**SOUTH DAKOTA**

**STATE REPORT**

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**Habitat Pays**

In December 2013, Governor Daugaard hosted a Pheasant Habitat Summit. More than 400 stakeholders gathered in Huron to learn more about the condition of South Dakota’s habitat through presentations and discussions from key leaders throughout the state. Following the summit, Governor Daugaard formed a habitat work group comprised of sportsmen and women, landowners, leading conservation and agriculture academics, legislators and government officials. He charged members with developing recommendations focused on practical solutions for maintaining and improving pheasant habitat compatible with agriculture production. The 13-member group reviewed survey results, scientific data, letters and suggestions, and released a report in September 2014. This report is available at *habitat.sd.gov.*

One of the group’s recommendations was to create an awareness campaign to connect landowners with the many resources available for establishing habitat on their land. Another recommendation was to implement a website specific to habitat management with information on federal, state, local and non-government programs for landowners to learn about and access when appropriate. Together these recommendations became Habitat Pays.

The Habitat Pays initiative is a collaborative effort between the South Dakota Departments of Game, Fish and Parks and Agriculture. The two departments have been working together to meet with agribusinesses, commodity organizations, cooperatives and producers to discuss ways to foster collaboration, improve communication and achieve mutually beneficial outcomes.

On October 2, 2015, habitat.sd.gov launched as part of the Habitat Pays public relations campaign to connect farmers and ranchers to the appropriate habitat resources and help them implement wildlife habitat where it makes the most sense. Videos on the site feature stories of landowners in various parts of the state who have taken advantage of programs to maintain or establish habitat. The site also includes a comprehensive list of resources, along with a list of habitat advisors who are experts in conservation programs and habitat planning. They possess the knowledge of federal, state and local programs to assist landowners in finding the right program or programs to meet their personal habitat and land use goals. Habitat advisors are available to assist landowners in designing, developing and funding habitat improvements on private lands. Background information, images and contact information for each of the habitat advisors is available on the website so landowners can put a name and a face together.

Since its launch (and as of May 12, 2016), habitat.sd.gov has had 8,645 sessions, 25,548 visits with 5,530 users. Sixty-two percent of the sessions have been from new users.

Earlier this year, the South Dakota Game, Fish and Parks GFP) hosted a variety of workshops across the state aimed at providing habitat information to interested landowners. These workshops provided landowners with practical and technical information on how to create winter cover, food plots, native grass seedings and more. Representatives from GFP, Natural Resource Conservation Service (NRCS), Pheasants Forever, local conservation districts and others were available for presentations and questions at each workshop.

These workshops provided an additional opportunity to explain the diverse habitat programs and resources together with partner organizations. For those landowners who could not attend the workshops in person, the presentations are also available online at: <http://habitat.sd.gov/workshops/previous-workshops.aspx>.

Habitat conservation is important. By balancing agricultural production with targeted conservation goals, landowners can improve soil and water quality while building habitat for a variety of species. These efforts enhance our wildlife populations, preserve our outdoor traditions, and benefit farmers and ranchers. As Mike Jaspers, a row-crop producer near Bridgewater, puts it, “If you take care of the land, the land will take care of you.”

**2015 Walk-In Area Program for Hunter Access**

Over 1.2 million acres of private land were enrolled statewide in the Walk-In Area (WIA) program providing public hunting access by 1,390 cooperators. In 2008, GFP implemented the Controlled Hunting Access Program (CHAP) which provides additional flexibility for the landowner and more control of the number of hunters using the area. Seventeen CHAP areas totaling 20,822 acres were enrolled statewide in 2015.

