Montana Department of Fish, Wildlife and Parks
Fisheries Division

Job Progress Report

STATE: Montana **PROJECT: Statewide Fisheries Management**

TITLE: Yellowstone River Drainage Investigations

JOB: Southeast Montana Warmwater Lakes Investigations

FEDERAL GRANT: F-113-R-7

FISCAL YEAR: 2016 (July 1, 2015 through June 30, 2016)

REPORT PERIOD: March 1, 2016 through November 1, 2016

ABSTRACT

Montana Fish, Wildlife & Parks (FWP) manages 102 ponds in Region 7. Forty-eight of these ponds were visited in 2016. Thirty-one of the managed ponds had fishable populations of target species, nine were void of fish, and seven ponds were only checked for depth. No new ponds were visited in 2016. Wild fish were transferred into two ponds by FWP in 2016. Yellow Perch from Maier Reservoir and Yellow Perch and Northern Pike from Homestead Reservoir were transferred into Spotted Eagle. In addition, Spotted Eagle was stocked with Black Crappie, Channel Catfish, Smallmouth Bass and Walleye from the Yellowstone River. Farwest Pond received Channel Catfish and Smallmouth Bass from the Yellowstone River. Pond anglers in FWP region 7 may see diminished success in 2017 as water levels throughout much of the region were low, and pond surveys yielded lower catch rates. The fisheries in these managed ponds would benefit from a refilling event to increase water depth and promote fish survival and growth.

PROCEDURES

Ponds are classified as either managed or new. Managed ponds are those that are currently stocked by Fish, Wildlife & Parks (FWP). New ponds are those that have not been sampled or stocked by FWP in the last 20 years. Pond depths were measured using a Lucky Wireless portable depth finder. Pond locations were recorded using township, range and section as well as GPS coordinates in decimal degrees, geographic projection NAD 1983. Fish populations were sampled using one or a combination of the following: modified fyke nets with 4 x 6 foot frames of 0.5-inch mesh (bar measure), experimental sinking gill nets with 25 ft panels of 0.75, 1.0, 1.25, 1.5, and 2.0-inch mesh (bar measure) for an overall length of 125 feet, bag seine 100 foot long by 0.25 inch mesh, mini-fyke nets with a 2 x 4 foot frame of $1/8^{th}$ inch mesh (bar measure) and/or hook and line. All fish were identified and counted, a sub-sample of up to 40 fish per species were measured for total length (mm) and weight (g). Metric measurements (Table 6) were converted to English equivalents a to provide unit consistency between this report, stocking records, and the Region 7 Pond Fishing Guide.

RESULTS AND DISCUSSION

Wild Fish Transfer and Hatchery Stocking

Wild fish transfers are currently being used as a tool to augment existing populations of game fish, and to start new populations where they currently don't exist. Wild fish were transferred into two ponds in 2016 (Table 1). Yellow Perch and Northern Pike from Homestead Reservoir and Yellow Perch from Maier Reservoir were transferred into Spotted Eagle to augment existing populations in this urban fishery. Black Crappie, Channel Catfish, Smallmouth Bass and Walleye were transferred from the Yellowstone River into Spotted Eagle. Farwest Pond received Smallmouth Bass and Channel Catfish from the Yellowstone River.

Table 1. Wild fish transfers conducted in 2016.

Date	Receiveing Water	County	Species	Number Transferred	Donor Water	County
4/14/2016	Spotted Eagle	Custer	Yellow Perch	1068	Maier Reservoir	Fallon
9/30/2016	Spotted Eagle	Custer	Walleye	10	Yellowstone River	Custer
9/30/2016	Spotted Eagle	Custer	Smallmouth Bass	4	Yellowstone River	Custer
9/30/2016	Spotted Eagle	Custer	Black Crappie	1	Yellowstone River	Custer
9/30/2016	Spotted Eagle	Custer	Channel Catfish	9	Yellowstone River	Custer
10/6/2016	Spotted Eagle	Custer	Yellow Perch	3108	Grants Reservoir	Prairie
10/7/2016	Spotted Eagle	Custer	Yellow Perch	1364	Grants Reservoir	Prairie
10/14/2016	Spotted Eagle	Custer	Northern Pike	2	Homestead Reservoir	Prairie
10/14/2016	Spotted Eagle	Custer	Yellow Perch	2	Homestead Reservoir	Prairie
10/18/2016	Farwest Pond	Rosebud	Smallmouth Bass	1	Yellowstone River	Rosebud
10/18/2016	Farwest Pond	Rosebud	Channel Catfish	10	Yellowstone River	Rosebud
10/20/2016	Farwest Pond	Rosebud	Smallmouth Bass	2	Yellowstone River	Custer
10/20/2016	Farwest Pond	Rosebud	Channel Catfish	20	Yellowstone River	Custer

