults. Early-season young join other juveniles and spend the rest of the summer in large flocks. Bluebirds that fledge in late summer tend to stay with their parents into winter (Gowaty and Plissner 2015).

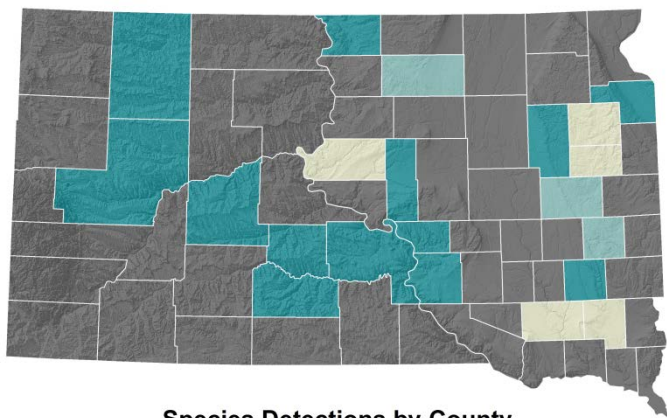
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	28	28	56
Probable	60	12	72
Possible	41	17	58
Observed	0	0	0
Total	129 (30%)	57	186

Eastern Bluebird



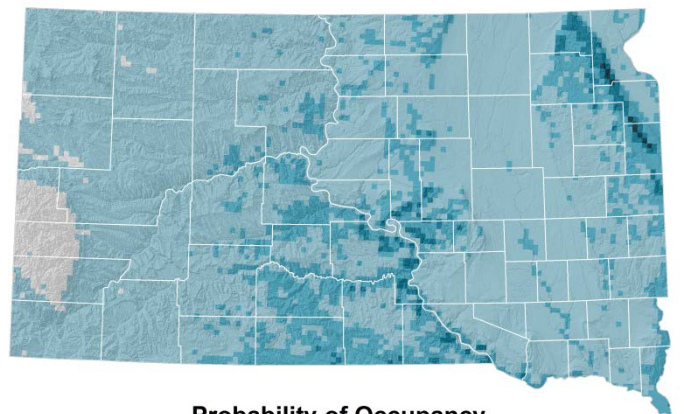
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

MOUNTAIN BLUEBIRD

Sialia currucoides

Around 1900, this icon of western mountains moved east into the Great Plains, aided by habitat changes created by human settlers. Nest-site availability is the main factor limiting bluebird populations; bluebird nest box trails have helped this species maintain a stable population.

DISTRIBUTION AND STATUS

South Dakota is at the extreme eastern edge of the Mountain Bluebird's breeding range, which encompasses all of the mountainous areas of western North America. Both the first and second South Dakota Atlases found this species to be most common in the Black Hills. It also occurs less commonly in pine forests in Harding County, pine remnants along the Grand, Cheyenne, White and Keyapaha rivers, and on the Pine Ridge Escarpment in Oglala Lakota, Bennett, and Todd counties. Between the first and second Atlases, the species spread eastward along the White and Keyapaha rivers.

HABITAT

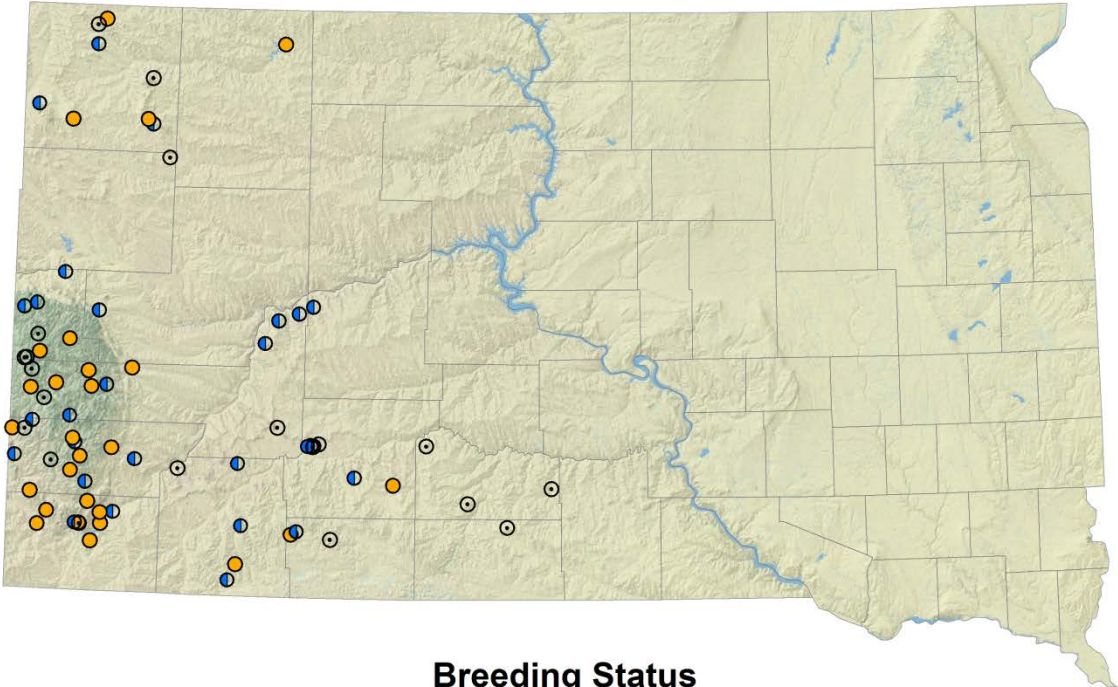
Mountain Bluebirds prefer open forests with a grass understory or forest-grassland edges, usually in mountainous areas. It occurs commonly in burned forests and clearcuts. It will nest in nest boxes near roads, pastures, ranches, and farms. During the second Atlas, observers reported Mountain Bluebirds most often in coniferous forests (23%), mixed conifer-deciduous forests (19%), and pastures (22%). Just four observations were in burns.

BREEDING BIOLOGY

Mountain Bluebirds nest in cavities. Historically, they relied on tree cavities created by woodpeckers but now they also nest in human-made structures. Second Atlas observers found five nests in nest boxes – three were in pastures and two in pine forests. Nests also were discovered in a fence post, a telephone pole, and a shed. Of two 'natural' nest reports, one was in a dead aspen and the other in an old Cliff Swallow nest on a cliff. Bluebirds begin nesting in early to mid-April and, when they raise a second brood, their breeding season can last into August (last second Atlas record: Aug. 7). The female chooses a cavity nest site within the male's territory, builds a nest made of grass with a lining of soft materials, and incubates the 4 to 8 pale blue unmarked eggs for 13 days. Both parents feed the nestlings until nest-leaving at age 18 to 21 days. If there is a second nest, the male feeds the first brood until independence while the female begins laying the second clutch (Power and Lombardo 1996).

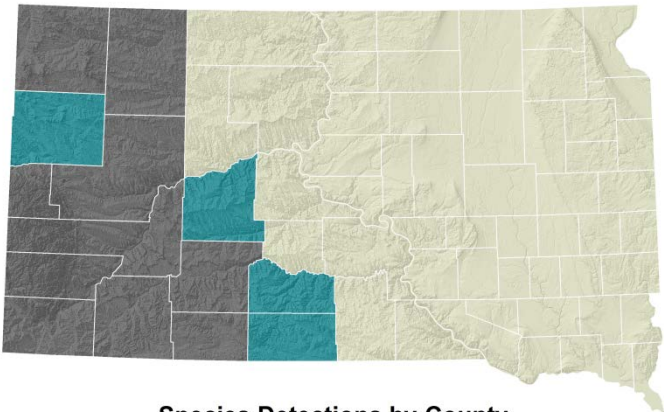
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	19	8	27
Probable	21	7	28
Possible	5	16	21
Observed	0	0	0
Total	45 (10%)	31	76

Mountain Bluebird



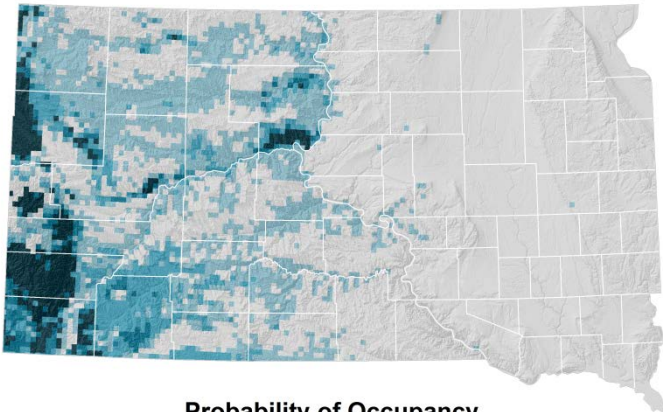
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

TOWNSEND'S SOLITAIRE

Myadestes townsendi

As a member of the thrush family, Townsend's Solitaire has a beautiful, complex song not unlike that of the American Robin. The Solitaire is more likely than other thrush species to sally after aerial insects from an exposed branch.

DISTRIBUTION AND STATUS

Townsend's Solitaire is found at higher elevations throughout western North America and is a common permanent resident in the Black Hills. Although it typically breeds at mid- to high elevations, some of the second Atlas confirmed breeding records were from lower sites such as at Whitney Preserve in Fall River County and lower Roby Canyon in western Custer County. There are several summer records of Townsend's Solitaire in the pine-covered buttes of Custer National Forest in Harding County, but this thrush has not been confirmed breeding there and its status is uncertain in that region.

HABITAT

The breeding habitat is open or dense pine, spruce or juniper forests, often near burns or forest edges. In a Black Hills study comparing bird abundance in logged versus unlogged pine stands, this species had higher abundances in logged stands (Dykstra 1996). During the second Atlas, 77% of Townsend's Solitaires were reported in conifer forests, 16% in mixed conifer-deciduous

forests, and one was observed in a burn.

BREEDING BIOLOGY

In the Black Hills the breeding season begins in early May and generally is finished by early July (but see Baylor *et al.* 1972 for descriptions of mid-July nests). The cup-shaped nest is placed on the ground, in soil banks, on cliff ledges, or human structures; the basic requirement being a protective overhang by vegetation, rock, dirt, or a building. Of nest details provided for the second Atlas, three nests were found in steep cliff faces, one nest was on the ground under a prostrate juniper bush, and one nest was in the overhang of a cabin. The 3 to 5 eggs are highly variable in color - white, gray, blue or pink with purple, red, or brown markings. Eggs are incubated for 10 to 12 days and nestlings leave the nest by 15 days. The parents divide the fledged brood and take care of their half for at least 2 weeks until the young are independent (Bowen 1997).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	2	9	11
Probable	9	3	12
Possible	6	40	46
Observed	0	0	0
Total	17 (4%)	52	69

Townsend's Solitaire



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

VEERY

Catharus fuscescens

The Veery, like many of the ‘spot-breasted’ thrushes, has a beautiful ethereal song heard primarily at dawn and dusk. In spring, the male and female sing back and forth to each other during establishment of the pair bond, a process that can take several days.

DISTRIBUTION AND STATUS

The main breeding range of the Veery is in southern Canada, northeastern states, Appalachia, northern Midwest states, northern Rocky Mountain region, and parts of the Pacific northwest. The South Dakota Veery population, of which there are two separate breeding sub-populations, is disjunct from the main breeding range. In northeast South Dakota, Veeries are uncommon and extremely local in wooded hollows on the eastern edge of the Prairie Coteau. In the northern Black Hills, Veeries are uncommon to common, and extremely local, along larger streams and dense deciduous thickets at higher elevations. More Veeries were detected during the second Atlas than during the first Atlas, most likely because of the addition of data from other annual Black Hills bird surveys (e.g., White *et al.* 2010).

HABITAT

Veeries breed in damp, dense deciduous or mixed coniferous-deciduous forests. They typically are near streamside thickets or wetlands created by beavers. During the second Atlas, 75% of reports were from

deciduous forests while 25% were from mixed conifer-deciduous forests.

BREEDING BIOLOGY

In South Dakota, Veeries nest in June and July. The nest typically is on or near the ground. Most elevated nests are less than 4’ above the ground in a bush or small tree. Only the female builds the nest, while the male defends the territory. Depending on weather, nest-building takes 6 to 10 days. The cup-shaped nest is made of a variety of plant materials. Females lay an average of 4 bluish-green unmarked eggs and incubation takes 10 to 14 days. Both adults feed small caterpillars, grubs, slugs, and other small insects to the nestlings for the first four days after hatching, with dragonflies and butterflies added one to two days later. The parent mashes the food between its mandibles to make it easier for small nestlings to eat. Nestlings leave the nest in 10 to 12 days and are mostly independent in another 2 weeks (Bevier *et al.* 2005).

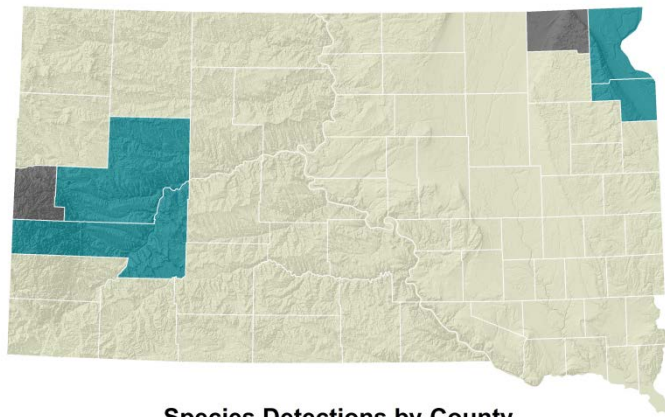
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	1	1
Probable	3	4	7
Possible	1	11	13
Observed	0	0	0
Total	4 (1%)	16	20

Veery



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

SWAINSON'S THRUSH

Catharus ustulatus

Swainson's Thrush is a long-distance migrant, spending the winter in South America. On the breeding grounds, males often do not begin singing until several weeks after arrival, an unusual trait in songbirds.

deciduous forests (70%) and conifer forests (30%).

DISTRIBUTION AND STATUS

The Swainson's Thrush breeds in conifer forests throughout northern and western North America. In South Dakota, Swainson's Thrush only breeds in the Black Hills. This population is isolated from the nearest breeders in the Laramie and Bighorn mountain ranges of Wyoming. Within the Black Hills, Swainson's Thrush is fairly common at higher elevations, but almost absent from the lower elevations of the southern region. Its breeding distribution in the state appears to be unchanged between the first and second Atlas. According to Breeding Bird Survey data, South Dakota's population has been stable over the past 45 years (Sauer *et al.* 2014).

BREEDING BIOLOGY

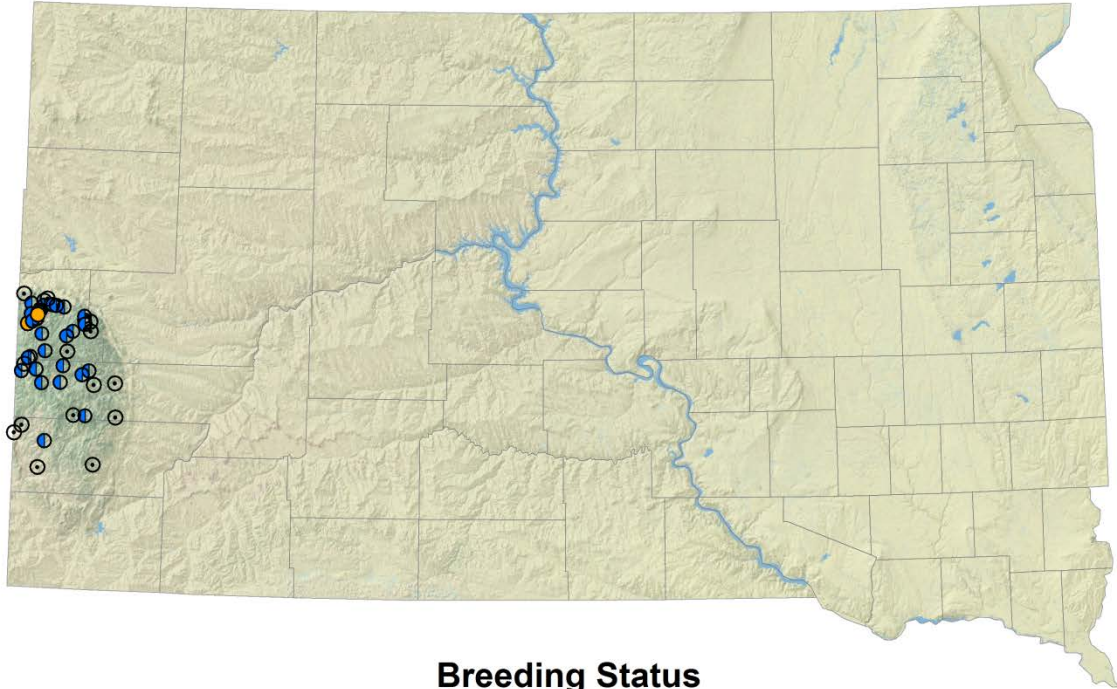
The breeding season is June and July (Pettingill and Whitney, 1962). The female spends about four days constructing the nest in the forest understory, especially in thickets of deciduous shrubs or conifer saplings. The nest is a loose cup made of grasses and plant stems, and lined with leaves, lichens, and moss. Only the female incubates the clutch of four eggs. Nestlings hatch after 10 to 14 days and leave the nest when 10 to 14 days old. They are fed a diet of regurgitated insects and berries as well as whole insects by both parents. It is not known how long the young thrushes rely on food from their parents after nest-leaving (Mack and Yong 2000).

HABITAT

In the Black Hills, Swainson's Thrushes are most abundant in multi-storied ponderosa pine or spruce forests with a closed canopy (Mills *et al.* 2000). During the second Atlas, Swainson's Thrushes were reported in mixed conifer-

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	3	3
Probable	6	24	30
Possible	3	12	15
Observed	0	0	0
Total	9 (2%)	39	48

Swainson's Thrush



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

HERMIT THRUSH

Catharus guttatus

The Hermit Thrush breeds in boreal and mountain forests throughout Canada, New England, the northern Midwest, and western United States (Dellinger *et al.* 2012). It is an accidental breeding species in the Black Hills of South Dakota. Breeding was confirmed in 1966 near Sylvan Lake in Custer County. Hermit Thrushes were not reported during the first Atlas, but a singing male was observed in 2003 in Lawrence County. Both second Atlas records were of singing males found during the summer of 2010 in Custer and Lawrence counties.



- Breeding Status**
- Confirmed breeding
 - Probably breeding
 - ⊙ Possibly breeding
 - Observed; not breeding at location

WOOD THRUSH

Hylocichla mustelina

Populations of the Wood Thrush throughout North America have declined over 50% since the mid-1960s. The major threat is habitat loss on the breeding grounds and to a lesser extent, on the wintering grounds in Central America (Rushing *et al.* 2016).

DISTRIBUTION AND STATUS

The Wood Thrush breeds in extreme southeastern Canada and throughout the eastern United States west to the Great Plains. South Dakota is on the western edge of the breeding range. Wood Thrush primarily breed in the southeast corner of the state, with a very small number in the northeast on forested slopes of the Prairie Coteau. This species' distribution within South Dakota has contracted. Before the Missouri River dams were built, Wood Thrush occurred in river bottom forests along the River north to Pierre (Harter 1974, Tallman *et al.* 2002). During the first Atlas, no Wood Thrush were found north of Fort Randall dam, but were found in the southeast and along the eastern border of the state. By the second Atlas, Wood Thrush had disappeared along the Missouri River between Fort Randall and Yankton, and from east-central South Dakota. The species now is uncommonly found along the Missouri River below Yankton, the lower Big Sioux River, and rarely on the slopes of the Prairie Coteau.

HABITAT

Wood Thrush breed in forested areas with closed canopy, a sub-canopy layer

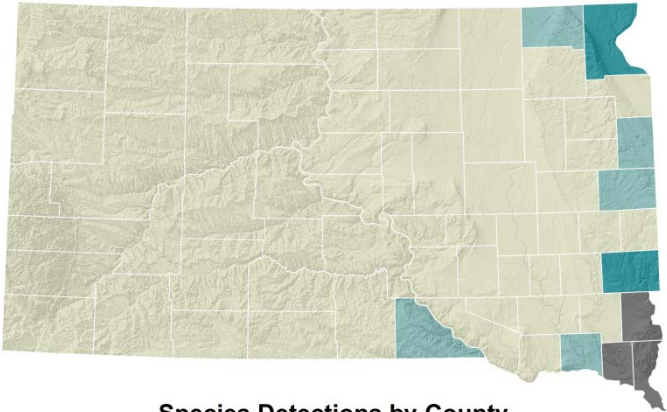
of shrubs, a fairly open forest floor, and decaying leaf litter for foraging. In South Dakota, Wood Thrush are only found in natural woodlands, not in shelterbelts (Gentry *et al.* 2006). During the second Atlas, all southeastern Wood Thrush detections were in riverine forests while the lone northeastern observation was in upland deciduous forest.

BREEDING BIOLOGY

Most female Wood Thrush attempt to raise two broods per summer. In South Dakota, Wood Thrush nest May through July. A second Atlas observer reported thrushes carrying nest material on May 6th. The nest, located in a sapling or shrub, is an open cup of grass, weeds, paper, and bark strips mixed with mud, and lined with finer materials. Clutch size in early nests is 3 to 4 eggs and in late nests, is 2 to 3. Incubation is by the female only and lasts 11 to 14 days. Both parents feed soft-bodied invertebrates and fruit to the nestlings. Chicks leave the nest 12 to 15 days after hatching and are attended by the parents for another 15 to 20 days (Evans *et al.* 2011).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	3	3
Probable	0	2	2
Possible	2	1	3
Observed	0	0	0
Total	2 (0.5%)	6	8

Wood Thrush



AMERICAN ROBIN

Turdus migratorius

The American Robin is the largest, most abundant, and most widespread thrush in North America. It is one of the first birds to begin singing in the morning and one of the last singing in the evening. This pattern is aided by the physiology of a robin's eyes, which are adapted to low-light conditions. Because of this, however, robins are fooled by artificial lights and may begin singing in the middle of the night.

DISTRIBUTION AND STATUS

American Robins breed throughout all of North America except Florida and the Chihuahuan and Sonoran deserts. In South Dakota, both Atlases recorded robins on about 90% of survey blocks and in all 66 counties. The species is most abundant in urban areas and the Black Hills and least abundant in regions with few trees, such as the northwestern grasslands. South Dakota's robin population has been steadily increasing over the past 45 years at a rate of 2.3% per year (Sauer *et al.* 2014).

HABITAT

American Robins inhabit a variety of treed habitats: forest areas with open understory, riparian woods, shelterbelts, towns, city parks, and farmsteads. In the Black Hills, robins prefer ponderosa pine forest with an open canopy or young aspen and birch stands (Dykstra 1999, Mills *et al.* 2000). Second Atlas observers reported robins in every habitat category, but most were in woodlands and shelterbelts (73%) or residential areas (13%). The majority of

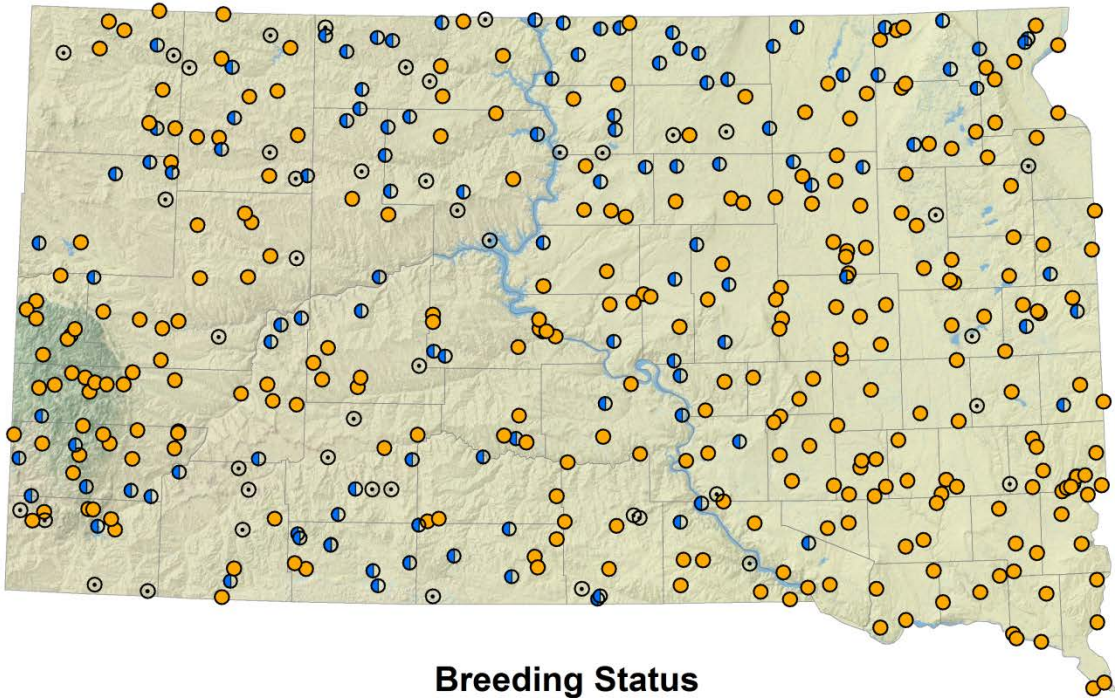
second Atlas nests were in deciduous woods and shelterbelts (60% of 141 nests), residential areas (22%), or mixed conifer-deciduous areas (12%).

BREEDING BIOLOGY

The breeding season in South Dakota is April through August. Robins attempt to raise two broods per summer. The earliest second Atlas nest was April 12. The nest is built on a firm support and sheltered from the rain. Second atlas nests were reported in 10 different tree and bush species, on buildings, corrals and fence posts, and on the ground. Nests were at heights of 0' to 70', with an average of 17'. The female builds the cup-shaped nest from grasses, twigs, and mud. Most songbirds lay eggs around sunrise, but female robins lay eggs around mid-day. The clutch of 3 to 7 pale blue eggs is incubated for 12 to 14 days. Both adults feed the nestlings. Because parents repeatedly arrive with food from the same direction, nestlings jockey for position to be the recipient of the next incoming meal. Chicks leave the nest when 14 to 16 days old and are independent of parental care in another 14 days (Vanderhoff *et al.* 2014).

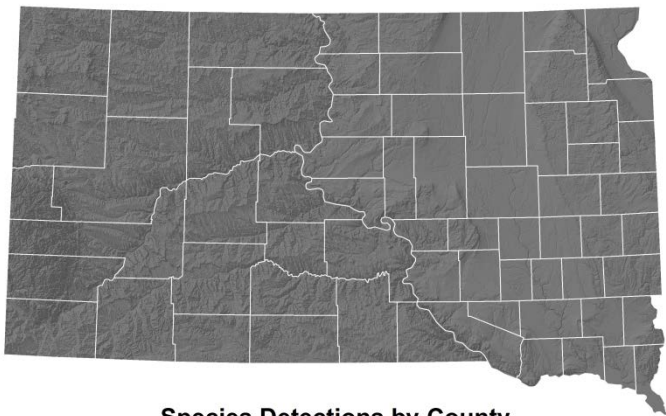
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	231	53	284
Probable	111	3	114
Possible	44	1	45
Observed	0	0	0
Total	386 (89%)	57	443

American Robin



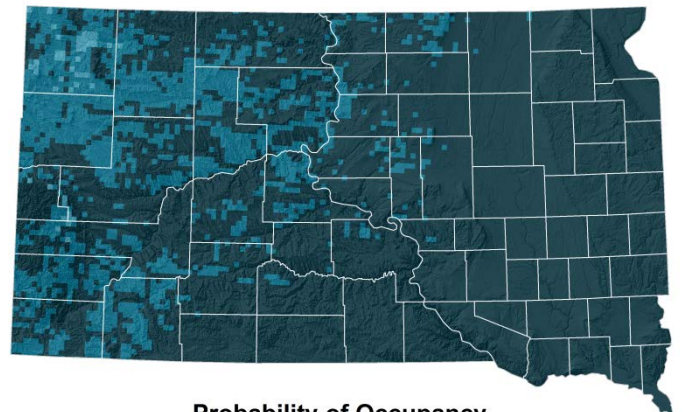
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

GRAY CATBIRD

Dumetella carolinensis

The Gray Catbird is named for its catlike, mewing call. This species is one of the few birds known to recognize and eject Brown-headed Cowbird eggs that have been laid in its nest. Experiments show that this ability is learned, not innate.

DISTRIBUTION AND STATUS

The Gray Catbird breeds in southern Canada and in the United States north and east of a line from Washington State to east Texas. Gray Catbirds breed throughout South Dakota. They are most common east of the Missouri River and in the Black Hills. The statewide distributions were similar between the first and second Atlases, with a small increase in catbird sightings in the Black Hills and northwest quarter of the state during the second Atlas. South Dakota's catbird population is stable, according to Breeding Bird Survey data (Sauer *et al.* 2014).

HABITAT

The catbird's genus, *Dumetella*, means "small thicket." Catbirds inhabit dense shrubby vegetation. Second Atlas observers recorded catbirds in shelterbelts and woodlots (43% of observations), riparian woods (33%), shrublands (20%), and residential areas (3%). Second Atlas nests were located in shelterbelts and woodlots (4 nests),

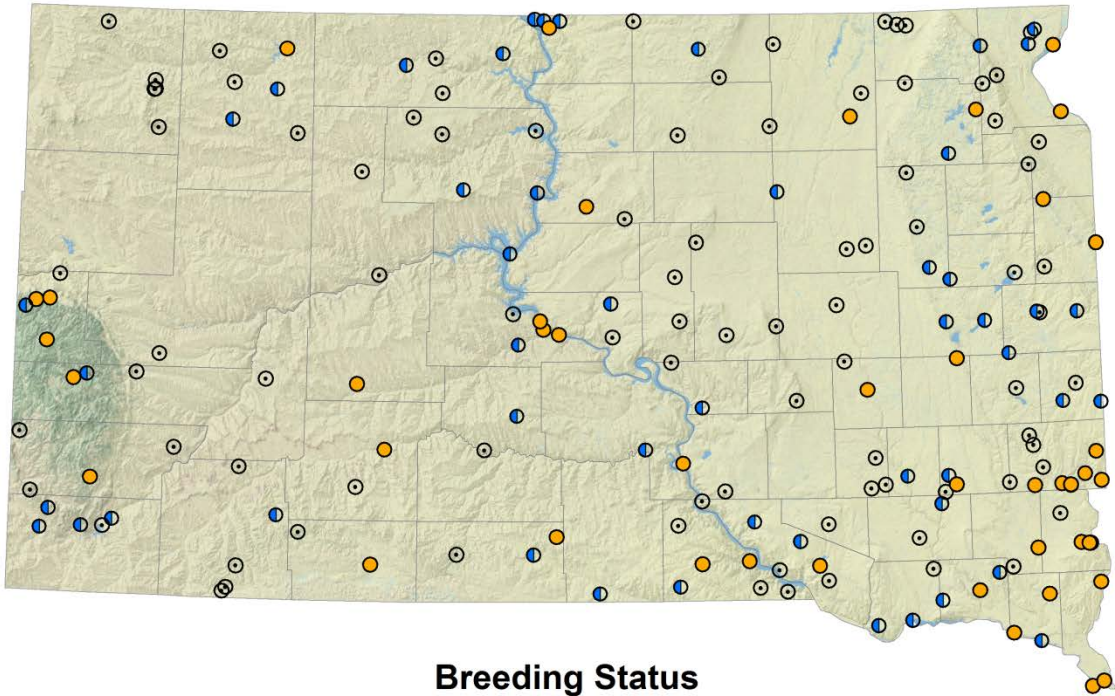
riparian woods (1 nest), and a garden (1 nest).

BREEDING BIOLOGY

The breeding season in South Dakota is from mid-May into July. Some pairs probably raise two broods per year. The nest is located in a dense shrub, thicket, vine tangle, or low tree, usually within 5 feet of the ground. The female constructs a bulky cup made up of three layers: an outer layer of coarse plant materials, a middle layer with smaller diameter materials, and a lining of finer plants and hair. The female incubates the clutch of 3 to 4 green-olive eggs for 12 to 13 days. Unless the female leaves to begin the second nest of the season, both parents feed small insects to the nestlings. After 10 to 12 days, the chicks leave the nest and are fed by the adults for another 12 days (Smith *et al.* 2011).

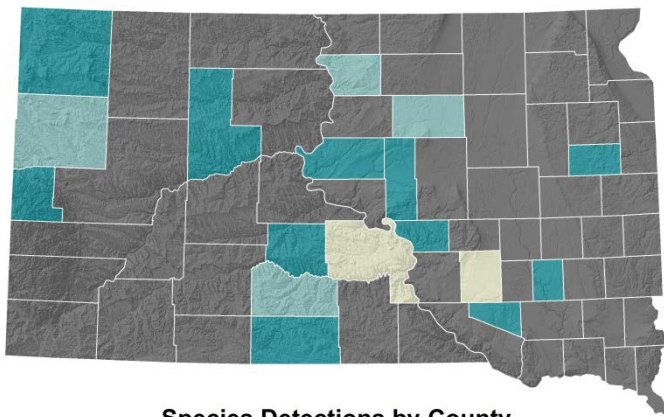
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	24	21	45
Probable	49	3	52
Possible	85	4	89
Observed	0	0	0
Total	158 (36%)	28	186

Gray Catbird



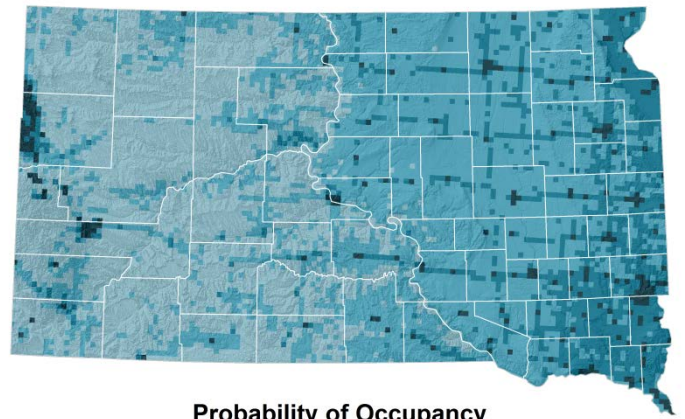
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BROWN THRASHER

Toxostoma rufum

The Brown Thrasher is an accomplished songster and has one of the largest song repertoires of any North American bird. A male may sing more than 1,000 different song types, possibly improvising or learning new song types throughout his life.

DISTRIBUTION AND STATUS

The Brown Thrasher breeds throughout the eastern United States, the Great Plains, and the southern edge of Canada. It is common throughout South Dakota. Brown Thrashers were detected on 88% of random blocks during the first Atlas compared to 83% of blocks during the second Atlas. This small decrease is confirmed by Breeding Bird Survey data, which shows that the population in South Dakota has experienced a slight, but significant, decline of 1.1% a year since 1968 (Sauer *et al.* 2014).

HABITAT

Breeding habitat is dense shrubs or thickets, including fence rows, shelterbelts, woody draws, and residential areas. In cottonwood forests along the Missouri River, thrashers occur predominately in early to middle-aged forests (Rumble and Gobeille 2004). During the second Atlas, Brown Thrashers were reported in woodlands and shelterbelts (74%), shrublands (12%), grasslands (8%), residential areas (4%), and cropland (1%). Second Atlas nests were in shelterbelts (7 nests), shrublands (7 nests), shrubby grasslands (9 nests), residential areas

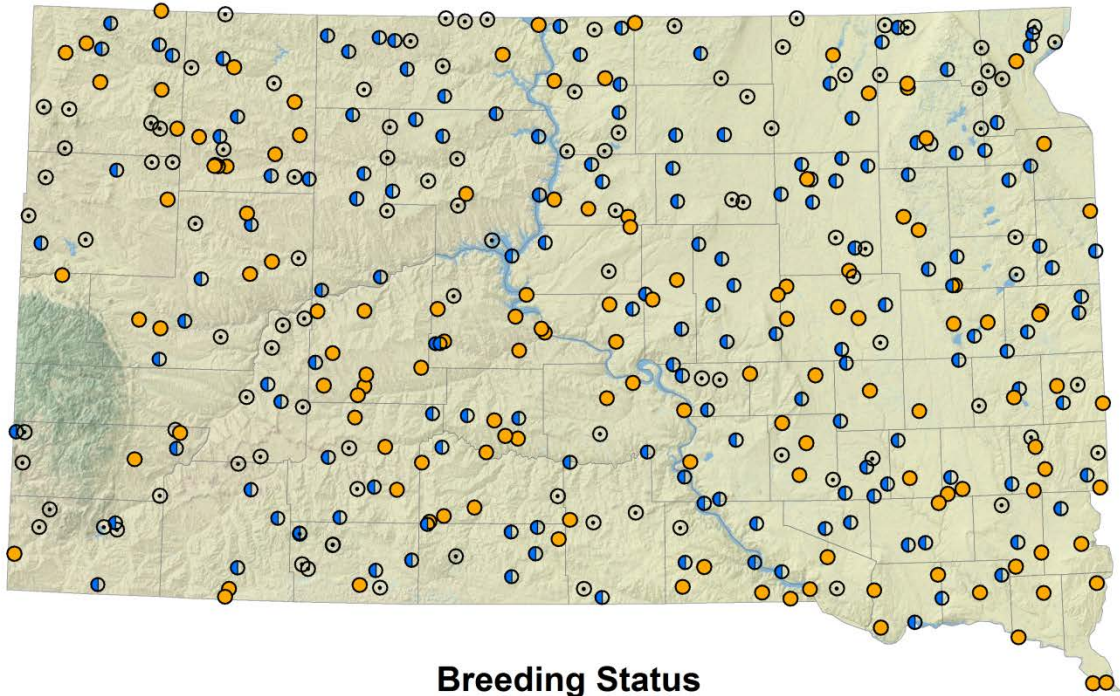
(including a cemetery) (2 nests), and roadsides (2 nests).

BREEDING BIOLOGY

In South Dakota, the breeding season is the third week of May through mid-July. Pairs usually nest low in a tree or shrub, or occasionally on the ground. During the second Atlas, observers found nests from 0 to 7' above ground (average 4', 65 nests). Nests were in elm (3 nests), bushes (4), junipers (3), cherry (1), hawthorn (1), willow (1), a tangle of barbed wire (1), and on the ground in reed canary grass (1). The nest, built by both adults, is a bulky cup made of twigs, leaves, small roots, and stems. The female lays a clutch of 3 to 5 pale blue eggs; second Atlas clutches averaged 4.2 eggs (5 nests). Both parents incubate the eggs for 11 to 14 days, and feed the nestlings. Nestlings leave the nest relatively quickly for a songbird of this size. They may leave when fully feathered in 9 days, although 11 to 12 days is more typical. Fledglings still may be accompanied by their parents 19 days after nest-leaving (Cavitt and Haas 2014).

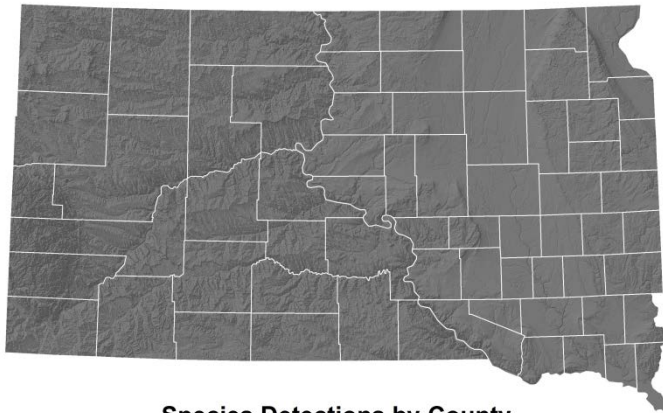
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	104	28	132
Probable	151	3	154
Possible	106	3	109
Observed	0	0	0
Total	361 (83%)	34	395

Brown Thrasher



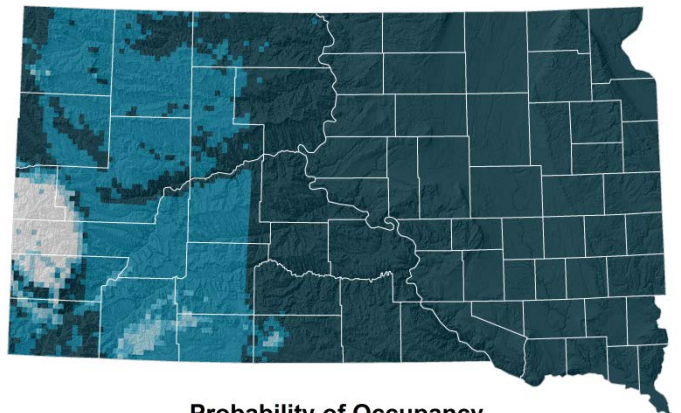
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

SAGE THRASHER

Oreoscoptes montanus

Originally called the Mountain Mockingbird, the Sage Thrasher sings a soft, melodious song that is somewhat similar to that of a mockingbird. The song, given from a perch atop a sagebrush, can last for several minutes without a break. The male also sings during the Undulating Flight courtship display, in which he flies in undulating circles and figure 8s over his territory.

DISTRIBUTION AND STATUS

South Dakota is on the extreme eastern edge of the Sage Thrasher's breeding range, which includes the interior regions of the western U.S. The Sage Thrasher in South Dakota is rare, most regularly found west of Edgemont in Fall River County, and north of Belle Fourche in Butte County. The first Atlas recorded the species in Harding County but none were found during the second Atlas, despite the continued presence of sagebrush habitat there. During the second Atlas, singing thrashers were observed multiple times in two locations that did not have requisite sagebrush habitat—at the Railroad Buttes in south central Pennington County and in eastern Mellette County.

HABITAT

Breeding Sage Thrashers are dependent on large expanses of sagebrush with relatively little grass. In South Dakota, this thrasher is found in brushy areas consisting of big sagebrush or greasewood. Nests

reported during both the first and second Atlases were in big sagebrush habitat.

BREEDING BIOLOGY

In South Dakota, Sage Thrasher nests have been found between June 3 and July 28. The June 3rd nest, found during the second Atlas, had newly-hatched nestlings. Sage Thrashers build their nest in a sagebrush or greasewood plant, typically one of the taller, thicker shrubs in the area. The nest is a bulky, untidy cup made of twigs, and lined with finer grass and animal hair. Both adults incubate the clutch of 4 or 5 eggs for 13 to 17 days. The adults are very secretive around the nest. When they bring food to the nestlings, they fly to within 10 yds of the nest and then walk the rest of the way. Young thrashers leave the nest when about 11 to 14 days old and are fed by their parents for at least another 7 days (Reynolds *et al.* 1999).

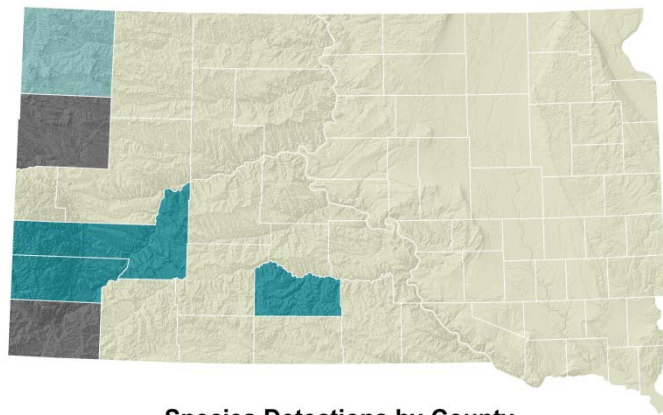
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	2	2
Probable	1	0	1
Possible	2	6	8
Observed	0	0	0
Total	3 (0.7%)	8	11

Sage Thrasher



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

NORTHERN MOCKINGBIRD

Mimus polyglottos

Northern Mockingbirds are famous for their vocal mimicry. A male's repertoire often contains more than 150 distinct song types. Songs are acquired through imitating the calls, songs and sounds of other mockingbirds, other bird species, non-avian animal species, and mechanical sounds.

DISTRIBUTION AND STATUS

Found throughout the lower 48 of the U.S. and barely into southeastern Canada, the Northern Mockingbird is a year-round resident in the southern two-thirds of this range. In South Dakota, it is found scattered throughout the state, more often west of, or along the Missouri River. Historically, the mockingbird was most common in Fall River County (most first Atlas reports were from the extreme southwest corner of the state) and the southeast (Findley 1949, Rosche 1982). It still is more likely to be found in these areas and is rare and unpredictable elsewhere. During the second Atlas, observers found multiple pairs in red cedar thickets that have invaded the lower Missouri River area in Gregory, Charles Mix, and Bon Homme counties. This concentration has not been noted before. Mockingbirds are almost never reported in South Dakota during the winter and are considered a migrant rather than a permanent resident.

HABITAT

Mockingbirds are characteristic of dense brush and shrubbery in thickets,

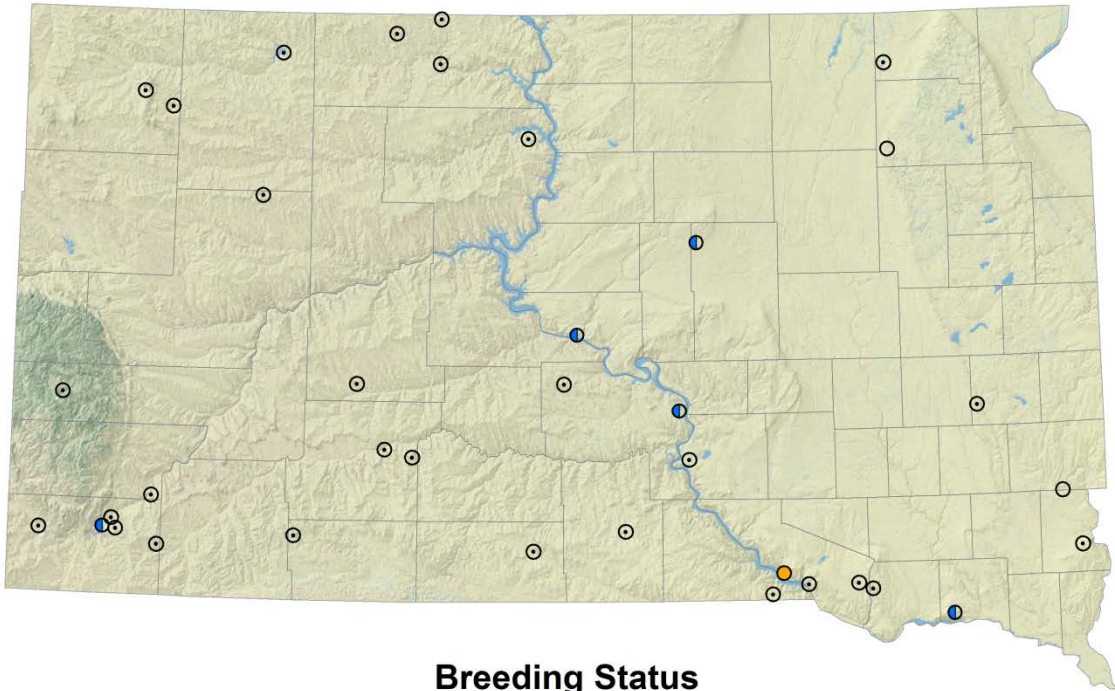
woodlands, and residential areas. Farther west, they can utilize habitat that is more open and arid. Second Atlas observers reported these birds in many habitats: upland woodlands and shelterbelts (44%), grasslands (17%), lowland woodlands and woody draws (12%), shrublands (10%), residential areas (10%), and open areas with scattered trees (5%).

BREEDING

The Northern Mockingbird in South Dakota nests in June and July. The only second Atlas confirmation of breeding was of a pair repeatedly carrying food into a red cedar thicket on July 14, 2014. Nests are built in shrubs and trees, generally between 3 and 10 feet high. The female builds the open cup nest with twigs and lines it with finer plant materials. She incubates an average of three bluish-green eggs for 12 to 13 days. Both parents feed the nestlings a mix of animal prey and fruit. Nestlings depart the nest on the 12th day after hatching and can fly eight days later (Farnsworth *et al.* 2011).

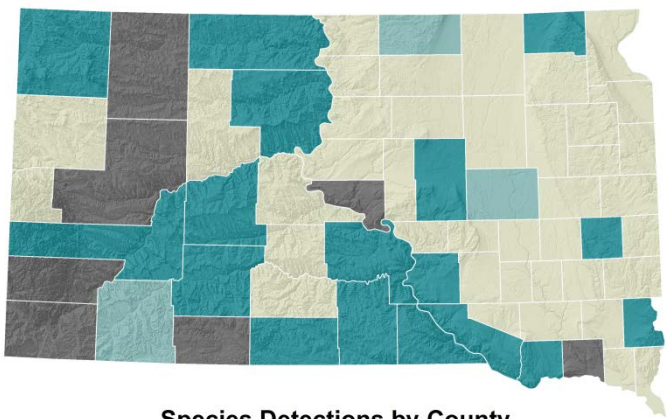
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	0	1
Probable	3	2	5
Possible	16	13	29
Observed	0	2	2
Total	20 (5%)	17	37

Northern Mockingbird



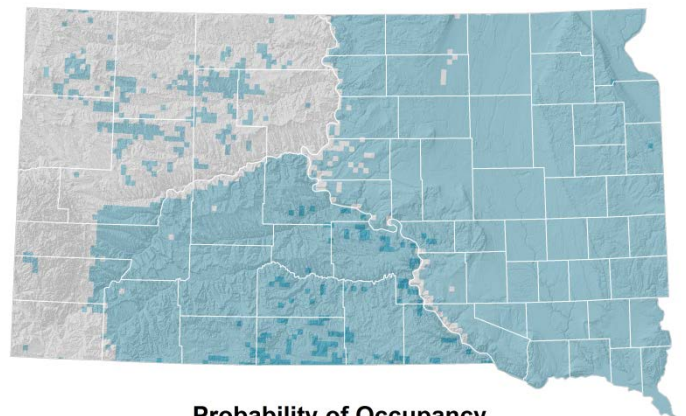
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

EUROPEAN STARLING

Sturnus vulgaris

The entire North American population of European Starlings, now numbering more than 200 million birds, is descended from about 100 birds released in New York City's Central Park in the 1890s. Starlings are famous mimics. As part of their sizeable repertoire of sounds, European Starlings mimic other bird species, other animals, human speech, and inanimate sounds.

DISTRIBUTION AND STATUS

The European Starling occurs throughout all of the United States and Canada, from the Arctic tree line and east-central Alaska south to northern Mexico. In South Dakota, starlings are common in all 66 counties. Breeding Bird Survey data show a slight negative population trend in South Dakota (Sauer *et al.* 2014). However, starlings were found on more survey blocks during the second Atlas (83%) compared to the first Atlas (69% of random blocks).

HABITAT

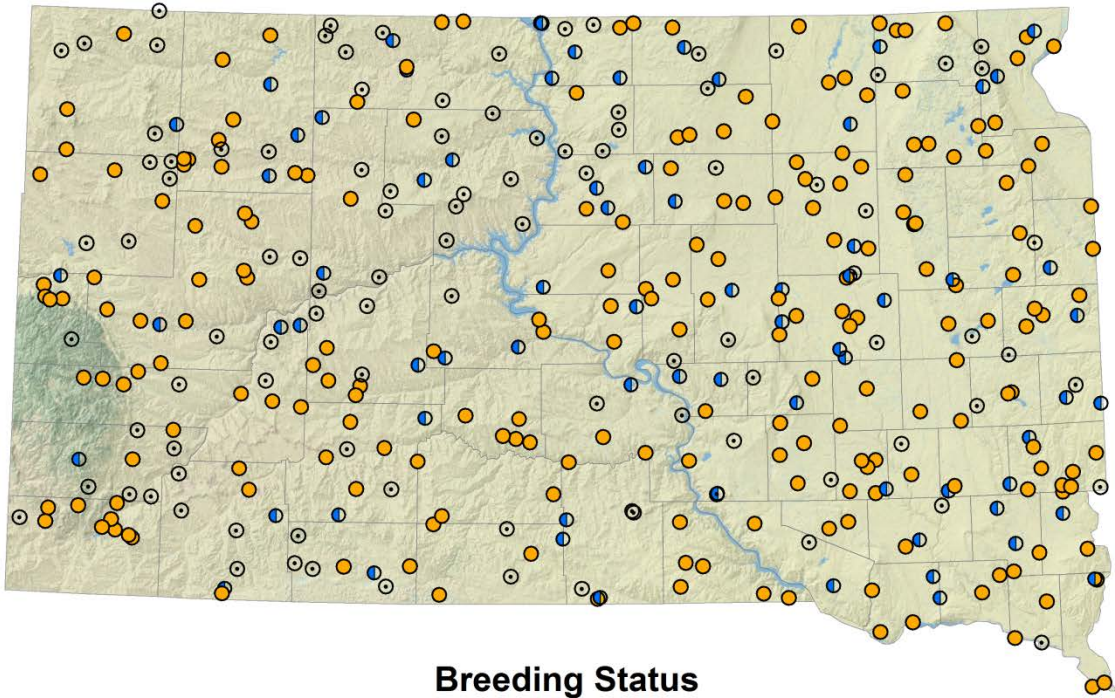
Numbers of European Starlings are higher in urban areas and around farms and ranches, but they inhabit any areas that provide nest sites and nearby open grassy areas in which to forage. Starlings were reported during the second Atlas in woodlots and shelterbelts (53% of reports), residential areas and roadsides (25%), grasslands (12%), open areas with scattered trees (5%), cropland (2%), and wetlands (2%).