**Aerial Predator Control**

South Dakota’s predator control program is operated cooperatively between South Dakota Game, Fish and Parks (SDGFP) and USDA-APHIS-Wildlife Services (USDA-WS). SDGFP provides predator control primarily with ground methods (i.e. traps, snares, calling, and shooting) while USDA-WS provides predator control via aerial control, exclusively. For 2016, SDGFP and USDA-WS finalized a financial agreement for the operation of a second aircraft located in eastern South Dakota. USDA-WS provides the aircraft and GFP provides approximately $160,000 of funding for the operational costs associated with the plane and pilot. This aircraft became operational on February 1 and has flown 140 hours in eastern South Dakota and the USDA-WS plane in western South Dakota has flown nearly 300 hours. These activities impacted over 250 livestock producers that requested assistance with coyotes due to livestock loss events. As calf and lamb production increases across South Dakota over the next several months, it is anticipated that both aircraft will remain busy responding to livestock loss events and livestock protection requests. The addition of the second aircraft will provide livestock producers across the state with enhanced levels of predator control. In 2015, SDGFP staff responded to over 1,300 requests for assistance with predator control which was an 11% increase over 2014. SDGFP staff in cooperation with USDA-WS removed over 7,623 coyotes which is the highest number of coyotes removed in over 15 years.

**Pheasant Population Status & Harvest**

During the 2015 – 2016 pheasant hunting season, 65,060 resident and 86,982 non-resident hunters harvested an estimated 1,259,242 rooster pheasants. Total pheasant hunters increased 7.9% while total harvest increased 5.0% from the previous year. Harvest averaged 1,650,860 during the previous ten years. The estimated pre-hunt population estimate was 7,700,000, a 2.7% increase from the previous year estimate of 7,500,000. The previous ten years’ average was 8,600,000. The increase in pheasant harvest was expected given the 42% increase in August roadside pheasant counts from 2014. Hunter success remained unchanged from the previous year which may have been caused by hot and dry conditions during the first month of the hunting season. The pheasant population is well below levels observed in 2007 (11.9 million) when 1.5 million acres of Conservation Reserve Program (CRP) Grasslands were available to nesting pheasants. Current CRP acreage is slightly below 1 million acres.

**Canada goose Depredation and August Management Take**

The latest (2013-2015) three year average spring Canada goose population index is over 192,000 birds. This represents a decrease of nearly 23% from a peak of approximately 248,000 birds in the 2011-2013 time series but remains above the state’s population objective. This population continues to exceed management objectives and when combined with favorable nesting conditions, row-crop expansion, and lowered landowner tolerance all resulted in significant resources and expenditures by Department.

South Dakota also implemented its sixth “August Management Take” (AMT). The AMT utilizes sportsmen/women to harvest resident Canada geese with the goal of reducing the resident Canada goose population. In 2015 over 1,600 hunters harvested an estimated 10,221 Canada geese. In addition, SDGFP worked closely with the USFWS and the South Dakota Sportsmen Against Hunger program to allow interested commercial meat processors to obtain a special permit from the USFWS to process donated hunter-harvested geese that were ultimately distributed to local food pantries.

Every year, a diversity of wildlife damage abatement techniques (i.e. fencing, food-plots, vegetative buffer strips, hazing, and lethal control) are used to assist landowners that suffer crop losses from Canada geese during the spring and summer months. In 2015, GFP spent approximately $378,000 with the implementation of these management techniques, which impacted over 450 agricultural producers. This assistance coupled with the overall lower population of resident Canada geese has helped tolerance levels to stabilize. Preliminary information from field-reports in eastern South Dakota indicate seeing increased numbers of breeding pairs and above-average nest production during the spring of 2016. Crop planting has been delayed due to spring rains and is running approximately two weeks behind.