The list of proposed wild fish transfers to be completed in 2017 includes four ponds (Table 2). Kreider Reservoir #3 and Chamberlain Reservoir #2 would receive crappie from Tongue River Reservoir. Spotted Eagle would receive Yellow Perch and Northern Pike from Homestead Reservoir and/or Grants Reservoir, Far West would receive Smallmouth Bass and Channel Catfish from the Yellowstone River (Table 2).

Table 2. Wild fish transfers proposed for 2017.

Date	Receiveing Water	County	Species	Donor Water	County
2017	Spotted Eagle	Custer	Yellow Perch & Northern Pike	Homesetead/Grants	Prairie
2017	Far West	Rosebud	Smallmouth Bass & Channel Catfish	Yellowstone River	Rosebud
2017	Kreider #3	Garfield	Crappie	Tongue River Reservoir	Bighorn
2017	Chamberlain #2	Garfield	Crappie	Tongue River Reservoir	Bighorn

Four trout ponds were stocked with catchable Rainbow Trout (7-10 inches) from either Bluewater Springs Hatchery or Ft. Peck Hatchery (Table 3) in 2016. Bluewater Springs Hatchery stocked Rainbow

Trout fingerlings (2 inches) into 44 ponds. Miles City Hatchery stocked Rainbow Trout fingerlings into one pond, Walleye fry (<1 inch) and fingerlings into two ponds, Channel Catfish fingerlings into one pond, and Largemouth Bass into three ponds in 2016. Ft. Peck Hatchery stocked Northern Pike fry and fingerlings into three ponds in 2016.

Table 3. Catchable Rainbow Trout stockings in 2016.

Date	Water Name	County	Number	Strain	Length(in.)	Hatchery	Latitude	Longitude
5/5/2016	Dean S	Custer	1001	Arlee x Erwin	8.21	Bluewater Springs	46.37900	-105.66570
5/5/2016	Hollecker Lake	Dawson	302	Arlee x Erwin	8.21	Bluewater Springs	47.12810	-104.72890
5/5/2016	Roerick	Powder River	203	Arlee x Erwin	8.21	Bluewater Springs	45.37556	-105.30163
5/26/2016	Baker Lake	Fallon	1000	Arlee x Erwin	7.59	Ft. Peck	46.36337	-104.27070

Ponds without pre-existing populations of fish receive a one-time stocking of fish to establish a population that will reproduce on its own until winterkill or dewatering necessitates re-establishment of the population. Three ponds were stocked with bass in 2016 (Lake Harold, Harlin Steiger Reservoir and Dave Potts Bass Pond). Two Lake Harold and Harlin Steiger Reservoir have pre-existing populations of non-target species that may make establishment of Largemouth Bass with fingerling hatchery stock difficult. Harlin Steiger Reservoir and Lake Harold were stocked with approximately 5 inch Largemouth Bass to help establish these populations in the presence of non-target species.

Survey of New Ponds

No new ponds were inspected in 2016.

Survey of Managed Ponds

Carter County

Sidney

Nine Rainbow Trout were captured via hook and line in Sidney Reservoir ranging in size from 12 to 15 inches (average 14 inch). Sidney was 12 feet deep, 7 feet from full pool.

Spring Canyon

Spring Canyon was sampled with hook and line; however, no fish were captured. Water depth was 6.5 feet, 1 foot from full pool.)

MacNab

Three Largemouth Bass were captured via hook and line in MacNab Reservoir ranging in size from 5 to 7 inches. MacNab was 17 feet deep, 3 feet from full pool.

Cheesman

27 Green Sunfish were captured via hook and line in Cheesman Reservoir ranging in size from 3 to 8 inches. Cheesman was 5.5 feet deep, 6 feet from full pool.

Bucholtz
Seven Black Bullhead were captured via an experimental gillnet in Bucholtz Reservoir ranging in size from 5 to 8 inches. Bucholtz was 6 feet deep, 3 feet from full pool.

