GAVINS POINT NATIONAL FISH HATCHERY AND AQUARIUM

YANKTON, SOUTH DAKOTA

Annual Report

Fiscal Year 2010

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Gavins Point National Fish Hatchery
Yankton, South Dakota

This report was prepared by:

Marc Jackson – Project Leader

Jeff Powell – Assistant Project Leader

Craig Bockholt – Fish Biologist

Tom Kent – Fish Biologist

Diane Von Eschen – Administrative Officer

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Approvals:

Marc Jackson, Project Leader	**Date**
Larry Gamble, Fisheries Geographic Supervisor	**Date**
Sharon Rose, Assistant Regional Director	**Date**

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The Gavins Point National Fish Hatchery is located three miles west of Yankton, South Dakota, on Highway 52 and Congress authorized construction on June 13, 1956 (70 Stat. 263). The Fish and Wildlife Act of 1956 (70 Stat. 1119) provided further authorization through defacto mitigation of the Upper Missouri Development Plan, which is a series of hydroelectric power dams on the Missouri River constructed by the Army Corps of Engineers. On August 14, 1946 an Act of Congress (60 Stat. 1080) granted the Department of the Interior a permit to use for the purpose of constructing, operating, and maintaining a fish hatchery and other cultural improvements on the United States Army Corps of Engineers land. Hatchery construction commenced in 1958, and the hatchery produced and distributed the first fish in 1961.

The Gavins Point National Fish Hatchery has played a key role in establishing and maintaining fishery resources within the Missouri River system and Midwestern states. Warm, cool, and cold water fish culture activities make the Gavins Point National Fish Hatchery a unique facility within the national hatchery program. Additionally, Gavins Point NFH propagates paddlefish and pallid sturgeon, and is currently developing a pallid sturgeon broodstock and genetic refugium. The Gavins Point Aquarium is an important component of the facility because it provides visitor orientation, promotes the Service's message, and displays both native and nonnative fish species found in the Missouri River system and tributaries in a simulated natural environment.

The Gavins Point National Fish Hatchery and Aquarium is comprised of:

30 1.3 Acre Rearing Ponds
6 0.3 Acre Ponds
8 Production Raceways
1 Booster Pump House for Lake Water
1 Brick Aerator/Generator Building
1 East Well House
2 Steel Storage Sheds
1 West well House
1 North Well House
1 Siphon Pump House Building
1 Hatchery/Lab/Maintenance/Office
1 Six Stall Garage
1 Aquarium/Public Use Facility
1 Brick Oil and Paint House
3 Wood Frame Residences
1 Sturgeon Building
1 Endangered Species Building
1 Advanced Rearing & Broodstock Holding Facility
2 Water Storage Tanks
1 Well House for South well

Fish culture water flows to the hatchery through one 24 inch waterline from Lewis & Clark Lake, and three wells (West Well), (East Well), and (North Well). The following table outlines water rights maintained by the facility.

License	Priority Date	Permitted Flow	Status	Source
954-3	12/21/1961	16 cfs	Active	Lake
953-3	12/21/1961	1.11 cfs	Active	East well
4224-3	02/08/1978	1.11 cfs	Active	East and West well
5907-3	01/26/1996	1.56 cfs	Active	West well
6733-3	06/07/2006	2.89 cfs	Active	North well
7094-3	12/1/2008	2.67 cfs	Active	South well

FY2010 Budget Gavins Point National Fish Hatchery and Aquarium

	1311	1321	1342	1664	2830	1937	8610	1263
Base Operations 64220-1311-0000	**$367,257**							
FONS – Paddlefish 64220-1311-0000	**$ 41,350**							
FONS – Sturgeon 64220-1311-0000	**$114,534**							
Annual Maintenance 64220-1321-A6GP		**$142,962**						
Aquatic Nuisance Species 64220-1342-000			**$8,000**					
ISP Provider 64220-1664-7002				**$1,140**				
Well #4 Project-Add On 64220-1321-6907		**$18,841**						
Corps of Engineers 64220-1937-6144						**$62,945**		
Volunteer Funding 64220-1263-6003								**$700**
Visitor Enhancement 64220-2830-EH59 64220-2830-EH60 64220-2830-EH61					**$18,188 $17,000 $17,000**			
Greening Funds 64220-2830-EG75 64220-2830-EG76					**$16,000 $ 3,000**			
Quarters 64220-8610-0000							**$11,311**	
TOTALS	**$523,141**	**$161,803**	**$8,000**	**$1,140**	**$71,188**	**$62,945**	**$11,311**	**$700**
GRAND TOTAL	**$840,228**							

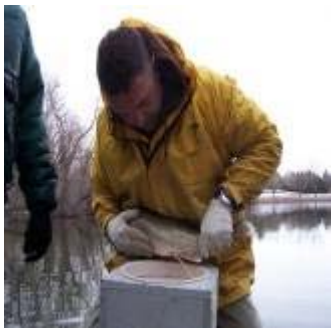
Hatchery Staff

Kurt Schilling
Project Leader

Diane Von Eschen
Administrative Officer

Jeff Powell
Assistant Project Leader

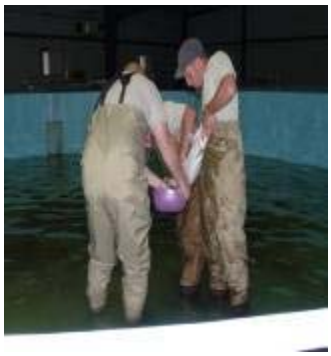
Tim Schroeder
Maintenance Mechanic



Craig Bockholt
Fish Biologist

Tom Kent
Fish Biologist

Marv Ehlers
Biological Science Tech



Jason Rockne
Biological Science Tech

Marc Jackson
Project Leader (end of FY-10)

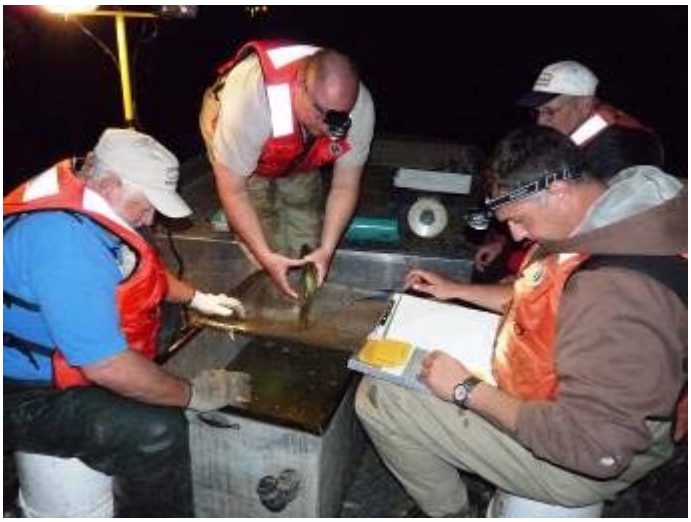
Jeff Powell served as the Acting Project Leader from May 24, 2010 until November 22, 2010. Kurt Schilling was promoted to Hatchery Program Supervisor in Region 3 Minneapolis, Minnesota.

Priority Areas

During fiscal year 2010, Gavins Point NFH had an impressive list of accomplishments ranging from conservation of endangered pallid sturgeon to connecting people with nature through meaningful activities. These accomplishments focused on the priority areas of landscape conservation, threatened and endangered species, aquatic species conservation, connecting people with nature, and facility operations. The conservation principles that guided these accomplishments, and all work at Gavins Point NFH, are stewardship, sound science, partnerships, professionalism, legacy, service, and people. Finally, without a talented and dedicated staff at Gavins Point NFH, these accomplishments would not have been possible.