BREEDING BIOLOGY

European Starlings attempt to raise two broods a year. In South Dakota, nesting occurs from April to mid-July. Cavity-nesters, Starlings successfully outcompete small native cavity-nesting species in areas with limited numbers of cavities. Second Atlas nest sites included cavities in cottonwoods (5 nests), buildings (4), dead trees (3), elm (1), aspen (1), a nest box (1), a mailbox (1), and a fence pipe (1). The nest, begun by the male and completed by the female, is a loose mass of plant materials, human trash, and feathers piled on the cavity bottom and topped with finer materials. Starlings often lay eggs in each other's nests, removing the host's eggs before laying their own. The final clutch usually is 4 to 6 eggs and is incubated by both adults. Both parents feed insects to the nestlings. When chicks leave the nest at 21 to 22 days, they are almost fully feathered and capable of extended flight. Parents continue to feed the fledglings for at least a day or two before starting the next nest (Cabe 1993).

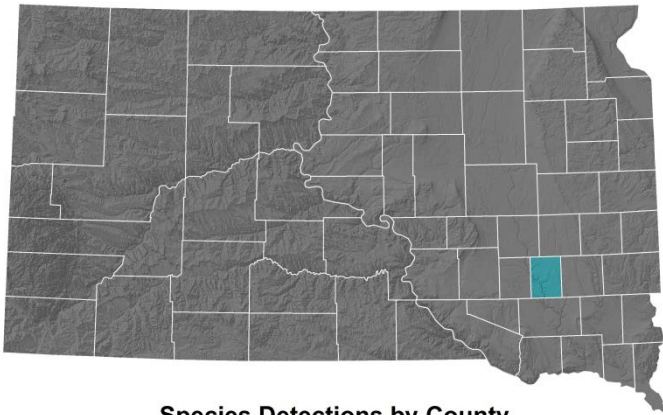
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	189	29	218
Probable	72	2	74
Possible	100	2	102
Observed	0	0	0
Total	361 (83%)	33	394

European Starling



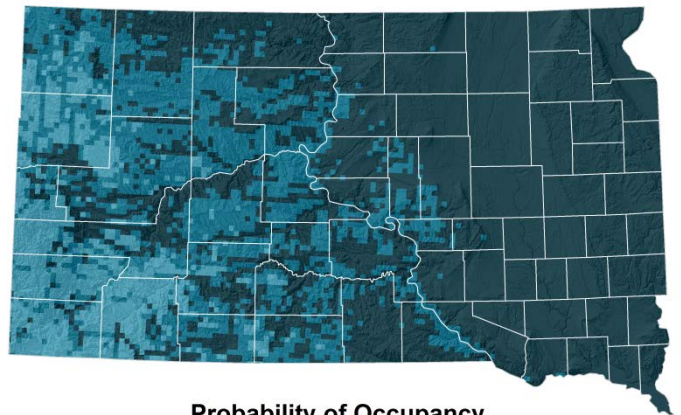
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

SPRAGUE'S PIPIT

Anthus spragueii

Sprague's Pipit is best known for prolonged male flight displays. During the display, the male circles at high altitude over his territory, constantly flapping, only stopping to hover while singing. Displays often last for over 30 minutes before the male descends to the ground, but displays lasting at least 3 hours have been documented.

DISTRIBUTION AND STATUS

South Dakota is at the southern edge of the Sprague's Pipit breeding range, which encompasses the north-central prairie region of the U.S. (the Dakotas and eastern Montana) and the Prairie Provinces of Canada. In South Dakota, this pipit breeds primarily in the counties bordering the North Dakota border, with a small breeding population west of Pierre in Stanley County. Historically, Sprague's Pipit may have bred as far south as the Badlands in Pennington County (Visher 1909). Both Breeding Bird Atlases detected pipits in the Badlands but these likely were non-breeding birds. Observers during the second Atlas made a special effort to locate Sprague's Pipit, accounting for the increase in detections compared to the first Atlas. This is a State Species of Greatest Conservation Need because of declining populations and continual loss of native prairie.

HABITAT

Sprague's Pipit breed in grazed native mixed-grass prairie that is in fair to excellent range condition. The ideal nest site has vegetation that is 6" to 12" tall, less than 15% bare ground, dry standing

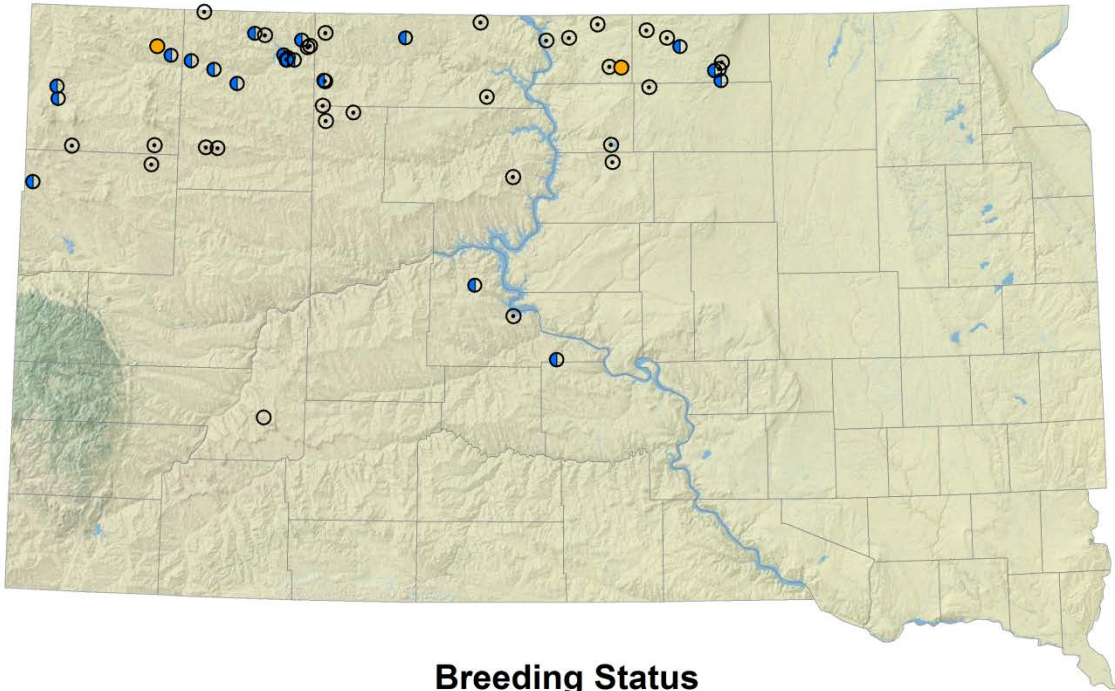
vegetation from the previous year's growth, and few shrubs. During the second Atlas, 86% of Sprague's Pipit observations were in pasture, 13% in undisturbed grassland, and 1 bird in a prairie dog town.

BREEDING BIOLOGY

Based on 4 breeding confirmations (nest with eggs May 26, 1907; fledglings Aug. 10, 1996; carrying food and feeding fledglings June 2010), the breeding season in South Dakota most likely is mid-May to August. The cup-shaped nest is built on the ground, in a slight depression or inside a clump of grass. It is composed of woven dry grass. Often, adjacent long grasses are interwoven over the nest to form a dome with a side entrance. When arriving, the adult does not fly directly to the nest but lands some distance away and walks to the nest along a runway through the grass. Females lay a clutch of 4 eggs and incubation lasts 12 to 15 days. Nestlings leave the nest after 10 to 14 days, before they are able to fly well. Young pipits typically stay within 100 yds of the nest during the first week post-fledging but gradually move farther away as they become better fliers (Davis *et al.* 2014).

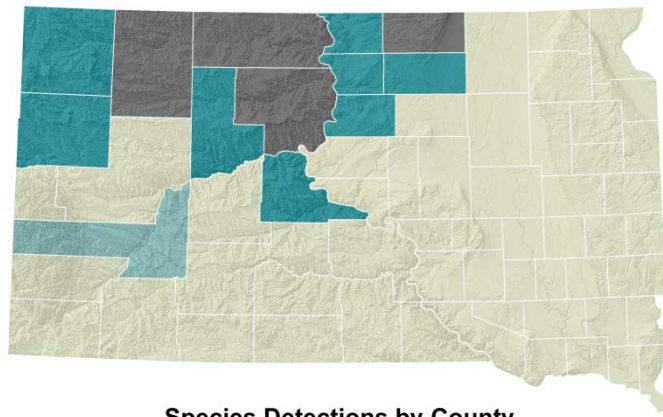
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	1	2
Probable	5	16	21
Possible	10	20	30
Observed	0	1	1
Total	16 (4%)	38	54

Sprague's Pipit



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

CEDAR WAXWING

Bombycilla cedrorum

Cedar Waxwings feed almost entirely on fruits. The fruit seeds pass intact through the digestive system, making the waxwing an important seed disperser. Especially in the early summer when few fruits are available, waxwings often feed on aerial insects.

DISTRIBUTION AND STATUS

Cedar Waxwings breed across the northern U.S. and southern Canada. The species is found throughout South Dakota. Over much of North America, Cedar Waxwing populations have increased (Sauer *et al.* 2014). This trend also appears to be the case in South Dakota. During the first Atlas, waxwings were detected on just 12% of random blocks and they were considered 'uncommon and scattered'. Twenty years later, during the second Atlas, waxwings were more common, detected on 36% of atlas blocks.

HABITAT

The South Dakota breeding habitat includes open woodlands, orchards, gardens, and residential areas with fruiting plants. During the second Atlas, observers reported waxwings in all types of woodlands (51% in deciduous, 29% in mixed conifer-deciduous, and 8% in conifers) and in residential (4%) and shrubby (3%) areas.

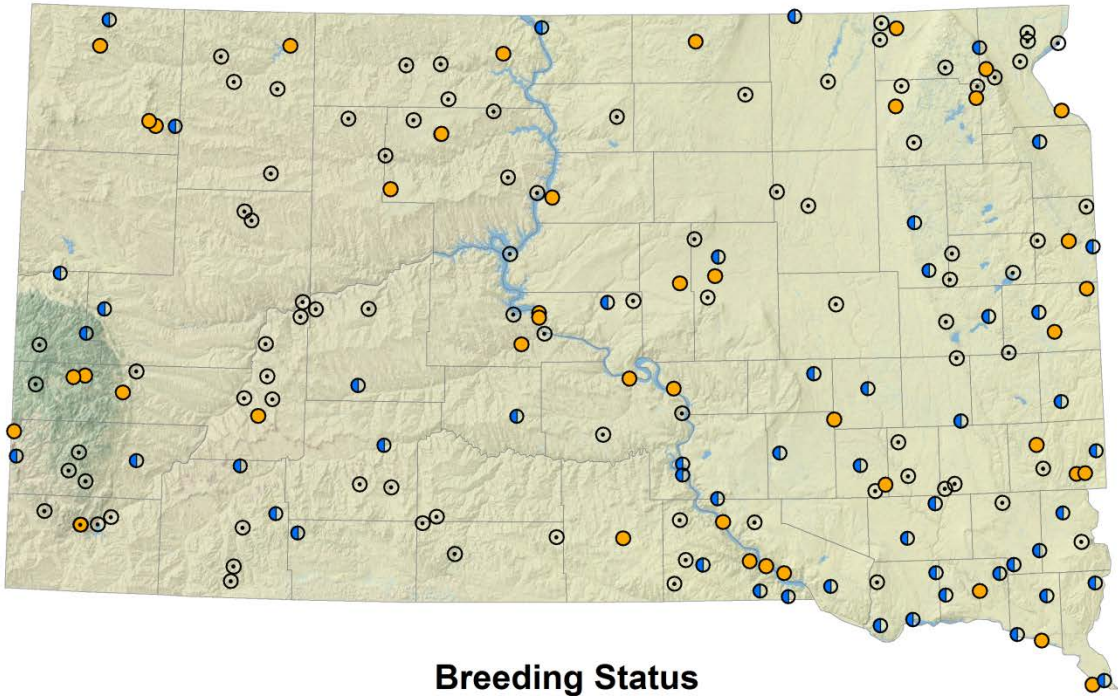
BREEDING BIOLOGY

This species is one of the latest-nesting songbirds in North America, probably because fruit that they feed on are more

abundant later in summer. Local nesting depends on fruiting plants. During the second Atlas, only 2 of 43 confirmed observations occurred in May (early date-May 19); the rest were in June, July, and early August (last date-August 12). Waxwings are not territorial and groups will nest in loose clusters. The female does most nest construction. The nest is located in a tree fork or on a horizontal branch. Six second Atlas nests were 8 to 15 feet high in deciduous trees (box elder, black locust, ornamental, ash) or conifers (pine, juniper). The large bulky cup nest is made of a variety of plant materials, as well as human refuse. Second Atlas observers reported cottonwood 'cotton' and orange baling twine as nest materials. Only the female incubates the 2 to 6 eggs during the 12-day incubation period. Both parents regurgitate food and place it in the nestlings' mouths, insects at first and after about 2 days, fruit. Nestlings leave the nest after 14 to 18 days and are fed by the adults for another 6 to 10 days (Witmer *et al.* 2014).

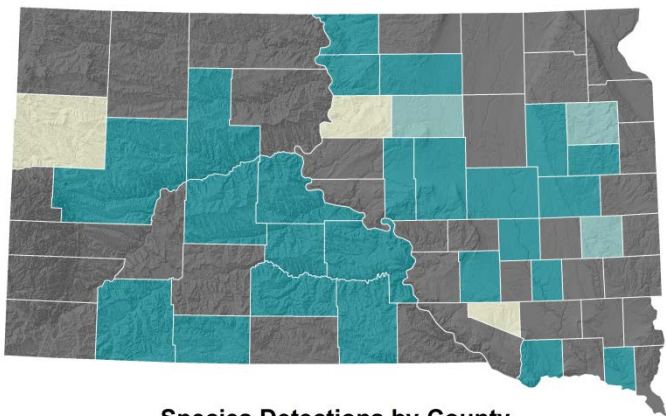
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	19	24	43
Probable	50	4	54
Possible	86	3	89
Observed	0	0	0
Total	155 (36%)	31	186

Cedar Waxwing



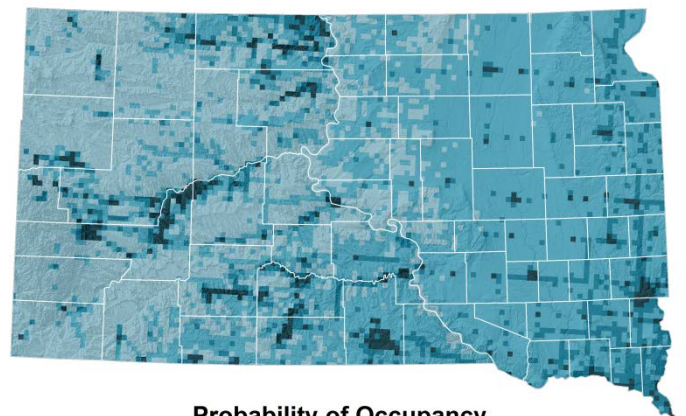
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



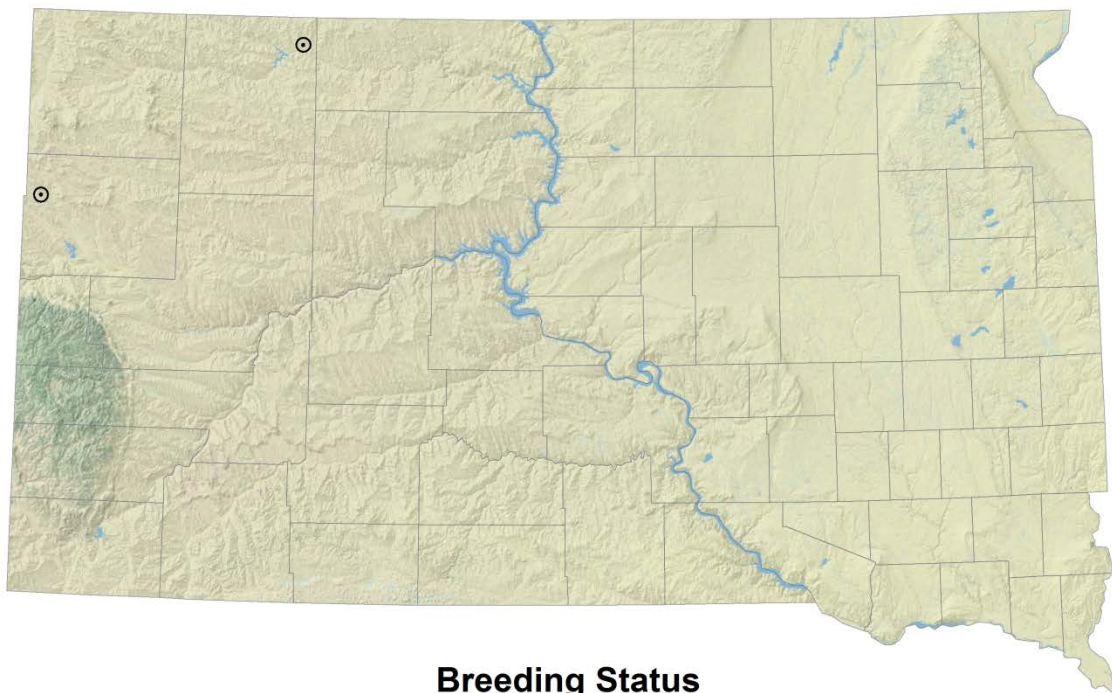
Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

MCCOWN'S LONGSPUR

Rhynchophanes mccownii

Limited to the drier regions of the central and northern Great Plains, the McCown's Longspur breeds in dry shortgrass prairies with considerable amounts of bare ground (Roche 1982, With 2010). Historically, it bred in western South Dakota as far east as the Missouri River (Tallman *et al.* 2002). The last known nest was in 1910 in Harding County. Territorial behavior was observed during the first Atlas in northwest Harding County (Peterson 1995). Currently, McCown's Longspur is an annual, but uncommon, migrant in western Butte and Harding counties. During the second Atlas, a male first discovered in May 2011 on a prairie dog town in the Grand River National Grassland persisted into early June. A male also was found in western Butte County in early July 2011.



- Confirmed breeding
- ⊙ Possibly breeding
- ◐ Probably breeding
- Observed; not breeding at location

CHESTNUT-COLLARED LONGSPUR

Calcarius ornatus

The male Chestnut-collared Longspur is one of the most colorful birds of the prairie. He performs Aerial Song Displays over his territory—flying in undulating circles up to 20', then spreading his tail and fluttering down, singing all the while.

DISTRIBUTION AND STATUS

The Chestnut-collared Longspur breeds in the prairies of the northern Great Plains. Highest breeding densities are in southern Alberta and Saskatchewan, northern Montana, and the western Dakotas. In South Dakota, longspurs are common in the northwestern quarter of the state and on the Missouri Coteau along the east side of the Missouri River. They are uncommon to rare elsewhere, and are no longer in the southeast or James River Valley. Abundance and distribution were similar between the first and second Atlases. Chestnut-collared Longspur populations are declining steeply, both in South Dakota and throughout the breeding range. For this reason, this species is a state Species of Greatest Conservation Need in South Dakota.

HABITAT

Chestnut-collared Longspurs breed in the shorter grass areas of mixed-grass prairie. In South Dakota they prefer native prairie over non-native grasslands, and avoid thick, dense grasslands or cropland. (Bakker 2005). They prefer to nest in moderately grazed native pastures with little to no litter and are most abundant in landscapes dominated by grasslands

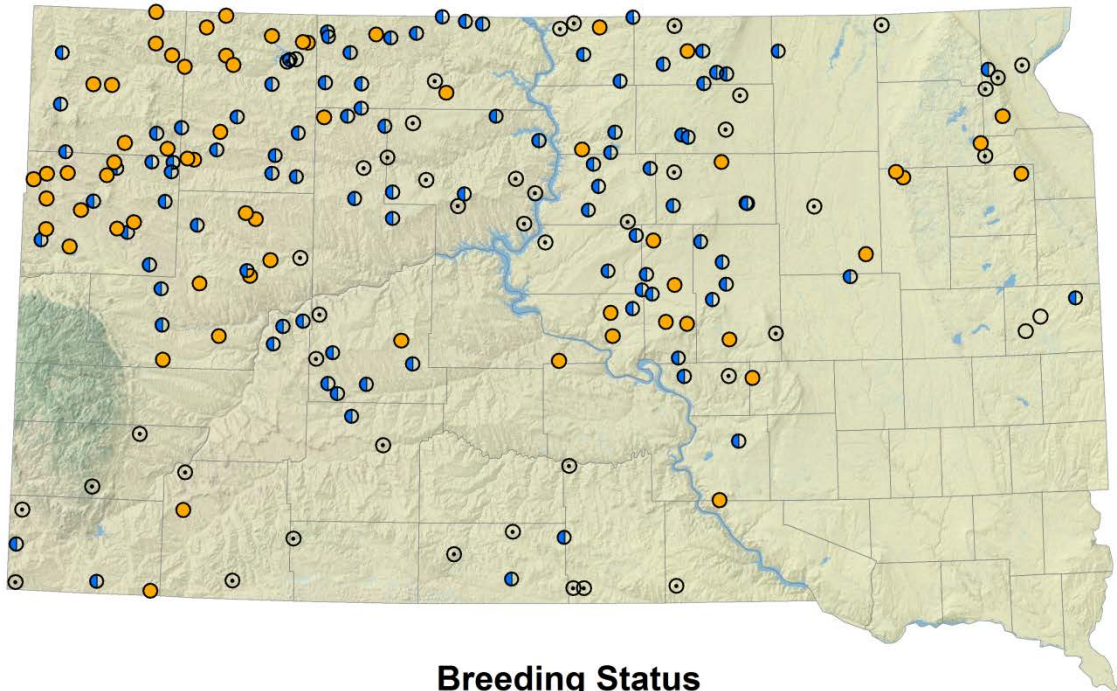
(Berman 2007). Second Atlas nests were in pastures (8 nests), undisturbed grasslands or Conservation Reserve Program fields (4 nests), and a prairie dog town (1 nest).

BREEDING BIOLOGY

Nest dates during the second Atlas ranged from May 15 to July 5, with one observation of a longspur carrying nesting material on April 23. The nest is built in a shallow depression on the ground, often at the base of a grass clump or weed, or next to an object such as a rock or cow pie. The nest is cup-shaped and usually made entirely of grass. Clutch size typically is 3 to 5 eggs. During the second Atlas, 1 nest had 2 eggs, 3 nests had 4 eggs, and 3 nests had 5 eggs. Eggs hatch after 10 to 13 days. Number of nestlings in 7 second Atlas nests ranged from 2 to 6. Nestlings cannot fly when they leave the nest at about 10 days, but are capable of short, labored flights 1 to 2 days later. If the female begins a second nest, the male provides most of the fledgling care. Older fledglings follow the adults and noisily beg for food. They continue to be fed by the parents for about 14 days (Bleho *et al.* 2015).

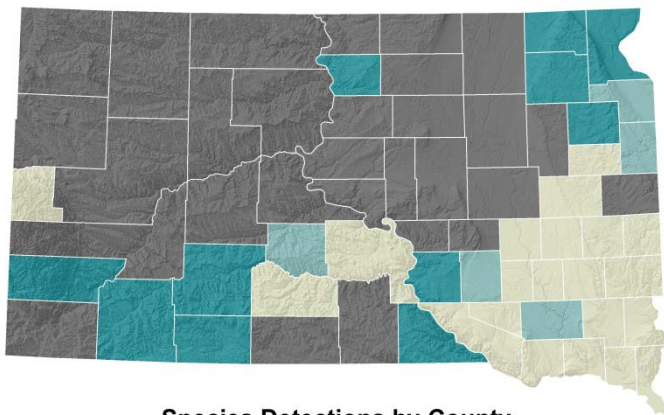
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	40	23	63
Probable	86	8	94
Possible	40	4	44
Observed	2	0	2
Total	168 (39%)	35	203

Chestnut-collared Longspur



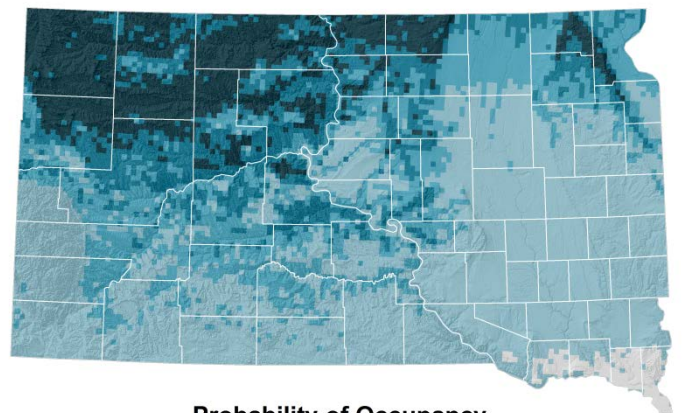
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

OVENBIRD

Seiurus aurocapilla

Ovenbirds are so named because they build a nest that resembles a dome-shaped oven. They are somewhat unusual for a warbler because they spend most of their time on the ground.

habitat requirements include a mature tree stand with few shrubs or small trees, an open forest floor, and a thick leaf layer.

DISTRIBUTION AND STATUS

In the U.S., the Ovenbird's breeding range covers the northeast, Appalachia, the Midwestern states, and the northern prairie region. Ovenbirds also occur through the southern half of Canada. In South Dakota, Ovenbirds are uncommon and limited to large blocks of mature timber, such as those found in the Black Hills, buttes of Harding County, the Pine Ridge escarpment, the slope of the Prairie Coteau, and along major river systems. Ovenbird populations are increasing in much of its range but decreasing around the periphery, including in South Dakota. Breeding Bird Survey data shows that South Dakota's Ovenbird population is decreasing significantly both over the long-term (4.2% per year since 1967) and short-term (5.0% per year since 2002) (Sauer *et al.* 2014).

BREEDING BIOLOGY

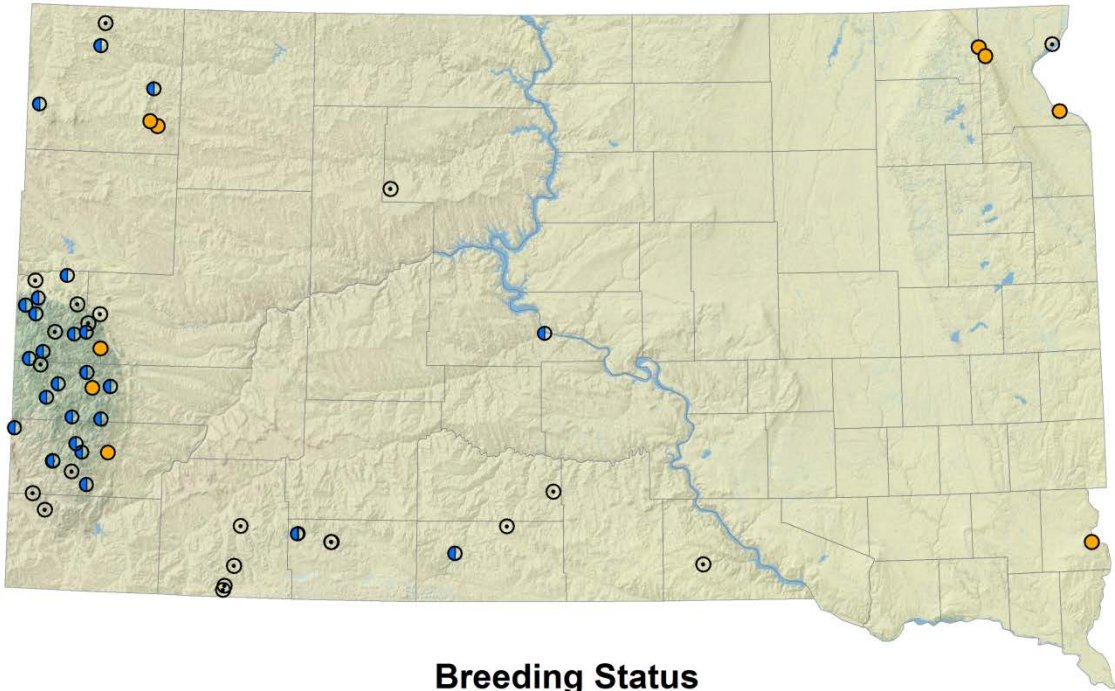
The nesting season in South Dakota is from early June to mid-July. The well-concealed nest is built of leaves on the ground. It is domed, with a side entrance concealed from above. Most work, including a final lining of deer or horse hair, is conducted inside, but dry leaves and small sticks are placed on top from the outside. Only the female incubates the 3 to 6 eggs during the 12 day incubation period and broods the young nestlings. Both parents feed nestlings. After 8 days, chicks are able to walk or hop from the nest. They leave one at a time, with several hours lapsing between the first and last. The first to leave is led away by one adult; as the others depart, the brood is split between the parents. Until they can fly at 11 to 20 days after nest-leaving, chicks sit quietly on the ground, blending in with the leaves. They are fed by their parents until 30 days after leaving the nest (Porneluzi *et al.* 2011).

HABITAT

A forest bird, Ovenbird occurs in mature stands of deciduous or mixed deciduous-conifer forests. In the Black Hills, this species is more abundant in unharvested than in harvested timber stands (Dykstra 1996). Ovenbird observations during the second Atlas were in mixed deciduous-conifer forests (50%), deciduous forests (34%), and ponderosa pine forests (15%). Nesting

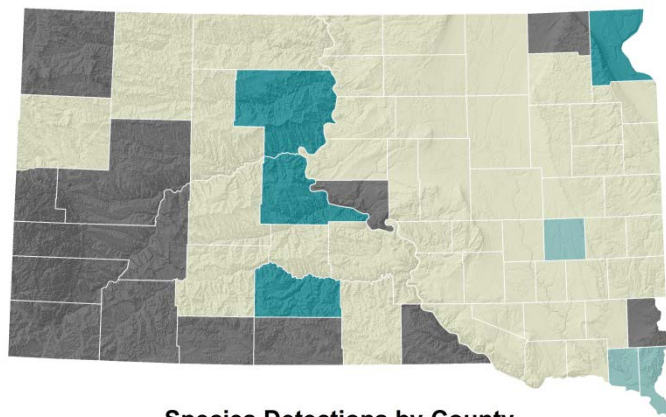
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	4	5	9
Probable	16	10	26
Possible	14	8	22
Observed	0	0	0
Total	34 (8%)	23	57

Ovenbird



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



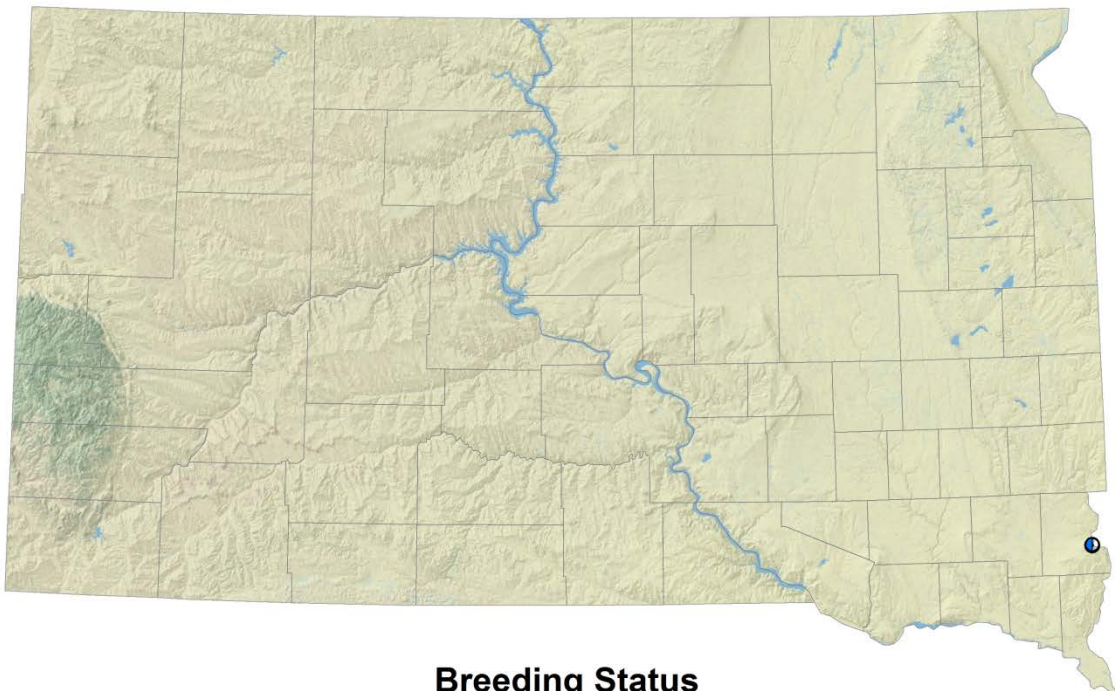
Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

BLUE-WINGED WARBLER

Vermivora cyanoptera

The Blue-winged Warbler breeds in dense second-growth forests of the northeastern United States and southern Ontario (Gill *et al.* 2001). It has never been confirmed breeding in South Dakota. For several years, especially since 2000, males have been singing in Newton Hills State Park, Lincoln County. Multiple males were singing at the same location in 2011 and 2012 during the second atlas.



- Breeding Status**
- Confirmed breeding
 - ⊙ Possibly breeding
 - ◐ Probably breeding
 - Observed; not breeding at location

GOLDEN-WINGED WARBLER

Vermivora chrysoptera

Throughout its range, Golden-winged Warblers often hybridize with Blue-winged Warblers and, less commonly, other warbler species. These matings produce viable hybrid offspring. The mixture of plumages causes much confusion over species identification for observers.

DISTRIBUTION AND STATUS

The Golden-winged Warbler occurs in the northeastern United States, northern Midwest States, and extreme southern Ontario west through Saskatchewan. The highest numbers of breeders are in west-central Minnesota and northwest Wisconsin. In South Dakota, the Golden-winged Warbler is an accidental breeder in the northeast Black Hills, specifically in a small area along Galena Road in western Lawrence County. The first confirmed breeding record for the state was of a female feeding immatures in late July 2001. Golden-winged Warbler was not confirmed breeding during either Breeding Bird Atlas, but a singing male was observed along Galena Road in early July 2012.

HABITAT

Golden-winged Warblers nest in areas with dense forbs and shrubs, often near forest edges. Black Hills warbler observations have been in areas with thickets of mixed aspen and birch

saplings, pasture, and nearby open ponderosa pine forest.

BREEDING BIOLOGY

All Black Hills breeding season records have occurred in June and July. Golden-winged Warblers usually place their nests on the ground, at the base of a leafy plant that conceals the nest with its leaves. The female uses leaves for the foundation of the nest, then weaves coarse strips of plant materials together, and lines the nest with finer plant fibers, especially those that are red. The 3 to 6 eggs are light pink with orange or lilac markings at the large end. Only the female incubates during the 10 to 11 day incubation period. Both parents feed the nestlings. When the young warblers leave the nest, parents often divide the brood and move off in different directions. Parents may feed the young for another 30 days (Confer *et al.* 2011).

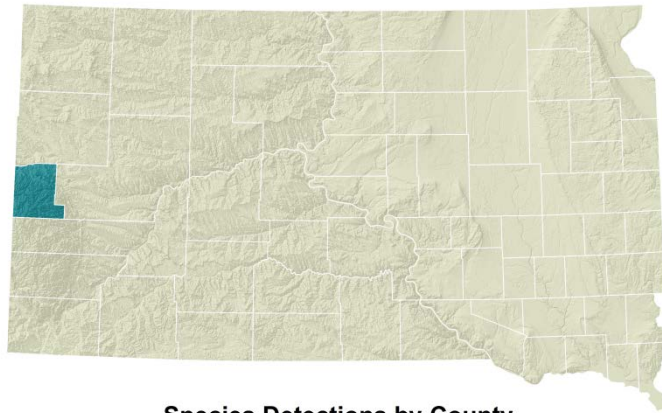
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	0	0
Probable	0	0	0
Possible	0	1	1
Observed	0	0	0
Total	0 (0%)	1	1

Golden-winged Warbler



Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- ◐ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

BLACK-AND-WHITE WARBLER

Mniotilta varia

A striking and unusual bird, the Black-and-white Warbler is the only member of the genus *Mniotilta*, which means “moss-plucking.” It has the unusual habit of creeping along tree trunks and limbs like a nuthatch, methodically probing bark crevasses for insects.

DISTRIBUTION AND STATUS

Black-and-White Warblers breed in the forests of Canada and the eastern United States. South Dakota’s breeding warblers are a disjunct population; the nearest breeders, which also are disjunct, are in northwest North Dakota, and western Iowa. In South Dakota, these warblers primarily breed in the Black Hills and the Pine Ridge Escarpment, where they are limited to deciduous draws surrounded by ponderosa pine. These include Yellow Bear and Crazy Horse canyons on the Pine Ridge Escarpment, Spearfish and Vanocker canyons and Fort Meade Recreation Area in the northern Hills, and Wind Cave National Park and Hot Brook Canyon in the southern Hills. The southern Hills observations are new – none were reported there during the first Atlas. In contrast, Little Moreau Recreation Area in Dewey County no longer has suitable habitat, a place that has had summer sightings for years, including during the first Atlas. The second Atlas also found that this species continues to be a rare summer resident on the Prairie Coteau in the northeast.

HABITAT

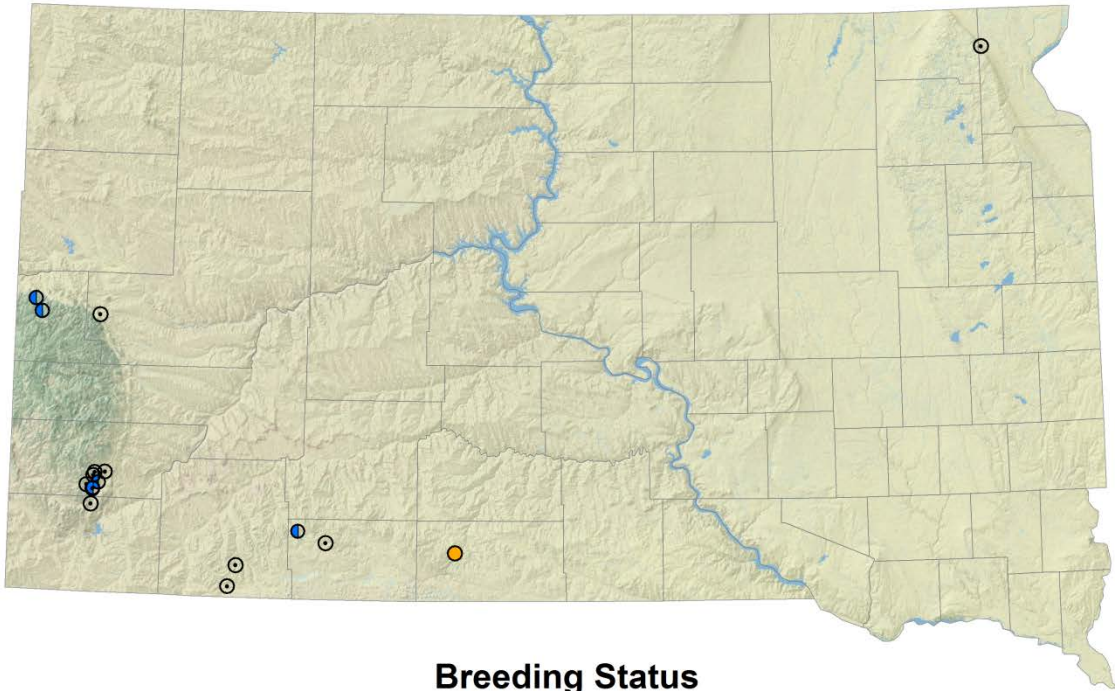
In South Dakota, this species primarily inhabits mature and second-growth deciduous draws, consisting of bur oak, green ash, box elder, and ironwood, surrounded by ponderosa pine forests (58% of Atlas 2 reports). Warblers away from the southwest are in mature deciduous forests.

BREEDING BIOLOGY

The South Dakota breeding season is June to mid-July. Nests are concealed on the ground at the base of a tree, stump or fallen log, occasionally in cavities on top of stumps. Females construct the cup-shaped nest of dry leaves and grasses and lay 4 - 6 whitish eggs. Nestlings hatch after 10 – 12 days. Both parents feed the young and defend the nest. One nest defense is the “rodent run” in which the bird assumes a hunched posture and drags its tail in an attempt to lure a predator away. Chicks leave the nest after 8 to 12 days and remain on the territory for 2 weeks (Kricher 2014).

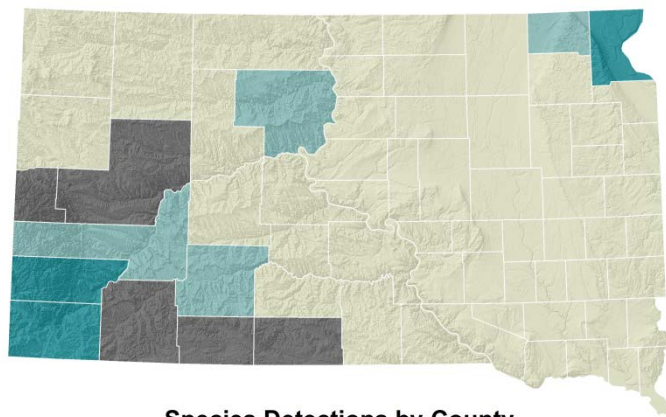
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	0	1
Probable	3	3	6
Possible	4	7	11
Observed	0	0	0
Total	8 (2%)	10	18

Black-and-white Warbler



Breeding Status

- Confirmed breeding
- Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

PROTHONOTARY WARBLER

Protonotaria citrea

Sighting a Prothonotary Warbler in South Dakota is very exciting, both because of its rarity in the state and because of its exquisite bright yellow plumage and beautiful song.

DISTRIBUTION AND STATUS

The Prothonotary Warbler is a southeastern U.S. swamp dweller, with populations extending northwest up the Mississippi and Missouri River drainages. The nest found during the second Atlas was along the Big Sioux River in Union County (Mills and Chapman 2009). This nest is the first known South Dakota breeding record. Early ornithologists reported that the species nested in Union County but gave no details of actual nests (Stephens and Felton 1955, Over and Thoms 1965). During the second Atlas, the same pair (presumably) nested at the same spot in 2009 and 2010. In 2011, floods washed away the nest cavity and the species was not present at the site again.

HABITAT

This warbler breeds in bottomland mature forests and other forested wetlands (i.e., swamps). The bottomland forest habitat around the second Atlas nest consisted of large cottonwood, box elder, and silver maple trees with an understory of weeds.

BREEDING BIOLOGY

Unusual among warblers, this species nests in cavities. Usually Prothonotaries build their nest in a tree cavity leaning out over water. However, the South Dakota nest was in a 3' long uncapped pipe, approximately 4" in diameter, angling up out of the ground about 15 yards from the Big Sioux River (photo in Mills and Chapman 2009). The pair built a cup nest made of fine plant materials in the top of the pipe. The nest was discovered June 10, 2009 in the late nestling stage. Prothonotaries can lay 3 to 7 white reddish-spotted eggs. The South Dakota nest fledged three young around June 16. The typical nestling stage is 10 to 11 days, so these nestlings hatched around June 6. Generally the female incubates the eggs and broods the nestlings. Both parents feed the young, which achieve independence around 35 days after leaving the nest (Petit 1999). The pair was present again in 2010 but the nest was not monitored and the outcome is unknown.

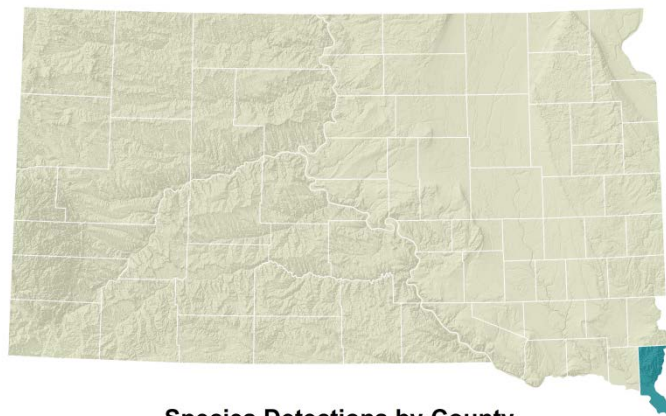
Number of Records during SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	1	1
Probable	0	0	0
Possible	0	0	0
Observed	0	0	0
Total	0 (0%)	1	1

Prothonotary Warbler



Breeding Status

- Confirmed breeding
- Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

VIRGINIA'S WARBLER

Oreothlypis virginiae

The Virginia's Warbler was named after the wife of Dr. W. W. Anderson, the man who first discovered and collected the species in New Mexico in 1858.

DISTRIBUTION AND STATUS

The Virginia's Warbler breeds in many scattered populations throughout the southwestern United States, especially in Nevada, Utah, Arizona, New Mexico and Colorado. In South Dakota, most breeding Virginia's Warblers occur in the dry canyons of extreme western Custer County, within 15 miles of the Wyoming border. This breeding population of Virginia's Warbler was discovered in 1997 but probably occurred there previously in this little known part of the state (Palmer 1998). This is a disjunct population. The next nearest known breeding Virginia's Warbler, also a disjunct population, is near Casper, WY (Faulkner 2010).

HABITAT

In South Dakota, Virginia's Warblers breed in steep-sloped, pine-juniper shrublands (Swanson *et al.* 2000). The breeding habitat has a relatively dense cover of mountain mahogany and skunkbrush sumac, interspersed with junipers and medium to large-sized ponderosa pine.

BREEDING BIOLOGY

Males start singing on territories in late May and early June in South Dakota, and some still are singing in mid-July. The nest, built by the female, is a well-hidden cup on the ground. She prefers sites that are on a slope, building in a small hole in the ground at the base of a shrub, tree, tuft of grass, or rock. The base of the nest is made of coarse dead plant stems and grass, then lined with fine grasses and hair. The female lays an average of 4 off-white eggs and incubates the clutch for 11 to 14 days. Chicks are fed by both parents and leave the nest when 10 to 14 days old. For the next 14 days, the family group moves well beyond the original territory boundaries until the young warblers are able to survive on their own (Olson and Martin 1999).

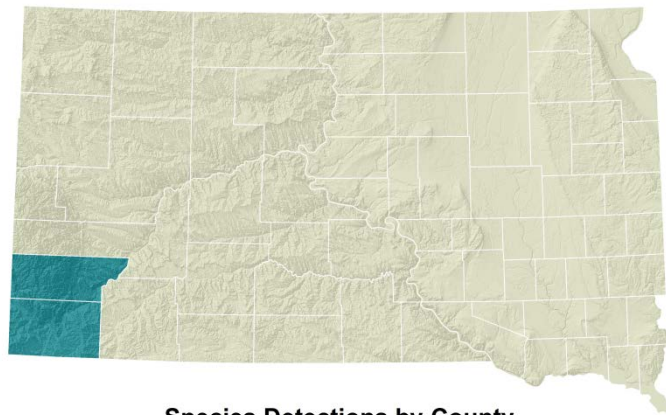
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	0	1
Probable	0	11	11
Possible	1	4	5
Observed	0	0	0
Total	2 (0.5%)	15	17

Virginia's Warbler



Breeding Status

- Confirmed breeding
- ◐ Probably breeding
- ◑ Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

MACGILLIVRAY'S WARBLER

Geothlypis tolmiei

A secretive warbler of dense thickets, the MacGillivray's Warbler is best located by its hard chip note or song, described as *tree tree tree tree sweet sweet!* John James Audubon named this species after his friend, William MacGillivray, a Scottish naturalist who never saw America.

DISTRIBUTION AND STATUS

The main breeding range of the MacGillivray's Warbler extends from the Rocky Mountains west to the Pacific Ocean. South Dakota's breeding MacGillivray's Warblers form the eastern-most population and are disjunct from the nearest breeders in the Bighorn and Snowy mountain ranges of Wyoming. In South Dakota, this warbler is an uncommon and local breeder in the Black Hills. It is more common in Lawrence County in the northern Hills. MacGillivray's Warbler distribution did not change between the first and second Atlases.

HABITAT

In the Black Hills, MacGillivray's Warblers breed in streamside thickets of willow, chokecherry, and other dense deciduous growth, as well as dense growth in canyons and gulches (Pettingill and Whitney 1965). In the central Hills, they are most abundant in seedling and sapling thickets of aspen

and birch (Mills *et al.* 2000). Second Atlas observations were in mixed deciduous-conifer stands (56% of reports), deciduous stands (37%), and wet meadows (10%).

BREEDING BIOLOGY

The breeding season in the Black Hills is from late May to July. MacGillivray's Warblers nest in dense shrubs, usually 2' to 3' above ground. The nest is a loosely-woven cup made of weeds, dry grass, and bark strips, and lined with finer grasses, rootlets and hair. The female lays a clutch of 4 creamy white eggs, which she incubates for 11 to 13 days. Both parents feed insects to the nestlings. The young warblers leave the nest when 8 or 9 days old (Pitocchelli 2013).

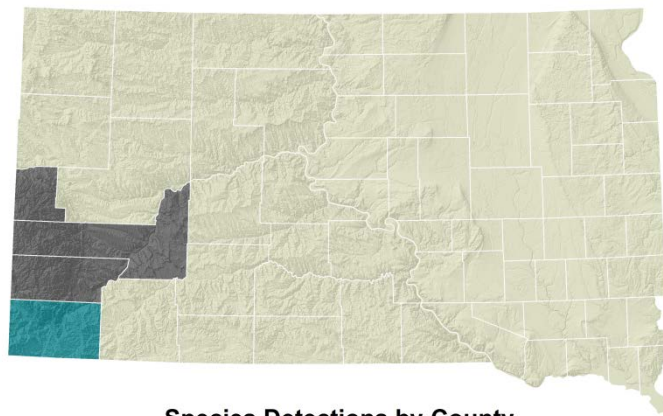
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	4	5
Probable	6	3	9
Possible	2	9	11
Observed	0	0	0
Total	9 (2%)	16	25

MacGillivray's Warbler



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

COMMON YELLOWTHROAT

Geothlypis trichas

The Common Yellowthroat is aptly named – the male has a bright yellow throat and his ‘wich-ety wich-ety’ song is a common sound near water. It was one of the first bird species to be described in the New World, back in 1766.

DISTRIBUTION AND STATUS

A widespread species, Common Yellowthroat breeds throughout Canada and the U.S. except desert areas. It is a common breeder throughout South Dakota in all 66 counties. It is less abundant in areas with fewer brushy marshes, such as the extreme northwest and areas around the Badlands. Yellowthroats also were widespread and common during the first Atlas and there appears to have been no change in distribution or abundance since that time. The Breeding Bird Survey shows a stable population in South Dakota between 1966 and 2012, although there has been a negative, but nonsignificant, population trend between 2002 and 2012 (Sauer *et al.* 2014).

HABITAT

Common Yellowthroats inhabit densely vegetated areas, typically near wetlands or riparian areas, such as streamside thickets, reedbeds, thick prairie, and brushy woodland edges. Among different types of grass habitat, this species in South Dakota reaches its highest densities in old CRP fields, versus grasslands or newly-planted CRP fields (Bakker *et al.* 2006). During the second Atlas, observers found

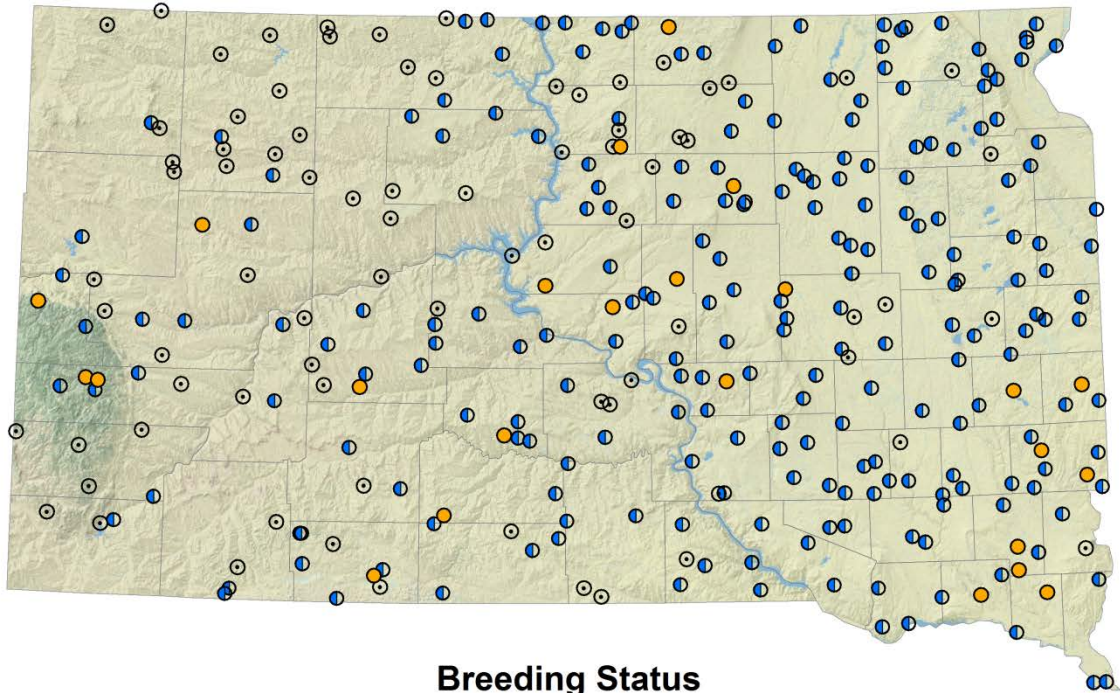
Yellowthroats in marshes and wet meadows (50% of all reports), upland woodland (19%), riparian woodland (12%), and grasslands (primarily CRP fields or undisturbed grasslands) (11%).