Custer County

Dean S
Dean S chronically winterkills due to minimal water depth. Dean S was only sampled for depth, with the pond being five feet deep, eight feet from full pool and a significant winterkill was confirmed with dead Rainbow Trout found throughout the pond. Rainbow Trout were restocked in May 2016 and were caught by hook and line by anglers in June.

Boulware
11 Rainbow Trout were captured via hook and line in Boulware Reservoir ranging in size from 9 to 10 inches. Boulware was 12 feet deep, 9 feet from full pool.

Rest Reservoir
Rest Reservoir was checked for depth only with it being 4 feet deep, 20 feet from full pool.

Spotted Eagle
Spotted Eagle in Miles City continues to be popular with local fisherman and other recreationists. Several community groups have contributed to cleaning and mowing the area and adding park benches and picnic shelters. The City of Miles City constructed a walking path, including three bridges, which cross the outlet channel. Walleyes Unlimited of Miles City built a handicap accessible fishing pier near the outlet channel. In 2014, the City of Miles City installed a restroom purchased by Walleyes Unlimited. An outdoor classroom was completed in the summer of 2015. Increased public use of Spotted Eagle demands continued monitoring and improvements to the fishery. Christmas trees were sunk to provide fish habitat in 2016, an effort that has occurred annually since 2005. The Christmas tree project will be continued in 2017. Wet conditions in 2010, 2011, 2013, and 2014 have provided ample opportunity for riverine species (e.g. Common Carp, River Carpsuckers, Goldeye, Shorthead Redhorse Suckers, Smallmouth Buffalo, and Largemouth Buffalo) to move into Spotted Eagle through the outlet channel or across the floodplain. The low elevation change from Spotted Eagle to the Tongue River makes fish movement into the pond easier when water levels rise in the Tongue River. In 2016, Walleyes Unlimited placed a fish barrier in the outlet channel. The barrier is intended to reduce, but not eliminate, the frequency of these migrations which will make mechanical removal efforts between migrations more effective. The barrier has six feet of drop from the outlet of Spotted Eagle to the Tongue River (at base flow). River Carpsuckers were the only river species found in abundance in Spotted Eagle during 2016 samples. Common Carp, Smallmouth Buffalo and Shorthead Redhorse were found in low abundances. Efforts to mechanically remove non-target fish with gill nets and electrofishing were conducted in 2012 and 2013 but not in 2014-2016. Focused efforts to mechanically remove non-target species will resume in 2017.

Eighteen species were found in Spotted Eagle in 2016 during the annual sampling effort. White Crappie was the most abundant species sampled at 22.2 fish per trap followed closely by Black Crappie at 15.8 fish per net; Bluegill, Channel Catfish and Walleye were other sport fish that were caught with fairly high occurrence. Walleye were caught at 1.3 fish per trap, the highest since traps have been used.

Efforts continued in 2016 to augment angling opportunities at Spotted Eagle by transferring adult sport fish. Yellow Perch and Northern Pike were transferred from Homestead Reservoir in April and October

2016; Yellow Perch were also transferred from Maier Reservoir in April 2016; Channel Catfish, Smallmouth Bass and Walleye from the Yellowstone River in September 2016; Yellow Perch from Grants Reservoir in October 2016 (Table 5). Anecdotal evidence suggests anglers are reaping benefits from removing non-target fish, and transfers of sport fish.

Table 5. Summary of sport fish transferred to Spotted Eagle in 2016.

Species	Count	Average Length (in)	Average Weight (lbs)	Length Range (in)	Weight Range (lbs)
Yellow Perch	5542	6.4	0.2	3.2-12.5	.1-1.3
Walleye	10	16.8	1.6	13.4-22.8	.7-3.9
Smallmouth Bass	4	10.8	0.8	8.3-12.8	.3-1.3
Black Crappie	1	10.7	0.6	10.7	0.6
Channel Catfish	9	18.3	2.2	13.5-24.5	.6-5.6
Northern Pike	27	19	1.7	15.4-33	.8-8.7

Dawson County

Hollecker Lake

Six species were collected in Hollecker Lake when sampled in 2016. Largemouth Bass averaged 10 inches and Bluegill averaged 5 inches. Largemouth Bass, Fathead Minnow and Rainbow Trout are the only species FWP has stocked since the lake was drained in the fall of 2005. White Crappie were the most abundant species captured in gillnets at 8.5 fish per net (Figure 1). All other species present entered Hollecker through the irrigation water supply or from illegal introductions. While the relative abundance of all introduced species is low, with the exceptions of Bluegill and White Crappie, this does not mean that introduced fish don't pose a problem to the managed fishery.