Landscape Conservation

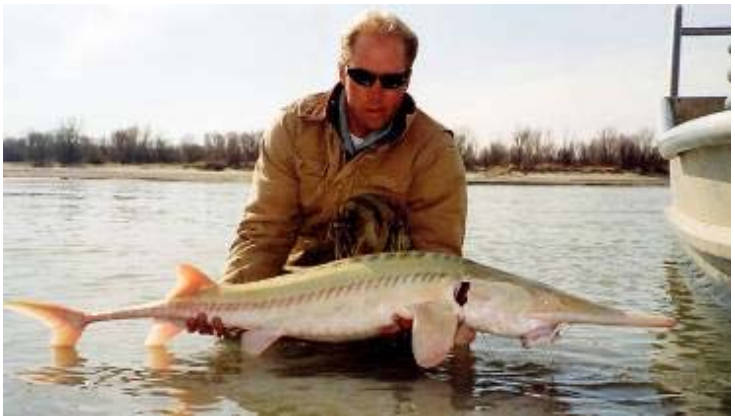
Landscape level conservation relies on the principle of strong partnerships, and Gavins Point NFH has a long history of developing strong partnerships with a variety of partners. These relationships are necessary because together we are more effective, efficient, and have more opportunities to succeed. The following list identifies current partners of the Gavins Point NFH:



- Ak-Sar-ben Aquarium
- Bozeman Fish Health Center
- Bozeman Fish Technology Center
- Cheyenne River Indian Reservation
- Columbia National Fish and Wildlife Conservation Office
- Duluth Aquarium
- Friends of the Gavins Point National Fish Hatchery
- State of Oklahoma
- Garrison Dam National Fish Hatchery
- Pine Ridge Indian Reservation
- Lower Brule Indian Reservation
- State of South Dakota
- Mississippi Interstate Cooperative Resource Association
- Neosho National Fish Hatchery
- Nevada Department of Game and Fish
- Northeast Fishery Center
- South Dakota Native American Trust Lands
- Southern Illinois University
- State of Kansas
- State of North Dakota
- U. S. Army Corps of Engineers
- Warm Springs Fish Technology Center
- Great Plains Fish and Wildlife Management Assistance Office
- USGS
- State of Iowa
- State of Missouri
- Rosebud Indian Reservation
- South Dakota State University
- State of Nebraska
- State of Montana
- State of Pennsylvania
- Yankton Sioux Tribe
- Western Area Power Administration

Threatened and Endangered Species

The Gavins Point NFH has been involved with endangered pallid sturgeon recovery efforts for 20 years. The activities include spawning, rearing, tagging, and stocking of juvenile fish, the rearing of captive brood stock, and other recovery activities. Currently, the Hatchery is holding 2,549 captive broodstock in 139 families and 13 year-classes as well as maintaining cryo-preserved milt. Gavins Point NFH transferred or stocked out 45,701 pallid sturgeon during fiscal year 2010, and is currently rearing 3,800 juveniles for spring 2011 stocking purposes. Modification to existing buildings and infrastructure is also ongoing allowing program improvements and expansion. The following sections highlight fiscal year 2010 activities and accomplishments.



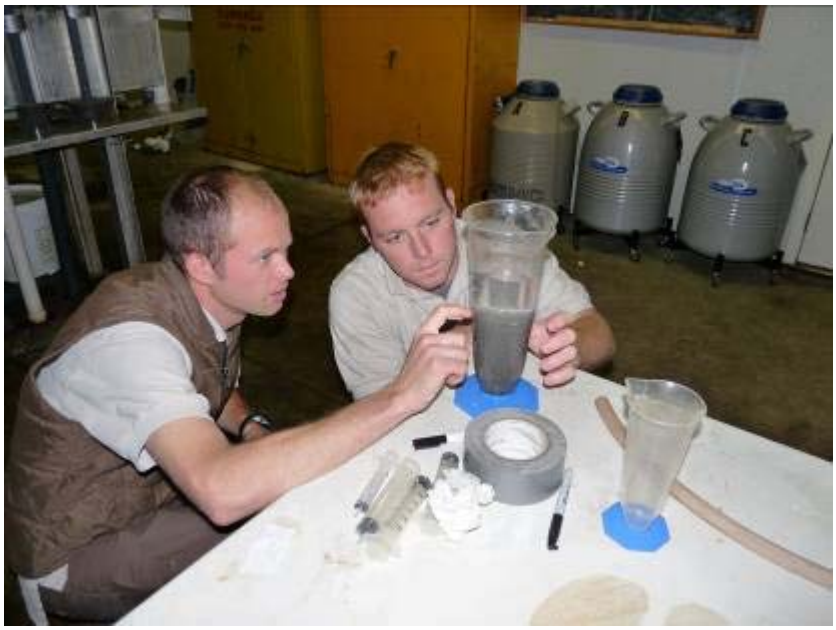
Middle basin activities

Gavins Point NFH over-wintered seven Recovery Priority Management Area (RPMA) 4 wild pallids in the Sturgeon Building. Nebraska Game and Parks captured these fish at various times throughout the year, and Janice Bryan (USGS – Columbia) determined the sex and stage of the fish using ultrasound and endoscope. In early April, hatchery staff transferred two reproductive females to Blind Pony State Fish Hatchery for Spawning and two non-reproductive females to Neosho National Fish Hatchery for 2011 spawning. Hatchery staff returned three non-reproductive fish to the nearest boat ramp where they were captured on the Missouri River.

In late April, Blind Pony SFH spawned eight family lots. After neuralization five family lots were divided equally and sent to Gavins Point NFH along with the entire lots from two other families totaling seven families consisting of 44,499 eggs. Two of the seven family lots never hatched, one had unfertilized eggs and the other had 0% hatch. The remaining five family lots became heavily infected with fungus, and the severity varied between the lots and hatching percentage ranged from 4-71%. The lot that had the 4% hatch rate experienced an extreme fungal infection. All eggs became completely engulfed in fungus just prior to expected hatching; and hatchery staff began pouring eggs back and forth between jars to produce a premature hatch. Gavins Point NFH staff produced a 4% hatch rate; however, the fry were weak and quickly died off. Hatchery personnel transferred

1,600 fry from two families to Blind Pony SFH to maximize survival, then staff stocked a small portion of three family lots into the Missouri River during the fall. All four remaining family lots are currently propagated on station for spring 2011 stocking.

Upper Basin Activities



Gavins Point NFH received eight family lots representing three wild females and eight wild males from Miles City SFH and Garrison Dam NFH. Fall production was split between Miles City SFH and Gavins Point NFH with Garrison Dam NFH picking one family lot. The Upper Basin spawn took place at two different dates; Miles City's first female spawned in early June and Miles City's second female and Garrison's female spawned in late June. The first lot of eggs was transferred after neutralization and the eggs experienced high levels of fungus, but survival on those lots was high. In an attempt to combat this, eggs from the second lot from Miles City SFH and Garrison Dam NFH were shipped 8-12 hours after spawning. The second lot of eggs from Miles City SFH did fine with no fungal infections and produced good hatch rates. The lots from Garrison Dam NFH experienced 100% egg mortality. Hatchery staff attributes the mortality to the rapid cool down from all the ice packed around the eggs. Another batch of neuralized eggs was shipped to Gavins Point and the eggs did fine with no fungal infections and good hatch rates. Two of the eight families experienced high early life stage mortality but enough fish survived for stocking plans. Currently Gavins Point NFH is rearing all eight family lots for spring 2011 stocking into RPMA 3 as well as for the captive broodstock.

