North American River Otter Action Plan, 2025–2029

SOUTH DAKOTA DEPARTMENT OF GAME, FISH AND PARKS PIERRE, SOUTH DAKOTA

WILDLIFE DIVISION REPORT TBD

DATE 2025

This action plan will be used by South Dakota Department of Game, Fish and Parks staff on an annual basis and will be formally evaluated at least every five years. Plan updates and changes, however, may occur more frequently as needed.

A supportive document to this action plan, the "North American River Otter Management in South Dakota," provides a historical background, research, surveys, population monitoring efforts and issues, challenges and opportunities which can be found at https://gfp.sd.gov/management-plans/.

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Cover photo by Wayne Melquist. All text and data contained within this document are subject to revision from corrections, updates, and data analysis.

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PUBLIC INVOLVEMENT

A draft of the "North American River Otter Action Plan" was available for public comment from INSERT DATES HERE.

INTRODUCTION

North American River Otter (*Lontra canadensis*, [hereafter; river otter]) were considered common in many riparian areas and permanent bodies of water in the Northern Great Plains. However, overexploitation, habitat degradation and water pollution extirpated the species from much of its range by the mid-twentieth century, including South Dakota (Anderson 1977, Jones et al. 1983, Jones et al. 1985, Kiesow 2003). Successful reintroduction efforts occurred by the Flandreau Santee Sioux Tribe in 1998 and 1999 to re-establish a river otter population in eastern South Dakota (GFP 2020). Historical reports of river otter sightings and sign occurred prior to re-establishment. However, only until recently have these reports become more common indicating their distribution has steadily expanded into other river systems in eastern South Dakota (GFP 2020). These reports could be a direct result of dispersals of individuals following restoration efforts in surrounding states or reestablished populations in South Dakota (Kiesow 2003).

Due to their limited distribution and population, river otter were listed as a state threatened species in South Dakota and given a protected status (South Dakota Administrative Rule 41:19:02:04; GFP 2012). In December of 2010, a group of South Dakota Department of Game, Fish and Parks (GFP) staff began developing a plan for the conservation and management of river otter and produced the South Dakota River Otter Management Plan (GFP 2012). That 5-year plan provided general, strategic guidance to GFP and potential partners for the recovery and sustained management of river otter in South Dakota. Using verified reports of sightings, sign, and incidental trapping events from staff and members of the public, GFP developed recovery criteria to remove river otter from the state threatened species list. In 2020, delisting criteria were met, river otter were removed from the state threatened species list, and a structured season was established. During this process, GFP outlined the need for a monitoring effort of the recently delisted species, an aspect critical for successful otter management (Melquist et al. 2003, Gallant et al. 2008), to ensure delisting criteria is continually being met and the population is sustainable.

This is an action plan for all constituents interested in the conservation of river otter in South Dakota. Wildlife managers are challenged to use the available tools for the benefit and well-being of river otter. With careful coordination among all stakeholders, South Dakota's trapping and outdoor heritage will be preserved for future generations. As such, GFP will manage river otter populations with data and techniques to encourage occupation of suitable available habitats and to provide sustainable use and enjoyment within the social tolerance level for this species.

HARVEST STRUCTURE

Management options include total protection; adjusting opportunities to harvest animals by season length and harvest period; establishing harvest limits, management zones, and closed areas; limiting harvest by individual trappers; and restricting the size, type, and number of traps allowed (Melquist and Dronkert 1987). Melquist et al. (2003) described Canada's long-term use of registered traplines, which helps reduce competition among trappers, particularly during times of high fur prices.

River otter are vulnerable to overharvest because of their low fecundity rate, the long interval between generations, their ability to travel extensively, and, when restricted to riparian corridors, their limited travel routes (Toweill and Tabor 1982, Melquist et al. 2003). This has led some states to regulate river otter harvest by allowing only one animal/trapper/season (Toweill and Tabor 1982). In addition, Hill (1978), as cited in Melquist and Dronkert (1987), analyzed river

otter and beaver trapping in the southeastern U.S. and found that one river otter was taken for every 6-10 beavers, but most incidentally trapped otters are caught by a few trappers.