**Elk Aerial Survey Results**

Aerial surveys of elk populations in the Black Hills were conducted from February 1-22, 2016, using three R-44 helicopters, each carrying 2 observers and a pilot. The entire Black Hills was surveyed, including Wind Cave National Park, Custer State Park, and 100% of all elk hunting units in South Dakota. A total of 195 survey hours were flown in South Dakota and an additional 35 hours were flown on the Wyoming side of the Black Hills in suspected elk winter range. The entire survey area was delineated into 253 smaller subunits and helicopter survey crews flew systematic search patterns within each subunit, spaced 650-1,000 feet apart, at speeds of 40-50 mph, and heights of 100-150 feet above ground level. Adjacent subunits were flown with minimal time delays to minimize elk movements between subunits and the potential of elk herds being missed completely or double sampled. Once a group of elk was detected the survey transect was interrupted to record GPS location, group size, percent visual obstruction, and percent snow cover. Pictures were taken of any elk group that exceeded 50 animals and later analyzed to ensure accurate counts.

**Total Counts and Sightability Model Estimates**

Black Hills Hunting Units (excludes Custer State Park and Wind Cave National Park)

• Total count = 6,356 elk (no model correction)

• Sightability Model estimate = **7,200** (95% CI 6,700 - 9,100)

Custer State Park

• Total count = 378 elk (no model correction)

• Sightability Model estimate = **460** (95% CI 400-730)

Wind Cave National Park

• Total count = 484 elk (no model correction)

• Sightability Model estimate = **700** (95% CI 570-1270)

Wyoming Black Hills

• Total count = 923 elk (no model correction)

• Sightability Model estimate = **1,100** (95% CI 990-1500)

This map represents winter population elk densities in the Black Hills. Based on previous radio telemetry research, elk within the Black Hills commonly display migratory behavior; therefore, winter estimates do not represent fall hunting unit estimates. Elk commonly cross unit boundaries and the Wyoming border during spring departures from their wintering area and thus; these densities only apply to the survey period.



**SD Deer Collaring Effort**

Understanding population dynamics of white-tailed deer and mule deer and determining annual rates of change (λ) requires knowledge of fawn, juvenile, and adult survival rates. Annual rates of change within a deer population are influenced primarily by adult survival and the number of fawns that reach one year of age. Thus, the primary objective of these efforts is to estimate annual survival rates of whitetail and mule deer adults, juveniles, and fawns occupying agricultural, prairie and forested landscapes throughout South Dakota. These data provide critical information in determining if a deer population is increasing, decreasing or remaining constant, which directly influences deer license numbers and harvest strategies.

In 2015, survival monitoring was conducted on 588 adult female white-tailed deer in 4 study areas - Brown/Clark Counties, Lake/McCook Counties, Perkins County, and the Black Hills. Statewide white-tailed deer survival rates were 70% (95% CI:64-76) for fawns (June-Sept 30, 2015; n=241), 65% (95% CI:52-77) for juveniles (Oct 1, 2014-Sept 30, 2015; n=90), and 86% (95% CI:81-91) for adult females (Oct 1, 2014-Sept 30, 2015; n=257).

Survival studies of mule deer populations in 2015 included monitoring 392 radio collared mule deer in 3 different study areas – Black Hills, Badlands, and Missouri River. Statewide mule deer survival rates observed last year were 57% (95% CI:48-65) for fawns (June-Sept 30, 2015; n=148), 80% (95% CI:66-90) for juveniles (Oct 1, 2014-Sept 30, 2015; n=43), and 90% (95% CI:84-94) for adult females (Oct 1, 2014-Sept 30, 2015; n=201).

Adult and juvenile capture efforts were increased in the winter of 2016 in order to increase the precision of survival estimates and thus improve survival comparisons and future regression analyses on multiple covariates that may influence survival. For each study area, adult female sample sizes were increased from 50 to 100 does and 30 juveniles were also captured and radio collared. Fawn capture sample size will remain at 50 fawns per study area. In addition, following the completion of a research project with the University of Montana, the state was divided into 11 Data Analysis Units - a DAU can be defined as an aggregate of management units that is large enough to account for auto-correlated biotic and abiotic factors and processes that uniformly influence vital rates. Capturing locations in 2016 were distributed throughout each DAU where deer survival is being monitored.