Captive Brood Stock Activities

The US Fish and Wildlife Service put out a moratorium on stocking any 2010 year-class captive broodstock offspring. Gavins Point NFH used all 2010 captive offspring for research and outreach opportunities. Hatchery staff reviewed the first draft of a genetic management plan for maintaining the captive broodstock and began implementing certain components of the plan. Because of density concerns, hatchery biologists carefully examined and culled fish from the 2004 and 2007 year-classes. Biologists stocked most of the culled fish into the Missouri River and donated the rest to research facilities. Crystal Hudson (Bozeman Fish Health Center) tested

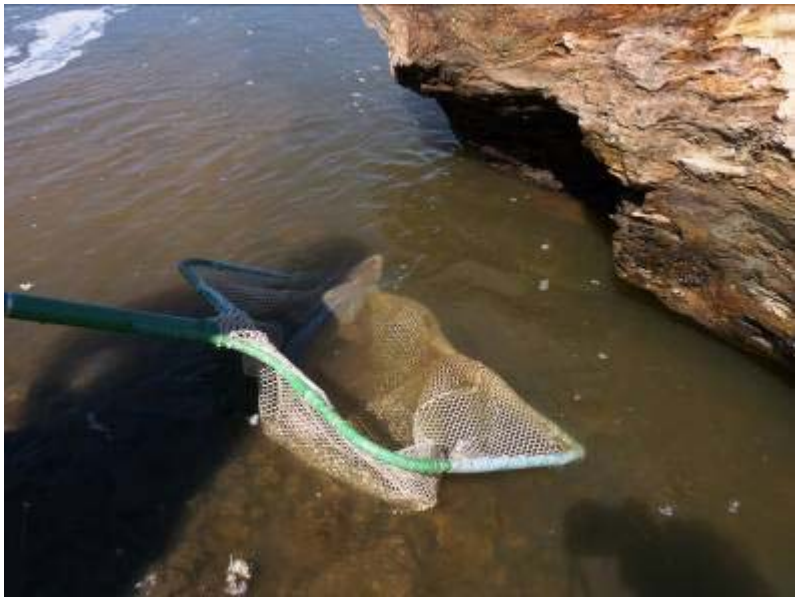
the entire 1997, 1998, 1999, and 2001 as well as part of the 2002 and 2003 year-classes for Iridovirus with PCR, and Molly Webb (Bozeman Fish Technology Center) staged the fish with ultra sound and blood work. Only 4% of the tested broodstock came back positive for Iridovirus.

The staging results revealed 21 reproductive females and more than 60 males. Biologists only injected 13 females and 47 males for spawning. The female spawn was a big success with all 13 females ovulating, but the male success was mixed with only 12 of the 47 male's producing viable gametes. Total egg production from the females was 275,409 eggs.

Hatchery staff documented new discoveries on the captive broodstock during 2010. One female who had severe scoliosis but successfully spawned and her offspring showed no symptoms of scoliosis through X days of culture. Gavins Point NFH and Bozeman Fish Health Lab did the first vertical transmission study of the Missouri River Iridovirus. In this study we crossed a positive female and positive male, and the offspring were tested using PCR and all samples came back negative. One female ovulated inside the tank with no hormone injection and another female is ovulating on a yearly cycle. We also conducted a pilot study for a formalin egg treatment, and formalin treatments showed slightly better hatch rates with less egg mortality.

Pallid Sturgeon Production

Gavins Point National Fish Hatchery stocked fish into all Recovery Priority Management Area's (RPMA) 1, 2, 3, and 4 during the 2010 production season. The hatchery stocked 3,187 fall fingerlings and 5,344 yearlings from the 2009 year class pallid sturgeon into the Missouri River System and 102 adults from the 2004 year-class into RPMA 1 and 2. The hatchery transferred a total of 36,965 fish from the 2010 year-class to other facilities for production and research. The hatchery maintained disease free status on all 2010 year-class production fish. The 2010



pallid sturgeon lots originated from the Missouri River Upper Basin, Missouri River Middle Basin, and the Captive Broodstock.

Fall 2010 stocking included 2009 year-class fish into RPMA's 1, 2, and 4. Fish were upper basin, middle basin, and captive broodstock origin. RPMA1 received a total of 1,100 fish with an average length of 7.85 inches. Some fish were PIT tagged and scute removed and smaller fish were double elastomer tagged. All fish were stocked at Fred Robinson Bridge. RPMA 2 received a total of 1,774 fish with an average length of 7.85 inches. Some fish were PIT tagged and scute removed and smaller fish were double elastomer tagged. Hatchery staff stocked fish into four sites: two sites on the Missouri River; Wolf Point and Culbertson, and two sites on the Yellowstone River; Forsyth, and Intake. RPMA 4 received 313 fish with an average length of 9.9 inches, all were PIT tagged and received a scute removal. Biologists stocked these fish at two sites; Mulberry Bend and St. Helena.

Spring 2010 stocking included 2009 year-class fish into RPMA 1, 2, and 3. Fish were upper basin and captive broodstock origin with an average length of 8.3 inches. Some fish were PIT tagged and scute removed and smaller fish were double elastomer tagged. Biologists stocked a total of 2,078 fish into RPMA 2 at five sites: two sites on the Missouri River; Wolf Point and Culbertson and three sites on the Yellowstone River; Forsyth, Intake and Fallon. RPMA 3 received 340 fish that were stocked at Standing Bear.

Fish transfers from 2010 year-class fish included 1,600 Middle Basin pallid sturgeon to Blind Pony State Fish Hatchery for back up and stocking purposes. Gavins Point NFH transferred 35,365 2010 year-class pallid sturgeon to South Dakota State University, Southern Illinois University, University of California Davis and USGS Research Center, Columbia, Missouri, for research activities. Bozeman Fish Technology Center received 16,640 eggs for research purposes. The remaining 2010 year-class fish are scheduled for spring stocking in fiscal year 2010. Gavins Point NFH hosted experimental units and provided fish for a bioenergetics study conducted by South Dakota State University. We spawned a 1992 female and collected samples throughout the spawning process for a USGS study.

Starter diets used in 2010 were a mixture of freeze dried cyclop-eeze and Otohime B1 and B2. Staff then transitioned to a larger particle size Otohime B2, C1 and C2 and slowly weaned fish off freeze dried cyclop-eeze during the process. Diets then transitioned off Otohime C1 and C2 to Silver cup Salmon #2 and #3. We experienced no problems associated with fish moving between feeds sizes, brands, or starting on feed.