BREEDING BIOLOGY

Birds arrive in mid- to late May and nesting commences in June and July. Some pairs may raise two broods. The female chooses a nest site, typically on or near (within 4”) the ground. She begins building the loose cup nest with a platform of a few grasses and leaves and gradually weaves the outer cup of coarse plant materials into place. She then adds lining and sometimes, a roof. Clutch size averages 4 eggs but can be from 1 to 6 eggs. Up to 20% of nests may be parasitized by the Brown-headed Cowbird. A second Atlas observer reported an instance of a Common Yellowthroat feeding a young cowbird. Eggs hatch after 12 days. Both parents feed insects to the chicks during the 10-day nestling stage and continue to feed the fledglings for another 20 to 24 days (Guzy and Ritchison 1999).

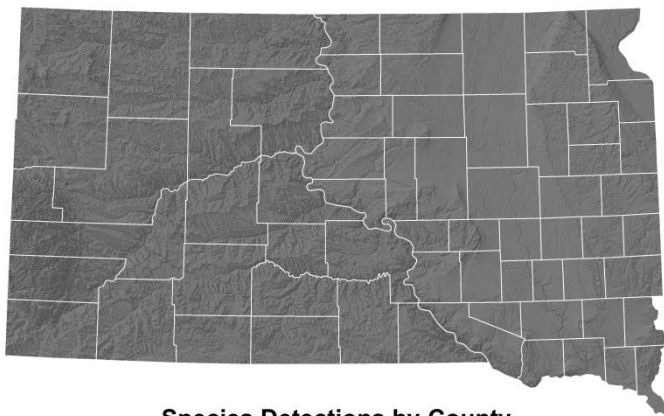
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	19	5	24
Probable	221	3	224
Possible	76	4	80
Observed	0	0	0
Total	316 (73%)	12	328

Common Yellowthroat



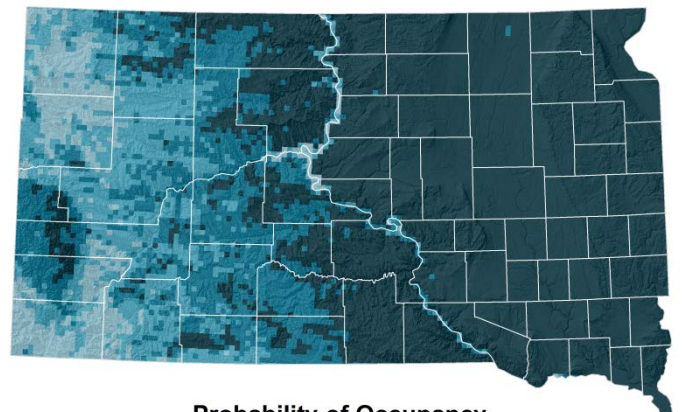
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

AMERICAN REDSTART

Setophaga ruticilla

The American Redstart is a Neotropical migrant that overwinters in Central and South America. The yearling males' plumage resembles that of the female (orange-yellow on brown) rather than the older males' orange-on-black plumage.

DISTRIBUTION AND STATUS

The breeding range includes much of Canada, the eastern U.S., and the northern Rocky Mountains. In South Dakota, American Redstarts breed in scattered locations throughout the state. The current breeding distribution is essentially the same as that during the first Atlas. The abundance of this warbler may be decreasing in South Dakota. Breeding Bird Survey data show a 2.6% annual population decline in South Dakota since 1967 (Sauer *et al.* 2014). In 1946, Redstarts were a frequent summer resident in the state (Over and Thoms 1946). Currently, the species is rare to uncommon, only found in any numbers in some canyons of the Black Hills, riparian areas of the Pine Ridge escarpment in Oglala Lakota and Bennett counties, along the Big Sioux River in the southeast, and deciduous forest along the eastern edge of the Prairie Coteau in Roberts County. A possible explanation for the decline is the reduction in the quantity and quality of riparian forests, especially early successional forests, in the region (Dixon *et al.* 2012).

HABITAT

American Redstarts breed in deciduous woodlands and shrubs, often in early

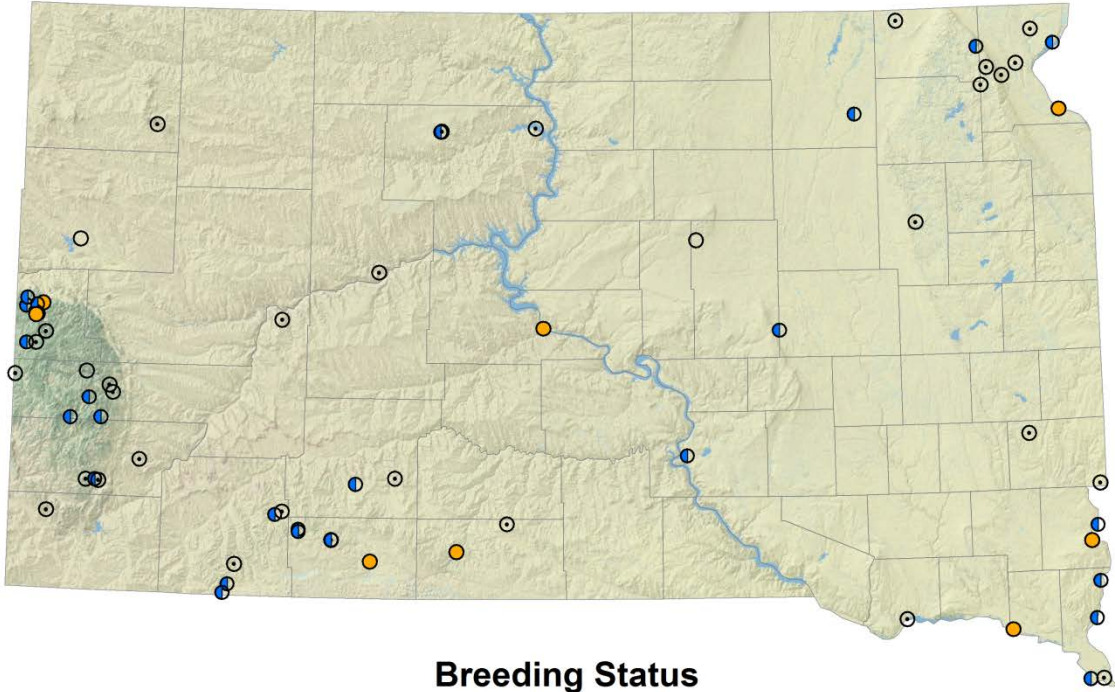
successional forests, and especially near water. Half of all observations during the second Atlas were in lowland woodlands, with 28% in lowland deciduous woods and 20% in lowland mixed deciduous-conifer forests. Another 48% of observation were in upland woodlands.

BREEDING BIOLOGY

The nesting season in South Dakota extends from late May to mid-July. The nest, a finely woven cup of plant materials, feathers, fur, lichens and spider webs, is usually placed 4' to 20' above ground on a small limb against a tree trunk (Moriarty 1965). Redstarts lay an average of 4 eggs. Females do all of the incubation and brooding. Both adults feed insects, primarily moths and flies, to the nestlings, which leave the nest when 9 days old. The adults divide the fledglings, feeding their half for almost 3 weeks until the young are independent (Sherry and Holmes 1997).

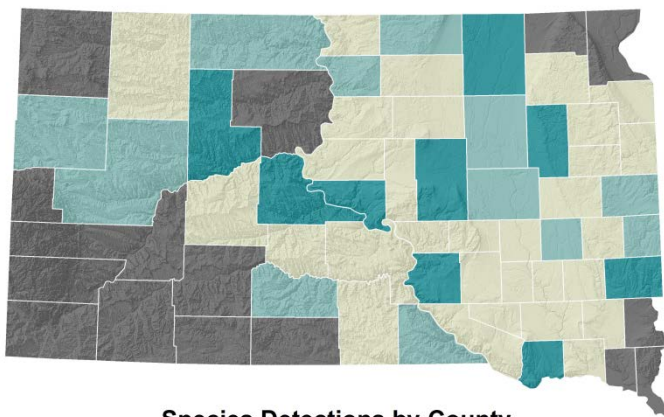
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	4	4	8
Probable	15	12	27
Possible	21	9	30
Observed	3	0	3
Total	43 (10%)	25	68

American Redstart



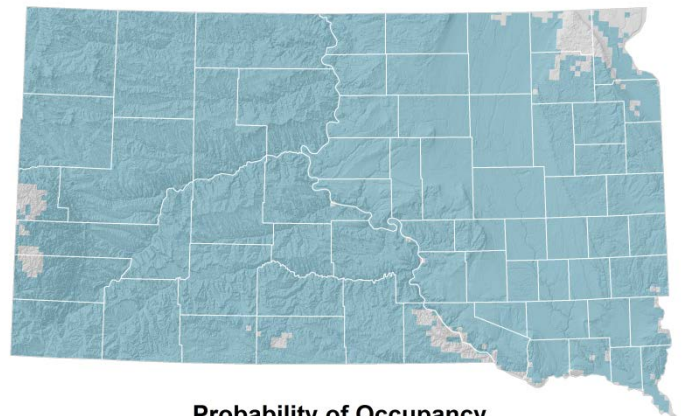
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

YELLOW WARBLER

Setophaga petechia

The aptly named Yellow Warbler is the only songbird in South Dakota that is completely yellow.

DISTRIBUTION AND STATUS

Yellow Warblers breed in the northern 1/3 of the U.S and north through Canada to tree-line. It is the most common and widespread warbler in South Dakota, found in every county and in 80% of atlas blocks. It is not found in the highest elevations of the Black Hills or the driest grassland areas west of the Missouri River. According to Breeding Bird Survey data, Yellow Warbler populations are increasing throughout its range and in South Dakota (Sauer et al. 2014).

HABITAT

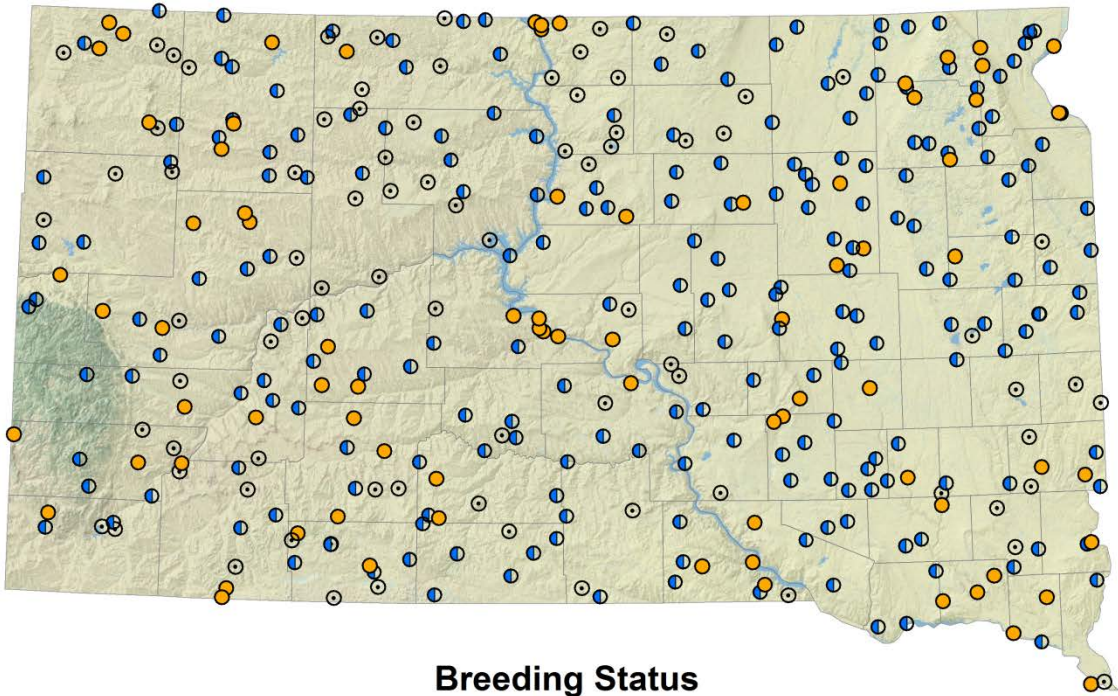
In general, Yellow Warblers breed in wet deciduous thickets, especially willows. In South Dakota, this is the typical habitat for Black Hills' breeders. However this habitat type is not common in the rest of the state, where Yellow Warblers are found in a variety of wooded shrubby habitats. Second Atlas observations were in upland woodlands (50%), lowland woodlands (38%), and lowland shrubs (7%). Observers found nests in cherry, hawthorn, Russian olive, box elder, cottonwood, willow, and elm trees, as well as unidentified shrubs and deciduous trees. Nests generally were relatively low to the ground, ranging from 3' to 21' in height (median height from ground was 5.5').

BREEDING BIOLOGY

In South Dakota, Yellow Warblers typically begin nesting in mid-May and finish by late July (second Atlas nest dates: May 23 to July 17). The nest is a tightly woven cup or ball made of grass and small strips of bark, hair, or feathers, often incorporating plant down. This species often is parasitized by Brown-headed Cowbirds. In the second Atlas, observers recorded two instances of Yellow Warblers feeding cowbird fledglings. Also, an observer reported that a warbler buried a set of cowbird eggs in nest material and lay a new warbler clutch on top, then abandoned that effort and built a new nest 10' higher in the tree. Second Atlas observers reported clutch sizes of 2 to 4 eggs and brood sizes of 3 or 4 nestlings. Nestlings leave the nest 8 to 10 days after hatching and stay with the parents for at least three more weeks (Lowther et al. 1999).

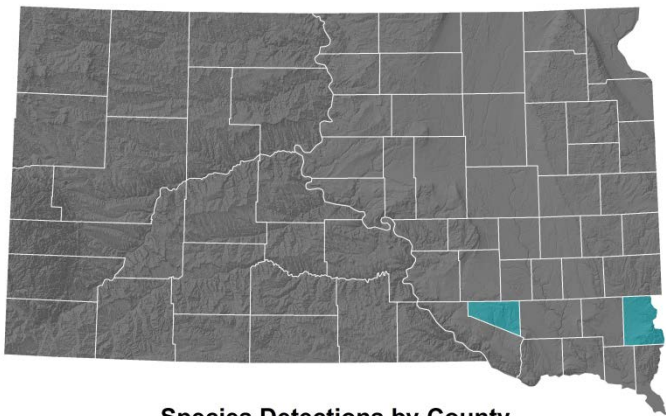
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	57	26	83
Probable	214	4	218
Possible	78	3	81
Observed	0	0	0
Total	349 (80%)	33	382

Yellow Warbler



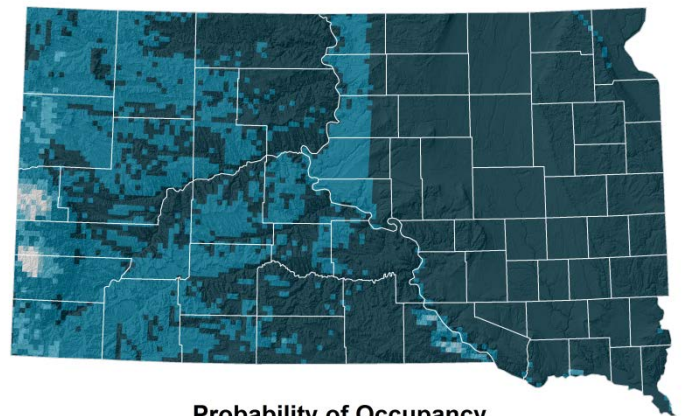
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

CHESTNUT-SIDED WARBLER

Setophaga pensylvanica

Male Chestnut-side Warblers sing two different songs, depending on the context and stage of the breeding cycle. The first, often rendered as *Please, please, pleased to meetcha*, is used early in the nesting cycle. Its main function is to attract females. The second type, similar to the first but without the accented ‘*meetcha*’ ending, is sung later in the breeding season and is used during aggressive encounters with other males. The two songs are learned separately. Young males require visual contact with tutor males to fully learn each song.

DISTRIBUTION AND STATUS

The Chestnut-sided Warbler breeds in eastern North America from central Saskatchewan southeastward through the Appalachian Mountains to Georgia. Although a rare migrant in western South Dakota, the species recently has begun to nest in the Black Hills. The first confirmed record occurred in 1997 when a nest with young was found near Sturgis (Podoll 1998). Since then, Chestnut-sided Warblers have nested most years in a small area along Galena Road near the Meade-Lawrence county line.

HABITAT

Chestnut-sided Warblers breed in second-growth forests and forest edges. Black Hills nests have been in patches of mixed forest that included young

aspen and birch thickets mixed with bur oak and ponderosa pine.

BREEDING BIOLOGY

Black Hills Chestnut-sided Warblers breed in June and early July. Nests are in shrubs close to the ground; the first nest discovered in South Dakota was in a chokecherry bush (Podoll 1998). The female constructs the open cup nest from bark strips, weeds, grasses, and roots and lines it with fine grass and hair. The nest is attached to adjacent vertical twigs with spider webs or tent caterpillar silk. The female lays 4 eggs, which she incubates for 11 or 12 days. Both parents feed the nestlings. At first, parents regurgitate insects for the nestlings. Later, they crush small insects, increasing the size of prey as the nestlings grow. Nestlings leave the nest when 10 to 12 days old. Chicks move to nearby thickets and wait to be fed. The young warblers are fed by their parents for at least 28 days after leaving the nest (Byers *et al.* 2013).

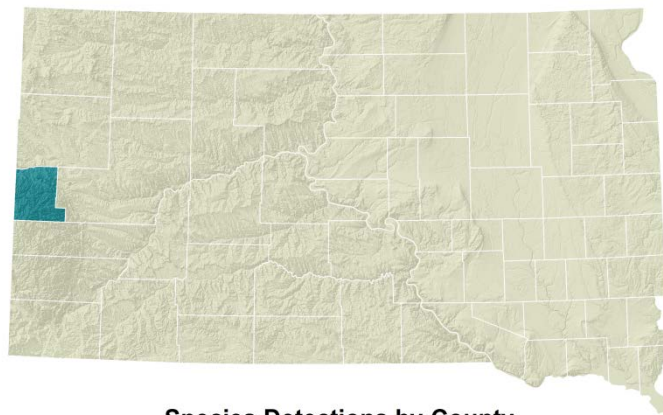
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	1	1
Probable	0	1	1
Possible	0	1	1
Observed	0	0	0
Total	0 (0%)	3	3

Chestnut-sided Warbler



Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- ◐ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

YELLOW-RUMPED WARBLER

Setophaga coronata

The Yellow-rumped Warbler formerly was considered two species: the Myrtle Warbler and the Audubon's Warbler. Both forms migrate through South Dakota, but it is the Audubon form, with its yellow instead of white throat, that breeds in the state.

DISTRIBUTION AND STATUS

The Yellow-rumped Warbler is one of the most common warblers in North America, breeding anywhere there is extensive coniferous forest. The southwest South Dakota - northwest Nebraska population is isolated from the main breeding range. Both the first and second Atlases recorded this warbler as common in the Black Hills. It also is found in the Cave Hills and Slim Buttes of Harding County, but not in the Short Pines. On the Pine Ridge Escarpment, the first Atlas recorded this warbler just once; the second Atlas documented more birds, uncommonly scattered through Oglala Lakota, Bennett, and Todd counties. According to Breeding Bird Survey data, the Yellow-rumped Warbler population in South Dakota is stable (Sauer *et al.* 2014).

HABITAT

Observers during the second Atlas found these warblers in conifer forests (61%), mixed conifer-deciduous forests (34%), and open areas with scattered trees (2%). In the Black Hills, Yellow-rumped Warblers are significantly more

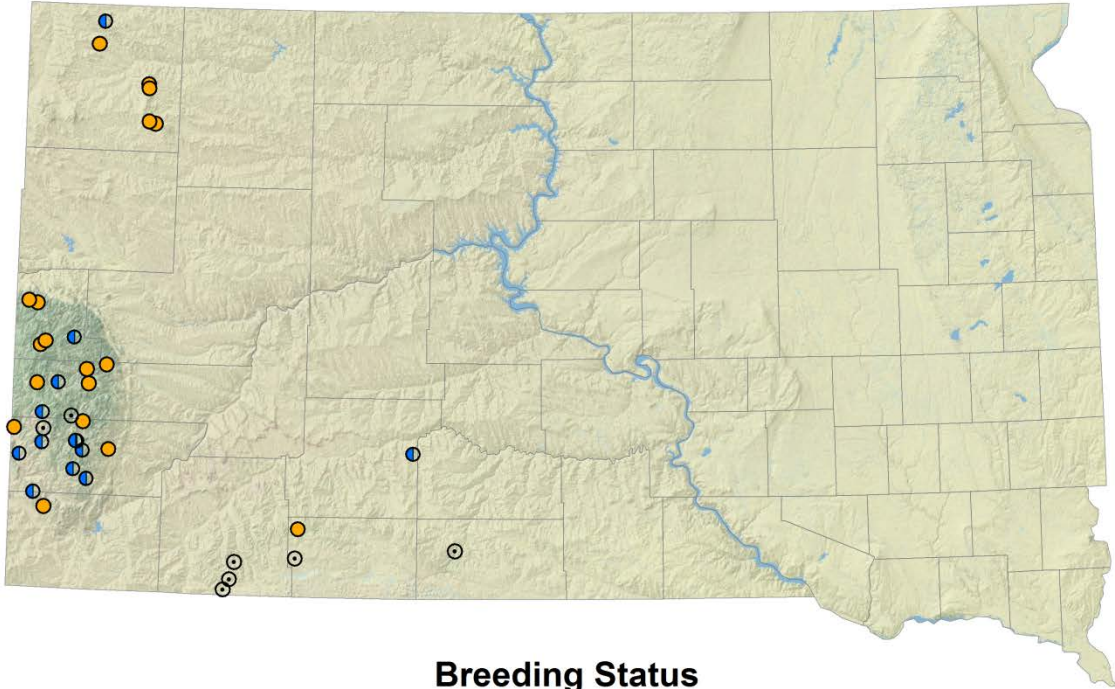
common in ponderosa pine than in adjacent aspen/birch forests (Mills *et al.* 2000). Of second Atlas nests, two were in ponderosa pine forests and one in mixed pine-ash woodland.

BREEDING BIOLOGY

The second Atlas documented breeding activity between May 22 and July 30; nest dates ranged from May 22 to July 4. South Dakota nests were recorded 20' to 45' high in ponderosa pines. The female builds a cup-shaped nest of twigs, pine needles, and grass and lines it with moss, lichens, hair, and feathers. The incubation period for the clutch of 4 or 5 eggs is 12 to 13 days. Both parents feed insects to the nestlings until nest-leaving at 13 to 14 days. The second Atlas recorded one observation of an adult warbler feeding a Brown-headed Cowbird fledgling. Cowbirds often lay their eggs in Yellow-rumped Warbler nests, and the warblers usually can raise both their own and the cowbird's young (Hunt and Flaspohler 1998).

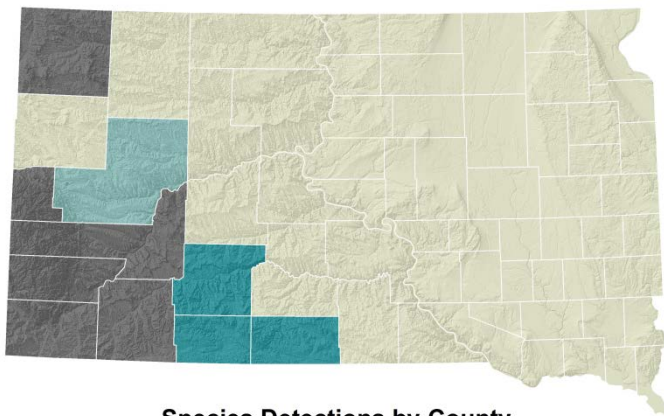
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	13	7	20
Probable	10	3	13
Possible	5	2	7
Observed	0	0	0
Total	28 (6%)	12	40

Yellow-rumped Warbler



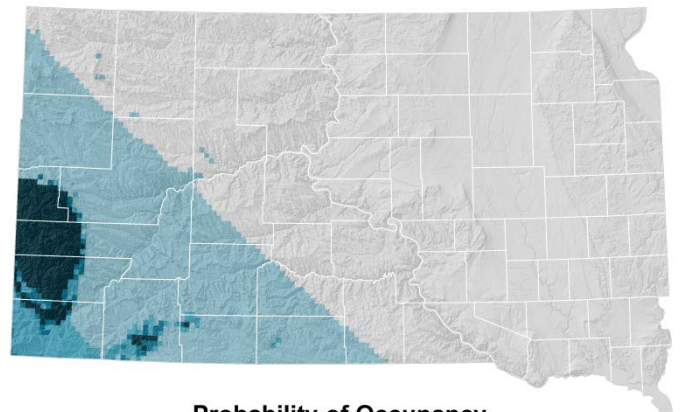
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

YELLOW-BREASTED CHAT

Icteria virens

Until recently the Yellow-breasted Chat was considered to be an atypical wood-warbler. However, recent genetic data suggests it is not a warbler at all, but what it is has not been resolved. The Yellow-breasted Chat is one of the few songbirds that will frequently sing at night. Only males sing; the song is a series of repeated clucks, whistles, cackles, and squawks, and occasionally includes a section that mimics another bird's song.

DISTRIBUTION AND STATUS

The Yellow-breasted Chat's summer range extends across the eastern United States and southern Canada, southward to Texas and northern Florida, as well as scattered locations in the western U.S. and Mexico. In South Dakota, chats are a locally common summer resident in the western part of the state. Chats were reported from more atlas blocks during the second Atlas (17% of blocks) compared to the first Atlas (11%). Much of the increase was in the northwest quadrant of the state and along the Missouri River. According to Breeding Bird Survey data, the chat population in South Dakota is stable (Sauer *et al.* 2014).

HABITAT

Yellow-breasted Chats inhabit thickets, dense brush, and early successional or second growth woods, especially near

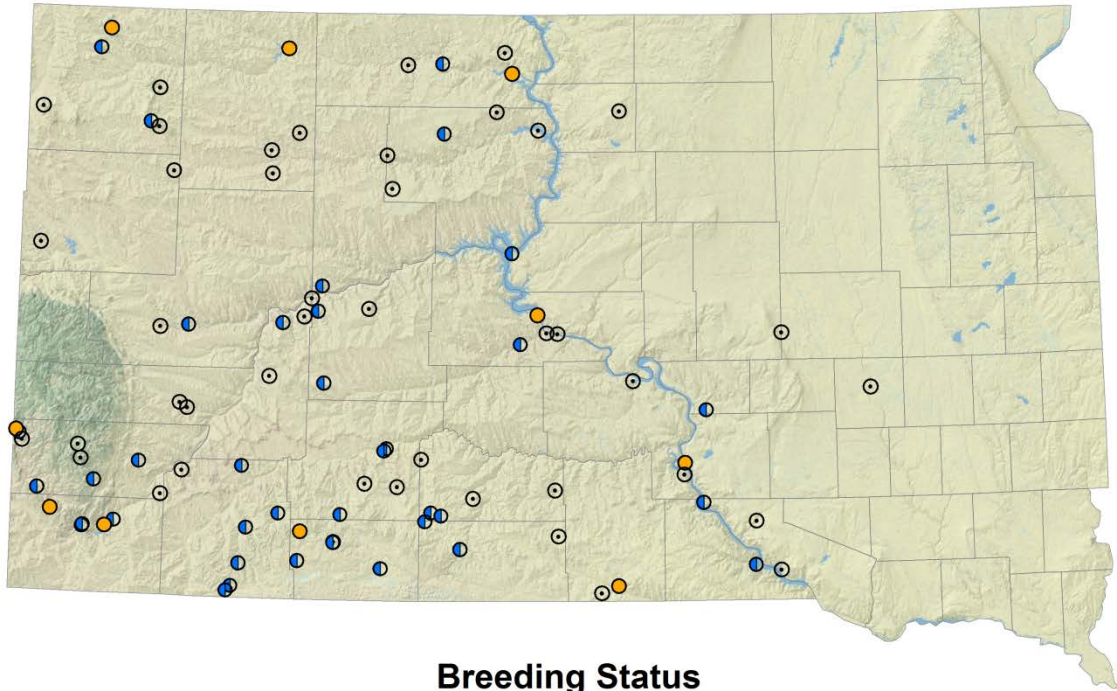
wetlands or riparian areas. Nesting occurs in low, dense vegetation within both riparian and upland habitats. Second Atlas observers reported chats in lowland woods and draws (43%), upland woodlands and shelterbelts (35%), and shrublands (21%).

BREEDING BIOLOGY

In South Dakota, chats nest from late May to mid-July. The well-concealed nest is usually placed near the ground in dense thickets, tangles of vines, or bushes. The nest, built by the female, is a large bulky cup composed of coarse vegetation, such as grasses, leaves, and strips of bark, and lined with finer grasses. The female lays 3 to 6 eggs that are white with light red, brown, gray, or purple markings. Eggs hatch after 12 days. Both parents feed the nestlings, which remain in the nest for 9 days (Eckerle and Thompson 2001).

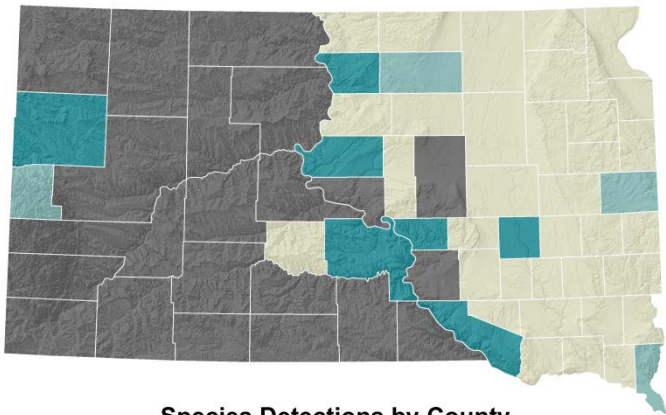
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	6	5	11
Probable	33	4	37
Possible	36	8	44
Observed	0	0	0
Total	75 (17%)	17	92

Yellow-breasted Chat



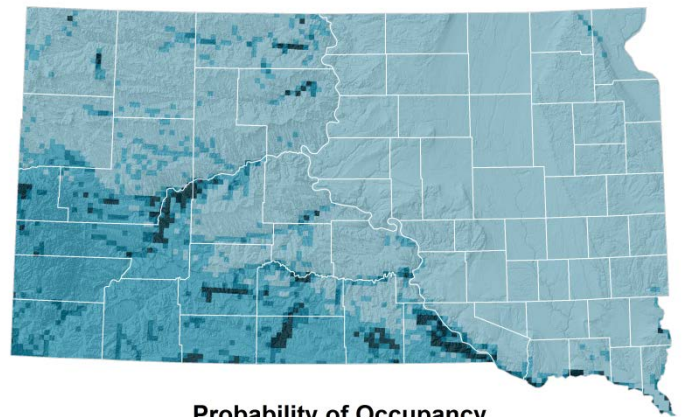
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

SPOTTED TOWHEE

Pipilo maculatus

This large sparrow forages on the ground, often scratching in the leaf litter with both feet to uncover insects, fruit, and seeds.

DISTRIBUTION AND STATUS

Spotted Towhees breed throughout the western U.S. and northern Great Plains east to the Missouri River. In South Dakota, these towhees are a common breeding species. They occur primarily west of and along the Missouri River. Almost all of the South Dakota breeding range is considered a hybrid zone with the very similar Eastern Towhee, except the extreme western quarter of the state and the Black Hills. Almost all of the hybrid zone is dominated by the Spotted Towhee, except a narrow contact zone with Eastern Towhee in the extreme southeastern corner, where Eastern Towhee is predominant (Greenlaw 1996a). Although the two species can hybridize, no Spotted - Eastern Towhee hybrid was reported during the second Atlas. At the time of the first Atlas, Eastern and Spotted Towhees were considered one species, the Rufous-sided Towhee. First Atlas observers did not separate their observations by subspecies. However the 'spotted' subspecies was considered the more common breeder (Peterson 1995). The Spotted Towhee population in South Dakota is stable, according to Breeding Bird Survey data (Sauer *et al.* 2014).

HABITAT

Breeding habitat is shrubby thickets along prairie coulees, streams and rivers, and brushy undergrowth in

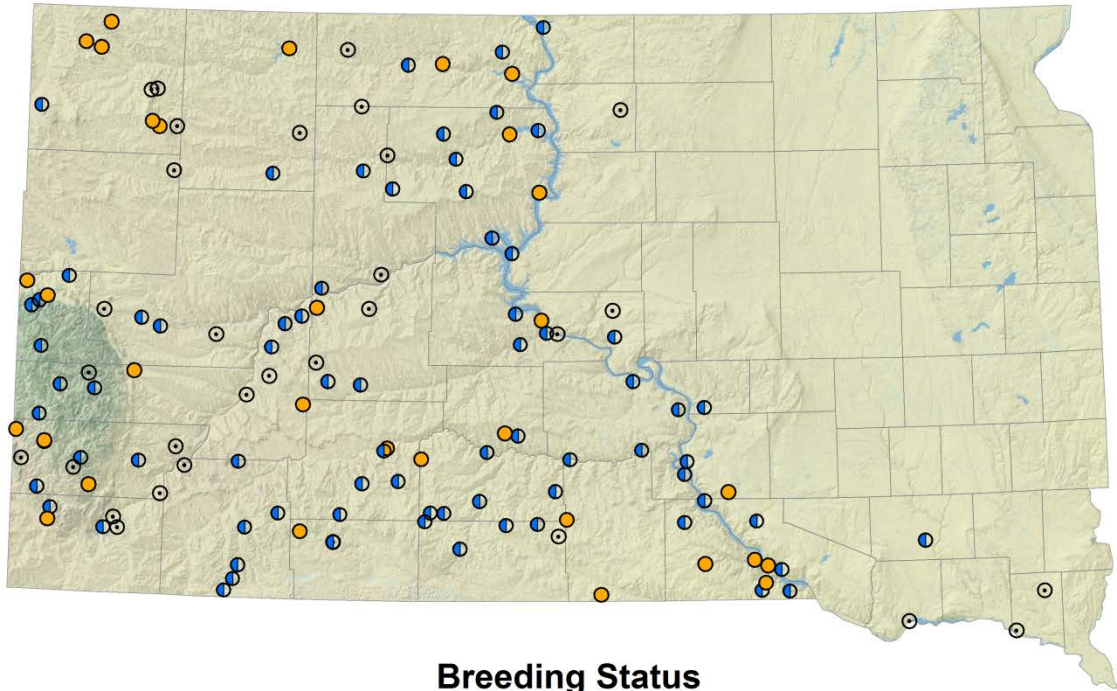
woodlands. In South Dakota, Spotted Towhees are rare in sagebrush, a habitat in which they are predicted to occur. During the second Atlas, observers found Spotted Towhees in lowland (47%) and upland woodlands (37%), and shrublands (13%).

BREEDING BIOLOGY

Although the earliest confirmed breeding record during the second Atlas was a pair carrying nest material on May 5, Spotted Towhees in South Dakota typically begin nesting in mid- to late May. Nesting lasts through July. Nests are either on the ground, sunk into the leaf litter so that the rim is even with the surface, or placed in low vegetation. The average clutch size is 3 to 5 eggs. Two second Atlas nests contained 4 and 7 eggs. Eggs hatch after 12 to 14 days of incubation, chicks leave the nest after 9 to 11 days, and fledglings depend on the adults for another 30 days (Greenlaw 1996b). Spotted Towhee nests occasionally are parasitized by Brown-headed Cowbirds. One second Atlas observer noted an adult towhee feeding a young cowbird.

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	24	10	34
Probable	70	3	73
Possible	28	3	31
Observed	0	0	0
Total	122 (28%)	16	138

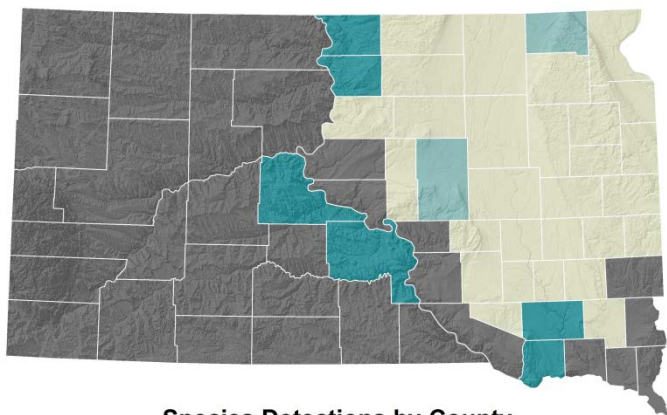
Spotted Towhee



Breeding Status

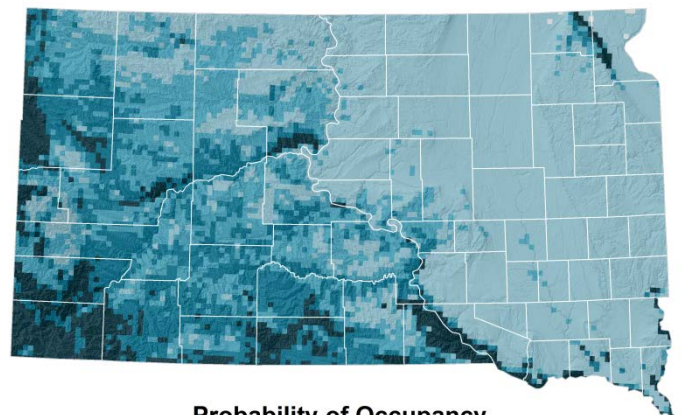
- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location

NOTE: the following maps are a combination of Spotted and Eastern Towhee data



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

EASTERN TOWHEE

Pipilo erythrophthalmus

Eastern Towhee males sing from a high, conspicuous perch, a song that is famously transliterated as *drink-your-teeeeeeee*. Two males on adjacent territories often engage in extended singing duels, each bird alternating his song with that of his neighbor.

(46%), lowland woods (39%), and shrublands (14%).

DISTRIBUTION AND STATUS

Eastern Towhees breed throughout the eastern U.S. west to the eastern edge of the Great Plains. This species occurs in the extreme southeastern portion of South Dakota. In the central Great Plains, Eastern Towhees meet and hybridize with Spotted Towhees in a north-south zone of secondary contact. No hybrids were reported during the second Atlas but Eastern Towhee locations west of Union County also had Spotted Towhees. There are not enough Breeding Bird Survey data to determine the population trend in South Dakota but Eastern Towhee populations are stable in Nebraska and increasing significantly in Iowa (Sauer *et al.* 2014).

BREEDING BIOLOGY

The nesting season in South Dakota is assumed to be mid-May through July. There is only one Eastern Towhee nest record for the state – a nest with chicks discovered June 2, 2001. During the second Atlas, young towhees were seen in late July and two adults carrying food were seen August 28. In general, the nest is in shrubby areas. It is either embedded in leaf litter on the ground or placed in low vegetation, usually below 5' in height. Sometimes the nest is well concealed, other times it is fully exposed. The cup-shaped nest is made of a wide variety of coarse plants and lined with finer materials. Females lay 2 to 6 eggs which are white, pink, or green with gray, brown, red or purple markings. Eggs hatch after 12 to 13 days. Nestlings are fed mostly insects, and later in the nestling period, some fruits. Chicks leave the nest after 10 to 11 days and are fed by their parents another 3 to 4 weeks (Greenlaw 1996a).

HABITAT

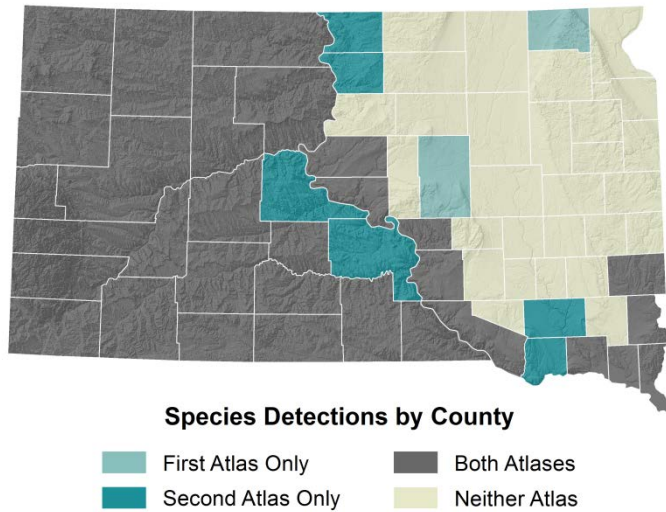
Associated with edge habitats, Eastern Towhees prefer areas with dense shrub or small tree cover and a well-developed leaf litter layer. One South Dakota study found that Eastern Towhees nest in natural river corridor woodlands but completely avoid shelterbelts or planted woodlots (Gentry *et al.* 2006). During the second Atlas, Eastern Towhees were reported from upland woods

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	2	2
Probable	5	2	7
Possible	2	3	5
Observed	1	0	1
Total	8 (2%)	7	15

Eastern Towhee



Note: following map is combined Eastern and Spotted Towhee (formerly Rufous-sided Towhee)



CASSIN'S SPARROW

Peucaea cassinii

A plain, secretive grassland bird, Cassin's Sparrows are most often detected during the breeding season when males engage in flight displays known as skylarking, and incessantly sing their loud songs from a conspicuous perch.

DISTRIBUTION AND STATUS

South Dakota is north of the main breeding range of the Cassin's Sparrow, which encompasses northern Mexico and the southern Great Plains north to western Nebraska. This sparrow is irregular in its nesting. At the periphery of its range, singing males can suddenly appear at locations where the species does not usually breed. In addition, the Cassin's Sparrow's breeding range may be extending or moving northward (Peterson 2003). In South Dakota, Cassin's Sparrow is an accidental breeder in the southwestern counties. Prior to the second Atlas, three Cassin's Sparrows had been reported; in 1977, and twice in 2002. During the second Atlas, singing males were reported at six locations in three southwestern counties. A bird was seen carrying food near Imlay, Pennington County in 2008, the first breeding confirmation in the state.

HABITAT

In the central and northern Great Plains, Cassin's Sparrows inhabit sparse grasslands with a few shrubs. In South Dakota, most observations are in drier situations – sand or sagebrush prairie. Second Atlas observations were in pastures (3 reports), undisturbed

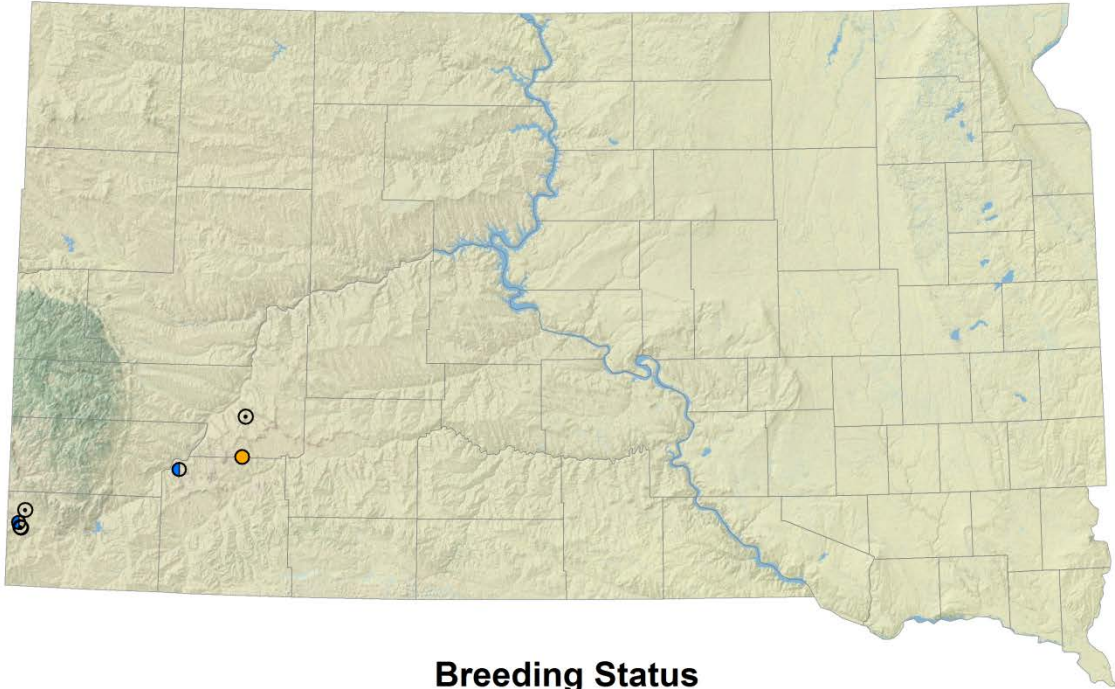
grasslands (2 reports), and shrublands (1 report).

BREEDING BIOLOGY

South Dakota's only breeding confirmation was a bird carrying food on June 22. Males establish territories on the breeding grounds before females arrive. The presence of a female within a territory invokes intense skylarking display behavior. The male pursues females in his territory with long flights, giving Flight Songs. The nest, constructed by the female, is on or near the ground, well hidden in a grass clump or low bush. It is an open cup made of dry grass and lined with finer materials. The female lays 3 to 5 unmarked white eggs. Both adults feed the nestlings. When approaching or leaving the nest, the parent is secretive, walking several yards through the grass rather than flying directly to and from the nest. Nestlings leave the nest when about 9 days old, but are not yet able to fly. They stay in dense vegetation, calling frequently to be fed by the female. The young sparrows start to feed themselves after another 8 days and are completely independent of parental feeding before 30 days (Dunning *et al.* 1999).

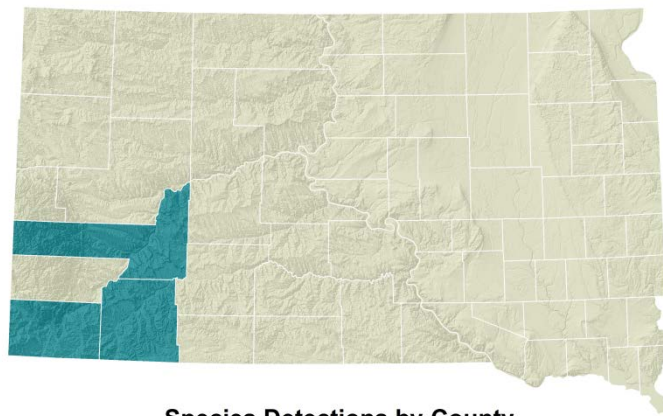
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	1	1
Probable	2	0	2
Possible	0	4	4
Observed	0	0	0
Total	2 (0.5%)	5	7

Cassin's Sparrow



Breeding Status

- Confirmed breeding
- ◐ Possibly breeding
- ◑ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

CHIPPING SPARROW

Spizella passerina

The Chipping Sparrow has benefited from European settlement in North America. Human-modified landscapes, such as parks, cemeteries, and planted conifer tree belts, mimic the sparrow's natural habitat of open conifer woods near grassy areas. Thus numbers of Chipping Sparrows have increased.

DISTRIBUTION AND STATUS

The Chipping Sparrow breeds throughout Canada and the United States, except in the southern Great Plains. It is common throughout South Dakota in both rural and urban areas. The highest densities occur in the Black Hills. The first Atlas documented Chipping Sparrows in 38% of random blocks, and found few sparrows in the central part of the state. The second Atlas recorded this species on 68% of blocks and in all 66 counties. South Dakota's Chipping Sparrow population is stable, according to Breeding Bird Survey data (Sauer *et al.* 2014).

HABITAT

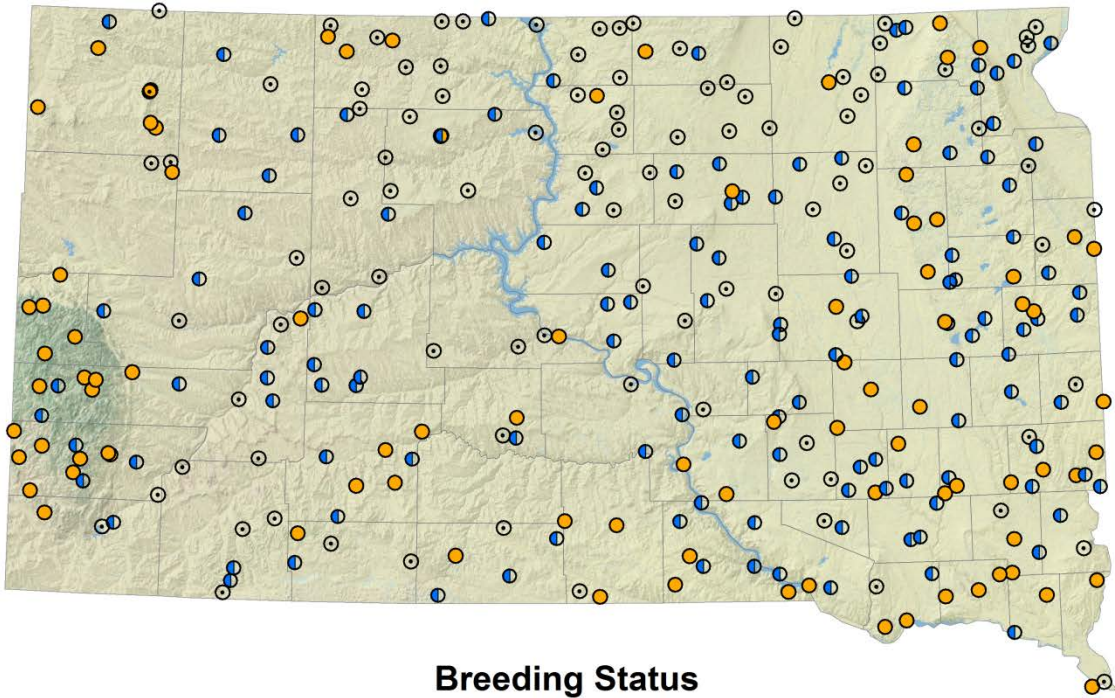
The Chipping Sparrow inhabits a wide variety of natural and human-modified habitats. It prefers nesting in open woodlands bordering grassy spaces, and foraging in brushy areas. Second Atlas observers reported Chipping Sparrows in woodlands and shrublands (79% of observations), residential areas (including parks and cemeteries) (15%), grasslands (4%), open areas with scattered trees (1%), and cropland (1%). Of 16 second Atlas nests, 9 were in woodlands, 1 in a brushy field, and 5 in residential areas.

BREEDING BIOLOGY

In South Dakota, the nesting season is mid-May through July. Chipping Sparrows prefer to nest low to the ground in conifers. Five of six second Atlas nests were in conifers (4 cedars and a spruce); the fourth was in a deciduous tree. Atlas nests were at heights of 2' to 10' above ground. The female builds a cup nest with grass, weeds, and rootlets, and weaves a lining of fine grass, plant fibers, and animal hair. Formerly, when horses were used for transportation, the Chipping Sparrow was famous for lining its nest with horse hair. The female lays a clutch of 3 or 4 eggs which she incubates for 12 days. The young sparrows leave the nest 9 to 12 days after hatching and are dependent on their parents for food for another 3 weeks (Middleton 1998). Brown-headed Cowbirds frequently lay their eggs in Chipping Sparrow nests. During the second Atlas, 2 of 3 nests with young contained only cowbird nestlings. In addition, adult sparrows were feeding cowbird fledglings in 20% of all observations of sparrows feeding fledglings (15 broods).

