

Biennial Commission Review of SD Threatened and Endangered Species List September 2026 Commission Meeting – Finalized

SDCL 34A-8-4 states: The South Dakota Game, Fish and Parks Commission shall conduct a review of the state list of endangered and threatened species within the period ending July 3, 1979, and every two years thereafter and may amend the list by appropriate additions or deletions.

In 2026, Nongame Conservation staff drafted status reviews for all state threatened and endangered (T&E) species to describe the current level of knowledge and identify monitoring and research priorities needed to help develop and meet downlisting and delisting goals. If sufficient information allowed, downlisting and/or delisting criteria were identified. Downlisting a species changes its status from state endangered to threatened. Delisting a species removes it from the state T&E list.

Each status review includes a section that highlights updates since 2024. Significant changes are described here:

- Delisting was recommended for the Eskimo curlew (state endangered) because the species is likely extinct throughout its range, including in South Dakota, based on the best available information.
- Delisting was recommended for the least tern (state endangered) because survey data collected by the USACE demonstrate that the species has met the state recovery goals established in the Least Tern and Piping Plover Management Plan (Aron 2005). This recommendation is further supported by the species' federal delisting in 2021.
- The osprey recovery criteria for the population outside of the Black Hills were revised to establish more realistic goals. The revisions require GFP to continue documenting new nesting pairs and monitoring active nests, with a revised criterion of an average of at least three active nests during at least three years within a 7-year period, reduced from the previous criterion of six nests. In addition, at least two of the three nests outside the Black Hills must be successful (produce at least one fledged young), reduced from the previous requirement of four successful nests out of six.
- The peregrine falcon recovery criteria were revised to include a definition of an active nest. An active nest is defined as a nest that is claimed or built by a pair and in which eggs are laid during that nesting season. This revision provides clarity when evaluating recovery criteria.
- Recovery criteria were established for the eastern hog-nosed snake and the lined snake.

STATE THREATENED or ENDANGERED SPECIES
(as of September 2026)

COMMON NAME	SCIENTIFIC NAME	STATE STATUS
Birds		
American dipper	<i>Cinclus mexicanus</i>	ST
Osprey	<i>Pandion haliaetus</i>	ST
Peregrine falcon	<i>Falco peregrinus</i>	ST
Piping plover	<i>Charadrius melodus</i>	ST
Whooping crane	<i>Grus americana</i>	SE
Reptiles		
Eastern hog-nosed snake	<i>Heterodon platirhinos</i>	ST
False map turtle	<i>Graptemys pseudogeographica</i>	ST
Lined snake	<i>Tropidoclonion lineatum</i>	SE
Mammals		
Black-footed ferret	<i>Mustela nigripes</i>	SE
Swift fox	<i>Vulpes velox</i>	ST
Fishes		
Banded killifish	<i>Fundulus diaphanus</i>	SE
Blacknose shiner	<i>Notropis heterolepis</i>	SE
Finescale dace	<i>Chrosomus neogaeus</i>	SE
Longnose sucker	<i>Catostomus catostomus</i>	ST
Northern pearl dace	<i>Margariscus nachtriebi</i>	ST
Northern redbelly dace	<i>Chrosomus eos</i>	ST
Pallid Sturgeon	<i>Scaphirhynchus albus</i>	SE
Sicklefin chub	<i>Macrhybopsis meeki</i>	SE
Sturgeon chub	<i>Macrhybopsis gelida</i>	ST

SE = State Endangered; ST= State Threatened

STATE T&E SPECIES STATUS REVIEWS EXPLAINED

- A status review was updated for each state threatened or state endangered species to summarize the current status of each in the state.
- If sufficient information existed, draft criteria for downlisting (changing status from endangered to threatened) and/or delisting (removing a threatened or endangered species from the state list) are described. If such information was lacking, the review describes additional monitoring or research needs.
- For species also listed as federal threatened or federal endangered under the federal Endangered Species Act, separate state recovery goals were not drafted. For those, SD Game, Fish and Parks (GFP) will continue cooperating with the U.S. Fish and Wildlife Service to meet identified recovery goals or assist in recovery planning, consistent with the “Cooperative Agreement between the U.S. Department of Interior Fish and Wildlife Service and South Dakota Game, Fish and Parks for the Conservation of Endangered and Threatened Animals.” This agreement was approved on June 30, 1977 and has been updated annually since then.
- The authority for state threatened and endangered species conservation and recovery, including listings and delistings, corresponds to the state’s boundaries. South Dakota’s state endangered species law does not require that the state list of threatened and endangered species agree with the federal list developed under the authority of the Endangered Species Act (ESA). Species that have been delisted under the ESA may be included on South Dakota’s list because they remain rare within the state’s boundaries, and federal listed species not considered rare within South Dakota’s borders are not necessarily state listed.
- South Dakota’s endangered species law is included in this document as Appendix A. The law can also be viewed here:
http://www.sdlegislature.gov/Statutes/Codified_Laws/DisplayStatute.aspx?Type=Statute&Statute=34A-8
- An additional law addressing black-footed ferret reintroduction is included in this document as Appendix B. The law can also be viewed here:
https://sdlegislature.gov/Statutes/Codified_Laws/2064247
- These status reviews will be revisited at least every two years to comply with the biennial review schedule of the state list of threatened and endangered species.

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STATE T&E SPECIES STATUS REVIEW

Species Name: American Dipper, *Cinclus mexicanus*

South Dakota Status, Including Legal Status and Special Listings:

- State threatened (SD Administrative Rule 41:10:02:02. List of threatened birds).
- Monitored by the South Dakota Nongame Conservation Program.
- State Heritage rank S2 (imperiled; state species rank last reviewed on 19 April 2020).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan (GFP 2025).

Federal Status:

- Protected under the Migratory Bird Treaty Act (protection for covered birds, body parts, nests, and eggs).
- NatureServe Global Rank of G5 (Secure, although it may be rare in some portions of the range); global rank last reviewed 20 December 2024.

Basis For New Listing, Status Change (T to E, Or E to T), or Continued Listing with Same Status:

The American dipper was listed as state threatened in 1996 due to the species' declining distribution and isolated population in the Black Hills. Continued listing as a state threatened species is recommended.

Description, Biology and Life History:

The American dipper, also referred to as a dipper, is a small, stocky gray bird with a short tail and long legs. It is named for its habit of bobbing up and down while foraging in streams. Sexes are similar in appearance, but the male is slightly larger than the female. Dippers have many contour feathers and a heavy layer of down that helps maintain body heat in cool temperatures.

Nesting occurs from April through July. Nests are dome-shaped and made of moss with grass and pine needles used for lining. A typical clutch has 4-5 eggs that are laid in March or April. The female incubates the eggs while the male helps build the nest and provides food. Eggs will hatch after two weeks of incubation and young fledge at approximately 4 weeks old. After the young fledge, pairs may begin a second brood in May or June. Dippers are typically monogamous, but males have been documented being polygynous when nest sites are limited and concentrated (Backlund 2007). In the Black Hills, dippers generally remain in the same established territory for nesting over multiple years (Lovett 2009).

American dipper's primary prey is aquatic insects, including larval caddisflies and mayflies. Less commonly they will prey on small fish, larval amphibians and fish eggs (Kingery 1996). High mortality occurs during the winter and is likely related to the availability of ice-free streams required for foraging (Price and Brock, 1983).

Habitat:

The American dipper occupies habitats of clear, unpolluted, fast-moving streams that remain partially open to provide sustenance through the winter. In addition, dippers select rivers with a substrate of stone, gravel or sand that supports aquatic invertebrates which are their main food source. Dippers are rarely observed far from water and during flight seem to prefer following stream courses rather than flying over land. However, dippers will disperse over land to adjacent watersheds (Price and Brock 1983).

Nests are built over water on both natural and human-made structures including cliffs, rock outcrops, boulders and bridges. Nest site availability is an important factor that may be limiting dipper populations in the Black Hills.

Distribution Within the State:

The American dipper's eastern most part of its overall range occurs as an isolated population in the Black Hills (Willson and Kingery 2011). Dippers are non-migratory; however, they will disperse to lower elevations during the winter. The American dipper population in the Black Hills is genetically distinct from populations in the west (Anderson et al. 2007). Dippers were once found along all larger rivers and streams throughout the Black Hills. Currently their population numbers around 50-75 individuals and is limited to the Spearfish Creek watershed and portions of Whitewood Creek in the northern Black Hill (Anderson et al. 2007).

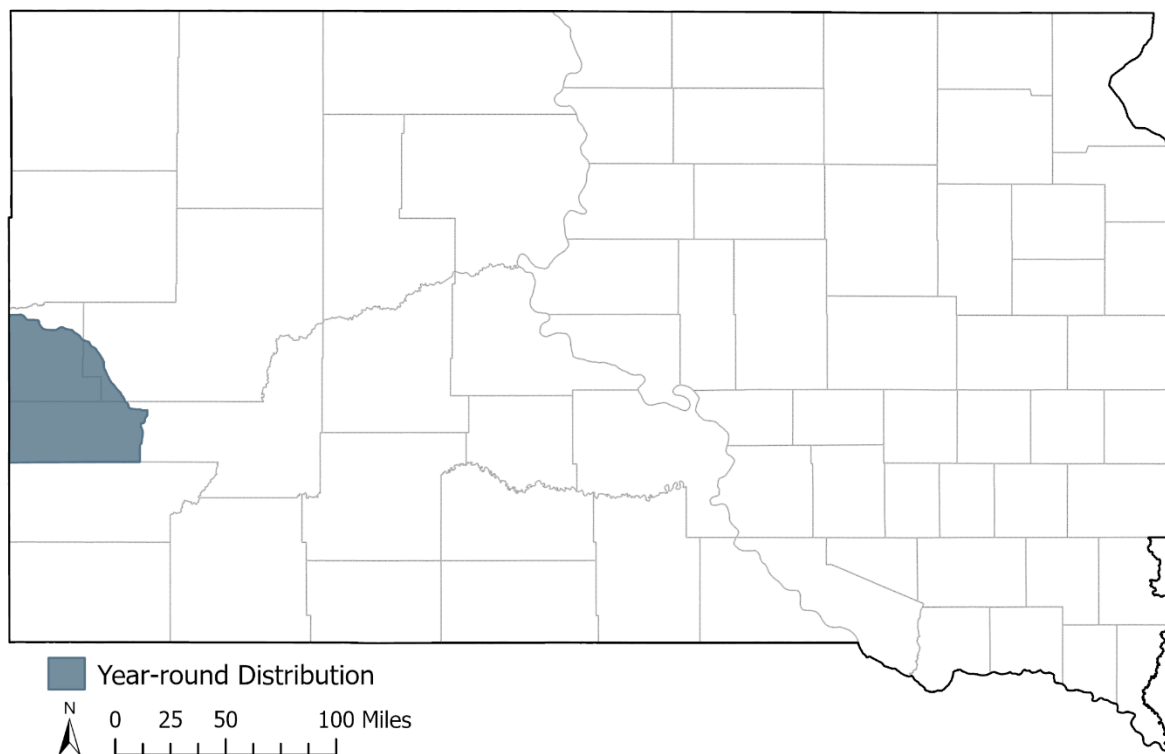


Figure 1. Year-round distribution of American dipper (*Cinclus mexicanus*) in South Dakota.

Conservation / Management Considerations:

Population modeling conducted by Palmer and Javed (2014) found that American dipperers in the Black Hills had higher survival rates but lower reproductive rates than other populations. A model that neglected age-structure differences in reproductive rates resulted in a less than 1% annual growth rate in the Black Hills dipper population, suggesting a delicate balance between population growth and decline. Given the relatively small population size and limited habitat, the dipper population in the Black Hills could be more susceptible to events such as flooding or extreme weather conditions.

Due to the species dependence on clear, cold, fast-moving streams, any changes in water quality are a threat to the species. Sedimentation of streams destroys the habitat for most aquatic insects which dipperers rely on for food. Some causes of sedimentation include livestock over use, logging of slopes near streams and building of roads along streams. Pollution from runoff, mining, agricultural practices or other sources can also be detrimental to dipper populations. The recent abnormal growth of a naturally occurring diatom, *Didymosphenia geminata*, is another threat to dipperers and aquatic systems in the Black Hills.

American dipperers were once prevalent on French and Rapid creeks. The absence of dipperers on Rapid Creek is likely due to the creation of the Pactola Dam which has caused erratic and lower stream flows. The loss of breeding birds on French Creek is likely due to pollution, sedimentation, and the construction of Stockade Lake Dam (Backlund 2007). American dipperers in the Black Hills were found to be generally tolerant of human activity as long as it is not excessive. The placement of nesting boxes on the underside of bridges over water can provide nesting opportunities where no natural nest sites exist.

Conservation Efforts in South Dakota:

Past:

In 1997, South Dakota Department of Game, Fish and Parks (GFP) with the assistance of the Spearfish Canyon Preservation Trust placed nest boxes for American dipperers under bridges along Spearfish Creek. Following those initial installments, additional nest boxes were placed along Whitewood and Rapid Creeks.

From 2002 through 2005, 52 dipperers were banded and monitored to assess dipper biology, habitat use, and movement in the Black Hills. Feathers and blood samples were taken for DNA analysis and results from this study suggested that the Black Hills population of American dipperers is a distinct population of dipper.

State Wildlife Grant Project T-17-R (2004–2009) involved intensive monitoring on Spearfish and Whitewood Creeks. Monitoring included the banding of 52 individuals to assess movement, nesting success, and longevity. Breeding was largely restricted to Spearfish Creek and portions of Whitewood Creek, representing a contraction from the historical distribution. Most individuals exhibited strong site fidelity and long-term pair bonding. Nest sites were strongly associated with human-made structures, with 41% of nests on Spearfish Creek and 50% on Whitewood Creek occurring in nest boxes. Dipperers commonly produced one or two broods annually. Nest failures occurred due to flooding, predation, competition, vandalism,

and unsuitable nest structures. Macroinvertebrate sampling was done at 11 nest sites and indicated that dippers relied heavily on aquatic insect taxa (e.g., Ephemeroptera, Plecoptera, Trichoptera), highlighting their dependence on high-quality streams. These findings emphasized the importance of suitable nesting structures and intact aquatic ecosystems for maintaining their population.

Palmer and Javed (2014) developed a stage-structured population viability model using survival and reproductive data derived from the 2002–2005 color-banded cohort and subsequent monitoring. Their results indicated that the population was generally stable over time, with little evidence of sustained increase or decline. The analysis showed that adult survival played the most important role in maintaining the population, while reproductive output and juvenile survival contributed less to overall population stability. This suggested that the population produced relatively few young compared to other dipper populations, and that continued persistence depended heavily on adults surviving and returning to breed each year. Because the Black Hills population was small, geographically isolated, and relied strongly on adult survival to remain stable, it appeared vulnerable to factors that reduced adult survival or reproductive success. These findings indicated that maintaining conditions that supported adult survival and successful nesting were important for the long-term persistence of American dippers in the Black Hills.

In 2015, as part of a collaborative climate change assessment, Amy Symstad (USGS, Northern Prairie Wildlife Research Center) conducted a Climate Change Vulnerability Assessment for the American dipper and determined that they have a moderate vulnerability to climate change. The American dipper's adaptive capacity in the Black Hills is primarily hampered by its low population size and the lack of appropriate habitat if climate change makes its current habitat unsuitable (Stamm et al. 2015).

Drilling (2019) surveyed selected Black Hills riparian areas for nesting American dippers from 2017–2019, covering approximately 100 miles of riparian habitat. Nest site occupancy and success were monitored in the current known dipper breeding areas as well as any newly located nest sites. The distribution of dippers in the Black Hills has not changed since previous surveys conducted in the late 1990s and early 2000s. This project found a total of 44 active and 15 inactive nests in the Spearfish and Whitewood creek systems and one unsuccessful nest on Rapid Creek. Following this project in the summer of 2019, local birding groups placed 62 nest boxes at new and existing sites to replace old boxes in need of repair.

In 2023, GFP created a standardized monitoring protocol and a Survey123 digital data entry form to improve consistency and overall data collection during American dipper surveys. This protocol established four spring survey windows to verify nesting activity, estimate nesting success, and determine whether pairs attempt a second brood.

Green and Graham (2025) monitored the American dipper population in the Spearfish Creek drainage to assess population status, reproductive success, and parasite prevalence. They estimated approximately 35 adult American dippers in the Black Hills, representing a substantial decline compared to the previous estimate of at least 70 adults reported during the

2017–2019 survey. They found 15 active nest sites with the average clutch size being 4.0 eggs, and while hatching success was relatively high (81.8%), only 52.4% of nests successfully fledged young, indicating continued low reproductive output. Blood samples from adult dippers showed no evidence of Haemosporidian parasite infection, suggesting blood parasites were not contributing to reduced productivity. However, ectoparasites were observed in some nests. The authors concluded that the population decline was likely related to low reproductive success and possibly habitat-related factors such as stream degradation, reduced food availability, or other ecological stressors, and recommended continued monitoring and evaluation of habitat conditions.

Ongoing:

GFP will continue to gather information on new nesting locations opportunistically from bird watchers, landowners, land management agencies, and agency staff. GFP will also continue to regularly conduct nest monitoring with agency staff or by contract to assess the status of the nesting population in South Dakota and gather sufficient data to assess whether American dipper have met recovery criteria.

Dr. Jessica Graham (Black Hills State University) will continue conducting research to evaluate potential causes of decline in the Black Hills American dipper population. For 2026, this work includes nest monitoring, banding, and collection of habitat and macroinvertebrate data to assess habitat quality and reproductive success. Blood samples will be analyzed to evaluate physiological stress using telomere length and gene expression. The Black Hills population will be compared to a stable population in the Bighorn Mountains, Wyoming, to identify environmental factors associated with population decline.

Recovery Criteria:

For delisting there needs to be evidence of a self-sustaining population on Whitewood and Spearfish creeks for at least 5 years in a 6-year timespan. In addition, there needs to be evidence of a self-sustaining population established on at least one additional river drainage over a similar timeframe.

A self-sustaining population is defined as one that maintains or increases its numbers over a period of time without significant human intervention (i.e., release of individuals to supplement population numbers), with the exception of birds produced by the use of human-made nesting structures.

Recovery Criteria Considerations:

Additional research and surveys are necessary to determine how many breeding pairs are necessary to obtain self-sustaining populations in each river drainage as well as:

- Determine what may be causing lower reproductive rates of dippers in the Black Hills compared to other populations.
- Have a better estimate of juvenile survival rate and its impact on dipper population dynamics.
- Influence of density dependence on reproductive rates if suitable nesting habitat is a limiting factor.
- Information on winter habitat availability, survival and movements.

Primary Reviewer:

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Other Staff or Experts Involved in the Review:

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Date Review Finalized: 2026**Dates of Other Reviews, if appropriate:** 2018, 2020, 2022, and 2024.**References or Information Sources:**

- Anderson, T. 2002. Conservation assessment for the American dipper in the Black Hills National Forest, South Dakota and Wyoming. USDA Forest Service Report. Custer, SD.
- Anderson, C.M., G.M. Spellman, C.S. Ferrell, K. Strickler, and S.K. Sarver. 2007. Conservation genetics of American dipper (*Cinclus mexicanus*): the genetic status of a population in severe decline. *Conservation Genetics* 9(4):939-944.
- Backlund, D. 2007. The American dipper *Cinclus mexicanus* in the Black Hills of South Dakota: past and present. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Drilling, N. E. 2019. Identification and Monitoring of American dipper Populations and Inhabited Areas in South Dakota: Final Report. Bird Conservancy of the Rockies. Brighton, Colorado, USA.
- Green, A. X. and J. L. Graham. 2025. Parasite monitoring and population assessment of American dippers in Spearfish Creek, South Dakota: First year report. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Kingery, H.E 1996. American dipper (*Cinclus mexicanus*). In *The Birds of North America*, No. 229. (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA and The American Ornithologists' Union, Washington D.C.
- Lovett, K. 2008. American dipper (*Cinclus mexicanus*) 2008 nest monitoring Spearfish Creek Watershed and Whitewood Creek in the Black Hills of South Dakota. Report to South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Lovett, K. 2009. American dipper (*Cinclus mexicanus*) 2009 nest monitoring Spearfish Creek Watershed and Whitewood Creek in the Black Hills of South Dakota. Report to South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Palmer, J.S. and J. Javed. 2014. An age-structured model for the American dipper in the Black Hills of South Dakota. *Proceedings of the South Dakota Academy of Science* 93:79-88.
- Price, F.E. and C.E. Bock. 1983. Population ecology of the dipper (*Cinclus mexicanus*) in the Front Range of Colorado. *Stud. Avian Bio.* 7:1-84.
- South Dakota Department of Game, Fish and Parks (GFP). 2025. South Dakota Wildlife Action Plan. Wildlife Division Report 2025-02. South Dakota Game, Fish and Parks, Pierre, SD.
- Stamm, J.F., M.F. Poteet, A.J. Symstad, M. Musgrove, A.J. Long, B.J. Mahler and P.A. Norton. 2015. Historical and projected climate (1901-2050) and hydrologic response of karst aquifers, and species vulnerability in south-central Texas and western South Dakota. U.S.

Geological Survey Scientific Investigations Report 2014-5089, 59p., plus supplements, <http://dx.doi.org/10.3133/sir20145089>
Wilson, M.F., and H.E. Kingery. 2011. American dipper (*Cinclus mexicanus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology. Available at <http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/229>.

SUMMARY OF UPDATES IN 2026:

- Dr. Jessica Graham (Black Hills State University) will continue research in 2026. This work includes nest monitoring and banding to track population size, survival, and reproductive success, as well as collection of environmental data to assess habitat quality. Blood samples will be analyzed to evaluate physiological indicators of environmental stress, including telomere length and gene expression.
- State Wildlife Grant funding in 2026 for fiscal years 2027–2029 to continue long-term monitoring of American dippers. This will include surveys of active, historic, and potential nesting sites and sampling of aquatic macroinvertebrate communities to better understand habitat associations and evaluate prey availability.

STATE T&E SPECIES STATUS REVIEW

Species Name: Eskimo Curlew, *Numenius borealis*

South Dakota Status, Including Legal Status and Special Listings:

- State endangered (SD Administrative Rule 41:10:02:01. List of endangered birds).
- Monitored by South Dakota Nongame Conservation Program.
- State Heritage rank SNA (A state-level conservation status rank is not applicable according to NatureServe's Core Methodology because it neither breeds nor winters in South Dakota).

Federal Status:

- NatureServe global rank GH (possibly extinct, some hope of rediscovery); last reviewed 9 April 2016.
- Protected under the Migratory Bird Treaty Act (protection for migratory birds, body parts, nests and eggs).
- Federal endangered. This species was listed as endangered in 1967 pursuant to precursor legislation to the Endangered Species Act of 1973. Information on the species is insufficient for the development of a recovery plan.
- Listed as an Appendix I species under the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) due to its extreme rarity among CITES-listed animals and plants. CITES prohibits the commercial international trade of specimens of Appendix I species.

Basis For New Listing, Status Change (T to E, or E to T), Or Continued Listing with Same Status:

Current: State endangered

Recommendation: Delist from state endangered and remove from the South Dakota threatened and endangered species list.

The specific rationale for including the Eskimo curlew on South Dakota's original list of threatened and endangered species is unknown. However, the species was likely included because of its federal endangered status and because sightings had become exceedingly rare throughout its range by the early 1900s.

Removal of the Eskimo curlew from South Dakota's threatened and endangered species list is recommended because the best available information indicates that the species is likely extinct. The last confirmed record occurred in Barbados in 1963, and the South Dakota Nongame Conservation Database contains no records of the species.

The U.S. Fish and Wildlife Service (USFWS) concluded in their 5-year Status Review for the Eskimo curlew that the probability of the species remaining extant is extremely low (USFWS 2021). Although some uncertainty remains regarding its extinction status, the available evidence supports delisting the species from the state threatened and endangered species list.

If the species is found to persist somewhere within its historic range, it will continue to receive protection under its federal endangered status.

Description, Biology and Life History:

A 14" shorebird that is cinnamon-brown above and below with a slender, somewhat long, down curved bill. Crown is dark with a pale stripe. There are chevron marks on the breast and barring on the flanks. Legs are blueish-gray. Overall, the Eskimo Curlew looks similar to the Whimbrel.

Peak of nesting occurs from June through July in extreme northwestern Canada and northeastern Alaska. Four eggs are laid in a nest scraped into the ground lightly lined with leaves and/or grass. Little information is known about the breeding behavior of this species.

Fall migration occurs from July through October. Migrants fly southeast across northern Canada, towards Hudson Bay and to the Atlantic coast, fly over the Atlantic to South America where they continue overland crossing through the center of Brazil to the wintering grounds in southern Brazil, Uruguay, Argentina, Tierra del Fuego and Chile. Spring migration northward begins in March when birds fly along the Pacific coast of South America, over Central America and through the central United States where a northwesterly flight pattern takes them to breeding grounds.

Habitat:

Breeds in treeless tundra and grassy meadows. More specifically, heath and coastlines with crowberries are favored. During fall migration it is found using a variety of terrestrial and aquatic habitats and in some areas, observed in open fields. During spring migration it favors grasslands, pastures, plowed fields and at times marshes and mudflats; also shows preference for burned grasslands and marshes. In the United States, Eskimo Curlews have been reported to use old fields, pastures, meadows and sand dunes. This species eats a wide variety of insects as well as seeds and berries.

Distribution Within the State:

The Eskimo curlew was once described as an abundant to common spring migrant in eastern South Dakota that followed river corridors in the tallgrass prairie and to a lesser degree mixed-grass prairie in late-March to mid-May. Specimen collected on 19 March 1878 near Pierre (Museum of Comparative Zoology, Harvard University). No records of this species are in the South Dakota Nongame Conservation Database. Current distribution is unknown.

Conservation / Management Considerations:

Eskimo curlew populations drastically declined as early as the late 1800's as the result of overharvest, habitat conversion from grassland to agriculture, fire suppression, change in available grasshopper prey (including the extinction of the Rocky Mountain grasshopper), and the reduced availability of insects uncovered by plows planting wheat in the fall instead of during curlew spring migration.

Few confirmed sightings and limited information on the basic biology of this species prevent effective conservation planning. The last confirmed sighting with physical evidence occurred

in 1963 in Barbados. Other potential sightings (39) have been reported, most recently in 2006 in Nova Scotia, but these reports are not supported by physical evidence.

The USFWS initiated a 5-year status review in May of 2021. These reviews are conducted to determine if the status of the species should be changed or removed from the federal list. The review found that the likelihood of the Eskimo curlew being extant is extremely low and they don't recommend any additional conservation or management actions at this time (USFWS 2021).

Conservation Efforts in South Dakota:

Conservation of this species in South Dakota has occurred primarily by increasing awareness through education ([Ashton and Dowd 2008](#), [Stukel 2013](#)). If a report of an Eskimo curlew is received by GFP, follow-up and request for photographs would be made. GFP would share this report with the USFWS and work cooperatively to confirm its validity.

Recovery Criteria:

Recovery criteria are not proposed at this time.

Primary Reviewer:

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Dates of Other Reviews, if Appropriate: 2018, 2020, 2022, and 2024

References or Information Sources:

- Andres, B. A., P. A. Smith, R. I. G. Morrison, C. L. Gratto-Trevor, S. C. Brown, and C. A. Friis. 2012. Population estimates of North American shorebirds, 2012. Wader Study Group Bulletin 119:178-194.
- Ashton, D. E., and E. M. Dowd. 2008. Fragile legacy: Rare animals of South Dakota. Wildlife Division Report Number 91-04.
- Gill, R. E. Jr., P. Canevari, and E. H. Iversen. 1998. Eskimo Curlew (*Numenius borealis*). In The Birds of North America, No. 347 (A. Poole, and F. Gill, eds. The Birds of North America, Inc., Philadelphia, PA.
- NatureServe. 2026. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org> (accessed 8 June 2026).
- Stukel, E. D. 2013. Eskimo curlew. Pages 28-29 in South Dakota Conservation Digest. Omaha Print.

U.S. Fish and Wildlife Service (USFWS). 2021. 5-year review: Eskimo curlew (*Numenius borealis*). U. S. U.S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office, Fairbanks, Alaska,

SUMMARY OF UPDATES IN 2026:

- Delisting is recommended for the Eskimo curlew (state endangered) based on the likelihood of Eskimo curlews being extinct in South Dakota

STATE T&E SPECIES STATUS REVIEW

Species Name: Least Tern, *Sternula antillarum*

South Dakota Status, Including Legal Status and Special Listings:

- State endangered (SD Administrative Rule 41:10:02:01. List of endangered birds).
- Monitored by South Dakota Nongame Conservation Program.
- State Heritage rank S3 (vulnerable; state rank last reviewed 2019).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan (GFP 2025).
- Originally listed as a subspecies (*Sterna antillarum athalassos*); taxonomy updated at GFP Commission meeting, November 2–3, 2017.

Federal Status:

- Protected under Migratory Bird Treaty Act (protection for covered birds, body parts, nests, and eggs).
- NatureServe global rank G4 (apparently secure); global rank last reviewed 10 April 2016.
- Inland population, aka interior Least Tern, removed from federal listing as endangered due to recovery; effective February 12, 2021.

Basis For New Listing, Status Change (T to E, or E to T), Or Continued Listing with Same Status:

Current: State endangered

Recommendation: Delist from state endangered and remove from the South Dakota threatened and endangered species list.

The specific justification for including the Least Tern on the first list of state endangered birds is unknown but was presumably intended to mirror its past federal status as an endangered species. Removal from listing as a state endangered species is recommended as recovery criteria have been met (see Recovery Criteria).

Description, Biology and Life History:

This smallest species in the gull and tern family measures 8–9 inches long and has a 20-inch wingspan. Adult males and females are similar in appearance, with a black crown, white forehead, gray back, gray wings above with white below, orange legs, and a black-tipped yellow bill. Immature birds have darker feathers, a dark bill, and dark eye stripes on white heads. Individuals begin breeding at 2–3 years of age. Least terns arrive in South Dakota in early May and begin nesting in late May or early June in small, loosely defined groups, often in association with piping plovers. This species has adapted to using both natural and human-created habitats and, in some areas outside South Dakota, it may nest on flat gravel rooftops.

Habitat:

The least tern is associated with large rivers. Nesting areas are barren, treeless beaches of sand, gravel, or shells; dry mudflats and salt flats; and sand and gravel pits along rivers. The nest is an inconspicuous scrape typically containing 2–3 eggs. Least Terns eat small adult fish, fingerlings, and crustaceans taken by diving from the air into shallow water. During the breeding season, they typically feed near the nesting colony.

Distribution Within the State:

This species nests along the Missouri and Cheyenne rivers, with the majority nesting below Gavins Point Dam in southeastern South Dakota. For reasons that are unclear, the Cheyenne River's importance to nesting least terns has declined in recent decades.

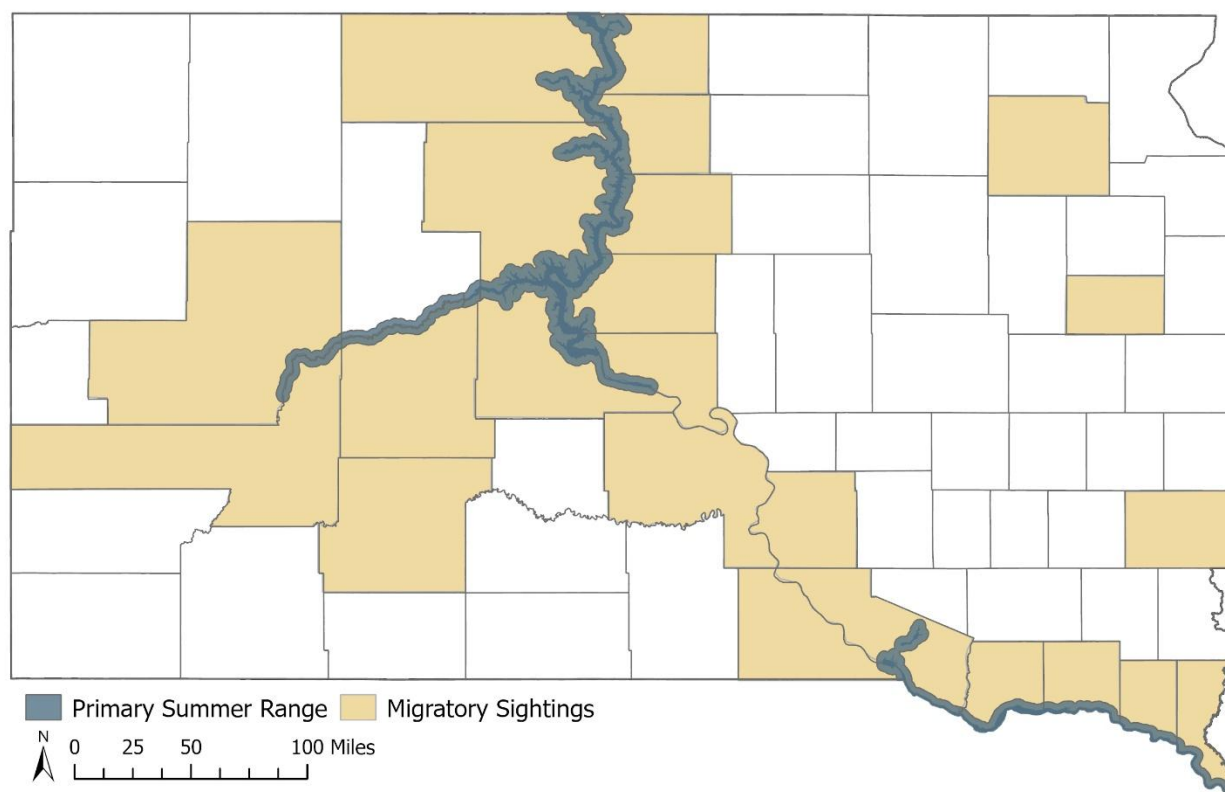


Figure 1. Least tern (*Sternula antillarum*) distribution in South Dakota. The species primarily uses the highlighted portions of the Missouri and Cheyenne rivers as breeding grounds but has been observed in counties across the state during migration or rare breeding events.

Conservation / Management Considerations:

Potential nesting habitat for this species in the Northern Great Plains was drastically reduced with the construction of six major dams on the Missouri River, four of which were built in South Dakota. Dams have converted previous riverine habitats to lacustrine habitats and disrupted sediment deposition important for habitat creation. Threats to nesting colonies include mammalian and avian predators, unrestricted pets, recreationists who disturb incubating adults or destroy nests or chicks, hail or other severe weather, elevated water

levels or natural flooding during the nesting season, habitat erosion, and vegetative encroachment/plant succession.

The federal Endangered Species Act of 1973, as amended, requires that the status of listed species be reviewed at least every 5 years. The USFWS began a 5-Year Review (Review) of the least tern in 2008 and published its findings in 2013 (USFWS 2013). The Review concluded that this species is operating as a metapopulation, population size has increased substantially, and population targets have been met in 3 of the 5 major drainages (Mississippi, Red, and Arkansas rivers). The Least Tern population in the Missouri River drainage has remained stable, despite extensive habitat creation and other management efforts. The Review further characterized the relative importance of the Missouri River drainage (i.e., Missouri, Loup, and Platte rivers) to the metapopulation by stating that this drainage supports less than 10% of the listed population.

The review recommended that the least tern be delisted due to recovery, following the accomplishment of the following:

1. Completion of a habitat-driven metapopulation model;
2. Development of conservation agreements for post-listing monitoring and management; and
3. Development of a post-listing monitoring strategy and plan.

In January of 2021, the U.S. Fish and Wildlife Service (USFWS) published a final rule that removed the inland population of the least tern, which includes South Dakota, from the federal list of endangered and threatened wildlife (USFWS 2021). The USFWS stated that this population has recovered and no longer meets the definition of an endangered species, threats identified at the time of listing have been eliminated or reduced, and this population has increased in abundance and range. As to the Missouri River drainage, while the recovery criteria for the number of birds (2,100) was not met, the least tern population along the Missouri has remained stable since recovery criteria were identified. With dedicated long-term monitoring efforts and protections in place, the Missouri river system has received a significant commitment of conservation resources and care. Considering the lack of increase in population size despite the substantial conservation commitment, the USFWS concluded that the Missouri River drainage is likely at carrying capacity of the available habitat.

Conservation Efforts in South Dakota:

Past:

More than 90,000 acres of land were transferred from the U.S. Army Corps of Engineers (USACE) to the State of South Dakota as a result of the Water Resources Development Act of 1999. Land transferred to the State of South Dakota is managed by Wildlife and/or Parks and Recreation divisions of South Dakota Game, Fish and Parks (GFP). Two products resulted from GFP's expanded role in endangered species management along the Missouri River, an interagency Memorandum of Agreement (MOA) regarding endangered species protection and recovery along the river and a state management plan for the least tern and piping plover (state management plan) (Aron 2005).

The first 5-year Missouri River endangered species interagency MOA was finalized in 2001 and included specific and shared commitments of three agencies: GFP, USACE, and USFWS. Subsequent MOAs included the National Park Service in addition to the original three agencies. MOA accomplishments by all participants included such activities as biological surveys and nesting season productivity for least terns and piping plovers within the portion of the Missouri River surveyed by the USACE and GFP, specific protocols or policies developed to help implement the MOA, outreach and educational efforts related to Missouri River endangered species, law enforcement efforts, and relevant Section 7 consultations among federal agencies.

As GFP assumed responsibility for additional ownership and management of lands along the Missouri River, concern increased about the possibility of needing permission for incidental take. State management plans were prepared for the four species covered by the MOA as part of an agency intention to submit a habitat conservation plan (HCP) to allow incidental take of federally listed species. Management plans were prepared for the pallid sturgeon, bald eagle, and piping plovers and least terns were covered in one plan. The HCP was not formally pursued.

The GFP Commission passed the following administrative rule in 1989 to provide added protection for Least Tern and Piping Plover nesting colonies in the state:

Administrative Rule 41:10:02:18. Harassment prohibited. Harassment of the nesting and rearing sites of the least tern, an endangered species, and the piping plover, a threatened species, is prohibited. The department shall post conspicuous signs near critical nesting and rearing sites on the sandbars and shoreline of the Missouri River to warn against entry during the nesting period.

The MOA has progressed through several iterations, with the most recent version finalized in 2015. Following coordination among the USACE, GFP, and USFWS, the 2015 MOA expired without renewal because of the successful partnership established among the agencies. GFP committed to continued support to the USACE with upper Lake Oahe nesting surveys by providing staff to assist with surveys.

Nesting and adult census survey data have been collected by state, federal, and tribal personnel. The most extensive surveys have been conducted by the USACE and compiled into a long-term dataset beginning in 1993. These data were collected in a systematic manner, with strict quality control measures, prior to incorporation into the USACE's endangered species data management system. This system is used to document USACE compliance with a Jeopardy Biological Opinion between the USACE and USFWS regarding Missouri River endangered species, to assist the USACE in implementing its Missouri River Recovery Program, and to assist the USACE in avoiding negative impacts to nesting colonies while making short and long-term water management decisions. The USACE has allowed GFP to access the data management system to assist the South Dakota Nongame Conservation Program and other GFP staff in conducting environmental review.

Future:

USACE conducted least tern surveys for five years following federal delisting and may not continue annual surveys going forward. If USACE or another partner conducts least tern surveys and requires assistance, GFP will provide nesting survey support when possible. GFP will continue to use nesting-season data collected by USACE and other partners, as well as incidental sightings, to inform environmental reviews.

Recovery Criteria:

The following state recovery criteria were outlined in the South Dakota Interior Least Tern and Piping Plover Management Plan (Aron 2005):

- 1) The current least tern distribution should be maintained or expanded along the Missouri River and reservoirs,
- 2) The least tern population in South Dakota should meet or exceed 653 adult birds over a ten-year running average,
- 3) A fledge ratio of 1.0 fledglings per pair should be met or exceeded over a ten-year running average, and
- 4) 80 acres of suitable habitat per river mile should be created both below the Gavins Point dam and on Lewis and Clark Lake by 2015, 20 acres per river mile should be created on the Fort Randall stretch by 2015, and potential nesting habitat should be identified and enhanced on Lake Oahe, with no acreage specified.

Recovery Criteria Considerations:

Long-term survey data suggests that the least tern population in South Dakota has been successfully recovered, with each criterion having been met several times over an intensive 30+ years of monitoring. (1) The least tern's distribution along the Missouri River and reservoirs in South Dakota has not changed significantly since monitoring began in 1993, with terns continuing to occupy and breed along Lake Oahe, the Fort Randall River, Lewis and Clark Lake, and the Gavins Point River (Figure 2). (2) Adult census survey efforts suggest that the least tern population in South Dakota has been increasing steadily from 419 individuals in 1993, when surveys first began, to 1198 individuals in 2025. (Figure 3, U.S. Army Corps of Engineers 2025). The population recovery criterion of 653 adult birds along the Missouri river corridor over a 10-yr running average has been met or exceeded since 2021, and annual population counts have surpassed the benchmark (653) since 2015 (Table 1). (3) Least terns continue to reproduce successfully in South Dakota. The fledge ratio criterion of 1.0 fledgling per pair over a 10-year running average was first met in 2002 and continued to be met until 2020, after which the USACE ceased to monitor least tern fledge success. The annual fledge ratio has met or surpassed the benchmark (1.0) each year of monitoring (Table 2). (4) The recovery criterion for the establishment of suitable habitat has been exceeded multiple times in all three river segments (Table 3). Available habitat continues to fluctuate with water levels, but least tern populations continue to increase despite these shifts in sandbar availability.

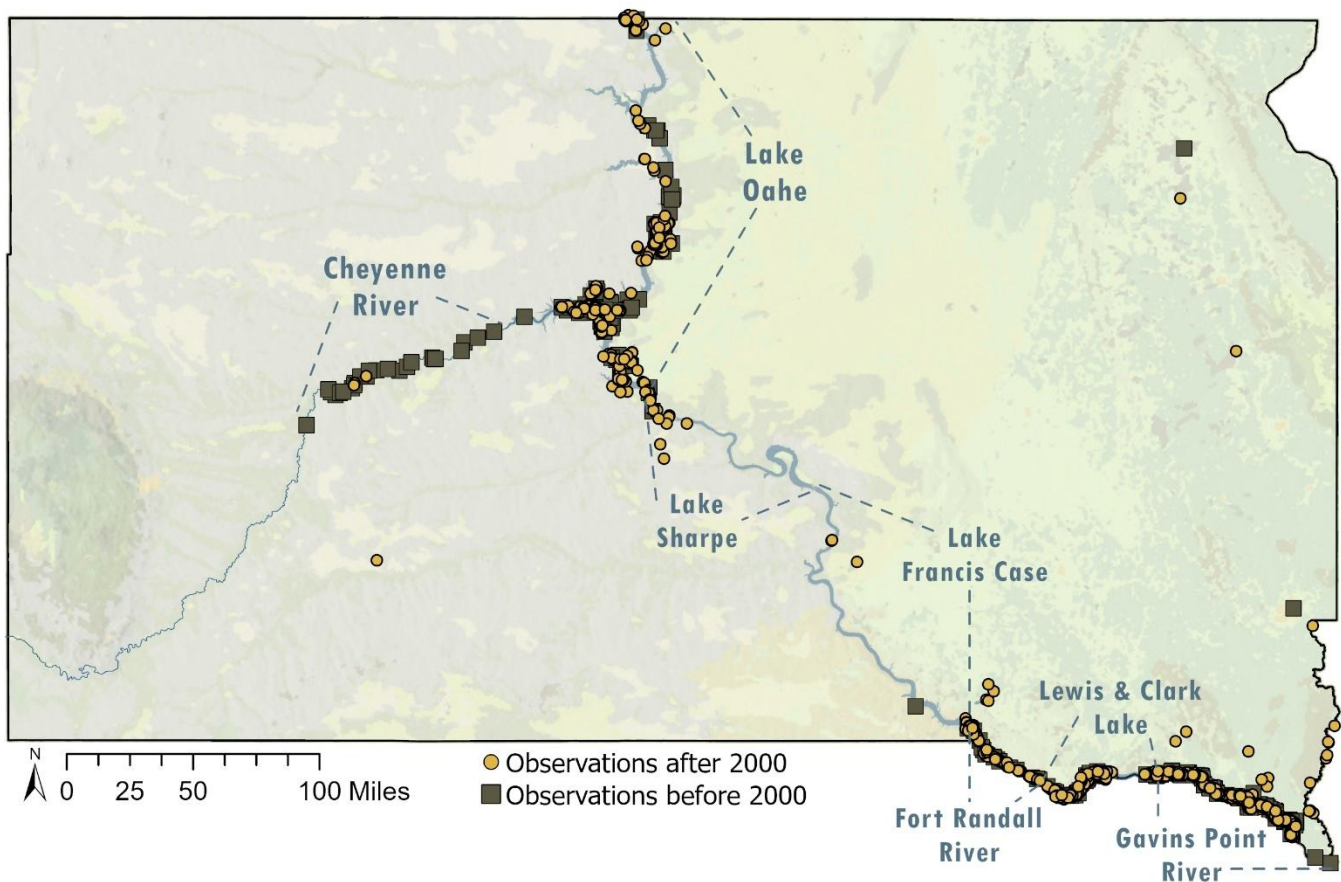


Figure 2. The recovery criterion for least tern distribution in South Dakota (maintenance of historic range along the Missouri River and reservoirs) has been met. Since intensive surveys began in 1993, least terns continue to be observed along Lake Oahe, the Fort Randall River, Lewis and Clark Lake, and the Gavins Point River. The historic distribution has expanded to include the northernmost stretch of Lake Oahe in South Dakota and the northernmost section of Lake Sharpe. While it appears least tern use of the Cheyenne River has declined, this stretch has not been surveyed regularly since 2000, and it has been observed that least tern abundance on the Cheyenne increases as available habitat (and thus, least tern abundance) decreases on Lake Oahe due to high water levels (Schwalbach et al. 2018). Occurrence data from USACE, GBIF, and GFP.

Table 1. The population recovery criterion (653 adult birds over a 10-year running average) for least terns in South Dakota was first reached in 2021 and has been exceeded for 5 years (2021–2025). Data from the USACE Missouri River Recovery Program.