Aquatic Species

Cool-water Production

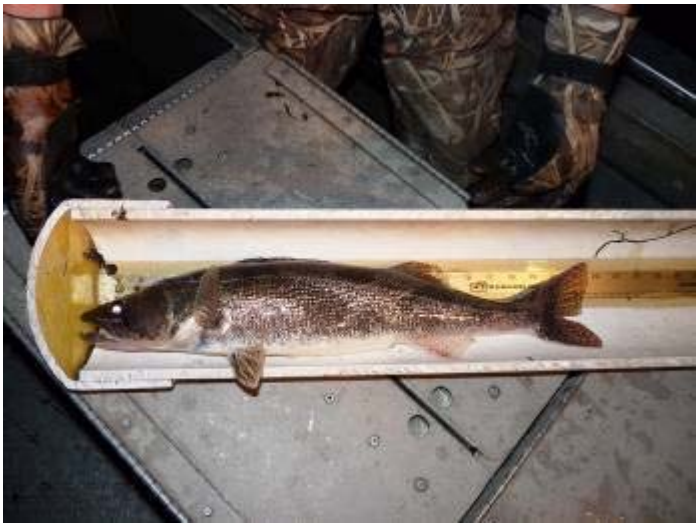
During fiscal year 2010, Gavins Point NFH propagated cool water fish species for stocking into Tribal, federal and State waters in Nebraska and South Dakota. Members of the Nebraska Game and Parks Commission and Gavins Point NFH collected yellow perch and walleye eggs. The perch eggs were collected on West Long Lake and the walleye eggs were collected from Merritt Reservoir and Lake McConoughy. Both bodies of water are in western Nebraska.

Paddlefish

The Gavins Point NFH temporarily suspended paddlefish production during FY-10 due to the presence of Asian Clams in the hatchery's water supply. Hatchery staff and the State of South Dakota both decided that paddlefish production should be suspended because the stocking destination for the paddlefish is negative for Asian clams, and the risk of potentially spreading Asian clams was too high to justify stocking.

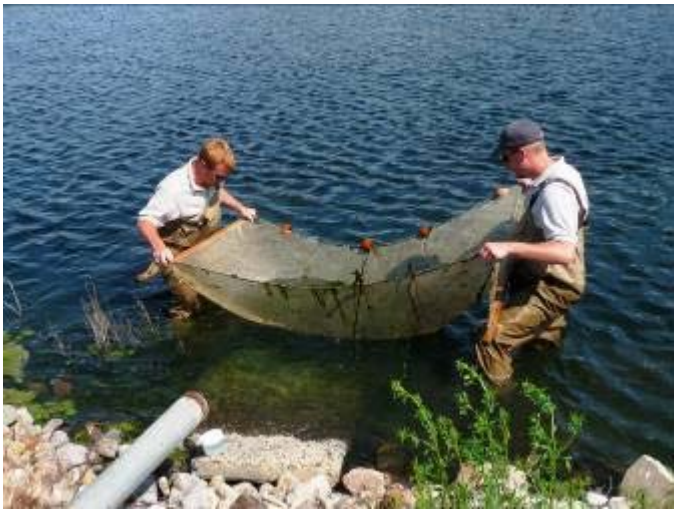
Walleye

Gavins Point NFH received 36,282,981 green eggs from Merritt Reservoir and Lake McConoughy in western Nebraska. We incubated the eggs on the hatchery's main incubation system using McDonald jars. The total incubation period for the walleye eggs was 16 days. Staff treated the walleye eggs with 1667 ppm formalin every other day to prevent fungus from growing on the eggs. The average percent eye-up on the walleye eggs was 66%. On April 15th, 2010, hatchery staff transferred 1,559,250 eyed eggs to the Byron State Fish Hatchery in Oklahoma. On April 23rd through 25th, the staff transferred 3,150,000 fry to 21 earthen ponds for the extensive culture phase of production. These 21 ponds received 150,000 fry each for a total of 3,150,000 fry. In addition to the fry stocked into the Gavins Point hatchery ponds, hatchery biologists distributed an additional 9,854,372 fry to our partners. The extensive culture period for walleye was from April 23rd, 2010 to June 8th, 2010. Walleye harvest took place on June 2nd and June 8th, 2010. Total walleye fingerlings harvested from the 21 rearing ponds was 910,411. Total harvest percentage was 28.9%. These fingerlings were used to facilitate stockings into tribal, state, and federal waters.



Gavins Point NFH performed a pilot study for maximizing survival of walleye fingerling in culture ponds. In the study we fertilized three ponds with alfalfa meal and three ponds with soybean meal. The three soybean meal ponds were fertilized initially with 130 pounds prior to fry stocking followed by weekly 65 pound applications. The normal ponds received 520 pounds alfalfa meal prior to fry stocking initially followed by weekly 260 pound applications. Biologists pulled weekly zooplankton and water quality samples to analyze for comparison. Significant findings revealed that soybean meal tended to have at least one ppm higher DO than did the alfalfa meal ponds, and ponds with soybean meal required less fertilizer to achieve similar zooplankton blooms. The initial conclusions for the trial showed that soybean meal outperformed alfalfa meal in pounds and numbers of fish at harvest time. Future expanded studies need to be run to verify information received during FY2011.

Yellow Perch



Gavins Point NFH received 12 quarts of yellow perch eggs for a total of 1,680,000 eggs. Staff placed these eggs in Heath incubation trays and incubated until the majority of the eggs had eyed-up but before the egg skeen began to break down. The eggs were also treated with formalin while in the Heath incubator to help reduce the amount of fungus growing on the eggs. On April 26th, 27th and 28th, we transferred the eggs to five earthen extensive culture ponds. The eggs were placed onto submerged cedar trees. These submerged trees held the eggs underwater and allowed the fry to swim down into the water column as they hatched off. The extensive culture period for the perch was from April 26, 2010 to June 8th, 2010. Total yellow perch harvested from the five rearing ponds totaled 880,652 fingerlings. Total harvest percentage was 52.4. These fingerlings were used to facilitate stockings into tribal and state waters.

Blue suckers

Gavins Point NFH attempted to spawn blue suckers during FY2010. South Dakota game fish and parks captured 12 blue sucker adults, and we subsequently brought them onto the hatchery for a spawning trial. Four fish were determined to be males and eight fish were immature females. The males were successfully spawned with both Chorulon hCG (one does of 500 IU/kg) and carp pituitary (one dose of 1.0 mg/kg).

Cold-water Production

Rainbow trout

Gavins Point NFH received 935,750 Rainbow Trout (*Oncorhynchus mykiss*) eggs in FY2010 from Ennis NFH. Once the hatchery received the eggs, biologists enumerated and disinfected them in argentyne prior to placement in upwelling jars. Approximately a week after arrival at Gavins Point NFH, the trout eggs begin to hatch and were allowed to swim out of the jar into the raceway where most of the fish spend their culture lives. The primary use for the Rainbow Trout at Gavins Point NFH is forage for the captive Pallid Sturgeon (*Scaphirhynchus albus*) broodstock during the fall/winter months. The Rainbow Trout are raised to approximately two inches in length at which point they are fed to the Pallid Sturgeon broodstock. We also use a small portion of the eggs for a request submitted by our tribal partners for catchable-sized ($\geq$ 10 inches in length) trout.

The remaining trout leftover are grown to catchable size and used for a fishing derby hosted by the hatchery each April, which allows children 12 and under to fish in the culture ponds stocked with trout. The hatchery also allows each child to keep up to a limit of three fish per child. The fish left over after the fishing derby are moved from the ponds to outdoor raceways the rest of the summer to serve their purpose as display fish for visitors and tour groups. Following the tourism season, the derby Rainbow trout are moved back to the culture ponds to overwinter.

