Fisheries and Aquatic Resources Management Issues and Priorities

South Dakota Game, Fish and Parks

Updated January 2024

Adopted by GFP Commission: January 2024

Department Mission

We serve and connect people and families to the outdoors through effective management of our state's parks, fisheries, and wildlife resources.

Vision

We will conserve our state's outdoor heritage to enhance the quality of life for current and future generations.

Goals

Opportunities - Provide outdoor recreational opportunities.

Resources - Serve as stewards of our state's outdoor resources.

Confidence - Inspire Confidence – instill trust from the people we serve through transparency and accountability.

Excellence – Foster professional excellence. Develop and empower highly engaged and well-trained staff.

Priorities

Habitat and Access
Asset Management
Customer Service
Operational Excellence

Motto "Serve – Connect – Manage"

Introduction

This document details fisheries and aquatic resources management work priorities beginning in 2024. It also identifies the most important aquatic management issues to address to help achieve the mission of the South Dakota Department of Game, Fish and Parks (SDGFP).

Strategic planning is essential for any organization. Limited financial and human resources must be thoughtfully allocated to achieve maximum impact. Successful planning also recognizes the need to be flexible and able to adapt to changing conditions. Input from both SDGFP staff and the public is an important part of this document, particularly in identifying the most important management issues to address.

The organization of this document begins with an overview of the SDGFP Aquatic Section, including staff structure, statewide aquatics programs, and fisheries management areas. Specific work priorities for each program and fisheries management area then follow.

Aquatic Resources Management Structure

The Aquatic Resources Management Section (Aquatic Section) is part of the Wildlife Division of SDGFP. Section staff include a section chief, program administrators for fish production and fisheries management, leaders for nine statewide programs, and staff at three fish hatcheries and five fisheries management work areas. Statewide programs were created to promote consistency in the implementation of research and management actions among work areas and hatcheries.

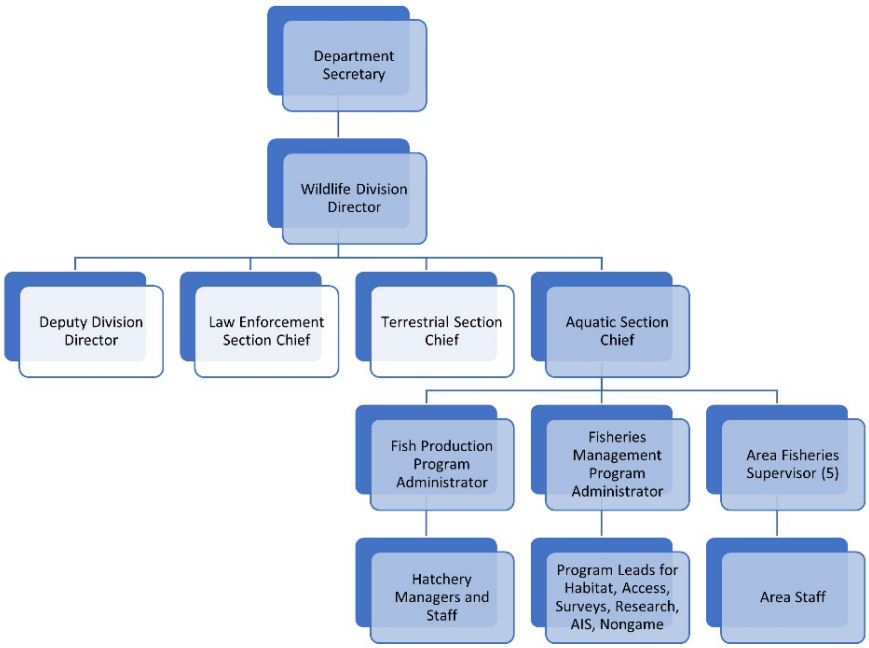
Within SDGFP, Aquatic Section staff collaborate with staff in the Parks Division, department communications team, law enforcement, and wildlife regions on the management of aquatic resources and their use by the public. Staff also cooperate with personnel from universities, federal agencies, and other states to help accomplish the mission of SDGFP.