Adult Bird Count								
Year	Lake Oahe	Fort Randall	Lewis & Clark	Gavins Point	Lake Sharpe	Francis Case	Total	10-yr RA
1993	39	38	78	264	-	-	419	-
1994	52	41	44	207	-	-	344	-
1995	50	10	16	99	0	-	175	-
1996	47	2	28	86	-	-	163	-
1997	38	-	6	115	-	-	159	-
1998	56	64	116	144	-	-	380	-
1999	37	124	76	161	-	-	398	-
2000	52	106	10	202	-	-	370	-
2001	54	71	46	232	-	-	403	-
2002	69	84	42	314	-	-	509	332
2003	59	44	46	366	-	6	521	342.2
2004	59	61	13	359	-	10	502	358
2005	79	76	4	476	-	0	635	404
2006	62	55	0	383	-	11	511	438.8
2007	85	74	85	410	-	0	654	488.3
2008	64	58	226	278	-	-	626	512.9
2009	23	23	214	211	-	8	479	521
2010	23	10	272	159	2	-	466	530.6
2011	19	-	231	0	-	-	250	515.3
2012	41	87	211	209	-	6	554	519.8
2013	38	77	148	272	-	-	535	521.2
2014	43	99	131	243	-	-	516	522.6
2015	48	155	164	318	-	-	685	527.6
2016	22	129	145	414	-	-	710	547.5
2017	58	145	142	422	-	-	767	558.8
2018	66	124	225	327	-	-	742	570.4
2019	29	133	177	403	0	-	742	596.7
2020	47	176	177	428	-	-	828	632.9
2021	29	173	196	269	-	-	667	674.6
2022	34	161	268	354	-	-	817	700.9
2023	63	219	281	473	-	-	1036	751
2024	48	267	258	265	-	-	838	783.2
2025	63	291	197	647	-	-	1198	834.5

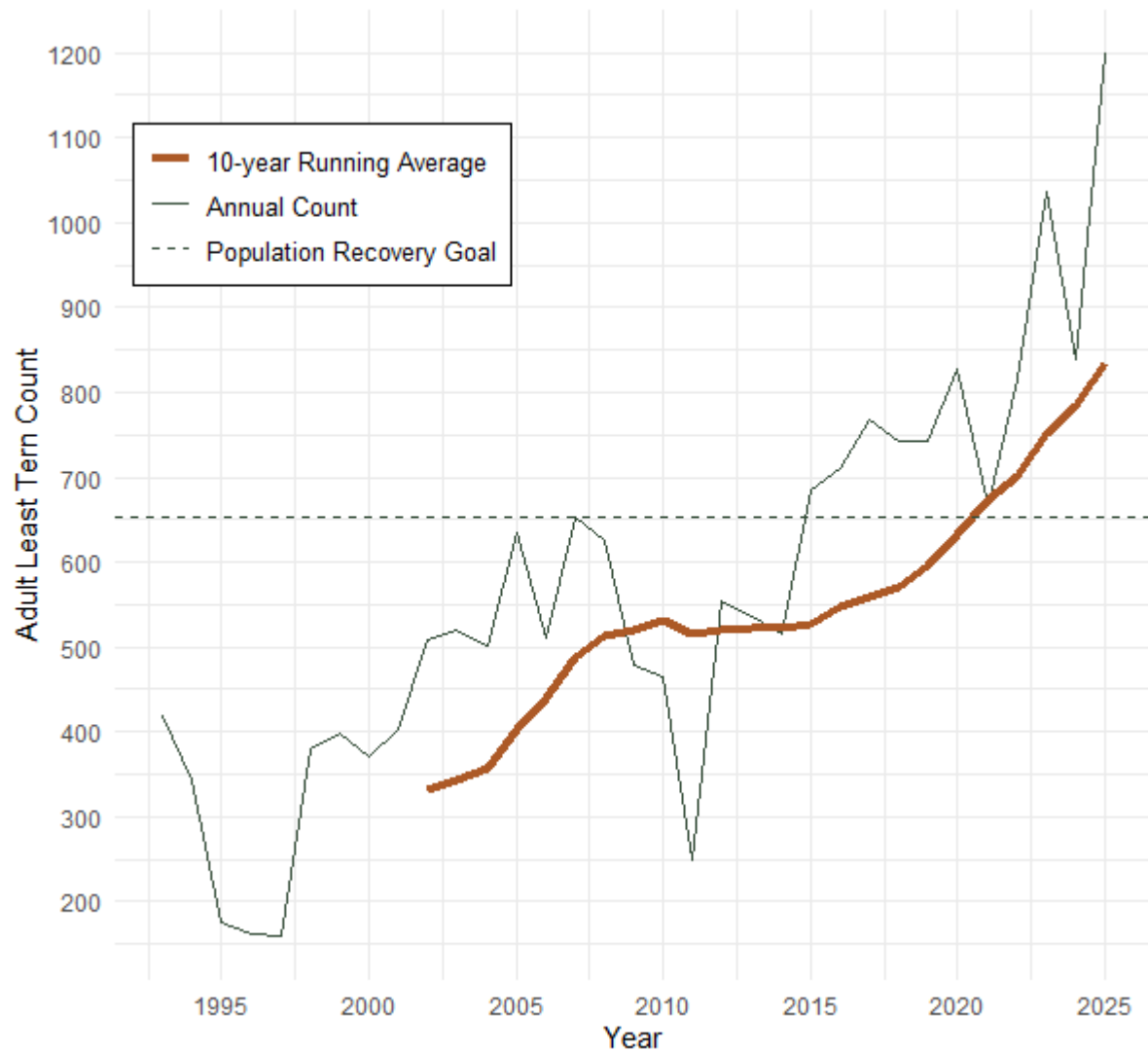


Figure 3. Least tern adult population in South Dakota has increased over time. Annual population counts are shown in solid black, the 10-year running population average in orange, and the recovery criterion (653 adult birds) in dotted black. Data from the USACE Missouri River Recovery Program.

Table 2. The fledge ratio recovery criterion (1.0 fledglings per pair over a 10-year running average) was first met in 2002 and continued to be met for 19 years (2002–2020). Note: The USACE stopped collecting data on least tern nest success following the species’ federal delisting in 2021. Data from the USACE Missouri River Recovery Program.

Year	Number of Fledglings						Total Fledged	Total Adult Pairs	Fledge Ratio	10-Yr RA
	Lake Oahe	Fort Randall	Lewis & Clark	Gavins Point	Lake Sharpe	Francis Case				
1993	0	0	37	120	-	-	157	157	1	-
1994	0	0	0	38	-	-	38	38	1	-
1995	0	0	0	23	0	-	23	23	1	-
1996	9	0	0	0	-	-	9	4.5	2	-
1997	5	-	0	52	-	-	57	54.5	1.046	-
1998	47	13	129	149	-	-	338	314.5	1.075	-
1999	15	61	8	183	-	-	267	259.5	1.029	-
2000	35	67	3	172	-	-	277	259.5	1.067	-
2001	43	5	34	127	-	-	209	187.5	1.115	-
2002	50	30	24	207	-	-	311	286	1.087	1.142
2003	38	14	9	138	-	9	208	189	1.101	1.152
2004	42	13	0	186	-	0	241	220	1.095	1.161
2005	33	18	0	318	-	3	372	355.5	1.046	1.166
2006	45	19	0	121	-	3	188	165.5	1.136	1.080
2007	21	11	67	119	-	0	218	207.5	1.051	1.080
2008	6	33	75	159	-	-	273	270	1.011	1.074
2009	0	5	81	105	-	0	191	191	1.000	1.071
2010	2	0	137	93	0	-	232	231	1.004	1.065
2011	1	-	17	0	-	-	18	17.5	1.029	1.056
2012	26	48	151	125	-	0	350	337	1.039	1.051
2013	0	32	8	75	-	-	115	115	1.000	1.041
2014	9	36	34	96	-	-	175	170.5	1.026	1.034
2015	3	126	120	232	-	-	481	479.5	1.003	1.030
2016	0	97	71	204	-	-	372	372	1.000	1.016
2017	13	76	40	180	-	-	309	302.5	1.021	1.013
2018	3	43	61	94	-	-	201	199.5	1.008	1.013
2019	1	24	21	89	0	-	135	134.5	1.004	1.013
2020	14	112	126	210	-	-	462	455	1.015	1.014

Table 3. The recovery criterion for the establishment of suitable habitat (80 acres/river mile on Gavins Point, 80 acres/river mile on Lewis and Clark Lake, and 20 acres/river mile on the Fort Randall River) has been exceeded multiple times in all three river segments, indicated in bold text. Data from the USACE Missouri River Recovery Program.

Available Emergent Sandbar Habitat (acres) by Segment						
Year	Gavins Point		Lewis & Clark		Ft. Randall	
	<i>Target</i>	<i>Actual</i>	<i>Target</i>	<i>Actual</i>	<i>Target</i>	<i>Actual</i>
2006	4568	403	1464	33	700	176
2007	4568	619	1464	535	700	186
2008	4568	651	1464	129	700	97
2009	4568	245	1464	236	700	14
2010	4568	298	1464	243	700	18
2012	4568	5255	1464	3009	700	1205
2013	4568	3183	1464	1699	700	606
2014	4568	2686	1464	1044	700	549
2015	4568	2452	1464	643	700	543
2016	4568	1876	1464	916	700	440
2017	4568	2116	1464	593	700	373
2018	4568	4052	1464	255	700	920
2019	4568	4576	1464	459	700	4758
2020	4568	4687	1464	1483	700	691
2021	4568	3147	1464	1232	700	568
2022	4568	2624	1464	629	700	312
2023	4568	1953	1464	408	700	256
2024	4568	2236	1464	677	700	219
2025	4568	1376	1464	256	700	249

Primary Reviewer:

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Other Staff or Experts Involved in the Review:

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Jessica Speiser, Nongame Conservation Biologist, GFP, Rapid City

J.M. Weidler, Nongame Conservation Biologist, GFP, Sioux Falls

Date Review Finalized: 2026

Dates of Other Reviews, if appropriate: 2018, 2020, 2022, and 2024

References or Information Sources:

Aron, C. 2005. South Dakota Interior Least Tern (*Sterna antillarum athalassos*) and Piping Plover (*Charadrius melodus*) Management Plan. Wildlife Division Report No. 2005-02 South Dakota Department of Game, Fish and Parks, Pierre, SD.

Schwalbach, M. J., Pomara, L. Y., Christie, W. M. and Zarnoch, S. J. 2018. Least tern (*Sternula antillarum*) population response to water levels on Cheyenne River and Oahe Reservoir, South Dakota, USA. *Waterbirds* 41: 145–153.

- South Dakota Department of Game, Fish and Parks (GFP). 2025. South Dakota Wildlife Action Plan. Wildlife Division Report 2025-02. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- U.S. Army Corps of Engineers (USACE). 2025. Missouri River Recovery Program Information Management System. Piping Plover & Least Tern.
- U.S. Fish and Wildlife Service (USFWS). 1990. Recovery plan for the interior population of the least tern (*Sterna antillarum*). U.S. Fish and Wildlife Service, Twin Cities, Minnesota. 90 pp.
- U.S. Fish and Wildlife Service (USFWS). 2013. Interior least tern (*Sternula antillarum*), 5-Year Review: Summary and evaluation. USFWS, Southeast Region, Jackson, MS. 71 pp.
- U.S. Fish and Wildlife Service (USFWS). 2021. Endangered and threatened wildlife and plants; Removal of the interior least tern from the federal list of endangered and threatened wildlife. 86 FR 2564; document number 2020-28192, pages 2564-2581.

SUMMARY OF UPDATES IN 2026:

- Delisting from the South Dakota threatened and endangered species list is recommended.
- State recovery goals from the Least Tern and Piping Plover Management Plan (Aron 2005) were added and evaluated using survey data collected by the USACE.
- Tables and figures showing long-term distribution and occurrence data, population trends, fledge success, and habitat availability were added to illustrate how each recovery criterion has been met.

STATE T&E SPECIES STATUS REVIEW

Species Name: Osprey, *Pandion haliaetus*

South Dakota Status, Including Legal Status and Special Listings:

- State threatened (SD Administrative Rule 41:10:02:02. List of threatened birds).
- Monitored by South Dakota Nongame Conservation Program.
- State Heritage rank S3 (vulnerable; state rank last reviewed in 2020).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan (SDGFP 2025).

Federal Status:

- Migratory bird under Migratory Bird Treaty Act (protection for covered birds, body parts, nests, and eggs).
- NatureServe global rank G5 (secure); global rank last reviewed 9 April 2016.

Basis For New Listing, Status Change (T to E, or E to T), or Continued Listing with Same Status:

The justification for including the osprey on the first list of state threatened birds is unknown, but was presumably due to rarity, limited distribution, and evidence of historical nesting in the state. Continued listing as a state threatened species is recommended at this time.

Description, Biology and Life History:

Ospreys are large, fish-eating raptors with dark brown upperparts, white underparts, and a wingspan of approximately 63 inches. Adults have a white crown, dark eyestripes, and yellow eyes, while juveniles are distinguished by a streaked crown, orange-red eyes, and pale feather edging that gives the plumage a scaly appearance. Their long, pointed wings feature a characteristic dark wrist patch.

Ospreys feed almost exclusively on fish captured near the water surface. Several physical adaptations support this specialized diet, including spiny foot pads and a reversible outer toe that improve grip on slippery prey. Ospreys commonly forage in shallow lakes, rivers, reservoirs, and wetlands.

Ospreys typically begin breeding at three years of age and exhibit strong fidelity to nest sites and mates. Females usually lay two to four eggs, with incubation lasting about five to six weeks. Both parents care for the young, although females perform most incubation duties.

Habitat:

Ospreys are closely associated with aquatic habitats, including lakes, large rivers, reservoirs, wetlands, and coastal bays that support abundant fish populations. They typically nest in open areas near water, placing large stick nests on tall living or dead trees, cliffs, or elevated human-made structures such as utility poles and communication towers. Nest sites are generally higher than surrounding vegetation and provide unobstructed flight access. In the Black Hills, ospreys commonly use ponderosa pine snags for nesting, although use of these natural sites fluctuates because standing snags often provide poor nest support and persist for

relatively short periods. Human-made nesting platforms have been installed in suitable habitat where natural nesting trees are unavailable and as a mitigation measure to relocate nests from power lines and other structures where nesting is unsafe or incompatible with infrastructure management.

Distribution Within the State:

Osprey nesting is concentrated in the Black Hills and surrounding areas, with occasional nesting records along the Missouri River and in Roberts County (Figure 1). Although breeding is localized, migrating individuals may be observed throughout the state.

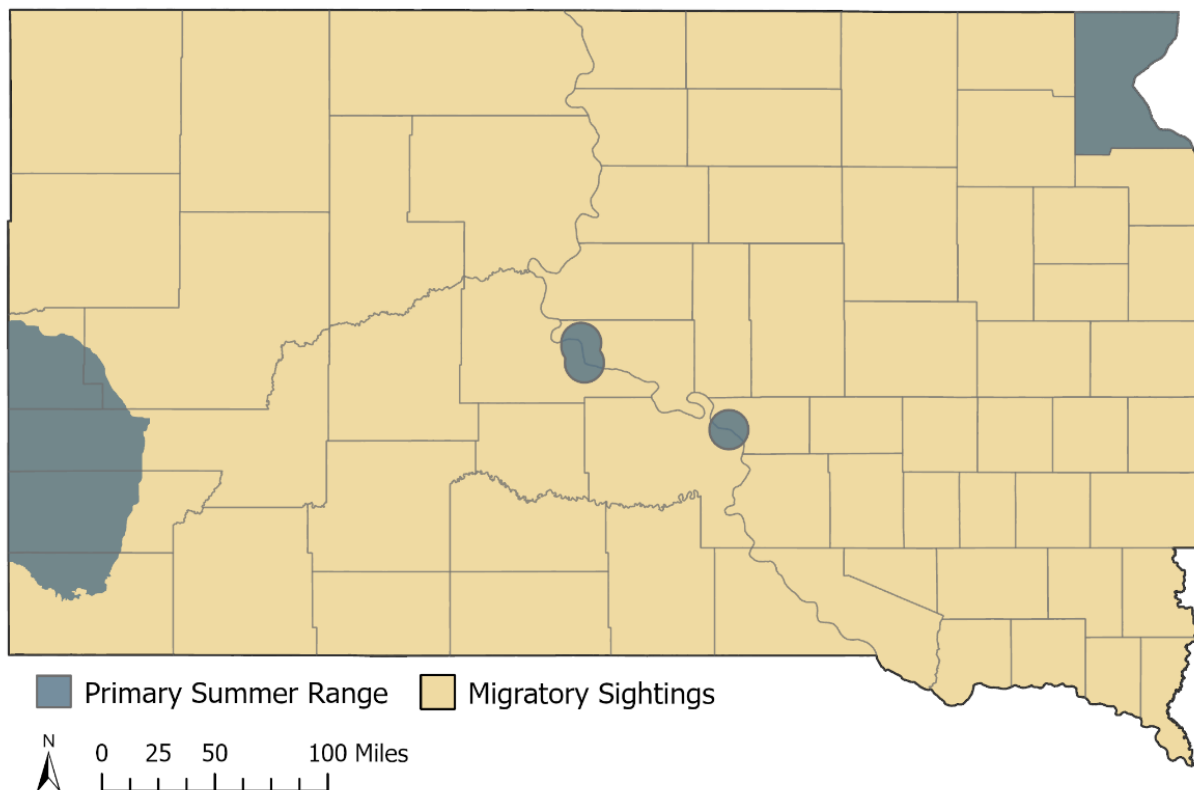


Figure 2. Documented osprey distribution in South Dakota.

Conservation / Management Considerations:

GFP works closely with Black Hills National Forest, Black Hills Energy, Black Hills Electric Cooperative, Butte Electric Cooperative, and various communities and landowners in the Black Hills to address conflicts associated with osprey nest placement. Management actions include installing or relocating nesting platforms, reducing risks of bird electrocution, fire, and power outages, and minimizing conflicts in areas with high public use. GFP also provides technical guidance on nesting platform design and placement.

Black Hills ospreys face several localized threats, including entanglement in plastic baling twine and fishing line incorporated into nests. Severe weather, including thunderstorms, high winds, and hail, can also result in nest failures and reduced productivity. Additional threats include habitat loss from timber harvest, shoreline development, and agricultural activities, as

well as competition with species such as bald eagles and great horned owls for nesting and foraging areas.

Ospreys are considered a sentinel species due to their role as indicators of environmental contamination, forest conditions, and fisheries health (Poole 1989; Grove et al. 2009). As fish-eaters at a high trophic level, they are vulnerable to bioaccumulative contaminants. Although populations recovered following the banning of DDT and other organochlorine pesticides, compounds such as PCBs and mercury can still affect reproductive success (Poole 1989; Bierregaard et al. 2014). Organochlorines are particularly harmful due to their persistence, bioaccumulation in fatty tissues, and effects on egg viability at low concentrations (Poole 1989).

Conflicts may occur where ospreys forage at commercial trout-rearing facilities and fee-fishing operations. GFP and partner agencies address these situations on a case-by-case basis to reduce economic impacts while supporting osprey conservation. Locations of fish hatcheries and similar facilities are considered when relocating nests or installing new nesting platforms.

Conservation Efforts in South Dakota:

Past:

GFP reintroduced 120 ospreys along the Missouri River in southeastern South Dakota, an area where this species historically nested (Agersborg 1885). Young birds, primarily from the Coeur d'Alene, Idaho area, were reintroduced from 2003–2006 and from 2008–2010 (Dowd Stukel et al. 2011). Nesting platforms were subsequently placed near Gavins Point Dam.

GFP contracted with Jennifer Fowler through the former Wildlife Diversity Small Grants Program to conduct a short-term investigation of the foraging behavior of ospreys in the Black Hills, particularly related to trout fisheries (Fowler 2006). Fowler concluded that the average number of fish caught per day based on observations was 6.63, with trout comprising 66% of captured fish (n=44). Trout observed being caught by ospreys during the investigation were 12 inches or less, indicating that the birds were catching stocked trout rather than trophy-sized trout. The investigation did not include an assessment of available fish to allow a comparison of trout taken to the proportion of trout in these lakes. Other fish species observed being captured by ospreys were yellow perch (*Perca flavescens*), northern pike (*Esox luciens*), largemouth bass (*Micropterus salmoides*), an unidentified species of sucker, and other undetermined fish species (Fowler 2006).

GFP contracted with Avian Research and Consulting (ARC), LLC, of Rapid City from 2011–2013 to assist with nest monitoring in the Black Hills, collect biological information from monitored nests, and assess population trends. ARC monitored 15 nests in 2011, 10 nests in 2012, and 13 nests in 2013. GFP also monitored an additional five nests in the Black Hills in 2012. The number of young observed at monitored nests was 20–21 in 2011, 26–27 in 2012, and 25 in 2013. Assuming most young observed during the 2011–2013 monitoring project by ARC survived to fledging, these figures indicated the Black Hills osprey population was increasing during that survey period. Additionally, based on these efforts, Engler and

Halverson (2013) recommended that utility companies replace center-pole nesting platforms with offset designs; install interpretive signage at selected nesting sites to educate the public about ospreys in the Black Hills; evaluate future power structures for suitability as nesting sites and install appropriate platforms to discourage nesting directly on utility infrastructure; and conduct surveys to determine the extent of osprey predation at commercial trout operations in the Black Hills.

GFP contracted with John Halverson to survey and report on nest success for known and possible osprey nests in the Black Hills of South Dakota during 2018 and 2019. Of 39 possible nests surveyed in 2018, 23 were active, and 1 was abandoned. Of this set of 24 nests, 20 were on artificial structures, and 4 were in live or dead trees. Twenty-three active nests produced 34 fledglings. Seventeen of these active nests produced at least 1 fledgling (Halverson 2019). Halverson surveyed 44 possible nests in 2019 and found 26 to be active and 1 abandoned. The 27 active or abandoned nests were on artificial structures (19) or in live or dead trees (8). Twenty-six active nests produced 16 fledglings. Fourteen of these active nests produced at least 1 fledgling. Halverson reported that 2019 nesting was heavily influenced by repeated snowfalls early in the nesting season and severe summer weather that included heavy rainfalls, cool weather, and hail events (Halverson 2019).

Ongoing:

In 2023, a standardized monitoring protocol and Survey 123 were created to improve consistency and overall data collection when surveying osprey. The definition of an “active” nest has varied over time but, as of 2026, an active nest refers specifically to nests with confirmed evidence of incubation, eggs, or young. GFP will continue to gather information on new nesting locations opportunistically from bird watchers, landowners, land management agencies, and agency staff. GFP will regularly conduct nest monitoring with agency staff or by contract to assess the status of the nesting population in South Dakota and gather sufficient data to assess whether the species has met recovery criteria.

Future:

GFP will assess the feasibility of an osprey nest watch program using agency staff, volunteer landowners, and birdwatchers for monitoring specific nests to determine nesting status and production.

GFP will continue to collect reports of summer season observations outside the known range of this species and follow up on promising reports of possible new nesting areas, if feasible, with aerial or boat searches.

GFP will evaluate the need to place additional nesting platforms in the vicinity of the Big Stone Power Plant and/or reintroduce additional young ospreys to eastern South Dakota to encourage growth of this secondary population. Based on the scarcity of reports outside the Black Hills and central South Dakota, GFP likely needs to take a more active approach to documenting osprey nesting in areas besides the Black Hills.

Recovery Criteria:

For delisting, South Dakota's osprey population should consist of an average of at least 20 active nests in the Black Hills for at least 5 years in a 7-year timespan and a second group of an average of at least three active nests outside the Black Hills during at least three years in a 7-year period. An active nest is one that is claimed or built by a pair that lays eggs during that nesting season.

At least 75% of the Black Hills nests should be successful (produce at least 1 fledged young) during the timespan considered. At least two of the three nests outside the Black Hills should be successful (produce at least one fledged young) during the timespan considered.

Recovery Criteria Changes and Rational:

A revision to the recovery criteria outside of the Black Hills was implemented during this review to continue documenting new nesting pairs and monitoring active nests, with a revised criterion of an average of at least three active nests during at least three years within a 7-year period, reduced from the previous criterion of six nests. In addition, at least two of the three nests outside the Black Hills should be successful (produce at least one fledged young), reduced from the previous requirement of four successful nests out of six. These revisions are intended to establish more realistic recovery criteria and are further justified below.

Although this state-threatened species does not yet meet all recovery criteria, the number of active nests has continued to increase steadily (Figure 2). An osprey nesting database has been maintained since the 1990s to document opportunistic observations, mitigation-related records, and nesting activity. Table 1 summarizes active nests and fledgling production during the past 10 years. The Black Hills population has met the proposed recovery criteria; however, the previous criterion of an average of six active nests outside the Black Hills for at least five years within a seven-year period may not reflect a realistically supportable population. As of 2026, six sites outside the Black Hills are regularly monitored (Table 2), but occupancy and nesting activity remain inconsistent.

Historically, ospreys in South Dakota were rare and largely restricted to the Missouri River corridor in the southeastern portion of the state (Agersborg 1885; Over and Thoms 1920; Henny 1987; Henny et al. 2010; Drilling 2021). Ospreys may not have nested in the Black Hills prior to European settlement because fish populations were limited (Drilling 2021). Following the introduction of trout and the creation of reservoirs, the Black Hills began providing reliable foraging habitat, allowing ospreys to establish the population present today (GFP 2014; Drilling 2021). Because nesting outside the Black Hills has historically been rare and remains intermittent, GFP recommends revising the current recovery criteria to better reflect the species' historical and contemporary distribution within the state.

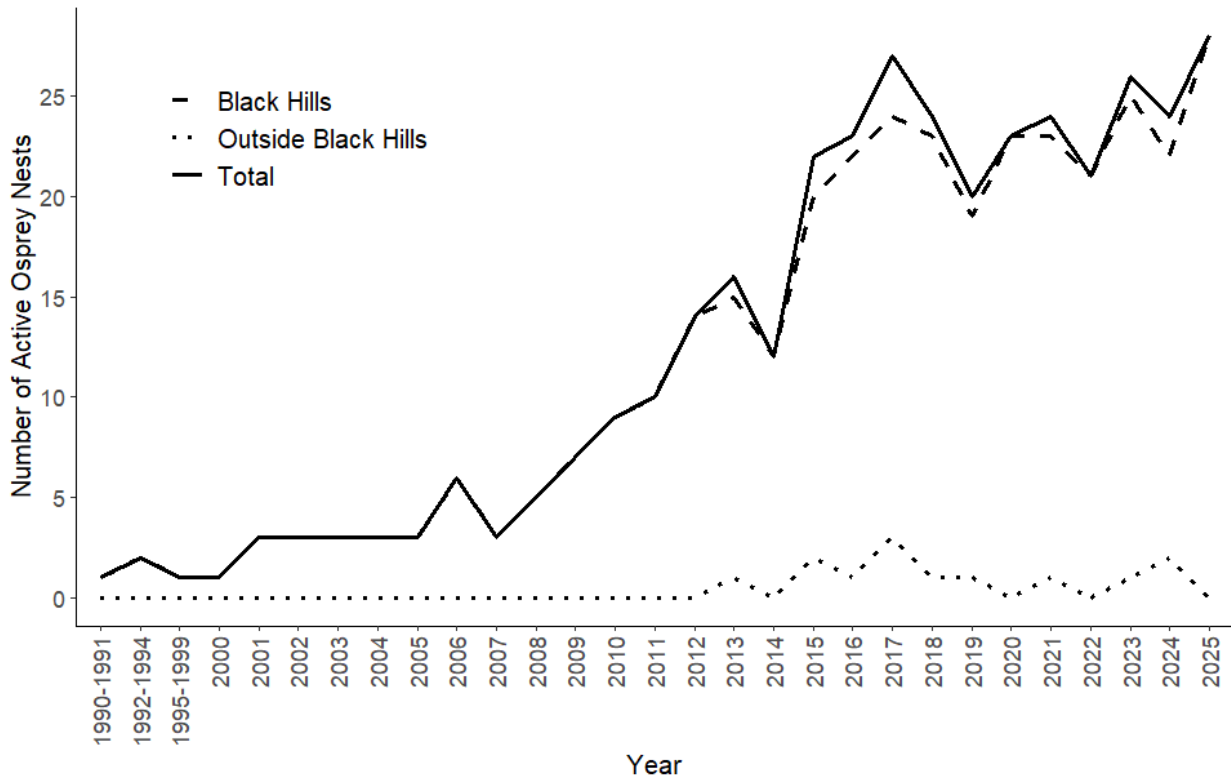


Figure 2. Active osprey nests in South Dakota from 1990–2025, total nests are represented by a solid line, Black Hills nests are represented by a dashed line, and nests outside of the Black Hills are represented by a dotted line.

Table 1. Estimated number of active osprey nests and fledglings across South Dakota produced from 2016–2025.

Year	No. of active nests*	No. of fledglings
2016	24	16
2017	26	30-31
2018	24	32
2019	19	27-28
2020	23	25
2021	24	31
2022	21	31
2023	26	35
2024	24	11
2025	28	39

*An active nest has incubating parents, eggs, or young. An inactive nest was occupied in previous years.

Table 2. Osprey nest sites outside of the Black Hills and years they were active.

Nest Site	Location	Nest Type	Years Active
Oahe Powerhouse 1	Stanley County	Platform	2021, 2024
Oahe Powerhouse 2	Stanley County	Platform	NA
Oahe Downstream	Stanley County	Platform	NA
Fischers Lilly	Stanley County	Platform	NA
Fort Thompson	Lyman County	Cell Tower	2017, 2019, 2023–2024
Big Stone Cell Tower	Roberts County	Cell Tower	2015–2017, 2019
Big Stone Power Plant	Roberts County	Platform	2013, 2015, 2018

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Date Review Finalized: 2026

Dates of Other Reviews, if appropriate: 2018, 2020, 2022, and 2024

References or Information Sources:

- Agersborg, G. S. 1885. Birds of Southeastern Dakota. Auk 2:276-289.
- Bierregaard, R. O., A. F. Poole, B. E. Washburn. 2014. Ospreys (*Pandion haliaetus*) in the 21st century: populations, migration, management, and research priorities. Journal of Raptor Research 48(4), 301–308.
- Cordes, R. J. 2007. Cold-water fish species. Pages 201-211 in C. R. Berry, Jr., K. F. Higgins, D. W. Willis, and S. R. Chipps, Editors, History of Fisheries and Fishing in South Dakota. South Dakota Department of Game, Fish and Parks, Pierre.
- Dowd Stukel, E., W. Melquist and C. West. 2011. Reintroduction of osprey into suitable sites along the Missouri River in South Dakota. Final Report Submitted to U.S. Fish and Wildlife Service for Grant Number T-10-R-1.
- Drilling, N. E. 2021. Range expansion of breeding Osprey (*Pandion haliaetus*) in South Dakota. South Dakota Bird Notes 73(3), 42–44.
- Engler, M. and J. Halverson. 2013. Osprey Monitoring Project – Summary of field activity through September 30, 2013. Report to South Dakota Game, Fish and Parks by Avian Research and Consulting, L.L.C.
- Fowler, J. A. 2006. Foraging behavior of ospreys (*Pandion haliaetus*) in the Black Hills of South Dakota. Report for the South Dakota Natural Heritage Program, SD Department of Game, Fish and Parks, Pierre, SD.

- Froiland, S. G. 1990 Natural history of the Black Hills and Badlands. Center for Western Studies, Augustana College, Sioux Falls, SD.
- Grove, R. A., C. J. Henny, J.L. Kaiser. 2009. Osprey: Worldwide sentinel species for assessing and monitoring environmental contamination in rivers, lakes, reservoirs, and estuaries. *Journal of Toxicology and Environmental Health* 12(1), 25–44.
- Halverson, J. W. 2019. 2018-2019 Osprey Survey Final Report. Report submitted to South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Henny, C. J. 1987. Distribution and Abundance of Nesting Ospreys in the United States. In J.W. Watts (Ed.), *Proceedings of the Symposium on Ospreys in Contemporary North America* (pp. 175–186). Virginia Polytechnic Institute and State University.
- Henny, C. J., R. A. Grove, J. L. Kaiser, and B. L. Johnson. 2010. North American osprey populations and contaminants: historic and contemporary perspectives. *Journal of Toxicology and Environmental Health, Part B* 13, 579–603.
- Junda, J., E. Green, and D. M. Bird. 2015. Proper flight technique for using a small rotary-winged drone aircraft to safely, quickly, and accurately survey raptor nests. *Journal of Unmanned Vehicle Systems* 3(4): 222-236, <https://doi.org/10.1139/juvs-2015-0003>.
- Over, W. H. and C. S. Thoms. 1920. *Birds of South Dakota*. South Dakota Geological and Natural History Survey.
- Poole, A. F. 1989. *Ospreys: A natural and unnatural history*. Cambridge University Press.
- South Dakota Department of Game, Fish and Parks (GFP). 2014. *Black Hills Fisheries Management Area Strategic Plan*. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- South Dakota Department of Game, Fish and Parks (GFP). 2025. *South Dakota Wildlife Action Plan*. Wildlife Division Report 2025-02. South Dakota Department of Game, Fish and Parks, Pierre, SD.

SUMMARY OF UPDATES IN 2026:

- Recommended changes to the recovery criteria outside of the Black Hills to the continued documentation of new nesting pairs and monitoring of active nests with an average of at least three active nests during at least three years in a 7-year period. As well as at least two of the three nests outside the Black Hills should be successful (produce at least 1 fledged young).
- Illustrated the steady incline of active osprey nests and number of fledglings in South Dakota through the long-term monitoring from 1990–2025.
- Described status for nests outside of the Black Hills and years they have been active.

STATE T&E SPECIES STATUS REVIEW

Species Name: Peregrine Falcon, *Falco peregrinus*

South Dakota Status, Including Legal Status and Special Listings:

- State threatened (SD Administrative Rule 41:10:02:02. List of threatened birds).
- Monitored by the South Dakota Nongame Conservation Program.
- State Heritage rank S1 (Critically imperiled breeding population; state rank last reviewed 31 Jan 2021).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan (GFP 2025).

Federal Status:

- Protected under the Migratory Bird Treaty Act (protection for covered birds, body parts, nests, and eggs).
- NatureServe Global Rank G4 (Apparently secure, although it may be rare in some portions of the range); global rank last reviewed 07 Apr 2016.

Basis for New Listing, Status Change (T to E, Or E to T), Or Continued Listing with Same Status:

The Peregrine falcon was included on the list of state threatened birds because it was once federally listed, and breeding populations were historically found in the state. Continued listing as a state threatened species is recommended.

Description, Biology and Life History:

Peregrine falcons are large falcons with long, pointed wings, a long narrow tail, and a rapid wingbeat. When perched, wingtips nearly reach tip of tail. Sexes are similar in appearance; however, the female is approximately 20% larger than the male. Adults are blue-gray above with a blackish facial malar stripe extending down from the eye. Underparts are whitish-gray with a variable amount of dark barring and spotting. Under tail and under wing coverts are barred. The upperparts of juveniles are pale to slate brown and underparts are buffy with streaking patterns instead of the barring of adults (White et al. 2002).

Instead of building nests, peregrines use scrapes of loose material to form a depression. Males typically make several scrapes and the female will select which to use for egg laying. One brood is fledged per year, typically with a clutch size of three to four eggs that hatch after 33–35 days. Renesting may occur if clutches are removed or lost early in the incubation period. Breeding pairs and individuals often show strong nest site fidelity.

During the breeding season peregrines will strongly defend the area surrounding their nest site. As the distance from the nest increases, territoriality decreases and most often occurs over food or preferred perch sites (Cade 1960). Size of territories varies by location and may be influenced by prey availability. Barnes et al. (2015) reported the shortest distance eyries (nesting locations) would occur from the nearest neighbor was 1.2 km for peregrines nesting in the Lake Mead National Recreation Area. In central West Greenland, Wightman and

Fuller (2005) found the average distance of an eyrie to the nearest neighbor was 3.27 km and ranged from 1.3–11.2 km.

A majority of the peregrine's diet consists of birds and on rare occasions small mammals. In urban areas pigeons and doves make up a large portion of the diet. Peregrines search for prey while flying or from perches that offer a high vantage point. Hunting is most often done in the air by conducting stoops on lower flying prey.

Predators of adults are primarily large raptors including great horned owls, eagles, and gyrfalcons. Nestlings or juveniles have a wider array of predators including other peregrines and many mammalian nest predators. In many reintroduction efforts, eagles and great horned owls are the primary predators on the young (Cade et al. 1988). Other causes of mortality in urban locations include collisions with automobiles and windows or drowning after fledging from bridges (Cade and Bird 1990). In non-urban environments mortality can be caused by collisions or electrocution from power lines, wire or fence collisions or illegal shooting (Barclay and Cade 1983).

Habitat:

The peregrine's natural habitat consists of tall cliffs for nesting with open landscapes for foraging. Nests are often established on cliffs at heights ranging from 50 to 200 meters. Preferred nesting sites provide isolation from mammalian and avian predators and are in close proximity to an abundant prey base (Oakleaf 2017). Peregrines have also become adapted to artificial habitat in urban areas and will establish nests on human-made structures such as tall buildings, towers, and bridges.

Distribution Within the State.

Peregrines are summer residents of the Black Hills and an uncommon statewide migrant (Figure 1). Historically, there was a limited nesting distribution in western South Dakota with only two confirmed nesting records at separate locations in 1925 and 1948–1960 (Patton 1926, Pettingill and Whitney 1965). Since, there were no known nesting records until 2017, when surveys for peregrines in the spring and summer documented two confirmed and one potential nest locations in the northern and central Black Hills (Oakleaf 2017).

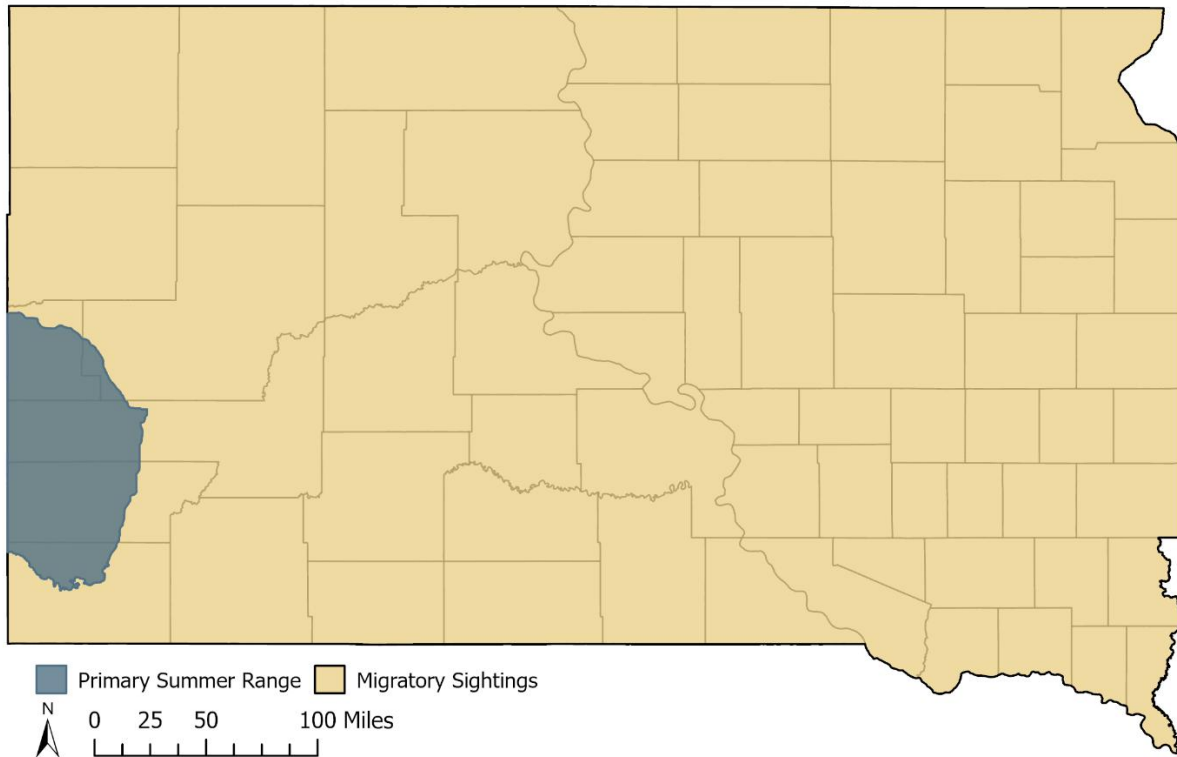


Figure 1. Known distribution of Peregrine Falcon (*Falco peregrinus*) in South Dakota.

Conservation / Management Considerations:

Peregrine falcon populations rapidly declined between 1940 and 1970 (Hickey 1969) causing the species to be listed as federally endangered. Population declines were primarily attributed to the widespread use of the pesticide DDT, which accumulated in small birds eaten by peregrines and caused eggshell thinning and breakage. After successful reintroduction efforts the peregrine was federally delisted in 1999 (USFWS 1999, Cade et al. 2003).

After conducting surveys for nesting peregrines and preliminary evaluations of cliffs for potential nesting suitability, Oakleaf (2017) indicated that approximately 6 to 8 breeding pairs of peregrines could potentially occupy cliffs in the Black Hills within the next few years. This number equates to the typical density for peregrines in North America, approximately one pair per 1000 km² (White et al. 2002). The Slim Buttes range in the Custer National Forest of Harding County was also evaluated in 2018 and found to have nesting potential for peregrines (Oakleaf 2018). Suitable natural (non-urban) habitat availability is limited in South Dakota to the Black Hills and potentially portions of northwestern South Dakota, and available nests sites are potentially further limited by conflicting recreational uses.

Successful management should include the protection of nest sites from disturbance. The Black Hills are a popular tourist destination and many of the cliffs that were identified as suitable peregrine nesting habitat are also popular spots for rock climbers. Excessive climbing activity in the vicinity of a nest could result in nest failure and the presence of climbers could prevent pairs from establishing new nest sites. Monitoring for contaminants

should also be considered if deemed necessary. Programs and materials should also be developed to educate the public on appropriate activities near nesting sites.

Conservation Efforts in South Dakota:

Past:

There have been several reintroduction efforts in different regions of South Dakota. In 1979 and 1980, Jon Sharps and Dan O'Brien cross-fostered peregrine falcon chicks with prairie falcon parents in the Black Hills. In 1997, the Lake Audubon Chapter reintroduced five young peregrines from the Zip Feed building in Sioux Falls. In 1994, four young peregrines were reintroduced from the roof of the Hotel Alex Johnson in Rapid City as part of an Eagle Scout project.

From 2010–2013, with a State Wildlife Grant (SWG) T-10-R-1 GFP reintroduced peregrine falcons in downtown Rapid City to promote establishment of breeding territories near historical Black Hills nest sites. A total of 57 captive-reared juveniles were released (20 in 2011, 21 in 2012, 16 in 2013) using rooftop hack boxes. Birds were banded, temporarily marked, and monitored via webcam and field observations. Several mortalities and non-releasable individuals were documented; however, at least one banded bird returned to the release site the following year, and an unbanded adult was also observed in 2013.

In 2017, GFP contracted Bob Oakleaf (Lander, Wyoming; Grant W95R48) to conduct aerial and ground surveys in the Black Hills to evaluate peregrine falcon nesting activity following the 2011–2013 reintroduction. Of 28 prioritized cliff sites, 3 were occupied by breeding pairs, with at least two successful nests documented. Observations of unbanded adults suggest recruitment from neighboring states. The report recommends continued monitoring and consideration of removing peregrines from the state endangered list, given regional population growth and increasing local occupancy.

From 2018–2021, with SWG T-81-R-1 GFP continued to contract with Bob Oakleaf to monitor nest occupancy and productivity of documented peregrine nests and to continue surveys of suitable cliff nesting sites to document new breeding pairs. In 2021, four nesting pairs were documented at previously identified sites, and all four successfully produced young, with at least 12 fledglings observed. Across the four-year survey period (2018–2021), five sites were occupied and 31 young were fledged, averaging 1.7 young per occupied site (2.8 per successful nest).

Peregrine falcons were downlisted from state endangered to state threatened in 2022 based on Oakleaf's monitoring data. Oakleaf was continually contracted each year (2022–2024) to survey peregrines in the Black Hills. In his final 2024 report, six established nesting sites were occupied and five of those sites successfully fledged at least 10 young, averaging 1.7 young per occupied site (2.0 per successful pair). Across the full monitoring period 2017–2024, surveys documented 32 occupied nesting attempts and 51 fledged young, averaging 1.6 young per occupied site.

Ongoing:

In the spring of 2025, Oakleaf was contracted to lead a three-day long peregrine falcon survey training for GFP staff. This training covered suitable cliff faces for new nesting pairs, past nesting locations for continued monitoring efforts, and survey methodology. Following this training, a survey protocol and Field Maps for data collection were established for the continued monitoring of peregrines in South Dakota by GFP staff.

Recovery Criteria:

Drafting recovery goals for this species was done with the understanding that peregrines nesting in South Dakota are part of a larger population in western North America. Although the following goals may be modest compared to recovery goals for other species, they represent a reasonable expectation of what the suitable and available natural nesting sites can support for a sustained period within the state's boundaries.

State recovery criteria require an average of five active nests for at least five years within a six-year period, along with average productivity of at least 1.25 naturally produced young per pair over a five-year period. An active nest is one that is claimed or built by a pair that lays eggs during that nesting season. Active nests may be the result of both naturally occurring pairs or from returning reintroduced individuals that establish breeding territories.

Recovery Criteria Considerations:

Survey results from 2020–2024 show an average of 5.4 occupied nests and 4.4 successful nests per year (Table 1), just below the required active nest threshold. However, productivity exceeded the required level, averaging 1.6 fledged young per occupied site and 2.3 fledged young per successful site. Maintaining management objectives of at least five active nesting pairs in a six-year period in South Dakota through continual monitoring by GFP is recommended before removal of state threatened status.

The following efforts should be considered for the continued management and delisting of peregrine falcons:

- Continuing to identify active peregrine nests statewide.
 - Conducting surveys in historic and suitable peregrine nesting habitat to document presence/absence.
 - Soliciting observations from agency personnel, local birding groups, and landowners to identify nesting sites.
- Continuing to monitor nesting success and productivity of active nests.
 - Documenting number of young hatched and successfully fledged.
 - Identifying nest site characteristics and evaluate their influence on nest success.
- Monitoring activity of “floaters” or non-breeding individuals to identify potential nest sites.
- Placing nest boxes on suitable structures in urban areas where peregrines have been observed to encourage nesting where feasible.
- Reducing or eliminating disturbance of nest sites during the breeding season.