FY 2010 Rainbow Trout Summary					
Location	**Site**	**Number of Fish**	**Pounds**	**Length**	**Use**
GPNFH	Captive Pallid Sturgeon Broodstock	422658	962	1.78"	Forage
GPNFH	Largemouth Bass Broodstock	72604	87	1.44"	Forage
GPNFH	Bluegill/Black Crappie Broodstock	41404	56	1.50"	Forage
GPNFH	Aquarium	17556	57	2.01"	Forage
GPNFH	Aquarium Pond	4350	87	3.68"	Forage
Rosebud IR	Rosebud Reservoir	588	420	15.1"	Put/Take
Rosebud IR	Ghost Hawk	588	420	15.1"	Put/Take
Pine Ridge IR	Allen Dam	1176	840	15.1"	Put/Take
South Dakota	Osprey Reintroduction Project	3990	285	5.63"	Forage/Research
	Totals	**564914**	**3214**		

FY 2010 Rainbow Trout Eggs Received				
Date	**Strain**	**Egg Size (eggs/ml)**	**Total Volume (L)**	**Total # Eggs**
11/16/2009	Arlee	21.5	6.1	131150
12/14/2009	Arlee	14.3	10.0	143000
1/19/2010	Shasta	17.6	7.5	132000
2/22/2010	Shasta	14.0	9.25	129500
8/9/2010	Erwin X Arlee	20.4	7.25	148200
9/7/2010	Erwin X Arlee	13.0	9.9	128700
9/27/2010	Erwin X Arlee	16.0	7.7	123200
			Total # Eggs Received	**935750**

Warm-water Production

Largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), and black crappie (*Pomoxis nigromaculatus*) broodstock are held on station year round in outdoor culture ponds. During the late spring, hatchery staff moves the broodstock to ponds where they spawn naturally. After several weeks, ponds are visually checked for swimming fry and are eventually drained to separate the broodstock from the fry placing each respective life stage in their own pond to complete the culture cycle.

Largemouth bass

On May 3, 2010 there were 56 largemouth bass (LMB) stocked into a pond for spawning. On June 22, staff drained that pond down and separated the swimming fry and broodstock and moved each to a new pond. During this transition staff stocked 47 LMB broodstock into a pond where they remained the rest of the summer. Biologists then

enumerated 63750 (25.5 pounds) of LMB fry at 2500 fish/pound, and stocked them into another pond on June 22, 2010. They remained in that pond until harvest for stocking on July 14, 2010. Numbers of fish, weight, and stocking location can be found in the table below.

Bluegill

On May 5, 2010 staff stocked 23 bluegill (BLG) into a pond for spawning. On June 25, that pond was drained down and the swimming fry and broodstock were separated and moved to new ponds. Staff separated 22 BLG and stocked them into a pond where they remained the rest of the summer. Staff then enumerated 540,000 (90 pounds) BLG fry at 6000 fish/pound, and stocked these fry into another pond on June 22, 2010. They remained in that pond until they were harvested for stocking on July 29, 2010. The BLG fingerlings were used as forage fish this fiscal year. Numbers of fish, weight, and stocking location can be found in the table below.

Black crappie

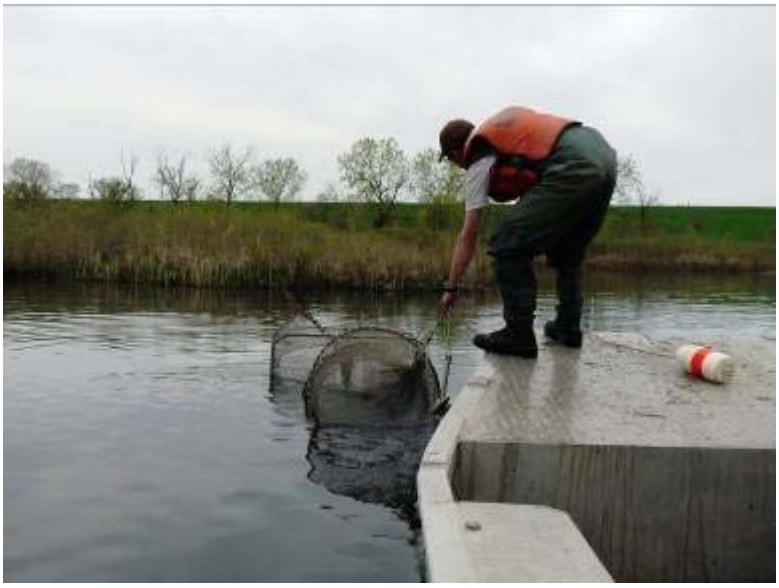
The only black crappie (BLC) fish used for anything this fiscal year were fingerlings that hatchery staff overwintered in one of the 1/8 acre culture ponds. Black crappie broodstock continue to be held on station in an outdoor culture pond for future use. The fingerlings were harvested during the spring and reared on well water for a month prior to being stocked out. Numbers of fish, weight, and stocking location can be found in the table below.

Species	Number of Fish	Fish/Pound	Weight Stocked	Stocking Location
BLC	**17063**	**113**	**151**	**Kyle Dam (Pine Ridge IR)**
BLC	**1000**	**113**	**8.85**	**Amy's Old Dam (Lower Brule IR)**
BLC	**1000**	**113**	**8.85**	**Amy's New Dam (Lower Brule IR)**
BLC	**1000**	**113**	**8.85**	**Hwy 47 WMA (Lower Brule IR)**
BLC	**2000**	**113**	**19.47**	**Donnie Moore S.Dam (Lower Brule IR)**
LMB	**5398**	**88.5**	**61**	**Lake Wanahoo (NGP)**
LMB	**492**	**82**	**6**	**Lyons City Lake (NGP)**

LMB	**880**	**100**	**8.8**	**Jenny Newman Lake (NGP)**
LMB	**660**	**100**	**6.6**	**Louisville 1 (NGP)**
LMB	**550**	**100**	**5.5**	**Louisville 1a (NGP)**
LMB	**330**	**100**	**3.3**	**Louisville 3 (NGP)**
BLG	**82800**	**690**	**120**	**Aquarium Pond (GPNFH)**
BLG	**82800**	**690**	**120**	**LMB Brood (GPNFH)**

Lake Yankton Activities

Lake Yankton is a shallow, eutrophic lake on the Nebraska-South Dakota boundary in southeastern South Dakota, four miles west of Yankton, South Dakota. The lake is a popular fishing site, and contains several popular game fish species, including black crappie (*Pomoxis nigromaculatus*), bluegill (*Lepomis macrochirus*), channel catfish (*Ictalurus punctatus*), largemouth bass (*Micopterus salmoides*), northern pike (*Esox lucius*), smallmouth bass (*Micropterus dolomieu*), walleye (*Stizostedion vitreum*), and yellow perch (*Perca flavescens*). Since the lake was renovated in 1980, the primary goal for fish management biologists has been to maintain quality panfish populations within the lake. Subsequently, state and hatchery biologists sample the lake biennially by electrofishing and trap netting to monitor black crappie, bluegill, channel catfish, largemouth bass, small mouth bass, and walleye, along with other fish populations. The lake was also sampled biennially by gill netting to monitor walleye. Density, size structure, age, growth, and condition are documented for the fish species listed above.