The abundance of Bluegill and White Crappie provides opportunity for anglers, particularly young anglers. Hollecker Lake Kid's Fishing Pond Proposal contains a detailed description of proposed management for this pond (Appendix 1). The original proposal was to create a bass/perch fishery; however, presence and proliferation of Bluegill has made this species a suitable alternative to Yellow Perch. The Largemouth Bass and Bluegill population dynamics should continue to be monitored to assure that the assemblage is meeting the needs and management goals of Hollecker Lake. The current management plan allows for mechanical draining of the lake if the species composition and abundances are undesirable.

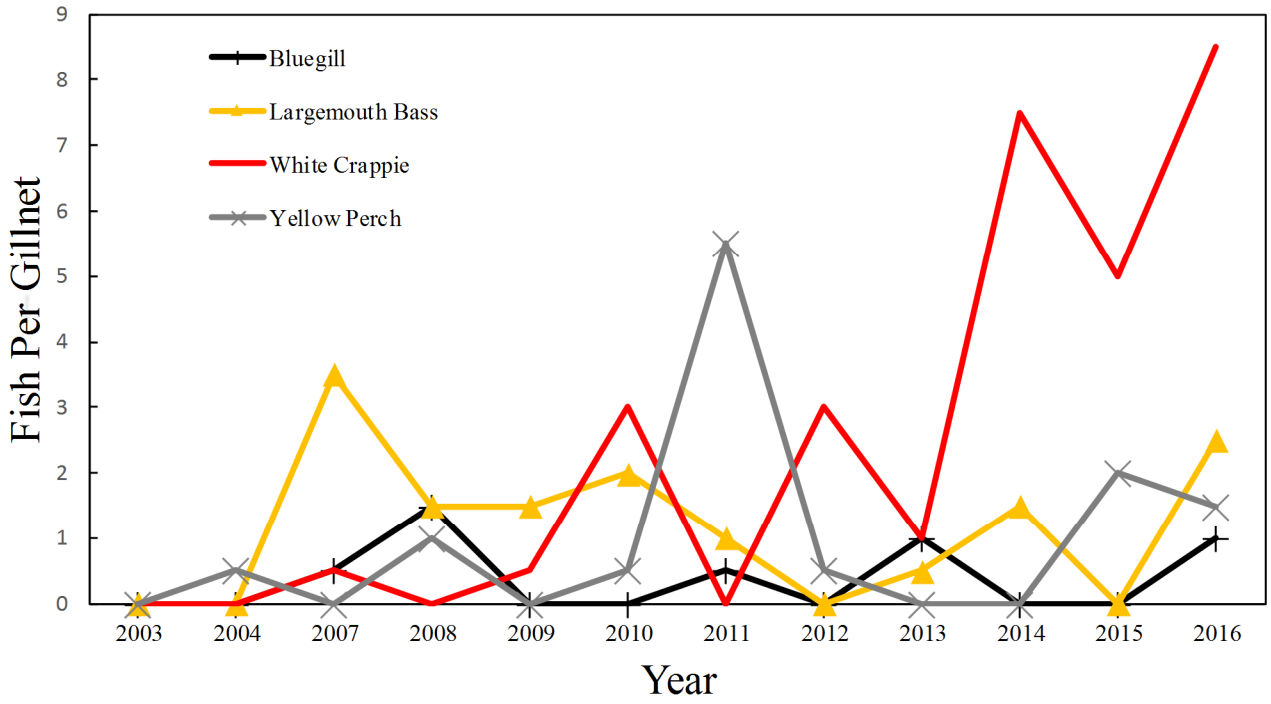

Figure 1. Catch per gill net for Bluegill, Largemouth Bass, White Crappie and Yellow Perch in Hollecker Lake, 2003-2016.

Rattlesnake

Rattlesnake Reservoir was sampled with two experimental gillnets set overnight. Two Black Crappie were captured ranging from 6 inches to 10 inches. Bureau of Land Management (BLM) has proposed to repair the failing spillway if funding for the project is required.

Johnson Reservoir

Johnson Reservoir was sampled for depth only. The reservoir was 7 feet deep, 3 feet from full pool.

Oil Pump Reservoir

Oil Pump Reservoir was sampled for depth only. The reservoir was 12 feet deep, 2 feet from full pool.