Table 3. Peregrine falcon nest occupancy, nest success, and number of young fledged from successful nests in the Black Hills from 2017–2024 (Oakleaf 2017, 2018, 2019, 2024). Productivity averaged 1.6 fledged young per occupied site and 2.3 young per successful nesting pair across the monitoring period. Data from 2025 were excluded because surveys that year were conducted as part of a field training and did not represent a comparable monitoring effort.

Year	# Occupied Site	# Successful Nesting Pair	Young Fledged
2017	3	2	6
2018*	4	1	3
2019	4	1	2
2020*	5	4	8
2021	4	4	12
2022	5	4	9
2023*	7	5	11
2024	6	5	10
Total	38	26	61

Fledged young per occupied site	1.605
Young per successful pair	2.346

*Counts of fledged young were not adequate for one occupied site in 2018, one site in 2020, and one site in 2023

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References or Information Sources:

Barclay, J.H., and T.J. Cade. 1983. Restoration of the Peregrine Falcon in the eastern United States, Pages 3-40 *in* S. Temple [Ed.], Bird Conservation. Vol 1, Univ. of Wisconsin Press, Madison, WI.

Barnes, J.G., R.D. Haley, D.B. Thompson and J.R. Jaeger. 2015. Attributes of a breeding population of peregrine falcons associated with reservoirs on the Colorado River. *Journal of Raptor Research* 49(3):269–280.

- Cade, T.J. 1960. Ecology of the peregrine and gyrfalcon populations in Alaska. University of California Publications in Zoology 63: 151-290.
- Cade, T.J., J.H. Enderson, C.G. Thelander, and C.M. White, eds. 1988. Peregrine falcon populations; their management and recovery. The Peregrine Fund Inc., Boise, ID.
- Cade, T.J., and D.M. Bird. 1990. Peregrine falcons, *Falco peregrinus* in an urban environment: a review. Canadian Journal of Field Naturalists 104:209-218.
- Cade, T.J., W.A. Burnham, and P. Burnham. 2003. Return of the Peregrine: A North American saga of tenacity and teamwork. The Peregrine Fund, Boise, ID.
- Dowd Stukel, E. 2013. Peregrine falcon (*Falco peregrinus*) reintroduction in South Dakota. Final Report, T-10-R-1, Amendment #5. GFP, Pierre, SD.
- Herkert, James R. 2000. Peregrine falcon reclassification goals. Report for the Illinois Endangered Species Protection Board.
- Hickey. J.J. 1969. Peregrine Falcon Populations, Their Biology and Decline. University of Wisconsin Press. Madison, WI.
- Oakleaf, Robert J. 2017. Peregrine falcon surveys for the South Dakota Department of Game, Fish and Parks. Unpublished report to GFP, Pierre, SD.
- Oakleaf, Robert J. 2018. Peregrine falcon surveys for the South Dakota Department of Game, Fish and Parks. Unpublished report to GFP, Pierre, SD.
- Oakleaf, Robert J. 2019. Peregrine falcon surveys for the South Dakota Department of Game, Fish and Parks. Unpublished report to GFP, Pierre, SD.
- Oakleaf, Robert J. 2020. Peregrine falcon surveys for the South Dakota Department of Game, Fish and Parks. Unpublished report to GFP, Pierre, SD.
- Oakleaf, Robert J. 2021. Peregrine falcon surveys for the South Dakota Department of Game, Fish and Parks. Unpublished report to GFP, Pierre, SD.
- Oakleaf, Robert J. 2023. Peregrine falcon surveys for the South Dakota Department of Game, Fish and Parks. Unpublished report to GFP, Pierre, SD.
- Oakleaf, Robert J. 2024. Peregrine falcon surveys for South Dakota Department of Game, Fish and Parks. Unpublished report to GFP, Pierre, SD.
- Patton, F. 1926. Out trip to the eagle nest. The Oologist 43:30-31.
- Pettingill, O.S. and N.R. Whitney. 1965. Birds of the Black Hills. Special Publ. No. 1. Cornell Laboratory of Ornithology, Cornell University. Ithaca, NY.
- Sharps, J.C., and D. O'Brien, 1985. Peregrine falcon reintroduction in the Black Hills, South Dakota, 1977-1980. Dept. of Game, Fish and Parks, Wildlife Division, Completion Report No. 85-10. Pierre, SD.
- South Dakota Department of Game, Fish and Parks (GFP). 2025. South Dakota Wildlife Action Plan. Wildlife Division Report 2025-02. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- U.S. Fish and Wildlife Service [USFWS]. 1999. Endangered and threatened wildlife and plants; final rule to remove the American Peregrine Falcon from the Federal list of endangered and threatened wildlife. Federal Register 64:46542-46558.
- U.S. Fish and Wildlife Service [USFWS]. 2003. Monitoring plan for the American peregrine falcon, a species recovered under the Endangered Species Act. U.S. Fish and Wildlife Service, Divisions of Endangered Species and Migratory Birds and State Programs, Pacific Region, Portland, OR. 53 pp.

White, C.M., N.J. Clum, T.J. Cade, and W.G. Hunt. 2002. Peregrine falcon (*Falco peregrinus*). In A. Poole (Ed.) The Birds of North America. No. 660. Cornell Lab of Ornithology, Ithaca, NY.

Wightman, C.W., and M.R. Fuller. 2005. Spacing and physical habitat selection patterns of peregrine falcons in central West Greenland. *Wilson Bulletin* 117(3):226-236.

SUMMARY OF UPDATES IN 2026:

- Intensive peregrine survey efforts (2017–2024) by Bob Oakleaf documented nest locations, occupancy, nesting success, and fledgling production, these efforts were compiled in Table 1.
- Oakleaf provided a peregrine falcon field survey training in 2025 for GFP staff to support continued long-term monitoring of nesting pairs and productivity.
- Management recommendation: Continue long-term monitoring of known nesting pairs and documentation of new nests, with a management goal of maintaining ≥ 5 nesting pairs statewide.
- Added a definition for an active nest into the recovery criteria.

STATE T&E SPECIES STATUS REVIEW

Species Name: Piping Plover, *Charadrius melodus*

South Dakota Status, Including Legal Status and Special Listings:

- State threatened (SD Administrative Rule 41:10:02:01. List of threatened birds).
- Monitored by South Dakota Nongame Conservation Program.
- State Heritage rank S3 (vulnerable; state rank last reviewed 2019).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan (GFP 2025).

Federal Status:

- Protected under Migratory Bird Treaty Act (protection for covered birds, body parts, nests, and eggs).
- Federally threatened species. South Dakota's piping lovers are part of the Northern Great Plains population. Both the Northern Great Plains and Atlantic Coast populations are federally threatened, while the Great Lakes population is federally endangered. A federal recovery plan covering both populations was finalized in 1988 (USFWS 1988). Since then, separate revised recovery plans have been finalized or are in the process of revision and finalization.

Basis For New Listing, Status Change (T to E, or E to T), Or Continued Listing with Same Status:

The specific justification for including the piping plover on the first list of state threatened birds is unknown but was presumably intended to mirror its federal status as a threatened species. Continued listing as a state threatened species is recommended at this time based on limited habitat available in the state and numerous threats to successful fledging.

Description, Biology and Life History:

Three distinct populations of piping plover are recognized: the Northern Great Plains (NGP) population (occurring along rivers and lakes from central Canada through northern Kansas), the Great Lakes population, and the Atlantic Coast population.

Piping plovers are sandy-gray, approximately robin-sized shorebirds. During the breeding season, adults have a single dark breast band, a dark stripe across the crown, and a white rump that is visible in flight. In South Dakota, the species is present during the breeding season, typically arriving in April and remaining through July or August.

Nests consist of shallow scraped depressions, sometimes lined with small pebbles or shells. Females typically lay a clutch of four eggs in late May or early June, and the eggs hatch approximately 27–31 days later. In South Dakota, piping plovers often nest in association with the least tern.

Piping plovers feed along shorelines on small insects, crustaceans, and mollusks.

Habitat:

Piping plovers typically nest on sandbars and sand and gravel beaches with short, sparse vegetation and will use both natural and human-made habitats.

Distribution Within the State:

Piping plovers primarily nest along Lake Oahe and the lower Missouri River below Fort Randall and Gavins Point dams, which constitute their primary summer range. However, migratory sightings have been documented across the state (Figure 1). Additional nesting occurs on alkaline wetlands in north-central and northeastern South Dakota when habitat conditions are suitable, and, more rarely, along lakeshores in western South Dakota.

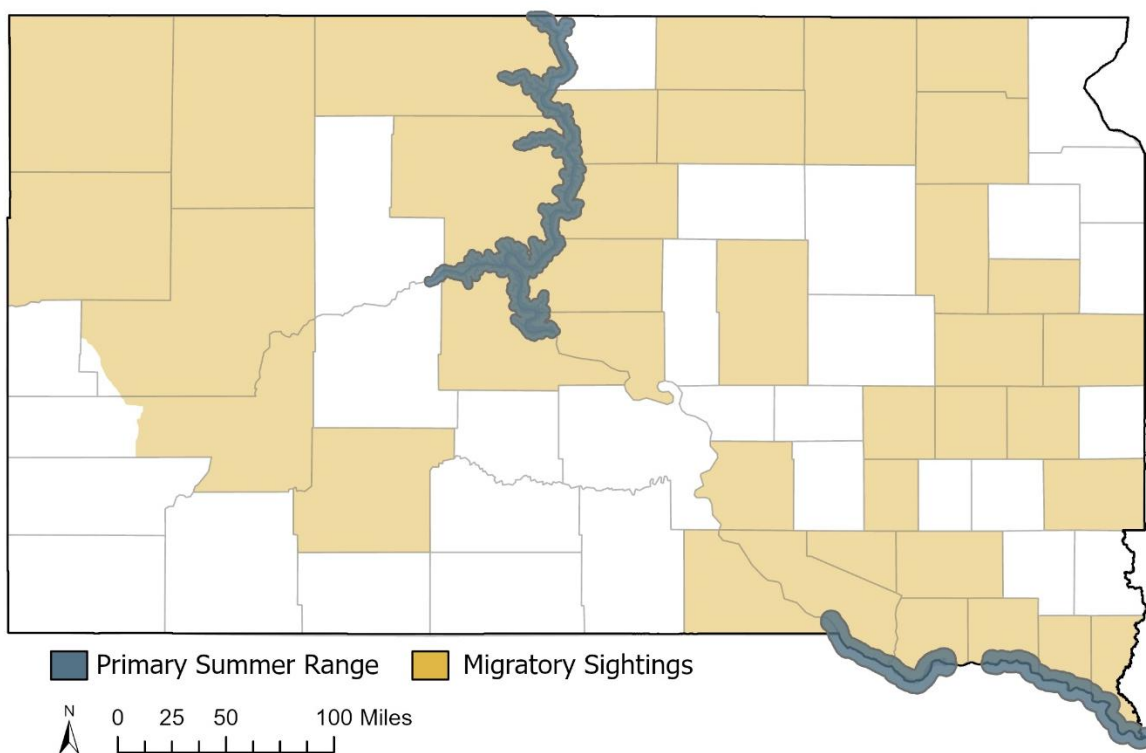


Figure 1. Piping plover (*Charadrius melodus*) distribution in South Dakota. The species primarily uses the highlighted portions of the Missouri River as breeding grounds but has been observed in counties across the state during migration or rare breeding events.

Conservation / Management Considerations:

Potential nesting habitat for piping plovers in the NGP was drastically reduced with the construction of six major dams on the Missouri River, four of which were built in South Dakota. Threats to nesting colonies include mammalian and avian predators, unrestricted pets, recreationists who disturb incubating adults or destroy nests or chicks, hail or other severe weather, elevated water levels during the nesting season, habitat erosion, and vegetative encroachment/plant succession.

In 1985, the NGP and Atlantic Coast populations of piping plovers were listed as federally threatened. In 1988, the first federal recovery plan was completed for the NGP piping plover population (USFWS 1988). The federal Endangered Species Act of 1973, as amended, requires that the status of listed species be reviewed at least every 5 years. The most recent federal 5-year status review for the Northern Great Plains piping plover population recommends no change to its current federally threatened status (USFWS 2024). Although portions of the NGP piping plover breeding range have been extensively monitored, gaps in monitoring efforts and inconsistent survey methodologies prevent the evaluation of recovery targets across the entire range. This review process identified the need for a more standardized monitoring program following updates to the federal recovery criteria.

Conservation / Management Efforts:

Past:

More than 90,000 acres of land were transferred from the U.S. Army Corps of Engineers (USACE) to the State of South Dakota as a result of the Water Resources Development Act of 1999. Land transferred to the State of South Dakota is managed by Wildlife and/or Parks and Recreation divisions of South Dakota Game, Fish and Parks (GFP). Two products resulted from GFP's expanded role in endangered species management along the Missouri River: an interagency Memorandum of Agreement (MOA) regarding endangered species protection and recovery along the river, and a state management plan for the least tern and piping plover (state management plan) (Aron 2005).

The first 5-year Missouri River endangered species interagency MOA was finalized in 2001 and included specific and shared commitments of 3 agencies: GFP, USACE, and the U.S. Fish and Wildlife Service (USFWS) (Dowd Stukel 2003). Subsequent MOAs included the National Park Service in addition to the original 3 agencies. MOA accomplishments by all participants included such activities as biological surveys and nesting season productivity for Least Terns and Piping Plovers within the portion of the Missouri River surveyed by the USACE and GFP, specific protocols or policies developed to help implement the MOA, outreach and educational efforts related to Missouri River endangered species, law enforcement efforts, and relevant Section 7 consultations among federal agencies.

As GFP assumed responsibility for additional ownership and management of lands along the Missouri River, concern increased about the possibility of needing permission for incidental take. State management plans were prepared for the 4 species covered by the MOA as part of an agency intention to submit a habitat conservation plan (HCP) to allow incidental take of federally listed species. Management plans were prepared for the pallid sturgeon and bald eagle, while the piping plover and least tern were addressed in a single plan. However, the HCP was not formally pursued.

The International Piping Plover Census was designed to be conducted every 5 years on both wintering and breeding grounds. Begun in 1991, the census was most recently conducted in 2016. The effort relies on federal, tribal, and state wildlife personnel and volunteers and at the state level is typically overseen by staff with the U.S. Geological Survey or USFWS.

The GFP Commission passed the following administrative rule in 1989 to provide added protection for Least Tern and Piping Plover nesting colonies in the state:

Administrative Rule 41:10:02:18. Harassment prohibited. Harassment of the nesting and rearing sites of the least tern, an endangered species, and the piping plover, a threatened species, is prohibited. The department shall post conspicuous signs near critical nesting and rearing sites on the sandbars and shoreline of the Missouri River to warn against entry during the nesting period.

The MOA has progressed through several iterations, with the most recent version finalized in 2015. Following coordination among the USACE, GFP, and USFWS, the 2015 MOA expired without renewal because of the successful partnership established among the agencies. GFP committed to continued support to the USACE with piping plover surveys.

The USFWS designated portions of South Dakota as critical nesting habitat for the Piping Plover in 2002 (Federal Register 2002). Included areas were Lake Oahe and the Missouri River from Fort Randall Dam south to Ponca State Park, Nebraska, including Lewis and Clark Lake. Critical habitat contains important elements or habitat features that meet a species' life cycle needs. Critical habitat is relevant when there is a federal nexus, such as federal funding provided or federal approval needed for a project within designated critical habitat.

GFP's Nongame Conservation Program participated in the Northern Great Plains Piping Plover Recovery Team (Team) from 2010 - 2016. The Team's primary task was to assist in the revision of the Northern Great Plains Piping Plover Recovery Plan. The draft recovery plan was published in the Federal Register in 2016 (USFWS 2015).

The USFWS initiated a 5-year status review for the NGP piping plover population in January 2024 and was published in December 2024 (USFWS 2024). These reviews are conducted on a routine basis to evaluate the best available scientific and commercial information and assess the current status of the species, including whether any changes to its listing or management are warranted.

Ongoing:

The final version of the Northern Great Plains Piping Plover Recovery Plan has not yet been published by the USFWS and remains in draft form as of 2026.

Nesting and adult census survey data are collected by state, federal, and tribal personnel. The most extensive surveys are conducted by the USACE and compiled into a long-term dataset that began in 1993. These data are collected in a systematic manner, with strict quality control measures, prior to incorporation into the USACE's endangered species data management system. This system is used to document USACE compliance with a Biological Opinion between the USACE and USFWS regarding Missouri River endangered species and to assist the USACE in avoiding negative impacts to nesting colonies while making short- and long-term water management decisions. The USACE has allowed GFP to access the data management system to assist the South Dakota Nongame Conservation Program and other GFP staff in conducting environmental review.

In the first year of the survey, 174 adult plovers were detected and the fledge ratio of young was estimated at 0.67. The most recent surveys of Piping Plovers in South Dakota, conducted in 2025, indicate an adult population of 1,217 adult piping plovers and a fledge ratio of 0.67 (Figure 2 and 3).

Future:

GFP will continue providing nesting and adult census survey support when feasible. GFP will continue using nesting season data provided by the USACE and other sources for environmental review. GFP will participate in future International Piping Plover Censuses as time and staff availability allow, particularly focused on potential habitat away from the Missouri River that may not be surveyed on a regular basis.

State Recovery Criteria:

South Dakota will cooperate with the USFWS in meeting recovery goals described in the 1988 federal recovery plan, as well as any subsequent revisions (USFWS 1988). The anticipated revised federal recovery plan will reflect the most current scientific and management information. Separate state recovery goals are not recommended.

Primary Reviewer:

Kailey Meacham, Nongame Conservation Biologist, SD Game, Fish and Parks, Pierre

Other Staff or Experts Involved in the Review:

Mandy Pearson, Senior Wildlife Biologist, GFP, Rapid City

Jessica Speiser, Nongame Conservation Biologist, GFP, Rapid City

J.M. Weidler, Nongame Conservation Biologist, GFP, Sioux Falls

Date Updated Review Finalized: 2026

Dates of Other Reviews, if appropriate: 2016, 2018, 2020, 2022, and 2024

References or Information Sources:

- Aron, C. 2005. South Dakota Interior Least Tern (*Sterna antillarum athalassos*) and Piping Plover (*Charadrius melodus*) Management Plan. South Dakota Department of Game, Fish and Parks, Pierre, SD. Wildlife Division Report No. 2005-02, 76 pp.
- Federal Register. 2002. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Northern Great Plains Breeding Population of the Piping Plover; Final Rule. 50 CFR, Part 17, Vol. 67, No. 176, pages 57638 – 57717.
- Hofer, C. 2023. USACE Missouri River tern and plover monitoring, Section 10 Sampling Permit Reporting – 2023. U.S Army Corps of Engineers, Omaha District. 13 pp.
- South Dakota Department of Game, Fish and Parks (GFP). 2025. South Dakota Wildlife Action Plan. Wildlife Division Report 2025-02. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- U.S. Army Corps of Engineers (USACE). 2025. Missouri River Recovery Program Information Management System. Piping Plover & Least Tern.

- U.S. Fish and Wildlife Service (USFWS). 1988. Great Lakes and Northern Great Plains Piping Plover Recovery Plan. U.S. Fish and Wildlife Service, Twin Cities, MN. 160 pp.
- U.S. Fish and Wildlife Service (USFWS). 2015. Recovery Plan for the Northern Great Plains piping plover (*Charadrius melodus*) in two volumes. Volume I: Draft breeding recovery plan for the Northern Great Plains piping plover (*Charadrius melodus*) 132 pp. and Volume II: Draft revised recovery plan for the wintering range of the Northern Great Plains piping plover (*Charadrius melodus*) and Comprehensive conservation strategy for the piping plover (*Charadrius melodus*) in its coastal migration and wintering range in the continental United States. Denver, Colorado. 166 pp.
- U.S. Fish and Wildlife Service (USFWS). 2024. Piping Plover (*Charadrius melodus*) 5-Year Review: Summary and Evaluation. 168 pp. https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/species_nonpublish/21330.pdf

SUMMARY OF UPDATES IN 2026:

- The USFWS published a 5-year status review for the NGP population of piping plovers, recommending no change in federal listing.
- The state distribution map has been updated to reflect known occurrences and primary breeding range.
- Data from the USACE on population trends and fledge success through time has been added to reflect monitoring

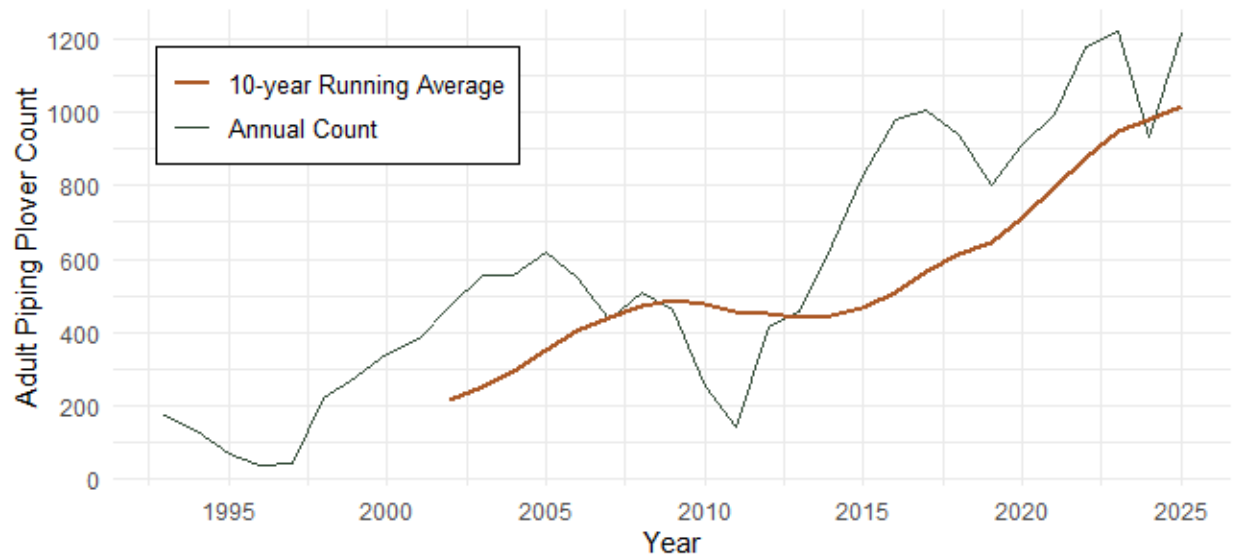


Figure 2. Adult piping plover count in South Dakota over time. Data from USACE surveys.

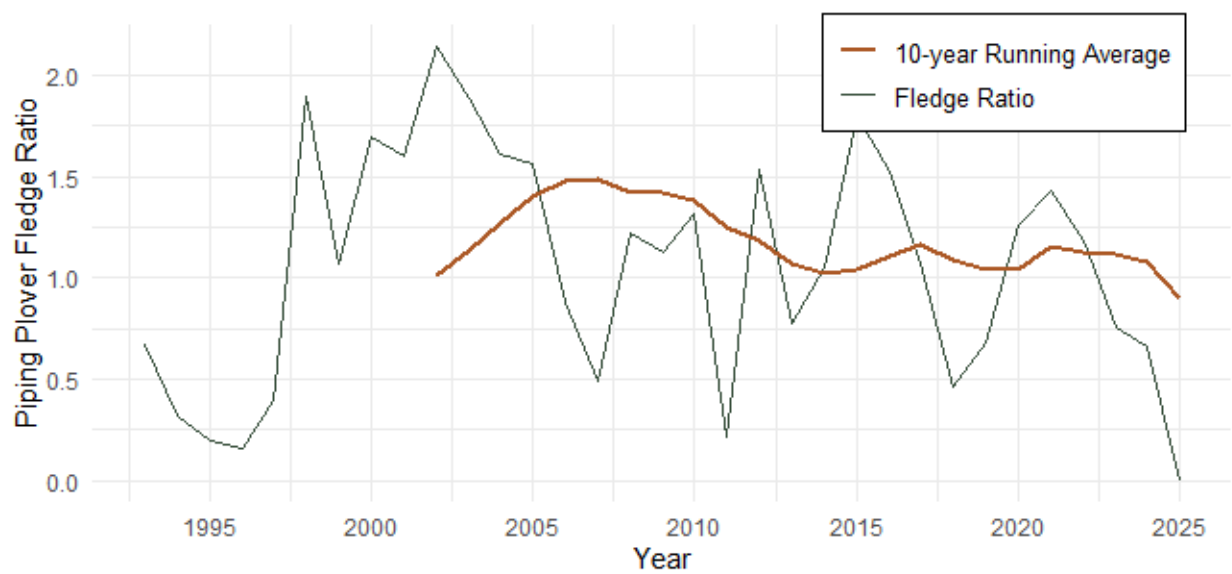


Figure 3. Piping plover fledge ratio in South Dakota over time. Data from USACE surveys.

STATE T&E SPECIES STATUS REVIEW

Species name: Whooping Crane, *Grus americana*

South Dakota Status, Including Legal Status and Special Listings:

- State endangered (SD Administrative Rule 41:10:02:01, List of endangered birds).
- Monitored by the South Dakota Nongame Conservation Program.
- State Heritage rank S1 (critically imperiled).
- Included as a Species of Greatest Conservation Need in the South Dakota Wildlife Action Plan (GFP 2025).

Federal Status:

- Nature Serve global rank G1 (species critically imperiled); last reviewed 8 April 2016.
- Protected under the Migratory Bird Treaty Act.
- Federally endangered. This species was listed as endangered in 1967 pursuant to precursor legislation to the Endangered Species Act (ESA) of 1973. International recovery plan, third revision published in 2007 (Canadian Wildlife Service and U.S. Fish and Wildlife Service 2007).

Basis For New Listing, Status Change (T to E, or E to T), Or Continued Listing with Same Status:

The specific justification for including the whooping crane on the first list of state endangered birds is unknown but was presumably intended to mirror its federal status. If this species is delisted by the U.S. Fish and Wildlife Service (USFWS), we will reevaluate whether continued listing as a state endangered species is warranted.

Description, Biology and Life History:

At 4–5' tall, the whooping crane is the tallest wading bird in North America. The adult is white with long black legs, wingtips, and markings below the eye. The top and sides of the head are featherless with bright red skin. Juveniles are a cinnamon color. The common name likely originates from the single note vocalization that is repeatedly given when alarmed. Average age in the wild is estimated to be 30 years.

Whooping cranes are omnivorous, consuming a variety of items including insects, berries, grains, plant tubers, crustaceans, fish, reptiles, and amphibians. During the winter, their main diet includes blue crabs and clams compared to migration where agricultural grains are primarily consumed.

Successful nesting and egg production begin at five years of age. Whooping cranes are monogamous, but will rapidly replace a lost mate. Pairs exhibit strong site fidelity to nesting areas. Two eggs are laid in late April to mid-May and hatch about one month later. Typically, only one young successfully reaches the wintering grounds.

Migration north begins in late March to early–April and is completed in two to four weeks. Fall migration begins in mid-September with most birds arriving on the wintering grounds in late November. These birds are observed in South Dakota beginning in early to mid-April

during the spring and again in October during the fall migration. Whooping cranes migrate during the day and can be seen as individuals, in small groups, or more rarely in flocks of up to 20 birds. Whooping cranes can also be seen migrating with sandhill cranes.

Habitat:

The only self-sustaining, wild, migratory population in the world breeds in portions of the Northwest Territories in Canada and adjacent areas of Alberta, especially within Wood Buffalo National Park. During breeding, this species prefers poorly drained headwater areas with abundant wetlands interspersed with spruce and tamarack. Bulrush dominates the diatom ponds that are used for nesting. Whooping cranes migrate twice a year through the Great Plains of North America. During migration, whooping cranes will use a variety of wetlands including marshes, wet prairies, shallow water in rivers, reservoirs, or lakes, as well as grain and stubble fields. The winter range is along a 30-mile stretch of the Gulf of Mexico coastline in Texas including the Aransas National Wildlife Refuge. Estuarine marshes, shallow bays, and tidal flats are used on the wintering grounds.

Distribution Within the State:

Although individuals from this population may be observed anywhere in South Dakota during migration, they are most commonly found between the Missouri and James rivers, which is considered the primary migratory corridor (Figure 1). The migratory corridor was adapted from Pearse et al. (2018).

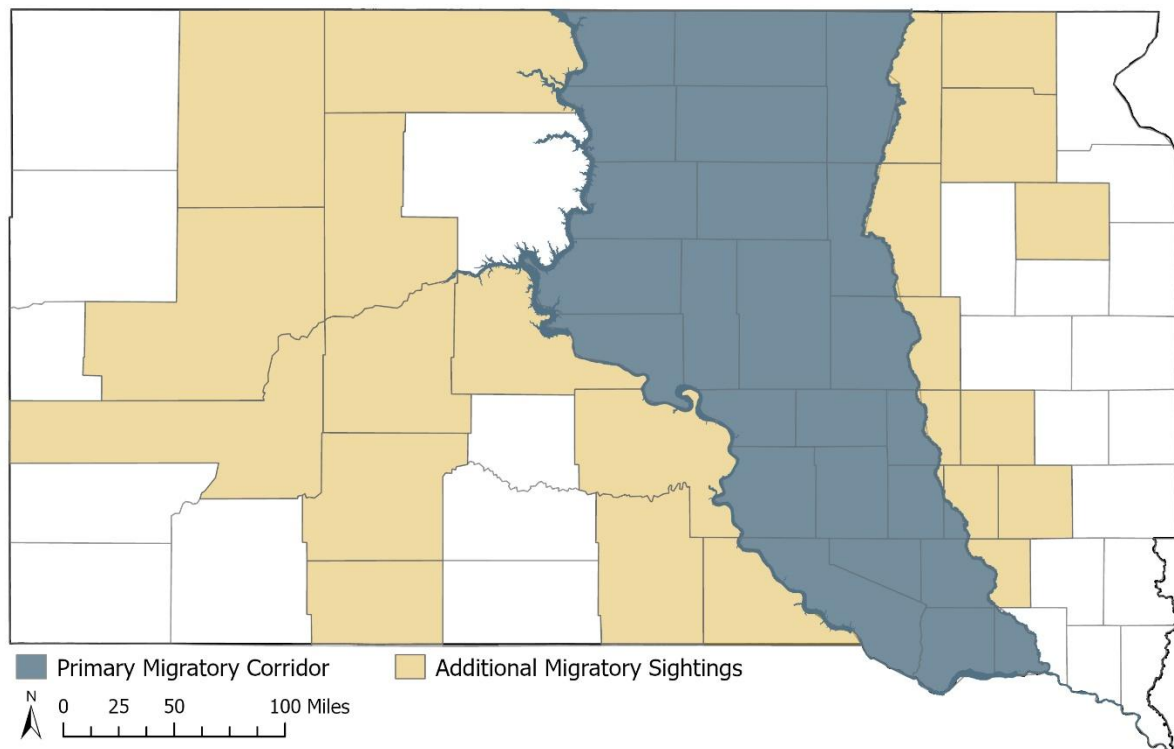


Figure 1. Known distribution of whooping cranes (*Grus americana*) in South Dakota.

Conservation / Management Considerations:

Overharvest was one of the main reasons for the historical decline of this species. Population declines were suspected by the early 1900s. Conversion of grassland and wetland for hay and grain production destroyed and altered traditional breeding grounds in the central United States. Similarly, migratory stopover habitat has been lost or degraded due to wetland drainage and river water diversion. Wintering grounds are impacted by reduced freshwater inflows into coastal estuaries making the water too saline for whooping cranes. This increased salinity reduces availability of blue crabs, the primary food source during the winter.

Loss and alteration of grassland and wetland habitats continue to impact this species as well as mortality from power lines, disease, and loss of genetic diversity. Sixty to 80% of mortalities occur during migration. Strikes with power lines constitute a substantial portion of that mortality and is the primary cause of death, especially for young birds. Wind turbines and guy wires associated with communication towers also pose a collision risk for whooping cranes. Mortality is also caused by accidental shootings resulting from misidentification of harvested bird species as well as intentional shootings. Whooping cranes are also susceptible to disturbance from humans, especially those on foot. Boat, plane and vehicle traffic are also potential sources of human disturbance. Research and monitoring needs in South Dakota include updating the National Wetlands Inventory, monitoring the impacts of tile drainage, continued migration monitoring and further understanding of stopover habitat.

The first whooping crane mortalities from Highly Pathogenic Avian Influenza (HPAI) were confirmed in 2025. In September, a captive-reared crane in Wisconsin died due to HPAI prior to being released into the Eastern Migratory population (Michalesko 2025). In October, two wild whooping cranes from the Aransas-Wood Buffalo population were found dead in Saskatchewan, also testing positive for HPAI (Bollinger et al. 2025). This virus is responsible for the loss of millions of birds worldwide and has caused large-scale mortality of other species of endangered cranes (Esaki et al. 2025), making disease monitoring a high priority for whooping crane conservation. Any deceased whooping cranes found in South Dakota should be reported to GFP staff.

The USFWS conducts Species Status Assessments (SSA) to determine the current and future status of listed species and assess their future viability. Additional planning and recovery tools include recovery plans and 5-year status reviews. The 2007 recovery plan (CWS and USFWS 2007) is currently being revised in conjunction with preparation of an SSA for this species. Following the completion of those documents, including public and agency input opportunities, attention will shift to the completion of a 5-year review (Kevin McAbee, pers. comm.).

Each year, the USFWS conducts a population survey of the Aransas-Wood Buffalo population, the only remaining self-sustaining population of whooping cranes, at their wintering grounds along the Texas coast. The most recent survey, in January of 2025, resulted in an estimate of 557 wild whooping cranes (Butler et al. 2025). The population has been increasing since the annual surveys began in 2016 (Table 1). Additional surveys of reintroduced populations in Wisconsin, Louisiana, and Florida yielded 149 whooping cranes,

a decline from previous years (McAbee and Conkin 2026). These efforts combined result in an estimate of 706 wild whooping cranes as of January 2025.

Table 1. Estimated whooping crane population sizes across all wild populations from 2012-2025.

Year	Aransas-Wood Buffalo Population	Eastern Migratory Population	Louisiana Non-migratory Population	Florida Non-migratory Population
2012		96	29	18
2013		103	31	
2014	304	94	39	
2015	329	94	36	15
2016	463	96	36	14
2017	489	94	53	14
2018	505	95	63	
2019	504	92	71	
2020	506	80	76	9
2021		78	72	
2022	543	77	76	7
2023	536	76	83	
2024		75	82	5
2025	557	64	75	4

Conservation Efforts in South Dakota:

Confirmed reports of migrating whooping cranes from the public and wildlife professionals are entered into the South Dakota Nongame Conservation Database and shared with the U.S. Fish and Wildlife Service through the Grand Island, Nebraska, Field Office of the Ecological Services Division.

GFP also provides review and oversight of efforts to minimize impacts to whooping cranes from wind energy development. This includes participation in the review of the Great Plains Wind Energy Habitat Conservation Plan (HCP), developed by the Wind Energy Whooping Crane Action Group to address potential impacts of wind energy facilities on federally listed species in the Great Plains and to streamline the Endangered Species Act permitting process. Additionally, GFP collaborates with wind energy developers to implement whooping crane management plans for projects located within or adjacent to South Dakota’s primary migratory corridor. These plans provide guidance for responding to whooping crane sightings near turbines and addressing turbine-related strikes.

Beyond project-specific conservation efforts, GFP contributes to broader whooping crane recovery planning. In spring 2026, GFP reviewed the initial draft of the revised International Recovery Plan for the whooping crane and determined that no comments were necessary.

Recovery Criteria:

GFP will cooperate with the USFWS in meeting downlisting goals detailed in the recovery plan (CWS and USFWS 2007).

Primary Reviewer:

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Other Staff or Experts Involved in the Review:

Mandy Pearson, Senior Wildlife Biologist, GFP, Rapid City

Jessica Speiser, Nongame Conservation Biologist, GFP, Rapid City

J. M. Weidler, Nongame Conservation Biologist, GFP, Sioux Falls

Date Current Review Finalized: 2026**Dates of Other Reviews, if appropriate:** 2018, 2020, 2022, and 2024**References or Information Sources:**

- Ashton, D. E., and E. M. Dowd. 2008. Fragile legacy: Rare animals of South Dakota. Wildlife Division Report Number 91-04.
- Bollinger, T., S. Copeland, S. Kirsch, and B. Garcia De Sousa. 2025. Highly Pathogenic Avian Influenza virus in endangered whooping cranes. Healthy Wildlife - Canadian Wildlife Health Cooperative.
- Butler, M. J., C. R. Sanspree, A. A. Griffin, and J. A. Moon. 2025. Whooping Crane Survey Results: Winter 2024–2025. U.S. Fish and Wildlife Service. Albuquerque, New Mexico. 5 pages
- Canadian Wildlife Service (CWS) and U.S. Fish and Wildlife Service (USFWS). 2007. International recovery plan for the whooping crane (*Grus americana*). Ottawa: Recovery of Nationally Endangered Wildlife (RENEW) and U.S. Fish and Wildlife Service. Albuquerque, New Mexico. 162 pages.
- Esaki, M., K. Okuya, K. Tokorozaki, Y. Haraguchi, T. Hasegawa, and M. Ozawa. Highly Pathogenic Avian Influenza A(H5N1) Outbreak in Endangered Cranes, Izumi Plain, Japan, 2022-23. *Emerg Infect Dis.* 2025 May;31(5):937-947. doi: 10.3201/eid3105.241410.
- McAbee, K. and J. Conkin. 2026. Whooping Crane Status: 2024 breeding season to 2023 spring migration. U.S. Fish and Wildlife Service and Environment and Climate Change Canada. 40 pages.
- Michalesko, R. 2025. First Confirmed Death of Endangered Whooping Crane due to Highly Pathogenic Avian Influenza. International Crane Foundation.
- Pearse A. T., M. Rabbe, L. M. Juliusson, M. T. Bidwell, L. Craig-Moore, D. A. Brandt, and W. Harrell. 2018. Delineating and identifying long-term changes in the whooping crane (*Grus americana*) migration corridor. *PLoS ONE* 13(2): e0192737.
- South Dakota Department of Game, Fish and Parks (GFP). 2025. South Dakota Wildlife Action Plan. Wildlife Division Report 2025-02. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Szyszkoski, E. K., S. E. Zimorski, and H. L. Thompson. 2025. Thirteen-year status of the Louisiana nonmigratory whooping crane reintroduction. *Proceedings of the North American Crane Workshop* 16:133-145.

- Thompson, H. L., N. M. Gordon, D. P. Bolt, J. R. Lee, and E. K. Szyszkoski. 2022. Twenty-year status of the eastern migratory whooping crane reintroduction. Proceedings of the North American Crane Workshop 15:34-52.
- U.S. Fish and Wildlife Service (USFWS). 2012. Whooping crane (*Grus americana*) 5-year review: Summary and evaluation. U. S. Department of the Interior.
- U.S. Fish and Wildlife Service (USFWS). 2021. Endangered and threatened wildlife and plants; Initiation of 5-year status reviews of 23 species in the Southwest. Federal Register 86:23976- 23978.

SUMMARY OF UPDATES IN 2026

- A distribution map has been added to show the migratory range of whooping cranes in South Dakota.
- Survey data from all wild populations has been compiled into a table showing trends in populations of whooping cranes over time.
- Updated conservation efforts in South Dakota.
- Information on HPAI has been added, as the first cases of HPAI were confirmed in whooping cranes in 2025.

STATE T&E SPECIES STATUS REVIEW

Species Name: Eastern Hog-nosed Snake, *Heterodon platirhinos*

South Dakota Status, Including Legal Status and Special Listings:

- State threatened (SD Administrative Rule 41:10:02:08. List of threatened reptiles).
- Monitored by the South Dakota Nongame Conservation Program.
- State Heritage rank S1 (critically imperiled; state species rank last updated on 8 June 2020).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan.

Federal Status:

- No federal protection.
- NatureServe global rank G5 (Demonstrably secure, although it may be rare in some portions of the range); global rank last reviewed 2 February 2016.

Basis For New Listing, Status Change (T to E, or E to T), or Continued Listing with Same Status:

The eastern hog-nosed snake was listed as state threatened due to its small population size, restricted range and dependence on limited suitable habitat. Continued listing as a state threatened species is recommended.

Description, Biology and Life History:

Heavy-bodied, medium sized snake (20–33 inches in length) with a slightly upturned snout and paired dark spots on the back of the head. Body color may be yellow, orange, reddish-brown, olive, or dark gray. Center and sides of back and tail have irregular dark spots. Scales are keeled and the underside of the tail is lighter colored than the rest of the belly. When threatened, the eastern hog-nosed snake raises its head, hisses, and flattens its neck like a cobra. If this behavior does not deter a predator, it will flip over on its back and play dead.

Eastern hog-nosed snakes are primarily active during the day. Their diet includes invertebrates, small mammals, frogs, and salamanders; but they often exclusively feed on toads. The upturned snout is thought to be used to burrow after food. They have adaptations to handle the toxins produced by toads and have large rear fangs in their mouths used to puncture inflated toads, making them easier to swallow. Potential predators include any medium-to-large carnivore.

Individuals become sexually mature around two years of age and mate in April or May, shortly after emergence from hibernacula. Egg laying is often restricted to the warmest months during late June through August. The female lays 4–20 eggs in depressions in sandy soils under rocks or logs. Eggs incubate for approximately 2 months. Females typically only have one clutch per breeding season. During the fall they will return to hibernacula in burrows under rocks.

Habitat:

The eastern hog-nosed snake's general habitat consists of a diverse mosaic of sandy, well-drained soils and open vegetative cover such as open woodlands and prairies in close proximity to water. Individuals avoid completely open areas to decrease risk of predation and will rely on driftwood and other artificial or natural ground cover.

Distribution Within the State:

Due to the likely confusion of the eastern hog-nosed snake with the closely resembling plains hog-nosed snake (*Heterodon nasicus*), the historical distribution in South Dakota is unclear. Wright and Wright (1957) showed the range extending from the southeastern to the northwestern corners of the state but indicated that they were not sure of this distribution.

Currently, the eastern hog-nosed snake is only known from the south-central and southeastern parts of the state, occupying five counties and three river basins (Figure 1). In 2017, a photo was confirmed of an eastern hog-nosed snake in Todd County from the Rosebud Indian Reservation. This observation is likely associated with neighboring populations in Cherry, Brown, and Keya Paha counties in Nebraska, and suggests connectivity from the Keya Paha and Niobrara rivers.

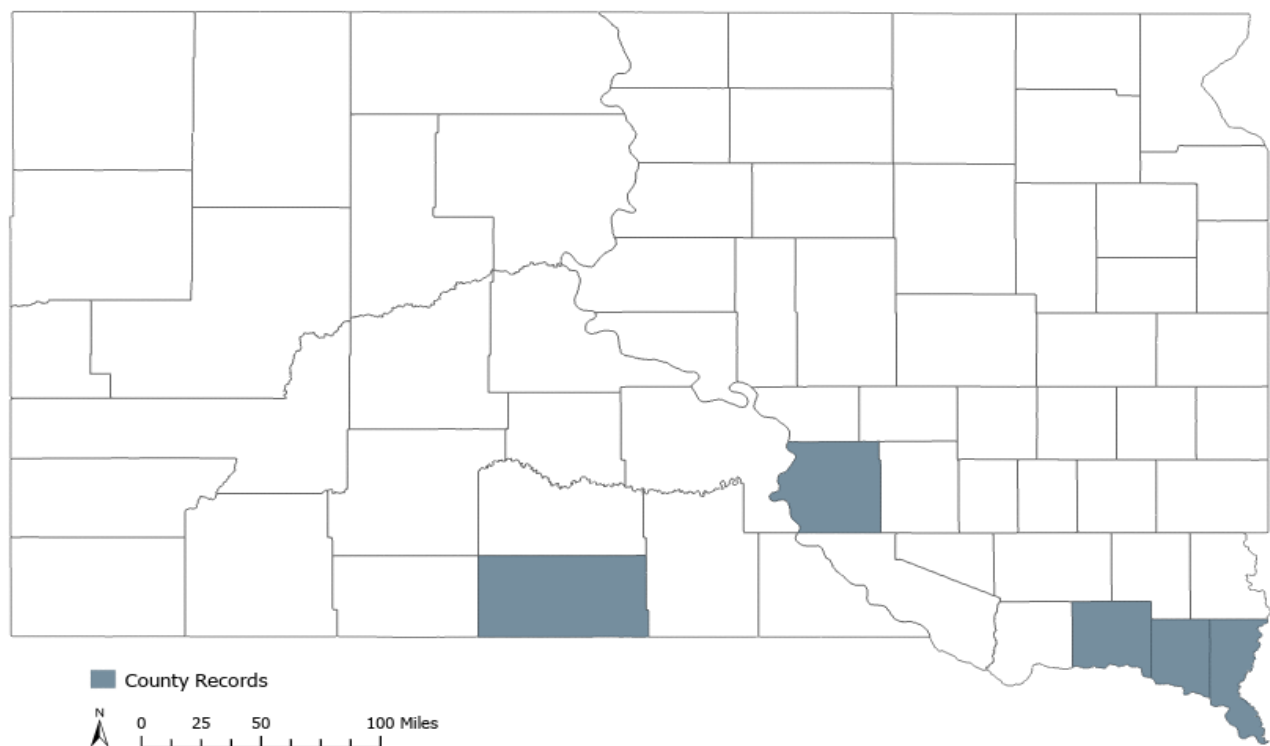


Figure 3. Current known county distribution of the eastern hog-nosed snake (*Heterodon platirhinos*) in the state.

Conservation / Management Considerations:

Prior to the damming of the Missouri River, frequent flooding events produced sandbars with sparse vegetative growth that created ideal habitat for the eastern hog-nosed snake. These sandbar habitats have rapidly declined due to succession of plants taking place in the absence of floods from the current Missouri Reservoir system. These sandy flood plain habitats are also popular areas for human use and prone to disturbance. Eastern hog-nosed snake habitat has also been altered for agricultural development and recreational uses.