In May of 2020, GFP staff recommended an annual river otter trapping/hunting season. The GFP Commission approved this season beginning at sunrise on 1 November and running through 31 December or until a harvest limit of 15 river otters was reached, whichever came first. In 2021, the harvest limit was increased to 20 river otters. The river otter season was restricted to the eastern portion of South Dakota (Figure 1). Participation was limited to residents of South Dakota, and trappers/hunters were limited to a harvest of one river otter per individual per season. During the open season, trappers/hunters are required to report any river otter within 24 hours of harvest to GFP. The trapper/hunter is required to check-in the carcass and detached pelt at a designated GFP office for registration. Upon check-in, the hunter/trapper is issued a Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) tag for the pelt, and the carcass is obtained by GFP to collect biological samples.

POPULATION MONITORING

The river otter is a difficult species to monitor, making the development of a meaningful and feasible monitoring program a continuing challenge. As with any species, clear objectives must be paired with suitable survey and monitoring tools. A monitoring program must help ensure the species status remains at least stable to demonstrate that delisting remains justified. A monitoring program can provide additional population status information, in addition to harvest or trapper effort data that are collected. Survey and monitoring tools must also be adapted to South Dakota's climate and landscape. A combination of methods best suited to South Dakota are needed, with consideration given to limited funding and staff availability, and dynamic weather and habitat conditions.

Reports of Sign, Sightings, and Mortalities

Reports of river otter are categorized based on the primary method used to identify the animal as a river otter: sighting, sign, incidental trap, and vehicle kill. Sightings are based upon the actual observation of a river otter. Reports of sign are based on tracks, slides, runs, scat, latrines, and/or natal dens. Incidental trap reports are of river otter that were incidentally caught while targeting other species. Vehicle kills are reports of river otter found dead on the road or hit by a vehicle. A report can be of an individual animal or a group of animals.

Certain criteria are used to determine the reliability of each report:

- A **verified report** is one of a carcass or live-captured individual(s) or where evidence exists that proves the report was a river otter. Photos where the animal can clearly be identified as a river otter may also be considered verified. Tracks associated with sliding marks in the snow, if confirmed by knowledgeable reviewers can also be considered a verified sighting. Knowledgeable reviewers may include agency staff familiar with river otter or other river otter experts.
- A **probable report** is a sighting not accompanied by a photo but is observed by someone with river otter experience and knowledge. Tracks and scats not in snow are considered probable reports in part because of the difficulty of correctly identifying them. Photos are evaluated by knowledgeable reviewers.
- An **unverified report** is a report with no evidence to support or reject the report.

Necropsy Information

Since 2003, GFP conducts necropsies on all available opportunistically obtained carcasses. Most carcasses are collected from two watersheds: Big Sioux and Minnesota. A vast majority of necropsied carcasses are obtained from Moody, Roberts, and Grant counties, with many of them obtained during the months of April and November. Incidental trapping is the primary cause of death for necropsied river otter.

When an incidentally killed river otter is reported to GFP, a river otter report form is filled out and includes date, time, county, location, GFP representative and reporting party. For those animals incidentally trapped, the trap type, species targeted, and whether the animal was found dead is recorded. Whole carcass weight, total length, and tail length is measured (Diggs 2013) prior to the initiation of the necropsy. Sex of the river otter is confirmed at necropsy. Samples are taken of the lower jaw or skull, reproductive organs (ovaries and/or uterus), and the tongue or a sample of hind quarter muscle tissue. Removal of lower canines from skulls/lower jaws is completed according to Matson's Wildlife Aging Lab protocols (Matson's Laboratory 2024). Reproduction status is determined by presence of corpora lutea (Diggs 2013). In addition, the uterine horn is examined for blastocysts and if swollen, the uterus is examined for embryos (Diggs 2013). The caudal lobe of liver and spleen may be collected to test for the presence of heavy metals such as selenium and mercury and the presence of pesticides. Presence of wrist worms and any obvious injuries are also recorded.

Latrine Survey

River otter are secretive animals occurring at relatively low densities in hard-to-reach places, making the use of traditional monitoring efforts difficult (Blundell et al. 1999, Melquist et al. 2003, Helon 2006, Serfass et al. 1996, Gallant et al. 2008, Bieber et al. 2018). Non-invasive genetic sampling (NGS) can be an effective tool for management and conservation (Sollmann et al. 2013, Hansen et al. 2008, Bonesi et al. 2013), especially for elusive, secretive, and hard to trap species, such as river otter (Brzeski et al. 2013, Cox and Murphy 2019). NGS provides biologists an alternative sampling technique by relying on DNA from scat, hair, or urine (Waits and Paetkau 2005, Brzeski et al. 2013, Ferreira et al. 2018). River otter regularly deposit scat and anal jellies (intestinal mucus) at communal latrine sites. These genetic samples give biologists the ability to identify the unique individuals and their sex (Bonesi et al. 2013, Brzeski et al. 2013, Johnson et al. 2013, Klutsch and Thomas 2018, Cox and Murphy 2019).