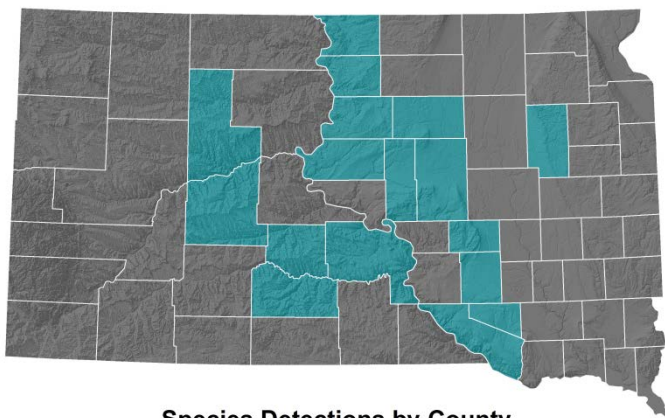
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	73	19	92
Probable	125	4	129
Possible	97	2	99
Observed	0	0	0
Total	295 (68%)	25	320

Chipping Sparrow



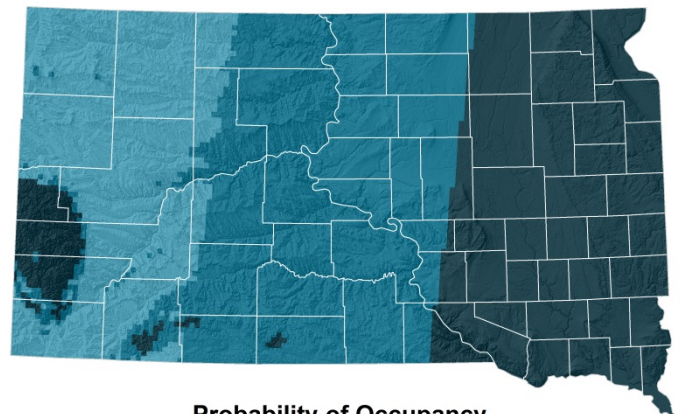
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

CLAY-COLORED SPARROW

Spizella pallida

The Clay-colored Sparrow's territory is unusual for a prairie bird because the territory is only used for nesting, not for foraging. Sometimes these sparrows defend an area around the nest as small as a tenth of an acre.

DISTRIBUTION AND STATUS

This sparrow breeds throughout the northern prairie region, from the south-central Canadian provinces south through the Dakotas and Michigan. The southern limit of its breeding range is in northern South Dakota. Since the first Atlas, this species has expanded south and west from its stronghold in the northeast corner of the state. During the first Atlas, Clay-colored Sparrow was recorded in 15 counties and on 5% of random blocks. It was only common in the northern Missouri and Prairie coteaus, with no records west of the Missouri River. These sparrows still are most common in the northeast, but now breed west along the North Dakota border to western Perkins County and, east of the River, south to Highway 34. The second Atlas recorded the species in 36 counties and 28% of blocks. According to Breeding Bird Survey data, this species' population is stable in the state (Sauer *et al.* 2014).

HABITAT

Breeding habitat is grasslands with some shrubby cover, including brushy edges of shelterbelts and woodlands. Studies have found that this species prefers native sod, idle or light to moderate grazing intensity, and a high proportion of grassland in the

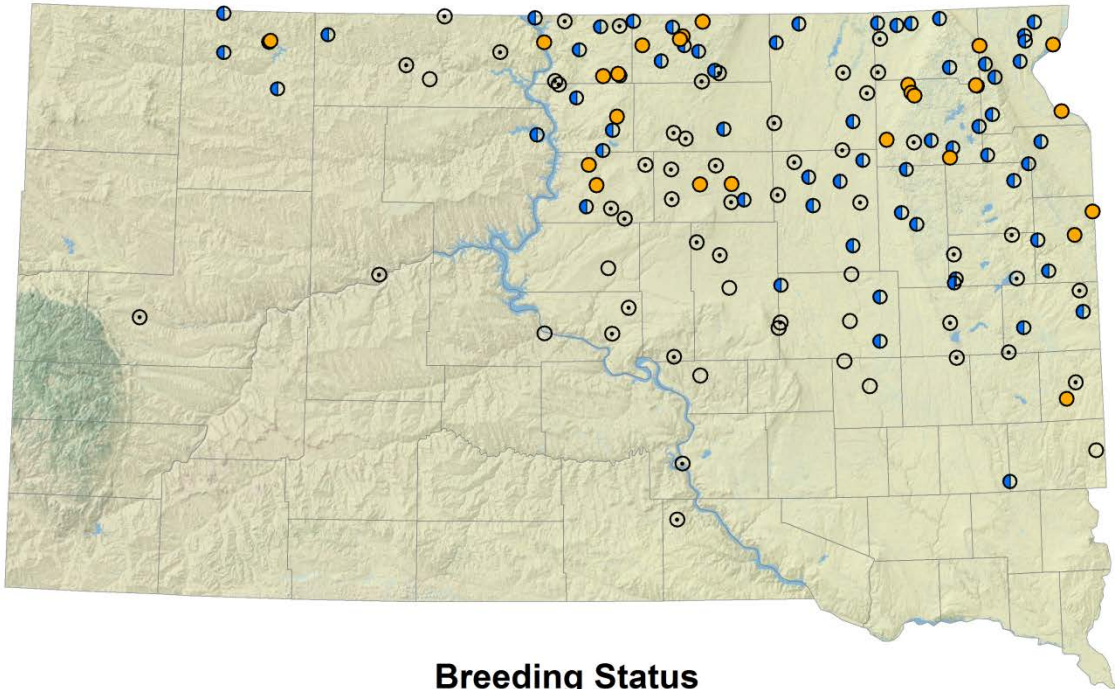
surrounding landscape (Bakker *et al.* 2002, Salo *et al.* 2006, Bakker and Higgins 2009). Second Atlas observations were in upland woodlands (48%) and grasslands (41%), especially idle grass and pasture. Twelve nests were found in idle grass and three in upland woodland. Foraging areas adjacent to territories usually are open spaces with sparse, short vegetation, such as cropland and pastures.

BREEDING BIOLOGY

The nesting season begins in late-May (second Atlas nest dates June 4 to July /22, 15 nests). The well-hidden cup nest, made of plant fibers, is placed a little above ground level in a weed or grass-tuft, or in lower shrub branches. Of second Atlas nest reports, one was on the ground and one was 6" high in weeds. Second Atlas observers reported an average of three eggs per nest (range 2 to 5 eggs, 8 nests). Two second Atlas nests contained Brown-headed Cowbird eggs. Eggs hatch after 10 to 12 days of incubation. Nestlings leave the nest after 7 to 9 days, and are fed by adults for another 8 days (Grant and Knapton 2012).

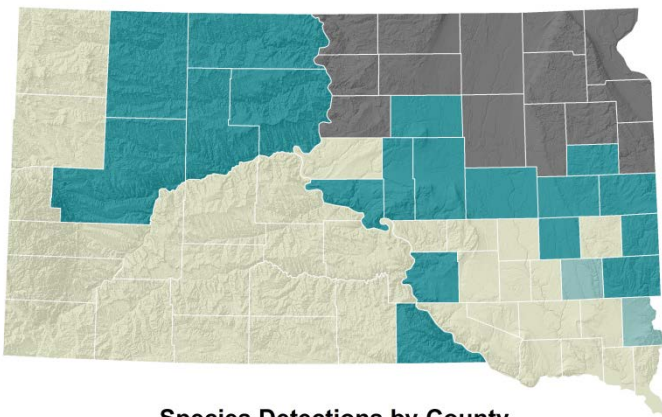
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	8	18	26
Probable	62	1	63
Possible	45	1	46
Observed	9	2	11
Total	124 (29%)	22	146

Clay-colored Sparrow



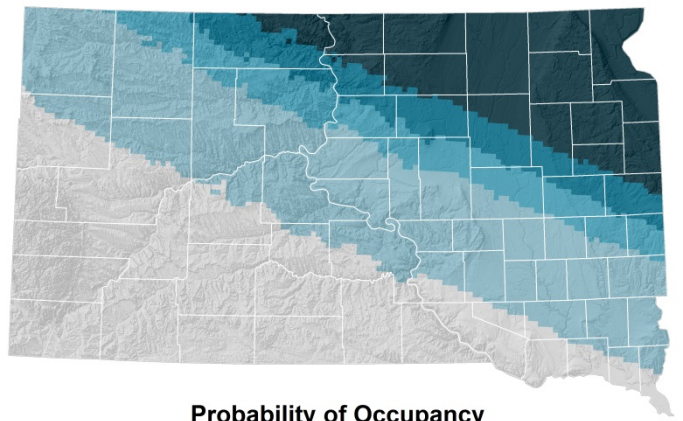
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BREWER'S SPARROW

Spizella breweri

Despite having typical seed-crushing sparrow bills, Brewer's Sparrows primarily eat insects. Adapted to arid climates, these birds can live for long periods without drinking water.

DISTRIBUTION AND STATUS

The Brewer's Sparrow is a sagebrush-obligate species and thus, its range is restricted to areas with sagebrush and other arid land shrubs. These areas primarily are in the interior of the western United States north into southern Canada. In South Dakota, Brewer's Sparrows are restricted to the sagebrush prairies of the western edge of the state, where Big Sagebrush and Greasewood occur. These birds are fairly common within their small South Dakota range. In the general region, Brewer's Sparrow populations have declined significantly since 1968, at a rate of 2.6% per year (Badlands and Prairies region, Sauer *et al.* 2013).

HABITAT

In South Dakota, Brewer's Sparrow is almost always associated with sagebrush or greasewood. Sometimes, such as in Meade County, grass is the dominant plant, with a smaller component of sage. Second Atlas observers found most Brewer's Sparrows in grasslands (79%), with the rest (21%) reported in shrub (sagebrush) habitat.

BREEDING BIOLOGY

The breeding season is from late May to mid-August. Pairs may raise two broods in a summer, although this has not been reported in South Dakota. The compact, cup-shaped nest is built near the ground in a thick shrub, usually sagebrush or greasewood. It is made of a variety of plant materials and lined with softer materials, especially horse hair when available. The female lays an average of 3 blue-green eggs and incubates for 11 days. Both parents feed small insects to the nestlings by stuffing billfulls of food into the nestlings' gaping mouths. Insect food includes butterfly and moth larvae, spiders, true bugs, and leafhoppers. After 6 to 9 days, nestlings leave the nest but are unable to fly for several more days. During this time, they remain motionless in vegetation near the nest unless they are being fed. Parents continue to feed the young for several more days, but observations are few and little is known about the rest of the fledgling period (Rotenberry *et al.* 1999).

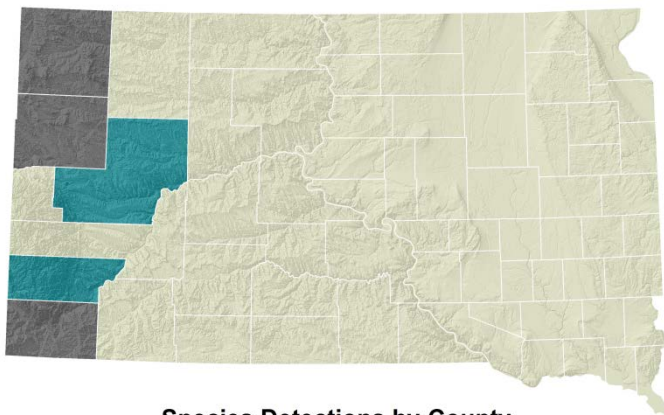
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	8	3	11
Probable	6	3	9
Possible	5	6	11
Observed	1	0	1
Total	20 (5%)	12	32

Brewer's Sparrow



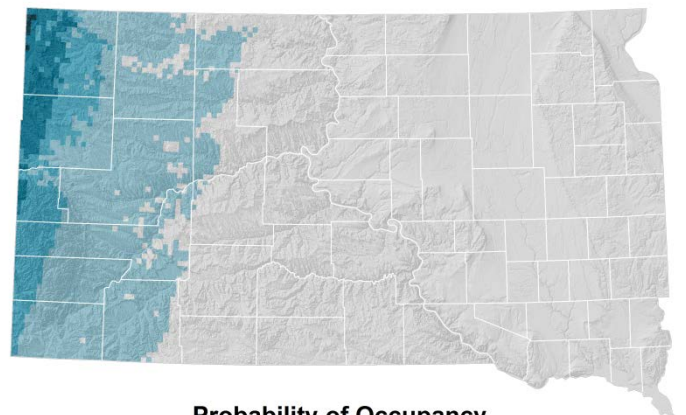
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

FIELD SPARROW

Spizella pusilla

The Field Sparrow has one of the most distinctive songs of South Dakota's sparrows – a series of soft, sweet, pure whistles that start with long duration tones and increase in rate to a trill. Both sexes are alike in plumage, but males are slightly larger than females.

habitat in developed areas, such as suburbs or planted shelterbelts (Gentry *et al.* 2006). Second Atlas observers found these birds in a wide variety of habitat types: grasslands (35%), upland forests (28%), lowland forests (18%), and shrublands (13%).

DISTRIBUTION AND STATUS

BREEDING BIOLOGY

Field Sparrows breed throughout the eastern U.S. into southeastern Canada and west into the eastern prairie region. In South Dakota, the species is locally common, but scattered throughout the state. Both the first and second Atlas found Field Sparrows absent from the Missouri Coteau region and the northern section of the James River lowlands, areas that lack natural shrubland. Second Atlas analyses generated the Field Sparrow Probability of Occupancy map based on a 'shrubland' variable that cannot distinguish between sage, where it does not breed, and other types of shrubland. Thus, this analysis gave a high probability of Field Sparrows occurring in sage in western Butte County, where it does not breed. In most of their breeding range, Field Sparrow populations are experiencing significant declines. In South Dakota, however, populations are increasing at an estimated rate of 1.3% per year (Sauer *et al.* 2014).

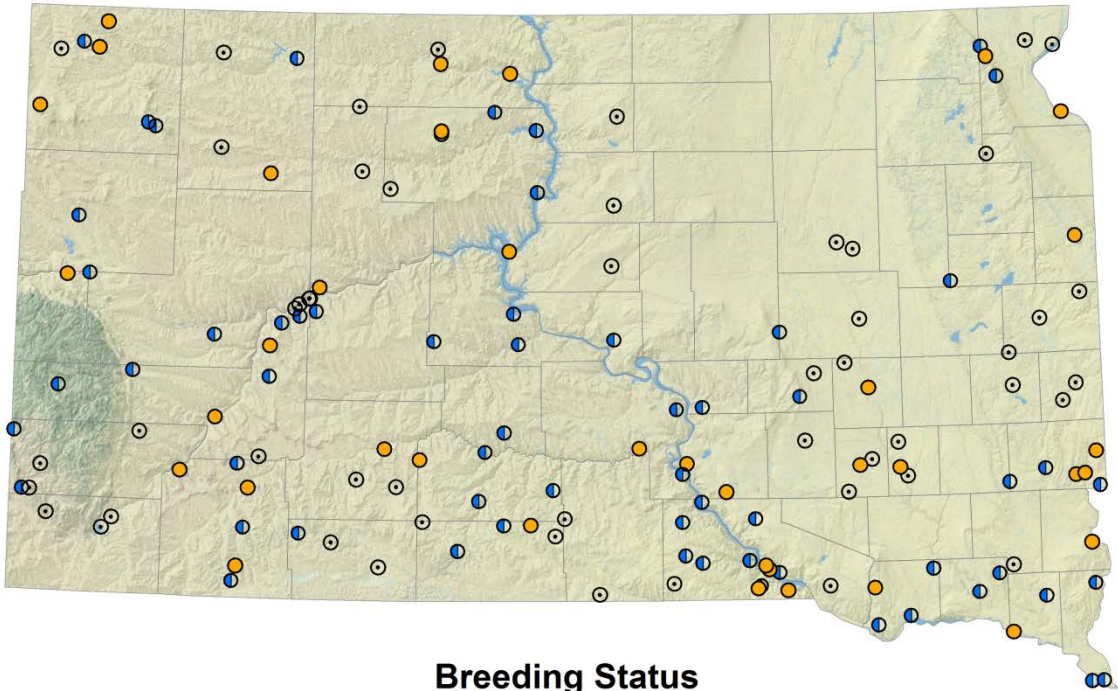
In South Dakota, the breeding season is mid-May through mid-July. Often a pair will raise two broods per summer. In early spring, the cup-shaped nest, built almost entirely of grasses, is placed at or near the ground in a clump of grass or near the base of a shrub. Later in the season, nests are built higher, in crotches of shrubs or saplings. The typical clutch size is 3 to 5 eggs. Eggs hatch after 11 to 12 days of incubation and nestlings leave the nest when 7 to 8 days old. If it is early enough in the season, the female starts laying a second clutch of eggs while the male feeds the first group of fledglings. Fledglings are able to fly when 13 to 14 days old and are independent at 26 to 34 days (Carey *et al.* 2008).

HABITAT

The breeding habitat is brushy pastures, second growth scrub, young second-growth forests, and openings in wooded areas. Field Sparrows avoid similar

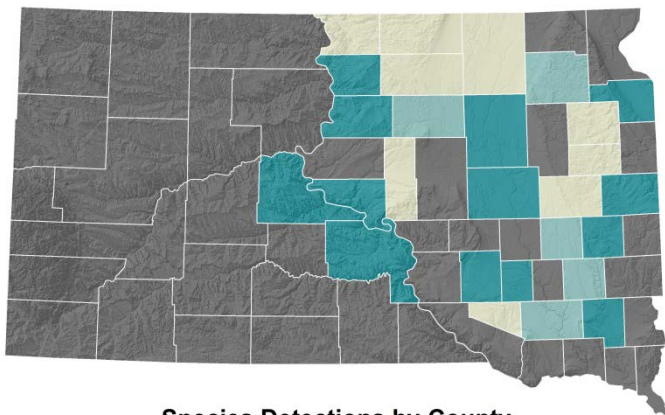
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	24	14	38
Probable	59	3	62
Possible	45	7	52
Observed	0	0	0
Total	128 (29%)	24	152

Field Sparrow



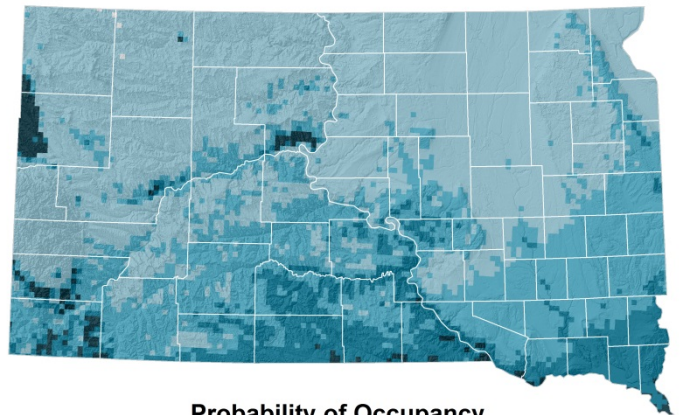
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

VESPER SPARROW

Pooecetes gramineus

Vesper Sparrows are so named because their peak singing times are before sunrise and at dusk. The scientific name refers to the Vesper Sparrow's habitat--*Pooecetes* meaning "grass dweller" and *gramineus* meaning "fond of grass".

DISTRIBUTION AND STATUS

The Vesper Sparrow breeds in the interior of the western U.S. and Canada and in the northern United States. It is common and widespread in South Dakota, but least common in the counties just west of the Missouri River. The second Atlas documented Vesper Sparrows on more blocks (65%) than did the first Atlas (48% of random blocks). Most of the increase occurred in the western half of East River and in Corson County. South Dakota's Vesper Sparrow population decreased at a rate of 3.4% per year between 2002 and 2012 (Sauer *et al.* 2014).

HABITAT

Vesper Sparrows breed in a broad range of open habitats that have short, relatively sparse vegetation, and some shrubs or robust forbs. During the second Atlas, observers reported this sparrow in pastures (31% of reports), cropland (33%), roadsides (14%),

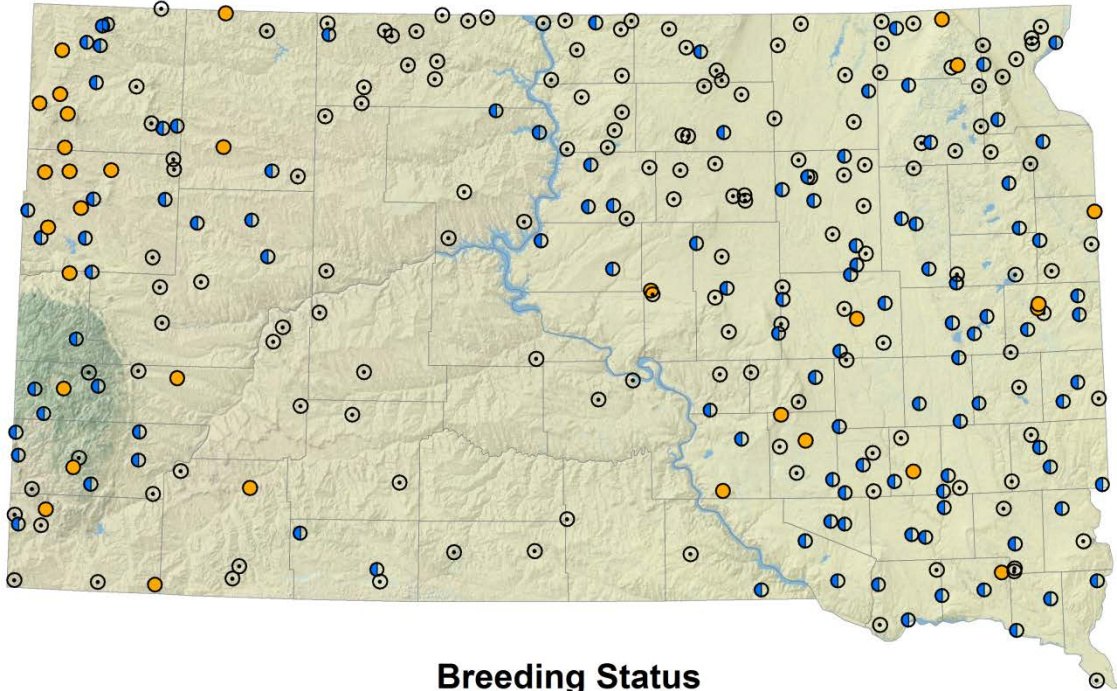
undisturbed and brushy grasslands (10%), hayfields (5%), shelterbelts (6%), and shrublands (1%).

BREEDING BIOLOGY

The breeding season in South Dakota is from mid-May to early July. Vesper Sparrow nests are placed on the ground in a slight depression, at the base of a clump of grass, weeds, or shrub. The nest consists of a woven bulky cup of grasses and weeds, lined with finer grasses, hair, and feathers. The female lays a clutch of 3 to 4 eggs, which she incubates for 12 to 13 days. Both parents feed insects to the nestlings. Chicks leave the nest at 9 to 10 days and are dependent on their parents for food for another 20 to 29 days (Jones and Cornely 2002).

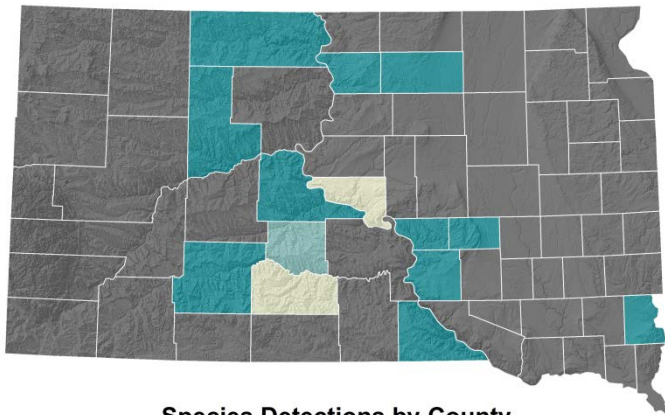
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	28	3	31
Probable	110	2	112
Possible	144	4	148
Observed	0	0	0
Total	282 (65%)	9	291

Vesper Sparrow



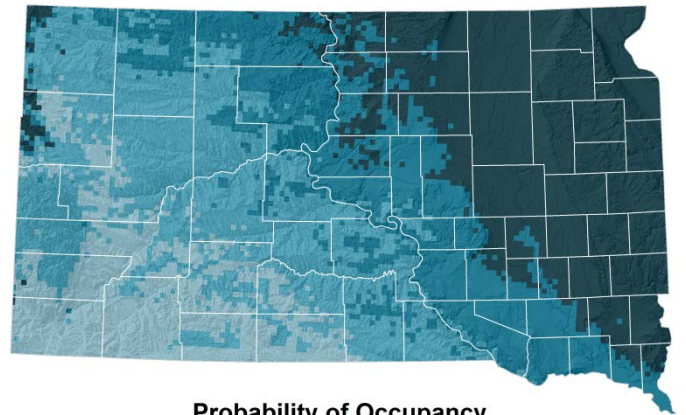
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

LARK SPARROW

Chondestes grammacus

Many sparrows are challenging to identify, but Lark Sparrows are easily identified by their bold facial pattern and broad, white-edged tail. Lark Sparrow courtship displays are quite different from those of most other songbirds. Males strut like a turkey, with tail upright, flashing white tail spots, and wings drooping to the ground.

DISTRIBUTION AND STATUS

The Lark Sparrow breeds throughout central and western United States, except the West Coast and high mountain regions. In South Dakota, Lark Sparrow is common west of the Missouri River and uncommon but increasing east of the River. The second Atlas detected this sparrow on more survey blocks (57%) than did the first Atlas (46%). Most of the increase occurred on the east side of the Missouri River and in the extreme northeast, where there was just one record during the first Atlas.

HABITAT

Lark Sparrows breed in a variety of habitats, preferring edges between two habitat types. During the second Atlas, Lark Sparrows were reported in woodlots and shelterbelts (43% of observations), pastures (24%), other grasslands (12%), shrublands (5%), roadsides (5%), cropland (5%), residential areas and parks (3%), and open areas with scattered trees (3%). For nesting, this sparrow favors areas with some open bare ground and some

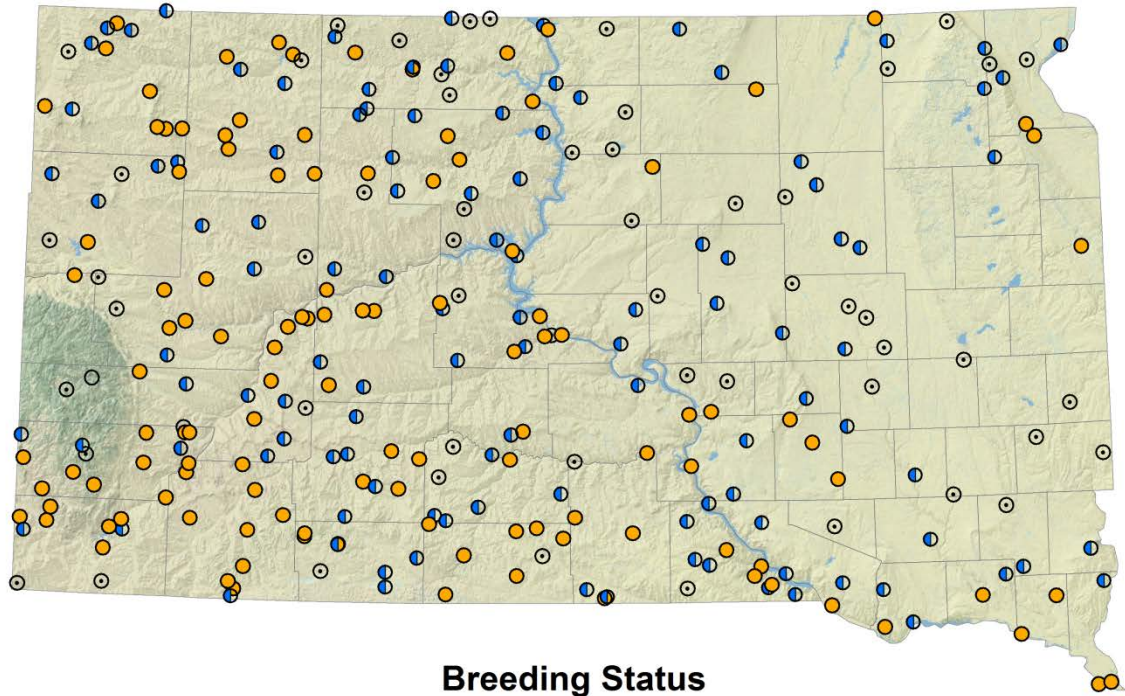
shrubs or low trees. Second Atlas nests primarily were found in woods (29%), pastures (29%), or other grasslands (24%), with two nests in residential yards, one on a sandy beach, and one in shrubland.

BREEDING BIOLOGY

In South Dakota, the breeding season is from mid-May to mid-August. Some pairs raise two broods during the summer. Both adults may take part in choosing the nest site. The male places twigs at a potential site, but the female does the actual building. The nest is built on the ground or in a shrub or low tree up to 7' above ground. The cup-shaped nest is composed of grass, weeds, and twigs, and lined with fine grass, rootlets, leaves, and animal hair. Clutch sizes reported in 12 nests during the second Atlas averaged 3.6 sparrow eggs and ranged from 2 to 5 eggs. Six nests also contained 1 to 2 Brown-headed Cowbird eggs (average 1.3 cowbird eggs per nest). Eggs hatch after 11 to 12 days incubation and nestlings leave the nest in another 9 to 10 days (Martin and Parrish 2000).

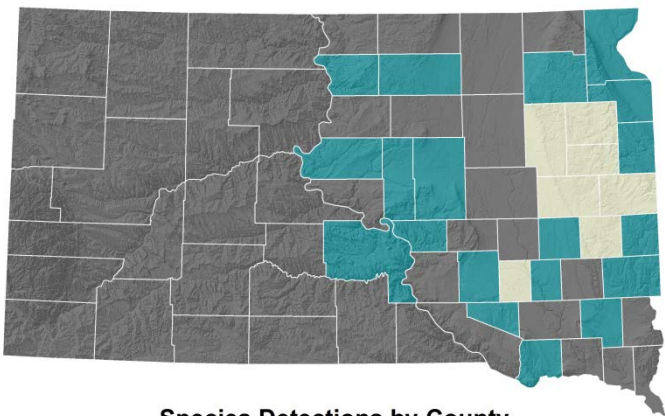
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	88	31	119
Probable	107	5	112
Possible	53	3	56
Observed	1	0	1
Total	249 (57%)	39	288

Lark Sparrow



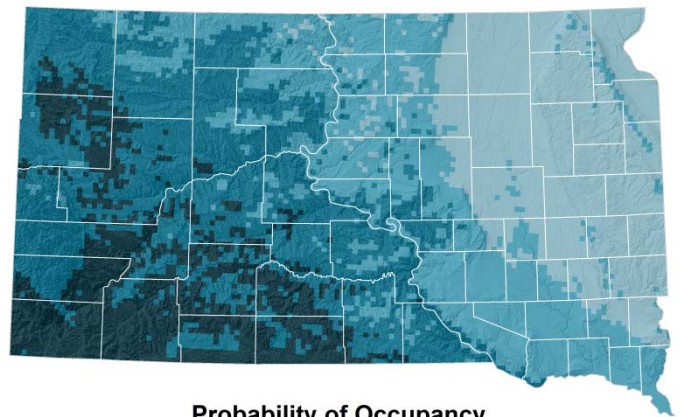
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

LARK BUNTING

Calamospiza melanocorys

Unusual among birds, male Lark Buntings perform two different Flight Songs. The Primary Song is used to attract mates while the Aggressive Flight Song is a territorial display aimed at other males.

DISTRIBUTION AND STATUS

The Lark Bunting is a Great Plains endemic species, breeding from the central Prairie Provinces in Canada, south to the Texas Panhandle. In South Dakota, Lark Buntings are relatively common west of the Missouri River. East of the River, however, Lark Bunting abundance and distribution has greatly decreased. During the first Atlas, Lark Buntings were detected on 67% of random blocks, including many records in the east-central counties and a small number in the southeast. State-wide grassland bird surveys 1997 to 2000 did not reveal any Lark Buntings east of the river (Bakker *et al.* 2003). Observers during the second Atlas also did not find any buntings in the southeast and found greatly reduced numbers on the east side of the Missouri Coteau, especially in Hand, McPherson, Edmunds, Faulk, and Spink counties. Lark Buntings in South Dakota have been experiencing a long-term decline of 3.2% a year since 1968 (Sauer *et al.* 2014). Because of this, Lark Bunting is a state Species of Greatest Conservation Need (SDGFP 2014).

HABITAT

In South Dakota, Lark Buntings breed in grasslands, sage prairies, and alfalfa fields. During the second Atlas, Lark

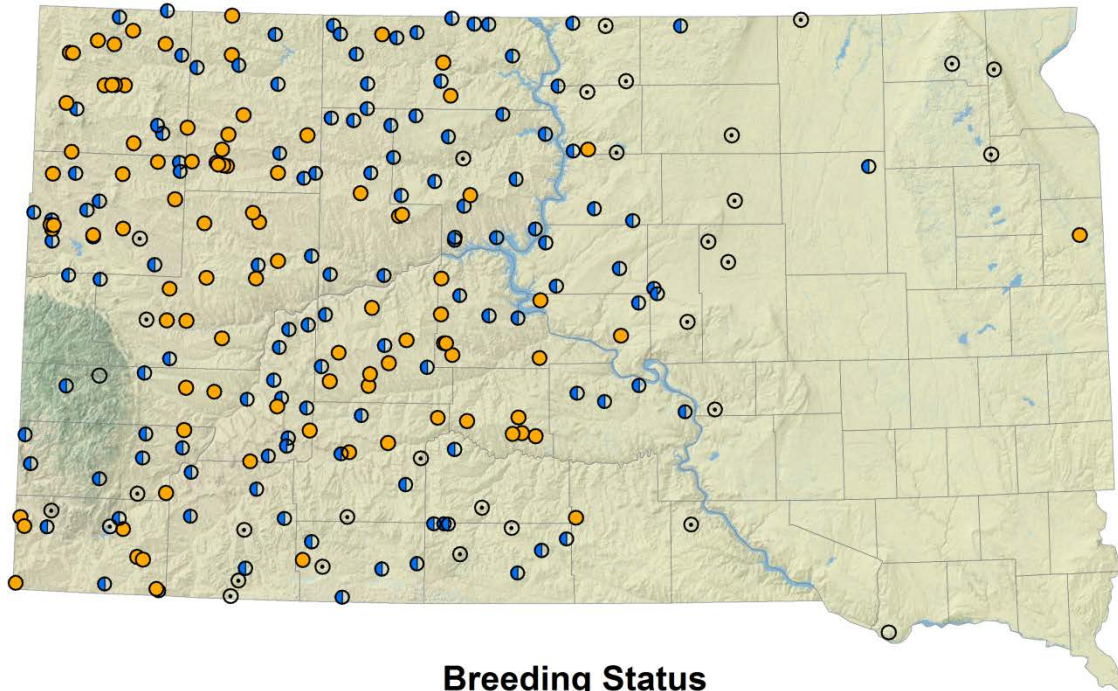
Buntings were in pastures (64%), hayfields (13%), cropland (11%), undisturbed grasslands (7%), roadsides (3%), prairie dog towns (1%), and sagebrush (1%). Second Atlas nests were in pastures (8 nests), undisturbed grasslands (8), sagebrush (2), a hayfield (1), and an alfalfa field (1).

BREEDING BIOLOGY

Lark Buntings in South Dakota nest from late May to mid-July. They nest in a shallow depression on the ground, next to a shrub or forb. The nest is an open cup made of grasses, weeds, and other coarse plant materials, and lined with finer grasses and hair. The female lays 4 to 5 greenish-blue eggs. In 8 second Atlas nests, clutch sizes ranged from 3 to 5 eggs, averaging 4.1 eggs. Normally, the frequency of cowbird parasitism is low, and cowbirds rarely fledge from Lark Bunting nests. During the second Atlas, 2 of 14 nests with eggs had Brown-headed Cowbird eggs (2 in each). Both adults feed the nestlings. When chicks leave the nest after 8 to 9 days, their flight feathers are not fully developed and they cannot fly. Chicks hide in the vegetation, waiting to be fed by their parents (Shane 2000).

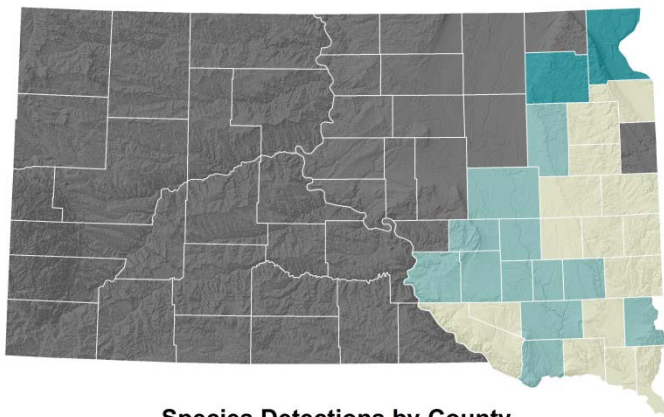
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	67	28	95
Probable	118	5	123
Possible	30	0	30
Observed	2	0	2
Total	217 (50%)	33	250

Lark Bunting



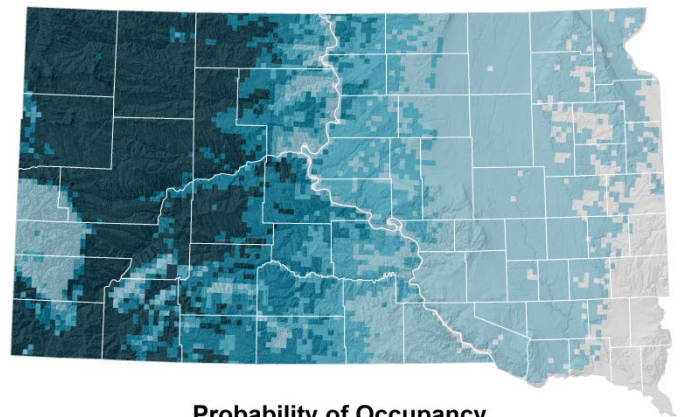
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

SAVANNAH SPARROW

Passerculus sandwichensis

The Savannah Sparrow was not named for its preference for open grasslands, but rather for the town of Savannah, Georgia, where it was first collected by ornithologists.

DISTRIBUTION AND STATUS

South Dakota is at the southern edge of the Savannah Sparrow's breeding range in the central United States. Elsewhere, this sparrow breeds throughout Canada and the northern half of the U.S. The distribution and abundance of Savannah Sparrows were quite different between the first and second Atlases. During the first Atlas, these sparrows were detected on just 16% of random blocks and only seven were reported west of the Missouri River. Ten years later, researchers found Savannah Sparrows in 10 more counties, mostly in the southeast and north-central regions (Bakker *et al.* 2003). Twenty years later, the second Atlas detected Savannah Sparrows in 51 counties, with a noticeable expansion in the northwestern counties bordering North Dakota. This sparrow's population within South Dakota has been increasing significantly over the past 45 years (Sauer *et al.* 2014).

HABITAT

In South Dakota, the highest densities of Savannah Sparrows are in native tallgrass prairies, well-established Conservation Reserve Program (CRP) grasslands, and larger grassland patches (Bakker *et al.* 2002, Bakker *et al.* 2006, Bakker and Higgins 2009). Second Atlas observers reported

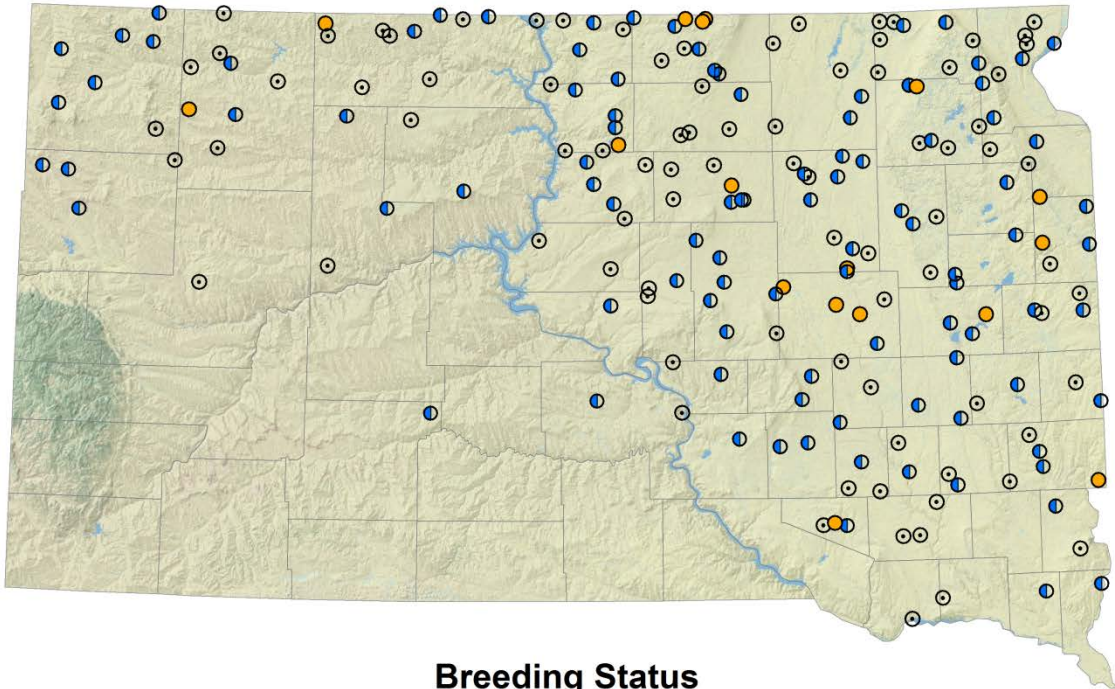
Savannah Sparrows in pastures (39% of observations), CRP (28.5%), cropland (10%), hayfields (7%), roadsides (6%), wet meadows (3%), and shelterbelts (3%). Three second Atlas nests were found in CRP.

BREEDING BIOLOGY

During the second Atlas, nesting activity occurred between June 8 and August 5. The cup-shaped nest is built by the female and is made of grass. It is placed on the ground under matted dead vegetation or overhanging grass, and usually can only be approached from one side via a tunnel. The female may lay 2 to 6 eggs; two second Atlas nests each had 4 eggs. Eggs are incubated by the female for 11 to 13 days. Both parents bring insects to the nestlings. After 8 to 11 days in the nest, the chicks leave the nest fully feathered but cannot fly. By 20 days old, they are erratic but proficient fliers. Parents feed and remain with the young sparrows for about 21 to 25 days (Wheelwright and Rising 2008). Brown-headed Cowbirds sometimes lay their eggs in Savannah Sparrow nests. One observer during the second Atlas reported an adult sparrow feeding a fledgling cowbird.

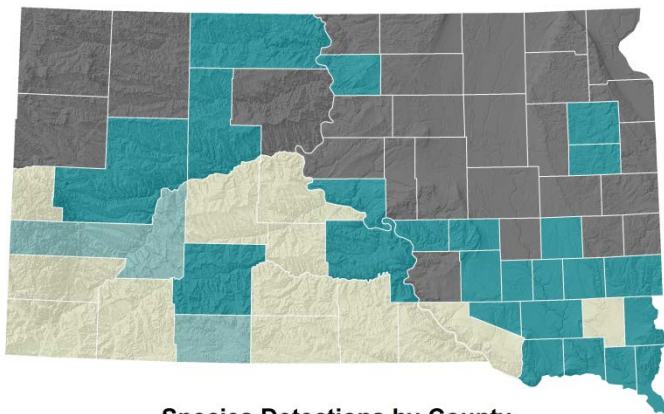
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	8	9	17
Probable	97	2	99
Possible	86	0	86
Observed	0	0	0
Total	191 (44%)	11	202

Savannah Sparrow



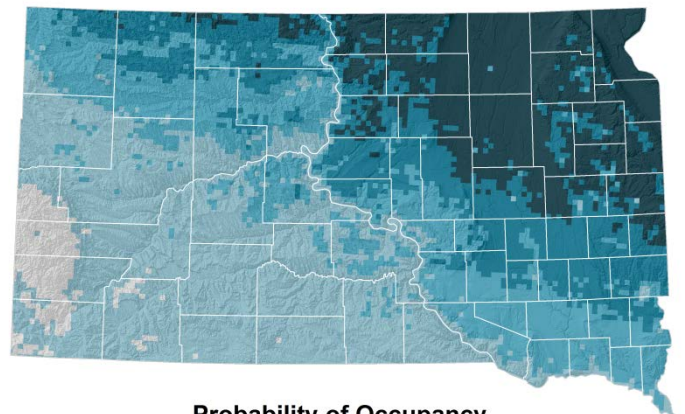
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

GRASSHOPPER SPARROW

Ammodramus savannarum

Although grasshoppers are a major part of its diet, the Grasshopper Sparrow is so named because of its insect-like song. It is one of the few North American sparrows that sings two completely different songs. The insect-like buzz is given from a perch and is used to mark territory boundaries. The Sustained Song is a rolling jumble of buzzy phrases. It is given either from a perch or during a low fluttering courtship flight and functions to attract a mate and maintain the pair bond.

DISTRIBUTION AND STATUS

Grasshopper Sparrows primarily breed east of the Rocky Mountains in the U.S. Highest breeding densities are in the Great Plains. The Grasshopper Sparrow is the most abundant and widespread breeding sparrow in South Dakota, only uncommon in cropland-dominated areas east of the Missouri River, and the Black Hills. Northwestern South Dakota has some of the highest densities in the country. Grasshopper Sparrow abundance and distribution did not change between the Atlases. The state's population has been declining significantly over the long term (1.6% per year, 1967-2012) but has been stable over the short term (2002-2012) (Sauer *et al.* 2014).

HABITAT

In South Dakota, Grasshopper Sparrows breed in grasslands with intermediate grass height and density, and a relatively deep litter layer. They are more abundant in large grassland patches and in landscapes with more

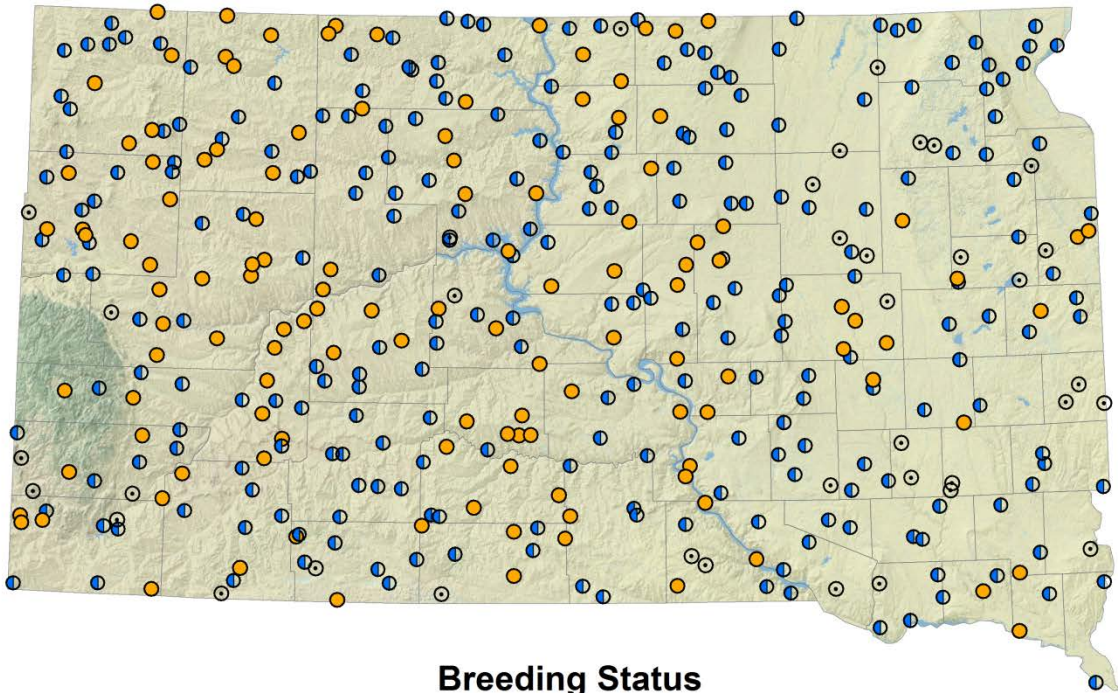
grassland, but less abundant near wooded edges and wind turbines (Bakker *et al.* 2002, Berman 2007, Greer 2009, Ruth 2015, Shaffer and Buhl 2016). Almost all Grasshopper Sparrow observations during the second Atlas were in grasslands, with 72% in pastures, 19% in undisturbed grasslands, and 7% in hayfields. Second Atlas nests were in pastures (5 nests), undisturbed or Conservation Reserve Program grasslands (5 nests), and in a roadside ditch (1 nest).

BREEDING BIOLOGY

Nesting during the Second Atlas was observed from May 21 to August 7. Grasshopper Sparrows may raise 2 broods per year. The female constructs a well-hidden nest on the ground under a clump of grass. The nest, made of dry grass, usually is partly domed with grass woven into overhanging vegetation. The average clutch size is 4 eggs; second Atlas nests (5) contained 1 to 6 eggs. Both parents incubate the eggs, care for the nestlings, and feed the fledglings. Sometimes unrelated adults from adjacent territories also help care for the young (Vickery 1996).

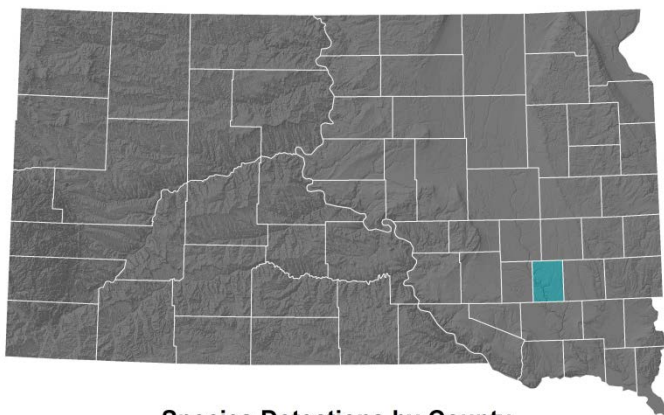
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	109	19	128
Probable	248	3	251
Possible	36	1	37
Observed	0	0	0
Total	393 (90%)	23	416

Grasshopper Sparrow



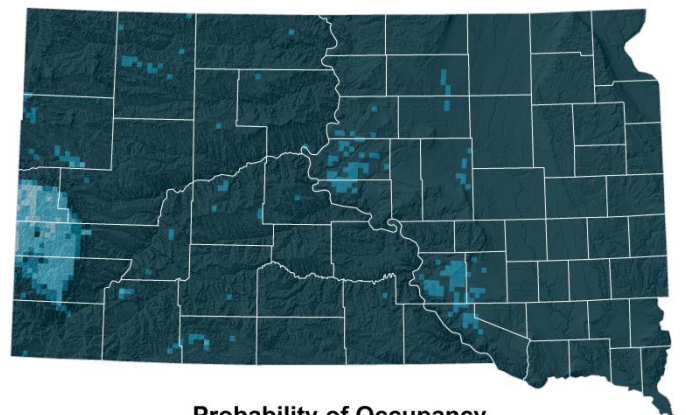
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BAIRD'S SPARROW

Ammodramus bairdii

Once considered an abundant prairie bird, Baird's Sparrow populations have decreased dramatically as their prairie habitats have been altered or plowed under.

DISTRIBUTION AND STATUS

This mixed-grass prairie specialist has a rather limited breeding range, from the prairie provinces of Canada south through northeast Montana and the Dakotas. In South Dakota, which is the extreme southeast end of the species' range, Baird's Sparrow is most common in the counties bordering North Dakota, especially Harding, Perkins, and western Corson counties. Baird's Sparrow also occurs in Butte, northern Ziebach, and northeast Dewey counties. It does not occur in the eastern half of Corson County, most of Ziebach, Dewey or Meade counties, an area which appears to have appropriate habitat. Baird's Sparrow is less common along the Missouri Coteau, east of the river. It rarely, but consistently, has been detected over the years south of the Missouri Coteau, especially in Hand and Faulk counties (e.g., Kantrud and Faanes 1979), but has not yet been confirmed breeding in that region. Its abundance and distribution did not change since the first Atlas, possibly because relatively few grasslands in the West River area were plowed during the period. However, because of its rapidly decreasing population in nearby states, Baird's Sparrow is listed as a Species of Special Conservation Need in South Dakota (SDGFP 2014).