Prairie Goat

The BLM is working to repair the spillway at Prairie Goat Reservoir and to deepen the reservoir to the original depth when it was built. The work done on Prairie Goat Reservoir should make it suitable to be planted with fish once the project is complete. Prairie Goat was 7 feet deep, 3 feet from full pool in 2016. Include depth measurements from 2016 and observations of pool fullness.

Fallon County

Baker Lake

Efforts to provide angling opportunity at Baker Lake continued in 2016. From 2010 to 2016, 3,267 pre-spawn Yellow Perch, 405,000 Northern Pike fry, 6,126 Northern Pike fingerlings and 513 crappie have been transferred to Baker Lake. 3,000 Catchable Rainbow Trout have been planted in Baker Lake since

2014. In 2016, 11 Rainbow Trout were captured in gill net samples. Only Black Bullheads were found in abundance. In spite of substantial stocking and transfer efforts since 2010, Baker Lake appears to only provide suitable habitat for Black Bullheads, a species tolerant of the low oxygen conditions. Fallon County will be implementing a major lake and wetland restoration project in the near future that will take approximately 2 years to complete. The total cost is approximately 4 million dollars. Baker Lake will be deepened substantially to 15-17 feet; the current average depth is approximately 6 feet. Year round aeration with several waterfalls will be included.

Pinnow #1

Pinnow #1 was sampled and no fish were found in either experimental gillnets or a seine haul. The reservoir was 5.5 feet deep, 5 feet from full pool.

Pinnow #2

Pinnow #2 was sampled with 2 experimental gillnets set overnight and 1 beach seine haul. Eight Largemouth Bass were captured ranging from 5 to 7 inches. 123 Green Sunfish and 1037 Black Bullheads were also captured. The reservoir was 7 feet deep, 4 feet from full pool.

Maier

Aquatic invasive species (AIS) and disease testing was completed on Maier Reservoir in 2013 so it could be used as a transfer source for Yellow Perch. Three trap nets at Maier in 2016 yielded 1068 Yellow Perch transferred to Spotted Eagle (Table 1). Maier had four species present in 2016: Yellow Perch, White Sucker, Creek Chub and Green Sunfish, with Yellow Perch accounting for the majority of the catch. The reservoir was 14 feet deep, 4 feet from full pool.

South Sandstone Reservoir

Yellow Perch were the most abundant species sampled in gill nets at South Sandstone Reservoir (Figure 2). Catch rates for Yellow Perch have been increasing over the last three years. Black Bullhead numbers were lower than Yellow Perch for the first time since 2011. Average length of Yellow Perch caught in gill nets was 6 inches in the 2016 sample, fish ranged from 5 to 7 inches. Walleye average length was 22 inches in gill nets in 2016. Northern Pike caught in gill nets had an average length of 25 inches with fish up to 29 inches. Angler opportunity for Yellow Perch and Northern Pike at South Sandstone continue to make this reservoir one of the best in the region.