GFP began a river otter monitoring program of surveying otter latrines in 2021. Twenty-three transects along the Big Sioux River ranging from 2.5 to 7 km are surveyed once by kayak in September and October annually. River otter latrines are a social hub and located in relatively predictable locations along a waterway. These locations include fallen trees, raised banks, sand bars, and near beaver lodges. Once a latrine is located, its location, the level of confidence it is a river otter latrine, number of scats sampled, and the scat's freshness are recorded. Fecal swabs are rubbed on the outside of the scat of anal jelly, and then stored in an individually marked vial containing a DNA/RNA shield. DNA is extracted from fecal swabs using DNeasy Blood and Tissue Kit (Qiagen, Inc.). Samples are genotyped to identify individual river otter (see North American River Otter Management in South Dakota for more detailed protocol).

The genetic information gathered provides a conservative count of river otter within a defined sampling unit and provides an index of abundance (river otter/sampling unit). This index helps establish a baseline distribution of river otter in South Dakota and provides

inferences to traditional abundance estimates (i.e., mark-recapture approaches) which can be monitored through time and establish population trends. An assessment will occur as needed to determine the feasibility of expanding monitoring efforts outside of the Big Sioux River to other river systems.

Population Backdating

Population backdating utilizes the known age of individuals to calculate the number of individuals back to their projected birth year (Downing 1980). These individuals are combined into age specific cohorts and contribute to the cumulative number of known-aged individuals for the years they are alive. For example, an individual estimated at five years old at death would have been a member of the population for the previous five years. Each necropsied river otter contributes to the cumulative number of known-aged river otter for the years they are alive. GFP biologists use this analysis to determine historical trends in abundance and produce a population trajectory to a certain point in time.

MANAGEMENT OBJECTIVES AND STRATEGIES

South Dakota will manage river otter populations with data and techniques to encourage occupation of suitable available habitats and to provide sustainable use and enjoyment within the social tolerance level for this species.

Objective 1: Determine the status of river otter populations.

Strategies:

1.1 Annually collect and summarize river otter reports to improve knowledge of distribution and document expansion; refine reporting process as needed.

1.2 Annually collect information on age structure, sex ratio, and reproduction by conducting necropsies on all available carcasses.

1.2.1 Use age structure data collected from cementum annuli to complete a population backdating analysis.

1.3 Annually implement latrine surveys within the Big Sioux River.

1.3.1 Determine results of the latrine stream survey to evaluate occupancy and determine if the data can support a reliable population estimate.

Objective 2: Manage populations using harvest strategies that maximize sustainable recreational opportunity.

Strategies:

2.1 Biannually review and analyze existing data to inform harvest season structure and harvest limit recommendations.

2.1.1 By 2029, develop a harvest limit decision support tool to help guide harvest strategies for increasing, maintaining, or decreasing harvest limits and adjusting season structure.

2.2 Comply with necessary state and federal requirements for harvest implementation and reporting, while coordinating with these conservation partners.

2.3 Annually collect trapper/hunter information from harvested river otter to determine harvest metrics, such as, age and sex ratios, harvest locations, and harvest effort.

Objective 3: Inform and educate the public on river otter ecology and management.

Strategies:

3.1 Annually provide information on ways to reduce incidental river otter catches.

3.2 Respond to all requests for service and use those opportunities to educate on river otter ecology and management.

Objective 4: Coordinate with private landowners and conservation partners to promote the restoration of wetlands, streams, and riparian habitat.

Strategies:

4.1 Provide financial commitment to the project goal of 25,000 acres to be enrolled in the Big Sioux River Watershed CREP.

4.2 Provide financial commitment to the 82,000 acres enrolled in the James River Watershed CREP and use funding sources as they become available to enroll the project goal of 100,000 acres.

4.3 Support the implementation of the Riparian Buffer Initiative implemented by South Dakota's Department of Agricultural and Natural Resources.