HABITAT

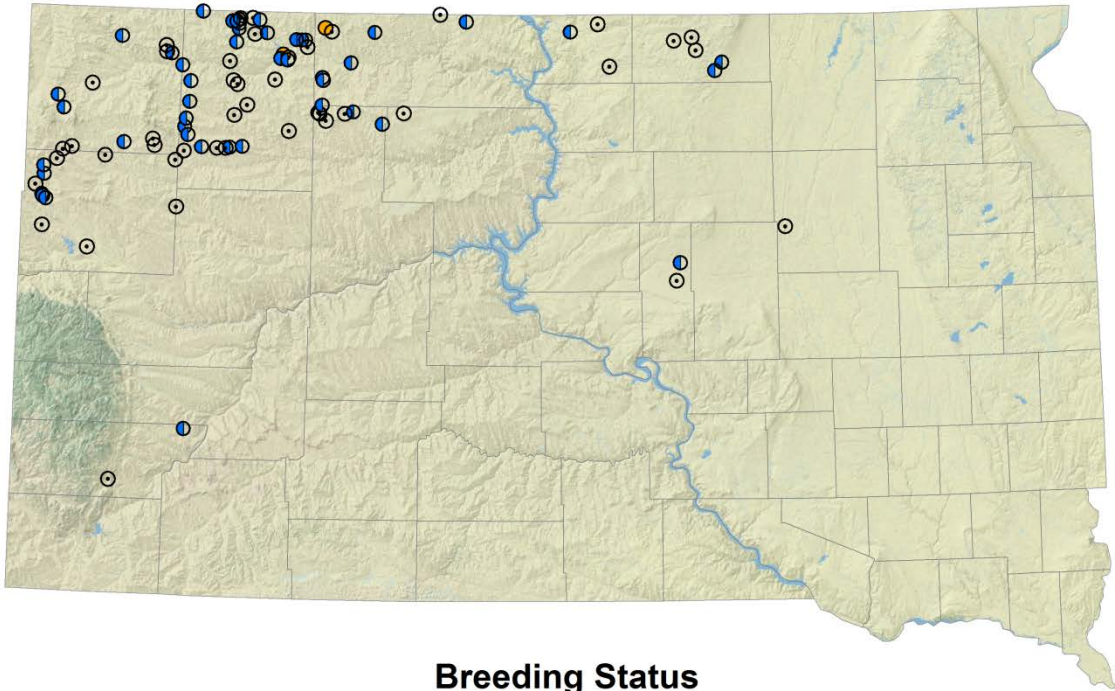
Baird's Sparrow is associated with wetter, taller vegetation within mixed-grass prairie. It will tolerate non-native grass species and grazing practices that create or maintain a diversity of vegetation heights and densities. All observations of Baird's Sparrows during the second Atlas were in grasslands--86% in pastures and 8% in undisturbed grasslands.

BREEDING BIOLOGY

Baird's Sparrows begin nesting in late May and may raise 2 broods in a summer. They create a depression in the ground under a tuft of grass in which they build their cup-shaped nest of grass and forbs lined with soft materials. The female incubates the 4 or 5 grayish-white eggs for 10 to 12 days. Nestlings are fed insects by both parents during the 8 to 11 days nestling period. After chicks leave the nest, they only are fed by the male until independence (Green *et al.* 2002).

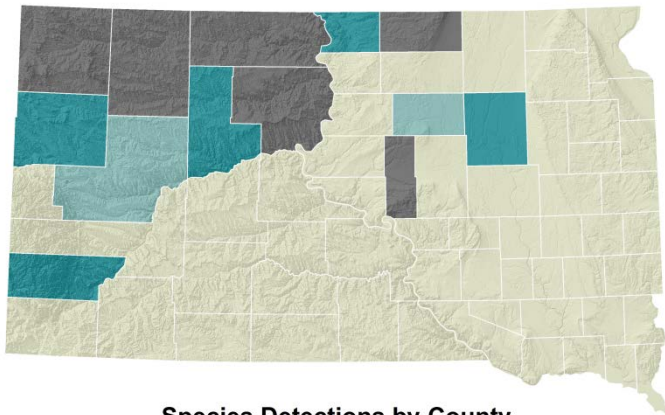
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	1	2
Probable	12	34	46
Possible	12	32	44
Observed	0	0	0
Total	25 (6%)	67	92

Baird's Sparrow



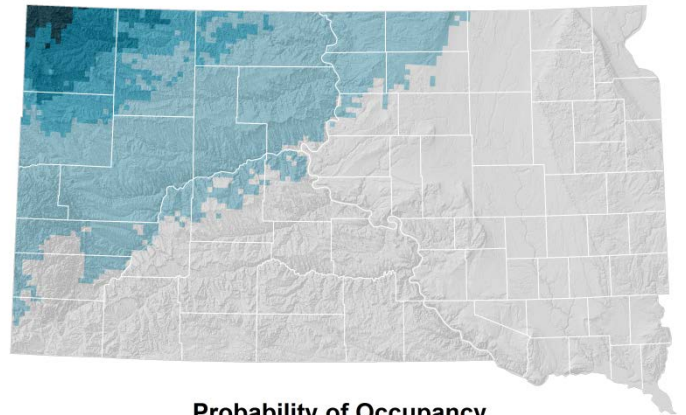
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

HENSLOW'S SPARROW

Ammodramus henslowii

The Henslow's Sparrow is a secretive, little known prairie bird. Males regularly sing at night, sometimes all night long, an unusual behavior for a songbird.

DISTRIBUTION AND STATUS

The current breeding range is from eastern Minnesota east to New England and south to northern Missouri, southern Illinois, and southern New York. South Dakota is not within the main breeding range, but the species is erratic and does occur regularly in the eastern Dakotas. Henslow's Sparrow may have nested in South Dakota in the 1800s. However, just one nest has ever been described, found in Day County in 2001 (Igl 2002). Most summer records have occurred since the 1960s (summarized in Igl 2002) and show that the species is regularly, but erratically, detected east of the Missouri River. The second Atlas recorded the first Henslow's Sparrows west of the River, on Fort Pierre National Grassland in Lyman County. The irregular nature of reports in South Dakota may be because of few observers and few systematic surveys in potential breeding areas. In addition, Henslow's Sparrow populations can fluctuate with climate conditions, often increasing with increasing rainfall (Herkert *et al.* 2002). This may explain the lack of observations during the first Atlas, which occurred during a prolonged dry spell (Peterson 1995).

HABITAT

Henslow's Sparrow breeding habitat is native tallgrass prairie, undisturbed grasslands, idle pastures, unmown

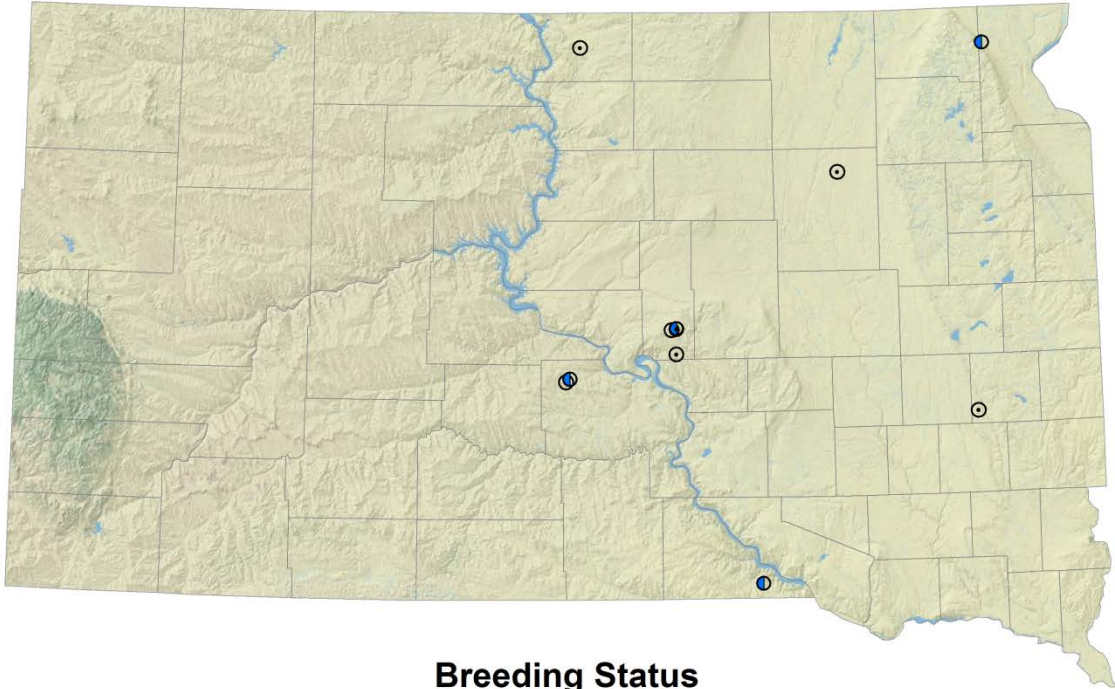
hayfields, and Conservation Reserve Program (CRP) fields. Requirements include tall dense grass cover, a high density of standing dead vegetation, and an accumulation of litter. Second Atlas reports were in undisturbed grasslands or CRP (58%) and pastures (42%).

BREEDING BIOLOGY

In South Dakota, Henslow's Sparrow likely nests from late May to early July. Dates of second Atlas records ranged from June 6 to July 15, and the one nest ever described in the state had nestlings on June 14. That nest was typical for the species: "...a well-concealed nest, located 6 cm [2.25"] above the ground at the base of a clump of smooth brome and alfalfa. The nest was cup-shaped, constructed primarily of grass, and lined with very fine grasses and rootlets. The nest was loosely woven around the vertical stems of smooth brome and alfalfa. Matted litter formed a partial dome over the nest..." (p. 8, Igl 2002). Females lay an average of 4 eggs. Eggs hatch after 10 to 12 days and nestlings leave the nest after about 9 days (Herkert *et al.* 2002).

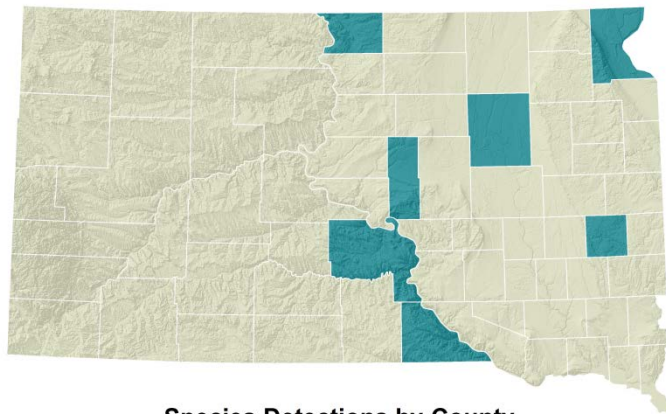
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	0	0
Probable	2	2	4
Possible	4	3	7
Observed	0	0	0
Total	6 (1%)	5	11

Henslow's Sparrow



Breeding Status

- Confirmed breeding
- Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

LE CONTE'S SPARROW

Ammodramus leconteii

Nesting Le Conte's Sparrows are so secretive that, although first described in 1790, the first nest was not discovered until 1882. The species is named for John Le Conte, a physician friend of John James Audubon.

DISTRIBUTION AND STATUS

Northeast South Dakota is at the southern tip of the Le Conte's Sparrow's breeding distribution, which extends from the extreme north-central United States through central Canada. This sparrow's population in the Dakotas fluctuates depending on moisture conditions. It is highest in wet years and is rare or absent during dry years (Igl and Johnson 1999). Only three Le Conte's Sparrows were detected during the first Atlas while 83 birds in 14 counties were recorded during the second Atlas. Moisture conditions are a possible explanation for the difference. Four years of the first Atlas survey were drier than normal (Peterson 1995), while 2010 and 2011 during the second Atlas were wetter than normal. Le Conte's Sparrow is a state Species of Greatest Conservation Need because of its erratic population levels, limited distribution within the state, and reliance on tall grass prairies and wetlands (SDGFP 2014).

HABITAT

Le Conte's Sparrows prefer tall, dense grass in wet meadows and wetland edges, as well as similar vegetation in upland areas. They avoid areas with

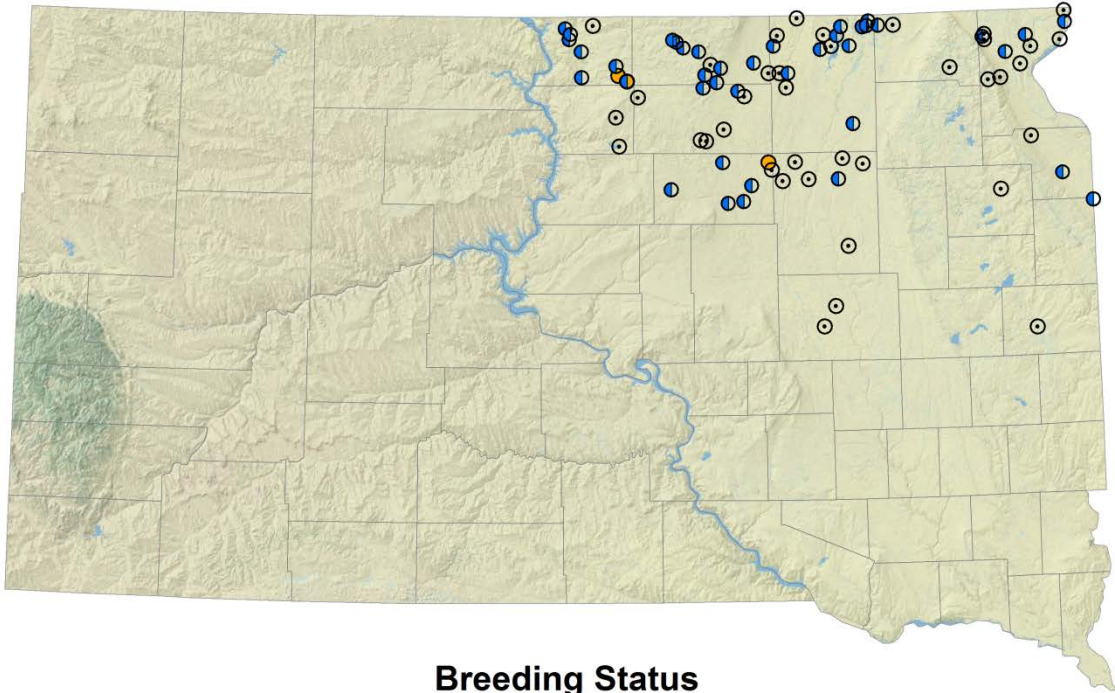
woody vegetation. Most second Atlas observations, as well as all three confirmed records, were in undisturbed grassland or Conservation Reserve Program grasslands (86% of all records). The remaining observations were in pastures (7%), marshes (5%), and wet meadows (2%).

BREEDING BIOLOGY

Only three nests have ever been discovered in South Dakota and all were active in June. Multiple observations of adults feeding fledglings have been recorded in July and early August. The cup-shaped nest is built on or just above the ground in a dense grass clump or dead matted grass litter. It is made of coarse dead grass and lined with finer grass or hair. Average clutch size is 4 to 5 eggs. Brown-headed Cowbirds often lay eggs in Le Conte's Sparrow nests. During the second Atlas, one observer witnessed an adult Le Conte's Sparrow feeding a cowbird chick. Because of the difficulty of finding nests, nothing is known about the nestling and post-nestling periods (Lowther 2005).

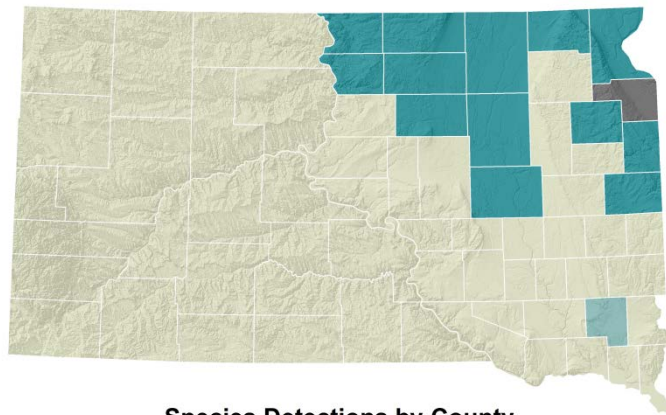
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	3	3
Probable	14	28	42
Possible	16	22	38
Observed	0	0	0
Total	30 (7%)	53	83

Le Conte's Sparrow



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

NELSON'S SPARROW

Ammodramus nelsoni

Formerly considered a subspecies of the Sharp-tailed Sparrow, Nelson's Sparrow is an enigmatic and secretive marsh-nesting bird. It is named after Edward William Nelson, an American naturalist who was Chief of the federal Bureau of Biological Survey in the early 1900s.

DISTRIBUTION AND STATUS

Subspecies *A. n. nelsoni* breeds inland, from northern Alberta to South Dakota. The other two subspecies breed along Hudson Bay and coastal New England. In South Dakota, Nelson's Sparrows breed in the northeastern quarter of the state. South Dakota's breeding population appears to cycle with wet and dry climatic conditions (Tallman *et al.* 2002). First Atlas surveys, conducted during a dry period, recorded just four detections, while second Atlas surveys, conducted during a wetter period, found 66 Nelson's Sparrows in 16 counties.

HABITAT

Nelson's Sparrows inhabit tall dense grass in freshwater marshes and surrounding wet meadow zones. Second Atlas observers found these birds in marshes (97%), pastures (1.5%), and undisturbed grasslands (1.5%).

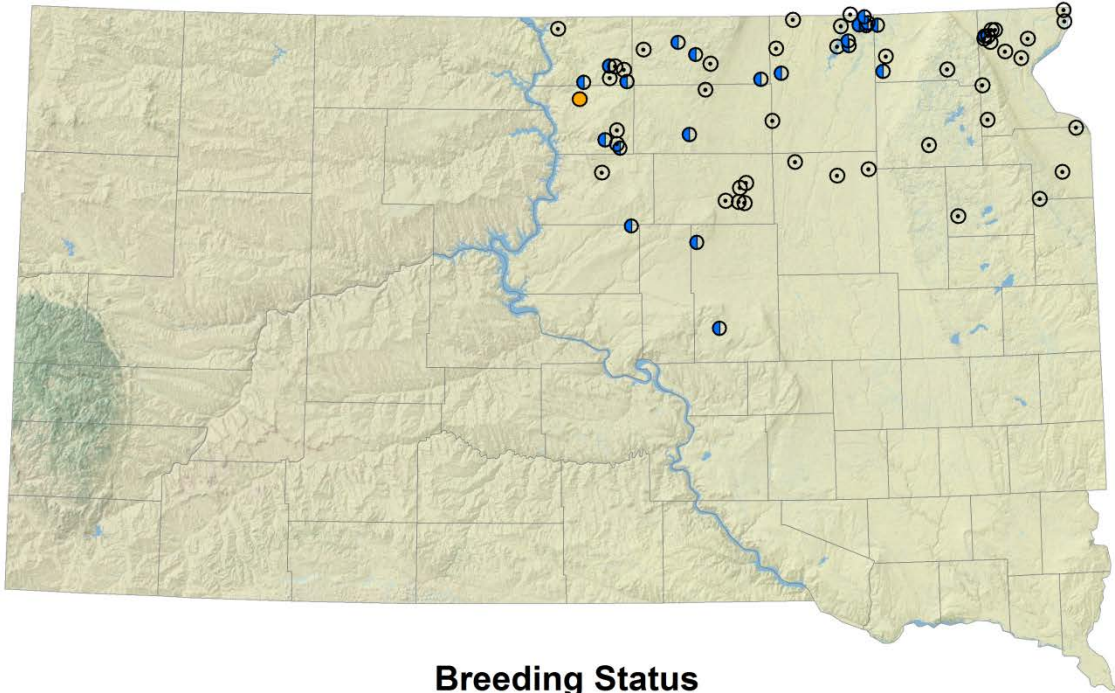
BREEDING BIOLOGY

Secretive while nesting, no Nelson's Sparrow nest has ever been reported in

South Dakota. The second Atlas breeding confirmation was of a bird carrying food. The species is regularly heard singing in June and all breeding confirmation reports (carrying food, young fledglings) have occurred during July. Nelson's Sparrow males do not defend territories and pairs do not establish pair bonds. Males move around large areas, singing to attract females. After mating, the male has no role in parental care. The nest is well-hidden in dense vegetation within a marsh or wet meadow. The female builds a bulky cup-shaped nest of dead grass. She may construct more than one nest but she will lay her clutch of 3 to 5 eggs in just one of them. If a person or potential predator approaches the nest during the 12-day incubation period, the female will quietly leave and hide. In a similar situation during the nestling or fledgling periods, she will give alarm calls, but will not perform distraction displays. Nestlings leave the nest when 8 to 11 days old. They can run but cannot fly for another 3 to 5 days. When the young sparrows are independent, the female may begin a second nest (Shriver *et al.* 2011.)

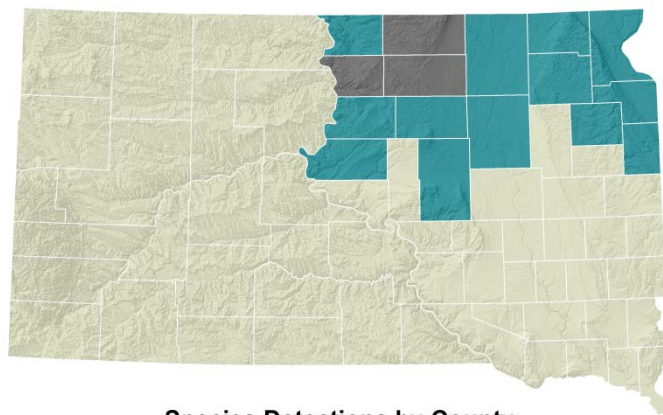
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	1	0	1
Probable	5	17	22
Possible	16	27	43
Observed	0	0	0
Total	22 (5%)	44	66

Nelson's Sparrow



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

SONG SPARROW

Melospiza melodia

Across their breeding range, Song Sparrows have the greatest diversity of plumages and sizes of any North American songbird. Song Sparrows are larger in the northern parts of their range and are darker in areas of higher relative humidity.

DISTRIBUTION AND STATUS

Song Sparrows breed commonly throughout Canada, and most of the United States. In South Dakota, Song Sparrows are common east of the Missouri River and in the Black Hills. Elsewhere, they are uncommon. Song Sparrows were more common west of the Missouri River during the second Atlas than during the first. During the first Atlas, Song Sparrows were reported from just three locations West River away from the Black Hills. South Dakota's Song Sparrow population is increasing at a significant rate according to Breeding Bird Survey data (Sauer *et al.* 2014).

HABITAT

Song Sparrows inhabit any moist areas with shrubs. Second Atlas observers reported Song Sparrows in shelterbelts (40% of observations), riparian woods (18%), wetlands (16%), weedy fields and Conservation Reserve Program grasslands (10%), shrublands (7%), roadsides (5%), cropland (2%), and grasslands with scattered trees (2%). Nests discovered during the second Atlas were in shelterbelts (2 nests) and

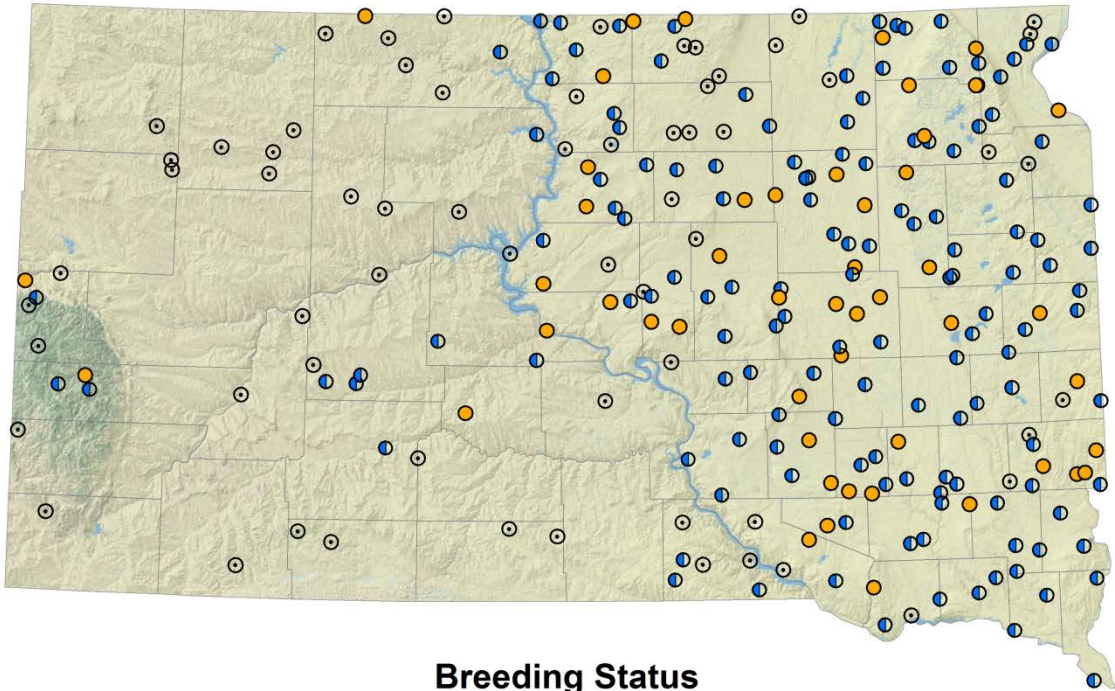
Conservation Reserve Program grasslands (4 nests).

BREEDING BIOLOGY

In South Dakota, Song Sparrows breed from mid-May into early August. They commonly raise two broods per summer. Nests usually are on the ground under a shrub or tuft of grass, or low in a shrub or tree. The female builds a simple cup nest of weeds, grass, and leaves, and lines it with fine grass, rootlets, and hair. The typical clutch size is 3 to 5 eggs. Only the females incubate and brood. The male assists with feeding the nestlings and defending the nest. Brown-headed Cowbirds commonly lay eggs in Song Sparrow nests. During the second Atlas, sparrow adults were reported feeding cowbird fledglings six times compared to one observation of adults feeding sparrow fledglings. Two of three nests with eggs had cowbird eggs. The only nest with young reported during the Atlas had four cowbird nestlings and no sparrow nestlings. Nestlings leave the nest at about 10 to 12 days after hatching and remain with their parents for another 3 weeks (Arcese *et al.* 2002).

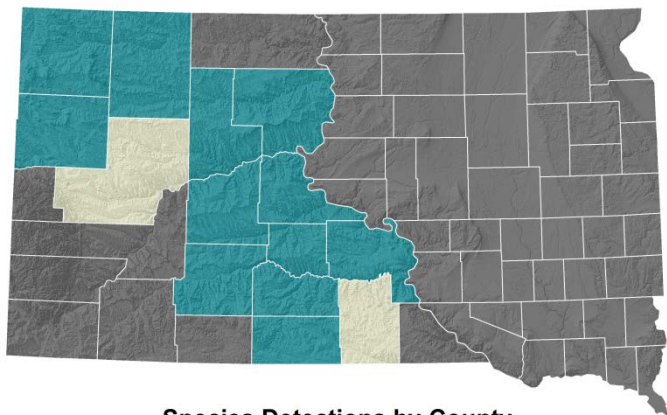
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	40	12	52
Probable	138	1	139
Possible	66	0	66
Observed	0	0	0
Total	244 (56%)	13	257

Song Sparrow



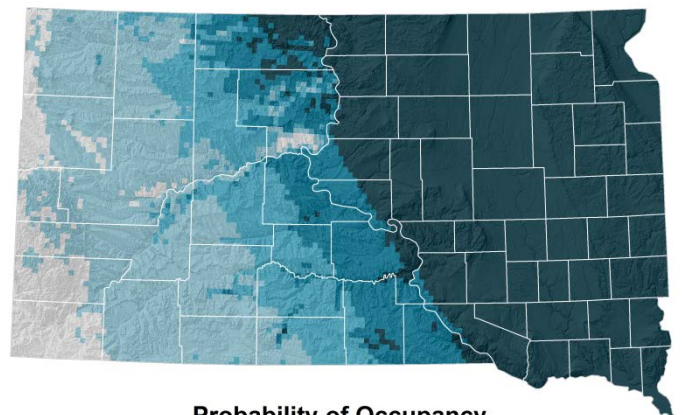
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

SWAMP SPARROW

Melospiza georgiana

A denizen of wetlands, the Swamp Sparrow's propensity for foraging in water is unique among North American sparrows. It often wades in shallow water like a sandpiper, picking insects off the water's surface. It also will lower its entire head into the water while clinging to a reed in order to search for aquatic insects under submerged leaves.

DISTRIBUTION AND STATUS

The Swamp Sparrow breeds in the northeastern and central United States and throughout boreal Canada. Eastern South Dakota is at the western edge of its breeding range. During the second Atlas, Swamp Sparrow was mostly limited to the northeast quarter of the state, where it was relatively common within its preferred habitat. This result is somewhat different from the first Atlas, which recorded fewer birds, but found the species more widespread throughout the eastern part of the state. Both Atlases recorded an outlier population in the Sandhills of Bennett County around Lacreek National Wildlife Refuge.

HABITAT

Rarely found far from water during the breeding season, nesting Swamp Sparrows require shallow water, dense low vegetation, and singing perches. Observers during the second Atlas found this sparrow in marshes (86% of

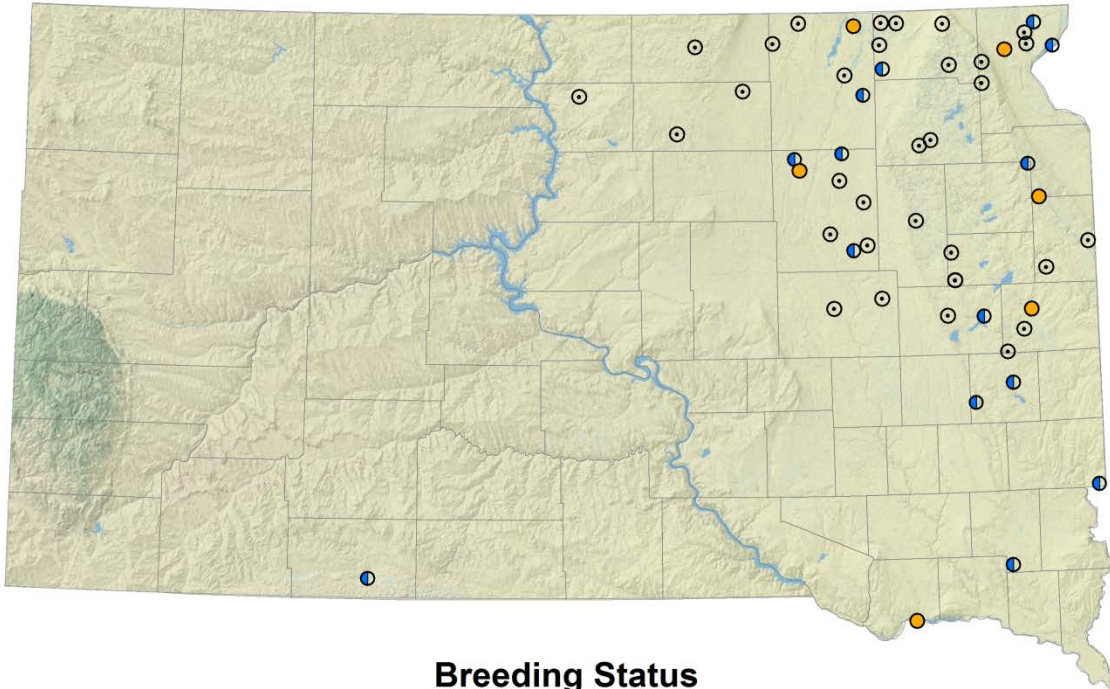
observations), wet meadows (7%), and brushy grasslands (4%).

BREEDING BIOLOGY

The nesting season in South Dakota is June and July. Swamp Sparrows are capable of raising two broods per season but this has not been reported in South Dakota. The female builds a nest just above the water or ground, often supported by surrounding vegetation. Nests over water sometimes are flooded out. The nest is a bulky cup, with a messy exterior made of coarse plant stalks, and an intricately woven lining made of finer plant materials such as rootlets, hair, and plant down. The female lays a clutch of four eggs that she incubates for 12 days. Both parents feed insects, especially dragonflies and damselflies, to the nestlings. The young sparrows leave the nest 9 to 11 days after hatching and are fed by the female for another 15 days (Mowbray 1997).

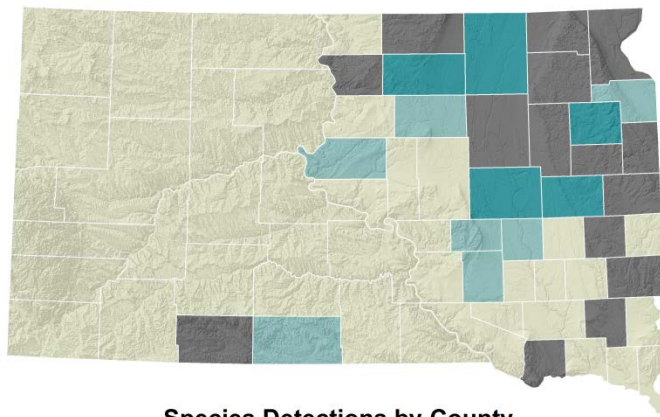
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	2	3	5
Probable	13	1	14
Possible	32	1	33
Observed	0	0	0
Total	47 (11%)	5	52

Swamp Sparrow



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

DARK-EYED (WHITE-WINGED) JUNCO

Junco hyemalis aikenii

The White-winged Junco, a subspecies of the Dark-eyed Junco, is the only endemic bird species in South Dakota. Compared to other junco subspecies, it has two narrow white wing-bars, more extensive white on the outer tail feathers, and in some birds, more color contrast between the darker gray lores and the rest of the head.

DISTRIBUTION AND STATUS

The Dark-eyed Junco breeds in conifer forests throughout Canada, the West, northern Midwest, and northeastern United States. The White-winged subspecies is the only junco subspecies known to breed in South Dakota. It is a common breeder in the Black Hills, and uncommon to rare on the Pine Ridge Escarpment and forested buttes of Harding County. The White-winged Junco is a State Species of Greatest Conservation Need because of its endemic status in the state and limited breeding distribution. The Black Hills population is increasing at a significant rate (2.1% per year) according to Breeding Bird Survey data (Sauer *et al.* 2014).

HABITAT

The White-winged Junco nests at all elevations in pine, spruce, or aspen stands, usually near rather open areas such as edges or clearings. During the

second Atlas, 52% of juncos were observed in pine or spruce forest, 41% in mixed conifer-deciduous stands, and 6% in residential areas.

BREEDING BIOLOGY

The White-winged Junco breeds from May to late July in South Dakota. The nest, built mostly by the female, is almost always on the ground and well hidden under overhanging vegetation, in the cleft of a slope, or under a log or rock. It is an open cup composed of grass and leaves, and lined with finer grasses, feathers, and hair. The female incubates her clutch of 3 to 5 eggs for 11 to 13 days. Nestlings are in the nest for 9 to 13 days and then are fed by their parents away from the nest for another 14 to 16 days (Nolan *et al.* 2002).

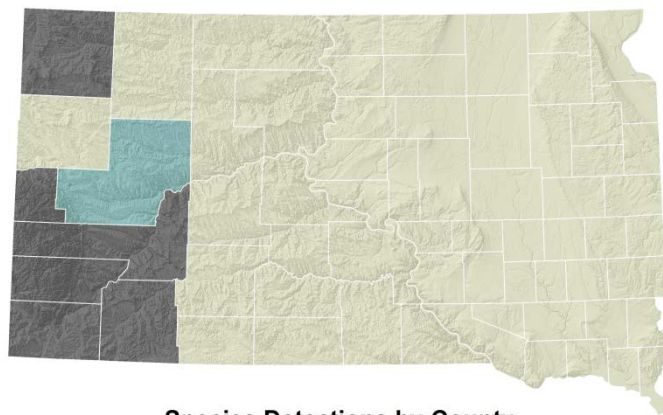
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	11	1	12
Probable	4	3	7
Possible	2	2	5
Observed	0	0	0
Total	17 (4%)	6	23

Dark-eyed Junco



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

SCARLET Tanager

Piranga olivacea

A long-distance migrant, Scarlet Tanagers spend the winter on the east slope of the Andes Mountains in northwestern South America.

DISTRIBUTION AND STATUS

The Scarlet Tanager's breeding distribution includes eastern Canada and the eastern United States, except for the southern states. In South Dakota, Scarlet Tanagers are uncommon and extremely local. They are primarily found in the forests along the lower Missouri and Big Sioux rivers in the southeast, the forested slopes of the Prairie Coteau in the northeast, and the oak woodlands of the south-central region. Scarlet Tanagers have been recorded in Harding County but none were observed there during the second Atlas.

HABITAT

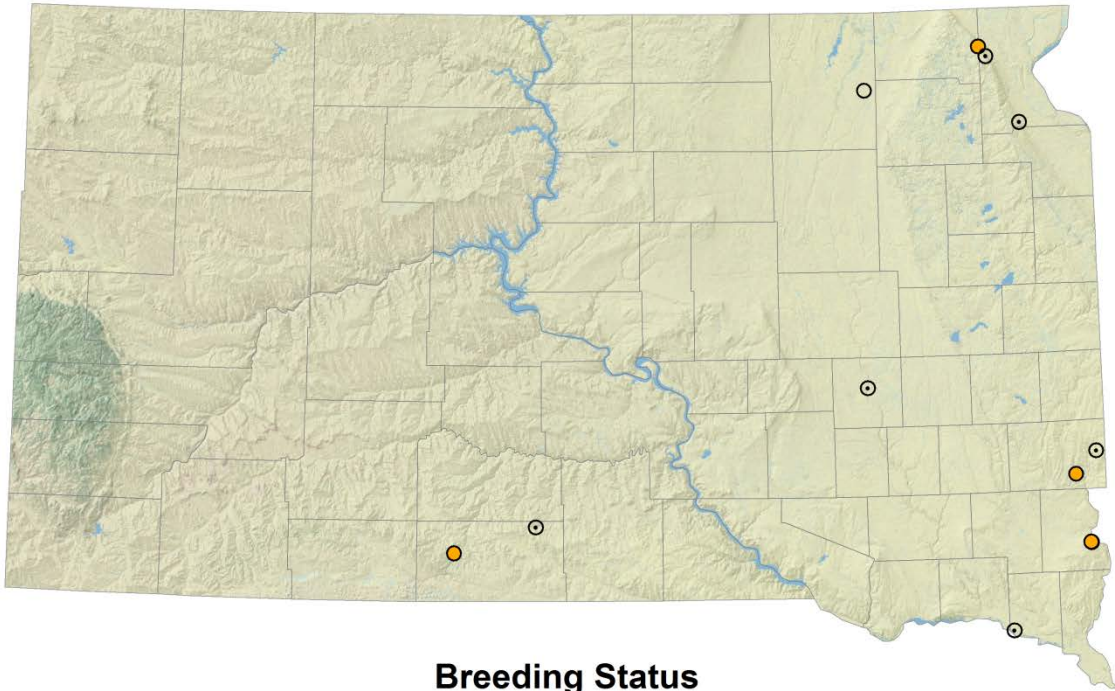
A forest interior species, the Scarlet Tanager prefers mature deciduous woodlands that are at least 25 to 30 acres in size. This species suffers high rates of predation and cowbird parasitism in smaller woodlands or fragmented forest. During the second Atlas, tanagers were reported from deciduous (81%) and mixed deciduous-conifer woodlands (19%).

BREEDING BIOLOGY

Second Atlas nest dates ranged from June 11 to July 24. The nest is built in a cluster of leaves in a tall deciduous tree, with a clear, unobstructed view of the ground, and open flyways to adjacent trees. The flimsy, loose cup is made of a variety of plants and lined with finer plant materials. It often is woven so loosely that the eggs can be seen from underneath. The female lays 3 to 5 light blue eggs, which she incubates for 12 to 14 days. Brown-headed Cowbirds will lay eggs in Scarlet Tanager nests. A second Atlas observer reported a tanager pair feeding a cowbird fledgling. Tanagers are not able to discriminate cowbird eggs and nestlings from their own. Tanagers drive off cowbirds, but if a female cowbird slips undetected into the nest, she removes a tanager egg and replaces it with her cowbird egg. Both adults feed insects and berries to the young tanagers. Nestlings leave the nest when 9 to 12 days old and are fed by their parents for another 2 weeks (Mowbray 1999).

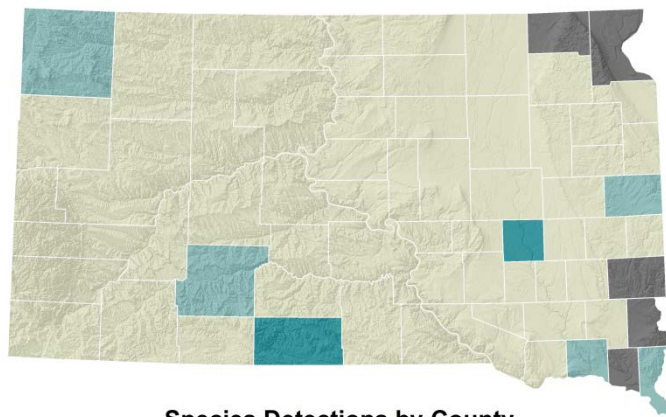
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	2	3	5
Probable	0	0	0
Possible	2	4	6
Observed	1	0	1
Total	5 (1%)	7	12

Scarlet Tanager



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

WESTERN TANAGER

Piranga ludoviciana

Despite their bright colors, Western Tanagers can be difficult to detect in their pine woods habitat because of their sluggish movements and propensity to stay in the shade. The male's red color is caused by rhodoxanthin, a rare plumage pigment that comes from his insect prey, which have themselves acquired the pigment from plants.

DISTRIBUTION AND STATUS

South Dakota is at the extreme eastern edge of the Western Tanager's breeding range, which includes all of western U.S. and Canada north to the southeastern corner of Alaska. It is a common summer resident at all elevations of the Black Hills. This tanager is also found in other ponderosa pine forests in the state. It is uncommon in Custer National Forest in Harding County, and rare on the Pine Ridge Escarpment and isolated pine remnants along the Cheyenne River. Compared to the first Atlas, the second Atlas added records in the southern Pine Ridge Escarpment in Oglala Lakota County and one record in a mixed pine forest remnant along the Cheyenne River in eastern Pennington County. Breeding Bird Survey data indicate that the population in South Dakota has been stable over the past 45 years (Sauer *et al.* 2014).

HABITAT

Western Tanagers breed in open coniferous woodlands or mixed conifer-deciduous woodlands. In the Black Hills, they are most abundant in multi-storied

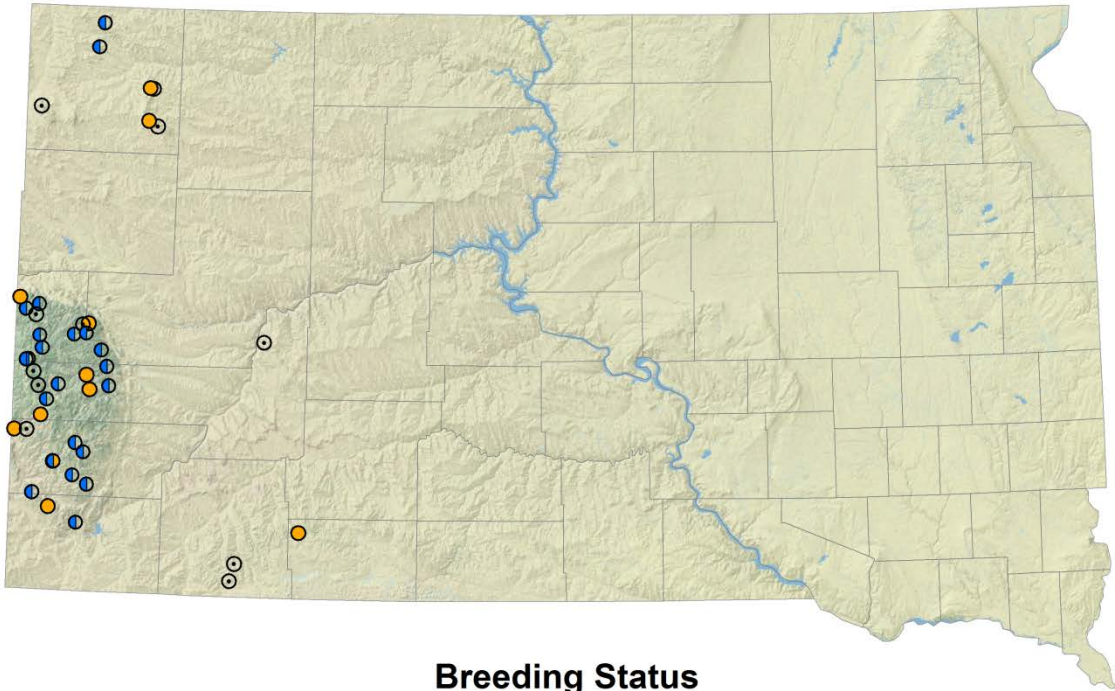
ponderosa pine stands that have an understory of bur oak, green ash, or aspen and birch (Mills *et al.* 2000). They also seem to require larger stands; in one study they were not found in Black Hills pine stands smaller than 25 acres (Rumble *et al.* 2000). Observers during the second Atlas reported finding these tanagers in upland ponderosa pine (64%), mixed pine-deciduous woods (with bur oak or green ash understory) (24%), and mixed pine-deciduous wooded draws (7%).

BREEDING BIOLOGY

Western Tanagers in South Dakota breed from June into mid-July. The nest, built on the end of a tree branch, is a messy, loosely woven, flat bowl with a relatively small cavity for eggs. It is made of a wide variety of coarse plant materials lined with finer plant materials or hair. The female incubates the 3 to 5 bluish-green eggs for 13 days and the nestlings leave the nest when around 12 days old. The male's contribution to raising the young tanagers is uncertain and needs more research (Hudon 1999).

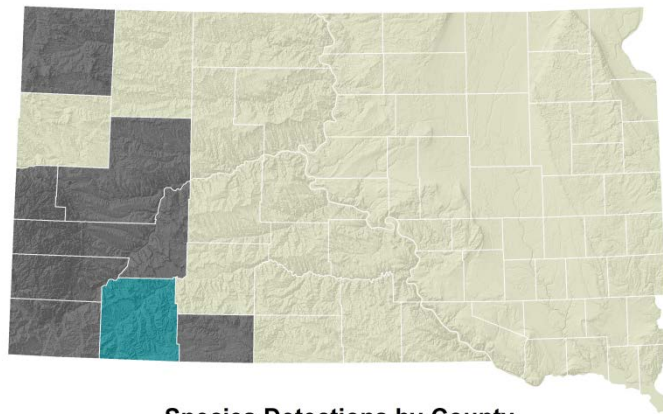
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	8	4	12
Probable	11	11	22
Possible	6	5	11
Observed	0	0	0
Total	25 (6%)	20	45

Western Tanager



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

NORTHERN CARDINAL

Cardinalis cardinalis

The male Cardinal's brilliant red color is not only a delight to see, but is an indication of male quality. Brighter males have better territories and higher reproductive success. The red color comes from eating foods containing carotenoid pigments during molt.

DISTRIBUTION AND STATUS

Originally a southeastern species, the cardinal is now found throughout the eastern U.S west to the Great Plains and south into Mexico. Cardinals have benefited from conversion of forests to crop and residential areas, and bird feeders. Cardinals were first reported in South Dakota, which is at the extreme northwest edge of its range, in 1877 (Krause and Froiland 1956). Initial expansion was up the Missouri River and by the mid-1940s, they were a permanent resident in the wooded areas of Union and Clay counties (Over and Thoms 1946). Although reported sporadically in the Black Hills since 1955, cardinals did not become resident until the early 2000s (Baylor 2005). First Atlas reports were more limited than expected, with only two records west of the river (both in Gregory County) and two records from the northern half of the state. Since then, they have expanded considerably, especially west and north. Cardinals also are now more frequently sighted, being reported in 9% of second Atlas blocks versus 4% of blocks during the first Atlas.

HABITAT

Cardinals live in a variety of habitats that have thick shrubs, including woodlands,

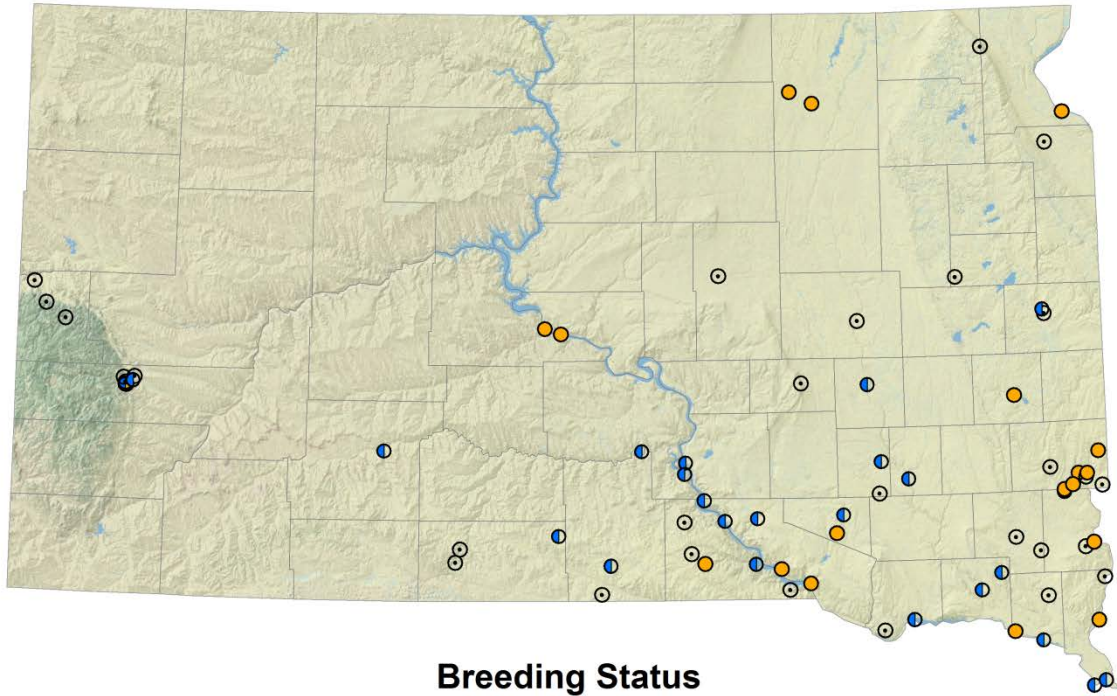
shelterbelts, and residential areas. Most second Atlas observations were in upland woods (43%), lowland woods (36%), and residential areas (16%).

BREEDING BIOLOGY

In South Dakota, the nesting season is from late April into early August. Although not confirmed in South Dakota, cardinals can raise more than one brood per season. The nest is wedged into place in a thick tangle, usually in shrubs or small trees. One second Atlas report was of a nest about 15' high in a juniper. The female builds the nest by chewing on twigs, then bending them around her body, turning in the nest while she works and pushing out with her feet to form a cup. She will lay 1 to 5 grayish eggs and incubate them for 11 to 13 days. When the young birds leave the nest at about nine days old, they have a tiny crest, which will be adult-sized in another 10 days. They are independent at 25 to 35 days old (Halkin and Linville 1999). Cardinals are frequently parasitized by Brown-headed Cowbirds. One second Atlas observer reported adult cardinals feeding a young cowbird.

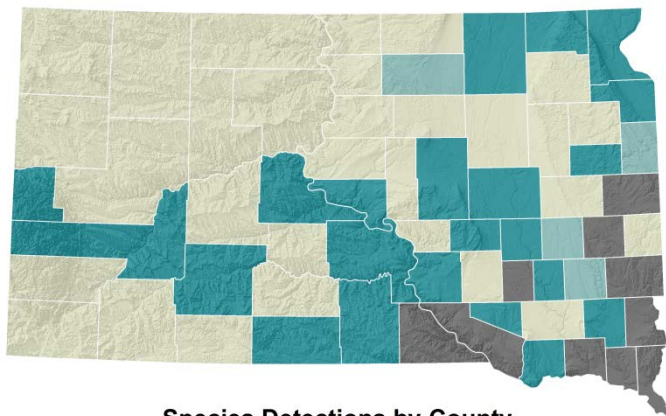
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	4	16	20
Probable	15	9	24
Possible	21	10	31
Observed	0	0	0
Total	40 (9%)	35	75

Northern Cardinal



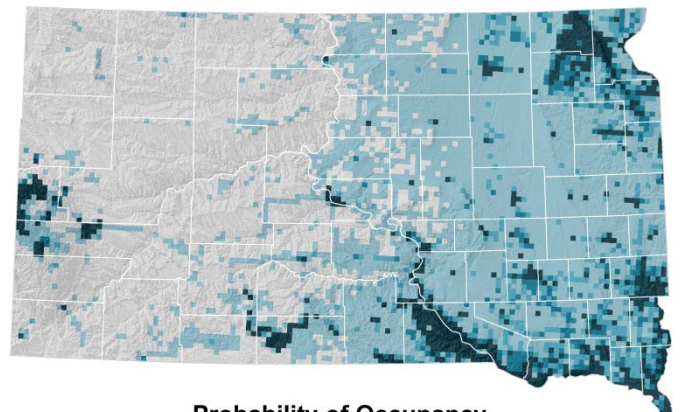
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

ROSE-BREASTED GROSBEAK

Pheucticus ludovicianus

Both male and female Rose-breasted Grosbeaks sing, an unusual trait in songbirds. The female sings while she is building the nest, incubating, and brooding. In addition, this is one of the few songbirds known to sing while sitting on the nest.

DISTRIBUTION AND STATUS

The Rose-breasted Grosbeak breeds in the northeast, Midwest, and northern Prairie states of the United States, and the southern boreal forests and northern Rockies of Canada. Rose-breasted Grosbeaks are found in the eastern portion of South Dakota. They are uncommon, mostly found in the eastern quarter of the state and the southeast. Outliers west of the Missouri River may be late migrants or non-breeding birds. Rose-breasted Grosbeaks sometimes will mate with the closely-related Black-headed Grosbeak, especially in a small hybrid zone in Gregory and Charles Mix counties (Anderson and Daugherty 1974). The grosbeak population in South Dakota has been stable since 1968, according to Breeding Bird Survey data (Sauer *et al.* 2014). The second Atlas found grosbeaks on a slightly higher percentage of blocks than did the first Atlas (13%). This increase appears to primarily have occurred in the counties just east of the Missouri River.