The increase in pesticide use in this species' range has also likely negatively impacted this species, either through direct exposure from runoff, consuming contaminated prey, or decreased prey availability.

Eastern hog-nosed snakes are relatively slow-moving, increasing their susceptibility to road mortality. Vehicle and foot traffic may also directly impact individuals and nests. The species may also experience human-caused mortality due to its defensive display, which is often misinterpreted as aggressive despite being harmless.

Sand dune habitats near known snake occurrences should be protected from human disturbance by purchase or easements. Off-road vehicle use should be restricted by fencing and posting signs. Protecting these habitats will also benefit softshell turtles, false map turtles, and other species.

Any management plan developed for the eastern hog-nosed snake should address the problem of vegetative encroachment. Public agencies and private landowners should be encouraged to utilize land management practices that promote early plant succession stages where populations of eastern hog-nosed snakes are known to exist. Landowners should also be encouraged to limit or restrict the use of pesticides on their crops. Public awareness and education should be improved to reduce human persecution.

Conservation Efforts in South Dakota:**Past:**

Non-GFP Projects:

- Fogell (2003) conducted herpetofauna surveys on state owned lands, with a focus on the lined snake.

GFP has funded multiple research projects through South Dakota State Wildlife Grants (SWG):

- SWG T-8-R-1 ten priority habitats were surveyed to collect baseline information on poorly studied reptile and amphibian species (Backlund 2005).
- SWG T-57-R-1 and SWG T-102-R-1 evaluated a variety of threats to herpetofauna in South Dakota as a component of the South Dakota Wildlife Action Plan revision (GFP 2014, 2025).

GFP has also funded projects through the former Wildlife Diversity Small Grants Program:

- Surveys were conducted for eastern hog-nosed snakes in south-central South Dakota to determine the extent of the species' range (Davis 2021).
- Online resources (sdherps.org) were developed and maintained to engage South Dakota citizens in amphibian and reptile identification, distribution, and conservation (Davis et al. 2018; Davis 2020).

Current:

Statewide road-cruising snake surveys under SWG T-107-R-1 began in fall 2025 and will include spring and fall sampling periods through spring 2027. Beginning in fall 2027, the project will incorporate a targeted effort for eastern hog-nosed snakes, including road-cruising, coverboard arrays, and walkabout surveys in areas adjacent to suitable habitat. Additionally, an opportunistic snake Survey123 form has been shared with GFP staff to allow reporting of incidental snake sightings outside of formal survey periods.

Recovery Criteria:

To be delisted from threatened, the eastern hog-nosed snake needs to have occurrence records from at least 3 river basins within a rolling 10-year period and evidence of reproduction from at least 2 river basins within a rolling 5-year period. Evidence of reproduction can include gravid females, newly hatched or young of the year snakes, and nests. Finding updated records of a reproducing population from at least 3 river basins would suggest a healthier and more widespread population than current data indicates.

Recovery Criteria Considerations:

Additional research and conservation efforts are needed to better define the distribution and management needs of this species in South Dakota, including:

- Conducting surveys on public lands adjacent to the lower Missouri, White, Little White, and Keya Paha rivers to determine the current distribution and extent of the species' range in South Dakota.
- Working with interested landowners and internal GFP programs to identify and implement management practices that support the conservation of this species throughout its range.

Primary Reviewer:

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Other Staff or Experts Involved in the Review:

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Jessica Speiser, Nongame Conservation Biologist, GFP, Sioux Falls

Date Review Finalized: 2026

Dates of Other Reviews, if appropriate: 2018, 2020, 2022, and 2024.

References or Information Sources:

- Backlund, D. 2005. South Dakota statewide herpetology survey 2004. Final report to the South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Ballinger, R.E., J.W. Meeker and M. Theis. 2000. A checklist and distribution maps of the amphibians and reptiles of South Dakota. Transactions of the Nebraska Academy of Sciences 26:29-46.
- Buchanan, S.W. 2012. Ecology of the Eastern Hognose Snake (*Heterodon platirhinos*) at Cape Cod National Seashore, Barnstable County, Massachusetts. Thesis. Montclair State University, Montclair, NJ.
- Davis, D. R. 2018. Geographic distribution: *Heterodon platirhinos* (eastern hog-nosed snake). Herpetological Review 49:76.
- Davis, D. R., C. E. Smith, and D. Becker. 2018. Creating online resources to engage South Dakota citizens in amphibian and reptile identification, distribution, and conservation. Final report to South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Davis, D. R. 2020. New resources and continued engagement to better inform the public on the amphibians and reptiles of South Dakota. Final report to South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Davis, D. R. 2021. Surveys for the state-threatened Eastern Hob-nosed Snake (*Heterodon platirhinos*) in south-central South Dakota. Wildlife Diversity Small Grant final report to South Dakota Game, Fish and Parks, Pierre, SD.
- Fogell, D.D. 2003. Amphibian and reptile surveys of southeastern South Dakota with an emphasis on the state-endangered lined snake (*Tropidoclonion lineatum*) May 2002 – June 2003. Final report to the South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Kiesow, A.M. and D.R. Davis 2020. Field guide to the reptiles and amphibians of South Dakota. 2nd Edition. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Kirsch, S.M. 1983. Ecology of the eastern hognose snake (*Heterodon platyrhinos*) in southeastern South Dakota. MA Thesis, University of South Dakota, Vermillion, SD.
- Marchand, Michael. 2015. Eastern Hog-nosed Snake (*Heterodon platyrhinos*) in New Hampshire Wildlife Action Plan Appendix A Reptile. 79-89.
- NatureServe. 2026. NatureServe Explorer: An online encyclopedia of life [web application]. NatureServe, Arlington, VA. Available <https://explorer.natureserve.org>
- Over, W. 1923. Amphibians and reptiles of South Dakota. South Dakota Geological and Natural History Survey Series XXIII Bulletin 12:1-34.
- Parks Canada Agency. 2016. Multi-species Action Plan for Georgian Bay Islands National Park of Canada. Species at Risk Act Action Plan Series. Parks Canada Agency, Ottawa. iv + 14 pp.
- Seburn, D. 2009. Recovery strategy for the Eastern Hog-nosed snake (*Heterodon platirhinos*) in Canada. *Species at Risk Act* Recovery Strategy Series. Parks Canada Agency, Ottawa. Vi +24.pp.
- Smith, B. and H. Quinn. 2012. Threats to South Dakota amphibians and reptiles. Final report to South Dakota Department of Game, Fish and Parks. Department of Biology, Black Hills State University, Spearfish, SD.

- South Dakota Department of Game, Fish and Parks (GFP). 2014. South Dakota Wildlife Action Plan. Wildlife Division Report 2014-03. South Dakota Dept. of Game, Fish and Parks, Pierre, SD.
- South Dakota Department of Game, Fish and Parks (GFP). State Wildlife Action Plan. 2025. Wildlife Division Report 2025-02. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Wright, A.H. and A.A. Wright 1957. Handbook of snakes of the United States and Canada. Comstock Publishing Associates, a division of Cornell University Press, Ithaca, NY.

SUMMARY OF UPDATES IN 2026:

- Developed recovery criteria and recovery criteria considerations.
- Updated conservation efforts.

STATE T&E SPECIES STATUS REVIEW

Species Name: False Map Turtle, *Graptemys pseudogeographica*

South Dakota Status, Including Legal Status and Special Listings:

- State threatened (SD Administrative Rule 41:10:02:08. List of threatened reptiles).
- Monitored by the South Dakota Nongame Conservation Program.
- State Heritage rank of S3 (vulnerable; rank last updated 14 October 2020).
- Wildlife Action Plan Species of Greatest Conservation Need (SDGFP 2025).

Federal Status:

- No federal protection.
- NatureServe rank of G5 (demonstrably secure, although may be rare in some portions of the range; rank last reviewed 2 May 2005).

Basis For New Listing, Status Change (T to E, or E to T), Or Continued Listing with Same Status:

The false map turtle was listed as state threatened due to its limited and localized populations when it once was reported as the most common turtle in the Missouri River. Continued listing as a state threatened species is recommended at this time.

Description, Biology and Life History:

The false map turtle has an olive to brown carapace with knobs running down the center of the back and a saw-tooth edge along the rear border. The female's carapace is 9–10 inches long and the male's is 4–6 inches long. Underside is yellow with dark lines around the edges. The neck has yellow stripes with a yellow "L" shaped spot behind each eye (Kiesow and Davis 2020).

False map turtles breed in the spring and females will lay up to 16 eggs in early June to July. Eggs hatch after two to three months of incubation. Dixon (2009) found the length of the nesting season was 36 days along the lower stretch of the Missouri National Recreational River (MNR). Sex of the offspring is dependent on temperature, and vegetation near nest sites can cause lower temperatures that alter sex ratios (Ewert and Nelson 1991). False map turtles in the northern portion of their range can produce two clutches per nesting season (Ernst et al. 1994). Sexual maturity is reached for males between 4–6 years of age and around 8 years for females. False map turtles are generally long-lived and have high fecundity rates. However, survivorship from hatching through the first year of life is low (Ernst et al. 1994). Gregor (2012) found that juvenile females had the longest average linear home ranges of 9.2 miles. Linear home ranges of adult females averaged 4.3 miles, and all males averaged 5.8 miles.

False map turtles consume aquatic invertebrates, fish, and aquatic vegetation. Predators include mink (*Neovison vison*), coyotes (*Canis latrans*), red fox (*Vulpes vulpes*), skunks (*Mephitis mephitis*), opossums (*Didelphis virginiana*) and raccoons (*Procyon lotor*) (Marchand and Litvaitis 2004). Dixon (2009) did not find depredation to be a major factor of nest mortality in most areas, but when it occurred it was concentrated at isolated patches of

preferred nesting habitat where turtles were nesting in high densities due to a lack of alternate sites. Higher predation rates also occurred on natural versus human-made sandbars.

Habitat:

False map turtles are found in rivers, reservoirs, lakes, and ponds with a muddy substrate, basking sites, and some aquatic vegetation. They use sparsely vegetated sandbars and beaches for nesting. False map turtles overwinter in mud or muskrat dens in areas with flowing water that provides suitable dissolved oxygen levels. Declines in water levels during winter can be a source of mortality by causing ice shelves to collapse and trap turtles along the shoreline (Gregor 2012).

Distribution Within the State:

False map turtles were once reported to be the most common turtle in the Missouri River in South Dakota (Timken 1968). Currently, they occur in the Missouri River and associated backwaters, as well as at the mouths of several tributaries in southeastern South Dakota, where they are considered rare to locally common (Figure 1). The species has also been documented in the James River upstream of its confluence with the Missouri River (Gregor 2012). False map turtles are most common below Gavins Point and Fort Randall dams and have been reported as regularly occurring in the Niobrara Delta area (Chris Longhenry, SDGFP biologist, personal communication). Gregor (2012) reported the false map turtle to be the dominant turtle species in all habitats sampled within the 59-mile segment of the Missouri National Recreational River. False map turtles have also been observed below Big Bend Dam and in the Pierre area near Farm Island and La Framboise Island. However, their current distribution and status upstream of Fort Randall Dam remain uncertain.

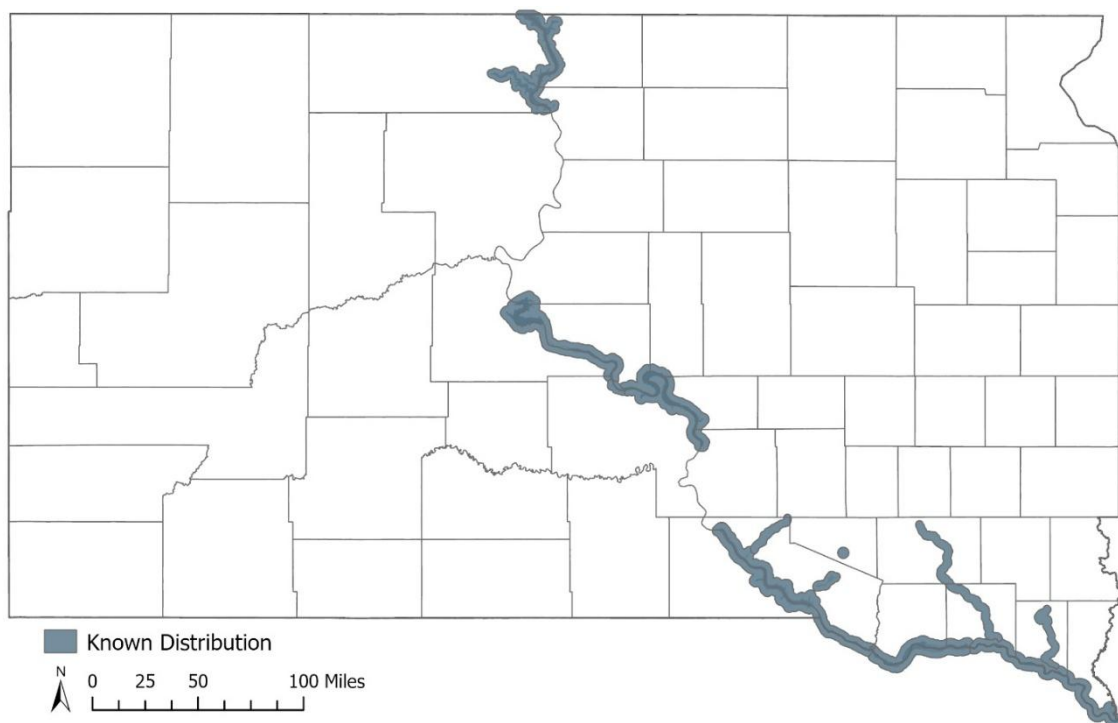


Figure 1. Known distribution of false map turtle (*Gratemys pseudogeographica*) in South Dakota.

Conservation / Management Considerations:

Populations of false map turtles have declined due to water pollution, river channelization, and the loss of nesting habitat. Sandbars and beaches, which provide important nesting habitat, have been disappearing since the construction of dams on the Missouri River and the near elimination of downstream flooding events. Without the disturbance associated with flooding, the remaining sandbars and beaches are transitioning from sparsely vegetated habitats, which are ideal for nesting turtles, to mature forests with invasive understories (Smith and Quinn 2012).

Bank stabilizations, such as rip-rap placement, also limit nest site availability and the input of large woody debris that false map turtles use for basking, cover, and foraging. The decline of nesting habitat has resulted in false map turtles concentrating their nesting on the few remaining beaches which can increase nest depredation rates. Boat collisions are also a hazard for false map turtle populations in areas that receive heavy boat traffic. This problem can be worse in early spring and late fall when the turtles are active but slower moving due to low water temperatures (Gregor 2012).

Public agencies and private landowners should be encouraged to use land management practices that promote early plant succession stages where populations of false map turtles are known to exist. Allowing controlled flooding events to occur would also promote the natural formation of sandbars and beaches. Alternatively, human-made sandbars have also been found being used by false map turtles for nesting habitat. Banks stabilization projects should also be discouraged in areas of known false map turtle populations. Areas of high nesting concentrations should be protected from predators and human disturbances. There is also a need to investigate if false map turtle bycatch in fish traps is a considerable threat to the species and if trap modifications need to be made to reduce loss. Requiring those who use fish traps to report bycatch would be one approach to the issue.

False map turtles are also a popular species in the pet trade. South Dakota's turtles are now legally protected from commercial trade; however, the species still needs to be protected from overtake.

Recovery efforts should focus on maintaining and expanding the range of false map turtle populations. To implement these goals there is a need to:

- Continue surveying and monitoring the species distribution and population.
- Identify and protect important nesting beaches and sandbars and overwintering sites from predators and human-caused mortalities and disturbances.
- Ensure regulations will protect the species from take if removed from state threatened list.

Conservation / Management Efforts:

South Dakota Game, Fish and Parks has funded several State Wildlife Grant (SWG) projects on false map turtle ecology and distribution:

- SWG T-8-R-1 surveyed ten priority habitats to collect baseline information on poorly studied reptile and amphibian species (Backlund 2005).

- SWG T-20-R-1 surveyed waterways in southeastern South Dakota to address a lack of information on annual populations changes, nest locations, and breeding success for the false map, smooth, and spiny softshell turtles (Dixon 2009).
- SWG T-30-R-1 determined habitat associations and requirements for determining turtle abundance and age structure, and documented turtle movement patterns (Gregor 2012).
- SWG T-57-R-1 and SWG T-102-R-1 evaluated a variety of threats to herpetofauna in South Dakota as a component of the South Dakota Wildlife Action Plan revision (GFP 2014, 2025).
- SWG T-77-R-1 surveyed waterways across the upper Missouri river of South Dakota to estimate population size and identify nesting requirements of the false map (Kase 2017, 2023).

The most extensive surveys were conducted as part of Grant T-77 by researchers from South Dakota State University. In this project, portions of Lake Oahe, Lake Sharpe, Lake Francis-Case, and the 59 Mile Stretch were surveyed with a combination of visual and trap surveys from 2017 to 2021 (Kase 2017, 2023; Table 1). In total, this effort surveyed over 1,000 miles of shoreline and involved over 10,000 trap hours.

Table 1. Number of false map turtles detected in each survey location from 2017 to 2021 as part of the Grant T-77 survey effort.

Detections	Lake Oahe	Lake Sharpe	Lake Francis-Case	59 Mile Stretch
<i>Visual Surveys</i>	0	90	41	37
<i>Trapping</i>	0	38	66	214
Total	0	128	107	251

A South Dakota GFP nongame conservation biologist conducted additional visual surveys during the summer of 2023 at 58 locations in Lake Oahe and Lake Sharpe, detecting 7 total locations of false map turtles. Notable, two false map turtles were detected at Peoria Flats Lakeside Use Area at the southern extent of Lake Oahe. In the 5 years of the Grant T-77 survey effort, no false map turtles were detected in Lake Oahe. Thirteen false map turtles were detected in the southern portion of Lake Sharpe, near the West Bend region. This area was not surveyed during the statewide effort of T-77.

Recovery Criteria:

- Criteria for Lake Sharpe, Lake Francis Case, and Lewis and Clark Lake and associated tributaries:
 - Evidence of at least 250 adult females in a breeding season.
 - Evidence of successful reproduction resulting in a stable or increasing population over a 10-year period.

Recovery Criteria Considerations:

Additional research and conservation efforts are needed to better define the distribution and management needs of this species in South Dakota, including:

- Conducting additional research on Lake Oahe to develop recovery criteria. Surveys conducted in 2017 and 2018 (SWG Project T-77-R1) suggest that false map turtles are less common in Lake Oahe than in other Missouri River reservoirs.
- Establishing and implementing a long-term monitoring plan to periodically assess population trends and habitat conditions following delisting.
- Ensuring that collection and bycatch no longer pose threats to the species' persistence.

Primary Reviewer:

Kailey Meacham, Nongame Conservation Biologist, GFP, Pierre

Other Staff of Experts Involved in the Review:

Mandy Pearson, Senior Wildlife Biologist, GFP, Rapid City

Jess Speiser, Nongame Conservation Biologist, GFP, Rapid City

J. M. Weidler, Nongame Conservation Biologist, GFP, Sioux Falls

Date Updated Review Finalized: 2026

Dates of Other Reviews, if appropriate: 2018, 2020, 2022, and 2024

References or Information Sources:

- Backlund, D. 2005. South Dakota statewide herpetology survey 2004. Final report to the South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Bury, T.B. 2011. Modifications of traps to reduce bycatch of freshwater turtles. *Journal of Wildlife Management* 75:3-5.
- Dixon, L.A. 2009. False map, spiny softshell and smooth softshell turtle nest and nest-site habitat characteristics along the lower stretch of the Missouri National Recreation River in South Dakota. M.S. Thesis, South Dakota State University, Brookings.
- Ernst, C.H., J.E. Lovich, and R.W. Barbour. 1994. *Turtles of the United States and Canada*. Smithsonian Institution Press, Washington, D.C., 682 pp.
- Ewert, M.A. and C.E. Nelson. 1991. Sex determination in turtles: Diverse patterns and possible adaptive values. *Copeia* 1991:50-69.
- Gregor, A. 2012. Abundance, habitat relationships, and movement patterns of turtles in southeastern South Dakota. Final Report to GFP, Pierre, SD.
- Johnston, W.C., M.D. Dixon, M.L Scott, L. Rabbe, G. Larson, M. Volke, and G. Werner. 2012. Forty years of vegetation change on the Missouri River floodplain. *BioScience* 62(2):123-135.
- Kase, A. 2017. Surveys for false map turtles and identification of key nesting sites in the upper Missouri River of South Dakota. Final Report to GFP, Pierre, SD.
- Kase, A. 2023. The effects of anthropogenic modification to the landscape on turtle distribution and health in South Dakota. M.S. thesis. University of South Dakota, Vermillion, SD.
- Kiesow, A.M. and D.R. Davis. 2020. Field guide to amphibians and reptiles of South Dakota – Second Edition. South Dakota Department of Game, Fish and Parks, Pierre, South Dakota.

- Larocque, S.M., S.J. Cooke, and G. Blouin-Demers. 2012. Mitigating bycatch of freshwater turtles in passively fished fyke nests through the use of exclusion and escape modifications. *Fisheries Research* 125-126:149-155.
- Merchand, M.N. and J.A. Litvaitis. 2004. Effects of landscape composition, habitat features and nest disturbance on predation rates of simulated turtle nests. *Biological Conservation* 117:243-251.
- NatureServe. 2017. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.0. NatureServe, Arlington, VA. Available <http://explorer.natureserve.org>
- Smith, B. and H. Quinn. 2012. Threats to South Dakota amphibians and reptiles. Final report to South Dakota Department of Game, Fish and Parks. Department of Biology, Black Hills State University, Spearfish, SD.
- South Dakota Department of Game, Fish and Parks (GFP). 2025. South Dakota Wildlife Action Plan. Wildlife Division Report 2014-03. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- South Dakota Department of Game, Fish and Parks (GFP). 2025. South Dakota Wildlife Action Plan. Wildlife Division Report 2025-02. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Timken, R.L. 1968. The distribution and ecology of turtles in South Dakota. Ph.D. dissertation. Department of Zoology, University of South Dakota, Vermillion, SD.

SUMMARY OF UPDATES IN 2026:

- The state distribution map has been updated to reflect known occurrences and primary range.

STATE T&E SPECIES STATUS REVIEW

Species Name: Lined Snake, *Tropidoclonion lineatum*

South Dakota Status, including legal status and special listings:

- State Endangered (SD Administrative Rule 41:10:02:07. List of endangered reptiles).
- Monitored by the South Dakota Nongame Conservation Program.
- State Heritage rank S2 (imperiled; state species rank last reviewed on 19 April 2020).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan (SDGFP 2025).

Federal Status:

- No federal protection.
- NatureServe global rank of G5 (Demonstrably secure, although it may be rare in some portions of the range); global rank last reviewed 07 Sep 2006.

Basis For New Listing, Status Change (T to E, or E to T), Or Continued Listing with Same Status:

Status change in 1996 from state threatened to state endangered and the current recommendation is to continue listing with this status. The species currently has a secure global rank but is considered critically imperiled in South Dakota due to continued habitat loss and alteration to urban and agricultural development.

Description, Biology and Life History:

Lined snakes are small (8-12 inches), gray/brown in color with 3 light-colored stripes running the length of its body with the central stripe being the most distinctive. The stripes are bordered by black dots that are more noticeable on juveniles. The Lined snake can be distinguished from similar looking garter snake species (*Thamnophis* spp.) by a double row of black half-moon shaped crescents along the belly.

The lined snake is most active from April to October, and activity appears to increase after periods of rain. Individuals are solitary but can be found in groups in overwintering dens and when males are seeking females during the breeding season. Individuals likely mate in the fall with egg fertilization delayed until the following spring. Female gives birth to 6-7 live young during mid-August.

The lined snake's diet consists of invertebrates, primarily earthworms. They forage at night and during rainstorms when earthworms are active or near the soil surface. Predators of the lined snake include a variety of carnivorous mammals and birds.

Habitat:

Found in open grasslands and sparsely wooded areas. Lined snakes prefer moist habitat near springs, ponds, marshes, streams and rivers. They are also found in urban areas such as city lots, parks, cemeteries and gardens. These snakes are active at night and typically shelter beneath rocks and logs during the day. They overwinter in underground burrows.

Distribution Within the State:

Over (1923) and Wright and Wright (1957) reported the distribution was restricted to the southeast corner of South Dakota along the Big Sioux River corridor. This is still largely the case, although numbers are probably diminished from the past. This species has been conclusively documented in four counties and two subbasins in South Dakota (Figure 1).

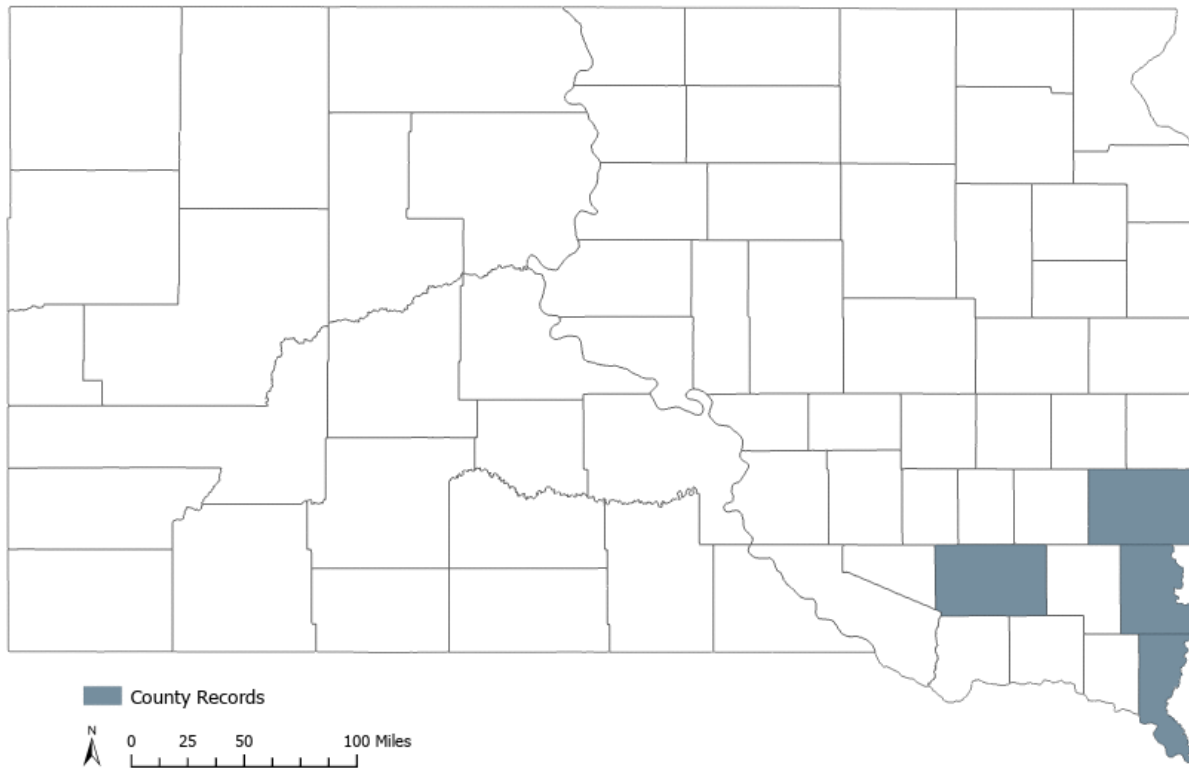


Figure 1. Current known county distribution of lined snake (*Tropidoclonion lineatum*) in the state.

Conservation / Management Considerations:

In addition to natural habitats, lined snakes are also found in urban settings. Wetland drainage, agricultural development, pesticide use, and road mortalities are some of the main threats to this species. Continued survey work is needed to identify population locations and to locate potential areas of high road mortalities.

There is a need to continue to conduct survey and monitoring work to document populations and potential road crossing hazards. In areas where hazards are identified, drift fences and road crossing culverts could be established to mitigate loss. Current documented populations should be protected by working with landowners to establish buffer zones around agricultural fields where lined snakes are known to occur.

Conservation Efforts in South Dakota:

Past:

Non-GFP Projects:

- Fogell (2003) conducted herpetofauna surveys on state owned lands, with a focus on the lined snake.
- Jessen (2002) conducted Blanding's turtle and herpetology surveys in northeastern South Dakota.
- Jessen (2003) surveyed the herpetofauna of the Big Sioux River Valley.
- Jessen (2005) conducted herpetological surveys of eastern South Dakota.

GFP has funded multiple research projects through South Dakota State Wildlife Grants (SWG):

- SWG T-8-R-1 surveyed ten priority habitats to collect baseline information on poorly studied reptile and amphibian species (Backlund 2005).
- SWG T-57-R-1 and SWG T-102-R-1 evaluated a variety of threats to herpetofauna in South Dakota as a component of the South Dakota Wildlife Action Plan revision (GFP 2014, 2025).

GFP has also funded projects through the former Wildlife Diversity Small Grants Program:

- Surveys for lined snakes were conducted to improve understanding of their distribution and occurrence in southeastern South Dakota (Davis 2018; Davis and Farkas 2018).
- Genetic analyses were conducted from 2022 to 2025 to characterize the genetic makeup of lined snake populations in South Dakota (Davis 2025).
- Online resources (sdherps.org) were developed and maintained to engage South Dakota citizens in amphibian and reptile identification, distribution, and conservation (Davis et al. 2018; Davis 2020).

Current:

Statewide road-cruising snake surveys under SWG T-107-R-1 began in fall 2025 and will include spring and fall sampling periods through spring 2027. Beginning in fall 2027, the project will incorporate a targeted effort for lined snakes, including road-cruising, coverboard arrays, and walkabout surveys in areas adjacent to suitable habitat. Additionally, an opportunistic snake Survey123 form has been shared with GFP staff to allow reporting of incidental snake sightings outside of formal survey periods.

Recovery Criteria:

To be downlisted from endangered, this snake needs to have occurrence records from at least 6 counties and 2 subbasins within a rolling 10-year period. To be delisted from threatened, in addition to still meeting the above criteria, lined snakes must also have evidence of reproduction from at least 4 counties and 2 subbasins within a rolling 5-year window. Evidence of reproduction can include gravid females, newly hatched or young of the year snakes, and nests. While county boundaries do not have biological significance, finding updated occurrence records of a reproducing population from more areas than is known

currently would suggest a healthier and more widespread population than current data indicates.

Recovery Criteria Considerations:

Additional research and conservation efforts are needed to better define the distribution and management needs of this species in South Dakota, including:

- Surveys should be conducted on public lands in the Lower James, Vermillion, and Lower Big Sioux subbasins.
- Working with interested landowners and internal GFP programs to identify and implement management practices that support the conservation of this species throughout its range.

Primary Reviewer:

J.M. Weidler, Nongame Conservation Biologist, GFP, Sioux Falls

Other Staff or Experts Involved in the Review:

Kailey Meacham, Nongame Conservation Biologist, GFP, Fort Pierre

Mandy Pearson, Senior Wildlife Biologist, GFP, Rapid City

Jessica Speiser, Nongame Conservation Biologist, GFP, Sioux Falls

Date Review Finalized: 2026

Dates of Other Reviews, if appropriate: 2018, 2020, 2022, and 2024.

References or Information Sources:

- Backlund, D. 2005. South Dakota statewide herpetology survey 2004. Final report to the South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Ballinger, R.E., J.W. Meeker, and M. Thies. 2000. A checklist and distribution maps of the amphibians and reptiles of South Dakota. Transactions of the Nebraska Academy of Sciences 26:29-46.
- Davis, D.R. 2018. Surveys for the state-endangered lined snake (*Tropidoclonion lineatum*) along the lower James River Valley. Final report to the South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Davis, D. R. 2020. New resources and continued engagement to better inform the public on the amphibians and reptiles of South Dakota. Final report to South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Davis, D. R. 2025. Characterizing the genetic makeup of lined snakes (*Tropidoclonion lineatum*). Final report to South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Davis, D. R. and J. K. Farkas. 2018. New county records of amphibians and reptiles from South Dakota, USA from 2017. Herpetological Review 49:288–295.
- Davis, D. R., C. E. Smith, and D. Becker. 2018. Creating online resources to engage South Dakota citizens in amphibian and reptile identification, distribution, and conservation. Final report to South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Fogell, D.D. 2003. Amphibian and reptile surveys of southeastern South Dakota with an emphasis on the state-endangered lined snake (*Tropidoclonion lineatum*) May 2002 –

- June 2003. Final report to the South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Jessen, T. 2002. Blanding's turtle and herpetology survey of northeastern South Dakota. Final report to South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Jessen, T. 2003. A survey of the herpetofauna of the Big Sioux River Valley. Final report to the South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Jessen, T. 2005. Herpetological survey of eastern South Dakota 2005. Final report to the South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Kiesow, A.M. 2020. Field guide to amphibians and reptiles of South Dakota. 2nd Edition. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- NatureServe. 2026. NatureServe Explorer: An online encyclopedia of life [web application]. NatureServe, Arlington, VA. Available <https://explorer.natureserve.org>
- Over, W. 1923. Amphibians and reptiles of South Dakota. South Dakota Geological and Natural History Survey Series XXIII Bulletin 12:1-34.
- South Dakota Department of Game, Fish and Parks (GFP). 2014. South Dakota Wildlife Action Plan. Wildlife Division Report 2014-03. South Dakota Dept. of Game, Fish and Parks, Pierre, SD.
- South Dakota Department of Game, Fish and Parks (GFP). State Wildlife Action Plan. 2025. Wildlife Division Report 2025-02. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Wright, A.H. and A.A. Wright 1957. Handbook of snakes of the United States and Canada. Comstock Publishing Associates, a division of Cornell University Press, Ithaca, NY.

SUMMARY OF UPDATES IN 2026:

- Developed recovery criteria and recovery criteria considerations.
- Updated conservation efforts.

STATE T&E SPECIES STATUS REVIEW

Species Name: Black-footed Ferret, *Mustela nigripes*

South Dakota Status, Including Legal Status and Special Listings:

- State endangered (SD Administrative Rule 41:10:02:03, List of endangered mammals).
- Monitored by South Dakota Nongame Conservation Program.
- State Heritage rank S1 (critically imperiled species).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan (GFP 2025).

Federal Status:

- NatureServe Global Rank G1 (critically imperiled species); last reviewed 4 April 2016.
- Federally endangered. This species was listed as endangered in 1967 pursuant to precursor legislation to the Endangered Species Act (ESA) of 1973. Second revision of the recovery plan was published in 2013 (USFWS 2013).

Basis For New Listing, Status Change (T to E, Or E to T), or Continued Listing with Same Status:

Specific justification for including the black-footed ferret on the list of state endangered mammals is unknown but was presumably intended to mirror its federal status. If this species is down listed or delisted by the U.S. Fish and Wildlife Service (USFWS), we will reevaluate whether continued listing as a state endangered species is warranted.

Description, Biology and Life History:

The black-footed ferret is a mink-like mammal that is 20–24 inches long and weighs 1.5–2.5 lbs. As indicated by its common name, the feet and legs are black. It also has a black face mask and black tipped tail. Upper body parts are yellowish buff.

Black-footed ferrets are solitary except during breeding. Breeding begins at approximately one year of age in March through early April. Gestation is approximately 42 days with an average litter of 3.5 kits born in an underground burrow and cared for exclusively by the female. Kits appear above ground in July and are ready to disperse in September or October. Young of the year may stay in the mother's home range; males disperse farther than females.

This nocturnal predator is extremely specialized, relying almost exclusively on prairie dog colonies for both food and shelter. Hunting occurs underground. Prey is cached and one prairie dog is consumed every three to four days. Little information exists on life expectancy, but individuals have been known to live up to five years in the wild.

Habitat:

Black-footed ferrets live in grassland habitats and use prairie dog burrows for shelter and denning.

Distribution Within the State:

Historically, black-footed ferret distribution in South Dakota corresponded with the distribution of black-tailed prairie dogs, with ferrets occurring throughout western South Dakota and areas of eastern South Dakota containing prairie dog colonies or other burrowing rodents. Although black-footed ferrets still rely on prairie dog colonies for their distribution, their range has changed over time and the current distribution primarily reflects reintroduction areas (Figure 1).

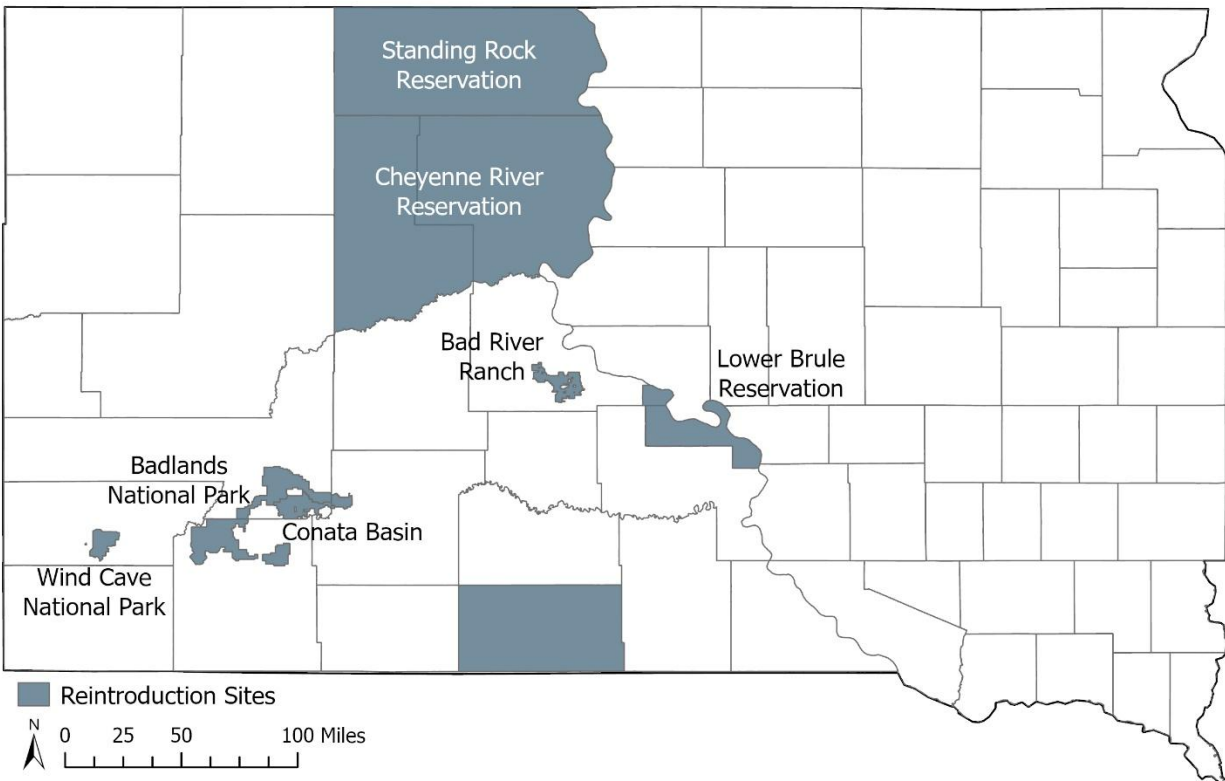


Figure 1. Black-footed ferret (*Mustela nigripes*) reintroduction areas in South Dakota.

Conservation / Management Considerations:

Historically, the close association of black-footed ferrets with prairie dogs has also been the primary reason for its decline. Up until the 1960's, the number of prairie dogs and their colony acres were in steep decline. This decrease was due to the conversion of suitable habitat to cropland, prairie dog poisoning campaigns, and disease in both prairie dogs and black-footed ferrets. Some of those same conservation challenges remain today. Current threats to black-footed ferret recovery include prairie dog colony size (i.e., maintaining colony acres of sufficient size and juxtaposition) and disease management (e.g., sylvatic plague). A minimum of approximately 1,500 acres of occupied black-tailed prairie dog habitat is required to support a population of 30 adult black-footed ferrets. Natural predation (e.g., coyote, fox, badger, great horned owl, golden eagle) also poses challenges for black-footed ferret recovery. Future research should focus on understanding sylvatic plague ecology, improving sylvatic plague mitigation methods (e.g., vaccination, insecticide application), improving reintroduction methods (e.g., captive rearing, captive release, translocation of wild animals) as well as determining the influence of predators and prey on

black-footed ferret populations. The distribution and prevalence of sylvatic plague should be monitored.

Conservation / Management Efforts:

Past:

The last known stronghold of ferrets in South Dakota occurred in Mellette County. After the discovery of this population in 1964, extensive research was conducted before the last individual in this population was observed in 1974. After the loss of this population, the species was thought extinct throughout its range until another population was discovered in Wyoming in 1981.

The first black-footed ferret recovery plan was drafted in 1978, a second plan was finalized in 1988, and the most recent published in 2013 (USFWS 2013). The USFWS conducts Species Status Assessments (SSA) to determine the current and future status of listed species and assess their future viability. The SSA completed for the Black-footed ferret in 2019 predicted that sylvatic plague and limited habitat will continue to affect species viability and unless management actions are intensified, viability will likely decline under all scenarios and timeframes analyzed (USFWS 2019). This SSA was used to inform the most recent 5-year review of the black-footed ferret completed in 2025 (USFWS 2025). Five-year reviews are conducted by the USFWS to determine if the status of listed species should be changed or removed from the federal list. No change in species status was recommended.

Since 1996, the South Dakota Department of Game, Fish and Parks (GFP) has been a part of the Black-footed Ferret Recovery Implementation Team (BFFRIT). The team was created under the authority of the ESA to help implement recovery plans and work towards recovery by integrating the expertise and resources of various partners. Similarly, the South Dakota Recovery Implementation Team shares relevant information and resources for the recovery and conservation of the black-footed ferret in the state. GFP is also a member of this team.

There have been 34 reintroduction sites in North America, including 8 reintroduction projects in South Dakota: Badlands National Park, Buffalo Gap National Grassland, Cheyenne River Sioux Tribe Reservation, Rosebud Sioux Tribe Reservation, Lower Brule Sioux Tribe Reservation, Wind Cave National Park, Bad River Ranch, and Standing Rock Sioux Tribe Reservation (Table 1).

Table 1. Updates from Black-footed ferret reintroduction sites in South Dakota in 2025.

Site Name	Year(s) Initiated	Active (2025)	Acres Surveyed for Ferrets (Fall 2025)	Min # of Ferrets (Fall 2025)	Max # of Ferrets (Year)	# Kits Released (2025)
Conata Basin/Badlands	1994, 1996	Yes	15,383	65	355 (2007)	0
Cheyenne River Sioux Tribe	2000	Yes	1,200	3	173 (2006)	16
Rosebud Sioux Tribe	2003	Yes*	-	-	30 (2004)	0
Lower Brule Sioux Tribe/FPNG	2006	Yes	2,561	45	45 (2025)	34
Wind Cave NP/Custer SP	2007	Yes	2,095	40	49 (2010)	0
Bad River Ranch	2017	No	1,500	0	8 (2017)	0
Standing Rock Sioux Tribe	2021	Yes	1,913	21	21 (2025)	30
Total			24,652	174		80

*Several roadkill ferrets were found in the Rosebud Sioux Tribe reintroduction area in 2025, although no further ferret work was done.

The reintroductions on Badlands National Park and Buffalo Gap National Grassland have since merged into one population (Conata Basin/Badlands). Before the outbreak of plague in the Conata Basin in 2008, this population was considered to be the most successful reintroduction site in the United States. Wild-born ferrets from this site were translocated to other reintroduction sites to augment other populations. Black-footed ferret reintroduction on the Cheyenne River Sioux Reservation was also considered successful, producing approximately 600 kits since the first release of ferrets there in 2000. By 2006, the Cheyenne River Sioux Tribe translocated ferrets for reintroduction of the Lower Brule Sioux Tribe and Rosebud Sioux Tribe reservations. However, by 2016, prairie dog colonies occupied an estimated 10% of their 2000 acreage, and ferrets were no longer found on the Cheyenne River Sioux Reservation. Black-footed ferrets have since been intermittently documented in Corson County, with the most recent roadkill report occurring in November 2012. Genetic testing strongly suggested that this individual originated from the reintroduced population on the Cheyenne River Sioux Reservation. In October 2021, 28 captive-reared ferrets were reintroduced onto tribal lands of the Standing Rock Sioux Tribe in Corson County, SD. This is the eighth reintroduction in South Dakota.

The USFS, National Park Service, USFWS, Cheyenne River, Rosebud and Lower Brule Sioux tribes monitor the success of reintroductions in South Dakota. Results are shared annually with GFP through the BFFRIT. Black-footed ferrets are highly susceptible to plague, and mortality rates are high for black-tailed prairie dogs. The first documented active outbreak (epizootic) in black-tailed prairie dogs in South Dakota occurred in 2005 in Oglala Lakota County. Based on available information (plague positive animals, flea samples or confirmed reports of prairie dog dieoffs), plague has a likely distribution across much of

western South Dakota. This does not mean that an epizootic is or has occurred in these areas, but that the bacterium *Yersinia pestis* that causes plague is known to be present.

The U. S. Geological Survey (USGS) National Wildlife Health Center and other cooperators have developed a sylvatic plague vaccine (SPV) for prairie dogs that is delivered through an oral bait. The efficacy of this vaccine was tested in field trials at 29 sites in seven states from 2013 to 2015 (Rocke et al. 2017). This oral vaccine was applied at Conata Basin/Badlands, Wind Cave National Park, and Bad River Ranch reintroduction sites in 2017-2019. Studies to determine the efficacy, resistance, and effect on non-target arthropods of deltamethrin and two additional pulicides (fipronil and cyfluthrin) are being conducted at the Conata Basin/Badlands site under the direction of David Eads, Fort Collins Science Center, USGS. Plague management using deltamethrin or fipronil occurs at Bad River Ranches, Conata Basin/Badlands, Cheyenne River Sioux Reservation, Lower Brule Sioux Reservation, Standing Rock Sioux Reservation, and Wind Cave National Park reintroduction sites.