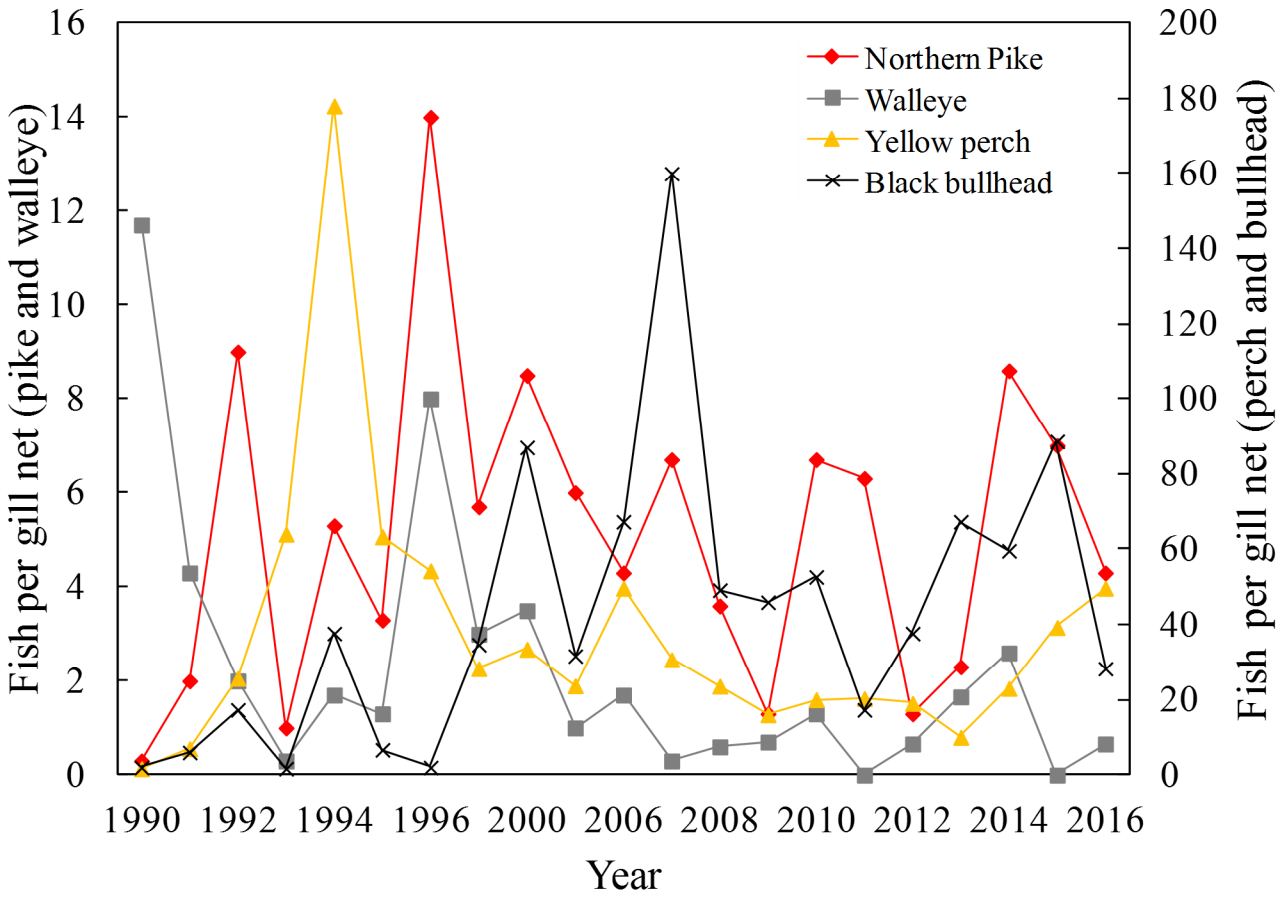

Figure 2. Catch per gill net for Northern Pike, Walleye, Yellow Perch and Black Bullhead in South Sandstone Reservoir, 1990-2016.

Clyde Pruett
Clyde Pruett was checked for depth only being 4 feet deep, 6 feet from full pool.

Wilbert Schweighert
Wilbert Schweighert was checked for depth only being 4 feet deep, 8 feet from full pool.

Meccage
Meccage was checked for depth and found to be 1 foot deep.

Garfield County

Chamberlain #2
Chamberlain #2 was 26 feet deep, 1 foot from full pool and had Channel Catfish with an average weight of 6.4 pounds (fish ranged from 4 -7 pounds). A wild crappie transfer from Tongue River Reservoir is proposed for Chamberlain #2 to establish the crappie population.

Kreider #2
Seven Rainbow Trout were captured via hook and line in Kreider #2 with an average length of 17 inches. Trout ranged from 13 to 20 inches. The reservoir was 18 feet deep, 2 feet from full pool.

Dale Kreider #3
Dale Kreider #3 was a new pond in 2014, with a robust population of Fathead Minnows. The pond was planted in June 2015 with 126 crappie from Tongue River Reservoir and Largemouth Bass from the Miles City Hatchery were planted in 2015 also. In 2016, the Largemouth Bass had an average length of 11 inches and no crappie were netted. A wild crappie transfer from Tongue River Reservoir is proposed for Kreider #3 to augment or reestablish the crappie population. The pond was 12 feet deep, 4 feet from full pool.

KV Watt
KV Watt was sampled with an experimental gillnet and 20 Rainbow Trout averaged 1.8 pounds with fish up to 4.7 pounds. The pond was 12 feet deep, 3 feet from full pool.

Clyde Saylor
Clyde Saylor was sampled with an experimental gillnet set overnight 25 Rainbow Trout were captured. Fish ranged from 6 to 15 inches long. The pond was 7 feet deep, 2 feet from full pool.

Irvine Saylor
Six Rainbow trout were captured via hook and line sampling at Irvine Saylor with fish ranging from 14 to 16 inches long.