Fisheries Management Areas

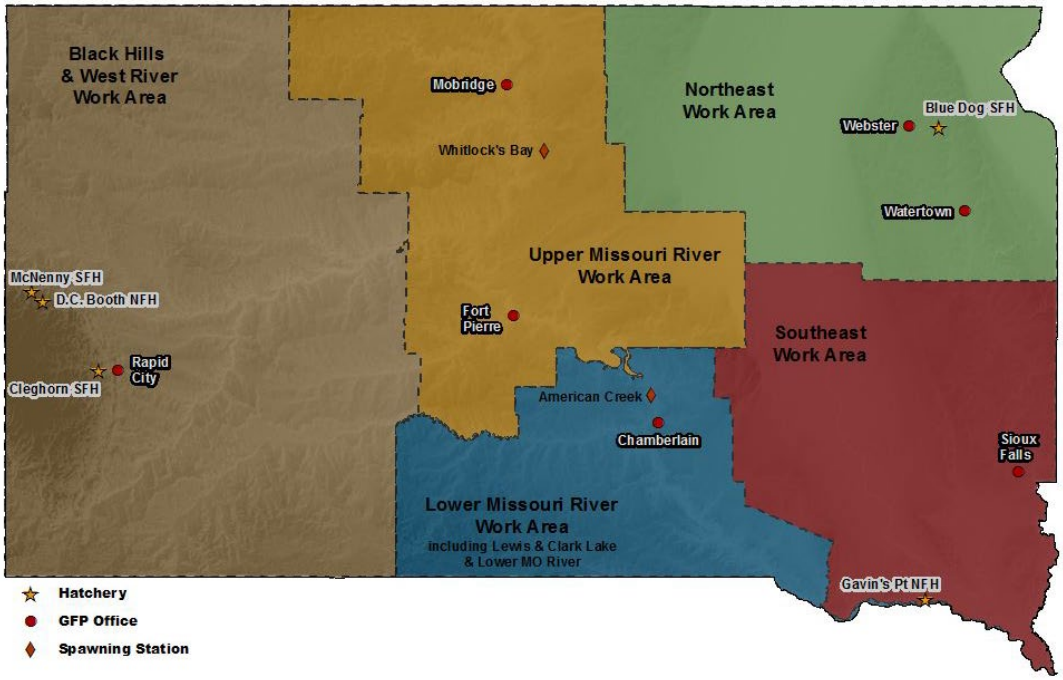
Fisheries work area boundaries are based on fisheries management areas (FMA). Fisheries management areas are loosely mirrored after the aquatic sub-regions identified in the South Dakota Wildlife Action Plan (2014), considering human demographics and resource use patterns. The FMAs delineated for fisheries and aquatics planning include East River (northeast and southeast), Missouri River, West River, and Black Hills. The aquatic habitats of each of these areas are generally described in this plan. More detailed descriptions may be found in individual

management area plans for the 2014-2018 and 2019-2023 Fisheries and Aquatic Resources Strategic Plans (SDGFP 2014b and SDGFP 2019, respectively).

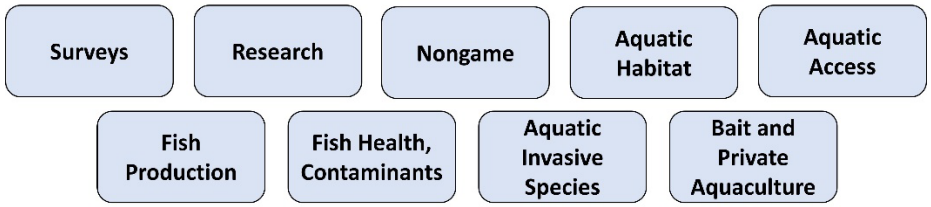
Aquatic Section Organizational Structure