GFP has funded numerous research projects through South Dakota State Wildlife Grants (SWG):

- SWG T-35-R-1 that investigated the relationship between prairie dog ecology and black-footed ferret resource selection (Eads 2009, Eads et al. 2010, 2011a, 2011b, 2012a, 2012b, 2012c; Jachowski et al. 2008, 2010, 2011),
- SWG T-38-R-1 that investigated the factors that affect territoriality and productivity of black-footed ferrets (Grassel 2015, Grassel et al. 2016),
- SWG T-60-R-1 that preliminarily investigated the role of small mammals in the maintenance of plague (Maestas and Britten 2017, 2019; Maestas 2018)

GFP also funded projects through Wildlife Diversity's Small Grants Program (Livieri 2013, Mize and Britten 2013, Mize et al. 2017).

To encourage private and tribal landowners to become willing participants in black-footed ferret reintroductions on their property, the USFWS established a Programmatic Black-footed Ferret Safe Harbor Agreement (SHA) in 2013. This agreement provides participating landowners assurances that they will not be subject to additional future regulatory restrictions or commitments. This SHA is applicable across the 12-state historical range of the black-footed ferret, including South Dakota. The reintroduction site on Bad River Ranch in Stanley County is the first reintroduction site in the state located on privately-owned land and was made possible by landowner enrollment in the SHA. The development of the SHA was supported by a Memorandum of Understanding (MOU) among the USFWS, NRCS, USGS, U.S. Animal and Plant Inspection Service and WAFWA, of which GFP is a member.

Ongoing:

Given the dependence of black-footed ferrets on prairie dogs, prairie dog conservation plays an important role in black-footed ferret recovery. Since 2002, GFP has been monitoring colony acreage and distribution of black-tailed prairie dogs in the state. This information is collected as part of the state conservation and management plan for the black-tailed prairie dog (Cooper and Gabriel 2005), hereafter referred to as management plan. These data are used not only for determining changes in state management actions related to black-tailed prairie dogs but have proven beneficial for the conservation and management of other

wildlife species. South Dakota non-tribal prairie dog acreage are estimated every three years, based on the requirements outlined in the management plan. The statewide (199,472 acres; 80,723.5 ha) and non-tribal (166,958 acres; 67,565.5 ha) colony acreage goals set forth in the management plan (Cooper and Gabriel 2005) were achieved in 2020 (Kempema et al. 2022) and 2023 (SDGFP unpublished), thus no changes in current management action are required.

Reintroduction sites in South Dakota remain of critical importance to the recovery of this species. In 2025, ~60% of all wild ferret detections occurred in South Dakota.

Recovery Criteria:

GFP will cooperate with the USFWS in meeting downlisting and delisting goals detailed in the recovery plan (U.S. Fish and Wildlife Service 2013). State-specific delisting guidelines are suggested in the USFWS recovery plan for the species. The recommended contribution from South Dakota is 204 adult ferrets that would require 30,000 colony acres.

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Other Staff or Experts Involved in the Review:

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Date Updated Review Finalized: 2026

Dates of Other Reviews, if appropriate: 2018, 2020, 2022, and 2024

References or Information Sources:

- Cooper, J., and L. Gabriel. 2005. South Dakota black-tailed prairie dog conservation and management plan.
- Eads, D. A. 2009. Evaluation and development of black-footed ferret resource selection models. M.S. Thesis, University of Missouri, Columbia.
- Eads, D.A., D.E. Biggins, D.S. Jachowski, T.M. Livieri, J.J. Millspaugh, and M. Forsberg. 2010. Morning ambush attacks by black-footed ferrets on emerging prairie dogs. *Ethology, Ecology & Evolution* 22:345-352.
- Eads, D. A., J. J. Millspaugh, D. E. Biggins, D. S. Jachowski, and T. M. Livieri. 2011a. Evaluation of a black-footed ferret resource selection model. *Journal of Wildlife Management* 75:1155-1163.
- Eads, D. A., J. J. Millspaugh, D. E. Biggins, T. M. Livieri, and D. S. Jachowski. 2011b. Post-breeding resource selection by adult black-footed ferrets in the Conata Basin, South Dakota. *Journal of Mammalogy* 92:760-770.
- Eads, D. A., D. E. Biggins, D. Marsh, J. J. Millspaugh, and T. M. Livieri. 2012a. Black-footed ferret digging activity in summer. *Western North American Naturalist* 72:140- 147.
- Eads, D. A., D. S. Jachowski, D. E. Biggins, T. M. Livieri, M. R. Matchett, and J. J. Millspaugh. 2012b. Resource selection models are useful in predicting distributions of black-footed ferrets in prairie dog colonies. *Western North American Naturalist* 72:206-215.

- Eads, D. A., D. S. Jachowski, J. J. Millspaugh, and D. E. Biggins. 2012c. Importance of lunar and temporal conditions for spotlight surveys of adult black-footed ferrets. *Western North American Naturalist* 72:179-190.
- Grassel, S. M. 2015. Ecological relationships of black-footed ferrets, American badgers, and black-tailed prairie dogs in South Dakota. Ph.D. Dissertation, University of Idaho, Moscow.
- Grassel, S. M., J. L. Rachlow, and C. J. Williams. 2016. Reproduction by black-tailed prairie dogs and black-footed ferrets: Effects of weather and food availability. *Western North American Naturalist* 76:405-416.
- Griebel, R. L. 2015. Conata Basin/Badlands Area 2015 Plague Management Report. Buffalo Gap National Grassland, Wall Ranger District.
- Higgins, K. F., E. D. Stukel, J. M. Goulet, and D. C. Backlund. 2000. Wild Mammals of South Dakota. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Jachowski, D. S., J. J. Millspaugh, D. E. Biggins, T. M. Livieri, M. R. Matchett. 2008. Implications of black-tailed prairie dog spatial dynamics to black-footed ferrets. *Natural Areas Journal* 28:14-25.
- Jachowski, D. S., J. J. Millspaugh, D. E. Biggins, T. M. Livieri and M. R. Matchett. 2010. Home-range size and spatial organization of black-footed ferrets *Mustela nigripes* in South Dakota, USA. *Wildlife Biology*. 16:66-76.
- Jachowski, D.S., J.J. Millspaugh, D.E. Biggins, T.M. Livieri, M.R. Matchett, and C.D. Rittenhouse. 2011. Resource selection by black-footed ferrets in South Dakota and Montana. *Natural Areas Journal* 31:218-225.
- Jackson, T. 2020. Strategies for Black-footed Ferret (BFF) Field Activities, Special Precautions due to COVID-19, June 2, 2020. Black-footed Ferret Conservation Subcommittee, Black-footed Ferret Recovery Implementation Team, U.S. Fish and Wildlife Service, Denver, CO.
- Kempema, S. L. F., R. Scott, and J. M. Weidler. 2022. Colony acreage and distribution of the black-tailed prairie dog in South Dakota, 2020. South Dakota Department of Game, Fish and Parks Wildlife Division Report Number 2022-04, Pierre, South Dakota USA. <https://gfp.sd.gov/userdocs/docs/prairiedogmappingreport.pdf>. Accessed 13 June 2024.
- Livieri, T. L. 2013. Assessing the risk of plague to black-footed ferrets in Conata Basin, South Dakota. Final Report to South Dakota Department of Game, Fish and Parks 28 April 2013. Prairie Wildlife Research, Wellington, Colorado. 12 pages.
- Livieri, T. 2023. Conata Basin/Badlands National Park Black-footed Ferret Monitoring Report Summer/Fall 2023. Prairie Wildlife Research, Stevens Point, WI, USA.
- Maestas, L. P. and H. B. Britten 2017. Flea and Small Mammal Species Composition in Mixed-Grass Prairies: Implications for the Maintenance of *Yersinia pestis*. *VectorBorne and Zoonotic Diseases* 17: 467-474.
- Maestas, L. P. 2018. The vector chronicles: The implications of plague management on ectoparasite and host ecology, and the search for *Ixodes scapularis* and *Borrelia burgdorferi* in South Dakota. Ph.D. Dissertation, University of South Dakota, Vermillion.
- Maestas, L. P. and H. B. Britten. 2019. Effects of deltamethrin treatment on small mammal and ectoparasite population dynamics and plague prevalence in a North American mixed-grass prairie system. *Journal of Vector-Borne and Zoonotic Diseases* 19:274-283.

- Mize, E. L. and H. B. Britten. 2013. *Yersinia pestis* prevalence in fleas collected from South Dakota swift fox and black-footed ferrets. Final Report to South Dakota Department of Game, Fish and Parks 20 March 2013. University of South Dakota, Vermillion. 11 pages.
- Mize, E. L., S. M. Grassel and H. B. Britten. 2017. Fleas of black-footed ferrets (*Mustela nigripes*) and their potential role in the movement of plague. *Journal of Wildlife Diseases* 53: 521-531.f
- Rocke, T. E., D. W. Tripp, R. E. Russell, R. C. Abbott, K. L. D. Richgels, M. R. Matchett, D. E. Biggins, R. Griebel, G. Schroeder, S. M. Grassel, D. R. Pipkin, J. Cordova, A. Kavalunas, B. Maxfield, J. Boulerice, M. W. Miller. 2017. Sylvatic Plague Vaccine Partially Protects Prairie Dogs (*Cynomys* spp.) in Field Trials. *EcoHealth*. DOI: 10.1007/s10393-017-1253-x.
- South Dakota Department of Game, Fish and Parks (GFP). 2025. South Dakota Wildlife Action Plan. Wildlife Division Report 2025-02. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- U.S. Fish and Wildlife Service (USFWS). 2013. Recovery plan for the black-footed ferret (*Mustela nigripes*). U.S. Fish and Wildlife Service, Denver, Colorado. 157 pp. Available online at: <https://ecos.fws.gov/ecp/species/6953>.
- U.S. Fish and Wildlife Service (USFWS). 2019. Species Status Assessment Report for the Black-footed Ferret (*Mustela nigripes*). 134 pp. Available online at: <https://ecos.fws.gov/ecp/species/6953>.
- U.S. Fish and Wildlife Service (USFWS). 2025. Five-year status review for the black-footed ferret. January 21, 2020. Available online at: <https://ecos.fws.gov/ecp/species/6953>.

SUMMARY OF UPDATES IN 2026:

- Updated reintroduction site map.
- Provided reintroduction site updates for each site in South Dakota.

STATE T&E SPECIES STATUS REVIEW

Species Name: Swift Fox, *Vulpes velox*

South Dakota Status, Including Legal Status and Special Listings:

- State threatened (SD Administrative Rule 41:10:02:04, List of threatened mammals).
- Monitored by South Dakota Nongame Conservation Program.
- State Heritage rank S3 (vulnerable; state species rank last reviewed 2020).
- Included as a Species of Greatest Conservation Need in the South Dakota Wildlife Action Plan (GFP 2025).
- Classified in South Dakota statute as a fur-bearing animal (SD Codified Law 41-1-1). Due to its state threatened designation by South Dakota Game, Fish and Parks (GFP) Commission, no harvest by trapping or shooting is allowed. Take is allowed only through a permitting process for certain authorized purposes.

Federal Status:

- NatureServe global rank G3 (vulnerable); last reviewed 5 April 2016.
- Considered a sensitive species in Region 2 of the U.S. Forest Service.
- Considered a sensitive species by the Bureau of Land Management in South Dakota.
- A candidate species under the Endangered Species Act from 1995 through 2001.

Basis For New Listing, Status Change (T to E, or E to T), or Continued Listing with Same Status:

Specific justifications for original state listing are unknown, likely the result of inadequate documentation and a declining population. Continued listing as a state threatened species is recommended.

Description, Biology and Life History:

Swift foxes are small, long-legged foxes with tan coloration, standing approximately 12 inches at the shoulder and measuring 28–32 inches in total length. The dorsal pelage is yellowish to buff-gray, with white underparts. The legs are tan to orange, and the tail is bushy with a black tip. Black facial markings on either side of the snout distinguish the species from young coyotes. Unlike red foxes, swift foxes do not exhibit black coloration on the legs.

Breeding occurs in February or March, with an average gestation period of approximately 7.5 weeks. Litters of about four young are born in April or May. Pups emerge above ground at 4 to 5 weeks of age and disperse from their natal den in early fall.

Swift foxes are opportunistic foragers traveling long distances during the night in search of prey (e.g., jackrabbits, cottontails, prairie dogs, ground squirrels, mice, insects, birds and carrion). Natural sources of mortality include predation by coyotes, badgers, bobcats, red fox, and golden eagles.

Habitat:

Swift foxes live in open, level, or gently rolling landscapes with short-stature land cover (< 12 inches) providing good mobility and visibility. Swift foxes use the modified burrows of other animals or dig their own burrows for use as year-round dens. Dens may be in a variety of places including hilltops, slopes, ridges, level pastures, ditches, cultivated fields, rangeland or prairie dog colonies.

Distribution Within the State:

Historically, swift foxes are believed to have been associated with the shortgrass and mixed-grass prairies of North America. In South Dakota, with the exception of the extreme eastern portion of the state, the species is generally depicted in reference materials as falling within its historical range (Figure 1). The easternmost historical record in South Dakota is from Spink County. A small population persists in southern Fall River County.

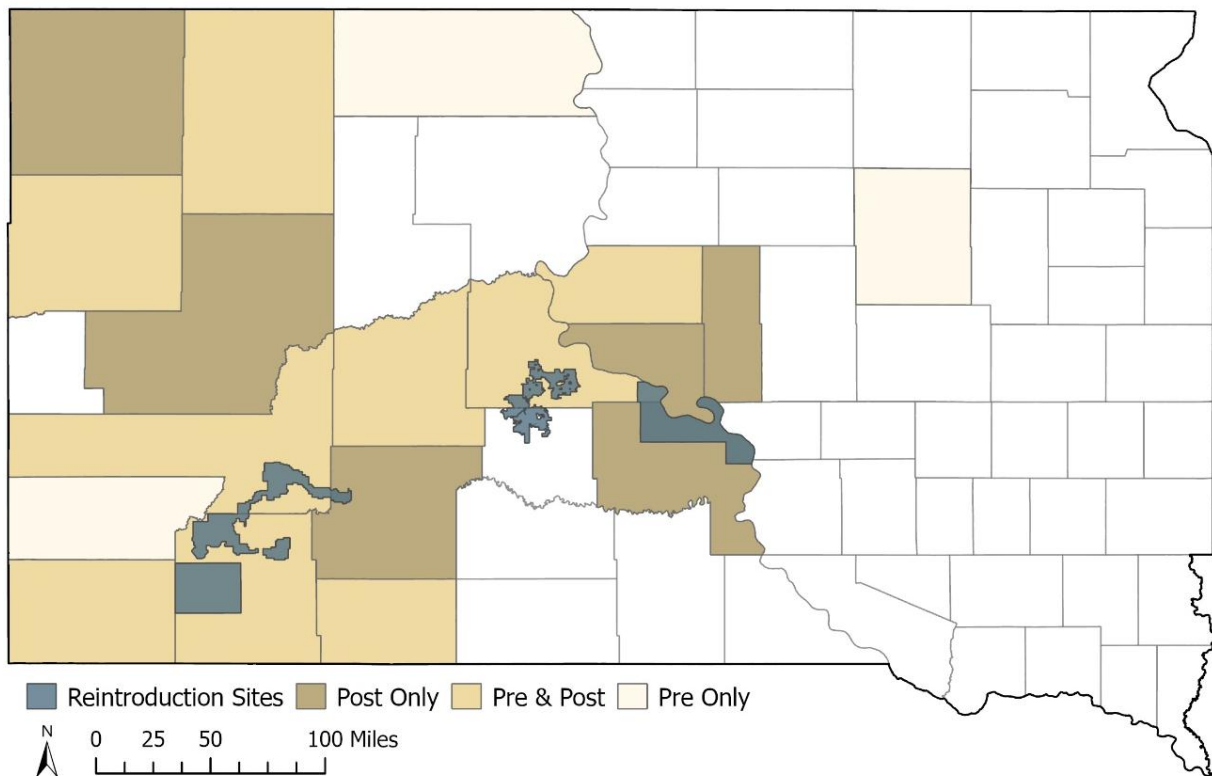


Figure 4. Counties with confirmed swift fox (*Vulpes velox*) reports (1963–2025) and general locations of reintroduction sites in South Dakota. County reports are separated into records before the year 2000 (Pre 2000), after 2000 (Post 2000), and records before and after 2000 (Pre & Post). Swift fox reports are comprised of sightings, incidental take, roadkill, den sites and one location of a radio collar. Reintroduction localities were combined efforts by Oglala Sioux Tribe, Badlands National Park, Buffalo Gap National Grassland, Turner Endangered Species Fund, and Lower Brule Sioux Tribe.

Conservation / Management Considerations:

Swift fox recovery in South Dakota is likely limited by a combination of biotic, habitat-related, and human-caused factors. Predation and interspecific competition with coyotes and red foxes are recognized constraints on swift fox population growth, with coyote predation identified as the primary cause of mortality in northwestern South Dakota (Stukel 2011; Mitchell 2018b). Grassland conversion also remains an ongoing concern because it reduces and fragments the open prairie habitat associated with this species. Near the eastern edge of its range, years of above-average precipitation may promote taller and denser vegetation in the absence of grazing. Additional human-related sources of mortality include vehicle collisions, shooting, trapping, and poisoning. Secondary poisoning from anticoagulant rodenticides used in prairie dog control may present an added risk.

Disease-related impacts to prey communities may also indirectly affect swift fox persistence in western South Dakota. Plague can reduce populations of black-tailed prairie dogs, rabbits, and other small mammals that contribute to prey availability, while also altering vegetation structure on prairie dog colonies.

The northwestern South Dakota swift fox population appears to differ from other populations in several respects, including relatively high estimated annual survival and selection of den sites located further from roads, at approximately 600 m on average (Mitchell 2018b). At the same time, the small size and relative isolation of this population may increase its vulnerability to inbreeding and loss of genetic diversity over time.

Several reintroduction efforts have also been undertaken in South Dakota with the goal of improving connectivity among release sites and linking those sites with the naturally occurring population. However, these efforts have not resulted in the establishment of persistent populations at all sites, and some reintroduced populations declined over time. These outcomes suggest that additional reintroductions may be premature unless the factors limiting establishment, persistence, and connectivity are better understood and addressed.

Conservation Efforts in South Dakota:

Past:

Since 1994, GFP has been an active participant in the Swift Fox Conservation Team (SFCT). The SFCT is comprised of 10 state wildlife management agencies and other interested cooperators within the species' range. The SFCT developed and updated *A Conservation Assessment and Conservation Strategy for Swift Fox in the United States* (Kahn et al. 1997, Stukel 2011). The goal of this assessment and strategy is to maintain or restore swift fox populations in each state to provide spatial, genetic, and demographic structure of the U.S. swift fox population to ensure long-term viability, provide species management flexibility, and encourage population connectivity.

Four reintroductions have occurred in South Dakota (Figure 1):

1. Turner Endangered Species Fund released 180 wild-caught foxes and 46 captive-born pups onto Bad River Ranches in Stanley County from 1999 through 2007.

Observations of swift fox have occurred in this area (Stratman 2015). However, swift fox have not become established at this site.

2. Badlands National Park and Buffalo Gap National Grassland released 114 wild-caught foxes from 2003-2006 in Pennington County. Swift fox are present in this area. Levels of genetic diversity in this population indicate a successful reintroduction (Sasmal et al. 2012). However, Nevison (2017) expressed concern regarding the status of this population and recommended that no additional reintroductions be conducted until factors limiting success are addressed.
3. The Lower Brule Sioux Tribe released 119 wild-caught swift fox from 2006 through 2008 on the Lower Brule Sioux Reservation in Lyman and Stanley counties. Swift fox have not become established at this site.
4. Oglala Sioux Parks and Recreation Authority released 79 wild-caught swift fox onto Pine Ridge Reservation from 2009 through 2010 in Oglala Lakota County. Swift fox are present on the reservation. Camera and live-trapping efforts in 2013 and 2014 documented 4 dens and at least six individuals (Stratman 2015).

One of the goals of establishing multiple reintroduction sites is to promote connectivity among those populations and with a small naturally occurring population near Ardmore, South Dakota. There is evidence that this connectivity has occurred.

GFP has funded or partially funded a number of swift fox research projects (summarized in Table 1, full citations in references) through state wildlife grants (SWG), the former Small Grants Program, and other sources of financial support. Research project reports are submitted to SFCT and are available for viewing at the team's website:

<https://cpw.cvlcollections.org/items/show/410>.

Table 4. Swift fox (*Vulpes velox*) research projects done in South Dakota that were funded or partially funded by GFP.

Funding Source	Researcher(s)	Year	Project Title
SWG T-78-R1	Emily L. Mitchell	2018a	Associating swift fox presence with the distribution of other carnivores in western South Dakota.
SWG T-78-R1	Emily L. Mitchell	2018b	Distribution, ecology, disease risk, and genetic diversity of swift fox (<i>Vulpes velox</i>) in the Dakotas.
SWG T-25	Jonathan Jenks	2010	Assessing Swift Fox (<i>Vulpes velox</i>) habitat use and resource selection in the pup-rearing period in the mixed grass prairie of west-central South Dakota.
SWG T-25	Indrani Sasmal et al.	2011	Population viability analysis of swift fox (<i>Vulpes velox</i>) at the Badlands National Park.

SWG T-25	Indrani Sasmal et al.	2011	Habitat selection by female swift foxes (<i>Vulpes velox</i>) during the pup-rearing season.
SWG T-25	Indrani Sasmal et al.	2012	Genetic diversity in a reintroduced swift fox population.
GFP Small Grants Program	Erica L. Mize and Hugh B. Britten	2013	<i>Yersinia pestis</i> prevalence in fleas collected from South Dakota swift fox and black-footed ferrets.
GFP Partial Funding	Sarah A. Nevison	2017	Swift foxes in southwestern South Dakota: Assessing the current status of a reintroduced population.

Ongoing:

A Memorandum of Agreement exists among GFP and the U.S. Fish and Wildlife Service with the Lower Brule Sioux Tribe and with the Oglala Sioux Tribe to designate roles and responsibilities, promote and facilitate coordination and communication with regards to swift fox conservation on and near respective tribal properties.

Swift fox occurrence records are maintained in the GFP Nongame Conservation Database. These records include both incidental observations (e.g., opportunistic sightings, roadkill, or trap bycatch) and observations collected during targeted research projects from the 1960s through 2025 (Figure 2). Targeted monitoring efforts included an early study conducted from 1975–1979 that documented capture and release events and collected information on digestive ecology, reproduction, color marking, and behavioral observations. More recently, targeted research was conducted through South Dakota State University (SDSU), including a graduate study by Sarah Nevison from 2014–2016 that used pit tagging and radio telemetry to monitor swift fox movements and survival, and a subsequent study by Emily Mitchell from 2016–2017 that included pit tagging and radio telemetry of captured individuals.

When observations associated with these targeted studies are included, records appear concentrated during periods of active research (Figure 3; Table 2). In contrast, incidental observations recorded outside of these studies are relatively sparse across most decades. These incidental records primarily consist of opportunistic detections such as roadkill reports, incidental captures, or visual sightings documented by agency staff and the public. Since the completion of the most recent targeted monitoring effort in 2017, GFP continues to add new records to the Nongame Conservation Database, but there have not been continued structured survey efforts.

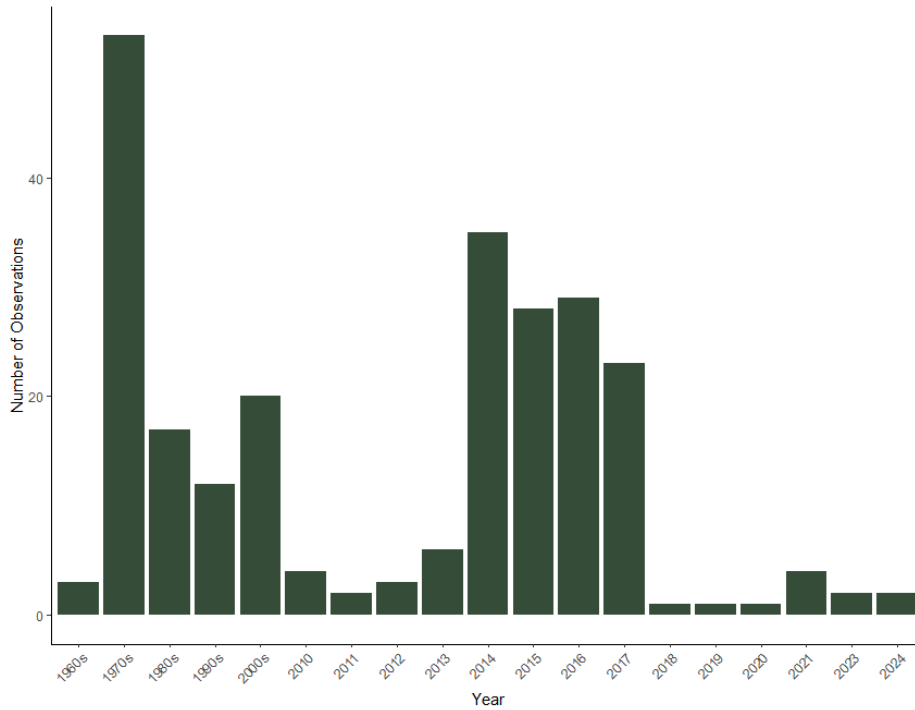


Figure 5. All swift fox observation records (1963–2025) maintained in GFP Nongame Conservation Database

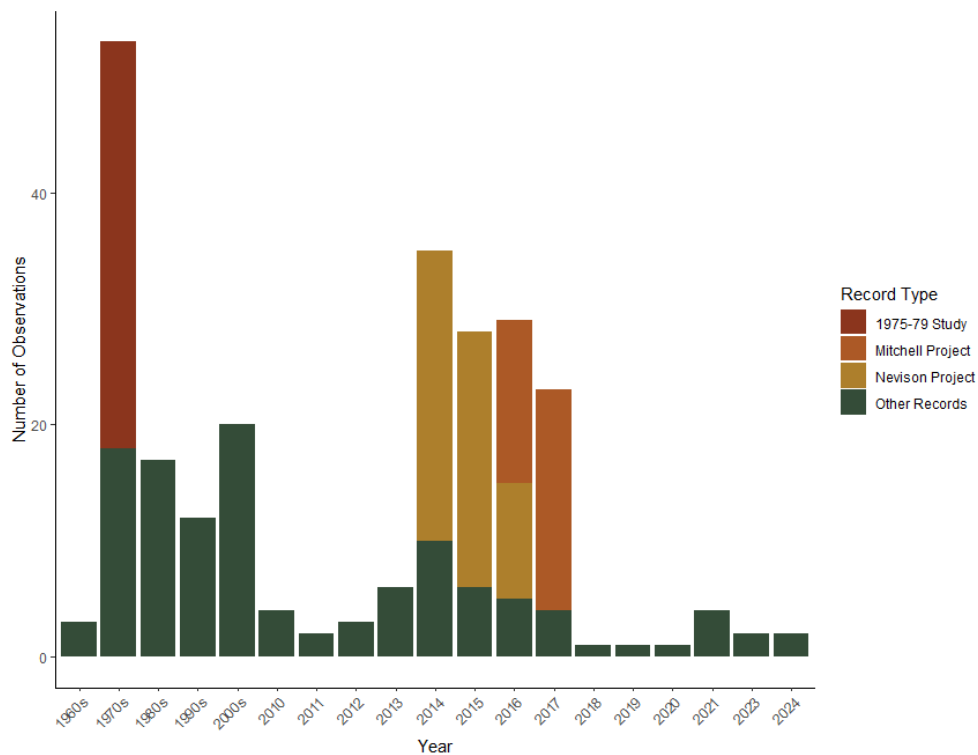


Figure 6. Swift fox observation records (1963–2025) delineated by incidental records (e.g., Other Records) and targeted study efforts.

Table 2. Total swift fox observation records by project type and counties that projects were targeting.

Research Project	Total Observations	Counties Targeted
1975–1979 Study	35	Oglala Lakota
Mitchell Project	33	Harding, Meade, Perkins
Nevison Project	57	Fall River, Jackson, Pennington

Recovery Criteria:

Recovery criteria have not previously been established for swift fox in South Dakota due to limited information on current distribution, population size, and habitat availability.

Recovery Criteria Considerations:

Before quantitative recovery goals can be defined, additional information and monitoring are needed to better understand the distribution, habitat requirements, and long-term viability of swift fox populations in South Dakota. The following actions and information needs are recommendations toward developing recovery criteria.

Recommended Initial Actions:

1. *Identify and map suitable habitat across South Dakota to help prioritize areas for survey effort:* Relevant datasets may include vegetation and land cover classifications such as LANDFIRE vegetation type layers, National Land Cover Database (NLCD) land cover classes, regional ecoregion classifications, and mapped prairie dog colonies. These data should be evaluated alongside swift fox observation records from the past decade to identify areas where habitat conditions align with recent detections.
2. *Conduct standardized monitoring surveys:* Periodic monitoring should be implemented to evaluate changes in distribution and relative abundance. A standardized survey design conducted approximately every 3–5 years would allow for comparison across survey periods and help detect long-term population trends.
3. *Implement a standardized survey framework:* Survey design should use a repeatable spatial sampling framework such as township-based sampling units or standardized grid cells approximating the typical home-range size of swift fox. Within each sampling unit, an array of trail cameras or other detection methods could be deployed to estimate presence, occupancy, or relative detection rates.

Additional Information Needs:

Continued efforts to document species occurrence using both targeted surveys and incidental observations will improve understanding of the species' current distribution and potential areas for range expansion. Previous research has highlighted the importance of large, relatively intact grassland systems for swift fox persistence, although local habitat associations may vary across the species' range.

Follow-up investigations building on the work of Nevison (2017) and Mitchell (2018b) may help clarify potential limiting factors influencing swift fox populations in South Dakota. Additional information on habitat connectivity, prey availability, interspecific interactions with other canines, and landscape fragmentation may help explain patterns of occupancy and distribution within the state.

Reliable estimates of statewide population size or a minimum viable population threshold would improve evaluation of species status. However, obtaining precise population estimates for rare and difficult-to-detect species can require substantial resources. As an alternative, a population index or occupancy-based monitoring approach measured consistently over time may provide a practical method for tracking population trends and informing management decisions.

Monitoring Approaches and Considerations:

Many states surrounding South Dakota use periodic occupancy-based surveys with trail camera arrays placed within standardized grid cells or townships representing suitable habitat. Wyoming and Colorado conduct statewide occupancy surveys approximately every 4–5 years using camera arrays within grid cells (~31 km²) classified as suitable habitat. Montana similarly conducts statewide monitoring at roughly five-year intervals using a combination of camera trapping and live trapping, depending on whether previous detections have occurred in a township.

Oklahoma conducts track-based presence surveys along dirt roads and other substrates suitable for detecting tracks within selected townships containing shortgrass prairie habitat. Nebraska has implemented a citizen science program that deploys trail cameras within habitat suitability grid cells and uses the resulting encounter histories to inform species distribution models. Kansas currently relies primarily on harvest records, incidental observations, and periodic surveys, and does not yet have a fully standardized statewide monitoring protocol.

Across the region, monitoring programs generally emphasize repeated surveys at multi-year intervals and standardized sampling units to track changes in distribution and occupancy over time. Similar approaches may provide a useful framework for evaluating population trends in South Dakota and informing the development of future recovery criteria.

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Date Review Finalized: 2026

Dates of Other Reviews, if appropriate: 2018, 2020, 2022, and 2024.

References or Information Sources:

- Higgins, K. F., E. D. Stukel, J. M. Goulet, and D. C. Backlund. 2000. Wild Mammals of South Dakota. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Kahn, R., L. Fox, P. Horner, B. Giddings, and C. Roy, editors. 1997. Conservation assessment and conservation strategy for swift fox in the United States.
- Mitchell, E.L. 2018a. Associating swift fox presence with the distribution of other carnivores in western South Dakota. Final Report to SD Game, Fish and Parks. May 2018. South Dakota State University, Brookings. 59 pages.
- Mitchell, E.L. 2018b. Distribution, ecology, disease risk, and genetic diversity of swift fox (*Vulpes velox*) in the Dakotas. M.S. Thesis, South Dakota State University, Brookings.
- Moehrenschrager, A., S. Alexander, and T. Brichieri-Colombi. 2006. Habitat suitability and population viability analysis for reintroduced swift foxes in Canada and northern Montana. Centre for Conservation Research Report No. 2, Calgary, Alberta, Canada.
- NatureServe. 2014. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>. (Accessed: March 16, 2015).
- Nevison, Sara A. 2017. Swift foxes in southwestern South Dakota: Assessing the current status of a reintroduced population. M.S. thesis. South Dakota State University, Brookings.
- Olimb, S., K. Bly, and C. Huang. 2010. Swift fox habitat suitability index for eastern Montana. Northern Great Plains Program, World Wildlife Fund. Bozeman, MT.
- Russell, T. A. 2006. Habitat selection by swift foxes in Badlands National Park and the surrounding area in South Dakota. M.S Thesis. South Dakota State University, Brookings.
- Sasmal, I. 2011. Population viability analysis of swift fox (*Vulpes velox*) at the Badlands National Park. PhD Dissertation. South Dakota State University, Brookings.
- Sasmal, I., J. A. Jenks, L. P. Waits, M. G. Gonda, G. M. Schroeder, and S. Datta. 2012. Genetic diversity in a reintroduced swift fox population. Conservation Genetics 14:93-102.
- Stratman, M. R., editor. 2013. Swift fox conservation team: report for 2011-2012. Colorado Division of Parks and Wildlife.
- Stratman. 2015. Swift fox conservation team: report for 2013-2014. Colorado Division of Parks and Wildlife.
- Stukel, E. D., editor. 2011. Conservation assessment and conservation strategy for swift fox in the United States-2011 update. South Dakota Department of Game, Fish and Parks.
- Stukel, E. D., editor. 2017 Swift fox conservation team: Report for 2015–2016. Wildlife Division Report No. 2017-04, SD Department of Game, Fish and Parks, Pierre, SD.

SUMMARY OF UPDATES IN 2026:

- GFP Nongame Conservation team became reacquainted with the Swift Fox Conservation Team, met with current president, and updated contact information on Colorado Parks & Wildlife website
- Updated map and included swift fox observation records and plots for South Dakota
- Updated recovery criteria and considerations.

STATE T&E SPECIES STATUS REVIEW

Species Name: Banded Killifish, *Fundulus diaphanus*

South Dakota Status, Including Legal Status and Special Listings:

- State endangered, ([SD Administrative Rule 41:10:02:05. List of endangered fish](#)).
- Monitored by South Dakota Nongame Conservation Program.
- State Heritage rank S1, (critically imperiled).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan.

Federal Status:

- NatureServe global rank G5 (secure, although it may be rare in some portions of the range); last reviewed 18 August 2015 (NatureServe 2026)

Basis For New Listing, Status Change (T to E, or E to T), Or Continued Listing with Same Status:

Banded Killifish are widespread and secure throughout the eastern portion of its range. Banded Killifish are at the western edge of their range and listed as critically imperiled in South Dakota. The justification for including Banded Killifish on the first list of state endangered (16 March 1978) fish is unknown but was presumably due to wetland drainage, possible climatic conditions, and fragmentation from interconnecting waterways of suitable habitat. Based on the presumed limited area of occupancy, threat of wetland drainage and limited potential for range expansions; Banded Killifish are extremely vulnerable to extirpation with limited ability for recolonization and continued listing as a state endangered species is recommended.

Description, Biology and Life History:

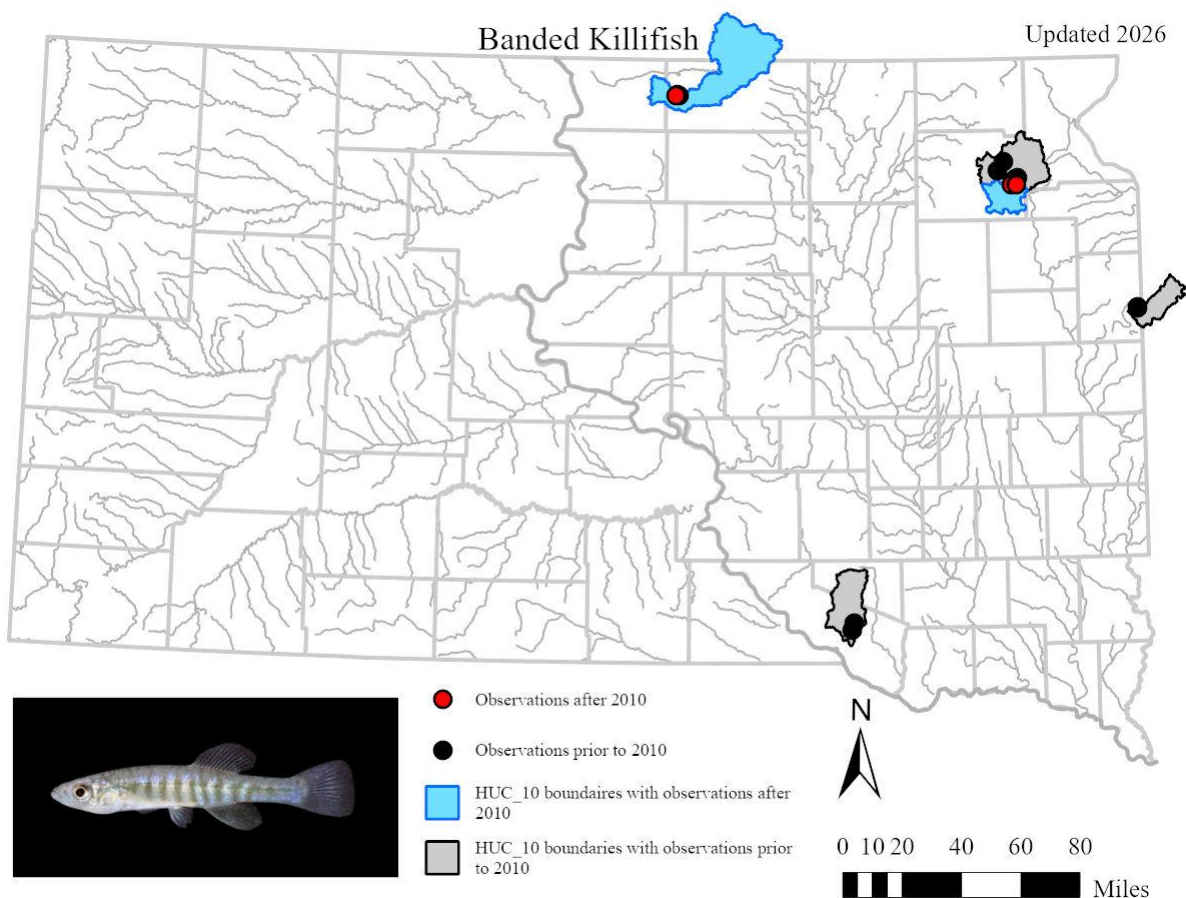
The Banded Killifish is a small, olive colored fish with yellow sides having green-brown vertical bands. It has a flattened head, protruding lower jaw and rounded caudal fin which make this fish well-adapted for surface feeding. Similar species include Central Mudminnow, which has a dark black vertical band at the caudal fin base and dark spot below the eye. Also, the Plains Killifish is similar in appearance with vertical bands along the lateral sides, however they have smaller scales with roughly 50-67 scales in the alter series. Banded Killifish spawn in late spring and summer when water temperatures reach 21°C to 23°C. Eggs are released and immediately fertilized in clusters of 5-10 eggs, which adhere to vegetation. Spawning continues until 100 or more eggs are released. Eggs hatch within 10 to 12 days. The diet consists of small crustaceans, insect larvae and some plant material (SDGFP 2006; Phillips et al. 2007).

Habitat:

Habitat for the Banded Killifish may be lentic or lotic. Banded Killifish prefer quiet and shallow waters of sloughs, marshes, ponds and lakes, as well as low gradient streams with gravel or sand substrate and abundant vegetation (SDGFP 2006).

Distribution Within the State:

Banded Killifish have been reported from a few lakes (Lake Andes, Garden Creek HUC_1014010117; Lake Eureka, Long Lake HUC_1013010603; Lake Cochrane, Lazarus Creek HUC_702000302; Blue Dog Lake, Waubay Lakes HUC_1017020102; Waubay Lake, Waubay Lakes HUC_1017020102; Bitter Lake, Bitter Lakes HUC_1017020103) in eastern South Dakota which is on the western periphery of its range (Bailey and Allum 1962; Bauer 1988; Lott 1991; Bertrand et al. in prep.). Since 2010, reported Banded Killifish have been limited to the inlet of Bitter Lake, Day County and Little Eureka Lake, McPherson County.



Conservation / Management Considerations:

Banded Killifish have been impacted by ecosystem/habitat conversion and loss, ecosystem alteration and habitat degradation due to shoreline development, conversion of wetlands to agriculture, pollution, and application of pesticides and herbicides (SDGFP 2006; 2014a).

Research and monitoring needs will focus on determining the current status of populations by increasing monitoring efforts, assessing population dynamics, and identifying conservation opportunity areas and limiting factors.

Conservation Efforts in South Dakota:

Conservation efforts will focus on increased survey efforts, expanding partnerships and cooperative arrangements, increasing awareness through education, and promoting best

management practices that reduce/limit soil erosion and nutrient/pesticide runoff. Additionally, objectives and strategies will follow those outlined within the East River Fisheries Management Plan to standardize survey and sampling protocols to inventory and monitor stream and riverine fishes (SDGFP 2014b).

State Wildlife Grant Accomplishments:

- Evaluation of a decision support tool to help support fish species at risk in South Dakota streams– T-9 (2006). Aquatic GAP is a tool for predicting where aquatic species might find suitable habitat. This study’s goal was to test the accuracy of aquatic GAP by surveying streams and watersheds with historic occurrences of rare fish species and wetlands with potential habitat for them.
- Small stream fish ladders for steel culverts– T-67 (2016). Assessing the use of fish ladder designs to estimate the increase in passability of round galvanized steel culverts in natural streams in both eastern and western South Dakota.

Recovery Criteria/Goals:

Given that Banded Killifish have limited natural dispersal abilities the primary recovery goal is to maintain existing populations and protect the habitat within watersheds where Banded Killifish are found. Specific goals for managing Banded Killifish are to work with fisheries biologists to standardize shoreline seining efforts in coordination with lake surveys and work with private land and habitat biologists to develop site specific best management practices to ensure habitat protection. Additionally, goals for delisting would include 50% of HUC_10 boundaries previously occupied to maintain current population status (Post-2010) and evidence of natural reproducing populations.

Primary Reviewer: Chelsey Pasbrig, Aquatic Biologist GFP

Other Staff or Experts Involved in the Review:

Dave Lucchesi, Fisheries Biologist, GFP, Sioux Falls
Brian Blackwell, Fisheries Biologist, GFP, Watertown
Katie Bertrand, Assistant Professor, SDSU, Brookings
Matthew Wagner, State Ichthyologist, Mississippi Department of Wildlife, Fisheries and Parks, Jackson, MS
Eileen Dowd Stukel, Senior Wildlife Biologist, GFP, Pierre

Date Review Completed: May 27, 2026

Date Adopted by GFP Commission: April 6, 2018

Dates of Other Reviews, if appropriate: December 14, 2017, May 28, 2020, June 10, 2022, June 24, 2024

References:

- Bailey, R. M. and M. O. Allum. 1962. Fishes of South Dakota. Misc. Publ., Mus. Of Zoology, Univ. of Michigan, No. 119. 131 pp.
- Bauer, D. L. 1988. The effect of grass carp introduction on aquatic vegetation and existing fish populations in two small prairie lakes. M.S. Thesis. South Dakota State University, Brookings, South Dakota.

- Lott, J. P. 1991. Food habits of yellow perch in eastern South Dakota glacial lakes. M.S. Thesis. South Dakota State University, Brookings, South Dakota. 2641.
- NatureServe. 2026. NatureServe Network Biodiversity Location Data accessed through NatureServe Explorer [web application]. NatureServe, Arlington, Virginia. Available <https://explorer.natureserve.org/>. (Accessed: May 27, 2026).
- Phillips, E. C., Y. Ewert, and P. A. Speares. 2007. Fecundity, age and growth, and diet of *Fundulus diaphanous* (Banded Killifish) in Presque Isle bay, Lake Erie. *Northeastern naturalist*, 14(2):269-278.
- South Dakota Department of Game, Fish and Parks. 2006. *Fragile Legacy: Rare Animals of South Dakota*. Wildlife Division Publication. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks. 2014a. *South Dakota Wildlife Action Plan*. Wildlife Division Report 2014-03. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014b. *Fisheries and aquatic resources adaptive management system 2014-2018: East River Fisheries Management Area Strategic Plan*. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks. 2019. *Fisheries and aquatic resources adaptive management system 2019-2023: Northeast Fisheries Management Area Strategic Plan*. South Dakota Department of Game, Fish and Parks, Pierre.

SUMMARY OF UPDATES IN 2020:

In coordination with the Northeast Fisheries Management Area Strategic Plan and fisheries biologists, an effort has been made to standardize nongame sampling across the state to better sample nongame fishes. In 2019, the first year of sampling was completed in the northeast, sampling Waubay Lake in coordination with standard lake surveys. Although no rare nongame species were reported, including Banded Killifish, standardized nongame sampling in coordination with standard lake surveys will continue. Currently, workplans have identified one standing water and one tributary per year to sample for nongame species through the 2023 sampling season.

SUMMARY OF UPDATES IN 2022:

Aquatic strategic planning efforts continue.

SUMMARY OF UPDATES IN 2024:

Aquatic strategic planning efforts continue. Since 2019, lake surveys in waters with rare species have incorporated standardized nongame sampling procedures. To date, Waubay, Blue Dog, Lake and Cochrane have been surveyed, however no Banded Killifish have been sampled. Bitter Lake, Waubay Lake and Little Eureka are scheduled to be surveyed over the next four years.

SUMMARY OF UPDATES IN 2026:

Aquatic strategic planning efforts continue. Since 2019, lake surveys in waters with rare species have incorporated standardized nongame sampling procedures. To date, Waubay, Blue Dog, Lake, Cochrane, and Bitter lakes have been surveyed. Only Bitter Lake documented Banded Killifish. Waubay Lake and Little Eureka are scheduled to be surveyed over the next two years.

STATE T&E SPECIES STATUS REVIEW

Species Name: Blacknose Shiner, *Notropis heterolepis*

South Dakota Status, Including Legal Status and Special Listings:

- State endangered, ([SD Administrative Rule 41:10:02:05. List of endangered fish](#)).
- Monitored by South Dakota Nongame Conservation Program.
- State Heritage rank S1 (critically imperiled).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan.