From mid-January to early April, 2016, 183 adult female, 68 male, and 85 juvenile white-tailed deer were captured and collared via helicopter net gun in DAUs 3, 9, and 11. Capture and collaring efforts for mule deer included 196 adult females and 91 juveniles in DAUs 3, 4, and 6. Capture plans for fawns in 2016 include 150 white-tailed deer and 150 mule deer. On-going mortality monitoring via aerial and ground telemetry occurs on a monthly basis for all collared animals.

These data were used to model deer populations and rates of change, and ultimately assisted GFP staff and the Commission in developing the 2016 deer season structure.

**SD Wildlife Action Plan Website Tool**

South Dakota's revised Wildlife Action Plan was approved by the U.S. Fish and Wildlife Service in May 2015. South Dakota's plan is not a SDGFP plan, but instead a strategic framework for agencies, partners, and the public to work together for the long-term benefit of fish and wildlife and their habitats. In that spirit, we developed an interactive website that hosts the plan and a variety of information about wildlife, native habitats, conservation challenges and initiatives, and summaries and products resulting from State Wildlife Grant funding. We hope this website becomes a destination for people interested in reliable information about native species and habitats, but we are also broadening the content to include other species and projects of interest to the public and our conservation partners. Website address: <http://arcgis.sd.gov/server/gfp/wap/Default.aspx>

**State Parks see Record Year in 2015**

The South Dakota state park system set records in 2015 in camping units, direct user revenue and visitation. This was on the heels of a record 2014. Camping was up 9% in a year when no new campsites were added to the state park system. Revenue generated directly from park users was up 11% from 2014. In addition to the higher camping use, park users bought 54,000 more park permits than they did last year. Visitation to state parks and recreation areas was up 4% in 2015. South Dakota’s newest state park, Good Earth at Blood Run, saw over 30,000 visitors, a 20% increase over last year.

**Good Earth State Park - South Dakota’s Newest State Park**

Dedicated, July 19, 2013, Good Earth State Park at Blood Run, is a 588-acre cultural and natural oasis just minutes from the city of Sioux Falls, in the most developed and populated area of the state. Today, the site is known for its tranquility. In the past, however, this area was bustling with activity. Ancestors of the Omaha/Ponca and Ioway/Otoe once lived here.

Good Earth State Park includes portions of Blood Run National Historic Landmark, where a village complex was intensively occupied primarily between 1500 and 1750 – one of the largest of its kind in the Upper Midwest. The historic landmark designation includes land located across the Big Sioux River in Iowa, which the State of Iowa owns and maintains.

The South Dakota Department of Game, Fish and Parks is constructing a visitor center (main construction completion scheduled for Fall 2016, interpretive design finished by spring of 2017) which aims to connect visitors to the rich cultural and natural history of the site. The center will serve as a premier field trip destination for local school groups, a primary audience for the project. An additional target audience will be visitors from the Midwest and beyond. The exhibits, along with an introductory film, will educate visitors about the historical significance of this complex site.

The visitor’s experience in the facility, including the 15-20 minute film, will serve as an introduction to the park for individuals, families and groups. It will teach them about the site’s cultural and historical importance and entice them to explore the park’s trails and scenic overlooks.

The visitor center exhibits will communicate the following themes:

* Cultural significance of the area.
* Good Earth State Park is a portal connecting the prehistoric village site to the present day.
* Commonalities and connections to contemporary culture and society.
* Ingenuity and complexity of village lifestyle.
* Evolution of the natural landscape.

The exhibits also aim to:

* Inspire curiosity about the historical significance of the park.
* Present a balanced, multifaceted interpretation of the site’s history in collaboration with the Omaha/Ponca and Ioway/Otoe tribes and archaeologists.

A Dedication of the new Visitor Center will take place late-spring of 2017.