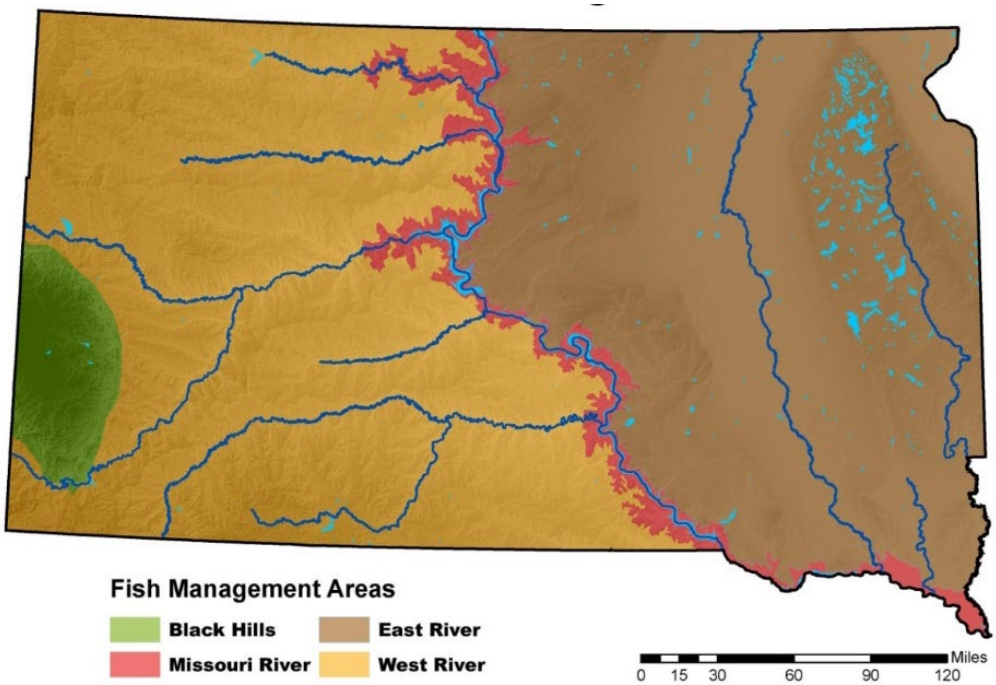
Aquatic Work Areas and Office and Hatchery Locations



Statewide Aquatics Programs



Some fisheries work areas are responsible for implementing priorities across multiple FMAs, while others, like the Northeast and Southeast work areas, are tasked with implementing priorities for a portion of one FMA.



Fisheries Work Area	Assigned Management Areas
Black Hills and West River	Black Hills and West River
Upper Missouri River	Missouri River and West River
Lower Missouri River	Missouri River and West River
Northeast	East River
Southeast	East River

Planning

Strategic plans for aquatic resources management by the department were developed for the 2014 - 2018 (SDGFP 2014b) and 2019 - 2023 (SDGFP 2019) periods. Those plans contain detailed information on fisheries management areas, funding sources, budgets, staffing, statewide aquatic programs, issues, objectives, and strategies for programs and management areas.

Several approaches have been used to ensure plan implementation, such as developing annual work plans based on strategic plans and tracking progress toward management objectives. After over a decade of planning experience, the best approach is to develop and prioritize a list of issues for a particular program or fisheries management area, and then focus funding and staff resources on the highest priority issues. These priorities must align with the overall SDGFP priorities. Although this plan begins in 2024, change is anticipated. New issues and opportunities will arise, and obstacles to implementation will occur. Thus, the components of this plan will be annually reviewed and updated as needed.

This document lists management issues along with the highest priorities for fisheries and aquatic resources management for the Aquatic Section, statewide programs, and FMAs. Priorities for aquatic work areas include all priorities for FMAs for which an area is responsible.

Aquatic Management Priorities

Within the mission, vision, goals, and priorities of SDGFP, the top management issues and priorities for aquatics management are:

Management Issues

- Degraded habitat exists in many public fishing waters.
- Insufficient access exists at many public fishing waters.
- Fish production cannot meet current requests for the number of fish and timing of stockings of fish, particularly for urban and community fishing waters.
- Stocking strategies to increase consistency of experience as related to recruitment, retention, and reactivation (R3) efforts are unknown.
- Information on the post-stocking performance of many hatchery-reared fish is unknown.
- Evaluation of management actions, including use of regulations and habitat and access improvements, can be insufficient to inform future actions.

Top Priorities

- Habitat and Access
- Consistently Meeting Stocking Requests
- Urban and Community Fisheries
- Stocking and Management Evaluations

Statewide Fisheries Program Priorities

Fisheries Surveys

Program Overview

The fisheries survey program includes fish population, angler use, fish harvest, and angler satisfaction survey design, implementation, data management and analysis, and information sharing for surveys and other management activities. Results from these surveys are the basis for evaluation of management activities including use of harvest regulations, stocking, and habitat and access development.