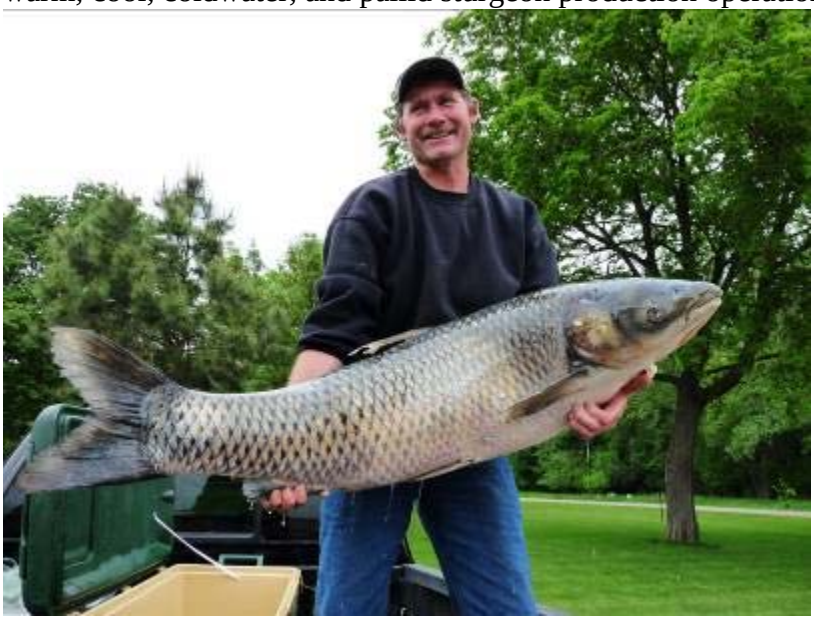
In FY2010 there was no sampling done on Lake Yankton. Craig Bockholt helped Nebraska Game, Fish, and Parks analyze (reading fish scales) data collected from the sampling done in 2009. Craig Bockholt also treated aquatic vegetation in Lake Yankton on July 16, 2010 with Aquathol-K around some of the boat ramp areas.

Beginning in 2012, Lake Yankton sampling will change to every three years instead of biennial. Because of the switch to every three years, there will be a need to increase sampling efforts during sample collection years. Old methods included six gill nets, six trap nets, and five scale samples per 10-mm length group. New sampling efforts will move to 10 gill nets and trap nets. There will also be an increase to 10 scale samples pulled per 10-mm

length group. The partners also discussed moving the management meeting to the fall after the survey season instead of during the winter/spring before the survey season.

Aquatic Invasive Species

Gavins Point NFH has developed Hazard Analysis and Critical Control Point (HACCP) Plans for warm, cool, coldwater, and pallid sturgeon production operations. These plans provide a structured method to identify risks and focus procedures on minimizing the unintended spread of invasive species.



The invasive Asian clam, *Corbicula fluminea* was discovered in Lewis and Clark Lake by South Dakota Game Fish and Parks in the summer of 2009. Lewis and Clark Lake supplies fish production water to Gavins Point National Fish Hatchery (NFH).

To understand better the risks associated with the discovery of Asian clams in Lewis and Clark Lake, Gavins Point NFH staff conducted a thorough inspection of facilities and investigated the biology, distribution, dispersal pathways, and potential ecological impacts posed by Asian clams. The results of these investigations identified certain procedures that may increase the risk of spreading Asian clams into sites in South Dakota, Nebraska, and Montana through the distribution of fish from Gavins Point NFH.

After consulting with state and tribal partners, warm water fish stocking (largemouth bass, bluegill and crappie) and paddlefish operations were suspended for 2010 year-class fish in South Dakota to eliminate any risk of spreading Asian clams from Gavins Point NFH.

During the summer of 2010, Gavins Point NFH staff and USGS Toxicologist Dr. Jackson Gross developed a series of studies to develop a chemical control for Asian Clam pediveligers. Dr. Gross's team independently evaluated chemical treatments and found that the current Gavins Point NFH Zebra Mussel protocols are 100% lethal for Asian Clam pediveligers. These significant findings will allow Gavins Point NFH to continue the warm water and paddlefish program for 2011.

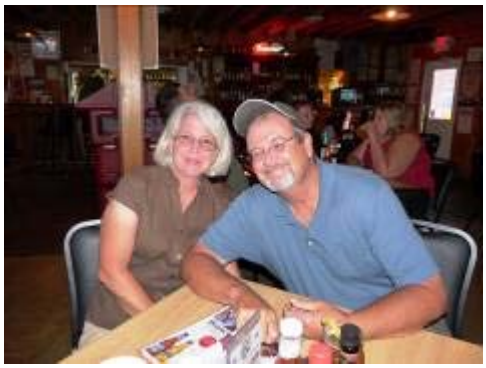
Connecting People with Nature

Aquarium highlights

Marv Ehlers installed new viewing glass in eight of the large aquaria. All new tank lighting was installed for 13 tanks using energy efficient lighting. New pumps, filters and all plumbing for the 13 tanks were installed as a recirculation system to conserve on water.

Visitor numbers increased by 1% compared to 2009 numbers. Visitors signed-in from 46 states and 17 countries. Tours of the hatchery and grounds were given to 52 school groups and 33 organizations.

Volunteer report



The volunteer program was very successful this year. In all, volunteers donated 2,615 hours of time to the hatchery. Two sets of couples, who volunteered at the Hatchery from mid-April through August, used the two trailer pad sites. Ron and Gloria, and Glen and Shauna provided a total of 1,360 hours to the Hatchery performing tours, doing light maintenance, staffing the Aquarium gift shop, completing office assignments, performing lawn care, and assisting with fish culture work.

Hatchery staff will again use the volunteers.gov/gov website to advertise our summer positions for 2011. Local recruitment involving our Friends group will continue to occur.

Friends 13 people	143 hours
Steve	120 hours
2 couples	1360 hours
USD 6 volunteers	491 hours
Jordan	80 hours
Sophie	320 hours
W of W 7 volunteers	101 hours
Total	2,615 hours

Friends of Gavins Point National Fish Hatchery

Youth Fishing Derby:

The annual fishing derby and open house was held April 17, 2010. Children between the ages of four and twelve were in attendance along with parents and other members of the public. Many rainbow trout were caught by the young anglers, while adults were given tours of the facilities. Local law enforcement provided fish cleaning and DARE information. Gift packs and refreshments were offered to everyone.

Membership:

A few business and individual members were added. The group is also trying to obtain more skilled directors.

Riverboat Days:

A hatchery truck and distribution trailer was decorated with palm trees and flower leis for the Hawaiian themed parade.

Flag pole:

The friends group landscaped the area around the hatchery flag pole with an attractive assortment of perennial shrubs and flowers mixed with annual flowers.

Gift Shop:

The gift shop was stocked with items of area interest or fish themes. Ice cream treats, souvenirs, and books were sold, but fish food to feed the trout was still the most popular purchase.

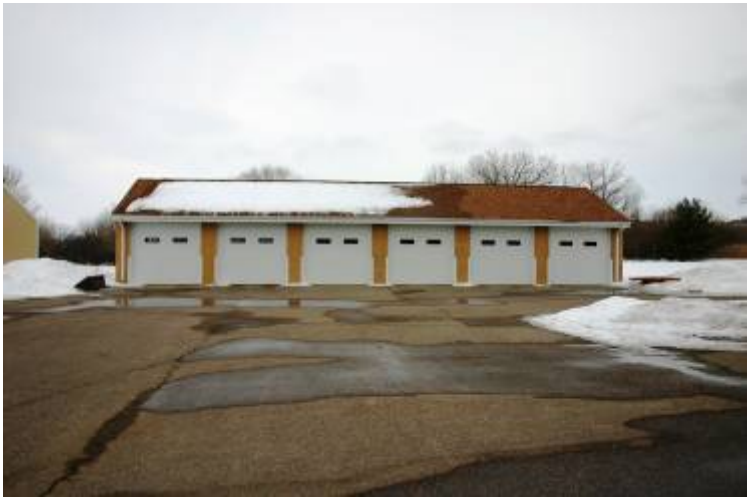
Membership Picnic:

A membership and guests picnic was held in September. Picnic food was served, and members and guests were invited to be or stay active with the organization. A recap of accomplishments was presented as well as the outlook for the coming year. Board members were also elected at the meeting.