**Custer State Park Visitor Center**

On May 6, 2016 Custer State Park dedicated and formally opened the new visitor center. The new visitor center offers an array of opportunities including a large interactive map, 20-foot-tall scale models of the Cathedral Spires and, of course, educational displays about the park’s iconic buffalo. Two-time Academy Award winner, Kevin Costner, narrates the Custer State Park film, "Spirit of Tatanka." The 20-minute film highlights the park and is featured in the visitor center’s state-of-the-art theater.  
  
 The previous Visitor Center, the Peter Norbeck Visitor Center, will be repurposed into the Peter Norbeck Outdoor Education Center, creating a space that will be ideal for the first-class interpretive programs that are offered at the park.

The successes of these projects are due to private – public partnerships. Millions of dollars of donations were received for the new visitor center.

**Concession Operations Analysis**

The Division of Parks and Recreation has entered a contract with CHM Government Services to conduct a comprehensive analysis of the concession operations within the State Park System. CHM will evaluate all aspects of each concession operation including lease and fee structures, asset valuation and business salability, operational models, etc. and develop recommendations for each concession. The study is expected to be completed in July of 2016.

**Pollinator Plots Planned for State Park Areas**

As part of Game, Fish and Parks’ effort to promote and expand quality wildlife habitat and stem the reduction of pollinator insects that are critical to habitat and agriculture, 20 pollinator plots are being planned, prepared for and planted during 2016. The plots will average 3.3 acres in size and when established will provide ideal pollinator insect habitat, but more important, will provide an educational opportunity to visitors that come to the parks. An important element of the project is interpretive signing, educational programs, school tours and media exposure. Preparation, planting and initial care of pollinator plots is labor intensive and the department is partnering with Pheasants Forever both at the state and local chapter level. Pheasants Forever biologists assisted with site analysis and seed recommendations and local chapter members are assisting with both funding and hands-on labor. School groups, local organizations and private citizens have stepped forward and are involved with creation and care of the plots.

**Mickelson Trail – Mount Rushmore Connector Trail EIS**

In October 2015, the Department of Game, Fish and Parks received final comments and approval from the U.S. Forest Service in regards to the contract between GFP and HDR Engineering to conduct the Environmental Impact Study for the proposed 15-mile trail connector trail. The U.S. Forest Service is the lead federal agency and will administer the project. The EIS is estimated to take about 18-24 months to complete.

**Go Fourth Free Park Passes**

In its second year, the Go Fourth program has distributed over 15,000 free daily state park passes to all fourth grade students in South Dakota. Passes should be coming home and reaching parents now through the elementary P.E. teachers. Each pass allows the fourth grade student and their family free entrance to the South Dakota state parks for the day, as well as $6 off a canoe/kayak/paddleboard rental. At the end of their visit, families can choose to exchange their day pass for $6 off an annual pass. Last year we had over 1,100 passes turned in across the state. Families that used their passes were very appreciative and loved the idea on exploring new areas in the state.

**Sanford Children’s Hospital Program**

Each week Game, Fish and Parks staff provides outdoor-themed programing at Sanford Children’s Hospital in Sioux Falls. On average, 10 kids participate in each program, which are held Friday mornings. Program topics have included insects, animal furs, fish, life cycles, owls, reptiles and tracks. Those patients that cannot attend in the classroom are visited one-on-one in their rooms.

Brandon Brake, park manager from Farm Island, shared his recent experience with other department staff: *“It was one of the most rewarding experiences I have had. I had one-on-one teaching with about 12 different children. Some children even required me wearing a surgical gown and mask. I could not put a value on any one child’s experience. I spent five minutes with some, all the way up to 20 minutes with others. These children need something to take away the pain, the long stay, or the fact that they hadn’t had solid food in two weeks. From my heart and soul to yours, these children need us! I did have hesitation about putting myself out there, and it being the start of our season. But my 9-hour day will last a lifetime for these kids.”*

**Post-Flood Research Monitors Fish Community Changes in Missouri River Reservoirs**

Impacts to people living along the Missouri River during the 2011 floods were many with some still evident today. Since 2011, multiple projects have taken place to determine long-term changes to Missouri River reservoir native, gamefish, and prey species. While some of these projects are completed, others are ongoing.