Management Issues

- Meeting the growing demand for timely fisheries information can be difficult.
- Traditional surveys of fish populations and their users are often expensive and time consuming.
- Sampling bias can make interpretation and comparison of collected data difficult within and between waters.

Priorities

- Data Management and Info Sharing
- Fisheries Survey Optimization
- Understanding Fisheries Data Bias

Fisheries Research and Evaluation

Program Overview

The fisheries research and evaluation program is an integral and essential component of aquatic resource management. It leads to a better understanding of fish biology, ecology, population dynamics, and evaluates contributions of stocked fish to fisheries, identifies management efficiencies, and helps determine if angler needs are being met. Research and evaluations may be completed solely by section staff, or in collaboration with universities, other state and federal agencies, or other outside entities.

Management Issues

- Evaluations of recirculating aquaculture systems (RAS) fish stocked into the wild are lacking.
- Survival of stocked fish (hatchery or relocated wild) can vary, and benefits are difficult to quantify.
- Levels of improvements needed and associated impacts of aquatic habitat and access projects on fish populations and their users are poorly understood and can vary between systems.
- Changes in fisheries regulations and management have both biological and social impacts that may not always align.
- Influence of urban and community fisheries on the overall angling community and angler recruitment, retention and reactivation are poorly understood.

Priorities

- Evaluations of:
    - Stocking
    - Fish and Angler Survey Techniques
    - Habitat and Access Improvements
    - Regulation Effectiveness
    - Urban and Community Fishery Impacts

Fishing Access

Program Overview

Game, Fish and Parks seeks to enhance fishing access opportunities. This includes maintenance and improvements on existing facilities and development of new facilities. Statewide, hundreds of boat ramps and shore fishing access areas are currently maintained. Some are managed through partnerships with the United States Army Corps of Engineers, counties, and city municipalities. The Aquatic Section also partners with the SDGFP Parks Division in developing, maintaining, and improving fishing access.

Funding for fishing access includes, but is not limited to, license revenues, Sportfish Restoration program dollars, State Habitat Stamp revenue, United States Coast Guard Motorboat Safety program dollars, and funds from third parties such as sport fishing clubs, cities, counties, and private individuals. Federal Emergency Management Agency (FEMA) and Title VI (Missouri River Land Transfer) funds are also available for some access projects.

Management Issues

- Providing ADA accessibility with new and existing structures is difficult and can be expensive.
- Meeting user expectations, access standards, and area maintenance needs while continuing to add access opportunities is challenging.
- Providing adequate access for boat, shore, and ice anglers amid a variety of infrastructure challenges (water levels, ice, vegetation) is challenging.
- Effectively providing users with information to locate and use access areas can be difficult and users do not always know where to find for information.
- Costs to maintain aging access infrastructure continually increase.

Priorities

- Meet Expectations for Access
- Addressing Infrastructure Limitations
    - ADA Accessibility
    - Aging Infrastructure
    - Water levels, ice, etc.
- Improve Access Information Sharing

Fish Habitat

Program Overview

This program includes a variety of small and large-scale projects to enhance fisheries habitat. Examples of habitat projects include small dam inspections, shoreline alteration permitting, shoreline alteration inspection, small dam and water structure repair and maintenance, sedimentation removal, undesirable species removal, submergent and emergent vegetation plantings, stream habitat projects, installation of artificial or natural structures, flow regime and water level modifications, riparian zone and watershed improvements, and water quality improvements.

Management Issues

- Costs of maintaining aging infrastructure continually increase.
- Addressing effects of erosion, wind/wave action, and reduced water volume on fishable waters is difficult and expensive.
- Manipulating water levels of man-made impoundments can positively affect fisheries quality, but management options to address water level fluctuations are limited.
- Balancing land-use practices, environmental conditions, and habitat needs to sustain fisheries is difficult.

Priorities

- Address Aging Infrastructure
- Reduce Sedimentation
- Enhance Water Level Management
- Improve Water Quality

Non-Game Aquatic Species

Program Overview

The Non-Game Aquatic Species program is part of the SDGFP Wildlife Diversity Program. The purpose of the Wildlife Diversity Program is to inventory, protect, and manage non-game species and their habitats, and prevent the listing of native species as threatened or endangered. It also maintains the Dakota Natural Heritage Program.