HABITAT

Grosbeaks breed in mature and young deciduous and mixed forests, thickets, shelterbelts, parks, and gardens. Most (78%) second Atlas records were in

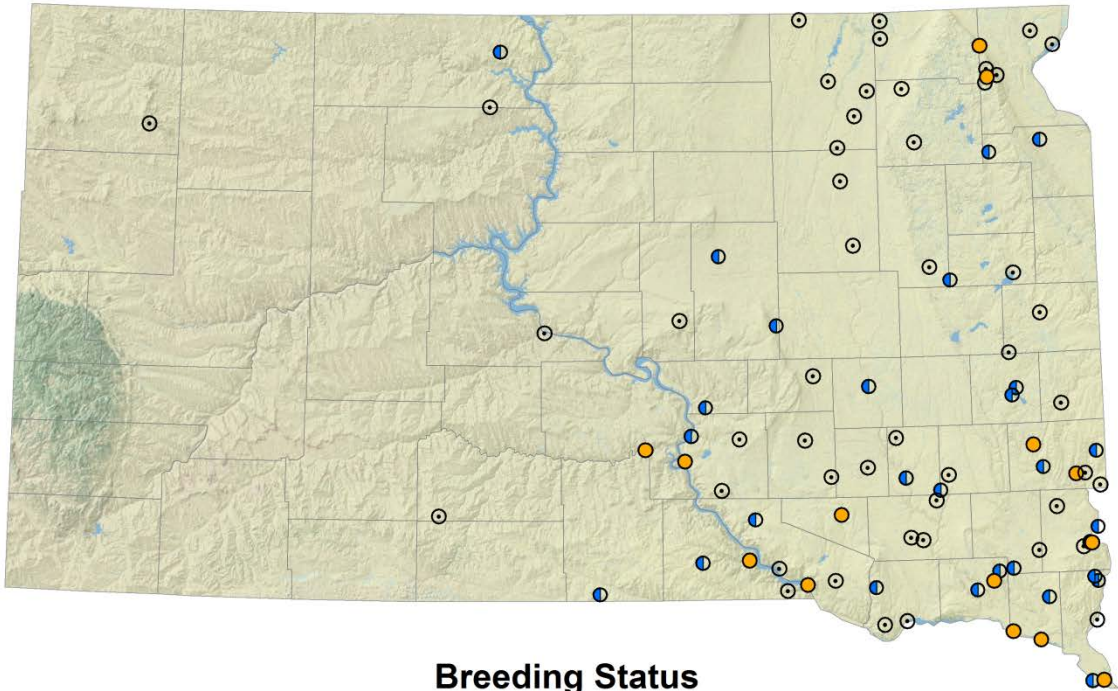
deciduous forest, while the remainder were in mixed deciduous-conifer forest (18%), and parks (2%).

BREEDING BIOLOGY

Grosbeaks breed from late May through July in South Dakota. Nests are placed in a vertical fork or crotch of a tree or shrub. During the second Atlas, one reported nest was in an elm tree while another was in a green ash. Both adults build the loose, open cup nest from coarse sticks, twigs, and grasses and line the cup with fine twigs, rootlets, or hair. The female lays an average of four bluish green eggs, which both adults incubate. Eggs hatch after 12 to 14 days. The parents feed crushed insects and seeds to the nestlings; the most common item is insect larvae. Nestlings leave the nest in about 10 days and remain dependent on their parents for another 3 weeks. During the second Atlas, one grosbeak adult was observed feeding a Brown-headed Cowbird fledgling. Usually, grosbeaks are able to raise both cowbird and grosbeak chicks successfully (Wyatt and Francis 2002).

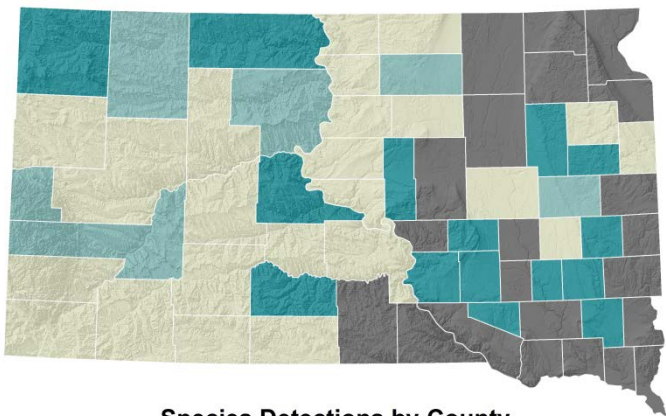
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	6	9	15
Probable	24	5	29
Possible	46	3	49
Observed	0	0	0
Total	76 (18%)	17	93

Rose-breasted Grosbeak



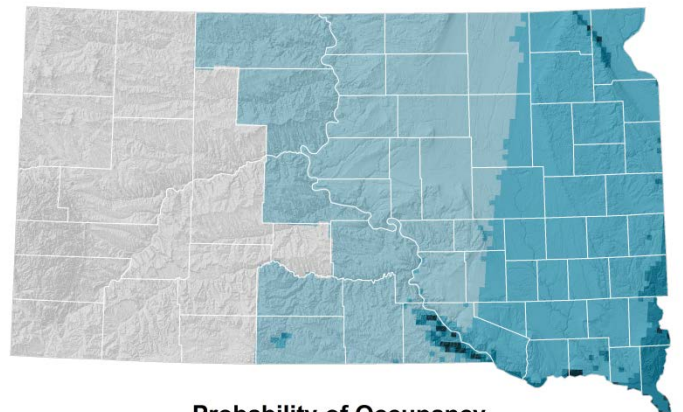
Breeding Status

- Confirmed breeding
- Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BLACK-HEADED GROSBEEK

Pheucticus melanocephalus

The plumage of yearling Black-headed Grosbeak males is highly variable. At one extreme, some have the black, orange, and white pattern of the adult male, while at the other, some have the brown streaky pattern of the adult female. Only yearlings that are most similar to adult males are able to obtain a territory, but they usually do not breed. Yearling males with female-like plumage are subject to less aggression from adult males. All males attain adult plumage in their second year.

DISTRIBUTION AND STATUS

South Dakota is on the eastern edge of the Black-headed Grosbeak's breeding range, which encompasses western North America from southwestern Canada to southern Mexico. In South Dakota, this Grosbeak is a fairly common breeder west of the Missouri River, including in the Black Hills. Black-headed Grosbeaks hybridize with Rose-breasted Grosbeaks in a narrow overlap zone along the Missouri River. However, the frequency of mixed-species pairs is relatively low and such pairs produce smaller clutches (Anderson and Daugherty 1974). The Black-headed Grosbeak population in South Dakota has been slightly increasing over the past 45 years (Sauer *et al.* 2014).

HABITAT

During the second Atlas, observers found grosbeaks in all forest types. Key components of breeding habitat are large trees combined with a dense shrub layer. Second Atlas observations were in deciduous woods (56% of

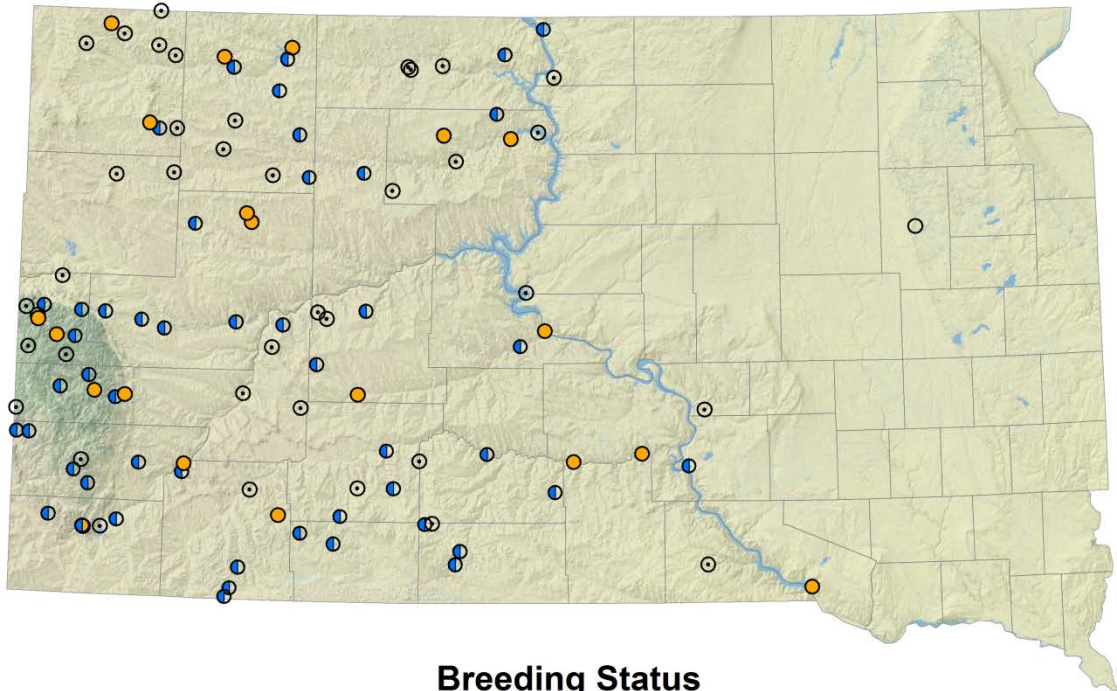
reports), mixed deciduous-conifer woods (27%), pine forests (9%), residential areas (4%), and shrubland (4%). Of 10 nests reported during the second Atlas, 7 were in lowland woods, 2 in upland woods, and 1 in shrubland.

BREEDING BIOLOGY

In South Dakota, Black-headed Grosbeaks nest from late May into August. The nest is placed fairly low in a small tree or bush, often near water. Second Atlas nests were found in shrubs (2 nests), green ash (1 nest), chokecherry (1 nest), and a conifer (1 nest). The nest is a bulky, loose, open cup built of twigs, stems, and pine needles, and lined with stems, hair, rootlets, string, and green material. Clutch size usually is 3 or 4 eggs. Both parents incubate the eggs, although only the female incubates at night. Eggs hatch after 12 to 14 days. Both parents feed the nestlings. During the first few days, insects and fruit are mashed together before being fed to the nestlings. Older nestlings receive whole food items. Nestlings climb out of the nest when 11 to 12 days old but are unable to fly for another 14 days (Ortega and Hill 2010).

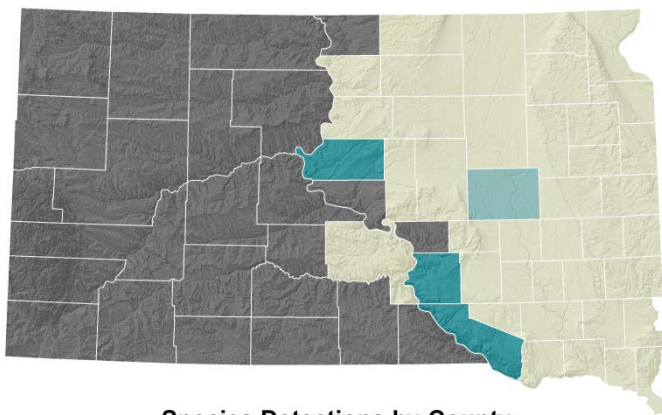
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	10	11	21
Probable	42	8	50
Possible	32	7	39
Observed	1	0	1
Total	85 (20%)	26	111

Black-headed Grosbeak



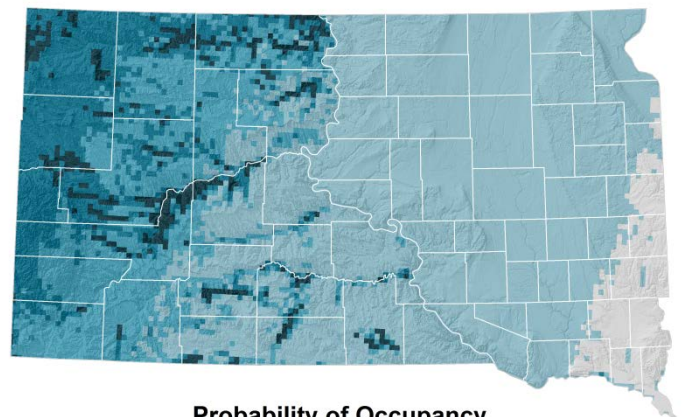
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BLUE GROSBEAK

Passerina caerulea

The sight of a male Blue Grosbeak singing his warbling song from a power line or treetop is becoming more familiar in South Dakota as this species is rapidly expanding throughout the state.

DISTRIBUTION AND STATUS

The Blue Grosbeak is distributed from coast to coast in the southern half of the U.S., with a northward extension through the central Great Plains to North Dakota. In South Dakota, this species has experienced one of the largest range expansions in the 20 years between Breeding Bird atlases of any species. During the first Atlas, it was only reported on 18% of random blocks versus 35% of blocks during the second Atlas. Also, the first Atlas had only three observations north of the Cheyenne River, one observation along the Missouri River north of Pierre, and no observations in the northeast. Now the species has expanded north along the Missouri River and throughout the west, and started to populate the Prairie Coteau. Blue Grosbeaks are still absent from the Black Hills, northern James River Valley and eastern side of the Missouri Coteau. Breeding Bird Survey data show slightly decreasing populations west of the Missouri River and increasing ones east of the river, a result that does not agree with Atlas data. This possibly may be because, although widespread, Blue Grosbeaks occur in low densities and may be difficult to survey with Breeding Bird Survey protocols.

HABITAT

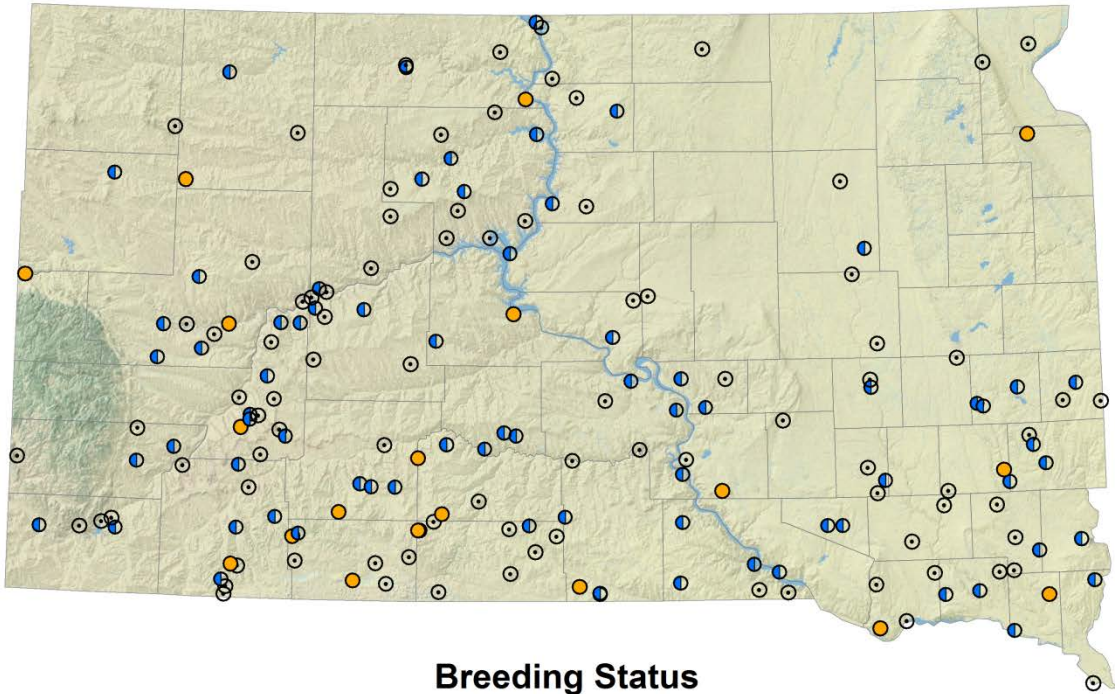
Blue Grosbeaks are found in shrubby areas, such as hedgerows, forest edges, abandoned fields, riparian zones, and brushy draws. During the second Atlas, Blue Grosbeaks were reported in upland woodlands (34%), lowland woodlands and brushy draws (29%), grasslands (15%), and shrublands (10%).

BREEDING BIOLOGY

The breeding season is from June to mid-July. Nests are placed low in small trees, shrubs, tangles of vines, and other vegetation, often near open areas or roads. One second Atlas nest was 2' up in a mulberry sapling and less than 10' from a road. The nest is a compact cup, with an outer layer of leaves, grass, rootlets, twigs, and bark and a lining made of finer plant materials and, often, snake skin. The female incubates 3 to 5 pale blue eggs for 12 to 13 days. Both parents feed insects to the nestlings, which leave the nest when 9 to 13 days old (Lowther and Ingold 2011).

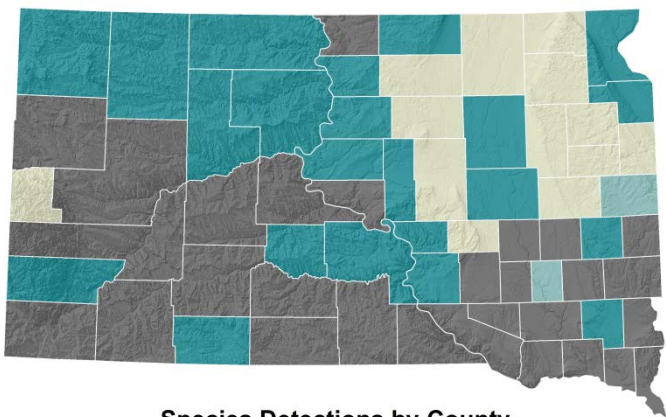
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	10	10	20
Probable	65	8	73
Possible	78	10	88
Observed	0	0	0
Total	153 (35%)	28	181

Blue Grosbeak



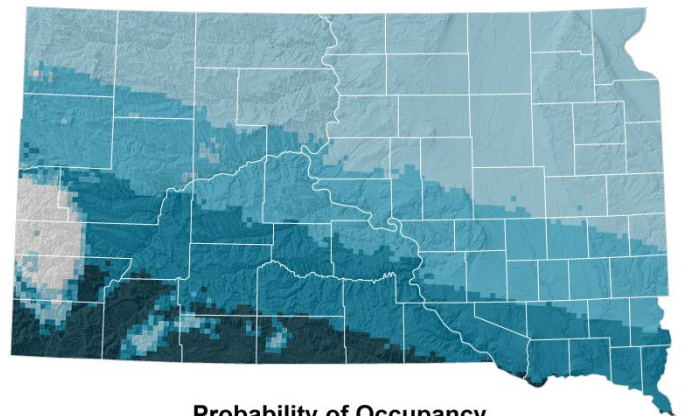
Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

LAZULI BUNTING

Passerina amoena

This songbird is named after the Lapis Lazuli gemstone, because of the male's turquoise coloration. Lazuli Buntings have an unusual molt schedule. After breeding, birds start to molt into their winter plumage while still on the breeding grounds. However, they interrupt this molt and migrate to molting hotspots near the U.S.-Mexican border, where they finish the molt before continuing on to the wintering grounds in western Mexico.

DISTRIBUTION AND STATUS

The Lazuli Bunting breeds throughout the western United States and extreme southwestern Canada. South Dakota is on the eastern edge of its range. The species is an uncommon breeder west of the Missouri River and very rare east of the River (Sibley and Short 1959). More Lazuli Buntings were reported during the second Atlas (11% of survey blocks) compared to the first Atlas (3% of random blocks). Some of the difference was in the northwest region of the state, especially Corson and Perkins counties, where more buntings were found during the second Atlas. According to Breeding Bird Survey data, South Dakota's Lazuli Bunting population is stable (Sauer *et al.* 2014).

HABITAT

In South Dakota, Lazuli Buntings breed in brushy thickets along roads, fence

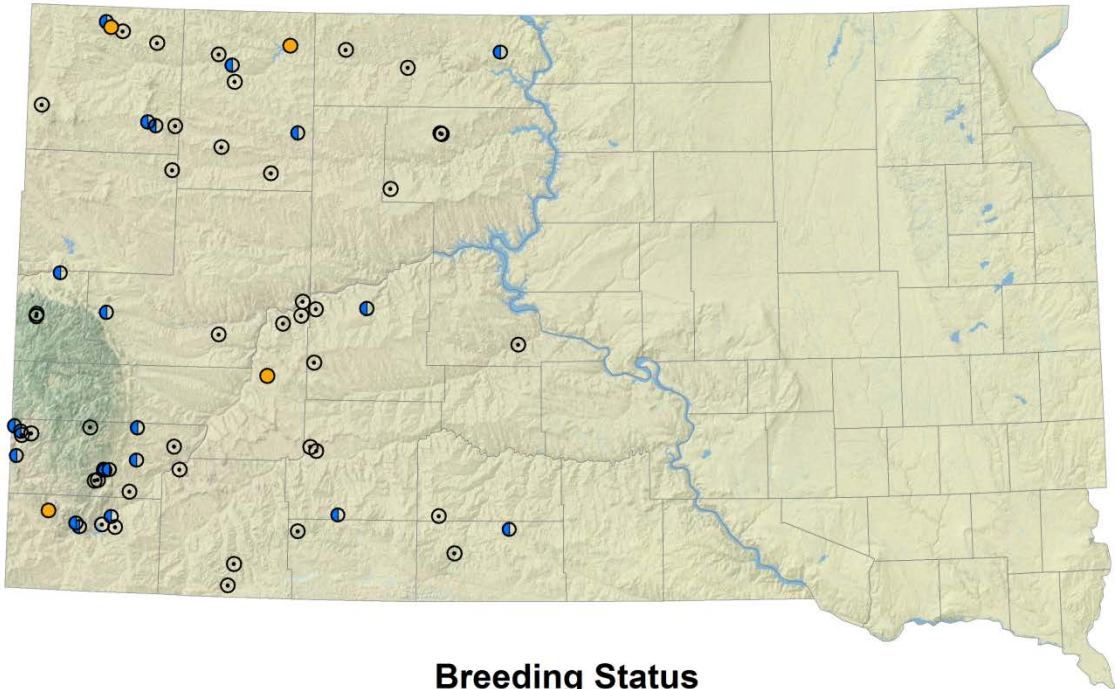
lines, creeks, and wooded draws (Pettingill and Whitney 1962). Second Atlas buntings were reported in riparian woods (51% of observations), upland woods (45%), and shrublands (4%).

BREEDING BIOLOGY

Lazuli Buntings in South Dakota nest from late May through July. The cup-shaped nest is built in a shrub, vine, or low tree, usually 2' to 4' above ground. Supported by stems or a fork, the nest is made of grasses, leaves, bark strips, and rootlets, and lined with fine grasses and hair. Tent caterpillar silk or spider webbing is used to bond the nest materials together. Clutch size is 3 to 5 pale blue eggs. Only the female incubates the eggs for 12 days. At some nests, the female does all of the parental care, while at others, the male helps. Chicks leave the nest when 9 to 11 days old. Both parents feed the young buntings for at least another 14 days (Greene *et al.* 2014).

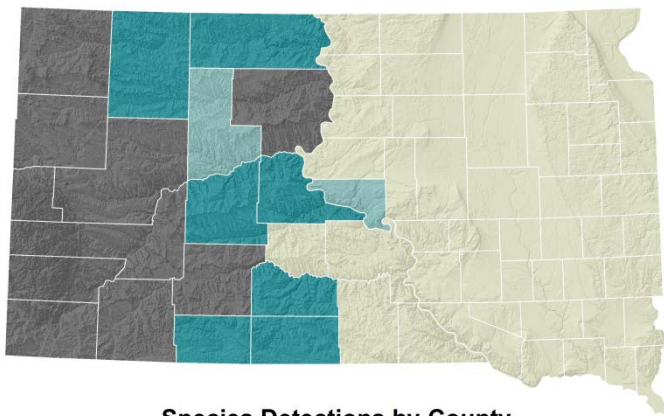
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	2	2	4
Probable	16	5	21
Possible	29	13	42
Observed	0	0	0
Total	47 (11%)	20	67

Lazuli Bunting



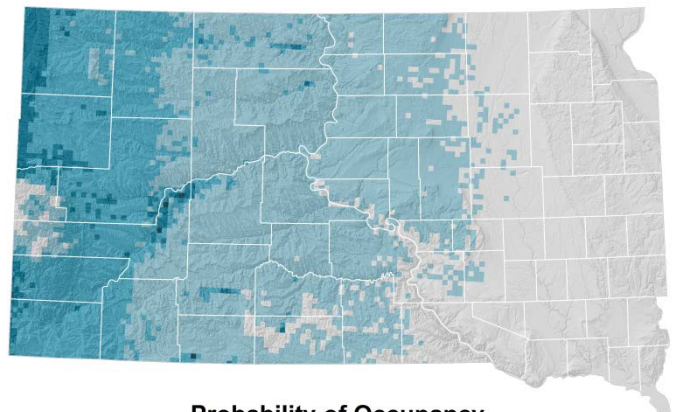
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

INDIGO BUNTING

Passerina cyanea

Song development in both Indigo and Lazuli bunting males is not innate but learned during the first few days of their first breeding season. When a yearling male arrives on the breeding grounds, he begins to copy songs or parts of songs from older males already on territories. Within a few days, he has developed his own unique song, which may be a rearrangement of syllables or combination of song fragments from several males. Song copying can produce song neighborhoods, in which songs of neighboring males are similar.

DISTRIBUTION AND STATUS

The Indigo Bunting breeds throughout the eastern United States west to the central Great Plains. It is expanding westward and breeds sporadically throughout the western U.S. (Carling and Zuckerberg 2011, Greene *et al.* 2014). South Dakota is on the western edge of the Indigo Bunting's primary breeding range. It is most common in the southern and extreme eastern regions of the state. The first Atlas also found Indigo Bunting to be most common in these regions.

HABITAT

Indigo Buntings breed in brushy and edge habitats such as wooded draws, riparian forests, woodlots, and woodland edges (Rumble and Gobeille 2004, Gentry *et al.* 2006). Observers during

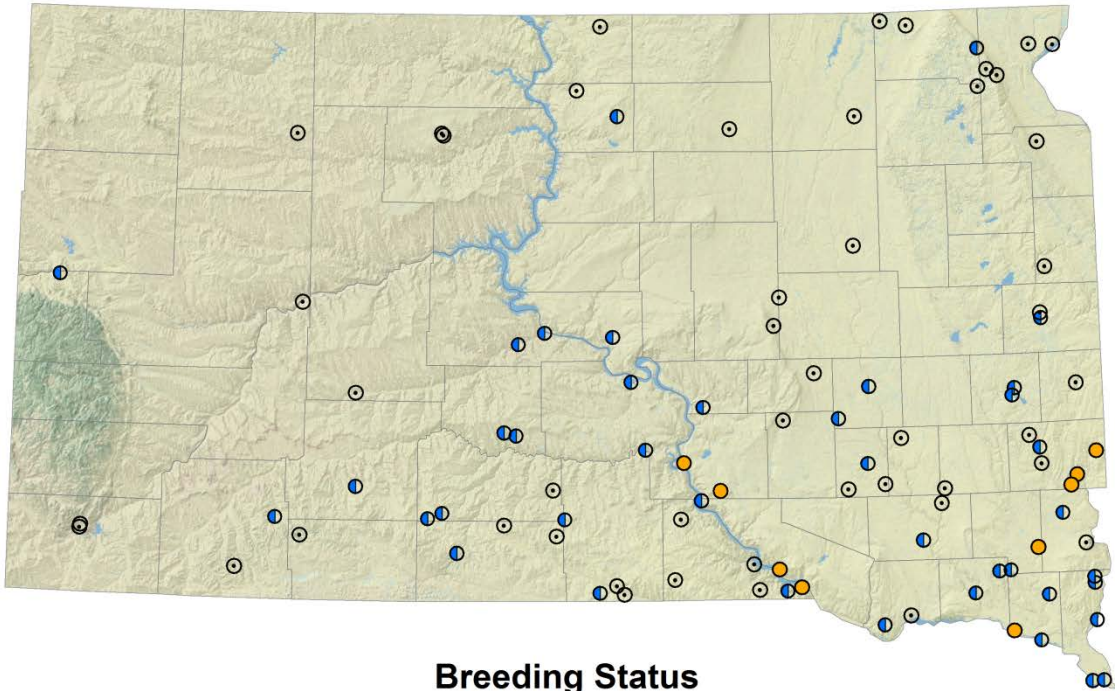
the second Atlas found Indigo Buntings in upland woods (45% of reports), riparian woods (45%), shrublands (4%), and cropland (1%).

BREEDING BIOLOGY

The breeding season in South Dakota is from late May through July. The nest is within 3' of the ground in a dense small tree or shrub. Incorporating several vertical stems as supports, the female builds the cup-shaped nest of grass, leaves, stems, and bark strips, and lines it with finer plant materials. She uses spider webs to hold the nest together. She lays 3 or 4 white unmarked eggs, which she incubates for 12 to 13 days. The male gives little parental care but does defend the nest. The female broods and feeds the nestlings. Chicks leave the nest when 9 to 12 days old and are independent in another 21 days (Payne 2006).

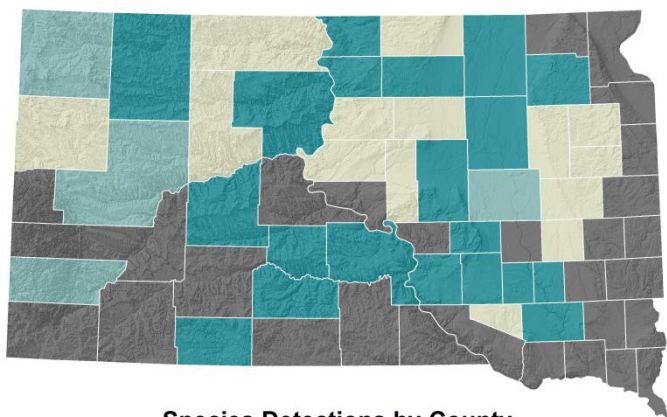
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	5	4	9
Probable	36	6	42
Possible	40	6	46
Observed	0	1	1
Total	81 (19%)	17	98

Indigo Bunting



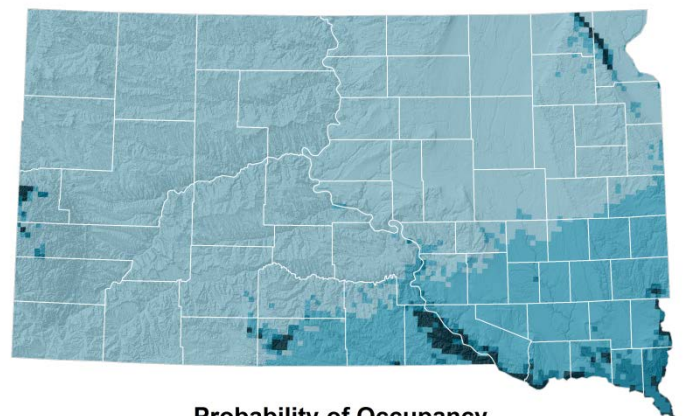
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



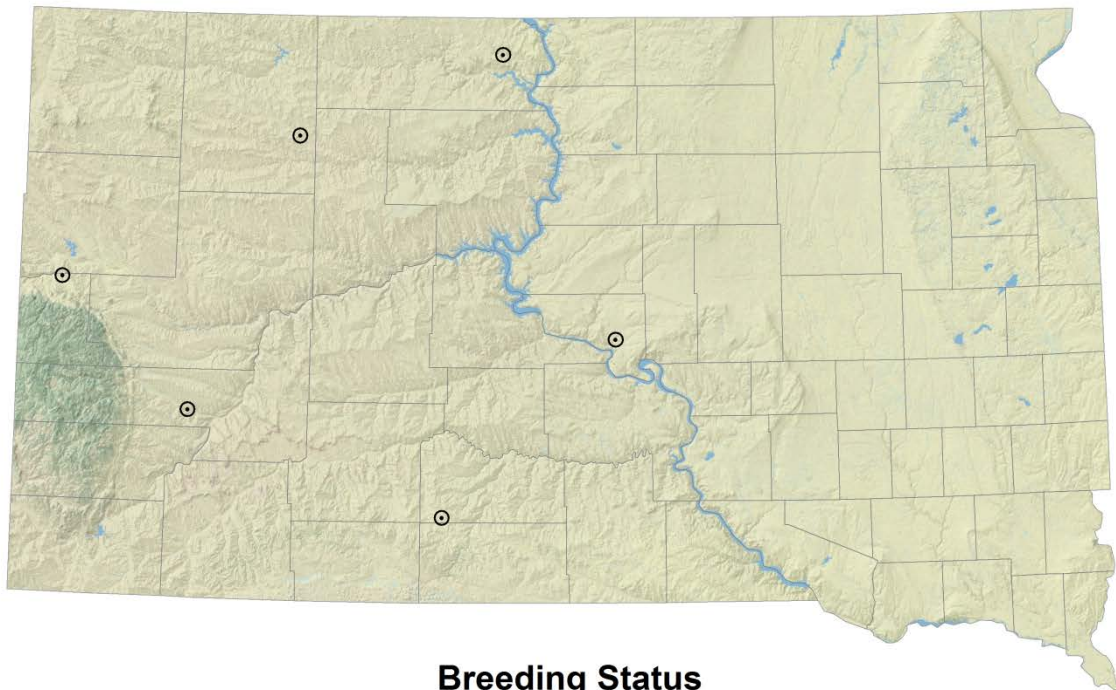
Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

LAZULI BUNTING – INDIGO BUNTING HYBRID

Passerina amoena X Passerina cyanea

Lazuli and Indigo buntings form pairs and produce hybrid offspring (Sibley and Short 1959). Formerly, these two species' ranges did not overlap. Lazuli Bunting bred in the western U.S. and western Great Plains and the Indigo Bunting bred in the eastern U.S. east of the Great Plains. However, because of habitat changes in the Great Plains during the past two centuries, their ranges now overlap in a broad zone from the southern Prairie Provinces of Canada to western Oklahoma. In South Dakota, hybrid buntings are found uncommonly in the western half of the state, primarily west of the Missouri River. The overlap zone is shifting westward at a rate of about 1.5 miles per year and is becoming narrower (Carling and Zuckerberg 2011). The shift primarily is caused by a greater number of Indigo Buntings moving west compared to the number of Lazuli Buntings moving east. The westward movement of Indigo Buntings may be facilitated by the multiple large river systems extending west from the Missouri River.



- Breeding Status**
- Confirmed breeding
 - Probably breeding
 - ⊙ Possibly breeding
 - Observed; not breeding at location

DICKCISSEL

Spiza americana

The male Dickcissel is a tireless singer, singing his “dick, dick, ciss, sell” song from elevated perches in his territory from dawn to dusk. He spends 70% of the day singing, even while he is panting during mid-day heat.

DISTRIBUTION AND STATUS

The breeding range of the Dickcissel encompasses the Midwestern United States, from North Dakota to Michigan and south to southern Texas. During the second South Dakota Atlas, Dickcissels occurred throughout the state, except for the Black Hills. During both Atlases, Dickcissels were more common east of the Missouri River. The first Atlas recorded only about 40 Dickcissel observations west of the River, approximately a quarter of the number found during the second Atlas. According to Breeding Bird Survey data, the Dickcissel population in South Dakota is stable (Sauer *et al.* 2014).

HABITAT

Dickcissels have adapted well to changes in their native grassland habitat and nest in any type of grassland with dense cover, moderate to tall vegetation, and many elevated song perches. Observers during the second Atlas found Dickcissels in pastures (30% of reports), old fields and undisturbed grasslands (29%), hay fields (19%), cropland (12%), roadsides (5%), alfalfa (3%), shelterbelt edges (1%), and wetlands (1%). This species

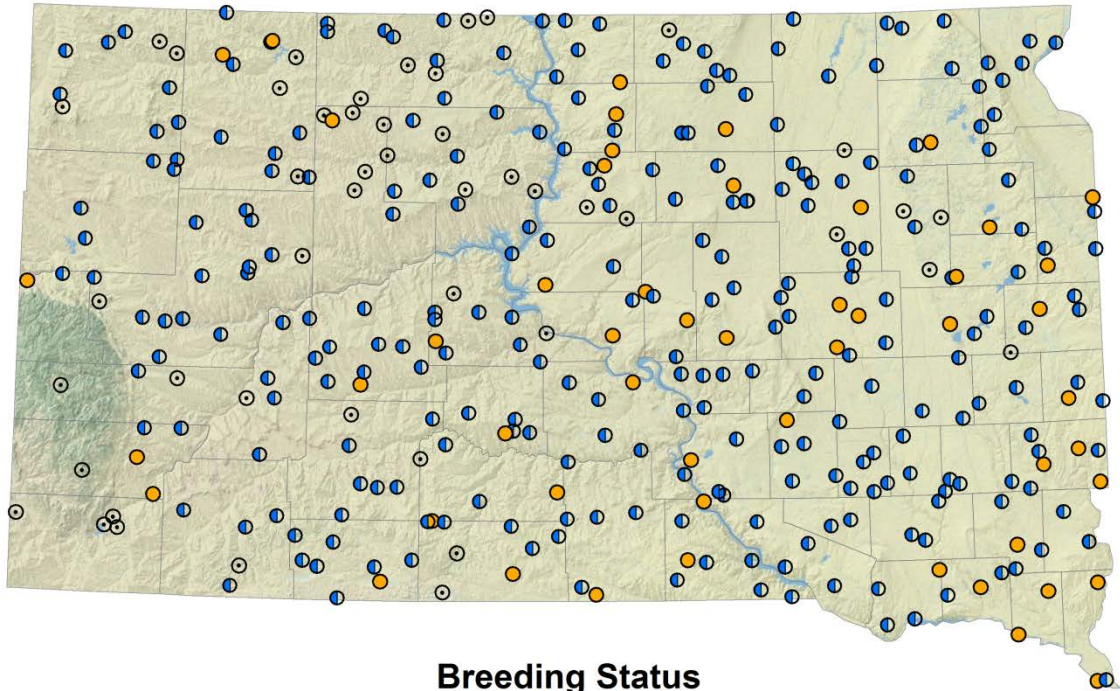
is more likely to occur in larger grasslands (Bakker *et al.* 2002).

BREEDING BIOLOGY

A relatively late migrant to South Dakota, Dickcissels breed in June and July. One male may have more than one mate if he has a high quality territory. Most nests are near, but not on, the ground, well concealed in dense grasses and forbs. Sometimes the nest is in a shrub or low tree. The female builds a bulky cup nest out of weeds, grass stems, and leaves, and lines it with finer grasses, rootlets, and hair. She lays 3 to 5 pale blue eggs, which she incubates for 12 to 13 days. The male does not help with caring for the nestlings, but he does continue to defend the territory. Nestlings leave the nest when 8 to 10 days old but are not able to fly for several more days. The female continues to feed the young Dickcissels for another 14 days (Temple 2002).

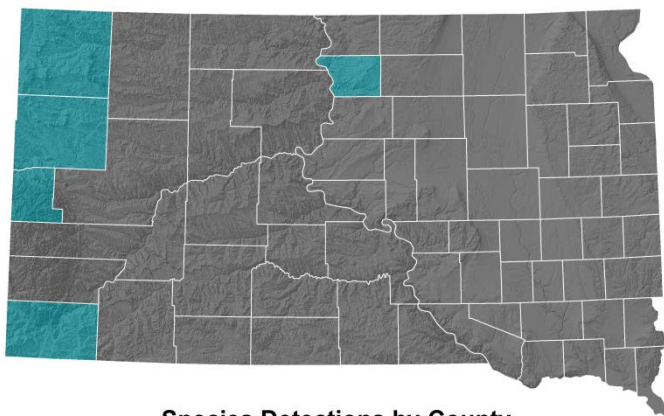
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	46	9	55
Probable	259	5	264
Possible	44	3	47
Observed	0	0	0
Total	349 (80%)	17	366

Dickcissel



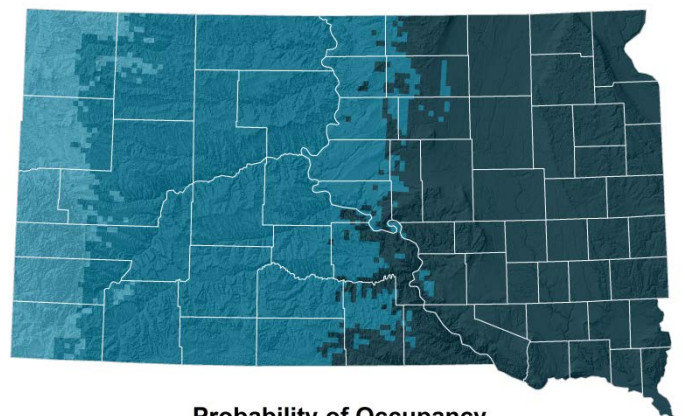
Breeding Status

- Confirmed breeding
- ◐ Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- -
 -
 -
 -
- 0% 1-25% 26-50% 51-75% 76-100%

BOBOLINK

Dolichonyx oryzivorus

The breeding plumage of the male Bobolink is unique among North American songbirds in being entirely black below and lighter above.

were in pastures (2 nests) and Conservation Reserve grasslands (5).

DISTRIBUTION AND STATUS

The Bobolink breeds in the northeastern states, northern Midwest, northern Great Plains, and extreme southern Canada. In South Dakota, Bobolinks are common east of the Missouri River and becoming increasingly common west of the River. The percentage of atlas blocks in which Bobolink were detected increased from 48% during the first Atlas to 71% during the second Atlas. Most of the increase occurred in the northern two-thirds of West River. The reason for the increase is not clear. According to the Breeding Bird Survey, the Bobolink population in the state has been stable over the past 45 years (Sauer *et al.* 2014).

BREEDING BIOLOGY

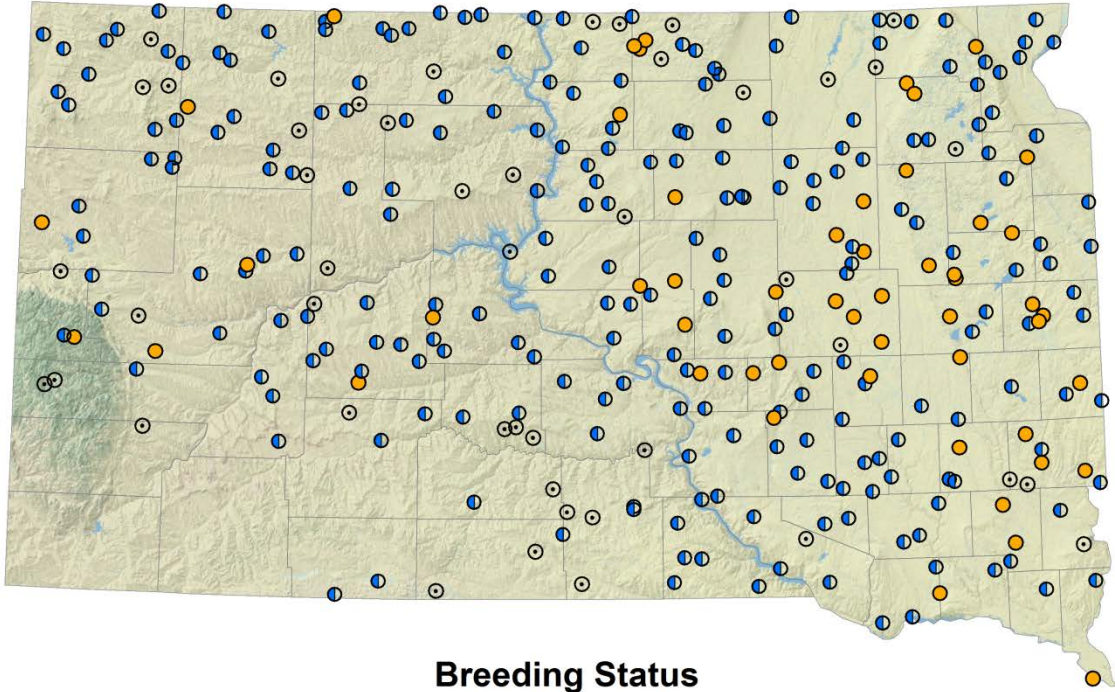
The breeding season in South Dakota is late May through July. Male Bobolinks are polygynous; successful males simultaneously pair with multiple females. The shallow cup nest is on the ground, often at the base of large forbs. It is constructed of grass and weed stems and is lined with finer grasses. Second Atlas clutch sizes ranged from 3 to 6 eggs, with an average of 5. The female incubates the eggs by herself for 11 to 14 days. Both parents feed nestlings in the primary nest, but a polygynous male may not help at his secondary nest. Nestlings leave the nest in 10 to 11 days. Within another 6 days, fledglings and adults from several nests flock together and remain as a flock until migration. Parents continue feeding their young for up to at 28 days. The second Atlas recorded four instances of Brown-headed Cowbird parasitism, including two nests with cowbird eggs and two adult Bobolinks feeding cowbird fledglings. (Renfrew *et al.* 2015).

HABITAT

A breeding bird of damp meadows and tall-grass prairie, Bobolinks also readily use hay fields and pastures. In Fort Pierre National Grassland, Bobolinks are more abundant in older grasslands (Fritcher *et al.* 2004). This species also is more abundant in larger grassland patches and farther from grassland edges (Igl and Johnson 2001). Observers during the second Atlas reported Bobolinks in pastures (39%), Conservation Reserve Program grasslands (36%), hay fields (14%), cropland (5%), wet meadows (3%), and roadsides (1%). Second Atlas nests

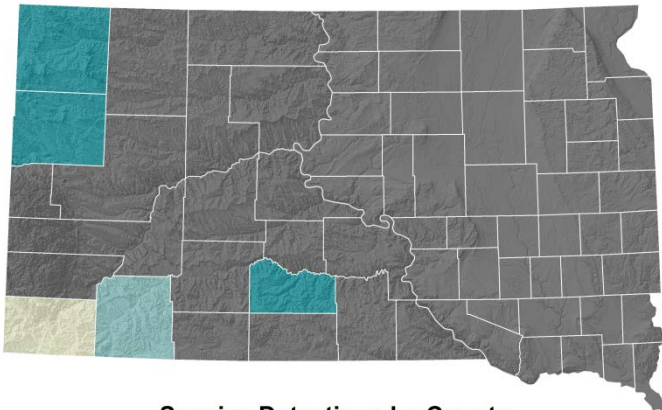
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	39	14	53
Probable	227	4	231
Possible	43	3	46
Observed	0	0	0
Total	309 (71%)	21	330

Bobolink



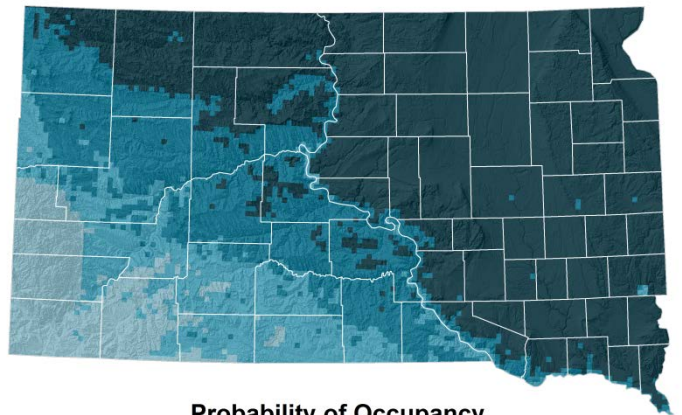
Breeding Status

- Confirmed breeding
- Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-100%

RED-WINGED BLACKBIRD

Agelaius phoeniceus

The Red-winged Blackbird is one of the most polygynous of all birds. One male may have 15 females nesting in his territory. Up to 90% of territorial males in a population mate polygynously, and at least 50% of the females mate with polygynous males. In addition, up to 50% of nestlings are sired by a male other than the territory-holder, usually by a neighboring male.

DISTRIBUTION AND STATUS

One of the most abundant birds in North America, Red-winged Blackbirds breed throughout most of the continent. This species is one of the most abundant and widespread breeders in South Dakota, found on 96% of all Atlas survey blocks and in all 66 counties. Blackbird distribution and abundance were the same during the first and second Atlases. The Red-winged Blackbird population in South Dakota is stable (Sauer *et al.* 2014).

HABITAT

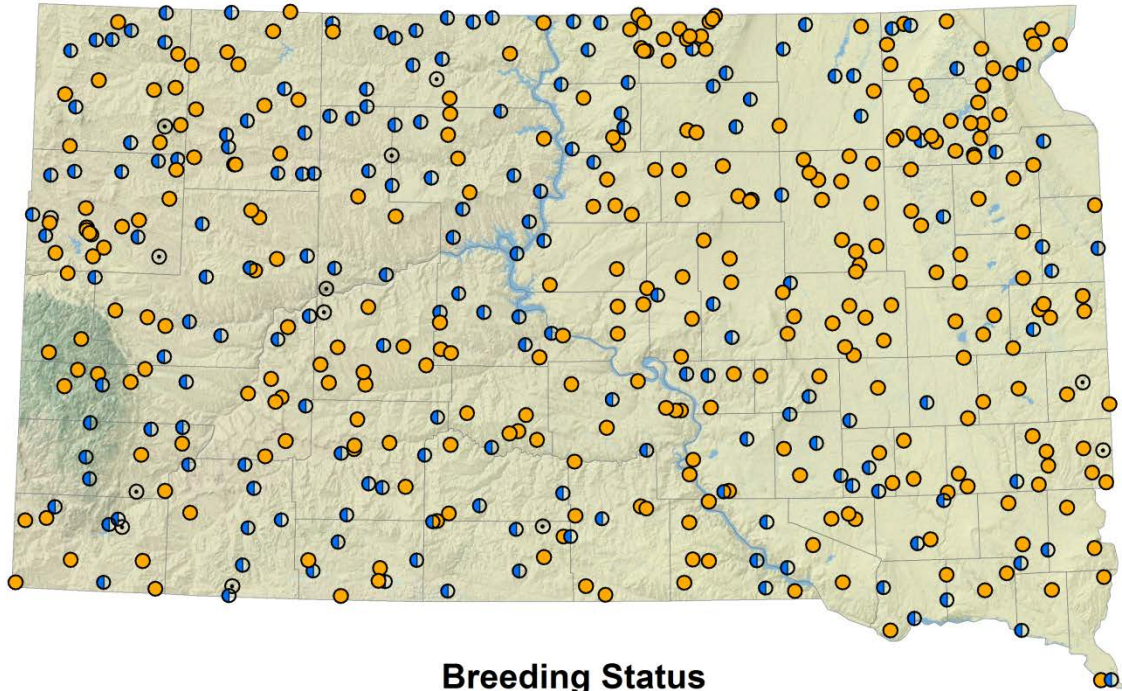
Red-winged Blackbirds primarily breed in wetlands, but also will nest in upland fields, cropland, and grasslands. Fifty-nine second Atlas nests were in wetlands (76%), grasslands (8%), wood lots (5%), shrubland (5%), cropland (2%), residential areas (2%), and roadside ditches (2%).

BREEDING BIOLOGY

In South Dakota, the nesting season is from mid-May through July. Second Atlas nests were found between May 21 and July 26. Most second Atlas nests were in cattails; other nest substrates included shrubs, especially snowberry, forbs, grass clumps, and a barbed wire fence. The female builds a bulky, open-cup nest of grass and reeds with inner layers of mud and finer grasses. The average clutch size is 3 eggs; second Atlas nests contained from 1 to 5 eggs. Brown-headed Cowbirds frequently lay their eggs in blackbird nests. During the second Atlas, 13 of 44 nests with eggs contained from 1 to 5 cowbird eggs (average 2.4 cowbird eggs). In addition, observers reported six instances of adult blackbirds feeding cowbird fledglings, out of 35 feeding-fledgling reports. The incubation period is 11 to 13 days and the nestling period is 9 to 12 days. Both parents, but especially the female, feed the chicks on the territory for up to 2 weeks after nest-leaving, and then for another 3 weeks away from the territory (Yasukawa and Searcy 1995).