Federal Status:

- NatureServe global rank G5 (secure, although it may be rare in some portions of the range); last reviewed 18 August 2015 (NatureServe 2026).

Basis For New Listing, Status Change (T to E, or E to T), Or Continued Listing with Same Status:

Blacknose Shiner are widespread and apparently secure throughout the northern portion of their range; however, the species is currently listed as critically imperiled in South Dakota. Blacknose Shiner populations have declined or are presumed extirpated throughout the majority of their Midwestern distribution (Bernstein et al. 2000; Roberts and Burr 2006; Hoagstrom et al. 2007; Felts 2013), and remaining populations in South Dakota are now on the periphery of the Blacknose Shiner's distribution. The justification for adding Blacknose Shiner to the list of state endangered fish on 22 May 1996 is unknown but was presumably due to the presence of only small, isolated relict populations, threat of wetland loss, and increased turbidity and siltation resulting from erosion. Due to this species' limited ability for recolonization it is vulnerable to extirpation and continued listing as a state endangered species is recommended.

Description, Biology and Life History:

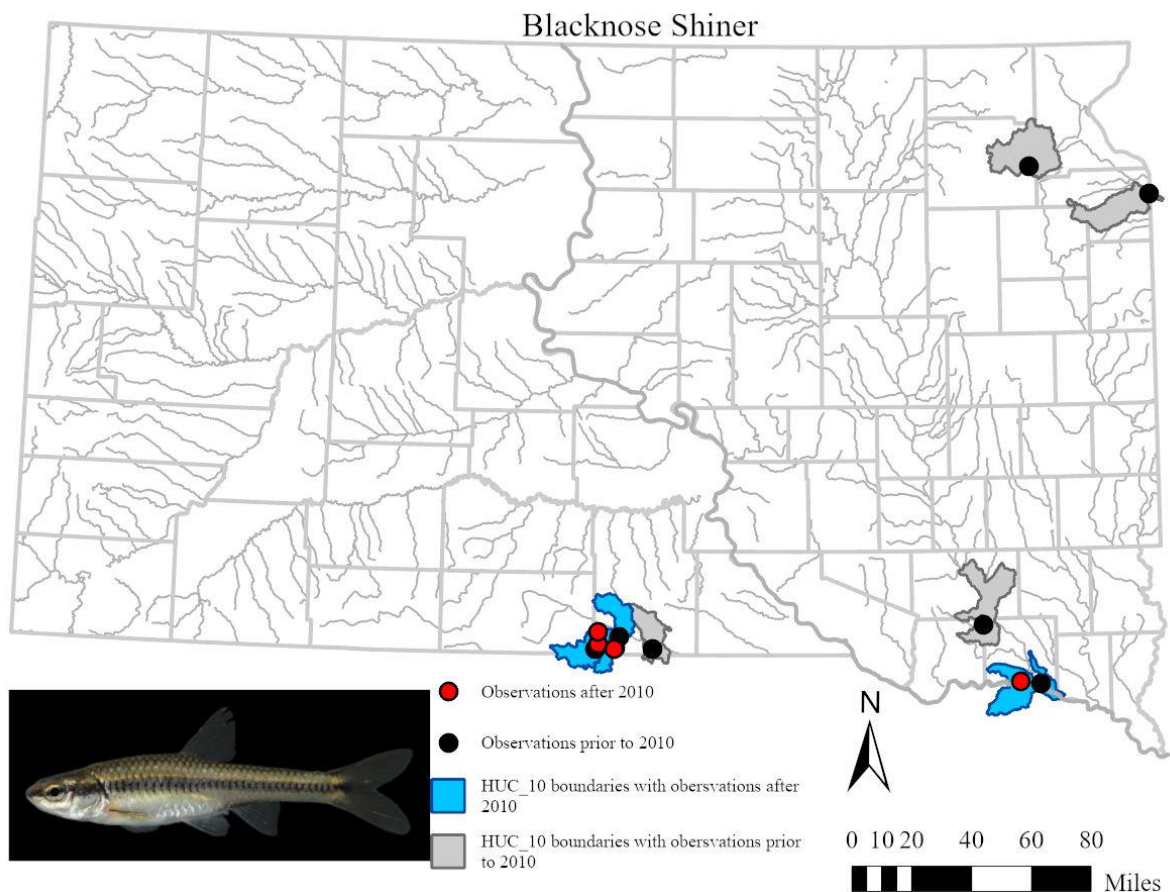
The Blacknose Shiner is a slender, silvery minnow with large eyes. Black crescent-shaped marks form a dark stripe along the lateral line from the tip of the nose to the caudal fin, passing through the eyes (Bertrand et al. in prep.). Little is known about the reproductive biology of life history for Blacknose Shiner; a study in Illinois found them to spawn late April through late June, with females remaining in reproductive condition for roughly 2-4 weeks. This extended spawning period indicates that females are multiple clutch spawners (Pflieger 1975; Roberts et al. 2006; NGPC 2010). The diet includes aquatic insects, crustaceans, and algae (SDGFP 2006). A subterminal mouth suggests the species is primarily a benthic feeder (Becker 1983).

Habitat:

Blacknose Shiner prefer cool, clear glacial lakes and small quiet, prairie streams with pool and run sequences. Often associated with considerable amounts of aquatic vegetation and organic debris, sand, gravel or rock substrates (Pflieger 1997; Roberts et al. 2006; SDGFP 2006).

Distribution Within the State:

Blacknose Shiner have been reported from tributaries of the James (Prairie Creek-HUC_1016001118), Big Sioux (Waubay Lakes HUC_1017020102), Minnesota (North Fork Yellow Bank River HUC_0702000109), Missouri (Beaver Creek HUC_1017010112) and Keya Paha (Sand Creek HUC_1015000603, Shadley Creek HUC_1015000605, Jimmie Creek HUC_1015000608) river drainages which are on the western periphery of the species geographic range (Bailey and Allum 1962; Cunningham and Olson 1994; Cunningham et al. 1995). Since 2010, only single fish occurrences of Blacknose Shiner have been reported from a limited number of tributaries of the Missouri and Keya Paha River drainages (Hoagstrom et al. 2007; Felts 2013).



Conservation / Management Considerations:

Blacknose Shiner have experienced ecosystem alteration/habitat degradation, partially due to increased turbidity and siltation of stream bottoms, reductions in aquatic and riparian vegetation, and grazing/agricultural practices. It is suggested that Blacknose Shiner are moderately vulnerable to climate change (SDGFP 2014a).

Monitoring and research needs will focus on determining current distribution and status through continued monitoring efforts, assessing population dynamics, and identifying conservation opportunity areas and limiting factors.

Conservation Efforts in South Dakota:

Conservation efforts will focus on more intensive surveying, expanding partnerships and cooperative arrangements, increasing awareness through education, and promoting best management practices that reduce/limit soil erosion and nutrient/pesticide runoff (SDGFP 2014a). Additionally, objectives and strategies will follow those outlined within the East and West River Fisheries Management Plans to standardize survey and sampling protocols to monitor non-game fishes (SDGFP 2014b, 2014c).

State Wildlife Grant Accomplishments:

- Glacial relict fishes in spring fed headwater streams of South Dakota's Sandhills region – T-2-8 (2013). The Sandhills area of South Dakota is a unique ecosystem that is home to many rare species, relict of Pleistocene Glaciation. This research assessed the current distribution, status and habitat requirements for these glacial relict fishes.
- Small stream fish ladders for steel culverts– T-67 (2016). Assessing the use of fish ladder designs to estimate the increase in passability of round galvanized steel culverts in natural streams in both eastern and western South Dakota.
- Evaluation of the James River Conservation Reserve Enhancement Program (CREP) of South Dakota– T-59 (2017). The CREP seeks to enhance natural resource conservation programs in selected watersheds nationwide to address specific regional conservation priorities by attempting to alleviate agriculturally related environmental concerns. This project assessed the effects of CREP on water quality, aquatic habitats, fish assemblages, and avifauna response to the James River CREP.

Recovery Criteria/Goals:

Given that Blacknose Shiner have limited natural dispersal abilities, the primary recovery goal for the Blacknose Shiner is to maintain existing populations and protect habitat within watersheds where Blacknose Shiner are found. Specific management goals are to work with fisheries biologists to standardize seining efforts in coordination with increased river/stream surveys and work with private land and habitat biologist to develop site specific best management practices to ensure habitat protection. Additionally, goals for delisting would include 50% of HUC_10 boundaries previously occupied to maintain current status (Post-2010) and evidence of natural reproducing populations.

Primary Reviewer: Chelsey Pasbrig, Aquatic Biologist

Other Staff or Experts Involved in the Review:

Dave Lucchesi, Fisheries Biologist, GFP, Sioux Falls

Brian Blackwell, Fisheries Biologist, GFP, Watertown

George Cunningham, Fisheries Biologist and Environmental Consultant, Eco~centrics, Omaha, NE

Eileen Dowd Stukel, Senior Wildlife Biologist, GFP, Pierre

Date Review Completed: May 27, 2026

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Dates of Other Reviews, if appropriate: December 14, 2017, May 28, 2020, June 10, 2022, June 24, 2024

References:

- Bailey, R. M. and M. O. Allum. 1962. Fishes of South Dakota. Misc. Publ., Mus. Of Zoology, Univ. of Michigan, No. 119. 131 pp.
- Becker, G.C. 1983. Fishes of Wisconsin. University of Wisconsin Press, Madison.
- Bernstein, N. P., M. Getting, T. Kamp, S. Christian, R. Smith, J. Steele, and S. Steele. 2000. The status of Blacknose Shiner (*Notropis heterolepis*) in Iowa: a preliminary survey. *J. Iowa Acad. Sci.*, 107:16-20.
- Bertrand et al. In preparation. Fishes of the Dakotas
- Cunningham, G. and R. Olson. 1994. Fish species collected in streams in West River South Dakota-1994. Unpublished report to South Dakota Game, Fish and Parks. Pierre, South Dakota. 10 pp.
- Cunningham, G. R., R. D. Olson, and S. M. Hickey. 1995. Fish surveys of the streams and rivers of South Central South Dakota west of the Missouri River. *Proc. S.D. Acad. Sci.* 74:55-64.
- Felts, E. 2013. Ecology of glacial relict fishes in South Dakota's Sandhills region. Master's thesis. South Dakota State University, Brookings.
- Hoagstrom, C. W., S. S. Wall, J. G. Kral, B. G. Blackwell, and C. R. Berry. 2007. Zoogeographic patterns and faunal change of South Dakota fishes. *Western North American Naturalist* 67:161-184.
- NatureServe. 2026. NatureServe Explorer: An online encyclopedia of life [web application]. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>. (Accessed: May 27, 2026).
- Nebraska Game and Parks Commission (NGPC). 2010. Nebraska's At-Risk Wildlife. Wildlife Division Publication. Nebraska Game and Parks Commission, Lincoln.
- Pflieger, W. L. 1997. The fishes of Missouri. Revised edition. Mo. Department. Of Conservation. Jefferson City.
- Roberts, M. E. and B. M. Burr. 2006. Current conservation status of the blacknose shiner, *Notropis heterolepis*, in Illinois. *Trans. Ill. St. Acad. Sci.*, 99:75-86.
- South Dakota Department of Game, Fish and Parks. 2006. Fragile Legacy: Rare Animals of South Dakota. Wildlife Division Publication. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks. 2014a. South Dakota Wildlife Action Plan. Wildlife Division Report 2014-03. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014b. Fisheries and aquatic resources adaptive management system 2014-2018: East River Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014c. Fisheries and aquatic resources adaptive management system 2014-2018: West River Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks. 2019. Fisheries and aquatic resources adaptive management system 2019-2023: Northeast Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.

SUMMARY OF UPDATES IN 2020:

In coordination with the Northeast and Southeast Fisheries Management Area Strategic Plans and fisheries biologists, an effort has been made to standardize nongame sampling across the state to better sample nongame fishes. Currently, workplans for both fish management areas have identified one standing water and one tributary per year to sample for nongame species through the 2023 sampling season which will include historic Blacknose Shiner waterbodies. Additionally, a proposed multi-state State Wildlife Grant project if funded would increase sampling efforts within the Sandhills areas of South Dakota.

SUMMARY OF UPDATES IN 2022:

Aquatic strategic planning efforts continue. The multi-state State Wildlife Grant project proposed during the last status update was not approved.

SUMMARY OF UPDATES IN 2024:

Aquatic strategic planning efforts continue. Since 2019, standard surveys in waters with rare species have incorporated standardized nongame sampling procedures. In 2020, the North Fork Yellowbank River was surveyed, however no Blacknose Dace were sampled. Tributaries to the Keya Paha drainage are scheduled to be surveyed over the next four years.

SUMMARY OF UPDATES IN 2026:

Aquatic strategic planning efforts continue. Since 2019, standard surveys in waters with rare species have incorporated standardized nongame sampling procedures. Tributaries to the Keya Paha drainage are scheduled to be surveyed over the next two years.

STATE T&E SPECIES STATUS REVIEW

Species Name: Finescale Dace, *Chrosomus neogaeus*

South Dakota Status, Including Legal Status and Special Listings:

- State endangered, ([SD Administrative Rule 41:10:02:05. List of endangered fish](#)).
- Monitored by South Dakota Nongame Conservation Program.
- State Heritage rank S1, (critically imperiled).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan.

Federal Status:

- NatureServe global rank G5 (secure, although it may be rare in some portions of the range); last reviewed 10 May 2016 (NatureServe 2026).
- USDA Forest Service, Region 2, Black Hills National Forest sensitive species.
- USDA Forest Service, Region 2, Buffalo Gap National Grassland sensitive species.
- USDA Forest Service, Region 1, Dakota Prairie Grassland, 2011 aquatic sensitive species.
- USDA Forest Service, Region 2, Rocky Mountain Region sensitive species.

Basis For New Listing, Status Change (T to E, or E to T), Or Continued Listing with Same Status:

Finescale Dace are apparently secure throughout their range, however, listed as critically imperiled in South Dakota. Previously listed state threatened (16 March 1978), the Finescale Dace was listed state endangered on 22 May 1996. The justification for including Finescale Dace on the first list of state threatened is unknown. Surveys during the 1990s failed to document Finescale Dace at all historic locations, except Cox Lake, and the species was reclassified as state endangered (Shearer and Erickson 2005). Their extremely limited distribution is presumably due to habitat alteration, introduction of nonnative fishes, and climate change, which have all limited their potential for range expansions. Finescale Dace are extremely vulnerable to extirpation with limited ability for recolonization and continued listing as a state endangered species is recommended.

Description, Biology and Life History:

The Finescale Dace is a small, dark olive to silvery minnow with a single dark lateral stripe ending with a spot at the base of the caudal fin. In breeding males, the silvery belly is brassy, to bright yellow or red (NGPC 2010). The ventrolateral surface is peppered with melanophores. The angle of the mouth extends almost to the front of the pupil (Bertrand et al. in prep). Finescale Dace spawn during May-June. Eggs are laid in clusters of 20-30 at a time under logs and brush. Spawning can occur over several days with a female laying as many as 3,000 eggs. Eggs hatch within 4 days. Most individuals live 3 to 4 years (SDGFP 2006). The diet includes algae, mollusks and a variety of aquatic insects (Baxter and Stone 1995).

Habitat:

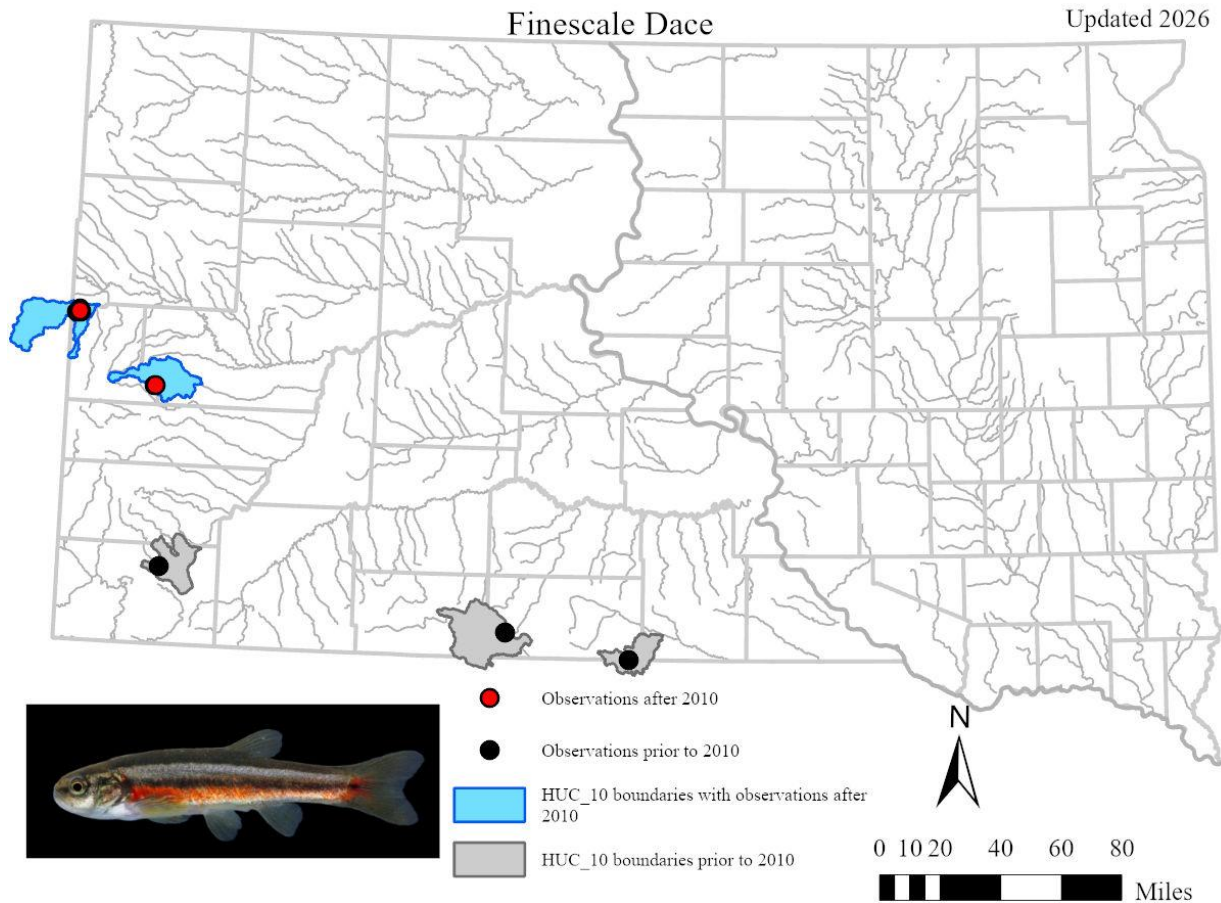
Habitat for Finescale Dace may be lentic or lotic. However, Finescale Dace prefer cool, headwaters streams and ponds with dense aquatic vegetation. Finescale Dace are confined to

cool spring waters and are commonly associated with beaver dams and Northern Redbelly Dace (Stasiak 1977; Baxter and Stone 1995; Isaak et al. 2003).

Distribution Within the State:

Within South Dakota, Finescale Dace are found west of the Missouri River and have been reported from tributaries of the Cheyenne (Beaver Creek HUC_1012010903; Dalton Lake-Upper Elk Creek HUC_1012011106), Belle Fourche (Cox Lake, Upper Redwater Creek HUC_1012020303), Little White (Spring Creek HUC_1014020303), and Keya Paha (Sand Creek HUC_1015000603) river drainages, which are on the southern periphery of the geographic range for Finescale Dace (Bailey and Allum 1962; Cunningham and Olson 1994; Olson 1998; Felts 2013). Since 2010, Finescale Dace have been reported in low numbers from Dalton Lake-Elk Creek tributary and a large population from Cox and Mud lakes near Spearfish.

In the fall, 2004, South Dakota Game, Fish and Parks conducted a lake renovation on Mud Lake, near Spearfish to reintroduce Finescale Dace. A rotenone treatment was applied to remove green sunfish and, in the fall of 2005, 50 Finescale Dace were stocked from Cox Lake into Mud Lake (Shearer and Erickson 2005). Mark-recapture population estimates in 2014 indicated 7,022 adult Finescale Dace in Mud Lake, with 95% confidence limits of 5,152 and 9,407 fish (Amiotte et al. 2015).



Conservation / Management Considerations:

Finescale Dace have been impacted by reductions in numbers of beaver dams, ecosystem alteration/habitat degradation, and the introduction of predatory fishes (i.e. green sunfish, trout). Finescale Dace are extremely vulnerable to climate change, due to their need for a specific habitat type (Stasiak and Cunningham 2006; SDGFP 2006, 2014a).

Monitoring and research needs will focus on continuing to expand current monitoring efforts, assessing population dynamics and genetic variation/integrity, identifying conservation opportunity areas and limiting factors, and investigating trap and transfer techniques for potential reintroduction techniques into identified suitable habitats.

Conservation Efforts in South Dakota:

Conservation efforts will focus on expanding partnerships and cooperative arrangements, increasing educational efforts, promoting best management practices that reduce/limit soil erosion and nutrient/pesticide runoff (SDGFP 2014a). Additionally, objectives and strategies will follow those outlined within the Black Hills Fisheries Management Plan to standardize survey and sampling protocols and investigate additional trap and transfer stocking techniques for Finescale Dace into suitable habitats (SDGFP 2014b).

State Wildlife Grant Accomplishments:

- Evaluation of a decision support tool to help support fish species at risk in South Dakota streams– T-9 (2006). Aquatic GAP is a tool for predicting where aquatic species might find suitable habitat. This study's goal was to test the accuracy of aquatic GAP by surveying streams and watersheds with historic occurrences of rare fish species and wetlands with potential habitat for them.
- Glacial relict fishes in spring fed headwater streams of South Dakota's Sandhills region – T-2-8 (2013). The Sandhills area of South Dakota is a unique ecosystem that is home to many rare species, relict of Pleistocene Glaciation. This research assessed the current distribution, status and habitat requirements for these glacial relict fishes.
- Small stream fish ladders for steel culverts– T-67 (2016). Assessing the use of fish ladder designs to estimate the increase in passability of round galvanized steel culverts in natural streams in both eastern and western South Dakota.
- The occurrence patterns, current distribution, and population interrelatedness of at-risk fishes in the Black Hills ecoregion – T-93 (2023). Describe the current distribution and estimate population densities of at-risk native fishes in the Black Hills ecoregion with an emphasis on Lake Chub and Longnose Sucker.

Recovery Criteria/Goals:

Given that Finescale Dace have limited natural dispersal abilities and are restricted to cool spring waters, the primary recovery goals for the management of the population of Finescale Dace is to maintain existing populations and protect the habitat within watersheds where Finescale Dace are currently found. Specific management strategies are to work with fisheries biologists to standardize sampling efforts in coordination with lake surveys in the Black Hills and explore trap and transfer techniques from the Mud/Cox Lake broodstock population for future reintroductions. Additional management strategies will involve

working with private land and habitat biologists to develop site specific best management practices to ensure habitat protection. Additionally, goals for delisting would include 50% of HUC_10 boundaries previously occupied to maintain current status (Post-2010) and evidence of natural reproducing populations.

Primary Reviewer: Chelsey Pasbrig, Aquatic Biologist

Other Staff or Experts Involved in the Review:

Greg Simpson, Fisheries Biologist, GFP, Rapid City
Jake Davis, Senior Biologist, GFP, Rapid City
Eli Felts, Ph.D. Graduate Research Assistant, SDSU, Brookings
Cassidy Gerdes, M.S. Graduate Research Assistant, SDSU, Brookings
Eileen Dowd Stukel, Senior Wildlife Biologist, GFP, Pierre

Date Review Completed: May 28, 2026

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Dates of Other Reviews, if appropriate: December 14, 2017, June 9, 2020, June 10, 2022, June 24, 2024

References:

- Amiotte, J., G. Simpson, and M. E. Barnes. 2015. Re-establishment of Finescale Dace (*Phoxinus neogaeus*) in Mud Lake, Lawrence County, South Dakota. Proceedings of the South Dakota Academy of Science 94(2015): 195-200.
- Bailey, R. M. and M. O. Allum. 1962. Fishes of South Dakota. Misc. Publ., Mus. Of Zoology, Univ. of Michigan, No. 119. 131 pp.
- Baxter, G. T. and M. D. Stone. 1995. Fishes of Wyoming. Wyoming Game and Fish Department, Cheyenne.
- Bertrand et al. In preparation. Fishes of the Dakotas
- Cunningham, G. and R. Olson. 1995. Fish species collected in streams in West River South Dakota-1994. Unpublished report to South Dakota Game, Fish and Parks. Pierre, South Dakota. 10 pp.
- Felts, E. 2013. Ecology of glacial relict fishes in South Dakota's Sandhills region. M.S. Thesis. South Dakota State University, Brookings, South Dakota.
- Isaak, D. J., W. A. Hubert, and C. R. Berry, Jr. 2003. Conservation assessment for Lake Chub, Mountain Sucker, and Finescale Dace in the Black Hills National Forest, South Dakota and Wyoming. US Department of Agriculture, Forest Service, Custer, South Dakota.
- NatureServe. 2026. NatureServe Explorer: An online encyclopedia of life [web application]. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>. (Accessed: May 28, 2026).
- Nebraska Game and Parks Commission (NGPC). 2010. Nebraska's At-Risk Wildlife. Wildlife Division Publication. Nebraska Game and Parks Commission, Lincoln.
- Olson, R. 1998. Finescale Dace and Lake Chub Survey. South Dakota Wildlife Diversity Small Grants Program. South Dakota Department of Game, Fish and Parks, Pierre, SD.

- Shearer, J. and J. Erickson. 2005. Finescale Dace: the reintroduction to a glacial relict. South Dakota Department of Game, Fish and Parks. South Dakota Conservation Digest 72(3) 10-11.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2006. Fragile Legacy: Rare Animals of South Dakota. Wildlife Division Publication. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014a. South Dakota Wildlife Action Plan. Wildlife Division Report 2014-03. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014b. Fisheries and aquatic resources adaptive management system 2014-2018: Black Hills Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks. 2019. Fisheries and aquatic resources adaptive management system 2019-2023: Northeast Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- Stasiak, R. H. 1977. Morphology and variation in the Finescale Dace, *Chrosomus neogaeus*. Copeia 1977:771-774.
- Stasiak, R. and G.R. Cunningham (2006). Finescale Dace (*Phoxinus neogaeus*): a technical conservation assessment. [Online]. USDA Forest Service, Rocky Mountain Region. Available: <http://www.fs.fed.us/r2/projects/scp/assessments/finescaledace.pdf> (June 5, 2015).

SUMMARY OF UPDATES IN 2020:

In coordination with the West River and Black Hills Fisheries Management Area Strategic Plans and fisheries biologists, an effort has been made to standardize nongame sampling across the state to better sample nongame fishes. Currently, workplans for both fish management areas have identified waters to sample for nongame species through the 2023 sampling season which will include historic Finescale Dace waterbodies.

SUMMARY OF UPDATES IN 2022:

Aquatic strategic planning efforts continue. In 2021, a State Wildlife Grant project began to describe the current distribution and estimate population densities of at-risk native fishes in the Black Hills ecoregion with an emphasis on Lake Chub and Longnose Sucker.

SUMMARY OF UPDATES IN 2024:

Aquatic strategic planning efforts continue. In 2021, a State Wildlife Grant project began to describe the current distribution and estimate population densities of at-risk native fishes in the Black Hills ecoregion with an emphasis on Lake Chub and Longnose Sucker, however no Finescale Dace were sampled. Finescale Dace continue to have a strong broodstock population in the Mud/Cox Lakes. Since 2019, standard surveys in waters with rare species have incorporated standardized nongame sampling procedures.

SUMMARY OF UPDATES IN 2026:

Aquatic strategic planning efforts continue. In 2023, a State Wildlife Grant project completed to describe the current distribution and estimate population densities of at-risk native fishes in the Black Hills ecoregion with an emphasis on Lake Chub and Longnose Sucker, however no Finescale Dace were sampled. Finescale Dace continue to have a strong broodstock population in the Mud/Cox Lakes. In 2025, a lake survey was conducted on Cox Lake and found Finescale dace to be the dominant species.

STATE T&E SPECIES STATUS REVIEW

Species Name: Longnose Sucker, *Catostomus catostomus*

South Dakota Status, including legal status and special listings:

- State threatened, ([SD Administrative Rule 41:10:02:06. List of threatened fish](#)).
- Monitored by South Dakota Nongame Conservation Program.
- State Heritage rank S2, (imperiled).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan.

Federal Status:

- NatureServe global rank G5 (secure, although it may be rare in some portions of the range); last reviewed 17 August 2015 (NatureServe 2026).

Basis For New Listing, Status Change (T to E, or E to T), Or Continued Listing with Same Status:

Longnose Sucker are widespread and secure throughout majority of their range, and listed as critically imperiled in South Dakota. The justification for including Longnose Sucker on the first list of state threatened (16 March 1978) fish is unknown but was presumably due to the threat of mining and logging practices, possible climatic conditions and fragmentation from interconnecting waterways of suitable habitat. Based on the presumed limited area of occupancy, separation from other populations, and limited potential for range expansions; Longnose Sucker are extremely vulnerable to extirpation with limited ability for recolonization and continued listed as a state threatened species is recommended.

Description, Biology and Life History:

Longnose Sucker are elongate, cylindrical suckers with long pointed snouts. They range in color from gray to black with a light colored underside. Breeding males have a wide, crimson band on the side that extends onto the snout and tubercles on the head, anal fin and caudal fin. Lips fleshy, heavily papillose. Lower lip completely divided by ventral notch forming an acute angle (Bailey and Allum 1962; Bertrand et al. in prep.). Longnose Sucker spawn in the spring in lakes or shallow slow-flowing streams over gravel substrates (SDGFP 2006). Eggs hatch in 8-14 days. Longnose Sucker become sexually mature at 2-3 years of age and are believed to be long-lived, as marked adult fish have been observed returning for as many as five successive years to spawn (Baxter and Stone 1995; SDGFP 2006). The diet consists primarily of plant material but will also include small crustaceans, snails and insect larvae (SDGFP 2006).

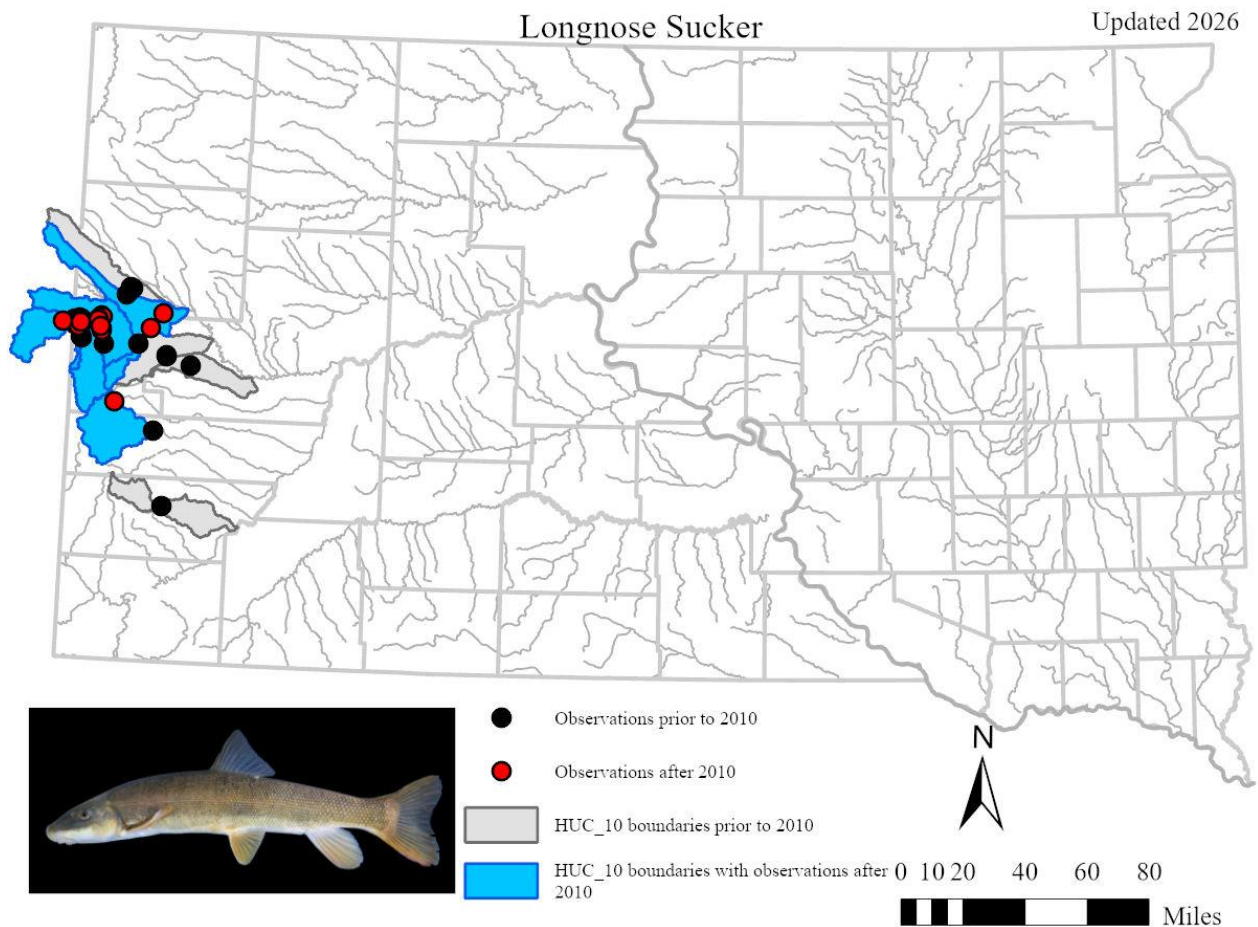
Habitat:

Habitat for Longnose Sucker may be lentic or lotic. Longnose Sucker prefer cool, clear streams and lakes with little to no turbidity and sand or gravel substrates (Baxter and Stone 1995; SDGFP 2006).

Distribution Within the State:

Longnose Sucker have been reported from a few cool, spring-fed tributaries of the Belle Fourche (Middle Belle Fourche River HUC_1012020205; Bear Butte Creek

HUC_1012020207; Spearfish Creek HUC_1012020302; Upper Rapid Creek HUC_1012011001; Upper Redwater Creek HUC_1012020303; Belle Fourche Reservoir-Owl Creek HUC_1012020202; Alkali Creek HUC_1012020209) and Cheyenne (French Creek HUC_1012010906) Rivers in the northern Black Hills, which is on the southern periphery of its geographic range (Bailey and Allum 1962; Stewart and Thilenius 1964; Chapman 1989; Olson 1998; Newman 1999). Since 2000, reported Longnose Sucker have been limited to Alkali, Crow, Redwater, and Spearfish creeks, all tributaries to the Belle Fourche River and Belle Fourche Reservoir (Bertrand 2010; Schultz 2011; Conklin and Bergstedt 2012).



Conservation / Management Considerations:

Longnose Suckers have been impacted by ecosystem alteration/habitat degradation. Longnose Suckers could also be threatened by mining, logging, road construction, and other activities near streams that may affect water quality and temperature. Longnose Sucker are highly vulnerable to climate change due to their need for a specific habitat type (SDGFP 2006, 2014a).

Monitoring and research needs will focus on determining baseline data and status through monitoring efforts, identifying conservation opportunity areas and limiting factors, and researching seasonal movements and recolonization capabilities.

Conservation Efforts in South Dakota:

Conservation efforts will focus on increasing partnerships and cooperative arrangements, increasing educational efforts, promoting best management practices that reduce/limit soil erosion and nutrient/pesticide runoff and restoring and maintaining habitat and stream connectivity (SDGFP 2014a). Additionally, objectives and strategies will follow those outlined within the Black Hills Fisheries Management Plan to standardize survey and sampling protocols and investigate trap and transfer techniques for Longnose Sucker into suitable habitats (SDGFP 2014b).

State Wildlife Grant Accomplishments:

- Evaluation of a decision support tool to help support fish species at risk in South Dakota streams– T-9 (2006). Aquatic GAP is a tool for predicting where aquatic species might find suitable habitat. This study’s goal was to test the accuracy of aquatic GAP by surveying streams and watersheds with historic occurrences of rare fish species and wetlands with potential habitat for them.
- Small stream fish ladders for steel culverts– T-67 (2016). Assessing the use of fish ladder designs to estimate the increase in passability of round galvanized steel culverts in natural streams in both eastern and western South Dakota.
- Updating and evaluating the distribution, density, and movement patterns of mountain sucker (*Catostomus platyrhynchus*) in South Dakota – T-63 (2020). Previous studies have shown that the Mountain Sucker occupies less than one-third of its historical distribution in the Black Hills of South Dakota. This study will not only update the distribution of Mountain Sucker but also the Longnose Sucker in the Black Hills.
- The occurrence patterns, current distribution, and population interrelatedness of at-risk fishes in the Black Hills ecoregion – T-93 (2023). Describe the current distribution and estimate population densities of at-risk native fishes in the Black Hills ecoregion with an emphasis on Lake Chub and Longnose Sucker.

Recovery Criteria/Goals:

Given that Longnose Sucker have limited natural dispersal abilities and are confined to cool spring-fed waters, the primary recovery goal for the management of the population of Longnose Sucker is to maintain existing populations and distribution, and protect the habitat within watersheds where Longnose Sucker are found. The specific goals of the management of Longnose Sucker are to work with fisheries biologists to standardize stream surveys to monitor populations and work with private land and habitat biologists to develop site specific best management practices to ensure habitat protection. Additionally, goals for delisting would include 50% of HUC_10 boundaries previously occupied to maintain current status (Post 2000), and evidence of natural reproducing populations.

Primary Reviewer: Chelsey Pasbrig, Aquatic Biologist

Other Staff or Experts Involved in the Review:

Jake Davis, Senior Biologist, GFP, Rapid City
Seth Fopma, Ph.D. Graduate Research Assistant, SDSU, Brookings
Eileen Dowd Stukel, Senior Wildlife Biologist, GFP, Pierre

Date Review Completed: June 10, 2026

Date Adopted by GFP Commission: April 6, 2018

Dates of Other Reviews, if appropriate: December 14, 2017, June 10, 2020, June 10, 2022, June 25, 2024

References:

- Bailey, R. M. and M. O. Allum. 1962. Fishes of South Dakota. Misc. Publ., Mus. Of Zoology, Univ. of Michigan, No. 119. 131 pp.
- Baxter, G. T. and M. D. Stone. 1995. Fishes of Wyoming. Wyoming Game and Fish Department, Cheyenne.
- Bertrand, K. et al. In preparation. *Fishes of the Dakotas*.
- Bertrand, K. 2010. Scientific collector's permit report. South Dakota Department of Game, Fish and Parks, Pierre, SD. Permit numbers 26, 28 and 29.
- Chapman, T. 1989. Longnose Sucker status, Belle Fourche Reservoir, Butte County, SD. South Dakota Department of Game, Fish and Parks. 5 pp.
- Conklin, D. Jr. and L. Bergstedt. 2012. Scientific collector's permit report. South Dakota Department of Game, Fish and Parks, Pierre, SD. Permit numbers 31 and 34.
- NatureServe. 2026. NatureServe Explorer: An online encyclopedia of life [web application]. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>. (Accessed: June 10, 2026).
- Newman, R. L. 1999. A biological assessment of four northern Black Hills streams and the reproductive success of longnose dace (*Rhinichthys cataractae*). M. S. Thesis. South Dakota State University, Brookings, South Dakota 2741.
- Olson, R. 1998. Finescale Dace and Lake Chub Survey. South Dakota Wildlife Diversity Small Grants Program. South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Schultz, L. 2011. Environmental factors associated with long-term trends of mountain sucker populations in the Black Hills, and an assessment of their thermal tolerance. M.S. Thesis. South Dakota State University, Brookings, South Dakota
- South Dakota Department of Game, Fish and Parks. 2006. Fragile Legacy: Rare Animals of South Dakota. Wildlife Division Publication. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014a. South Dakota Wildlife Action Plan. Wildlife Division Report 2014-03. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014b. Fisheries and aquatic resources adaptive management system 2014-2018: Black Hills Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks. 2019. Fisheries and aquatic resources adaptive management system 2019-2023: Northeast Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- Stewart, R. K. and C. A. Thilenius. 1964. Stream and lake inventory and classification in the Black Hills of South Dakota, 1964. SDGFP, Lake and Stream Classification Report. 101 pp.

SUMMARY OF UPDATES IN 2020:

In coordination with the Black Hills Fisheries Management Area Strategic Plan and fisheries biologists, an effort has been made to standardize nongame sampling across the state to better sample nongame fishes. Currently, workplans for the Black Hills Fisheries Management Area have identified waters to sample for nongame species through the 2023 sampling season which will include historic Longnose Sucker waterbodies.

SUMMARY OF UPDATES IN 2022:

Aquatic strategic planning efforts continue. In 2021, a State Wildlife Grant project began to describe the current distribution and estimate population densities of at-risk native fishes in the Black Hills ecoregion with an emphasis on Lake Chub and Longnose Sucker. Since the study began 139 Longnose Sucker have been sampled exclusively from Crow and Spearfish Creeks. Species ranking using NatureServe in 2022 to assess extinction risk using standard methods updated the species rank for Longnose Sucker from S1 (critically imperiled) to S2 (imperiled). Major categories assessed during species ranking are rarity, threats, and trends.

SUMMARY OF UPDATES IN 2024:

The project looking at the distribution and populations of at-risk native fishes in the Black Hills ecoregion was completed June 2023. Longnose Sucker were restricted to two major tributaries of the Redwater subbasin (Crow and Spearfish Creeks), where they were more often captured in stream reaches with steep banks and more even substrates. Additionally, Longnose Sucker were more common in areas with greater width-depth ratios and higher species richness. Species-specific genetic variation and degree of gene flow within and between streams was examined for 114 Longnose Sucker. Although Longnose Sucker presence is thought to be restricted to two single tributaries, admixture between individuals found in both streams suggest usage and movement between these streams within the Redwater River subbasin. Aquatic strategic planning efforts continue.

SUMMARY OF UPDATES IN 2026:

Aquatic strategic planning efforts continue. In 2023, a State Wildlife Grant project completed to describe the current distribution and estimate population densities of at-risk native fishes in the Black Hills ecoregion with an emphasis on Lake Chub and Longnose Sucker. Longnose Sucker were restricted to two major tributaries of the Redwater subbasin (Crow and Spearfish Creeks), where they were more often captured in stream reaches with steep banks and more even substrates. Additionally, Longnose Sucker were more common in areas with greater width-depth ratios and higher species richness. Species-specific genetic variation and degree of gene flow within and between streams was examined for 114 Longnose Sucker. Although Longnose Sucker presence is thought to be restricted to two single tributaries, admixture between individuals found in both streams suggest usage and movement between these streams within the Redwater River subbasin. Longnose Sucker continue to be present in both Crow and Spearfish Creeks.

STATE T&E SPECIES STATUS REVIEW

Species Name: Northern Pearl Dace, *Margariscus nachtriebi*

South Dakota Status, Including Legal Status and Special Listings:

- State threatened, ([SD Administrative Rule 41:10:02:06. List of threatened fish](#)).
- Monitored by South Dakota Nongame Conservation Program.
- State Heritage rank S2, (imperiled).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan.

Federal Status:

- NatureServe global rank G5 (secure, although it may be rare in some portions of the range); last reviewed 21 December 2017 (NatureServe 2026).
- USDA Forest Service, Region 2, Rocky Mountain Region sensitive species.

Basis For New Listing, Status Change (T to E, or E to T), Or Continued Listing with Same Status:

Northern Pearl Dace are listed as secure throughout their range, however, listed as imperiled in South Dakota (NatureServe 2016). The justification for including Northern Pearl Dace on the first list of state threatened (16 March 1978) fish is unknown but was presumably due to the need for specific cool, clear headwater habitats and limited survey efforts. Northern Pearl Dace are extremely vulnerable to extirpation with limited ability for recolonization and continued listing as state threatened species is recommended.