Aquatic non-game species management and research is focused in two areas: species tracked by the Natural Heritage Program and species of greatest conservation need (SGCN). In return for developing and implementing the South Dakota Wildlife Action Plan (SDGFP 2006, 2014a), SDGFP is eligible for State Wildlife Grant funds. These federal grants provide matching funds for managing many SGCN in South Dakota, including 28 fish, 11 freshwater mussels, two turtles, and four aquatic insects.

Management Issues

- Information on the distribution, biology, and population dynamics of many nongame species and SGCN is insufficient.
- Management of nongame species and SGCN alongside sportfish populations can be challenging.
- A comprehensive database containing both sportfish and nongame/SGCN information is lacking, making timely data synthetization and dissemination difficult.

Priorities

- Increase Species Status Information
- Expand Management Opportunities
- Data Management

Fish Production

Program Overview

Fish stocking is an important fisheries management tool for introducing new species, supporting urban and community fisheries, supplementing natural reproduction, repopulating after winterkill, and maintaining a fishery in the absence of natural production or high angler use. Fisheries managers stocking requests dictate the species, numbers, and sizes of fish produced by the three state fish hatcheries. Fish are also obtained from other states, federal hatcheries, private sources, or by transfer from one water to another (trap-and-transfer). Considerable effort is directed to spawning walleyes in the spring and Chinook salmon in the fall. Eggs for some fish species are also obtained from other state hatcheries, federal hatcheries, or private business.

Management Issues

- Hatchery production cannot meet fisheries manager requests.
- Aquatic Invasive Species and fish health concerns can impact pond rearing and trap-and-transfer.
- Fish stocking needs continue to increase, and hatchery infrastructure is aging.

Priorities

- Increase Rearing Capabilities
- Expand Recirculating Aquaculture
- Plan for Future Infrastructure Needs

Bait and Private Aquaculture

Program Overview

By statute, SDGFP is the regulatory authority for the baitfish industry and private aquaculture. Wild baitfish are a public resource sold by private entities and private aquaculture can affect public fisheries and aquatic resources.

Baitfish harvest from South Dakota waters has an estimated economic impact of over $3,000,000 a year (SDGFP 2007). In 2023, 127 resident retail, 21 resident wholesale, 16 export, and 42 non-resident retail bait licenses were issuedwhile13 private aquaculture and five fee fishing licenses were issued. Private aquaculture facilities vary from totally enclosed recirculating systems to fish rearing in natural waters. Private aquaculture produces fish for human consumption, sale to private landowners, export outside of South Dakota, and evaluating aquaculture research.

Management Issues

- A comprehensive database of waters historically used for private aquaculture, particularly in relation to the online approval process for new waters, is lacking.
- An online process for issuing licenses and importation permits, along with submitting required reports and fish health information is needed.
- It is difficult balancing protecting fisheries resources from invasive species, disease, and unauthorized fish stockings with commercial aquaculture and bait operations.

Priorities

- Private Aquaculture Database
- Online Licensing and Report Submission
- Regulatory Mechanisms to Protect Fisheries

Fish Health and Contaminants

Program Overview

South Dakota Department of Game, Fish and Parks regulations in administrative rules protect wild fish populations from pathogens and invasive species. Prior to bringing fish or reproductive products into South Dakota from out-of-state, an importation permit must be issued, based on the appropriate fish health certification. Fish health protocols and sampling is described in the Statewide Fish Health Manual (SDGFP 2016b).

South Dakota Department of Game, Fish and Parks cooperates with the South Dakota Departments of Health, Agriculture and Natural Resources, to test fish for mercury, selenium, cadmium, pesticides, and polychlorinated biphenyls (PCBs) in a minimum of 10 waters annually. The U.S. Food and Drug Administration threshold value of 1.0 ppm is used for issuing mercury advisories.

Management Issues

- The process for submitting information and fees for issuance of importation permits is inefficient and lengthens the time needed for approval.

- Existing pathogen testing requirements for fish importation may not include new pathogens of concern.