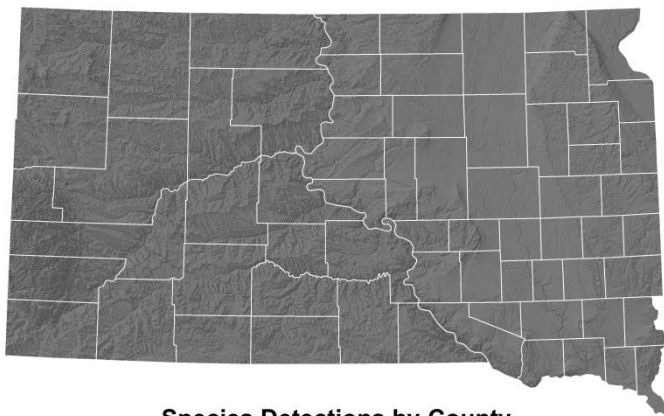
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	235	61	296
Probable	170	4	174
Possible	11	2	13
Observed	0	0	0
Total	416 (96%)	67	483

Red-winged Blackbird



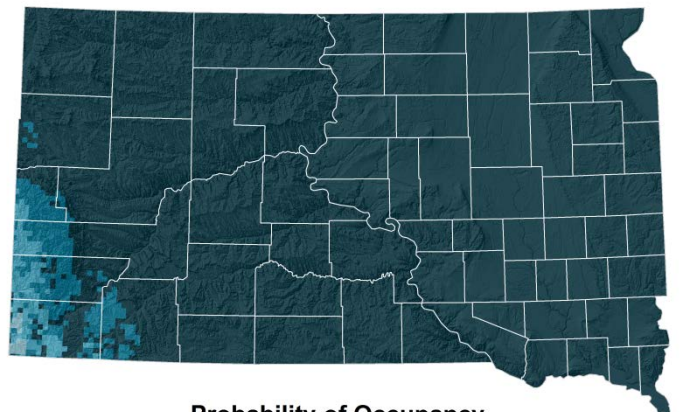
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

EASTERN MEADOWLARK

Sturnella magna

Eastern and Western Meadowlark breeding ranges overlap in a narrow zone in the Great Plains, including in South Dakota. In the overlap zone, male Easterns defend their territories against both male Western and Eastern Meadowlarks. Female Easterns identify male Easterns by their quite different song. As a result, hybridization between the two species is rare.

DISTRIBUTION AND STATUS

The Eastern Meadowlark occurs in southeastern Canada, the eastern U.S., the Sonoran Desert, and south through Central and northern South America. In South Dakota, which is on the northwestern edge of the breeding range, Eastern Meadowlarks have only been confirmed breeding in the Sandhills along the Nebraska border in Todd, Bennett, and Oglala Lakota counties. Eastern Meadowlarks are occasionally found in the southeast during the summer but their breeding status in that area is uncertain (Peterson 1995). Distribution and abundance were similar between the first and second Atlases.

HABITAT

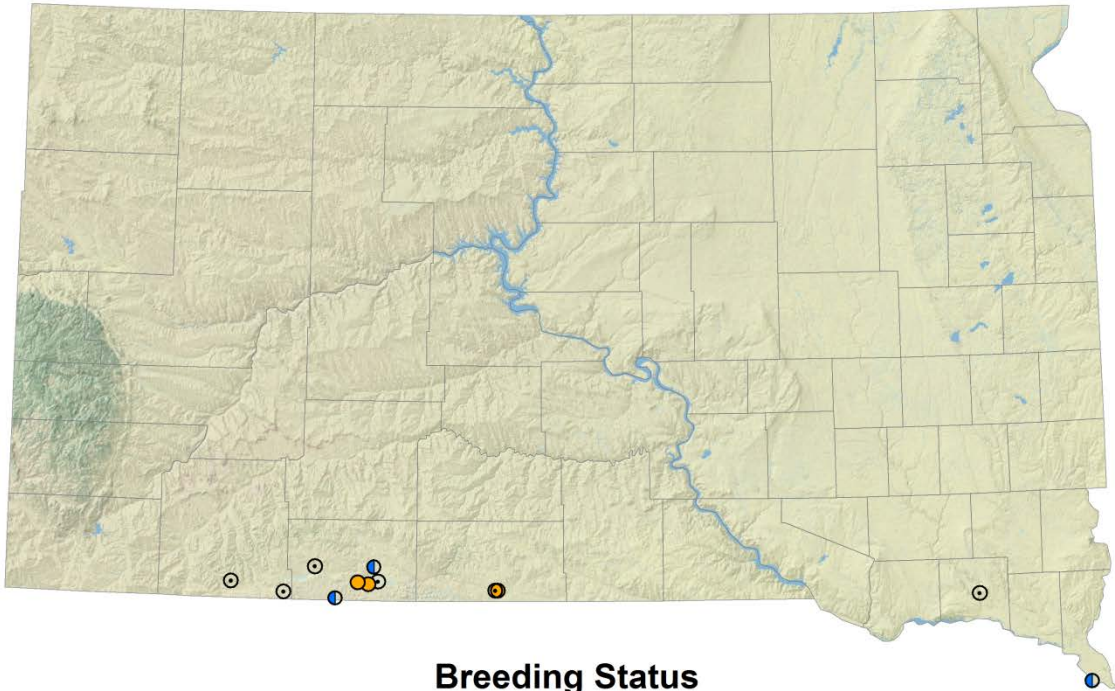
In South Dakota, Eastern Meadowlarks breed in wet meadows and lowland grasslands. Thus, they are segregated from Western Meadowlarks, which breed in drier upland grasslands. During the second Atlas, 47% of Eastern Meadowlark observations were in undisturbed grasslands, 40% in pasture, 7% in brushy grasslands, and 7% in marshlands.

BREEDING BIOLOGY

Males arrive in South Dakota in March and April; females arrive 2 to 4 weeks later and immediately pair up. Eastern Meadowlarks usually raise two broods per season. Just two nests have ever been reported in South Dakota, in late May and early June. During the second Atlas, an adult was carrying a fecal sac on July 22. Many males have two mates simultaneously. The nest is in a small depression on the ground within dense grass cover. It is made of dried grass and weeds interwoven with surrounding vegetation to form an arch or roof. The entrance is on the side and accessed by a trail or tunnel through the grass. Incubation of the clutch of 4 to 6 eggs is by the female and lasts 13 to 15 days. Both parents feed insects to the nestlings. Chicks leave the nest at 10 to 12 days when they walk out a few steps to meet a parent with food. Newly-fledged chicks cannot fly but have strong legs and can run quickly. They are fed by their parents for at least 14 more days (Jaster *et al.* 2012).

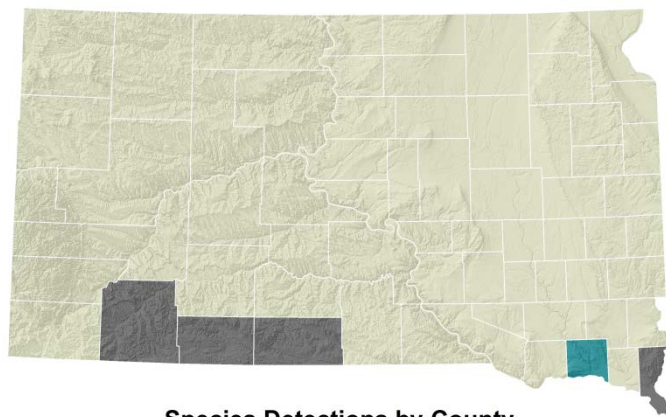
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	3	3
Probable	3	0	3
Possible	3	3	6
Observed	0	0	0
Total	6 (1%)	6	12

Eastern Meadowlark



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

WESTERN MEADOWLARK

Sturnella neglecta

One of the most familiar birds of South Dakota, the Western Meadowlark is not a lark, but a member of the blackbird family. Although it usually consumes insects, the Meadowlark's willingness to eat seeds allows it to arrive in early spring before insects emerge.

DISTRIBUTION AND STATUS

As its name implies, the Western Meadowlark breeds throughout western North America, from northern Mexico north to the central prairie provinces of Canada and east through the Great Plains and Midwestern states. In both first and second Atlas, this species was one of the most frequently reported species and observed in all portions of the state except the higher elevations of the Black Hills. During the second Atlas, this species was reported from all 66 counties and on 98% of all atlas blocks. However, Breeding Bird Surveys have detected a significant population decline (1.1% per year) since 1967, suggesting that this abundant songbird could someday become uncommon.

HABITAT

Open habitat generalists, Western Meadowlarks prefer areas dominated by grass, but avoid dense stands of grass. Most observations (83%) during the second Atlas were in some type of grassland, with 59% of observations in pastures, 13% in undisturbed grasslands, and 9% in hay fields. Meadowlark observations in cropland (9%) probably were of foraging birds. Although they will nest in small grassland patches, nest success is

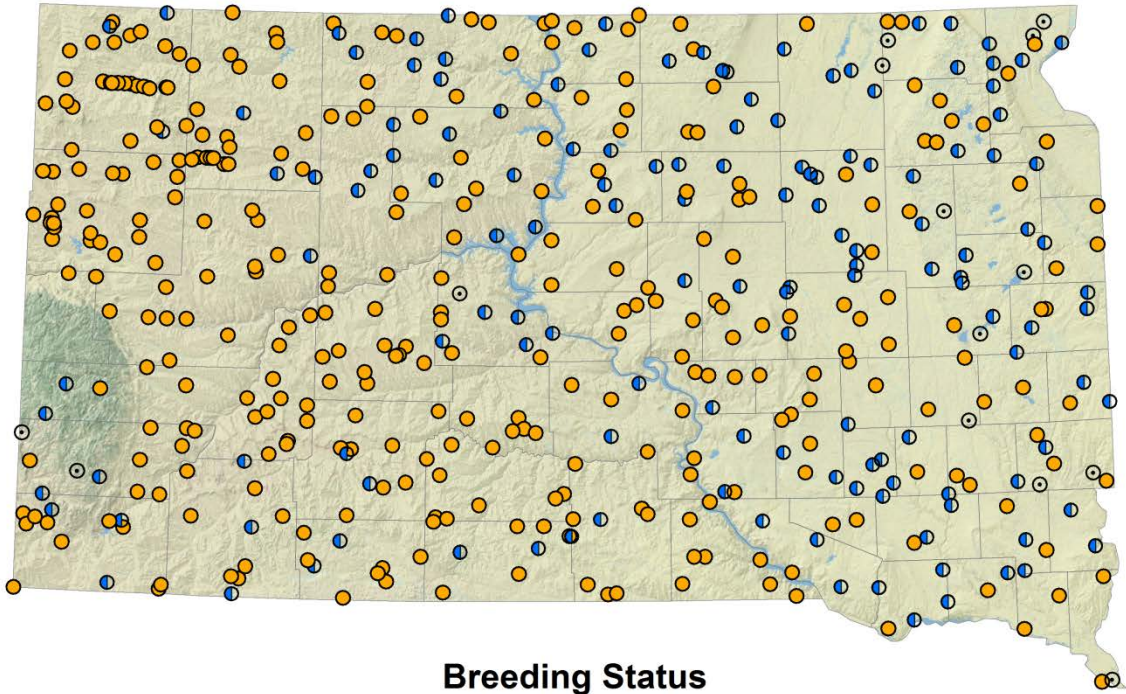
higher in landscapes with greater than 50% grassland habitat (Berman 2007).

BREEDING BIOLOGY

Males arrive 2 to 4 weeks earlier than females to establish territories. Nesting begins in May and lasts until August (second Atlas nest dates: May 2 to July 15). They typically raise two broods. The ground nest is made of grass, forbs, and bark, which are interwoven with and attached to the surrounding vegetation. It is partially or completely domed by grass, with a conspicuous runway extending from the nest entrance. In 16 second Atlas nests, observers counted an average of 4.6 white eggs. Three of these nests had 1 to 3 Brown-headed Cowbird eggs; observers also reported three instances of meadowlarks' feeding cowbird fledglings. Females do most of the parental duties: two weeks of incubation, 10 to 12 days of brooding and feeding nestlings until nest-leaving, then two weeks until the fledglings achieve independence. Meanwhile, the polygynous male divides his time between defending two nests and feeding one or both broods (Davis and Lanyon 2008).

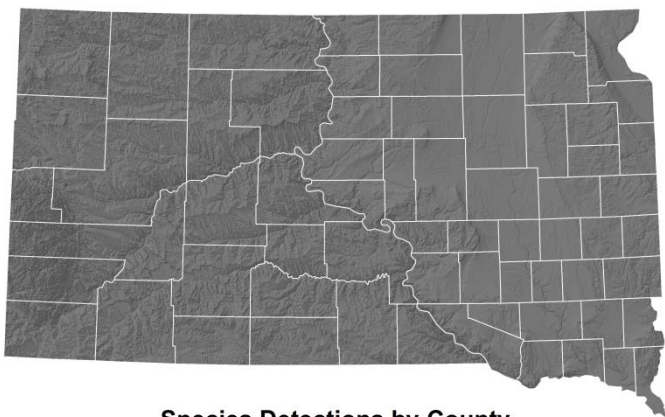
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	275	63	338
Probable	138	5	143
Possible	12	2	14
Observed	0	0	0
Total	425 (98%)	70	495

Western Meadowlark



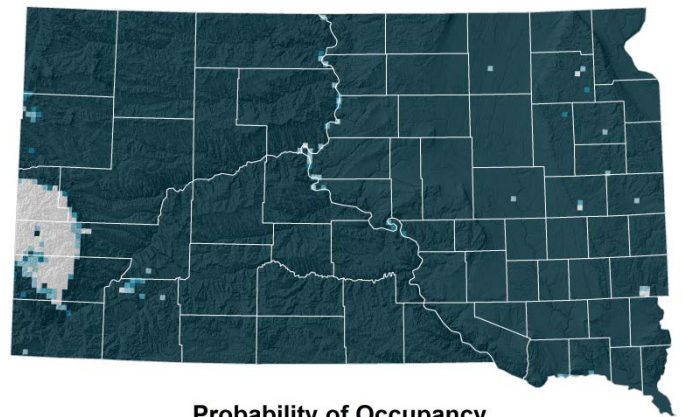
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

YELLOW-HEADED BLACKBIRD

Xanthocephalus xanthocephalus

Yellow-headed Blackbird breeding territories usually are clumped together, either in tight groups or loose colonies. Polygynous males may have up to eight females on their territories, while many males, particularly second-year males, are “floaters,” without established territories or females.

DISTRIBUTION AND STATUS

Yellow-headed Blackbirds breed in the northern Midwest states and throughout the interior of the western U.S. and Canada. The breeding distribution is centered on the prairie potholes of the northern Great Plains. Within this range, they are limited by availability of suitable wetland habitat. In South Dakota, this species is common and widespread, except in the Black Hills, which lack appropriate habitat. First and second Atlas breeding distributions were almost identical, with this species recorded on 56% of blocks, and most frequently reported in the Prairie Pothole region. According to Breeding Bird Survey data, South Dakota’s Yellow-headed Blackbird population is stable (Sauer *et al.* 2014).

HABITAT

This blackbird nests in the deeper-water areas of freshwater wetlands. Often, Red-winged Blackbirds nest in the same marsh but inhabit the shallower regions. During the second Atlas, 82% of reports were in marsh, 4% in wet meadow, and

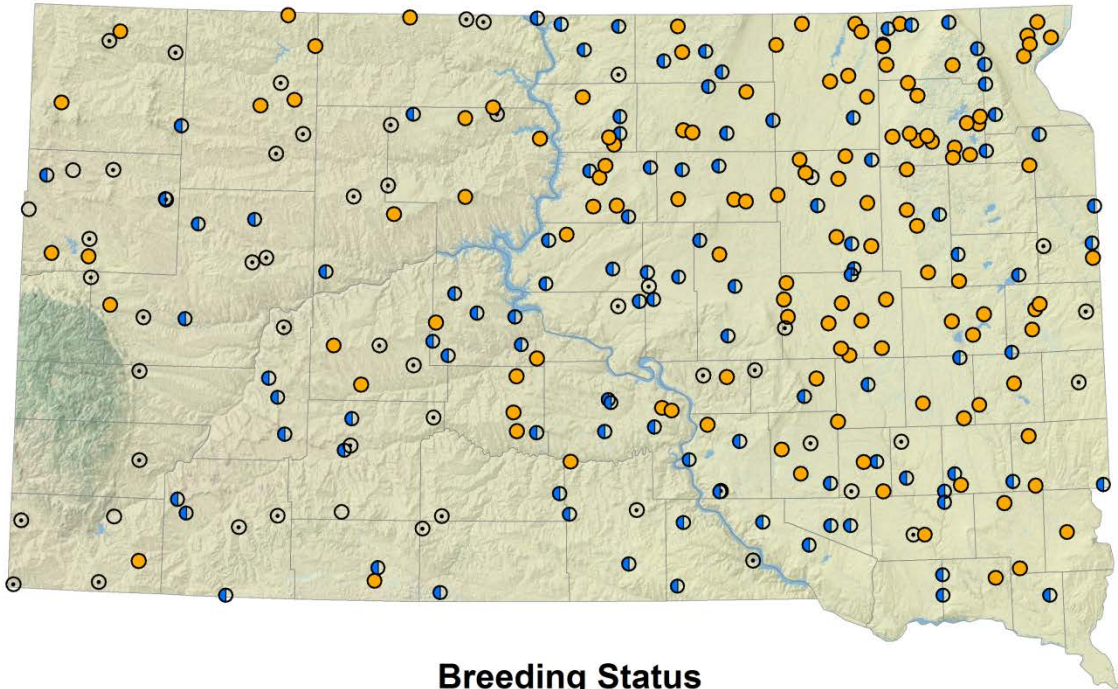
4% at lakes and ponds. During the breeding season, these blackbirds forage within wetlands and in surrounding grasslands and croplands.

BREEDING BIOLOGY

The nesting season in South Dakota is from mid-May to July (second Atlas nest dates: May 21 to July 4). First-arriving males establish territories in the center or deepest part of the marsh; later territories are established nearer to the marsh periphery. Females construct open-cup nests over water in cattails, bulrushes, or reeds. They weave pieces of vegetation together to form a rigid, compact nest. Clutch sizes reported during the second Atlas ranged from 1 to 4 eggs (average 2.8 eggs, 15 nests). Eggs hatch after 12 to 13 days. Nestlings are fed insects and other invertebrates by both parents. When they leave the nest at 9 to 12 days old, chicks are not able to fly but are adept at hopping about in the wetland vegetation. The young blackbirds can fly well at around 3 weeks old (Twedt and Crawford 1995).

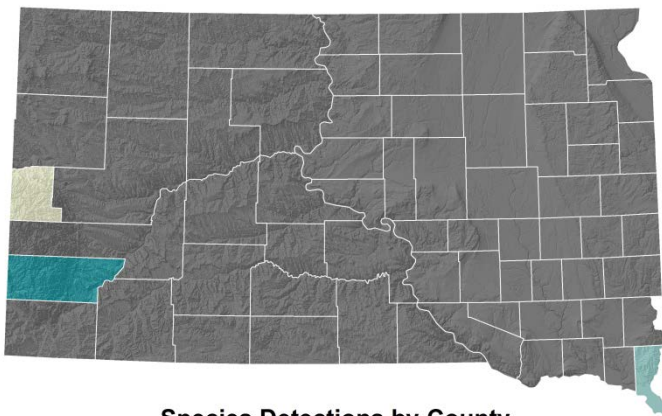
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	93	34	127
Probable	97	6	103
Possible	48	1	49
Observed	4	0	4
Total	242 (56%)	41	283

Yellow-headed Blackbird



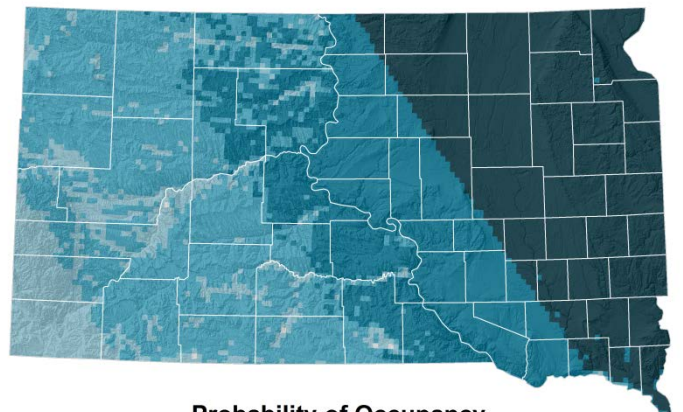
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BREWER'S BLACKBIRD

Euphagus cyanocephalus

The Brewer's Blackbird is the common blackbird of open country in the West. The species is named after Thomas Brewer, a prominent ornithologist in the mid-1800s.

be located near open foraging areas and water.

DISTRIBUTION AND STATUS

Western South Dakota forms the eastern boundary of the Brewer's Blackbird breeding range, which covers most of the western U. S. and Canada. Since the first Atlas, which described this species as 'uncommon and limited', Brewer's Blackbird has spread from the extreme western counties, to the Missouri River north of the Cheyenne River, and about 100 miles east of the Black Hills south of the Cheyenne. The second Atlas also documented an expansion of this species in the northeast part of the state, from three records in two counties, to multiple records in five counties. As a result, Brewer's Blackbird was detected on 24% of second Atlas blocks compared to 8% of first Atlas blocks.

BREEDING BIOLOGY

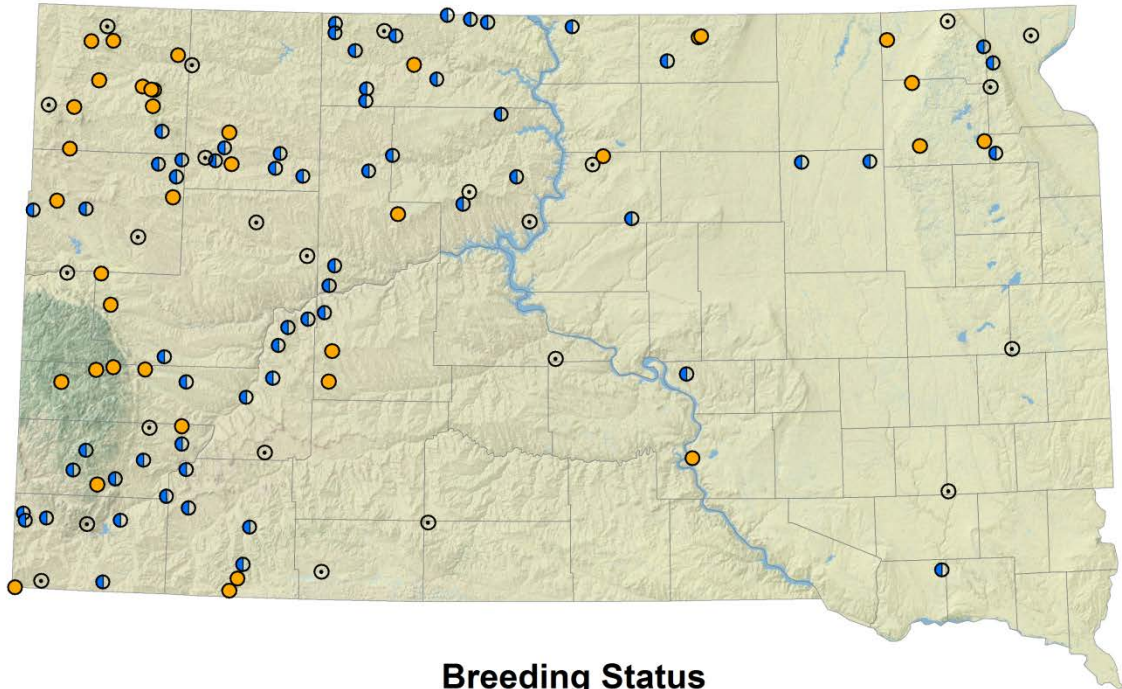
Most nesting in South Dakota occurs from May to early July. Second Atlas nest dates ranged from May 23 to July 2. Brewer's Blackbirds often nest in loose colonies of up to 20 to 30 pairs. The territory is limited to a small area around the nest, which is defended by the female, who is guarded by the male. Nests usually are in trees or shrubs, but may be in grass, in a cliff crevice, or on the ground. The female builds the cup-shaped nest from twigs, grass, and weeds, and lines it with fine grass, rootlets, or hair. The average clutch is 3 to 7 pale gray to greenish gray spotted eggs. Nestlings hatch after 12 to 13 days of incubation. Both parents feed insects to the brood. Nestlings leave the nest after about 12 to 14 days but are not able to fly well. After another 7 to 14 days, several family groups form a flock that remains in the general area until the young blackbirds are independent at about 40 days old (Martin 2002).

HABITAT

Brewer's Blackbird is an adaptable species but prefers open, human-modified habitats. During the second Atlas, these blackbirds were found in grasslands (67% of reports), riparian woods and shrublands (14%), wet meadows and marshes (12%), farmsteads and ranches (3%), and cropland (2%). Successful nest sites must have available guard perches and

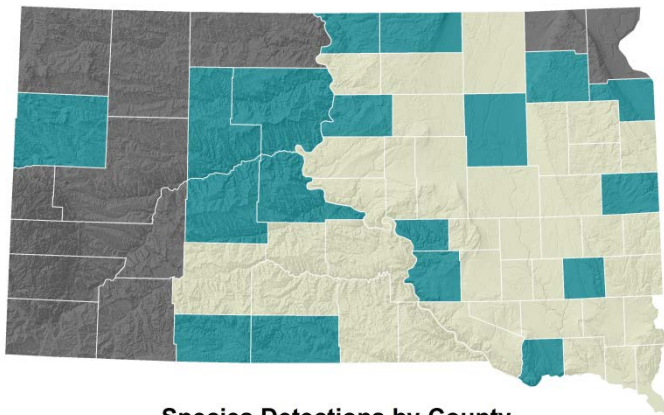
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	26	11	37
Probable	59	2	61
Possible	19	6	25
Observed	0	0	0
Total	104 (24%)	19	123

Brewer's Blackbird



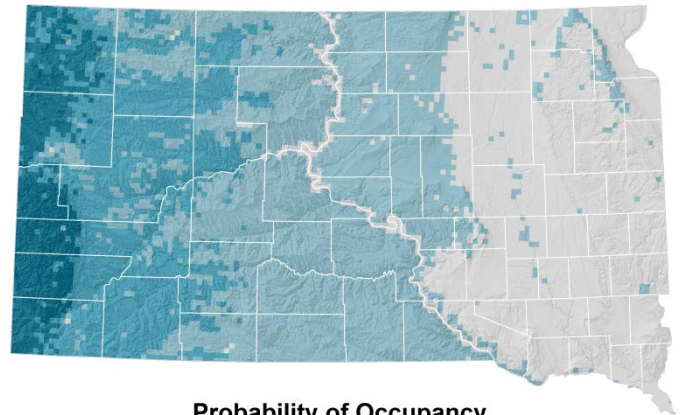
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1 - 25%
- 26 - 50%
- 51 - 75%
- 76 - 100%

COMMON GRACKLE

Quiscalus quiscula

Both male and female Common Grackles sing; the female less often than the male. Pairs participate in bouts of song-answering, in which each bird begins to sing 1/4 to 2 1/2 seconds after the end of its mate's song. Each bout of song-answering includes 3 to 10 songs by each partner.

DISTRIBUTION AND STATUS

The Common Grackle is one of the most abundant songbirds in North America, breeding throughout the United States from the Rocky Mountains to the East Coast, and from the Gulf Coast north to central Canada. It also is one of the most abundant species in South Dakota, and a confirmed breeder in all 66 counties. Distribution and abundance did not change between the first and second Atlases. South Dakota's Common Grackle population is stable according to Breeding Bird Survey data (Sauer *et al.* 2014).

HABITAT

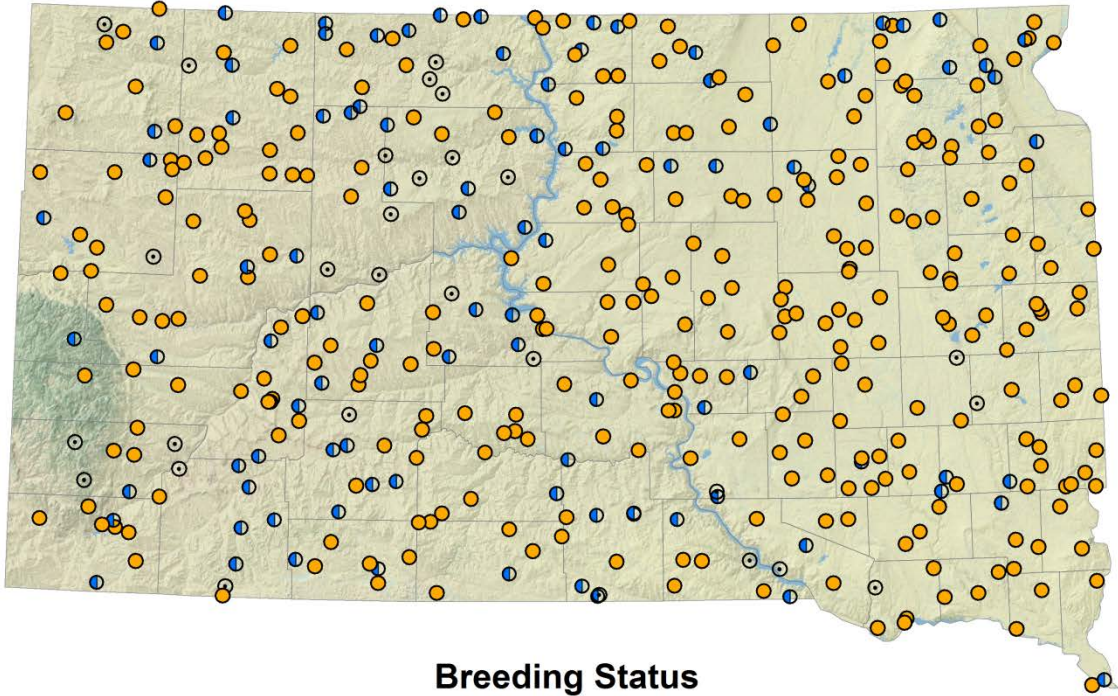
The Common Grackle prefers open or semi-open areas with scattered trees or bushes. It avoids heavily forested areas. Second Atlas observers reported grackles in deciduous woods (56% of reports), grasslands (12%), residential areas (10%), wetlands (9%), cropland (4%), open areas with scattered trees (3%), conifer woods (2%), shrubland (2%), and roadsides (2%). Grackles nest in areas with dense trees close to open areas. Most second Atlas nests were in deciduous woodlands and shelterbelts (58% of 97 nests) or residential areas and roadsides (36%).

BREEDING BIOLOGY

In South Dakota, Common Grackles nest from April to mid-July. Grackles often nest in small colonies of 5 to 20 pairs but can nest singly. Their territory is very small; a limited area defended around the nest. During the second Atlas, nests were found in junipers and red cedar (13 nests), bushes (9 nests), deciduous trees (10 nests), under a highway overpass (1 nest), in the eaves of a building (1 nest), and in a barn (1 nest). Reported nest heights during the second Atlas ranged from 6' to 30' and averaged 14' (16 nests). The female builds a large bulky cup nest with stems and grasses. She then lines this with mud, and, after that has dried, adds a lining of finer grass and hair. She incubates a clutch of 2 to 6 eggs for 12 to 15 days. During incubation, about half of the males desert and leave the female with all parental duties. Nestlings are fed mostly insects; the most aggressive nestlings monopolize the food. Chicks leave the nest about 12 to 15 days after hatching and are fed by their parents for another several weeks (Peer and Bollinger 1997).

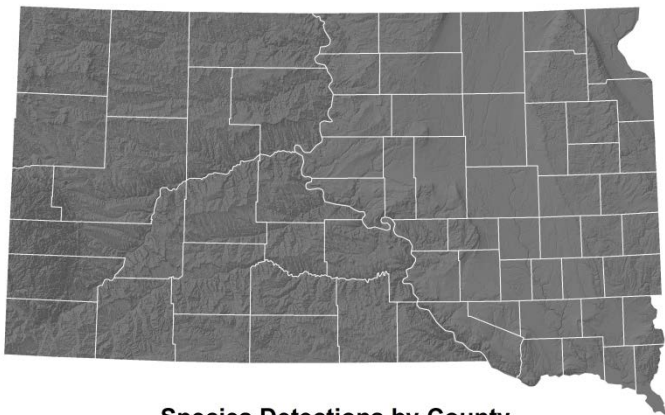
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	262	43	305
Probable	94	2	96
Possible	26	2	28
Observed	0	0	0
Total	382 (88%)	47	429

Common Grackle



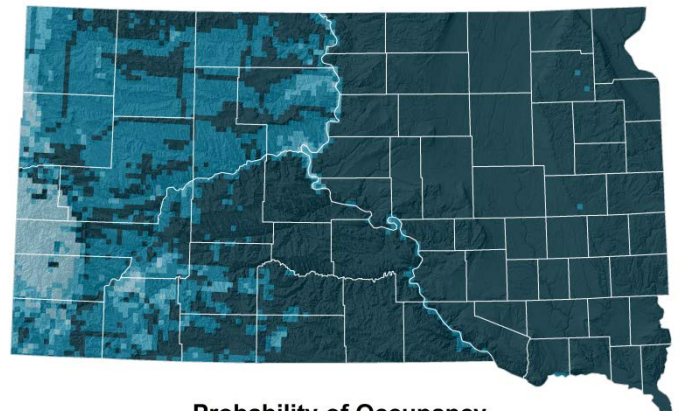
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

GREAT-TAILED GRACKLE

Quiscalus mexicanus

The Great-tailed Grackle colonizes new areas with a vanguard of pioneering birds. This is followed in a few years by additional birds that establish a breeding population.

DISTRIBUTION AND STATUS

The Great-tailed Grackle has experienced an explosive range expansion in the United States from its south Texas origins, especially since 1960. This species now is found throughout the southwestern U.S. north to the Great Basin and central Great Plains, and east to the Mississippi River. It also occurs in Central and South America. The first sighting of Great-tailed Grackle in South Dakota was in 1988 in Yankton and the first confirmed breeding was reported in 1999 in Clay County (Swanson and Liknes 2001). There were no sightings of this species during the first Atlas but grackles were reported in 20 of South Dakota's 66 counties during the second Atlas. Some individuals may remain in the state during a mild winter but most probably migrate short distances to milder climates.

HABITAT

In South Dakota, Great-tailed Grackles breed in wetlands with large stands of cattails, and forage in adjacent pastures and woodlots. Second Atlas observers reported grackles in marshes (84%), pastures and hay lands (10%), wet meadows (3%), and upland deciduous trees (3%). In other parts of the breeding range, these grackles nest in

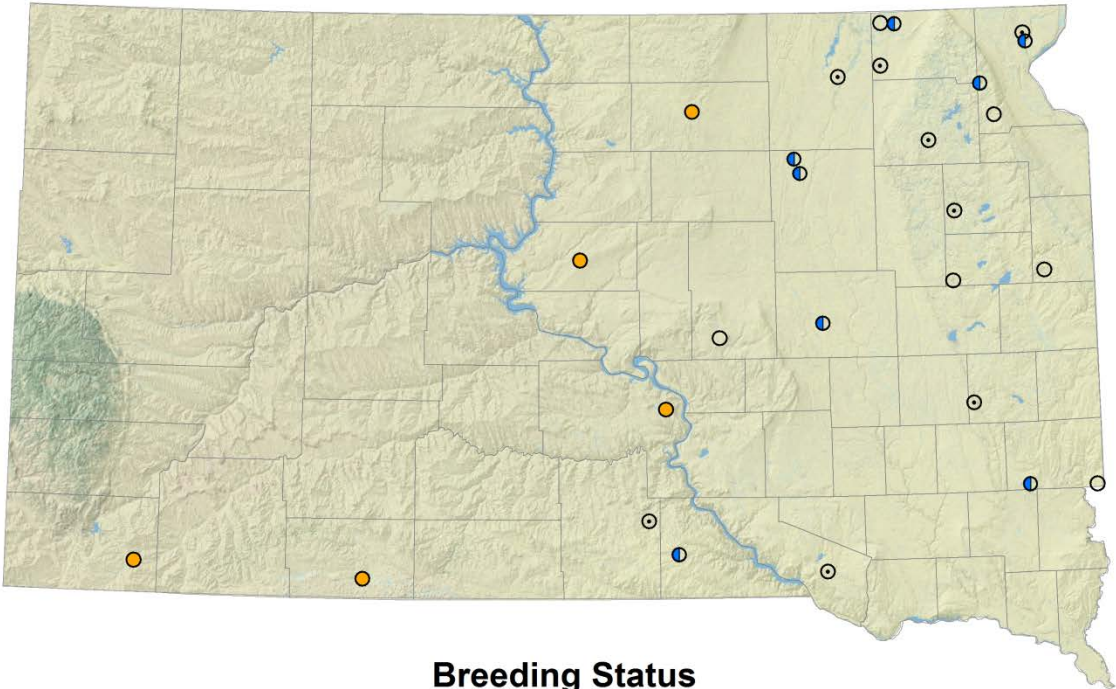
trees in farm country and urban areas, but thus far, all South Dakota nests have been in marshes (Swanson and Liknes 2001, second Atlas results).

BREEDING BIOLOGY

The breeding season in South Dakota is mid-April to mid-July. A colonial nesting species, Great-tailed Grackle males defend a very small territory. The pair bond is weak and short-lived; both male and female may mate with birds from nearby territories, and a few males defend multiple females within their territory. In South Dakota, grackle nests are suspended in cattails, 1.5' – 3' above the water (Swanson and Liknes 2001). Nests are cup-shaped and made of woven plant material, primarily cattails. The male defends nestlings and fledglings hatched in his territory, otherwise all parental care is provided by the female. The female incubates 3 to 4 eggs for about 2 weeks. She feeds insects to the chicks both in the nest and after the chicks leave the nest at about 12 days old. Young grackles continue to beg for food from the female for several more weeks (Johnson and Peer 2001).

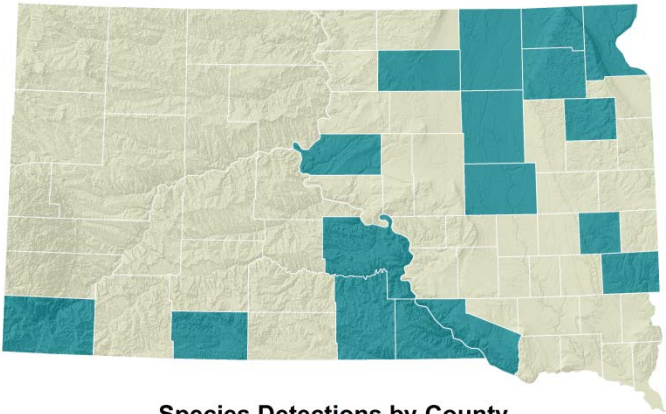
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	5	5
Probable	6	2	8
Possible	5	3	8
Observed	7	0	7
Total	18 (4%)	10	28

Great-tailed Grackle



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

BROWN-HEADED COWBIRD

Molothrus ater

Brown-headed Cowbirds often forage near grazing livestock, especially horses, cattle, and bison. The birds feed on insects flushed by the grazing mammals.

DISTRIBUTION AND STATUS

Brown-headed Cowbirds breed throughout North America, except Alaska and northern Canada. Highest cowbird densities are in the northern Great Plains. In South Dakota, Brown-headed Cowbirds are abundant and widespread, found in every county. They occurred on 99% of second Atlas blocks, up from 97% in the first Atlas. South Dakota's cowbird population is increasing at a significant rate of 1% per year (Sauer *et al.* 2014).

HABITAT

Brown-headed Cowbirds breed in open or semi-open country. They prefer forest-grassland edges and agricultural areas. Second Atlas observers reported cowbirds in grasslands (49% of observations), woodlands (26%), cropland (10%), roadsides and residential areas (10%), wetlands (4%), and shrublands (1%).

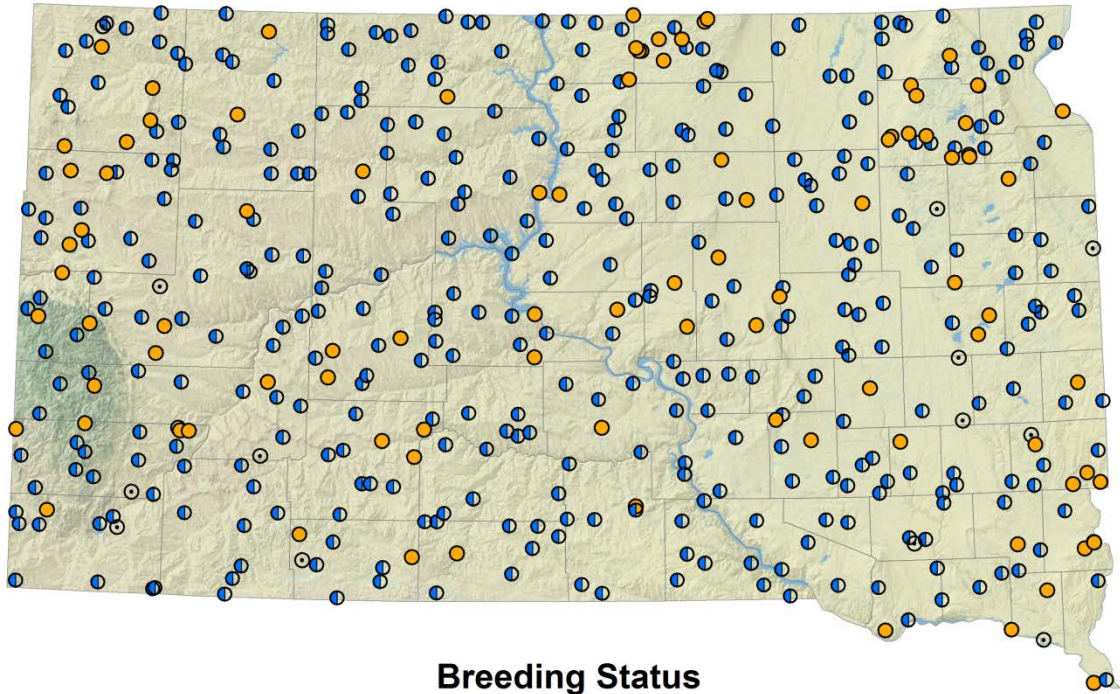
BREEDING BIOLOGY

Brown-headed Cowbirds lay their eggs in the nests of a variety of bird species. The host parents incubate the cowbird eggs and raise the cowbirds as their own. In South Dakota, cowbird breeding begins in mid-May and hosts may be feeding fledglings into late July. The

female searches for nests to parasitize by watching quietly from a perch or by noisily flapping through the vegetation to flush incubating hosts. A female lays about 40 eggs per season, which she distributes among the nests of several host species. She often removes an egg from the host nest before laying her own. Second Atlas observers reported parasitism for 34 host songbirds. The species with the highest rates of parasitism during the second Atlas, among those that had at least five reports, were Song Sparrow (parasitism in 75% of all nest and feeding-fledgling reports), Bobolink (38%), Red-winged Blackbird (34%), Horned Lark (21%), Lark Sparrow (20%), Chipping Sparrow (18%), and Western Meadowlark (16%). During the second Atlas, cowbirds laid an average of 1.7 eggs per parasitized nest (range 1 to 5 eggs, 51 nests). Observers also reported two instances of a host (1 Yellow Warbler, 1 Blue-gray Gnatcatcher) building a nest on top of eggs laid by cowbirds. Some hosts also remove cowbird eggs from their nests. The cowbird nestlings leave the nest after 10 to 11 days and are independent of their host parents' care in another 15 to 30 days (Lowther 1993).

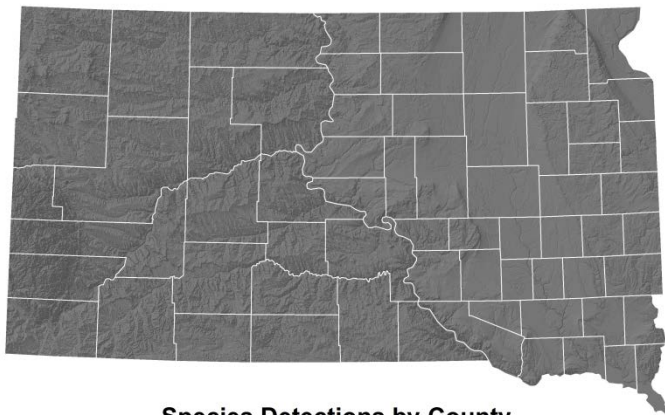
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	59	50	109
Probable	361	5	366
Possible	11	3	14
Observed	0	0	0
Total	431 (99%)	58	489

Brown-headed Cowbird



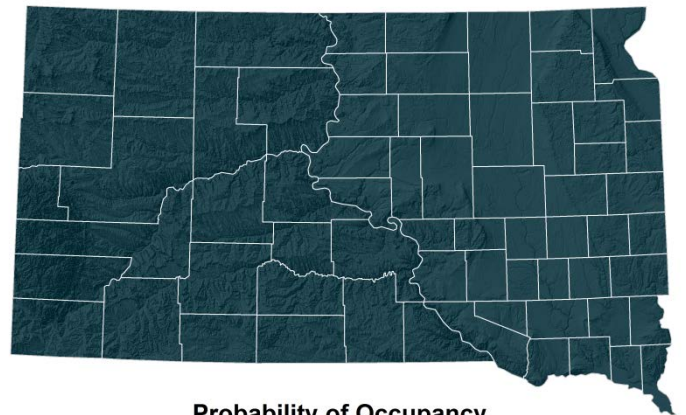
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

ORCHARD ORIOLE

Icterus spurius

The smallest oriole in North America, yearling males look more similar to females (yellow-greenish plumage) than adult males (black and chestnut plumage). This is thought to make the young males less easy to see in the treetops and thus suffer less predation. On the downside, yearling males are less likely to be chosen as a breeding partner by females.

DISTRIBUTION AND STATUS

The Orchard Oriole breeds throughout the United States east of the Rockies and south into central Mexico. In South Dakota, this species breeds throughout the state except in the Black Hills, and in all 66 counties. Orchard Oriole is one of South Dakota's most abundant breeding species. Both Atlases recorded it in 89% of blocks and it was one of the top 15 most abundant species in terms of the number of records. In addition, Breeding Bird Survey data show that the state's breeding population is increasing significantly, at a rate of about 1.9% per year since 1967 (Sauer *et al.* 2014).

HABITAT

This oriole breeds in areas with deciduous trees, such as young woodlands, open riparian areas, shelterbelts, ranches, roadsides, farmsteads, parks, and suburbs. Second Atlas nests were found in deciduous woodlands (17 nests each in upland and lowland), mixed conifer-deciduous

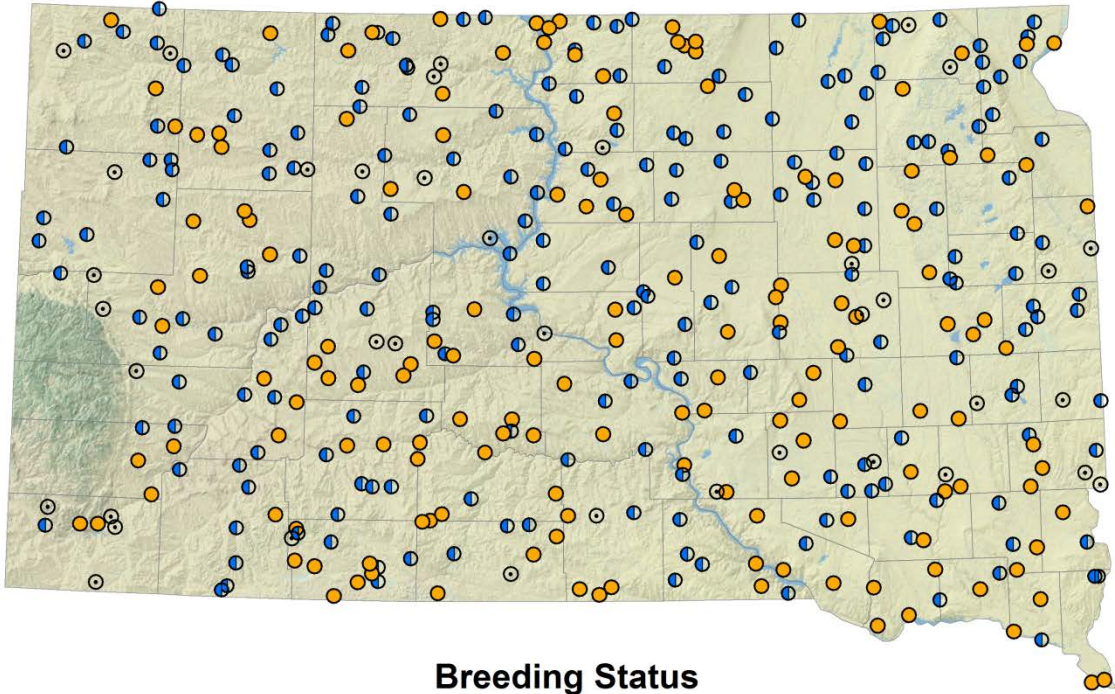
woods (5), open areas with scattered trees (5), a marsh (1), and a farm (1).

BREEDING BIOLOGY

In South Dakota, Orchard Orioles raise one brood between early June and early August. The nest, primarily built by the female, is a woven basket made of grass, open at the top or to one side, and lined with finer materials. It is attached to the fork of a twig or branch away from the main trunk. Second Atlas nests were reported at heights of 2.5' to 30' above ground (average 12', 17 nests) in green ash (8 nests), cottonwood (6), willow (3), American elm (2), red cedar (1), box elder (1), walnut (1), and in a brush pile (1). Females incubate 4 or 5 pale blue eggs for 12 to 14 days. Chicks leave the nest after about two weeks and spend the next week in dense cover near the nest being fed insects and fruit. Young and adult females form groups and continue foraging together after males have begun migration in late July or early August (Scharf and Kren 2010).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	140	22	162
Probable	212	6	218
Possible	34	4	38
Observed	0	0	0
Total	386 (89%)	32	418

Orchard Oriole



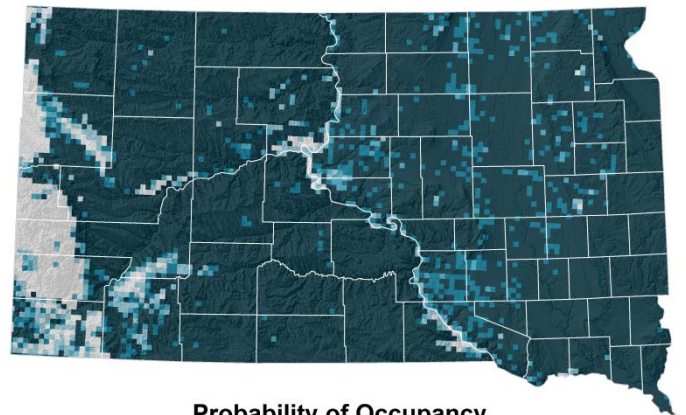
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

BULLOCK'S ORIOLE

Icterus bullockii

Both male and female Bullock's Orioles sing, but their songs are noticeably different. Females sing regularly during the early part of the nesting season, sometimes singing more than the male. Both sing to defend their territory. The pair also sing and call back and forth, especially when they cannot see each other.

DISTRIBUTION AND STATUS

Bullock's Orioles breed throughout the western United States and north-central Mexico. The breeding range extends into the western quarter of South Dakota, where the species is relatively common. During the first Atlas, observers reported several orioles in Butte County; none were found there during the second Atlas. Bullock's and Baltimore orioles both breed in an overlap zone approximately 150 to 200 miles wide. In South Dakota, this hybrid zone extends from Oglala Lakota County to Harding County (Tallman *et al.* 2002). One hybrid oriole was reported during the second Atlas, in central Oglala Lakota (formerly Shannon) County.

HABITAT

Breeding Bullock's Orioles inhabit shelterbelts and riparian woods, especially those with cottonwoods. Second Atlas orioles were reported in riparian woods (51% deciduous, 11% mixed cedar-deciduous), upland shelterbelts and woods (17% mixed conifer-deciduous woods, 7%

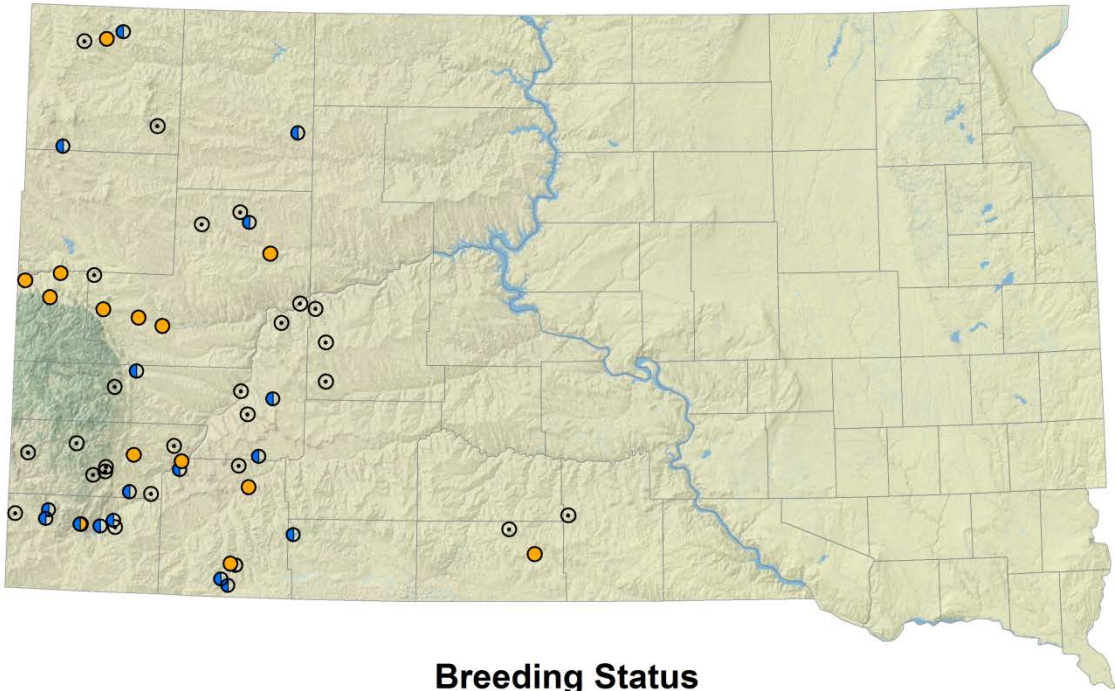
deciduous, 3% pines), open areas with scattered trees (5%), grasslands (4%), and residential areas (3%). Of seven Bullock's Oriole nests reported during the second Atlas, four were in riparian deciduous woods, two in upland mixed woods, and one in open areas with scattered trees.