Facility Operations

Deferred maintenance completed

1) Install well #4 - $100,041
2) Aquarium upgrade for water system and displays - $32,390
3) Pond kettle rehabilitation project for 11 ponds - $162,111
4) New tank installation and plumbing for broodstock building - $6,043
5) New overhead doors on 6 stall garage - $5,312
6) New overhead doors and walk-through doors at hatchery, quarters, and aquarium - $14,245
7) Emergency well repair - $5,877
8) Sign replacement - $1,200
9) Aquarium trees - $3,000



Deferred Maintenance Waiting Approval

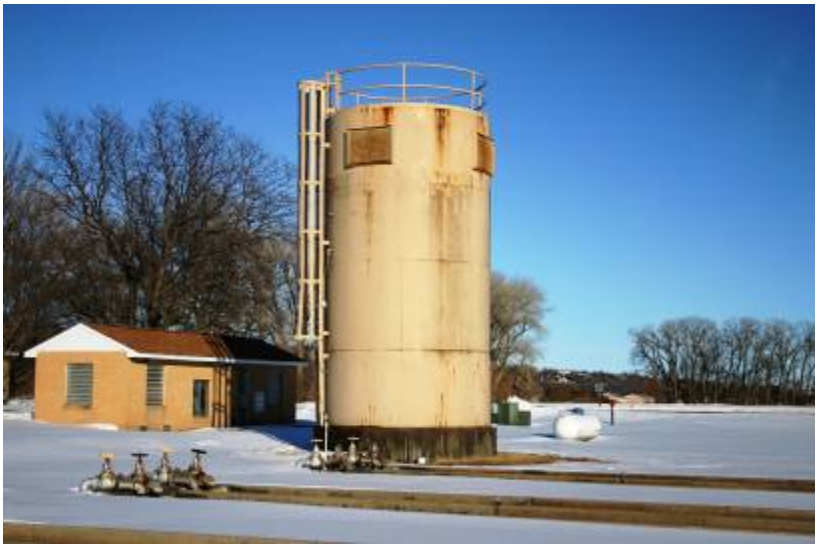
Water Control Structures

1) Repair leaking expansion joints, screen slots, and drains in 8 raceways - $108,000
2) Rehabilitate deteriorated pond drain valves and drain pipelines - $106,000
3) Install gravel and reshape pond levee roads - $297,000
4) Replace drum filter tanks in endangered species and broodstock buildings - $250,000

5) Rehabilitate east well pump - $13,000
6) Replace 3,000 gpm drum filter in broodstock building - $112,000
7) Install low-water level alarm in water storage reservoir - $2,000
8) Replace deteriorated de-gassing tower - $90,000
9) Rehabilitate main lake-water supply line - $8,000
10) Install raceways covers - $20,000
11) Line water tank - $57,000
12) Rehabilitate old water tower - $15,000

Hatchery Buildings

1) Install concrete floor in metal/isolation building - $23,000
2) Replace water heaters for egg incubation - $4,000
3) Repair cracked wall at six-stall garage - $2,000
4) Replace well and pump house windows and doors - $1,000
5) Replace deteriorated glass block windows in hatchery building - $33,000
6) Replace T-12 fluorescent lamps in endangered species building - $40,000
7) Replace heaters in endangered species building - $12,000
8) Install ventilation



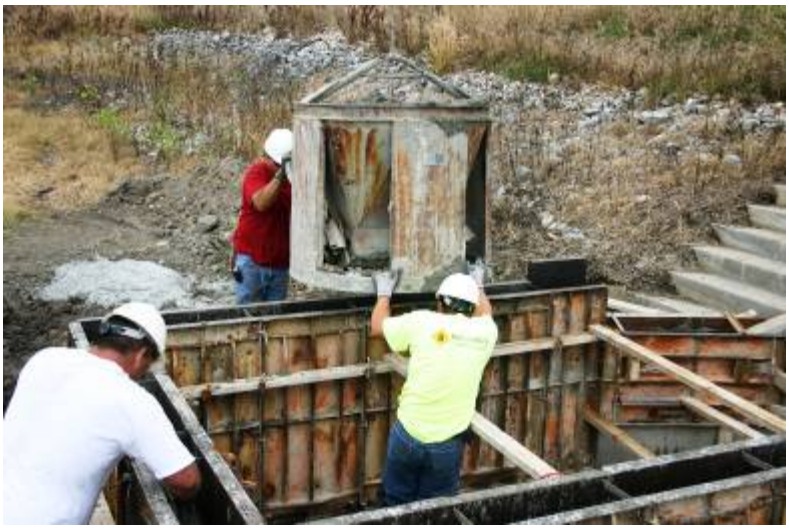
system in endangered species and broodstock buildings to reduce moisture - $60,000

9) Replace bulls on well pump $13,000

Quarters

1) Rehab one-stall garages - $61,000
2) Replace deteriorated siding - $122,000
3) Replace inefficient basement windows and renovate basement ceilings - $46,000
4) Remediate radon gas - $33,000
5) Renovate bathrooms and replace deteriorated sheetrock - $18,000
6) Replace inefficient furnaces and water heaters - $9,000
7) Inspect out-dated electrical systems - $6,000
8) Replace concrete steps - $6,000

Other Assets



1) Rehabilitate court yard asphalt - $28,000
2) Rehabilitate entrance road asphalt - $150,000
3) Upgrade hatchery communication systems - $12,000
4) Replace barbed wire on boundary fence - $26,000

Safety

1) Remove asbestos ceilings and floor tiles in the hatchery and shop building - $83,000

Aquarium

1) Remove asbestos ceiling tiles in back workroom - $63,000
2) Replace deteriorated walkway supports, doors, and frames - $13,000
3) Rehabilitate aquarium parking asphalt - $30,000
4) Replace glass block windows - $19,000

Construction Waiting Approval

1) Water treatment and quarantine facility
2) New well #5
3) Outdoor interpretive area
4) Addition to aquarium building
5) Addition to office building

Appendix A. Trainings, Meetings, Conferences, and Seminars Completed FY-2010

	Kurt	Jeff	Craig	Tom	Diane	Marv	Tim
December							
Retirement Seminar				X		X	
Ethics for New Supervisors		X					
CPR						X	
January							
Pallid Sturgeon Early Mortality Workshop		X		X			
Pallid Sturgeon Propagation Team Meeting		X					
Nebraska Fish Production Meeting			X				
February							
Midcontinent Warmwater Fish Culture Workshop			X				
South Dakota Winter Fisheries Meeting	X	X	X				
Region 6 Summit Meeting	X	X	X				
Dakota Chapter AFS	X	X	X				
Cool Water Fish Culture						X	
Charge Card Holder					X	X	
March							
FISSA, Privacy Act, Records Management	X	X		X	X	X	X
Fisheries Academy				X			
Upper Basin Pallid Sturgeon Meeting		X					
Ship Safe – Ship Smart					X		
April							
Walleye Spawning in Valentine, Nebraska				X			
May							
Tractor and Skid Loader Training				X		X	
National Park Service's Clean Boat Campaign			X				
July							
Middle Basin Pallid Sturgeon Meeting		X					
Fire Extinguisher						X	

August							
Wage Grade Workshop							X
Warrant training – 80 Hours					X		
September							
Administrative Conference					X		

Appendix B. FONS Projects

64220-2002-001 - Operate an isolation facility to protect endangered pallid sturgeon captive brood held in refugia - $66,900

Restoration and recovery of endangered pallid sturgeon is enhanced by operating an isolation facility. The isolation facility separates wild collected eggs, juveniles, and adults from hatchery populations eliminating the potential spread of pathogens to endangered captive pallid sturgeon broodstock held in refugia. Gavins Point NFH maintains the only captive brood population of endangered pallid sturgeon in the world. These fish are critically important to recovery efforts as they contain the key genetic material needed to recover and restore this important species of fish in the event they are extirpated from the wild.