Priorities

- Online Fish Importation Permitting
- Regular Review of Pathogen Testing Requirements

Aquatic Invasive Species

Program Overview

Aquatic invasive species (AIS) activities follow SDGFP's AIS Strategic Management Plan (SDGFP 2016a), recently updated in 2023 (SDGFP 2023). Current tasks annually conducted include sampling for AIS spread detection, education and outreach, updating the GFP Commission, communicating with other government agencies and non-governmental organizations, and attending regional and national AIS conferences.

Management Issues

- The high number of access points and aquatic systems in South Dakota make reaching individuals in-person challenging.
- Providing all users of surface water within South Dakota with AIS Best Management Practices for practicing Clean, Drain, Dry is difficult.
- High numbers of aquatic systems in South Dakota make documenting current distributions of existing and new AIS difficult.
- User compliance with existing regulations is inconsistent.
- Few management options are available once an AIS becomes established in a waterbody and options are often costly and ineffective.

Priorities

- Outreach and Education
- Detection and Monitoring
- Regulations and Compliance
- Mitigation and Eradication

Fisheries Management Area Priorities

Black Hills

Area Overview

The upheaval of the Black Hills by volcanic activity during the Tertiary period caused the concentric rings of sedimentary and volcanic rocks visible today. This forested region with diverse narrow valleys, high plateaus, and well-defined drainages has numerous streams but no natural lakes. However, several constructed dams have created lakes with considerable recreational use. Aquatic systems in the Black Hills do not contain the diversity of plants and animals found in other management areas. The Black Hills has the second highest human population of any management area and is a major tourist destination.

Management Issues

- The small size of most yellow perch in Deerfield Reservoir does not meet angler expectations.
- Rainbow trout stockings have not been fully evaluated; additional information on angler harvest of stocked trout is needed.
- Habitat quality in some Black Hills stream reaches does not meet angler expectations, due to loss and degradation.
- Effective walleye stocking strategies, to establish fishable walleye populations in Black Hills reservoirs, have not been determined.
- Some Black Hills reservoir fisheries are negatively affected by sedimentation.

Priorities

- Deerfield Yellow Perch Population Quality
- Rainbow Trout Stocking Evaluations
- Stream Habitat Improvement
- Walleye Stocking Strategies
- Sediment Removal in Aging Reservoirs

Western South Dakota

Area Overview

The main western tributaries of the Missouri River are the basis for most aquatic habitats in western South Dakota. Natural wetlands are rare and generally associated with rivers and streams. Land use is dominated by grazing, although tillage agriculture is increasing. Dams or ponds, frequently constructed on intermittent streams for watering cattle and other livestock, provide fishing opportunities. Three large Bureau of Reclamation reservoirs, Shadehill, Angostura, and Orman, are extremely important fisheries.

Management Issues

- Fisheries and angler access is impacted by sedimentation and abundant vegetation in aging reservoirs.
- Maintaining water levels required for sustainable fisheries can be difficult.
- Fish stocking needs are not always met, especially for stock dams and small impoundments.
- Survival of walleye juveniles produced in recirculating aquaculture systems and stocked into small impoundments is unknown.
- Some anglers living in rural areas may not have quality fishing opportunities within a reasonable travel distance.

Priorities

- Sedimentation Removal in Aging Reservoirs
- Impoundment Water Level Management
- Fish Availability for Stocking
- Walleye Stocking Evaluations
- Shore Fishing Access
- Quality Rural Fishing Opportunities

Missouri River

Area Overview

The Missouri River is the longest river system in North America, averaging a mile wide and transporting 20 to 25 million tons of sediments a year. In South Dakota, four major dams on the river created Lakes Oahe, Sharpe, Francis Case and Lewis and Clark. These dams have greatly altered the form and function of the river, as well as the associated aquatic plants and animals. The only free-flowing river sections in South Dakota are located below Fort Randall Dam and Gavin's Point Dam. Walleye and smallmouth bass fisheries define the mainstem reservoirs and paddlefish fisheries currently exist in Lake Francis Case and below Gavins Point Dam. A salmon fishery exists in the coldwater habitat in Lake Oahe. The only free-flowing river sections in South Dakota are located below Fort Randall Dam and Gavin's Point Dam. Missouri River fisheries provide significant recreational opportunity and contribute greatly to the economies of towns along the river.