Clark
Eight Rainbow Trout were captured via hook and line sampling at Clark Reservoir averaging 2.4 pounds and fish up to 3.8 pounds. Trout ranged from 8 inches to 21 inches long.

LC Brooks
LC Brooks was sampled with an experimental gillnet set overnight and no fish were captured. The pond was 10 feet deep, 1 foot from full pool.

Mardrie Baker
Mardrie Baker was sampled with an experimental gillnet set overnight and no fish were captured. The depth of the pond was 13 feet deep, 10 feet from full pool.

Powder River County

Losinski #3
Losinski #3 was 1 foot deep, 15 feet from full pool in July 2016. Losinski #3 has struggled to fill up with water the past few years and it is likely to have summer killed in 2016.

Roerick
Roerick was sampled with a seine in July 2016. The seine found 5 species; Black Bullhead, Channel Catfish, Common Carp, Sand Shiner and Western Silvery Minnows. None of the 5 species found have been planted by MT FWP, 200 catchable trout are stocked yearly into this pond. Roerick was 6.5 feet deep, 2 feet from full pool.

Prairie County

Reukauf (Harms)
Reukauf (Harms) was only 3 feet deep when checked in 2016, and it was12 feet from full pool.

Silvertip Reservoir
Silvertip Reservoir was checked for depth being 10 feet deep, 4 feet from full pool.

South Fork Reservoir
South Fork Reservoir was checked for depth in March of 2016 being 4 feet deep, 10 feet from full pool. It was checked in October and it had lost 3 feet of water.

Clarks Reservoir
Clarks Reservoir was checked for depth in March of 2016 it was 8 feet deep, 4 feet from full pool, in October it had lost about 2 feet of water.

Courtney Ayers
Courtney Ayers was sampled via hook and line88 Largemouth Bass were captured. The bass averaged 10 inches, ranging from 6 to 14 inches long. The pond was 12 feet deep, 5 feet from full pool.

Marshall Reservoir
Marshall Reservoir had a good population of Largemouth Bass that averaged 12 inches. 85 Largemouth Bass were captured via hook and line ranging from 8 to 15 inches long. The reservoir was 10.5 feet deep, 4 feet from full pool.

Oil Pump
Oil Pump Reservoir was sampled via hook and line eight Rainbow Trout were captured. The trout averaged 12 inches, ranging from 11 to 13 inches. The reservoir was 10 feet deep, 5 feet from full pool.

Homestead Reservoir
Homestead Reservoir was AIS and disease tested in 2014. AIS and disease tests were negative, thus Homestead Reservoir was used as a transfer source to Spotted Eagle in 2016. Twenty-seven Northern Pike and 16 Yellow Perch were transferred into Spotted Eagle from Homestead in 2016. There had been some anecdotal evidence of natural reproduction from the adult Northern Pike planted in 2012; however, sampling had not substantiated these claims and fingerling Northern Pike were stocked in Homestead in 2014 to augment the population of wild adults that were transferred into the reservoir in 2012. The lack of success trapping Yellow Perch is thought to be due to the larger number of Northern Pike cruising the shorelines in the spring where are traps are located. Northern Pike sampled in 2016 had an average length of 20 inches, with fish up to 33 inches. Multiple year classes of Northern Pike were sampled, with most being in the 18 inch range.

Grants Reservoir

Grants Reservoir was a new pond in 2014 that we attempted to stock with only female Yellow Perch in an experimental effort to establish a trophy population. Yellow Perch exhibit sexual size dimorphism, with adult females typically being larger than the males at a given age. Females mature later allowing more time for energy to be put into body growth. This biological principle in the absence of density dependent factors should have resulted in a population of all female Yellow Perch that could be expected to exceed ten inches relatively quickly. The experiment had early indications of success as mean total length of the Yellow Perch planted increased from 5.2 inches to 9.4 inches in 6 months (Figure 3). Sampling in spring 2015 found male Yellow Perch in Grants Reservoir suggesting some of the fish transferred in 2014 were misidentified. Yellow Perch are capable of reaching 14 inches in length and 2 pounds in weight, but high fecundity and annual reproductive success often cause density dependent factors to result in populations with high relative abundance but small average size. This density dependence is being observed as the density of Yellow Perch has drastically increased after apparently successful spawning events from 2014-2016 driving down the average total length of Yellow Perch. The average length of Yellow Perch in 2016 was 6.6 inches. Grants Reservoir was tested in 2016 to be a wild fish transfer source and the test came back clean.