Iridovirus and other detectable diseases have been found in native wild pallid sturgeon, and within the Missouri River. Currently there are no means to prevent the spread of pathogens within the hatchery when adults, eggs, or fish are shipped to the Hatchery from the wild or from partner facilities as current recovery efforts require. The objectives of this project are to operate an isolation facility that will allow offsite pallid sturgeon recovery activities to occur completely separate from our main fish culture buildings, raceways, and aquarium, and to prevent the transmission of potential pathogens to the captive pallid sturgeon brood stock. species of fish.

This project funds operations of an isolation facility that is planned under SAMMS CI work order number 2008856441. This project provides annual utilities for UV and mechanical drum filtration, operational means to evaluate and monitor new animal drugs. This project would enhance the ability of the Gavins Point NFH to successfully spawn, rear, tag, stock, and monitor success for the various endangered, threatened, "Species of Special Concern," candidate, proposed or imperiled species that have been, and will be in the future, cultured at this hatchery. This project will allow several fish cultural activities to be done, and would be separate and independent of our main fish culture buildings, raceways, ponds to prevent the transmission or spread of potential disease vectors from eggs/fish to other eggs/fish.

64220-1999-003 - Develop culture techniques on sicklefin/sturgeon chubs and Topeka shiner for recovery opportunities - $16,725

Spawning, culture, and rearing techniques will be developed for sicklefin/sturgeon chubs and Topeka shiners improving opportunity for species recovery/restoration. Sicklefin/sturgeon chubs and Topeka shiners are important native fish in the Missouri River System providing biodiversity and an important prey base for larger native endangered fish. Native populations of sicklefin/sturgeon chubs and the endangered Topeka shiner have experienced significant declines since the construction of the large water development projects on the Missouri and Mississippi River Systems.

The short-term objective of this project is to develop spawning, culture, and rearing techniques for these species, leading to a long-term objective of species recovery/restoration in free flowing

reaches of the Missouri River System. Wild fish will be sampled and spawned using sound genetic principles and protocols to retain genetic diversity. Gavins Point NFH will develop spawning, culture, and rearing techniques suitable for these species. Fish produced would be used for recovery/restoration stocking efforts and research. Methods developed would be shared with partners. Performance of stocked fish would be evaluated and adjusted to meet species recovery/restoration goals. The propagation and stocking project will be designed to complement improving and protecting the species habitat.

64220-2007-010 - Improve culture techniques and maintain genetically sound hatchery paddlefish production - $27,875

Genetic integrity, local adaptations, and fish quality retained in more than 25,000 juvenile paddlefish stocked annually by Gavins Point NFH. The paddlefish was nearly listed as a threatened species several years ago, but with the more recent prelisting activity and stocking that has occurred over the last 10 years, this fish was not listed. It still is considered a "Species of Special Concern."

Recent hatchery propagation and stocking efforts have helped to prevent rapid species losses but spawning and rearing techniques constantly need to be evaluated, improved, and modified, to ensure that high quality, genetically sound hatchery fish are produced. The objective of this project is to fully fund the balance of a 2004 FONS project that provided funds for hatchery paddlefish propagation. This project will allow genetic testing and analysis of hatchery crosses, testing and investigation of new animal drugs, and evaluation of new fish culture methods.

Genetic samples will be taken on wild adults and used to ensure correct spawning crosses are implemented. Investigational New Animal Drug (INAD) protocols will be tested to enhance spawning and rearing success. New technologies will be developed to improve rearing success.

64220-2007-011 - Maintain federal trust responsibilities on Tribal Lands and National Wildlife Refuges - $55,750

Provide fish to various tribes for fishery management efforts and provide recreational fish and natural resource stewardship opportunities. A variety of fish species are requested by Service Fish and Wildlife Management Assistance Offices for both Native American trust lands and refuges. No opportunities are available to fish management personnel to obtain fish for stocking unless they are provided by the fish hatchery system.

The objective of our activities will be to provide those fish species and technical assistance so that tribal fisheries can be managed and developed for the benefit of those people residing on tribal lands. Fish species will be reared on Service fish hatchery facilities and stocked on Native American trust lands by the rearing facility. This project will continue stocking approximately 100,000 fish on Tribal and Service lands. Fish will be stocked into the waters of six Indian Reservations and four National Wildlife Refuges, providing recreational fisheries and natural resource stewardship opportunities. A variety of fish species are requested by Service Fish and

Wildlife Management Assistance Offices for both Indian trust lands and the refuges.

64220-2007-012 - Support hatchery efforts to mitigate for Missouri River Federal water development projects - $55,750

The effects of Missouri River water development projects are mitigated by providing stocked fish and support for fisheries management efforts on Tribal and other Federal lands within the Missouri River system. Stocking fish to mitigate the effects of the various water development projects on the Missouri River is very important to maintaining native species diversity and promoting recreational angling opportunities.

The construction of water development projects along the Missouri River resulted in the loss of spawning habitat, nursery areas, riverine features, and the natural food supply for many native species of fish and wildlife. These losses have caused declines in many native species and reduced angling opportunity. The objective of this project is to produce native fish species for stocking within the areas of the Missouri River where water development projects have altered the habitat and changed the riverine features.

The hatchery will fully use its current pond culture facilities to spawn, rear, and stock 1.0 million native cool and warm water fish within the Missouri River system and on Tribal lands.
An Act of Congress (60 Stat. 1080) allowed the Department of Interior construct, operate, and maintain the Gavins Point NFH in South Dakota. One purpose of the hatchery is to produce various species of fish to mitigate for the impacts of Federal water development projects on the Missouri River. This project will allow the hatchery to fully meet its congressionally mandated mitigation goal of producing walleye, black crappie, largemouth bass, smallmouth bass, bluegill, white crappie, and yellow perch.

64220-2007-013 - Study and manage invasive species that are impacting hatchery operations - $22,300

Methods will be developed to manage the invasive species impacting the Hatchery and allow for no interruption in operations. Preventing the spread of aquatic invasive species into and from the hatchery has many economic and biological benefits, and it is also required by Service policy. Invasive species impact the ability of the hatchery to fully meet its stocking mandates. Natural resources are also damaged by their spread.

Sumer stocking of warm-water fish was canceled in 2009 due to the discovery of the invasive Asian clam in Lewis and Clark Lake. This lake supplies un-treated fish culture water to the rearing ponds at the hatchery. Zebra mussels have been identified in the Missouri River below the hatchery. Additional spread could further impact the hatchery. The objective of this project is to develop methods to manage and control Asian clams in the lake water supplying the Hatchery and manage risks associated with stocking operations.

The method will be to work with partners to evaluate new and current practices (chemical,

mechanical, and various filtration systems) to determine their effectiveness in controlling Asian clams and other invasives. A risk management plan will be developed outlining risks associated with Hatchery stocking operations and include public education. The USFWS is promoting the 100th Meridian Initiative as an opportunity to prevent or substantially slow the spread of zebra mussels into western North America. This project would support those goals. This project will allow science support to be provided directly to the operations of the Hatchery. Partner contacts have been made and funding would allow evaluations to proceed.