For the Missouri River Fisheries Management Area, general issues and priorities are provided, as are more-specific issues and priorities for the upper (Oahe and Sharpe) and lower (below Big Bend Dam) portions of the area.

Management Issues

- Current fish population and angler survey methods may not accurately represent fishery metrics.
- Additional evaluations of fish stockings and regulations (harvest limits) are needed for proper decision making.
- Involvement of multiple governing agencies makes management and long-term planning difficult.
- Potential conflicts exist among increasingly numerous and sizable angler groups.

Priorities

- Improve Surveys to Index Sportfish Populations
- Evaluate Stockings and Regulation Impacts
- Improve Inter-agency Coordination
- Address Angler Group Conflicts

Upper Missouri River (Lakes Oahe and Sharpe)

Management Issues

- Information on smallmouth bass fisheries is lacking.
- Stocking of paddlefish in Lake Sharpe has not been evaluated.
- The change in walleye population survey methodology a few years ago has made stocking decisions difficult.
- There is a lack of information on fish loss through Oahe and Big Bend Dams during all flow regimes.

Priorities

- Describe Smallmouth Bass Fisheries
- Determine Lake Sharpe Paddlefish Population Status
- Evaluate Lake Oahe Walleye Stockings
- Document Fish Losses Through Dams

Lower Missouri River (below Big Bend Dam)

Management Issues

- Effects of zebra mussels on the Lake Francis Case fishery are unknown.
- Contribution of stocked walleye juveniles to the Lewis and Clark Lake walleye population, at older ages, is not well understood.
- Paddlefish condition below Gavins Point Dam has decreased but the cause and extent has not been determined.

Priorities

- Evaluate Lewis and Clark Lake Walleye Stockings
- Lake Francis Case Zebra Mussel Impacts
- Paddlefish Condition Below Gavins Point Dam

Eastern South Dakota

Area Overview

Glaciation in eastern South Dakota created a grassland landscape of rolling plains and wetlands. Row-crop agriculture dominates land-use. Most of South Dakota's natural lakes in are in this area, along with the watersheds of the James, Vermillion, and Big Sioux Rivers. Eastern South Dakota also contains small impoundments, many of which were made in the 1930s. The fisheries resources of this area include over 370,000 acres of lakes and 1,100 miles of streams. Southeastern South Dakota has the highest human population in the state.

For the Eastern South Dakota Fisheries Management Area, development of management issues and priorities were done separately for the northern and southern portions of the area.

Northeast Area

Management Issues

- Survival and optimal stocking strategies for muskies raised in recirculating aquaculture systems need to be determined.
- Post-stocking survival of walleye produced in recirculating aquaculture systems is unknown.
- Relative post-stocking survival of walleye fry versus juveniles is unknown.
- Stocking strategies for community fisheries need to be evaluated.
- Angler preferences for community fisheries management options is unknown.
- Post-stocking performance of fish raised in recirculating aquaculture systems in community fisheries is unknown.
- Limited ice fishing and shore fishing access opportunities exist.
- Limited fishing access and degraded aquatic habitat exists at Gary Creek.
- Habitat projects to improve fish passage in the Big Stone Lake watershed are needed.
- Information on lake sturgeon population dynamics, movement, and reproductive status in Big Stone Lake is needed.

Priorities

- Walleye and Musky Stocking Evaluations
- Stocking and Management Strategies for Community Fisheries
- Habitat Improvement in Gary Creek
- Shore-Fishing and Ice-Fishing Access
- Improve Fish passage within Big Stone Lake Watershed

Southeast Area

Management Issues

- There is an ever-increasing need for fish for stocking.

- Information on the best stocking and management strategies for community fisheries is lacking.

- There are declining sport fish populations and dam safety concerns with aging impoundments.

- Changing angler and boater demands drive improved access needs for lakes and rivers.

- Changing user demographics, including increasing urbanization and population growth, fuel demand for nearby quality fishing opportunities.

- The possibility of silver and bighead carp spreading to new waters during periods of high-water levels is of concern.

Priorities

- Increase Fish Available for Stocking
- Evaluate Management Strategies for Community Fisheries
- Intensively Manage Aging Small Impoundments
- Improve River and Lake Access
- Minimize the Spread and Impact of Invasive Carp

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