**Impact of the Missouri River Flood on Native Fishes in the Lewis and Clark Delta**

Fish community evenness (J’) in the Lewis and Clark Delta rose, Species Richness stabilized, and Diversity (Fisher’s α) stabilized after the flood. The majority of species present in the delta were more abundant following the flood and the abundance of small-bodied native species remained stable. Overall results suggest the Delta serves as a refuge environment for juvenile and adult fishes during and immediately after catastrophic flood events.

**Entrainment of Walleye Through the Missouri River Dam System During the 2011 Flood**

On average, 25% of all walleye collected from Lakes Sharpe, Francis Case and Lewis and Clark were entrained through a dam at some point in their lives. Entrainment increased as you moved downstream with 19%, 24% and 34% of walleye originating from upstream reservoirs for Lakes Sharpe, Francis Case and Lewis and Clark, respectively. Approximately 2/3rds of these downstream entrainment events occurred during the Missouri River flood in 2011. The remaining entrainment occurred over a 12 year period not including the flood year. Thus, downstream walleye movement through dams is constantly occurring; however, this entrainment was most extensive during the 2011 flood.

**Entrainment of Rainbow Smelt Through Oahe Dam During the 2011 flood**

During the 2011 Missouri River flood, concerns regarding rainbow smelt entrainment were numerous and we sought to determine rainbow smelt entrainment rates. Trawl sampling below Oahe Dam estimated 231 million adult and 433 million age-0 rainbow smelt were entrained during the summer of 2011. Hydroacoustic sampling above Oahe Dam on Lake Oahe estimated a loss of 213 million adult and 520 million age-0 rainbow smelt from Lake Oahe. Rainbow smelt entrainment rates were substantially higher from 1500 to 2100 hours. This corresponds to the time of day when rainbow smelt exhibit a diel migration into the water column likely making them more susceptible to entrainment as they pass by Oahe Dam intake structures. By reducing discharge during this critical time period, entrainment of rainbow smelt could be dramatically reduced.

**Side-Channel Habitat Importance for Gizzard Shad and Sport-Fish in Lake Sharpe**

Hipple Lake is a side-channel habitat adjacent to Lake Sharpe. However, the connection between Hipple Lake to Lake Sharpe was limited by sediment deposition during the 2011 flood. Thus, we wanted to determine the importance of this and other unique habitats to gizzard shad reproduction and reproductive contribution of black and white crappie, bluegill, yellow perch, white bass, smallmouth bass, and largemouth bass in Lake Sharpe.

Age-0 gizzard shad were reclassified to a known natal habitat with 92% accuracy. Natal contributions were highest in floodplain (i.e., tributary, canal, embayment, stilling basin) habitats with 64% of adults being produced from such habitats. Although Hipple Lake represents less than 1% of Lakes Sharpe’s surface area, over 12% of adult gizzard shad in Lake Sharpe are produced from this area.

Floodplain habitats were important for bluegill, crappie, yellow perch, largemouth bass, and white bass natal production and adult occupancy, but not for smallmouth bass production and adult occupancy. Main channel habitats were important for all species.