Description, Biology and Life History:

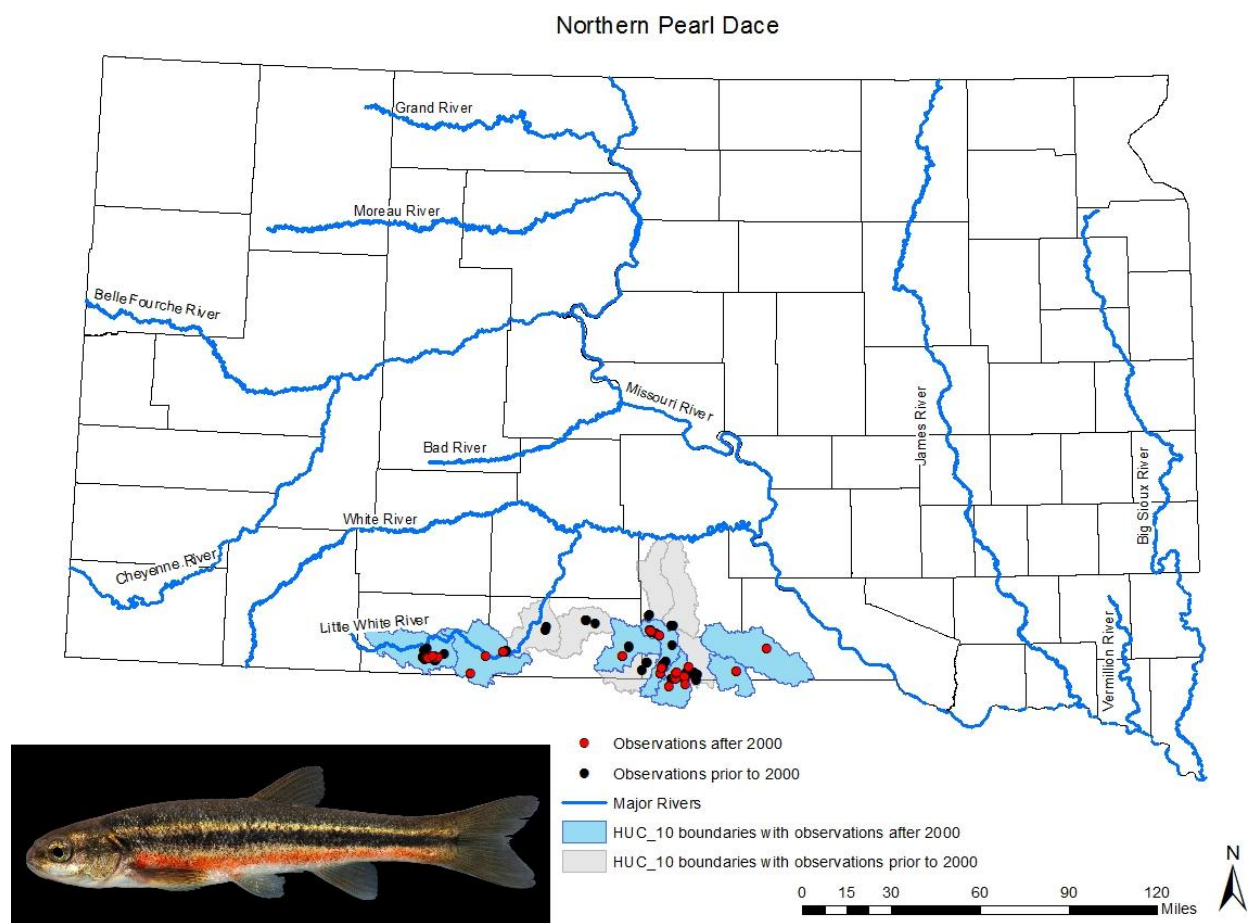
The Northern Pearl Dace is a small fish that is dark olive colored on the back with lighter sides and white belly; a dark lateral band is sometimes present but more distinct on younger individuals (SDGFP 2006; NGPC 2010). Northern Pearl Dace lack a black spot on the anterior portion of the dorsal fin base. The mouth is small and slightly subterminal, rarely reaching past the anterior origin of the eye. Nuptial males have orange-red sides and belly below the dark lateral band (Bertrand et al. *in prep.*). Little is known about the reproductive biology or life history for Northern Pearl Dace in South Dakota; however it is presumed that they spawn in the spring from April to early June, over gravel substrates (Baxter and Stone 1995; SDGFP 2006). Most individuals live 3 to 4 years (SDGFP 2006). The diet includes copepods, chironomids, molluscs, and other invertebrates along with filamentous algae (Scott and Crossman 1973; Baxter and Stone 1995; SDGFP 2006).

Habitat:

Habitat for Northern Pearl Dace may be lentic or lotic. However, Northern Pearl Dace prefers cool, clear headwater streams, ponds, and small lakes with gravel substrates. Northern Pearl Dace have also been found in association with beaver ponds, and well vegetated stream banks, abundant macrophyte growth and undercut banks (Scott and Crossman 1973; SDGFP 2006; NGPC 2010).

Distribution Within the State:

Within South Dakota, Northern Pearl Dace are found west of the Missouri River and have been reported from tributaries of the White, Niobrara and Keya Paha river drainages, which are on the southern periphery of the geographic range for Northern Pearl Dace (Bailey and Allum 1962; Cunningham and Olson 1994; Cunningham et al. 1995; Felts 2013; Bertrand et al. *in prep.*). Since 2000, Northern Pearl Dace have been reported in low numbers from the Little White and Keya Paha river tributaries (Felts 2013; Bertrand et al. *in prep.*).



Conservation / Management Considerations:

Northern Pearl Dace have been impacted by reductions in numbers of beaver dams, ecosystem alteration/habitat degradation, impoundments, channelization, pond drainage, conversion of land to agriculture, and pollution/pesticides/herbicides. Northern Pearl Dace are extremely vulnerable to climate change, due to their need for a specific habitat type (SDGFP 2006, 2014a).

Monitoring and research needs will focus on continuing to expand current monitoring efforts, assessing population dynamics and genetic variation/integrity, identifying conservation opportunity areas and limiting factors, and researching seasonal movements and recolonization capabilities.

Conservation Efforts in South Dakota:

Conservation efforts will focus on preserving suitable habitat, expanding partnerships and cooperative arrangements, increasing educational efforts, promoting best management practices that reduce/limit soil erosion and nutrient/pesticide runoff (SDGFP 2014a). Additionally, objectives and strategies will follow those outlined within the West River Fisheries Management Plans to standardize survey and sampling protocols and examine population status and trends for Northern Pearl Dace (SDGFP 2014b).

State Wildlife Grant Accomplishments:

- Evaluation of a decision support tool to help support fish species at risk in South Dakota streams– T-9 (2006). Aquatic GAP is a tool for predicting where aquatic species might find suitable habitat. This study’s goal was to test the accuracy of aquatic GAP by surveying streams and watersheds with historic occurrences of rare fish species and wetlands with potential habitat for them.
- Glacial relict fishes in spring fed headwater streams of South Dakota’s Sandhills region – T-2-8 (2013). The Sandhills area of South Dakota is a unique ecosystem that is home to many rare species, relict of Pleistocene Glaciation. This research assessed the current distribution, status and habitat requirements for these glacial relict fishes.
- Small stream fish ladders for steel culverts– T-67 (2016). Assessing the use of fish ladder designs to estimate the increase in passability of round galvanized steel culverts in natural streams in both eastern and western South Dakota.

Recovery Criteria/Goals:

Given that Northern Pearl Dace have limited natural dispersal abilities and are restricted to spring-fed waters, the primary recovery goals for the management of the population of Northern Pearl Dace are to maintain existing populations and protect the habitat within watersheds where Northern Pearl Dace are currently found. Specific strategies of the management of Northern Pearl Dace are to work with fisheries biologists to standardize sampling efforts in coordination with increased river/stream surveys and work with private land and habitat biologists to develop site specific best management practices to ensure habitat protection. Additionally, goals for delisting would include 50% of HUC_10 boundaries previously occupied to maintain current status (Post-2000) and evidence of natural reproducing populations.

Primary Reviewer: Chelsey Pasbrig, Aquatic Biologist

Other Staff or Experts Involved in the Review:

Eileen Dowd Stukel, Senior Wildlife Biologist, GFP, Pierre

Date Review Completed: June 10, 2026

Date Adopted by GFP Commission: April 6, 2018

Dates of Other Reviews, if appropriate: December 14, 2017, June 10, 2020, June 10, 2022, June 26, 2024

References:

- Bailey, R. M. and M. O. Allum. 1962. Fishes of South Dakota. Misc. Publ., Mus. Of Zoology, Univ. of Michigan, No. 119. 131 pp.
- Baxter, G. T. and M. D. Stone. 1995. Fishes of Wyoming. Wyoming Game and Fish Department, Cheyenne.
- Bertrand et al. In preparation. *Fishes of the Dakotas*
- Cunningham, G. and R. Olson. 1994. Fish species collected in streams in West River South Dakota-1994. Unpublished report to South Dakota Game, Fish and Parks. Pierre, South Dakota. 10 pp.
- Cunningham, G. R., R. D. Olson, and S. M. Hickey. 1995. Fish surveys of the streams and rivers of South Central South Dakota west of the Missouri River. Proc. S.D. Acad. Sci. 74:55-64.
- Felts, E. 2013. Ecology of glacial relict fishes in South Dakota's Sandhills region. M.S. Thesis. South Dakota State University, Brookings, South Dakota.
- NatureServe. 2026. NatureServe Explorer: An online encyclopedia of life [web application]. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>. (Accessed: June 10, 2026).
- Nebraska Game and Parks Commission (NGPC). 2010. Nebraska's At-Risk Wildlife. Wildlife Division Publication. Nebraska Game and Parks Commission, Lincoln.
- Scott, W. B. and E. J. Crossman. 1973. Freshwater Fishes of Canada. Fisheries Research Board of Canada, Bulletin 184. 966 pp.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2006. Fragile Legacy: Rare Animals of South Dakota. Wildlife Division Publication. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014a. South Dakota Wildlife Action Plan. Wildlife Division Report 2014-03. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014b. Fisheries and aquatic resources adaptive management system 2014-2018: West River Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks. 2019. Fisheries and aquatic resources adaptive management system 2019-2023: Northeast Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.

SUMMARY OF UPDATES IN 2020:

In coordination with the West River Fisheries Management Area Strategic Plan and fisheries biologists, an effort has been made to standardize nongame sampling across the state to better sample nongame fishes. Currently, workplans for the West River Fisheries Management Area have identified waters to sample for nongame species through the 2023 sampling season which will include historic Northern Pearl Dace waterbodies.

SUMMARY OF UPDATES IN 2022:

Aquatic strategic planning efforts continue.

SUMMARY OF UPDATES IN 2024:

Aquatic strategic planning efforts continue. Since 2019, standard surveys in waters with rare species have incorporated standardized nongame sampling procedures. Tributaries to the Keya Paha drainage are scheduled to be surveyed over the next four years.

SUMMARY OF UPDATES IN 2026:

Aquatic strategic planning efforts continue. Since 2019, standard surveys in waters with rare species have incorporated standardized nongame sampling procedures. Tributaries to the Keya Paha drainage are scheduled to be surveyed over the next two years.

STATE T&E SPECIES STATUS REVIEW

Species Name: Northern Redbelly Dace, *Chrosomus eos*

South Dakota Status, Including Legal Status and Special Listings:

- State threatened, ([SD Administrative Rule 41:10:02:06. List of threatened fish](#)).
- Monitored by South Dakota Nongame Conservation Program.
- State Heritage rank S3, (vulnerable).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan.

Federal Status:

- NatureServe global rank G5 (secure, although it may be rare in some portions of the range); last reviewed 17 August 2015 (NatureServe 2026)
- USDA Forest Service, Region 1, Dakota Prairie Grassland, 2011 aquatic sensitive species
- USDA Forest Service, Region 2, Rocky Mountain Region sensitive species

Basis For New Listing, Status Change (T to E, or E to T), Or Continued Listing with Same Status:

Northern Redbelly Dace are listed as secure throughout their range, however, listed as imperiled in South Dakota (NatureServe 2016). The justification for including Northern Redbelly Dace on the first list of state threatened (16 March 1978) fish is unknown but was presumably due to the need for specific spring-fed habitats and fragmentation from interconnecting waterways of suitable habitat. Northern Redbelly Dace are extremely vulnerable to extirpation with limited ability for recolonization and continued listing as state threatened species is recommended.

Description, Biology And Life History:

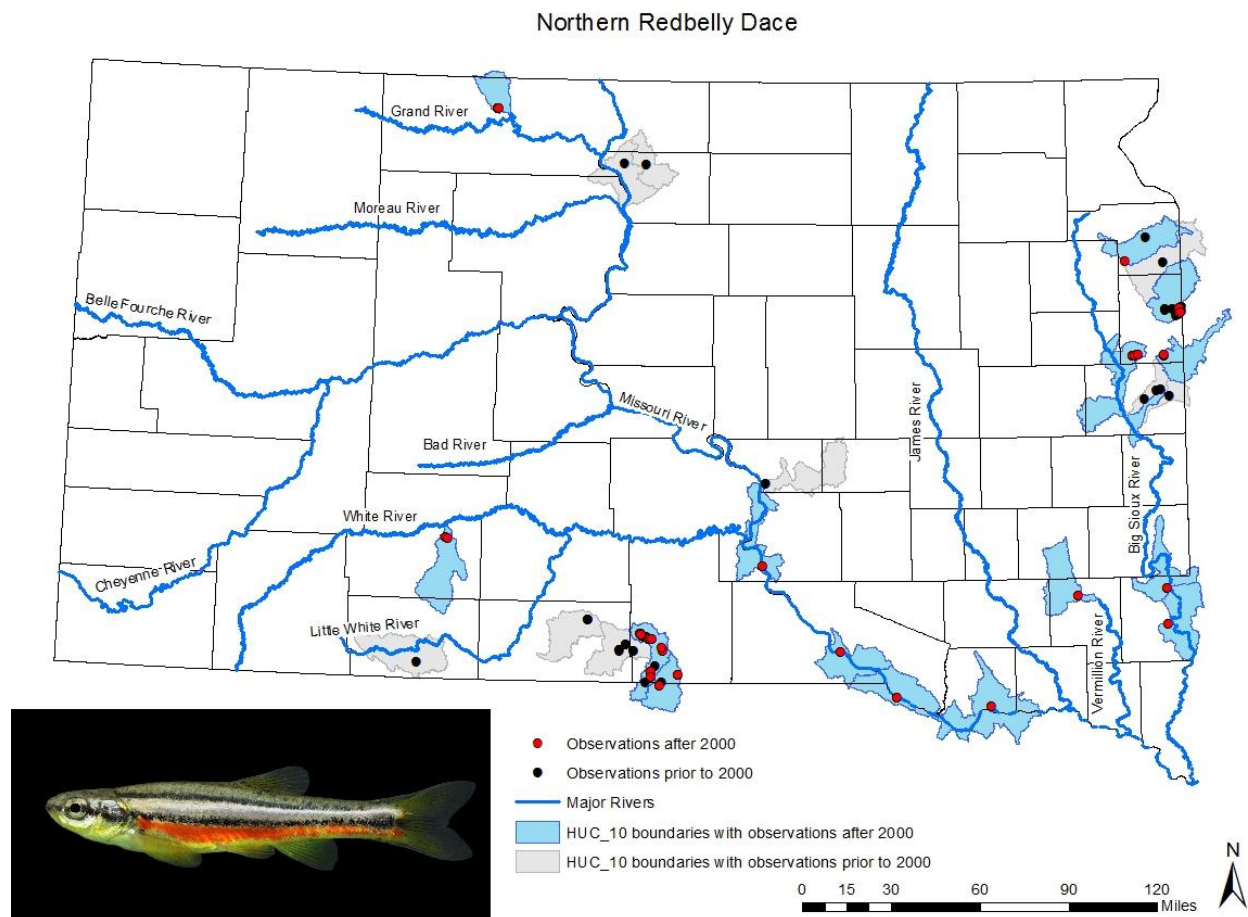
The Northern Redbelly Dace is a small, dark olive to silvery minnow with two dark lateral stripes separated by an iridescent, silvery band on the sides. In breeding males, the silvery belly is reddish in color with yellow fins (NGPC 2010). The mouth is upturned; with the chin anterior to the upper lip (reaching more than halfway to the eye) and the snout is rounded (Bertrand et al. *in prep*). Little is known about the reproductive biology or life history for Northern Redbelly Dace in South Dakota; however it is presumed that they spawn between late April and June over aquatic vegetation. Eggs hatch within 8-10 days (Faber 1984; SDGFP 2006). Most individuals live 3 to 4 years (NGPC 2010). The diet includes mainly diatoms and filamentous algae, also zooplankton, invertebrates and plant material (SDGFP 2006; NGPC 2010).

Habitat:

Habitat for Northern Redbelly Dace may be lentic or lotic. However, Northern Redbelly Dace prefer spring-fed streams with adequate vegetation; slow to moderate current, and silt or sand substrates. Habitat also includes boggy lakes, ponds, beaver ponds and pools of headwater streams (Lee et al. 1980; SDGFP 2006; NGPC 2010).

Distribution Within the State:

Within South Dakota, Northern Redbelly Dace are found primarily east of the Missouri River and have been reported from tributaries of the Missouri, Big Sioux, Minnesota, White, Niobrara and Keya Paha river drainages which are on the southern periphery of the geographic range for Northern Redbelly Dace (Bailey and Allum 1962; McCoy and Hales 1974; Cunningham and Olson 1994; Diertman and Berry 1994; Cunningham et al. 1995; Cunningham 1999; Heakin et al. 2003; Felts 2013; Bertrand et al. *in prep.*). Since 2000, Northern Redbelly Dace have been reported in low numbers from the Big Sioux, Minnesota, Keya Paha, and Lower Missouri river tributaries (Heakin et al. 2003; Felts 2013; Bertrand et al. *in prep.*).



Conservation / Management Considerations:

Northern Redbelly Dace have been impacted by reductions in numbers of beaver dams, ecosystem alteration/habitat degradation, mining, logging, construction of roads, heavy grazing, and stream channelization. Northern Redbelly Dace are extremely vulnerable to climate change, due to their need for a specific habitat type (SDGFP 2006, 2014a).

Monitoring and research needs will focus on continuing to expand current monitoring efforts, assessing population dynamics and genetic variation/integrity, identifying conservation opportunity conservation opportunity areas and limiting factors, and researching seasonal movements and recolonization capabilities.

Conservation Efforts in South Dakota:

Conservation efforts will focus on expanding partnerships and cooperative arrangements, increasing educational efforts, promoting best management practices that reduce/limit soil erosion and nutrient/pesticide runoff (SDGFP 2014a). Additionally, objectives and strategies will follow those outlined within the East River, West River, and Missouri River Fisheries Management Plans to standardize survey and sampling protocols and examine population status and trends for Northern Redbelly Dace (SDGFP 2014b, 2014c, 2014d).

State Wildlife Grant Accomplishments:

- Evaluation of a decision support tool to help support fish species at risk in South Dakota streams– T-9 (2006). Aquatic GAP is a tool for predicting where aquatic species might find suitable habitat. This study’s goal was to test the accuracy of aquatic GAP by surveying streams and watersheds with historic occurrences of rare fish species and wetlands with potential habitat for them.
- Comprehensive aquatic survey of the Minnesota River tributaries – T-17 (2008). This unique aquatic ecosystem in northeastern South Dakota was sampled for fish, mussels, and aquatic invertebrates to identify species composition, with an emphasis on identifying sites with rare aquatic species.
- Glacial relict fishes in spring fed headwater streams of South Dakota’s Sandhills region – T-2-8 (2013). The Sandhills area of South Dakota is a unique ecosystem that is home to many rare species, relict of Pleistocene Glaciation. This research assessed the current distribution, status and habitat requirements for these glacial relict fishes.
- Small stream fish ladders for steel culverts– T-67 (2016). Assessing the use of fish ladder designs to estimate the increase in passability of round galvanized steel culverts in natural streams in both eastern and western South Dakota.
- Evaluation of the James River Conservation Reserve Enhancement Program (CREP) of South Dakota– T-59 (2018). The CREP seeks to enhance natural resource conservation programs in selected watersheds nationwide to address specific regional conservation priorities by attempting to alleviate agriculturally related environmental concerns. This project assesses the effects of CREP on water quality, aquatic habitats, fish assemblages, and avifauna response to the James River CREP.
- Reducing stream fragmentation in eastern South Dakota: Identifying high priority barriers and evaluating low-cost techniques to improve fish habitat- T-99 (2025). Road crossings act as major barriers to the movement of stream fishes. This project assessed

barrier severity and looked at low-cost fish ladders as an alternative to aid in fish movement.

- Quantifying fish responses to in-stream habitat restoration in Gary Creek, South Dakota-T-101 (2027). Gary Creek is a low discharge, groundwater dependent stream, that has seen habitat degradation due to bank erosion, substrate embeddedness, and lack of deep water pool habitat. This project evaluated the before and after effectiveness of habitat restoration efforts for target species including Northern Redbelly Dace including their habitat and food requirements.
- Gary Gulch Game Production Area stream restoration and access project- T-106 (2026). Gary Creek is a low discharge, groundwater dependent stream, that has seen habitat degradation due to bank erosion, substrate embeddedness, and lack of deep-water pool habitat. This project directly enhanced in stream and riparian habitat with the construction of in stream boulders and woody debris to create pools and washouts and stabilize bank locations that show signs of high erosion or scouring on Gary Creek to benefit SGCN including Northern Redbelly Dace.

Recovery Criteria/Goals:

Given that Northern Redbelly Dace have limited natural dispersal abilities and are restricted to spring-fed waters, the primary recovery goals for the management of the population of Northern Redbelly Dace are to maintain existing populations and protect the habitat within watersheds where Northern Redbelly Dace are currently found. Specific strategies of the management of Northern Redbelly Dace are to work with fisheries biologists to standardize sampling efforts in coordination with increased river/stream surveys and work with private land and habitat biologists to develop site specific best management practices to ensure habitat protection. Additionally, goals for delisting would include 50% of HUC_10 boundaries previously occupied to maintain current status (Post-2000) and evidence of natural reproducing populations.

Primary Reviewer: Chelsey Pasbrig, Aquatic Biologist

Other Staff or Experts Involved in the Review:

Eileen Dowd Stukel, Senior Wildlife Biologist, SDGFP, Pierre

Date Review Completed: June 10, 2022

Date Adopted by GFP Commission: April 6, 2018

Dates of Other Reviews, if appropriate: December 14, 2017, June 10, 2020

References:

- Bailey, R. M. and M. O. Allum. 1962. Fishes of South Dakota. Misc. Publ., Mus. Of Zoology, Univ. of Michigan, No. 119. 131 pp.
- Bertrand et al. In preparation. *Fishes of the Dakotas*
- Cunningham, G. 1999. Rare fish surveys in selected streams of eastern South Dakota. South Dakota Small Grants Program. South Dakota Department of Game, Fish and Parks, Pierre, SD.

- Cunningham, G. and R. Olson. 1994. Fish species collected in streams in West River South Dakota-1994. Unpublished report to South Dakota Game, Fish and Parks. Pierre, South Dakota. 10 pp.
- Cunningham, G. R., R. D. Olson, and S. M. Hickey. 1995. Fish surveys of the streams and rivers of South Central South Dakota west of the Missouri River. *Proc. S.D. Acad. Sci.* 74:55-64.
- Dieterman, D. J. and C. R. Berry, Jr. 1994. Fishes in seven streams of the Minnesota River drainage in northeastern South Dakota. *Proc. S. D. Acad. Sci.* 74:23-30.
- Faber, D. J. 1985. The early development of the northern redbelly dace, *Phoxinus eos* (Cope). *Canadian Journal of Zoology* 63:1724-1729.
- Felts, E. 2013. Ecology of glacial relict fishes in South Dakota's Sandhills region. M.S. Thesis. South Dakota State University, Brookings, South Dakota 2933.
- Heakin, A., N. Morey, and C. Berry, Jr. 2003. Environmental monitoring and assessment program activities in South Dakota. Annual Progress Report Submitted to the South Dakota Department of Game, Fish and Parks by the U.S. Geological Survey.
- Lee, D. S., C. R. Gilbert, C. H. Hocutt, R. E. Jenkins, D. E. McAllister, and J. R. Stauffer, Jr. 1980. Atlas of North American freshwater fishes. North Carolina State Museum of Natural History, Raleigh, North Carolina. 854 pp.
- McCoy, R. W. and D. C. Hales. 1974. A survey of eight streams in eastern South Dakota: Physical and chemical characteristics, vascular plants, insects and fishes. *Proc. S. S. Acad. Sci.* 53:202-219.
- NatureServe. 2026. NatureServe Explorer: An online encyclopedia of life [web application]. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>. (Accessed: June 10, 2026).
- Nebraska Game and Parks Commission (NGPC). 2010. Nebraska's At-Risk Wildlife. Wildlife Division Publication. Nebraska Game and Parks Commission, Lincoln.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2006. Fragile Legacy: Rare Animals of South Dakota. Wildlife Division Publication. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014a. South Dakota Wildlife Action Plan. Wildlife Division Report 2014-03. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014b. Fisheries and aquatic resources adaptive management system 2014-2018: East River Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014c. Fisheries and aquatic resources adaptive management system 2014-2018: West River Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014d. Fisheries and aquatic resources adaptive management system 2014-2018: Missouri River Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks. 2019. Fisheries and aquatic resources adaptive management system 2019-2023: Northeast Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.

SUMMARY OF UPDATES IN 2020:

In coordination with the East River, West River and Missouri River Fisheries Management Area Strategic Plans and fisheries biologists, an effort has been made to standardize nongame sampling across the state to better sample nongame fishes. Currently, workplans for all fish management areas have identified waters to sample for nongame species through the 2023 sampling season which will include historic Northern Redbelly Dace waterbodies.

SUMMARY OF UPDATES IN 2022:

Aquatic strategic planning efforts continue. Species ranking using NatureServe in 2022 to assess extinction risk using standard methods updated the species rank for Northern Redbelly Dace S2 (impaired) to S3 (vulnerable). Major categories assessed during species ranking are rarity, threats, and trends.

SUMMARY OF UPDATES IN 2024:

Aquatic strategic planning efforts continue. Since 2019, standard surveys in waters with rare species have incorporated standardized nongame sampling procedures. Recent occurrences have been documented in Peg Munky Run, a tributary to the Big Sioux River and Gary Creek, a tributary to West Branch Lac Qui Parle River. Tributaries to the Keya Paha drainage are scheduled to be surveyed over the next four years.

SUMMARY OF UPDATES IN 2026:

Aquatic strategic planning efforts continue. Since 2019, standard surveys in waters with rare species have incorporated standardized nongame sampling procedures. Recent occurrences have been documented in Peg Munky Run, a tributary to the Big Sioux River and Gary Creek, a tributary to West Branch Lac Qui Parle River. Tributaries to the Keya Paha drainage are scheduled to be surveyed over the next two years. A stream restoration project was initiated on Gary Creek in late 2024 and completed in early 2025, to directly enhance stream and riparian habitat with the construction of stream boulders and woody debris to create pools and secure washouts and stabilize bank locations that show signs of high erosion or scouring. In conjunction with this project a before and after habitat evaluation has been ongoing by SDSU to evaluate the effectiveness of habitat restoration efforts for target species including Northern Redbelly Dace including their habitat and food requirements.

STATE T&E SPECIES STATUS REVIEW

Species Name: Pallid Sturgeon, *Scaphirhynchus albus*

South Dakota Status, Including Legal Status and Special Listings:

- State endangered, ([SD Administrative Rule 41:10:02:05. List of endangered fish](#)).
- Monitored by South Dakota Nongame Conservation Program.
- State Heritage rank S1, (critically imperiled).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan.

Federal Status:

- Federal endangered, ([55 FR 36641-36647](#)). Federal recovery plan finalized in 1993 ([USFWS 1993](#)) and a revised recovery plan was finalized in 2014 ([USFWS 2014](#)).
- NatureServe global rank G2 (imperiled, large range and area of occupancy in larger channels of the Mississippi-Missouri river system and Atchafalaya River; range much reduced by dams in the upper Missouri River; habitat changes and barriers have resulted in limited natural recruitment and continuing declines in wild populations in the Missouri River basin; last reviewed 21 November 2018; NatureServe 2026).

Basis For New Listing, Status Change (T to E, or E to T), Or Continued Listing with Same Status:

Pallid Sturgeon are listed as imperiled and rare throughout their range, and listed as critically imperiled in South Dakota. The justification for including Pallid Sturgeon on the first list of state endangered (16 March 1978) fish is unknown. Limiting factors include activities which affect in-river connectivity and the natural form, function, and hydrologic processes of rivers; illegal harvest; impaired water quality and quantity; entrainment; and life history attributes of the species (i.e. delayed sexual maturity, females do not spawn every year and larval drift requirements). Despite increased sampling efforts and improved species status within the lower portions of their range (Mississippi and Atchafalaya rivers), data regarding natural recruitment, mortality, habitat use, and abundance remain limited (USFWS 2014). And without supplementation efforts, the species faces local extirpation within several reaches, therefore continued listing as a state endangered species is recommended.

Description, Biology and Life History:

The Pallid Sturgeon is a primitive fish with a cartilaginous skeleton. Pallid Sturgeon have long, slender grey-white body with a flattened shovel-shaped snout. Pallid Sturgeon have embedded scutes or bony plates that armor their dorsal surface and sides but have naked or smooth bellies. Origins of fringed inner chin barbels are half as long and anterior to origins of two outer barbels (Bertrand et al. in prep.). Pallid Sturgeon are similar in appearance to the more common Shovelnose Sturgeon. Pallid Sturgeon spawn from June through August with fecundity related to body size (40,000-150,000 eggs) (Keenlyne et al. 1992; SDGFP 2006a; George et al. 2012). Pallid Sturgeon can be long-lived, with females reaching sexual maturity later than males (Keenlyne and Jenkins 1993). Sexual maturity can vary between hatchery-reared and wild fish and is dependent on local conditions. For wild fish, estimated age at first reproduction was 15-20 years for females and approximately 5 years for males (Keenlyne and Jenkins 1993). Hatchery-reared Pallid Sturgeon attained sexual maturity

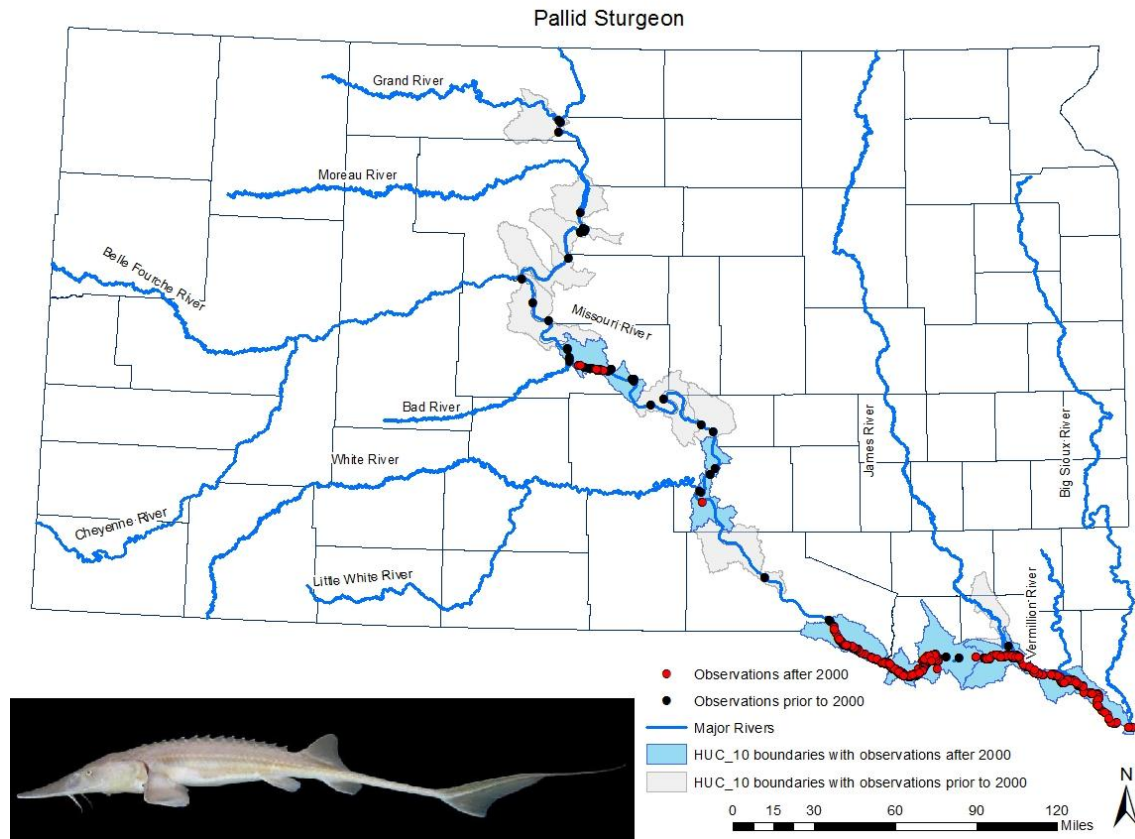
between 6-9 years (Steffensen 2012; USFWS 2014). Females do not spawn each year, spawning every 2-3 years (Kallemeyn 1983; USFWS 2014). Pallid Sturgeon diets are generally composed of fish and aquatic insect larvae (SDGFP 2006a; USFWS 2014).

Habitat:

Habitat for the Pallid Sturgeon is lotic, as they are a bottom-oriented, large river fish inhabiting the Missouri and Mississippi rivers. The Pallid Sturgeon evolved and is adapted to the pre-development habitat conditions that historically existed in these rivers. These conditions generally can be described as large, free-flowing, and turbid rivers with a diverse assemblage of dynamic physical habitats (Pflieger 1975; Kallemeyn 1983; USFWS 2014).

Distribution Within the State:

Pallid Sturgeon historically were reported throughout the Missouri River in South Dakota, which is within the northcentral part of the range (Bailey and Allum 1962; SDGFP 2006a; USFWS 2014). Since 2000, Pallid Sturgeon have been reported in low relative numbers from the Missouri River between Fort Randall and Gavins Point dams and downstream from Gavins Point Dam (Shuman et al. 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2013; Shuman and Klumb 2012; Stukel et al. 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014; Pierce et al. 2014; USFWS 2014; Bertrand et al. in prep.). In 2004, a single Pallid Sturgeon was netted during Paddlefish surveys from Lake Francis Case (Bertrand et al. in prep.). In 2006, USFWS and GFP staff participated in a collaborative gillnetting effort to search for remnant Pallid Sturgeon for hatchery broodstock in Lake Sharpe. Subsequent sampling efforts on Lake Sharpe have not produced any Pallid Sturgeon. The majority of Pallid Sturgeon collected are of hatchery origin or translocated fish that were used for broodstock production.



Conservation / Management Considerations:

Pallid Sturgeon have been impacted by large river habitat alterations, including river channelization, impoundment, and altered flow regimes, water quality (pollution/pesticides/herbicides), entrainment, and hybridization with Shovelnose Sturgeon. It is also suggested that Pallid Sturgeon are moderately vulnerable to climate change (SDGFP 2014a; USFWS 1993, 2014). The effects from dams (i.e. altered hydrographs and temperature profiles, altered ecologic processes, habitat fragmentation, and conversion of riverine reaches to reservoirs) may be the single greatest factors affecting Pallid Sturgeon in South Dakota.

Monitoring and research needs should continue to expand current monitoring efforts, while developing standardized protocols for monitoring all life history stages of Pallid Sturgeon. Additionally, research needs will evaluate the role of sediment transport and discharge on the creation and maintenance of habitats for all life stages, identifying limiting factors associated with natural recruitment, research spawning and potential natural recruitment on the James River and below Gavins Point Dam and researching seasonal movements (SDGFP 2014a).

Conservation Efforts in South Dakota:

Past:

More than 90,000 acres of land were transferred from the U.S. Army Corps of Engineers (USACE) to the State of South Dakota as a result of the Water Resources Development Act of 1999. Land transferred to the State of South Dakota is managed by Wildlife and/or Parks and Recreation divisions of South Dakota Department of Game, Fish and Parks (GFP). Two products resulted from GFP's expanded role in endangered species management along the Missouri River; 1) an interagency Memorandum of Agreement (MOA) regarding endangered species protection and recovery along the river, and 2) a state management plan for the Pallid Sturgeon (SDGFP 2006b).

The first 5-year Missouri River endangered species interagency MOA was finalized in 2001 and included specific and shared commitments of 3 agencies; GFP, USACE, and the U.S. Fish and Wildlife Service (USFWS). Subsequent MOAs included the National Park Service (NPS) in addition to the original 3 agencies. MOA accomplishments by all participants have been summarized by GFP and include such activities as biological surveys and production, specific protocols or policies developed to help implement the MOA, outreach and educational efforts related to Missouri River endangered species, law enforcement efforts, and relevant Section 7 consultations among federal agencies.

As GFP assumed responsibility for additional ownership and management of lands along the Missouri River, concern increased about the possibility of needing permission for incidental take. State management plans were prepared for the 4 species covered by the MOA as part of an agency intention to submit a habitat conservation plan to allow incidental take of federal listed species. Management plans were prepared for the Pallid Sturgeon and Bald Eagle. Piping Plover and Interior Least Tern were covered in one plan. The HCP was not formally pursued.

The state management plan (SDGFP 2006b) listed the following components of Pallid Sturgeon recovery in South Dakota:

1. Participate in a river-wide Pallid Sturgeon monitoring projected funded by the USACE.
2. Broodstock recovery from Lake Sharpe for augmentation
3. Pallid Sturgeon stocking
4. Participate in the Missouri River Natural Resources Committee, Mississippi Interstate Cooperative Resources Association, Great Plains Fisheries Workers Association, Missouri River Restoration Program/Task Force, a part of the Missouri River Trust Missouri River Association of States and tribes (MORAST), Upper and Middle Basin Workgroups and in development of the Missouri River Recovery Implementation Committee (MRRIC).
5. Provide input on the Corps' Annual Operating Plan (AOP)
6. Increase public knowledge and interest in Pallid Sturgeon

Ongoing:

As of October 2015, a new 5-year Missouri River Endangered Species MOA went into effect. The purpose of the MOA is to provide guidance and specific agency commitments for

management, protection, and recovery of the Least Tern, Piping Plover, Pallid Sturgeon, and Bald Eagle along the Missouri River for the 4 signatory agencies (GFP, USFWS, USACE, and NPS). It is the intent of the signatory agencies to cooperatively commit to protect and manage Pallid Sturgeon through law enforcement and public outreach and their habitat by minimizing threats from existing and proposed human activities.

The Pallid Sturgeon Population Assessment team was assembled to initiate a comprehensive monitoring plan designed to assess survival, movement, distribution, and habitat use of wild and hatchery reared (stocked) Pallid Sturgeon. The Population Assessment Team consists of field crews from several state and federal agencies. The Missouri River was divided into 14 sampling segments for this project. These segments were designated by commonalities in habitat conditions. Each field crew is responsible for sampling one or two segments of the river using standardized methods. Habitat classification, gear deployment, and reporting are all guided by a set of standard operation procedures produced by the team (Welker 2012).

Since 2005, the GFP Sturgeon Crew has monitored Segment 7 (of 14) on the Missouri River for Pallid Sturgeon and other native fish populations. This Segment is located between Gavins Point Dam and Ponca State Park, NE (miles 811 to 752). Segment 7 coincides with the lower (59-mile) reach of Missouri National Recreational River.

In addition GFP continues to be an active partner and participant in the Missouri River Natural Resources Committee, Mississippi Interstate Cooperative Resources Association, Great Plains Fisheries Workers Association, MORAST, and MRRIC.

Future:

GFP intends to continue its participation in the multiagency Missouri River endangered species MOA. GFP further intends to assist with new recovery goals established in the revised Pallid Sturgeon Recovery Plan (USFWS 2014).

Additionally, conservation efforts will focus on increasing partnerships and cooperative arrangements, increasing educational efforts, promoting best management practices that reduce/limit soil erosion and nutrient/pesticide runoff, maintaining/restoring natural hydrology and stream connectivity when possible, developing captive breeding and stocking programs, and river corridor habitat protection through conservation programs/incentives or purchase (SDGFP 2006b, 2014a). In addition, objectives and strategies will follow those outlined within the Missouri River Fisheries Management Plan to incorporate Pallid Sturgeon population assessment program information into survey and management strategies (SDGFP 2014b).

State Wildlife Grant Accomplishments:

- Development and application of a habitat assessment tool for juvenile Pallid Sturgeon in the upper Missouri River – T-24 (2008). This study was designed to provide a better understanding of the habitat requirements and food habits of juvenile Pallid Sturgeon in the Missouri River.
- Evaluation of the James River Conservation Reserve Enhancement Program (CREP) of South Dakota– T-59 (2017). The CREP seeks to enhance natural resource conservation

programs in selected watersheds nationwide to address specific regional conservation priorities by attempting to alleviate agriculturally related environmental concerns. This project assesses the effects of CREP on water quality, aquatic habitats, fish assemblages, and avifauna response to the James River CREP.

- Population characteristics, movement, and habitat use of Shovelnose Sturgeon in Lake Sharpe, South Dakota- T-72 (2021). This study was designed to provide a better understanding of the population demographics of Shovelnose Sturgeon in Lake Sharpe, however has the potential to sample Pallid Sturgeon as well.

Recovery Criteria/Goals:

GFP intend to continue its participation in the multiagency Missouri River endangered species MOA. Despite having state specific management actions in the state management plan, South Dakota will cooperate with the USFWS in meeting recovery goals described in the revised federal recovery plan, because this revised federal plan will reflect the most current scientific and management information (SDGFP 2006b; USFWS 2014).

Primary Reviewer: Chelsey Pasbrig, Aquatic Biologist

Other Staff or Experts Involved in the Review:

Landon Pierce, Fish and Wildlife Biologist, USFWS, Great Plains Fish and Wildlife Conservation Office, Pierre

Sam Stukel, Fish and Wildlife Biologist, USFWS, Gavins Point National Fish Hatchery, Yankton

Nathan Loecker, Fisheries Biologist, GFP, Sioux Falls

Eileen Dowd Stukel, Senior Wildlife Biologist, GFP, Pierre

Date Review Completed: June 12, 2026

Date Adopted by GFP Commission: April 6, 2018

Dates of Other Reviews, if appropriate: December 14, 2017, June 12, 2020, June 10, 2022, June 27, 2024

References:

George, S. G., W. T. Slack, and J. J. Hoover. 2012. A note on the fecundity of Pallid Sturgeon. *Journal of Applied Ichthyology*. 28(4): 512-515.

Keenlyne, K. D., E. M. Grossman, and L. G. Jenkins. 1992. Fecundity of the Pallid Sturgeon. *Transactions of the American Fisheries Society* 121:139-140.

Klumb, R. A., D. A. Shuman, D. A. James, and K. L. Grohs. 2012. Movement Patterns of Age-1 and Age-7 Pallid Sturgeon Within the Missouri River During Record 2011 Discharges Downstream of Fort Randall Dam. Progress Report Prepared for WAPA, Billings, Montana and the Upper Basin Pallid Sturgeon Workgroup USFWS, Great Plains Fish and Wildlife Conservation Office, Pierre, South Dakota.

Missouri River Recovery Program. Pallid Sturgeon and Associated Fish Community Population Assessment website:

http://moriverrecovery.usace.army.mil/mrrp/f?p=136:155:12288912760890::NO::PIS_ID:44.

- NatureServe. 2026. NatureServe Explorer: An online encyclopedia of life [web application]. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>. (Accessed: June 12, 2026).
- Pierce, L., D. A. Shuman, R. A. Klumb, D. A. James, and K. L. Grohs. 2014. 2013 annual report. Pallid sturgeon population assessment and associated fish community monitoring for the Missouri River: Segments 5 and 6. U.S. Fish and Wildlife Service, Great Plains Fish and Wildlife Conservation Office, Pierre, South Dakota. Prepared for the U.S. Army Corps of Engineers – Missouri River Recovery Program. 144 pp.
- Shuman, D. A., R. A. Klumb, and S. T. McAlpin. 2005. 2004 annual report. Pallid sturgeon population assessment and associated fish community monitoring for the Missouri River: Segments 5 and 6. U.S. Fish and Wildlife Service, Great Plains Fish and Wildlife Conservation Office, Pierre, South Dakota. Prepared for the U.S. Army Corps of Engineers – Missouri River Recovery Program. 129 pp.
- Shuman, D. A., G. A. Wanner, and R. A. Klumb. 2006. 2005 annual report. Pallid sturgeon population assessment and associated fish community monitoring for the Missouri River: Segments 5 and 6. U.S. Fish and Wildlife Service, Great Plains Fish and Wildlife Conservation Office, Pierre, South Dakota. Prepared for the U.S. Army Corps of Engineers – Missouri River Recovery Program. 191 pp.
- Shuman, D. A., G. A. Wanner, R. A. Klumb, and W. J. Stancill. 2007. 2006 annual report. Pallid sturgeon population assessment and associated fish community monitoring for the Missouri River: Segments 5 and 6. U.S. Fish and Wildlife Service, Great Plains Fish and Wildlife Conservation Office, Pierre, South Dakota. Prepared for the U.S. Army Corps of Engineers – Missouri River Recovery Program. 116 pp.
- Shuman, D. A., G. A. Wanner, and R. A. Klumb. 2008. 2007 annual report. Pallid sturgeon population assessment and associated fish community monitoring for the Missouri River: Segments 5 and 6. U.S. Fish and Wildlife Service, Great Plains Fish and Wildlife Conservation Office, Pierre, South Dakota. Prepared for the U.S. Army Corps of Engineers – Missouri River Recovery Program. 132 pp.
- Shuman, D. A., R. A. Klumb, and G. A. Wanner. 2009. 2008 annual report. Pallid sturgeon population assessment and associated fish community monitoring for the Missouri River: Segments 5 and 6. U.S. Fish and Wildlife Service, Great Plains Fish and Wildlife Conservation Office, Pierre, South Dakota. Prepared for the U.S. Army Corps of Engineers – Missouri River Recovery Program. 132 pp.
- Shuman, D. A., R. A. Klumb, K. L. Grohs, and G. A. Wanner. 2010. 2009 annual report. Pallid sturgeon population assessment and associated fish community monitoring for the Missouri River: Segments 5 and 6. U.S. Fish and Wildlife Service, Great Plains Fish and Wildlife Conservation Office, Pierre, South Dakota. Prepared for the U.S. Army Corps of Engineers – Missouri River Recovery Program. 133 pp.
- Shuman, D. A., R. A. Klumb, G. A. Wanner, and K. L. Grohs. 2011. 2010 annual report. Pallid sturgeon population assessment and associated fish community monitoring for the Missouri River: Segments 5 and 6. U.S. Fish and Wildlife Service, Great Plains Fish and Wildlife Conservation Office, Pierre, South Dakota. Prepared for the U.S. Army Corps of Engineers – Missouri River Recovery Program. 139 pp.
- Shuman, D. A. and R. A. Klumb. 2012. 2011 annual report. Pallid sturgeon population assessment and associated fish community monitoring for the Missouri River: Segments 5 and 6. U.S. Fish and Wildlife Service, Great Plains Fish and Wildlife Conservation

- Office, Pierre, South Dakota. Prepared for the U.S. Army Corps of Engineers – Missouri River Recovery Program. 134 pp.
- Shuman, D. A., R. A. Klumb, D. A. James, and K. L. Grohs. 2013. 2012 annual report. Pallid sturgeon population assessment and associated fish community monitoring for the Missouri River: Segments 5 and 6. U.S. Fish and Wildlife Service, Great Plains Fish and Wildlife Conservation Office, Pierre, South Dakota. Prepared for the U.S. Army Corps of Engineers – Missouri River Recovery Program. 165 pp.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2006a. Fragile Legacy: Rare Animals of South Dakota. Wildlife Division Publication. South Dakota Department of Game, Fish and Parks, Pierre, South Dakota.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2006b. South Dakota Pallid Sturgeon (*Scaphirhynchus albus*) Management Plan. Wildlife Division Report 2006-01. South Dakota Department of Game, Fish and Parks, Pierre, South Dakota.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014a. South Dakota Wildlife Action Plan. Wildlife Division Report 2014-03. South Dakota Department of Game, Fish and Parks, Pierre, South Dakota.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014b. Fisheries and aquatic resources adaptive management system 2014-2018: Missouri River Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks. 2019. Fisheries and aquatic resources adaptive management system 2019-2023: Northeast Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- Stukel, S., J. Kral, and S. LaBay. 2006. 2005 Annual Report. Pallid Sturgeon population assessment and associated fish community monitoring for the Missouri River: Segment 7. Prepared for the U.S. Army Corps of Engineers-Missouri River Recovery Program. South Dakota Game, Fish, and Parks. 171 pp.
- Stukel, S., J. Kral, and S. LaBay. 2007. 2006 Annual Report. Pallid Sturgeon population assessment and associated fish community monitoring for the Missouri River: Segment 7. Prepared for the U.S. Army Corps of Engineers-Missouri River Recovery Program. South Dakota Game, Fish, and Parks. 129 pp.
- Stukel, S., J. Kral, and S. LaBay. 2008. 2007 Annual Report. Pallid Sturgeon population assessment and associated fish community monitoring for the Missouri River: Segment 7. Prepared for the U.S. Army Corps of Engineers-Missouri River Recovery Program. South Dakota Game, Fish, and Parks. 167 pp.
- Stukel, S., J. Kral, and S. Labay. 2009. 2008 Annual Report. Pallid Sturgeon population assessment and associated fish community monitoring for the Missouri River: Segment 7. Prepared for the U.S. Army Corps of Engineers-Missouri River Recovery Program. South Dakota Game, Fish, and Parks. 148 pp.
- Stukel, S., J. Kral, and S. LaBay. 2010. 2009 Annual Report. Pallid Sturgeon population assessment and associated fish community monitoring for the Missouri River: Segment 7. Prepared for the U.S. Army Corps of Engineers-Missouri River Recovery Program. South Dakota Game, Fish, and Parks. 126 pp.
- Stukel, S., J. Kral, N. Loecker, and S. LaBay. 2011. 2010 Annual Report. Pallid Sturgeon population assessment and associated fish community monitoring for the Missouri River:

- Segment 7. Prepared for the U.S. Army Corps of Engineers-Missouri River Recovery Program. South Dakota Game, Fish, and Parks. 125 pp.
- Stukel, S., J. Kral, and N. Loecker. 2012. 2011 Annual Report. Pallid Sturgeon population assessment and associated fish community monitoring for the Missouri River: Segment 7. Prepared for the U.S. Army Corps of Engineers-Missouri River Recovery Program. South Dakota Game, Fish, and Parks. 114 pp.
- Stukel, S., J. Kral, and N. Loecker. 2013. 2012 Annual Report. Pallid Sturgeon population assessment and associated fish community monitoring for the Missouri River: Segment 7. Prepared for the U.S. Army Corps of Engineers-Missouri River Recovery Program. South Dakota Game, Fish, and Parks. 126 pp.
- Stukel, S., N. Loecher, and J. Kral. 2014. 2013 Annual Report. Pallid Sturgeon population assessment and associated fish community monitoring for the Missouri River: Segment 7. Prepared for the U.S. Army Corps of Engineers-Missouri River Recovery Program. South Dakota Game, Fish, and Parks. 125 pp.
- U.S. Fish and Wildlife Service (USFWS). 1993. Pallid Sturgeon (*Scaphirhynchus albus*) Recovery Plan. USFWS, Bismarck, North Dakota. 55 pp.
- U.S. Fish and Wildlife Service (USFWS). 2014. Revised Recovery Plan for the Pallid Sturgeon (*Scaphirhynchus albus*). USFWS, Billings, Montana. 115 pp.
- Welker, T. L. (editor), 2012. Missouri River Standard Operating Procedures for Fish Sampling and Data Collection, Volume 1.4. U.S. Army Corps of Engineers, Omaha District, Yankton, SD.