4.4 Provide financial and technical support to interested landowners through department private lands cost-share programs, and partner programs to create or improve existing wetland and riparian habitat through restoration projects, range management projects and grazing stewardship practices.

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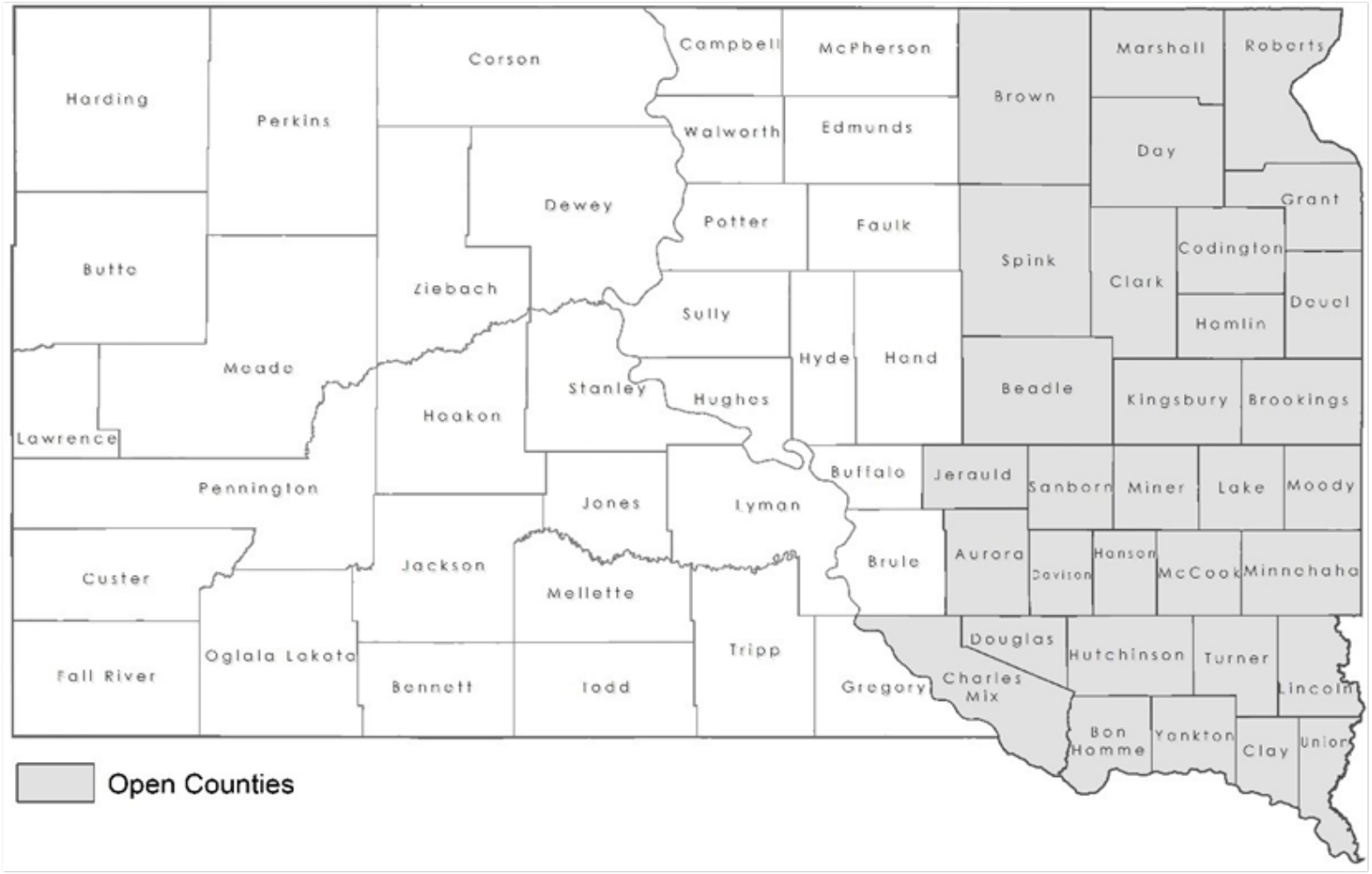

Figure 1. Counties in eastern South Dakota open to the harvest of river otters through trapping and hunting (grey). Hunters/trappers are limited to one river otter per trapper/hunter per season.