**Lake Sharpe Habitat Use by Gizzard Shad**

Gizzard shad are an important part of the food web in Lake Sharpe, South Dakota. Because of flooding on the Missouri River during 2011, the connection between Hipple Lake, a backwater habitat, and Lake Sharpe is at risk of silting in. To gain a better understanding of how gizzard shad use the available habitats within Lake Sharpe, we captured and implanted 40 adult gizzard shad with ultrasonic telemetry from 4 locations throughout Lake Sharpe. Twelve stationary receivers were deployed in Lake Sharpe to record movements/habitat use of tagged gizzard shad. Twenty gizzard shad were tagged in June of 2014, and twenty were tagged in June of 2015. Nine tagged gizzard shad used Hipple Lake during the winter of 2014. Gizzard shad began arriving in Hipple Lake as early as 11/11/14, and most fish remained in Hipple Lake until the first week of June. The last two remaining fish departed from Hipple Lake on 6/29/15. Gizzard shad remained in Hipple Lake for an average of 150 days (range: 48-203) through the winter and early spring. Hipple Lake appears to be an important over-winter habitat for adult gizzard shad in Lake Sharpe. Gizzard shad can move considerable distances over a short time period during summer and early fall.

**Impacts of Prey-fish Collapse and Regulation Changes on Lake Oahe Walleye Harvest**

Researchers have marked 34,358 walleye from 2013-2016 on Lake Oahe in an effort to quantify natural mortality and angler exploitation rates following the 2011 flood. Results have indicated that natural mortality varies within Lake Oahe, but has decreased throughout the reservoir throughout this study. Angler exploitation ranged from 17% to 28%, indicating that angler harvest has had less effect on the Lake Oahe walleye population than natural mortality since the Missouri River flood.

**Management-Driven Research Helps Provide Quality Fisheries**

Research is a major part of the South Dakota Game, Fish and Parks (GFP) aquatics program helping to answer management questions. Projects funded through the Federal Aid in Sportfish Restoration help support management of a variety of fish species. The following describes some of the initial results of these research efforts.

In Pactola Reservoir, research documented relationships between the lake trout and northern pike populations and effectiveness of the current 610-mm minimum length limit and one fish daily limit on lake trout. Juvenile lake trout consumed invertebrates, centrarchids, and rainbow smelt. Adult lake trout consumed primarily bluegill and rainbow smelt. Annual surveys since 2003 showed relatively constant catch per unit effort of lake trout. Based on lake trout yield models, current harvest regulations fit existing management goals. The 610 mm minimum size limit will better withstand future increases in fishing effort than more liberalized size and harvest regulations. Northern pike diets mainly consisted of centrarchids, rainbow smelt, and rainbow trout. Northern pike consumption of rainbow trout increased with size of northern pike. Individual, large northern pike (≥600 mm) consumed 10.3 to 23.4 rainbow trout y-1. Large northern pike are a primary source of post-stocked mortality on rainbow trout.

American Fisheries Society standard sampling methods were reviewed and compared to current GFP fisheries sampling methods. In non-Missouri River systems, GFP gill nets had higher catch per unit effort for most species commonly indexed with gill nets including walleye and yellow perch while Standard gill nets selected for larger individuals of most species. In Missouri River systems, gill net CPUE was higher for almost all species captured using GFP multifilament reservoir gill nets because SDGFP nets were over three times longer than standard nets. Standard gill nets with additional large bar-mesh panels selected for larger individuals of most species, including walleye, than did GFP reservoir nets. Monofilament was more efficient than multifilament for almost all species investigated.

Modified fyke net catches were similar for many species between net types though Standard nets captured more black crappies and GFP nets captured more black bullheads. Standard modified fyke nets tended to select for larger black crappie and bluegills. Estimates of species diversity and evenness did not differ between GFP or standard gears. Indirect estimates of gill net selectivity were performed for 18 species sampled using standard gill nets to identify shape of species and mesh-specific selectivity curves, approximate peak modal efficiency for each mesh, and identify overall shape of selectivity curves for all meshes combined. In both Missouri River and non-Missouri River systems, conversion factors for lake-wide catch per unit effort were developed for each gear type using regression analysis to allow for conversion of historic catch data into equivalent Standard CPUE. Together, the paired gear comparisons between GFP and Standard gears and additional investigations of Standard gears provided the necessary information to allow for a potential statewide transition to North American Standard sampling gears.