BREEDING BIOLOGY

The breeding season is June and July. The nest is a hanging pouch suspended from the tip of a slender branch. It is woven with long plant and man-made fibers and lined with fine grass, plant down, and hair. The female does most of the nest weaving, but the male may assist, with one working on the inside of the nest and the other on the outside. Two nests reported during the second Atlas were 35' high in a cottonwood and 15' high in a green ash. The female lays 4 to 5 eggs, which she incubates for 11 days. Both parents feed the nestlings. Chicks leave the nest when 14 days old and family groups remain together for several more days (Rising and Williams 1999).

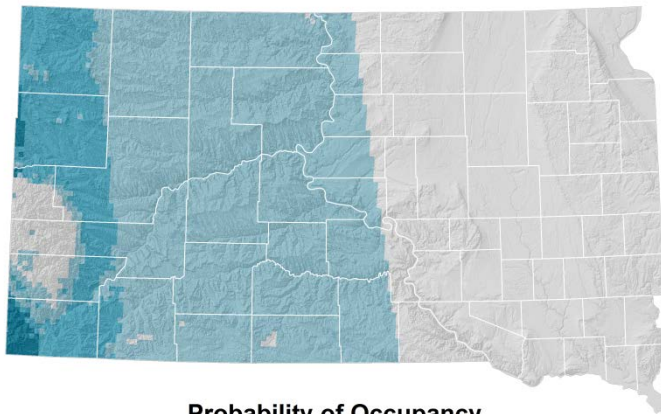
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	8	6	14
Probable	16	2	18
Possible	17	8	25
Observed	0	0	0
Total	41 (9%)	16	57

Bullock's Oriole

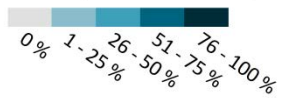


Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- Probably breeding
- Observed; not breeding at location



Probability of Occupancy



BALTIMORE ORIOLE

Icterus galbula

First described by naturalist Mark Catesby in 1731, this oriole was named the 'Baltimore Bird' because its black and orange colors were the colors of the Baltimores, the owners of the Maryland colony.

DISTRIBUTION AND STATUS

The breeding range of the Baltimore Oriole includes the United States east of the Rocky Mountains and central Canada. In South Dakota, this oriole is fairly common in the eastern three-quarters of the state, but less common in grassland-dominated areas. In the 1980s, including during the first Atlas, Baltimore and Bullock's orioles were considered a single species (Northern Oriole). Thus, oriole distributions from the two Atlases cannot be compared. South Dakota's Baltimore Oriole population is increasing significantly over both the long and the short term (Sauer *et al.* 2014).

HABITAT

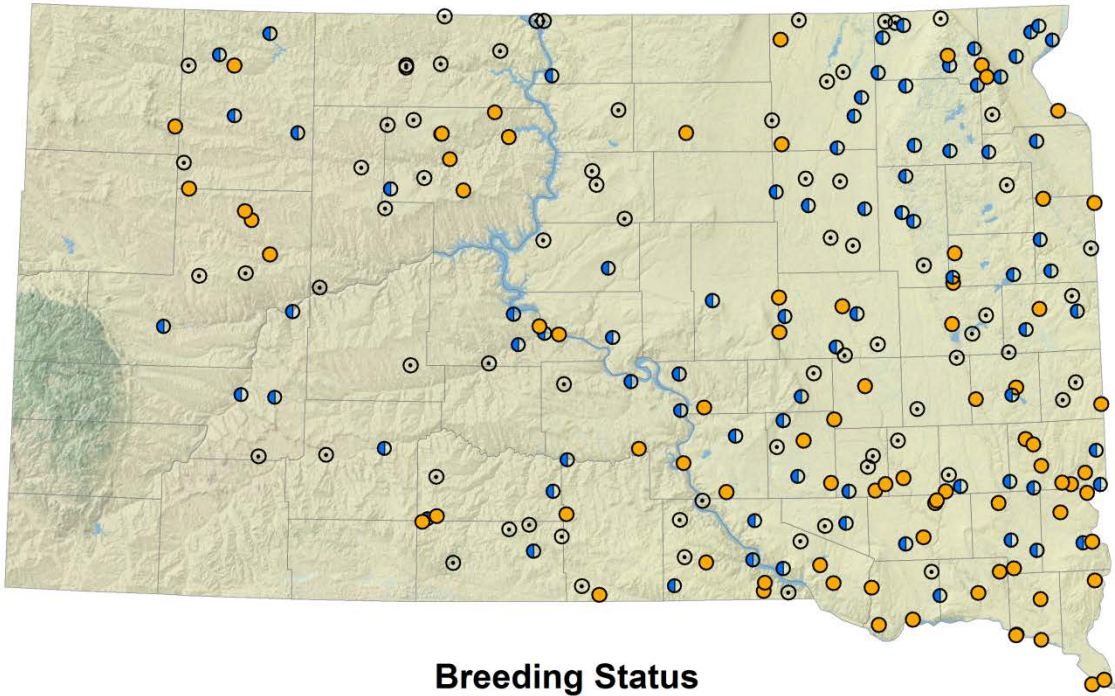
Baltimore Orioles breed in riparian woodlands, shelterbelts, and wooded urban areas. Second Atlas observers found these orioles in shelterbelts and upland woods (51%), riparian woods (29%), residential areas (3%), open areas with scattered trees (3%), grasslands (2%), and shrublands (1%). Of 28 reported second Atlas nests, 54% were in riparian woods, 43% in upland woods, and 3% in open areas with scattered trees.

BREEDING BIOLOGY

During the second Atlas, Baltimore Orioles nested from May 19 to July 16 and pairs fed fledglings until July 23. The male defends a relatively large territory at the beginning of the season. Once nest-building begins, his defended area shrinks to a small area around the nest. Second Atlas nests were in cottonwoods (12 nests), hackberry (1), mulberry (1), and elm (1), at heights between 15' and 55'. The nest, woven by the female, is a long hanging pouch suspended by its rim from the end of a down-hanging branch. She first weaves the outer layer from long, flexible plant or human-made fibers, to provide support. Next, materials such as grass and moss are woven into an inner lining to maintain shape. Finally she lines the nest with soft plant down and hair. Clutch size is 4 to 5 eggs, which are incubated by the female for 12 to 14 days. Both parents feed the nestlings. Insects, such as caterpillars and soft parts of other insects, are the major food item. Chicks are able to fly, but not well, when they leave the nest at 12 to 13 days. The young orioles are dependent on their parents for food for another 14 days (Rising and Flood 1998).

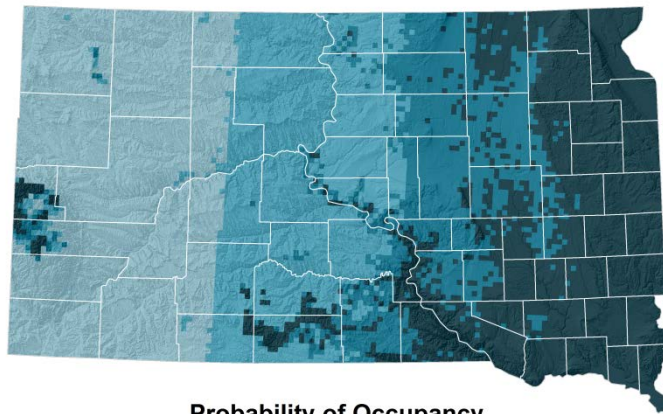
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	59	22	81
Probable	77	3	80
Possible	66	5	71
Observed	0	0	0
Total	202 (46%)	30	232

Baltimore Oriole



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

HOUSE FINCH

Haemorhous mexicanus

Native to the southwestern region of the U.S., House Finches were released in New York City in 1940 by pet shop owners who had been selling the bird illegally and were trying to escape prosecution. Some of the birds survived and, within 50 years, had spread westward across the continent to meet their western counterparts.

DISTRIBUTION AND STATUS

As a result of rapid range expansion of the introduced eastern flock during the late 1900s, House Finch now occurs throughout the United States, Mexico, southern Canada, and southern Alaska. In South Dakota, the first House Finch record was in 1966 in Mitchell, and the first breeding records were in 1989 in Minnehaha and Fall River counties (Tallman 1982, Blankespoor 1989, Peterson and Peterson 1989). During the first Atlas, House Finches were uncommon and limited, recorded on 3% of random blocks in 21 counties. Since then, the House Finch has continued to spread across the state, mainly in residential areas and near rural buildings. The second Atlas reported House Finches on 11% of blocks in 59 of South Dakota's 66 counties.

HABITAT

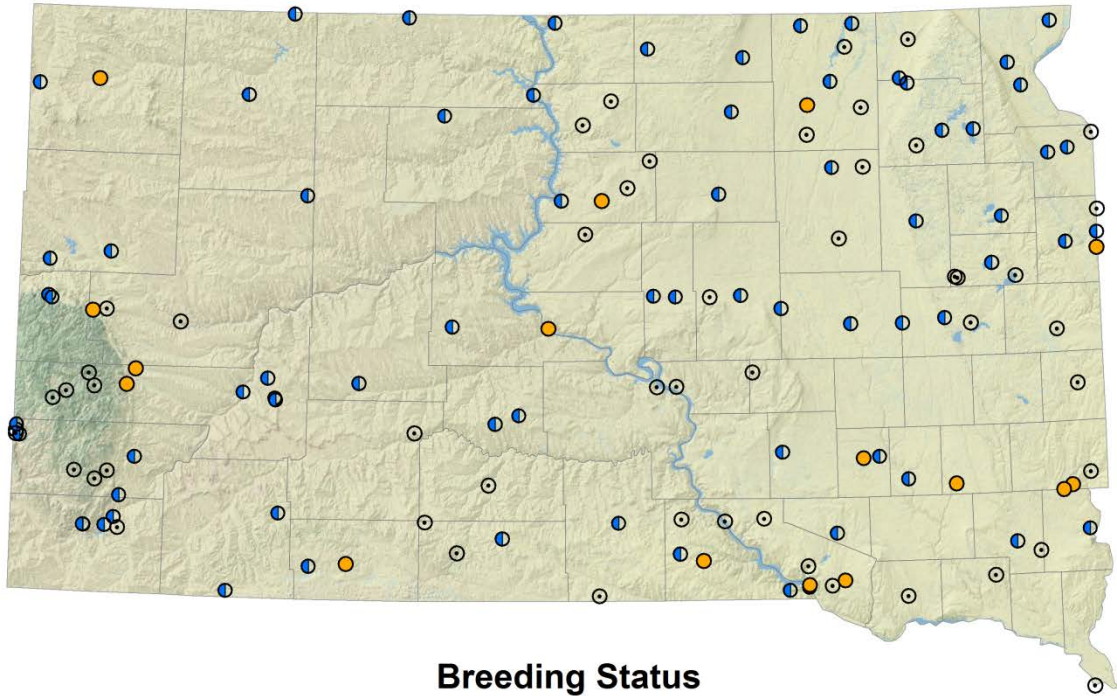
South Dakota's House Finches primarily live near humans, including towns, parks, cemeteries, campgrounds, farms, and ranches. Seventy percent of second Atlas observations were in residential areas, 28% in deciduous or mixed deciduous-conifer shelterbelts, and 2% in conifer woods.

BREEDING BIOLOGY

Raising two or three broods a year, House Finches in South Dakota nest from early March into July. Pairs often maintain their pair bonds throughout the year, with unpaired birds finding mates in winter flocks. Pairs sometimes will spend weeks building "preliminary nests"; unusually large, rough nests with piled layers of nesting material. When the weather improves, pairs abandon such nest-building and rapidly complete the actual nest. They nest in a variety of sites but mainly in evergreens or holes in human structures. Two second Atlas nests were reported in buildings and one in a small spruce in a city park. The cup-shaped nest, mostly built by the female, is composed of grass, weeds, twigs, and leaves, and lined with finer materials including man-made fibers. The clutch size is 2 to 7 eggs; one second Atlas nest contained 7 nestlings. The female incubates the eggs for 13 to 14 days. Both parents regurgitate seeds to the nestlings. Nestlings leave the nest 12 to 15 days after hatching. If the pair attempts another nest, the male feeds the first brood while the female builds a new nest and lays the second clutch (Badyaev *et al.* 2012).

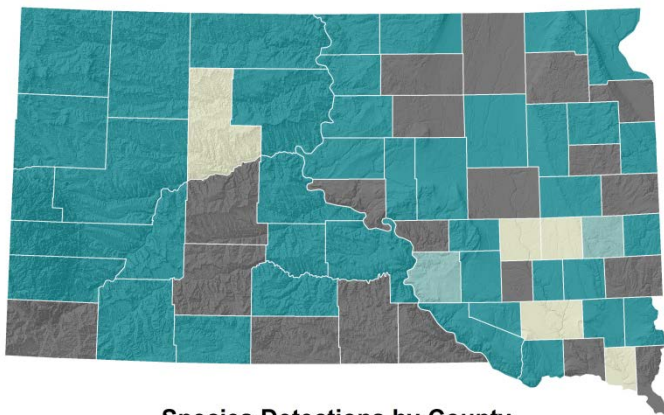
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	4	12	16
Probable	20	52	72
Possible	25	26	51
Observed	0	0	0
Total	49 (11%)	90	139

House Finch



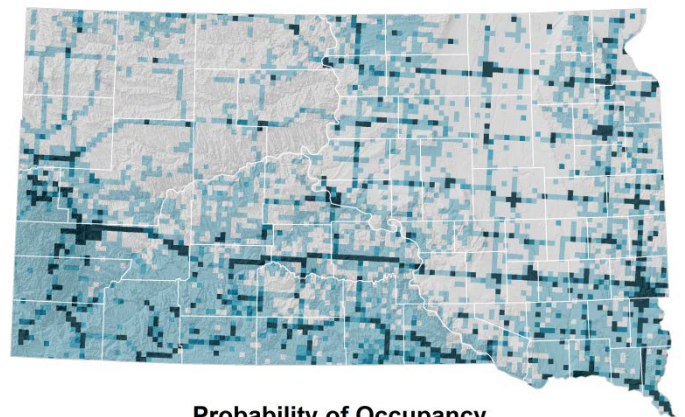
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- Second Atlas Only
- First Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

CASSIN'S FINCH

Haemorhous cassinii

Cassin's Finch songs often include excellent imitations of other bird species' songs, such as those of Red Crossbill and Townsend's Solitaire. The accuracy of most of these imitations suggests that the sounds are learned directly from the other species rather than from other Cassin's Finches.

DISTRIBUTION AND STATUS

This western finch breeds in most mountain ranges of the northwestern states, Great Basin, and Rocky Mountain region, usually occurring at 3,300' to 10,000' elevation. In South Dakota, the species is a year-round resident in the Black Hills, where it is a disjunct population east of the main breeding range. The distribution and relative abundance of Cassin's Finch were similar during the first and second Atlases, being uncommon and restricted to the Black Hills during both surveys.

HABITAT

This species prefers open coniferous habitats at a wide range of elevations. During the second Atlas, 70% of observations were in conifer forests, 20% in mixed conifer-deciduous forests, and one record in a residential area.

BREEDING BIOLOGY

No Cassin's Finch nest has ever been reported in South Dakota. The few

confirmed breeding records that exist indicate that the breeding season is June and July. The earliest state breeding record was set during the second Atlas when a female was observed gathering and carrying off nest material in Jewel Cave National Monument on June 3, 2012. In some parts of its range, Cassin's Finch breeds semi-colonially but this has not been reported in South Dakota. Once incubation has started, the male only defends a very small area around the nest and will tolerate nest construction by another pair a few yards from his nest. Most nests are built in conifers, usually well out on a lateral branch or within about 3' of the tree top. The nest consists of a base of coarser plant parts such as twigs, roots, or weed stems and a lining of finer plant materials or fibers such as hair or feathers. The female incubates the 4 or 5 eggs for approximately 12 days; the male feeds her during incubation. Both parents feed the nestlings by regurgitation. Almost immediately after the chicks leave the nest, they depart from the breeding site in the company of their parents until independence (Hahn 1996).

Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	1	1
Probable	2	6	8
Possible	4	6	10
Observed	0	0	0
Total	6 (1.4%)	13	19

Cassin's Finch



Breeding Status

- Confirmed breeding
- ◐ Possibly breeding
- ◑ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

RED CROSSBILL

Loxia curvirostra

Red Crossbills are so named because of their distinctive mandibles which are curved and crossed at the tip and because of the male's red coloration. Crossbills use their unique bill to pry open a gap between the scales of conifer cones so they can extract the underlying seeds with their tongue. To help digestion, crossbills drink large amounts of water or eat snow daily.

DISTRIBUTION AND STATUS

Isolated populations of Red Crossbills occur wherever there are coniferous forests, including boreal and mountain forests from Alaska to eastern Canada, southward into Mexico. In South Dakota, crossbills breed in ponderosa pine-dominated forests in the western part of the state. Very rarely they will breed east of the Missouri River (e.g., Larrabee 1920). The species is nomadic and flocks typically wander one to three times a year searching for cone crops. Locally, crossbill abundance is correlated with the availability of conifer seeds. In some years, Red Crossbill is one of the most abundant species in the Black Hills while other years, the species occurs in very low numbers (e.g., Rosche 1982, White *et al.* 2010). According to Breeding Bird Survey data, Red Crossbill populations in South Dakota are increasing significantly, both over the short term (2002 to 2012) and the long term (1967 to 2012) (Sauer *et al.* 2014).

HABITAT

Found in mature conifer-dominated forests, crossbill presence is heavily

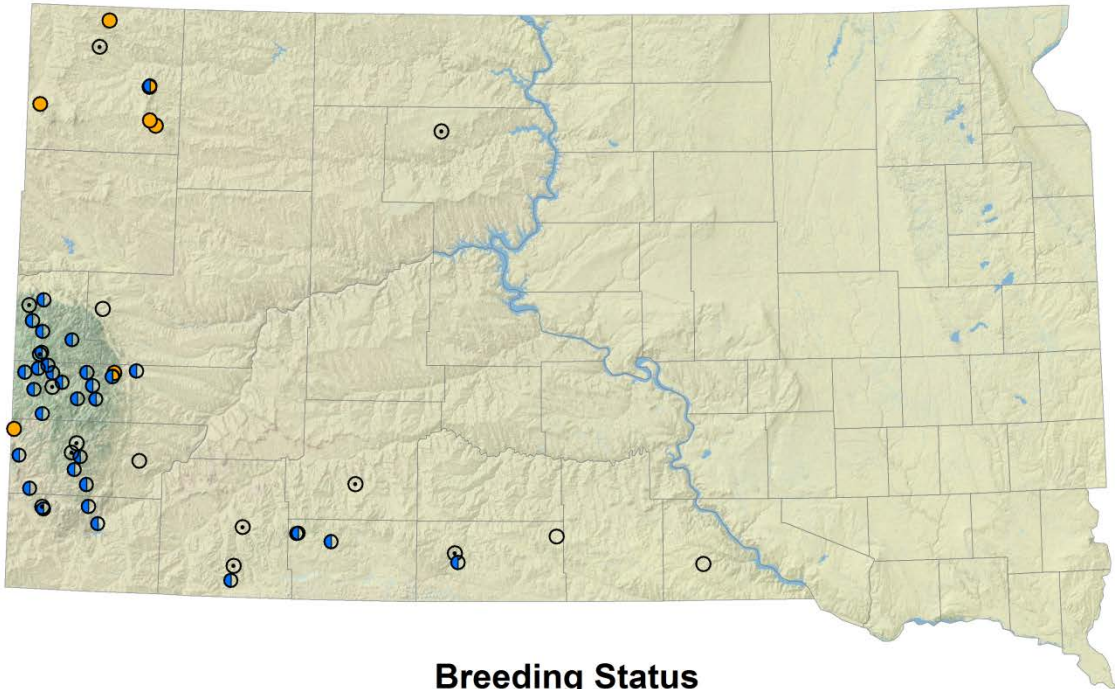
influenced by the availability of conifer seeds. During the second Atlas, Red Crossbills were reported in upland pine and mixed pine-deciduous forests (84%), lowland deciduous and mixed forests (8%), and residential areas (4%).

BREEDING BIOLOGY

The crossbill breeding season is determined by photoperiod (more than 10 hours of daylight) and food availability. In South Dakota, they appear to breed from February through July, based on the many records of young fledglings in early April and no confirmed breeding records beyond July. There is little evidence of territories and pairs may nest within 50 to 100 yds of one another. The nest, made of coarse vegetation lined with softer materials, is built in the densest foliage of conifers. The female incubates three eggs for 12 to 16 days. Parents regurgitate a paste of seed kernels and possibly saliva that provides both food and moisture for the chicks. When chicks leave the nest in 15 to 25 days, their bills are uncrossed. Crossing may be complete by 30 days. Parents feed their chicks as long as 33 days after nest-leaving (Adkisson 1996).

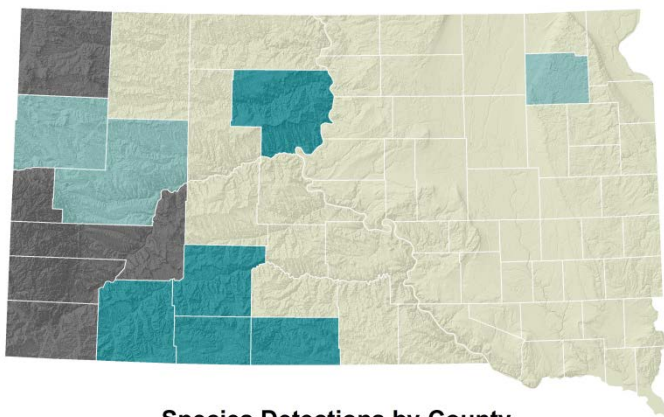
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	5	2	7
Probable	20	13	33
Possible	6	6	12
Observed	4	0	4
Total	35 (8%)	21	56

Red Crossbill



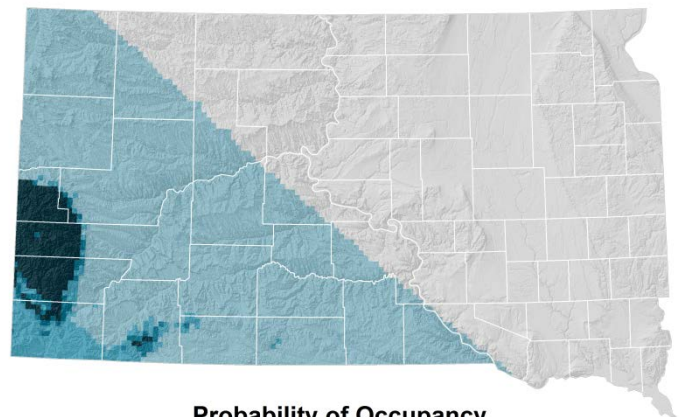
Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Both Atlases
- Second Atlas Only
- Neither Atlas



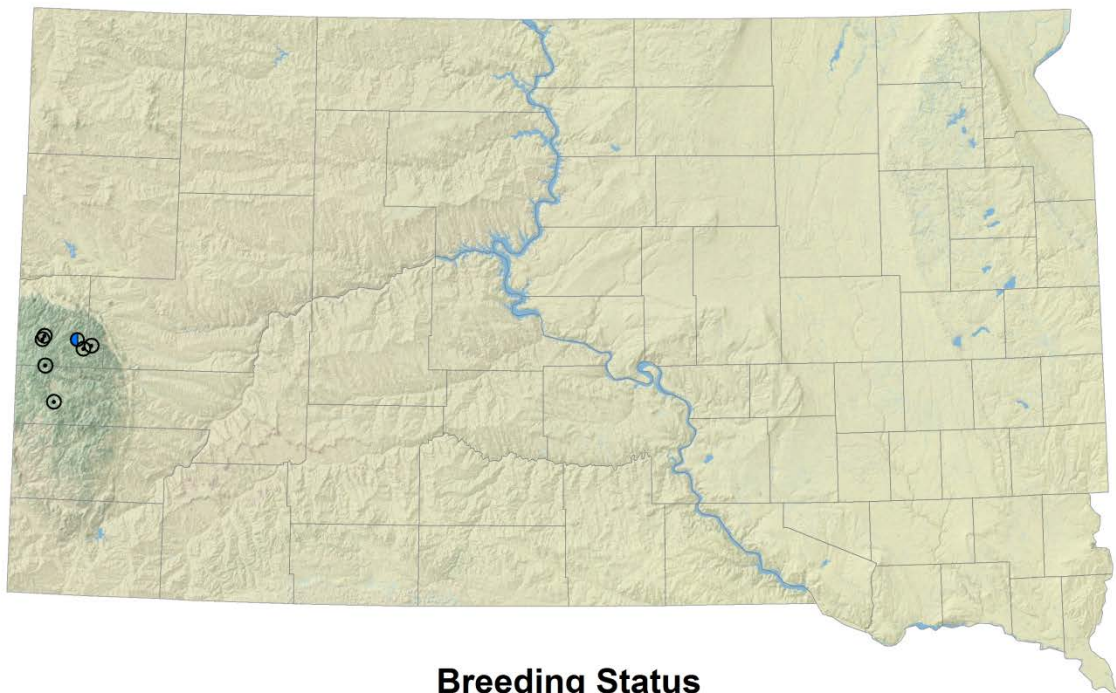
Probability of Occupancy

-
 0%
-
 1-25%
-
 26-50%
-
 51-75%
-
 76-100%

WHITE-WINGED CROSSBILL

Loxia leucoptera

The White-winged Crossbill nests in spruce forests throughout Canada and the United States (Benkman 2012). In South Dakota, it is a casual and sporadic summer resident at higher elevations of the Black Hills. It has never been confirmed breeding in the state. During the second Atlas, one observation was of a singing male, in June 2010 in Pennington County. The remainder of the observations were of calling birds, usually in flocks.



Breeding Status

- Confirmed breeding
- Possibly breeding
- Probably breeding
- Observed; not breeding at location

PINE SISKIN

Spinus pinus

Pine Siskins are an irruptive winter visitor that can be abundant one year and absent the next. After favorable winter conditions, some birds stay to breed.

47% of siskin reports were in upland coniferous or mixed forests, 35% in residential areas, and 12% in lowland forests. Five of the six confirmed breeding observations were in towns.

DISTRIBUTION AND STATUS

This species breeds in boreal forests as far north as central Alaska and northern Canada and south to Guatemala. In South Dakota, Pine Siskin is most common in the Black Hills, where it is a year-round resident. Other West River second Atlas observations were in or near mixed pine-juniper woods, such as in Custer National Forest in Harding County, Cedar Butte in Mellette County, the Pine Ridge Escarpment in Oglala Lakota (Shannon) County, and plantings near Shadehill in Perkins County. East River siskins typically breed after winters of high irruptive populations and where there are feeders. These birds usually nest in conifer plantings in residential areas (e.g., Krause 1954, Howitz 1991). The statewide distribution of breeding Pine Siskins did not substantially change since the first Atlas.

HABITAT

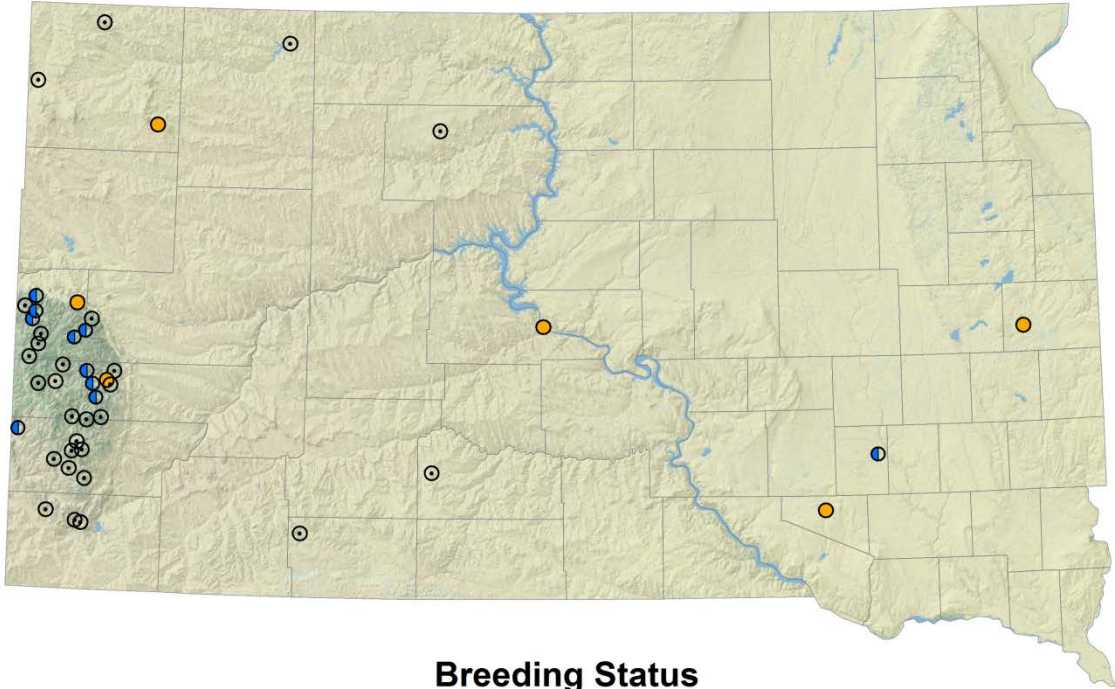
Pine Siskins primarily are associated with conifers. In residential areas, they breed in planted coniferous ornamentals or less commonly, in deciduous trees and shrubs. During the second Atlas,

BREEDING

Pine Siskins breed relatively early in South Dakota, usually starting in late April and finishing by late June. Nests typically are placed in dense vegetation for concealment, but some South Dakota nests have been located at the tip of pine trees (Krause 1954). The female, closely watched by the male, builds the nest from tree or plant parts and lines it with finer materials such as hair or feathers. She incubates 3 to 5 pale greenish-blue eggs for 13 days. The male feeds her during incubation and brooding. Nestlings leave the nest 13 to 17 days after hatching, but rely on their parents for food for another three weeks (Dawson 1997).

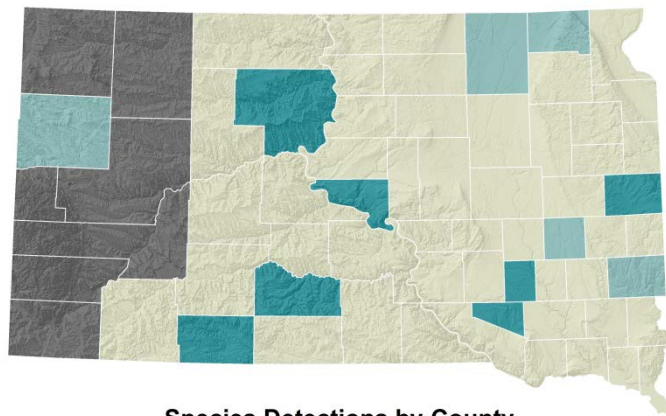
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	3	3	6
Probable	6	4	10
Possible	10	18	28
Observed	0	0	0
Total	19 (4%)	25	44

Pine Siskin



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

LESSER GOLDFINCH

Spinus psaltria

Male Lesser Goldfinches are of two color morphs – either green-backed or black-backed. Birds of both morphs are found in South Dakota. Females do not differ in coloration.

pine-juniper-deciduous mixed woods, and residential areas. Second Atlas observations were in residential areas (2 records), lowland deciduous woods (1), and mixed deciduous-conifer woods (2).

DISTRIBUTION AND STATUS

A western species, Lesser Goldfinches breed from Oregon east into Colorado and south into northern and western South America. South Dakota, located northeast of the species' breeding range, has a small, local population, concentrated around Hot Springs in Fall River County. The nearest known breeding population is the Laramie Range and Guernsey areas of southeast Wyoming (Faulkner 2010). Lesser Goldfinches were first noted during the breeding season in 1969 near Hot Springs and, beginning in the early 1980s, have been found there almost every summer. They were not, however, observed during the first Atlas. They were first confirmed breeding in the state in 2004. Lesser Goldfinches appear to be expanding their range; during the second Atlas they were detected in Roby Canyon in extreme western Custer County, and in west-central Rapid City.

HABITAT

Lesser Goldfinches in South Dakota are found in dry brushy canyons, especially those with open ponderosa pine stands intermixed with juniper and shrubs. They also occur in brushy riparian areas,

BREEDING BIOLOGY

In South Dakota, there are few breeding records but Lesser Goldfinches appear to breed from late May through July. Pairs do not have a large all-purpose territory; rather they defend a small area immediately around the nest. The female builds a cup-shaped nest of plant fibers in a well-shaded spot in dense vegetation, often where several branches intersect. Clutch size is 3 to 6 pale-blue eggs. The female is fed by the male during the 12 to 13 days of incubation. Nestlings leave the nest when 11 - 15 days old. After another week, the young birds are strong enough to accompany adults to foraging areas, where they congregate into larger groups. The family stays together for several weeks as they move among foraging areas (Watt and Willoughby 2014).

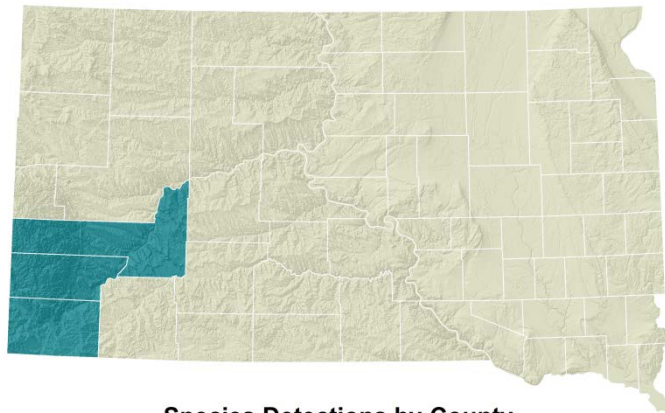
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	1	1
Probable	0	2	2
Possible	1	3	4
Observed	0	0	0
Total	1 (0.2%)	6	7

Lesser Goldfinch



Breeding Status

- Confirmed breeding
- ⊙ Possibly breeding
- ◐ Probably breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

AMERICAN GOLDFINCH

Spinus tristis

American Goldfinches are almost entirely seed-eaters. Unlike most other songbirds, they exclusively feed seeds to their nestlings. This diet dictates when, where, and how they breed.

DISTRIBUTION AND STATUS

The American Goldfinch is an abundant breeding bird throughout southern Canada and the northern two-thirds of the United States. It is common and widespread throughout South Dakota. According to Breeding Bird Survey data, South Dakota's goldfinch population has been increasing significantly at a rate of 2% per year since 1968. This trend is reflected in Atlas results. The species was detected on 76% of random blocks during the first Atlas and on 83% of blocks during the second Atlas.

HABITAT

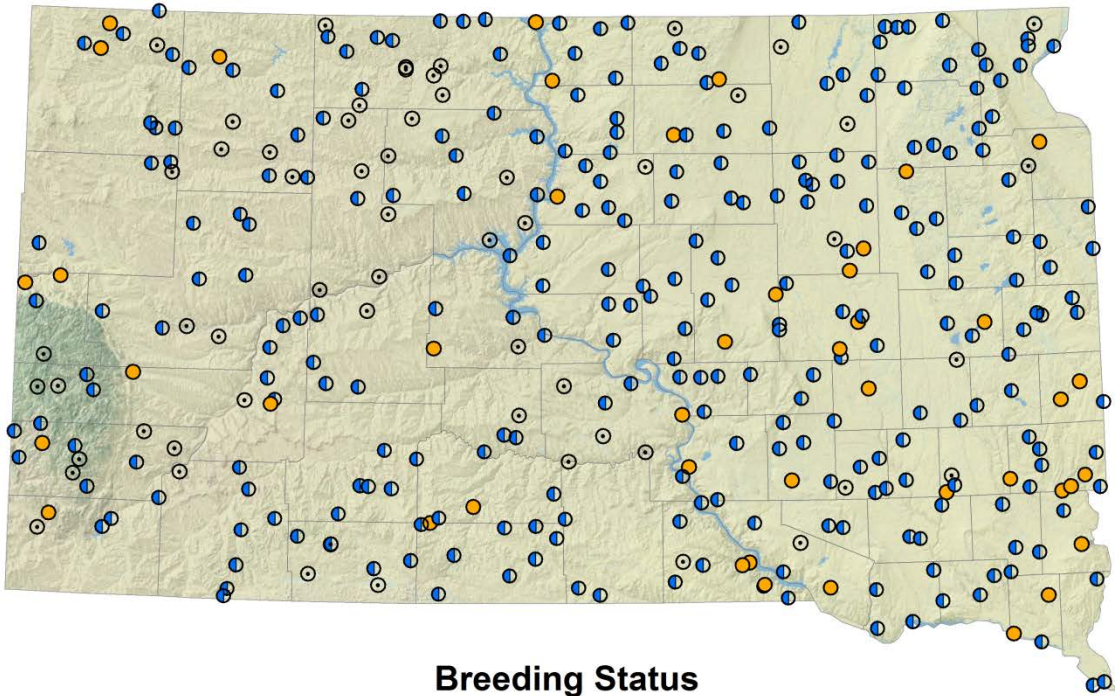
Goldfinches prefer areas with early successional vegetation, such as small woodlots, riparian zones, ditches, weedy grasslands, and residential areas. These habitats provide seed-bearing flowers. During the second Atlas, goldfinches were found in deciduous woodlands (57%), mixed deciduous-conifer woodlands (16%), grasslands (10%), residential areas (5%), shrublands (3%), marshes (2%), and open areas with scattered trees (2%). Observers found nests in deciduous woodlands (15 nests), mixed deciduous-conifer woods (4), residential areas (2), marshes (1), and roadsides (1).

BREEDING BIOLOGY

This goldfinch is one of the latest breeders in South Dakota. Most nesting occurs after mid-summer when food plants, such as thistles, begin to flower. Observers during the second Atlas confirmed breeding between June 7 and August 29, and other breeding records in the state report breeding into mid-September. Goldfinches often nest colonially. The nest is placed in a tree or shrub; second Atlas nests were in green ash (2 nests), box elder (1), cottonwood (1), and a deciduous shrub (1), 6' to 35' above ground (average 15'). The ball-shaped nest is made of small plant fibers and spider webs and has one opening for access. The female incubates 2 to 7 unmarked, pale blue eggs for 12 to 14 days. Parents feed the chicks by regurgitating a sticky, semi-solid mass of seeds. Chicks leave the nest when 12 to 17 days old but remain dependent on their parents for another three weeks. If the first nest is early enough, some females leave their mate to feed the first brood while they mate with a second male (McGraw and Middleton 2009).

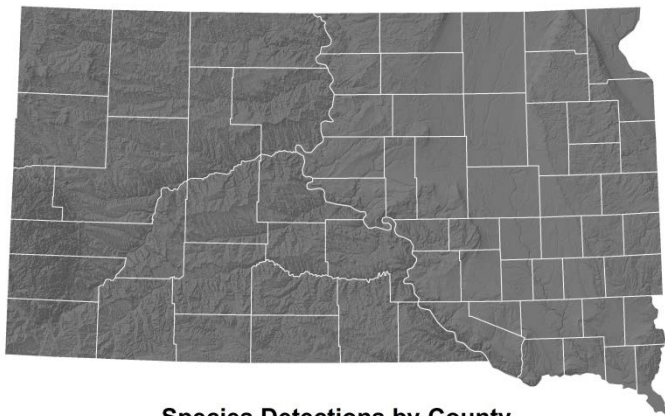
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	36	9	45
Probable	267	6	273
Possible	57	1	58
Observed	0	0	0
Total	360 (83%)	16	376

American Goldfinch



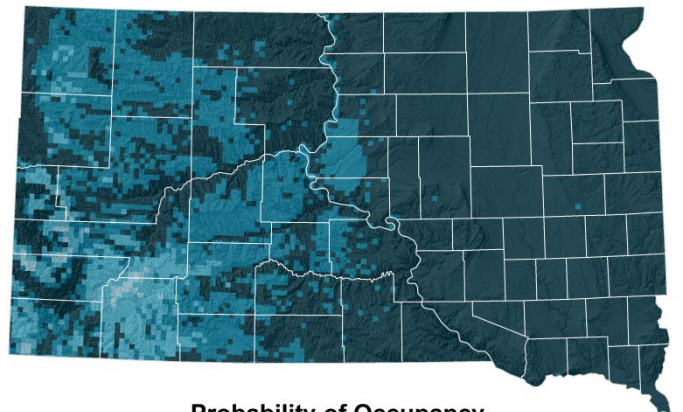
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

EVENING GROSBEAK

Coccothraustes vespertinus

The Evening Grosbeak's scientific name, *Coccothraustes*, means "kernel-cracker," referring to its ability to crack large seeds with its powerful bill. Seeds, especially those of box elder, ash, maple, and other trees, make up the majority of the grosbeak's diet. Grosbeaks also eat gravel to obtain minerals and salts.

DISTRIBUTION AND STATUS

The breeding distribution of the Evening Grosbeak includes the boreal forests of southern Canada and the northeastern United States, the Rocky Mountains, and the Sierra Madres of Mexico. The Evening Grosbeak in South Dakota is a rare breeder in the northern and northeastern Black Hills (Pettingill and Whitney 1965, Peterson 1995). Because of its rarity, local trends are difficult to ascertain. The first Atlas had seven grosbeak reports, including one nest, while the second Atlas had three reports. Evening Grosbeak populations across the continent are declining rapidly but the reasons for the decline are unknown (Bonter and Harvey 2008).

HABITAT

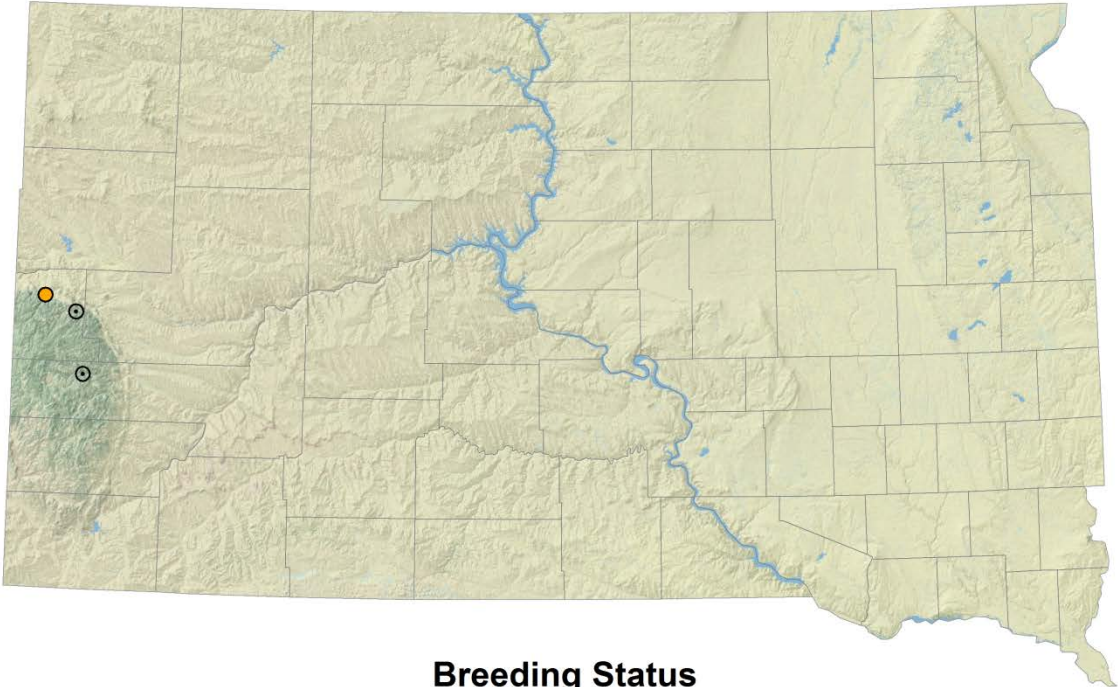
Evening Grosbeaks breed in coniferous and mixed coniferous-deciduous forests. All three second Atlas observations were at feeding stations in yards surrounded by pines, pine-oak, or pine-green ash forests.

BREEDING BIOLOGY

Evening Grosbeak breeding records in South Dakota include a nest with young in mid-June and adults feeding fledglings in July and August. The Second Atlas breeding confirmation was of a pair feeding very young fledglings at a feeder on August 1. Grosbeak pairs form in winter flocks and the pair return together to the breeding area. Grosbeaks are tolerant of other grosbeaks nesting nearby and may breed in colonies. The nest site usually is a horizontal branch or vertical fork in a tree. The nest is a shallow, loosely-made structure, built of small twigs and rootlets and lined with lichens, grass, moss, or pine needles. The female usually lays 3 to 4 eggs but she may lay between 2 and 5. The male does not help to incubate during the 12 to 14 day incubation period, but he does feed the incubating female. The parents feed chewed up insect larvae to young chicks. After about a week, the diet changes to whole insects and soft seeds. Nestlings leave the nest individually over several days. The adults may feed the fledglings into August and September (Gillihan and Byers 2001).

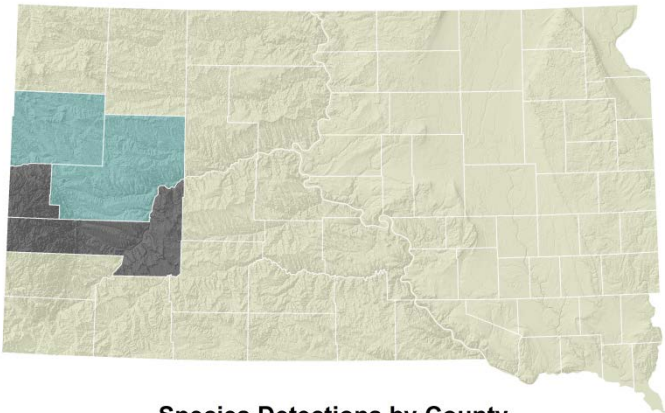
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	0	1	1
Probable	0	0	0
Possible	1	1	2
Observed	0	0	0
Total	1 (0.2%)	2	3

Evening Grosbeak



Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas

HOUSE SPARROW

Passer domesticus

A native of Eurasia, the House Sparrow was introduced into the U.S. (Brooklyn, NY) in 1851 and was first reported in South Dakota in 1884.

DISTRIBUTION AND STATUS

The House Sparrow is resident throughout the U.S. (excluding Alaska), the southern two-thirds of Canada, the Caribbean, and most of Central America. It also has been successfully introduced into South America, South Africa, Australia, and New Zealand. Throughout South Dakota, House Sparrows are a common year-round resident, but are less common in areas with sparse human habitation, such as the western third of the state. Although still common, this species' numbers are decreasing, both in South Dakota (3.1% decrease per year 2002-2012) and throughout the U.S. (Sauer *et al.* 2014). The first Atlas recorded House Sparrows in 81% of random blocks while the second Atlas recorded this species in 70% of blocks.

HABITAT

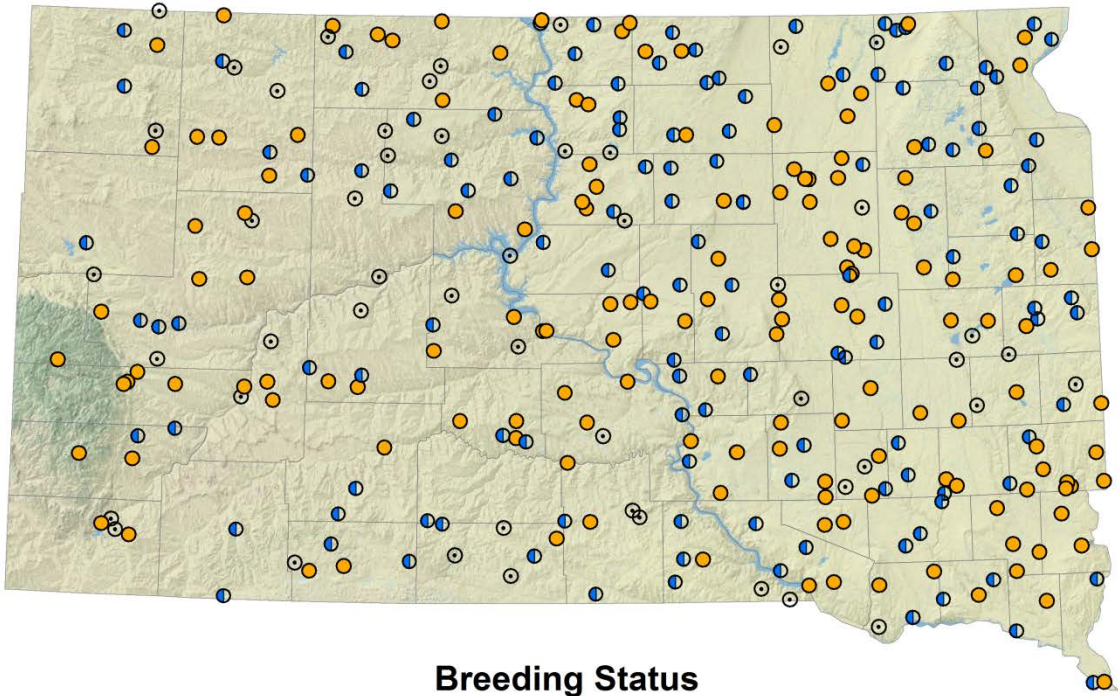
House Sparrows are found near humans, especially where grain and bird seed are readily available. During the second Atlas, 65% of all House Sparrow observations were near human habitation, and another 27% were in forested areas, including shelterbelts and more heavily wooded parks.

BREEDING BIOLOGY

The breeding season in South Dakota is April through July. House Sparrows can raise more than one brood per year, but little information exists for South Dakota. House Sparrows nest in cavities. Second Atlas nests were in dead trees (8 nests, including in elm, cottonwood, and juniper), nest boxes (4), Purple Martin houses (5), under building eaves (9), in holes in buildings (2), on light fixtures (2), under bridges (8), in old Cliff Swallow nests (8) and in holes in a dirt pile (1). The nest is composed of dry vegetation woven together, and often incorporating discarded human trash. The 1 to 8 greenish- or bluish-white eggs are incubated for an average of 11 days. Both parents incubate the eggs, and feed the nestlings. Although usually a seed-eater, House Sparrows feed insects to their young. Nestlings leave the nest about 14 days after hatching, and are independent after another 7 to 10 days (Lowther and Cink 2006).

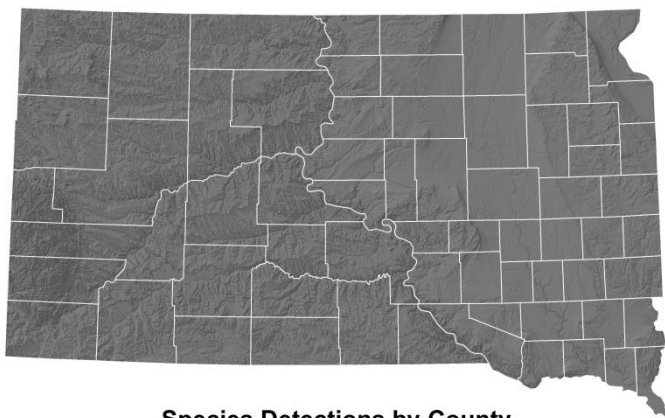
Number of Records During SDBBA2			
	Blocks	Extra Obs.	Total
Confirmed	126	25	151
Probable	129	1	130
Possible	50	0	50
Observed	0	0	0
Total	305 (70%)	26	331

House Sparrow



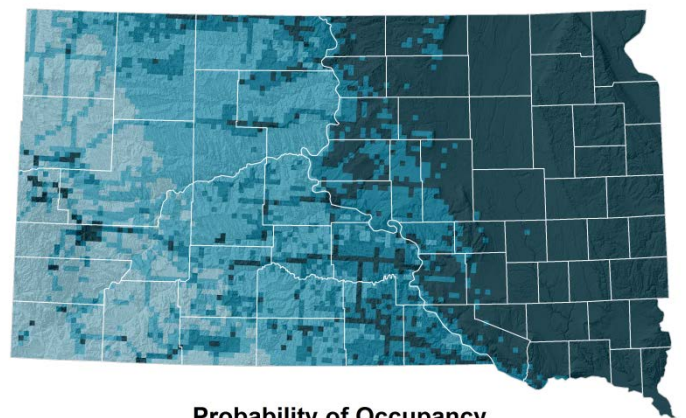
Breeding Status

- Confirmed breeding
- Probably breeding
- Possibly breeding
- Observed; not breeding at location



Species Detections by County

- First Atlas Only
- Second Atlas Only
- Both Atlases
- Neither Atlas



Probability of Occupancy

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%