SUMMARY OF UPDATES IN 2020:

As of September 30, 2017, a contract with the Corps to conduct fish community monitoring on the lower Missouri River in South Dakota was not renewed which ended the GFP's 13th year of sampling in Segment 7 of the lower Missouri River (59-mile reach of unchannelized Missouri River between Gavins Point Dam and Ponca, Nebraska). GFP continues its participation as a signatory on the Missouri River Endangered Species Memorandum of Agreement and remains an active participant in Pallid Sturgeon recovery.

In coordination with the Missouri River Fisheries Management Area Strategic Plan and fisheries biologists, an effort has been made to standardize nongame sampling across the state to better sample nongame fishes. Currently, workplans for the Missouri River Fisheries Management Area have identified areas throughout the Missouri River reservoirs and its unchannelized reaches to sample for nongame species through the 2023 sampling season which will include Pallid Sturgeon habitats.

SUMMARY OF UPDATES IN 2022:

Aquatic strategic planning efforts continue.

SUMMARY OF UPDATES IN 2024:

Aquatic strategic planning efforts continue. The USFWS completed a 5 year review for Pallid Sturgeon August 23, 2021.

SUMMARY OF UPDATES IN 2026:

Aquatic strategic planning efforts continue.

STATE T&E SPECIES STATUS REVIEW

Species Name: Sicklefin Chub, *Macrhybopsis meeki*

South Dakota Status, Including Legal Status and Special Listings:

- State endangered, ([SD Administrative Rule 41:10:02:05. List of endangered fish](#)).
- Monitored by South Dakota Nongame Conservation Program.
- State Heritage rank S1, (critically imperiled).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan.

Federal Status:

- NatureServe global rank G3 (vulnerable, range in the Mississippi and Missouri rivers and their major tributaries has decreased substantially, due to human-caused habitat alteration/fragmentation); last reviewed 30 April 2012 (NatureServe 2014).

Basis For New Listing, Status Change (T to E, or E to T), Or Continued Listing with Same Status:

Sicklefin Chub are vulnerable and rare throughout their range, and listed as critically imperiled in South Dakota. Previously listed as state threatened (16 March 1978), the Sicklefin Chub was listed state endangered on 29 January 2007. Prior to impoundment of the Missouri River in South Dakota, records indicated Sicklefin Chub were present from Sioux City, IA upstream to the Grand River confluence. At the time of the last status change (2007) only two individuals were documented in South Dakota. One individual was collected in 1996 near Burbank, South Dakota during a four year benthic fish study designed to document the benthic fish assemblage of the entire Missouri River (Young 2001). The other individual fish was collected in 2005 by South Dakota Game, Fish and Parks staff during the Pallid Sturgeon Assessment project (Bertrand et al. *in prep.*). Since the last state status change, Sicklefin Chub have been limited to the Missouri River below Gavins Point Dam, Yankton County. Due to reservoir impoundment Sicklefin Chub are currently isolated and restricted to the Missouri River below Gavins Point Dam, leaving Sicklefin Chub vulnerable to extirpation with limited ability for recolonization. Continued listing as state endangered is recommended.

Description, Biology and Life History:

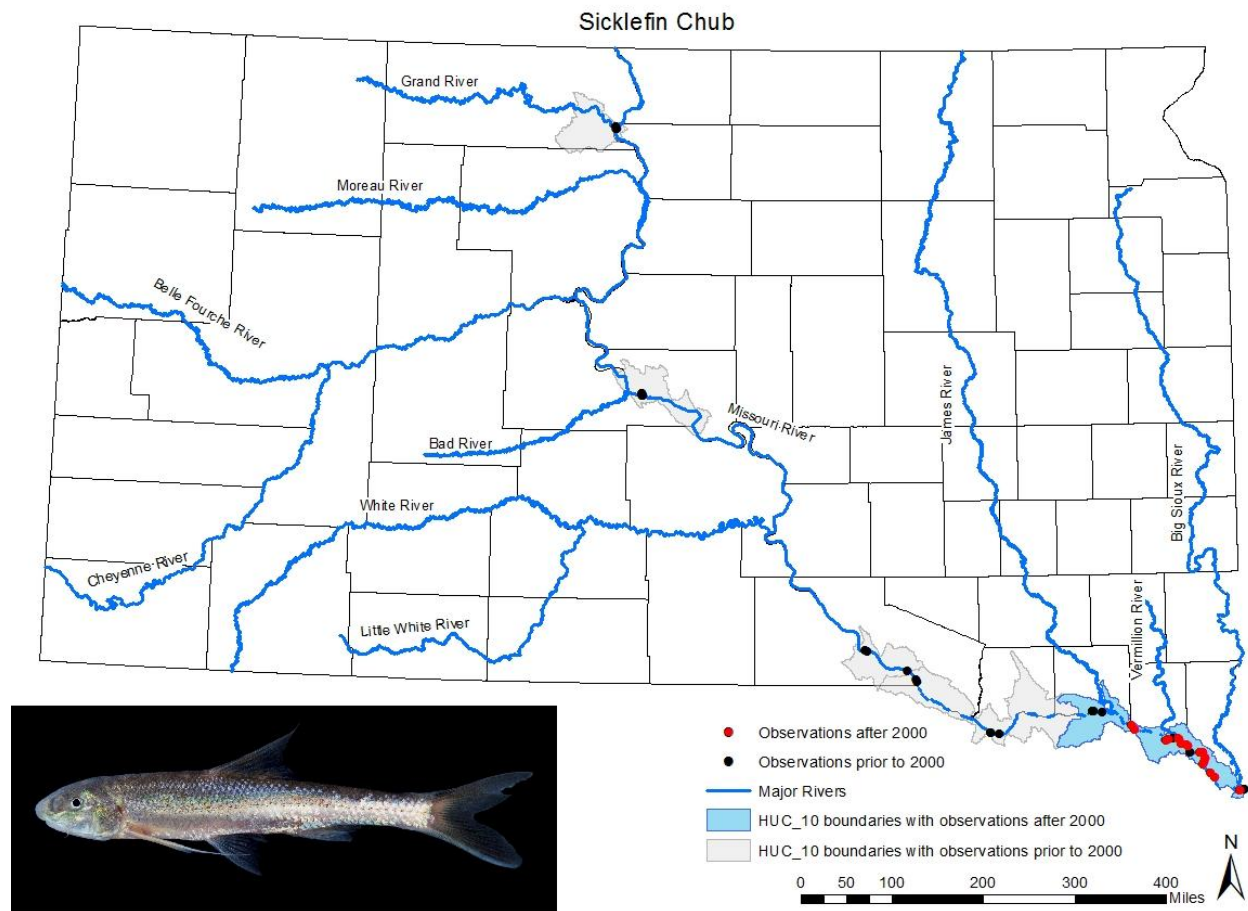
The Sicklefin Chub is a small, slender bodied minnow with small eyes and long sickle shaped pectoral fins. The Sicklefin Chub's body is yellowish-brown with a silvery-white belly and conspicuous barbels at the corners of the mouth (NGPC 2010). The dorsal fin's origin is over or slightly behind the pelvic fin origin (Bertrand et al. *in prep.*). Little is known of the reproductive biology of Sicklefin Chub; however, it is presumed that they spawn during spring to early summer. Individuals are sexually mature at 2-3 years of age and live up to 4 years (SDGFP 2006; Dieterman et al. 2006; USFWS 2008). Little is known about the diet of Sicklefin Chub, but it's believed to be a bottom feeder (NGPC 2010).

Habitat:

Habitat for the Sicklefin Chub is lotic, as they prefer the main channels of large, turbid rivers with strong currents and sand or fine gravel substrates (Pflieger 1975).

Distribution Within the State:

Sicklefin Chub are reported within the Missouri River (Grand River Bay-Lake Oahe HUC_1013010215; Peoria Flats-Lake Oahe HUC_1014010103; Whetstone Creek-Missouri River HUC_1014010118; Randall Creek-Missouri River HUC_1017010104; Lewis & Clark Lake-Missouri River HUC_1017010109; Beaver Creek-Missouri River HUC_1017010112; Lime Creek-Missouri River HUC_1017010115) in South Dakota, which is on the northern periphery of the geographic range for Sicklefin Chub (Bailey and Allum 1962; Werdon 1992; Young 2001). Since 2000, reported Sicklefin Chub have been of individual fish and limited to the lower Missouri River below Gavins Point Dam (Bertrand et al. in prep.).



Conservation / Management Considerations:

Sicklefin Chub have been impacted by ecosystem alteration/habitat degradation and ecosystem/habitat conversion/loss associated with the development and operation of reservoirs on large rivers. These disrupt water regimes due to the combination of modified flow/temperature regimes and sediment transport, channelization, water diversion, fragmentation of once continuous rivers, and reductions in turbidity. It is suggested that Sicklefin Chub are moderately vulnerable to climate change (USFWS 1993, 2001; SDGFP 2014a).

Monitoring and research needs will focus on determining baseline data and status through monitoring efforts and identifying conservation opportunity areas and limiting factors.

Conservation Efforts in South Dakota:

Conservation efforts will focus on increasing partnerships and cooperative arrangements, increasing educational efforts, promoting best management practices that reduce water diversion, and maintaining/restoring natural hydrology and stream connectivity when possible (SDGFP 2014a). Additionally, objectives and strategies will follow those outlined within the Missouri River Fisheries Management Plan to standardize survey and sampling protocols to monitor non-game fishes (SDGFP 2014b).

State Wildlife Grant Accomplishments:

- Evaluation of the James River Conservation Reserve Enhancement Program (CREP) of South Dakota– T-59 (2017). The CREP seeks to enhance natural resource conservation programs in selected watersheds nationwide to address specific regional conservation priorities by attempting to alleviate agriculturally related environmental concerns. This project assesses the effects of CREP on water quality, aquatic habitats, fish assemblages, and avifauna response to the James River CREP.
- Population structure and habitat use of benthic fishes of the Missouri River and its major tributaries with an emphasis on Sicklefin and Sturgeon Chub in South Dakota- T-89 (2022). Sicklefin and Sturgeon Chub, state listed endangered and threatened respectively, have been petitioned for federal listing and currently are undergoing a 12-month finding. This study will update the distribution and status of this fish assemblage with an emphasis on Sicklefin and Sturgeon Chub, two rare species in South Dakota.

Recovery Criteria/Goals:

Given that Sicklefin Chub have limited natural dispersal abilities the primary recovery goal for the management of Sicklefin Chub is to maintain existing populations, and protect the habitat within watersheds where Sicklefin Chub is found, especially tributary populations. There are three aspects to Sicklefin Chub management in South Dakota. Goals will work to increase sampling regime standardization among fisheries biologists in coordination with reservoir surveys. Improved coordination with private land and habitat biologist should be utilized in the development of site-specific best management practices to ensure habitat protection. The protection of conservation opportunity areas should be promoted by maintaining natural flow regimes in tributary areas where the species is present. Additionally, goals for delisting would include 50% of HUC_10 boundaries previously occupied to maintain current status (Post-2000) and evidence of natural reproducing populations.

Primary Reviewer: Chelsey Pasbrig, Aquatic Biologist

Other Staff or Experts Involved in the Review:

Sam Stukel, Fish and Wildlife Biologist, USFWS, Gavins Point National Fish Hatchery, Yankton

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Nathan Loecker, Fisheries Biologist, GFP, Yankton

Date Review Completed: June 12, 2026

Date Adopted by GFP Commission: April 6, 2018

Dates of Other Reviews, if appropriate: December 14, 2017, June 12, 2020, June 10, 2022, June 27, 2024

References:

- Bailey, R. M. and M. O. Allum. 1962. Fishes of South Dakota. Misc. Publ., Mus. Of Zoology, Univ. of Michigan, No. 119. 131 pp.
- Bertrand, K. et al. In preparation. *Fishes of the Dakotas*.
- Dieterman, D. J., E. Roberts, P. J. Braaten, and D. L. Galat. 2006. Reproductive development in the Sicklefin Chub in the Missouri and Lower Yellowstone Rivers. *The Prairie Naturalist* 38(2): 113-130.
- NatureServe. 2014. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>. (Accessed: October 3, 2014).
- Nebraska Game and Parks Commission. 2010. Nebraska's At-Risk Wildlife. Wildlife Division Publication. Nebraska Game and Parks Commission, Lincoln.
- Pflieger, W. L. 1975. Fishes of Missouri. Missouri Department of Conservation. 343 pp.
- South Dakota Department of Game, Fish and Parks. 2006. Fragile Legacy: Rare Animals of South Dakota. Wildlife Division Publication. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014a. South Dakota Wildlife Action Plan. Wildlife Division Report 2014-03. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014b. Fisheries and aquatic resources adaptive management system 2014-2018: Missouri River Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks. 2019. Fisheries and aquatic resources adaptive management system 2019-2023: Northeast Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- U.S. Fish and Wildlife Service. 1993. Status report on Sicklefin Chub (*Macrhybopsis meeki*), a candidate endangered species. United States Department of the Interior, Region 6, Denver, Colorado.
- U.S. Fish and Wildlife Service. 2001. Updated status review of Sicklefin and Sturgeon Chub. United States Department of the Interior, Region 6, Denver, Colorado.
- U.S. Fish and Wildlife Service. 2008. Three year summary age and growth report for Sicklefin Chub (*Macrhybopsis meeki*): Pallid Sturgeon population assessment project and associated fish community monitoring for the Missouri River. Prepared for the U.S. Army Corps of Engineers Northwest Division. U.S. Fish and Wildlife Service. Region 6, Columbia, Missouri.
- Weldon, S. J. 1992. Population status and characteristics of *Macrhybopsis gelida*, *Platygobio gracilis*, and *Rhinichthys cataractae* in the Missouri River basin. M.S. Thesis. South Dakota State University, Brookings, South Dakota.

Young, B. A. 2001. Intraspecific variation among emerald shiners (*Notropis atherinoides*) of the Missouri River. Ph.D. Dissertation. South Dakota State University, Brookings, South Dakota.

SUMMARY OF UPDATES IN 2020:

As of September 30, 2017, a contract with the Corps to conduct fish community monitoring on the lower Missouri River in South Dakota was not renewed which ended the GFP's 13th year of sampling in Segment 7 of the lower Missouri River (59-mile reach of unchannelized Missouri River between Gavins Point Dam and Ponca, Nebraska). GFP continues its participation as a signatory on the Missouri River Endangered Species Memorandum of Agreement.

In coordination with the Missouri River Fisheries Management Area Strategic Plan and fisheries biologists, an effort has been made to standardize nongame sampling across the state to better sample nongame fishes. Currently, workplans for the Missouri River Fisheries Management Area have identified areas throughout the Missouri River reservoirs and its unchannelized reaches to sample for nongame species through the 2023 sampling season which will include Sicklefin Chub habitats.

SUMMARY OF UPDATES IN 2022:

Aquatic strategic planning efforts continue. In 2020, a State Wildlife Grant project began to describe the population structure and habitat use of benthic fishes of the Missouri River and its major tributaries with an emphasis on Sicklefin and Sturgeon Chub in South Dakota.

SUMMARY OF UPDATES IN 2024:

Aquatic strategic planning efforts continue. The project looking to describe the population structure and habitat use of benthic fishes of the Missouri River and its major tributaries was completed December 2022, no Sicklefin Chub were sampled in this study.

The U.S. Fish and Wildlife Service (the Service) published a not-warranted 12-month finding for the Sturgeon Chub and Sicklefin Chub in the *Federal Register*, September 20, 2023. The Service completed a species status assessment (SSA) report which communicates the results of the comprehensive biological status review. The USFWS determined that the Sturgeon Chub and Sicklefin Chub are not at risk of extinction now or in the foreseeable future. Therefore, the listing is not warranted (USFWS 2023).

The Sicklefin Chub is a small minnow that inhabits large, turbid rivers, including the mainstem Missouri and Mississippi Rivers that have evolved specific adaptations to turbid, riverine habitats. This species also has a widespread distribution and currently occupies 75 percent of its historical range across 13 States (Montana, North Dakota, South Dakota, Nebraska, Kansas, Iowa, Missouri, Illinois, Arkansas, Tennessee, Kentucky, Mississippi and Louisiana).

SUMMARY OF UPDATES IN 2026:

Aquatic strategic planning efforts continue.

STATE T&E SPECIES STATUS REVIEW

Species Name: Sturgeon Chub, *Macrhybopsis gelida*

South Dakota Status, Including Legal Status and Special Listings:

- State threatened, ([SD Administrative Rule 41:10:02:05. List of threatened fish](#)).
- Monitored by South Dakota Nongame Conservation Program.
- State Heritage rank S3, (vulnerable).
- Included as a Species of Greatest Conservation Need in South Dakota Wildlife Action Plan.

Federal Status:

- USDA Forest Service, Region 2, Rocky Mountain Region sensitive species.
- NatureServe global rank G3 (vulnerable, historically occurred in the Mississippi, Missouri, and Yellowstone rivers and 30 tributaries of the Missouri and Yellowstone rivers; has declined in range and abundance due to human-caused habitat changes (e.g., dams)); last reviewed 30 April 2012 (NatureServe 2014).

Basis For New Listing, Status Change (T to E, or E to T), Or Continued Listing with Same Status:

Sturgeon Chub are vulnerable and rare throughout its range, and listed as imperiled in South Dakota. The justification for including Sturgeon Chub on the first list of state threatened (16 March 1978) fish is unknown but was presumably due to the construction of the Missouri River impoundments. Surveys in 1989-1990, specifically designed to study Sturgeon Chub believed the species was extirpated as the last recorded Sturgeon Chub was from the Little Missouri River in 1976 (Bich and Scalet 1977; Werdon 1992). Surveys in the mid-late 1990s found Sturgeon Chub at a limited number of sites in the White, Little White, and Cheyenne rivers (Cunningham and Olson 1994; Cunningham et al. 1995; Cunningham and Hickey 1997; Hampton 1998; Cunningham 1999). Based on the presumed limited area of occupancy, separation from other populations, and limited potential for range expansions, Sturgeon Chub are extremely vulnerable to extirpation with limited ability for recolonization and continued listing as state threatened species is recommended.

Description, Biology and Life History:

The Sturgeon Chub is a slender minnow with small eyes, a brownish-blue back with dark specks and a light underside. The Sturgeon Chub's mouth is inferior with conspicuous barbels at each corner of the mouth and a longitudinal ridge or keel is present on dorsal scales (Bertrand et al. *in prep.*). Sturgeon Chub spawn in June and July with females producing between 2,000 and 5,000 eggs (SDGFP 2006; NGPC 2010). Most individuals live 3 to 4 years (Rahel and Thel 2004). Little is known about the diet of Sturgeon Chub, but it's believed to be a bottom feeder with external taste buds, feeding mainly on invertebrates and sediment material (NGPC 2010).

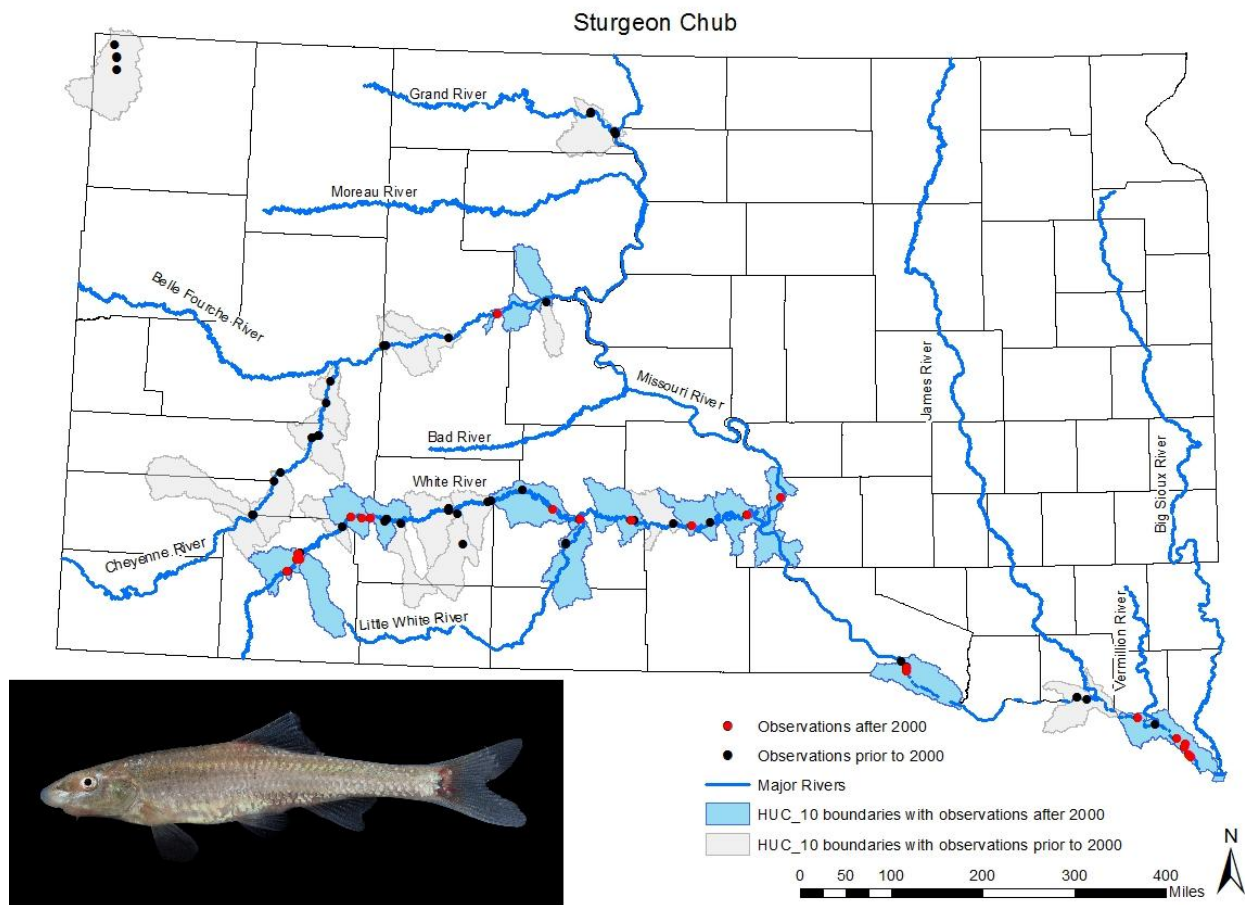
Habitat:

Habitat for the Sturgeon Chub is lotic, as they prefer areas with moderate to strong current on large turbid rivers with rocks, gravel or coarse sand substrates. Also, Sturgeon Chub will

occupy moderate to small tributaries directly connected to larger turbid rivers with extant populations (Pflieger 1975; USFWS 2001; Rahel and Thel 2004).

Distribution Within the State:

Sturgeon Chub have been reported at a limited number of sites within the Little Missouri, Grand, Cheyenne, White, and Missouri rivers in South Dakota, which is within the central part of the range (Bailey and Allum 1962; Bich and Scalet 1977; Werdon 1992, 1993; Cunningham and Olson 1994; Cunningham et al. 1995; Cunningham and Hickey 1997; Hampton 1998; Cunningham 1999). Since 2000, Sturgeon Chub have been reported in low relative numbers from the White and Lower Missouri rivers below Fort Randall and Gavins Point dams and a single site from within the Cheyenne River (Heakin, et al. 2002; Cunningham 2014; Bertrand et al. in prep.).



Conservation / Management Considerations:

Sturgeon Chub has been impacted by ecosystem alteration/habitat degradation and ecosystem/habitat conversion loss associated with the development and operation of reservoirs on large rivers. These disrupt water regimes due to a combination of modified flood regimes and sediment transport, channelization, water diversion, fragmentation of once continuous rivers, and reductions in turbidity. It is suggested that Sturgeon Chub are highly vulnerable to climate change (Rahel and Thel 2004; SDGFP 2014a).

Research and monitoring needs will focus on determining baseline data and status through monitoring efforts, and identifying critical habitats and limiting factors.

Conservation Efforts in South Dakota:

Conservation efforts will focus on increasing partnerships and cooperative arrangements, increasing educational efforts, promoting best management practices that reduce water diversion, maintaining/restoring habitat and stream connectivity, and developing programs to reduce or eliminate the threat of non-native fish competing with Sturgeon Chub (SDGFP 2014a). Additionally, objectives and strategies will follow those outlined within the West River and Missouri River Fisheries Management Plans to standardize survey and sampling protocols to monitor non-game fishes (SDGFP 2014b, 2014c).

State Wildlife Grant Accomplishments:

- Evaluation of a decision support tool to help support fish species at risk in South Dakota streams– T-9 (2006). Aquatic GAP is a tool for predicting where aquatic species might find suitable habitat. This study’s goal was to test the accuracy of aquatic GAP by surveying streams and watersheds with historic occurrences of rare fish species and wetlands with potential habitat for them.
- Classification and mapping of riparian forest along the White River in South Dakota– T-50 (2014). This study classified and mapped the forest and other floodplain vegetation along the White River. Using historical and modern aerial imagery, they were able to describe the changes in river channel dynamics and subsequent vegetation changes over the past 80 years from 1930s to 2010.
- Population structure and habitat use of benthic fishes of the Missouri River and its major tributaries with an emphasis on Sicklefin and Sturgeon Chub in South Dakota- T-89 (2022). Sicklefin and Sturgeon Chub, state listed endangered and threatened respectively, have been petitioned for federal listing and currently are undergoing a 12-month finding. This study will update the distribution and status of this fish assemblage with an emphasis on Sicklefin and Sturgeon Chub, two rare species in South Dakota.

Recovery Criteria/Goals:

Given that Sturgeon Chub have limited natural dispersal abilities due to Missouri River mainstem dams, the primary recovery goal for the management of Sturgeon Chub is to maintain existing populations, and protect the habitat within watersheds where Sturgeon Chub are found, especially tributary populations. The specific management goals for Sturgeon Chub are to work with fisheries biologists to standardize seining/otter trawl efforts in coordination with reservoir, Cheyenne River and White River surveys. Additionally, management strategies will involve working with private land and habitat biologists to develop site specific best management practices to ensure habitat protection, while working to maintain existing ecological flow regimes in remaining locations to ensure protection of conservation opportunity areas. Additionally, goals for delisting would include 50% of HUC_10 boundaries previously occupied to maintain current status (Post-2000) and have self-reproducing populations.

Primary Reviewer: Chelsey Pasbrig, Aquatic Biologist

Other Staff or Experts Involved in the Review:

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Omaha, NE

Nathan Loecker, Fisheries Biologist, GFP, Yankton

Eileen Dowd Stukel, Senior Wildlife Biologist, GFP, Pierre

Date Review Completed: June 12, 2026

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Dates of Other Reviews, if appropriate: December 14, 2017, June 12, 2020, June 10, 2022,
June 27, 2024

References:

Bailey, R. M. and M. O. Allum. 1962. Fishes of South Dakota. Misc. Publ., Mus. Of Zoology,
Univ. of Michigan, No. 119. 131 pp.

Bertrand, K. et al. In preparation. Fishes of the Dakotas

Bich, J. P. and C. G. Scalet. 1977. Fishes of the Little Missouri River, South Dakota. Proc. SD.
Acad. Sci. 56:163-177.

Cunningham, G. 1999. Fish survey of the White River on the U.S. Air Force Badlands Bombing
Range, Shannon County, South Dakota.

Cunningham, G. 2014. South Dakota Scientific Collector's Permit. South Dakota Department of
Game, Fish and Parks. Pierre, South Dakota

Cunningham, G. and R. Olson. 1994. Fish species collected in streams in West River South
Dakota-1994.

Cunningham, G. R., R. D. Olson, and S. M. Hickey. 1995. Fish surveys of the streams and rivers
of South Central South Dakota west of the Missouri River. Proc. S.D. Acad. Sci. 74:55-
64.

Cunningham, G. and S. Hickey. 1997. Distribution of the Sturgeon Chub in South Dakota.
Wildlife Diversity Small Grants Program Project Report. South Dakota Department of
Game, Fish and Parks. Pierre, South Dakota.

Hampton, D. R. 1998. A survey of the fishes and habitat of the Cheyenne River in South Dakota.
M.S. Thesis. South Dakota State University, Brookings, South Dakota.

Heakin, A., N. Morey, and C. Berry Jr. 2002. Environmental monitoring and assessment
program activities in South Dakota. Annual Progress Report Submitted to the South
Dakota Department of Game, Fish and Parks by the U.S. Geological Survey.

NatureServe. 2014. NatureServe Explorer: An online encyclopedia of life [web application].
Version 7.1. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>.
(Accessed: October 3, 2014).

Nebraska Game and Parks Commission. 2010. Nebraska's At-Risk Wildlife. Wildlife Division
Publication. Nebraska Game and Parks Commission, Lincoln, Nebraska.

Pflieger, W. L. 1975. Fishes of Missouri. Mo. Department. Of Conservation. 343 pp.

- Rahel, F.J. and L.A. Thel. 2004. Sturgeon Chub (*Macrhybopsis gelida*): a technical conservation assessment. [Online]. USDA Forest Service, Rocky Mountain Region. Available: <http://www.fs.fed.us/r2/projects/scp/assessments/sturgeonchub.pdf> [June 5, 2015].
- South Dakota Department of Game, Fish and Parks. 2006. Fragile Legacy: Rare Animals of South Dakota. Wildlife Division Publication. South Dakota Department of Game, Fish and Parks, Pierre, South Dakota.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014a. South Dakota Wildlife Action Plan. Wildlife Division Report 2014-03. South Dakota Department of Game, Fish and Parks, Pierre, South Dakota.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014b. Fisheries and aquatic resources adaptive management system 2014-2018: West River Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks (SDGFP). 2014c. Fisheries and aquatic resources adaptive management system 2014-2018: Missouri River Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- South Dakota Department of Game, Fish and Parks. 2019. Fisheries and aquatic resources adaptive management system 2019-2023: Northeast Fisheries Management Area Strategic Plan. South Dakota Department of Game, Fish and Parks, Pierre.
- U.S. Fish and Wildlife Service. 2001. Updated status review of Sicklefin and Sturgeon Chub. United States Department of the Interior, Region 6, Denver, Colorado.
- Werdon, S. J. 1992. Population status and characteristics of *Macrhybopsis gelida*, *Platygobio gracilis*, and *Rhinichthys cataractae* in the Missouri River basin. M.S. Thesis. South Dakota State University, Brookings, South Dakota.
- Werdon, S. J. 1993. Status report on sturgeon chub (*Macrhybopsis gelida*), a candidate endangered species. U.S. Fish and Wildlife Service, Ecological Services. North Dakota State Office. Bismarck, ND. 58 pp.

SUMMARY OF UPDATES IN 2020:

As of September 30, 2017, a contract with the Corps to conduct fish community monitoring on the lower Missouri River in South Dakota was not renewed which ended the GFP's 13th year of sampling in Segment 7 of the lower Missouri River (59-mile reach of unchannelized Missouri River between Gavins Point Dam and Ponca, Nebraska). GFP continues its participation as a signatory on the Missouri River Endangered Species Memorandum of Agreement.

In coordination with the West and Missouri River Fisheries Management Area Strategic Plans and fisheries biologists, an effort has been made to standardize nongame sampling across the state to better sample nongame fishes. Currently, workplans for the West and Missouri River Fisheries Management Areas have identified areas throughout the Missouri River reservoirs and its unchannelized reaches to sample for nongame species through the 2023 sampling season which will include Sturgeon Chub habitats.

SUMMARY OF UPDATES IN 2022:

Aquatic strategic planning efforts continue. In 2020, a State Wildlife Grant project began to describe the population structure and habitat use of benthic fishes of the Missouri River and its major tributaries with an emphasis on Sicklefin and Sturgeon Chub in South Dakota. Species

ranking using NatureServe in 2022 to assess extinction risk using standard methods updated the species rank for Sturgeon Chub from S2 (imperiled) to S3 (vulnerable). Major categories assessed during species ranking are rarity, threats, and trends.

SUMMARY OF UPDATES IN 2024:

Aquatic strategic planning efforts continue. The project looking to describe the population structure and habitat use of benthic fishes of the Missouri River and its major tributaries was completed December 2022. Sturgeon Chub were captured in the Cheyenne (n = 81), White (n = 331), and Little White (n = 71) rivers but were absent from the Little Missouri and Grand rivers. Relative abundances of Sturgeon Chub of all life stages were highest in the White River. Distributions of all Sturgeon Chubs were limited to lower areas of all rivers where stream width, turbidity, discharge, and observed habitat complexity were highest. Sturgeon Chub were often found in association with high abundances ($\geq 10\%$ of catch) of Flathead Chub *Platygobio gracilis* and *Hybognathus* spp. (Plains Minnow *H. placitus* and Western Silvery Minnow *H. argyritis*).

The U.S. Fish and Wildlife Service (the Service) published a not-warranted 12-month finding for the Sturgeon Chub and Sicklefing Chub in the *Federal Register*, September 20, 2023. The Service completed a species status assessment (SSA) report which communicates the results of the comprehensive biological status review. The USFWS determined that the Sturgeon Chub and Sicklefing Chub are not at risk of extinction now or in the foreseeable future. Therefore, the listing is not warranted (USFWS 2023).

The Sturgeon Chub is a small minnow adapted to benthic riverine habitats with a slender streamlined body that inhabits turbid mainstem sections of the Missouri and Mississippi Rivers and some of their tributaries. The species has a widespread distribution and currently occupies 53 percent of its historical range across 12 States (Wyoming, Montana, North Dakota, South Dakota, Nebraska, Kansas, Iowa, Missouri, Illinois, Arkansas, Tennessee, Kentucky).

SUMMARY OF UPDATES IN 2026:

Aquatic strategic planning efforts continue. Since 2019, standard surveys in waters with rare species have incorporated standardized nongame sampling procedures. Surveys of the Cheyenne and White River drainages are scheduled to be conducted over the next four years.

Appendix A. South Dakota Endangered Species Law

CHAPTER 34A-8 - ENDANGERED AND THREATENED SPECIES

- [34A-8-1](#) Definition of terms.
- [34A-8-2](#) Investigation of wildlife by secretary--Information developed.
- [34A-8-3](#) Lists of endangered and threatened species promulgated--Basis for determination.
- [34A-8-4](#) Biennial review of lists of endangered and threatened species--Amendments.
- [34A-8-5](#) Notice by commission of proposed actions--Time allowed for comment.
- [34A-8-6](#) Departments to manage, protect, and restore endangered and threatened species.
- [34A-8-7](#) Programs and agreements for management of endangered species--Prairie dog control on private lands.
- [34A-8-8](#) Permitting capture of endangered and threatened species--Authorized purposes.
- [34A-8-9](#) Possession, transportation and sale of endangered and threatened species prohibited--Violation as misdemeanor.
- [34A-8-10](#) Importation, possession, sale, or purchase of endangered or threatened species under permit, license, or other documentation--Violation as misdemeanor.
- [34A-8-11](#) Permits for capture or destruction of, wildlife to protect life or property--Violation of permit--Emergency protection of human life.
- [34A-8-12](#) Repealed.
- [34A-8-13](#) Legislative approval required for reintroduction of species.

34A-8-1. Definition of terms. Terms as used in this chapter, unless the context otherwise requires, mean:

- (1) "Endangered species," any species of wildlife or plants which is in danger of extinction throughout all or a significant part of its range other than a species of insects determined by the Game, Fish and Parks Commission or the secretary of the United States Department of Interior to constitute a pest whose protection under this chapter would present an overwhelming and overriding risk to man;
- (2) "Nongame species," any wildlife species not legally classified a game species, fur-bearer, threatened species, or as endangered by statute or regulations of this state;
- (3) "Threatened species," any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range;
- (4) "Wildlife," any nondomesticated animal, whether reared in captivity or not, and includes any part, product, egg, or offspring thereof, or the dead body or parts thereof.

34A-8-2. Investigation of wildlife by secretary--Information developed. The game, fish and parks secretary shall conduct investigation on nongame, endangered, or threatened wildlife to develop information relating to population, distribution, habitat needs, limiting factors, and other biological and ecological data to determine management measures necessary to ensure their perpetuation as viable components of their ecosystem and for human enjoyment.

34A-8-3. Lists of endangered and threatened species promulgated--Basis for determination. On the basis of determinations pursuant to § 34A-8-2 the Game, Fish and Parks Commission shall promulgate a list of those species of wildlife which are determined to be endangered or threatened within the state. The Game, Fish and Parks Commission shall make these determinations on the basis of the best scientific, commercial, and other data available to them and after consultation, as appropriate, with federal agencies, other interested state agencies, other states having a common interest in the species and interested persons and organizations.

34A-8-4. Biennial review of lists of endangered and threatened species--Amendments. The Game, Fish and Parks Commission shall conduct a review of the state list of endangered and threatened species within the period ending July 3, 1979, and every two years thereafter and may amend the list by appropriate additions or deletions.

34A-8-5. Notice by commission of proposed actions--Time allowed for comment. The Game, Fish and Parks Commission may not add a species to nor remove a species from any list pursuant to § 34A-8-3 or 34A-8-4, until it has:

- (1) Published a public notice of such proposed action;
- (2) Notified the Governor of any state sharing a common border with this state and in which the subject species is known to exist that such action is being proposed;
- (3) Allowed at least thirty days following publication for comment from public and other interested parties.

34A-8-6. Departments to manage, protect, and restore endangered and threatened species. The Department of Game, Fish and Parks and the Department of Agriculture shall perform those acts necessary for the conservation, management, protection, restoration, and propagation of endangered, threatened, and nongame species of wildlife.

34A-8-7. Programs and agreements for management of endangered species--Prairie dog control on private lands. The secretary of agriculture and the secretary of game, fish and parks shall establish programs, with legislative approval and may enter into cooperative agreements with federal and state agencies or with private persons as deemed necessary for the management of nongame, endangered, or threatened species. The secretaries shall establish and conduct control programs at state expense on private lands that are encroached upon by prairie dogs from contiguous public lands.

34A-8-8. Permitting capture of endangered and threatened species--Authorized purposes. The secretary of agriculture and the secretary of game, fish and parks may permit the taking, possession, purchase, sale, transportation, exportation, or shipment of species of plants or wildlife which appear on the state list of endangered or threatened species for scientific, zoological, or educational purposes, for propagation in captivity of such fish or wildlife to insure their survival.

34A-8-9. Possession, transportation and sale of endangered and threatened species prohibited--Violation as misdemeanor. Except as otherwise provided in this chapter, no person may take, possess, transport, import, export, process, sell, or offer for sale, buy or offer to buy, nor may a

common or contract carrier transport or receive for shipment, any species of wildlife or plants appearing on the following lists:

- (1) The list of wildlife and plants indigenous to the state determined to be endangered or threatened within the state pursuant to §§ 34A-8-3 and 34A-8-4.
 - (2) The United States list of endangered or threatened native wildlife effective on January 1, 1977.
 - (3) The United States list of endangered or threatened foreign wildlife effective on January 1, 1977.
 - (4) The United States list of endangered or threatened plants effective on January 1, 1977.
- A violation of this section is a Class 2 misdemeanor.

34A-8-10. Importation, possession, sale, or purchase of endangered or threatened species under permit, license, or other documentation--Violation as misdemeanor. A species of wildlife appearing on any of the lists enumerated in § 34A-8-9 may enter South Dakota from another state or from a point outside the territorial limits of the United States and may be transported, possessed, sold, and purchased in accordance with the terms of a permit issued pursuant to rules promulgated by the Game, Fish and Parks Commission pursuant to chapter 1-26. However, a person may transport into South Dakota or otherwise possess, sell, or purchase within the state any animal or parts thereof appearing on any of the lists enumerated in § 34A-8-9 that were lawfully taken or acquired in another state or lawfully taken or acquired from a point outside the territorial limits of the United States if the items are accompanied by the appropriate license, documentation, Convention on International Trade in Endangered Species (CITES) permit, or CITES tag. It is a Class 2 misdemeanor to transport, possess, sell or purchase a species of wildlife appearing on any of the lists enumerated in § 34A-8-9 in violation of the conditions of a permit, or to transport, possess, sell, or purchase any part thereof, in violation of the provisions of this section. The provisions of this section do not apply to any captive nondomestic animal of the mammalia class and the products thereof regulated by the Animal Industry Board under Title 40.

34A-8-11. Permits for capture or destruction of, wildlife to protect life or property--Violation of permit--Emergency protection of human life. Upon good cause shown and where necessary to alleviate damage to property or to protect human health, endangered or threatened species found on the state list may be removed, captured, or destroyed pursuant to a permit issued by the secretary of game, fish and parks. A violation of the terms of the permit is a Class 2 misdemeanor.

Carnivorous animals found on the state list may be removed, captured, or destroyed by any person in emergency situations involving an immediate threat to human life, provided that the removal, capture, or destruction shall be reported to the secretary or his representative within twenty-four hours of the act.

34A-8-12. Repealed by SL 1992, ch 158, § 50.

34A-8-13. Legislative approval required for reintroduction of species. No species that is currently extinct in this state and that has been placed on the threatened or endangered species list pursuant to the federal "Endangered Species Act of 1973," as amended to January 1, 1995,

may be reintroduced into this state through action by any federal, state, or local governmental entity, unless the Legislature has specifically enacted legislation naming the species and specifying the manner of reintroduction.

Appendix B. South Dakota Law Related to Black-footed Ferret Reintroduction

41-11-15. Reintroduction of black-footed ferret.

The Department of Game, Fish and Parks and the Department of Agriculture and Natural Resources may participate in programs to reintroduce the black-footed ferret if the following conditions are being met:

- (1) Areas containing prairie dogs but not having the potential to support black-footed ferrets shall be identified, evaluated and declared ferret-free;
- (2) The existing United States Forest Service Prairie Dog Management Plan for the Conata Basin, Buffalo Gap National Grasslands shall be strictly adhered to, and if future increases in prairie dog acres are needed, a funding mechanism shall be established to provide financial compensation to landowners suffering lost income;
- (3) No additional land may be acquired for ferrets through condemnation, and the multiple use concept of the United States Forest Service shall be continued;
- (4) The initial ferret reintroduction efforts shall be concentrated within the boundaries of Badlands National Park, and once release techniques are refined, the prairie dog management plan on the Buffalo Gap National Grasslands is functioning and local citizens have had the opportunity to view the progress, then reintroduction efforts may be expanded to the grasslands; and
- (5) The United States Fish and Wildlife Service shall attempt to provide for the continued meeting on a regular basis during and after the ferret reintroduction of the local level committee consisting of representatives of the United States Forest Service, Pine Ridge Indian Reservation, United States National Parks Service, United States Fish and Wildlife Service, affected state agencies, private organizations, and local landowners.

Source: SL 1992, ch 301; SL 2021, ch 1 (Ex. Ord. [21-3](#)), § 14, eff. Apr. 19, 2021.