**Aquatic Habitat Projects Take Center Stage**

The fish habitat component of the South Dakota fisheries program has a lot of momentum right now and efforts are being made to ensure that momentum continues. After two years of waiting, fall and winter flows in Rapid Creek below Pactola reservoir in the Black Hills were low enough to allow a major stream habitat project to be completed. This project included partnerships with the U.S. Forest Service and the Black Hills Flyfishers. Planning for phase 2 of this project is underway, with an additional $35,000 in contributions already pledged by the Flyfishers. The Flyfishers have also pledged $35,000 towards a similar project on Spearfish Creek in the northern Black Hills. Stream habitat enhancement and maintenance is a primary objective of the Black Hills fisheries management plan and at least one large-scale Black Hills stream habitat project will be submitted for department funding consideration each year. Stream bank stabilization and small-scale instream habitat enhancements are annually conducted.

While the Black Hills component of South Dakota’s fish habitat program is well defined, efforts to determine the best approach to maintaining and enhancing aquatic habitats in prairie impoundments and glacial lakes are ongoing. Habitat enhancement efforts on impoundments have focused on cooperative Christmas tree habitat placements and use of artificial habitat structures is increasing. Natural shoreline restoration projects are a focus of current glacial lakes habitat efforts. An aquatic habitat management plan is in development and will aid in prioritization of projects on a statewide basis.

**Aquatic Invasive Species (AIS) Strategic Management Plan Updated**

A plan was first approved in 2008 in response to the Nonindigenous Aquatic Nuisance Prevention and Control Act (NANPCA) of 1990. That plan serves as the umbrella for the recently drafted AIS strategic management plan. The strategic plan guides GFP’s activities to achieve the goals outlined in the 2008 Statewide AIS Management Plan. GFP has led the effort in collaboration with multiple state, federal, tribal, and non-governmental organizations. Three main issues are identified: prevention, control and regulations.

The major focuses of the draft strategic plan are: 1) Creating partnerships and awareness with other agencies; 2) Securing alternative funding sources to aid in achieving plan objectives; 3) Control and containment of Zebra mussels in Lewis and Clark Lake and preventing their spread to other waters; 4) Control and containment of Asian Carp to their present range in the State of South Dakota; 5) Preventing the introduction of zebra mussels from other states into our natural lakes; and 6) Supporting research on AIS in South Dakota and developing systems to disseminate information to research and management communities.

**Stakeholder Opinion Database (SOD)**

During the 2013 big game review, one specific area identified by the Wildlife Management Institute that needs development is a means to quantify wildlife population information gathered by Conservation Officers obtained through landowner conversations. Because this anecdotal information is used in the decision process of establishing seasons and license allocations, a database (Stakeholder Opinion Database, SOD) was created as an application and installed on smartphones and GPS units to record information. Recognizing the importance of this data, its’ utility was expanded to gather from all stakeholders. Since its implementation in January, there have been almost 2,500 records uploaded to the system.  In addition, there have been 74 staff (63 Conservation Officers) reporting interactions with stakeholders in almost every county in South Dakota.  To help monitor entries and augment season recommendations, a website was launched that allows staff to run various reports that summarize the population information of game species as perceived by the public.

**Step Outside Program**

In 2015, Game, Fish and Parks provided over 35 Step Outside and other community shooting sports programs for approximately 3,100 participants. Through these events, GFP works with local area volunteers to provide an opportunity for youth and their families to try several different types of shooting, hunting and fishing related activities. Research indicates that an initial exposure to hunting, fishing, and shooting activities are essential for the development of young hunters, anglers and shooters.

**Economic Impact Study**

GFP has contracted with Southwick Associates to understand the economic impact of outdoor recreation in South Dakota. Measuring the economic contribution of all recreation associated with the department (camping, hunting, fishing, trapping, wildlife viewing, snowmobiling, etc.) will help frame many of the topics we engage in on an annual basis. Results will be used for things such as business planning purposes, legislative issues, increasing awareness about the need for conservation and more. The results of the survey will be available later in 2016.