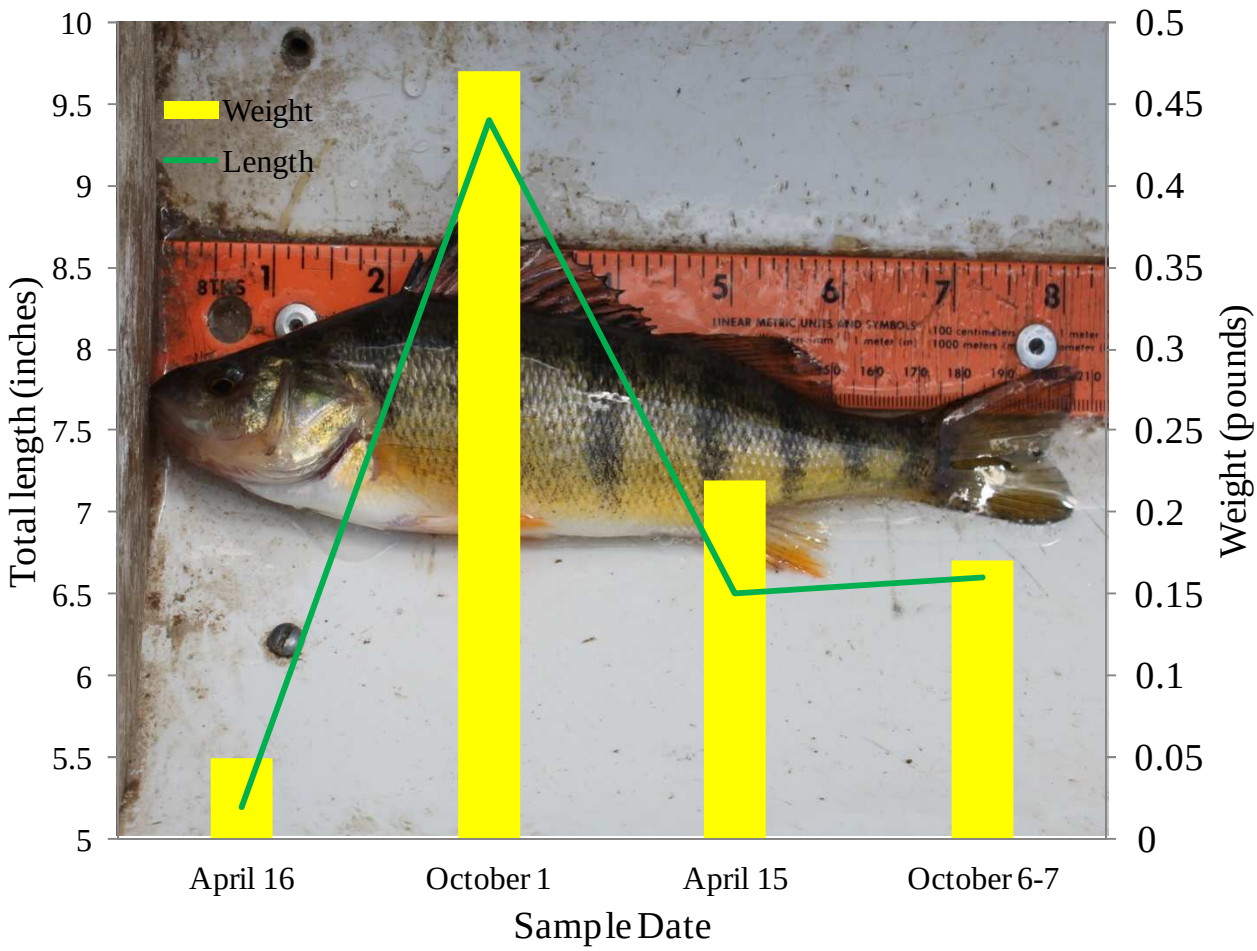

Figure 3. Yellow Perch average length and weight in Grants Reservoir from 2014 to 2016.

Richland County

Gartside Reservoir

Natural reproduction for Northern Pike has generally been successful at Gartside Reservoir. Northern Pike stocking in the reservoir was discontinued in 2004 to evaluate natural spawning and recruitment. Catch rates of Northern Pike in 2016 were similar to the long-term average (Figure 4). The highest recorded catch rate of Northern Pike in 2010 was partially attributed to increased sampling efficiency of gill nets while pool level was reduced for construction of a fishing pier.

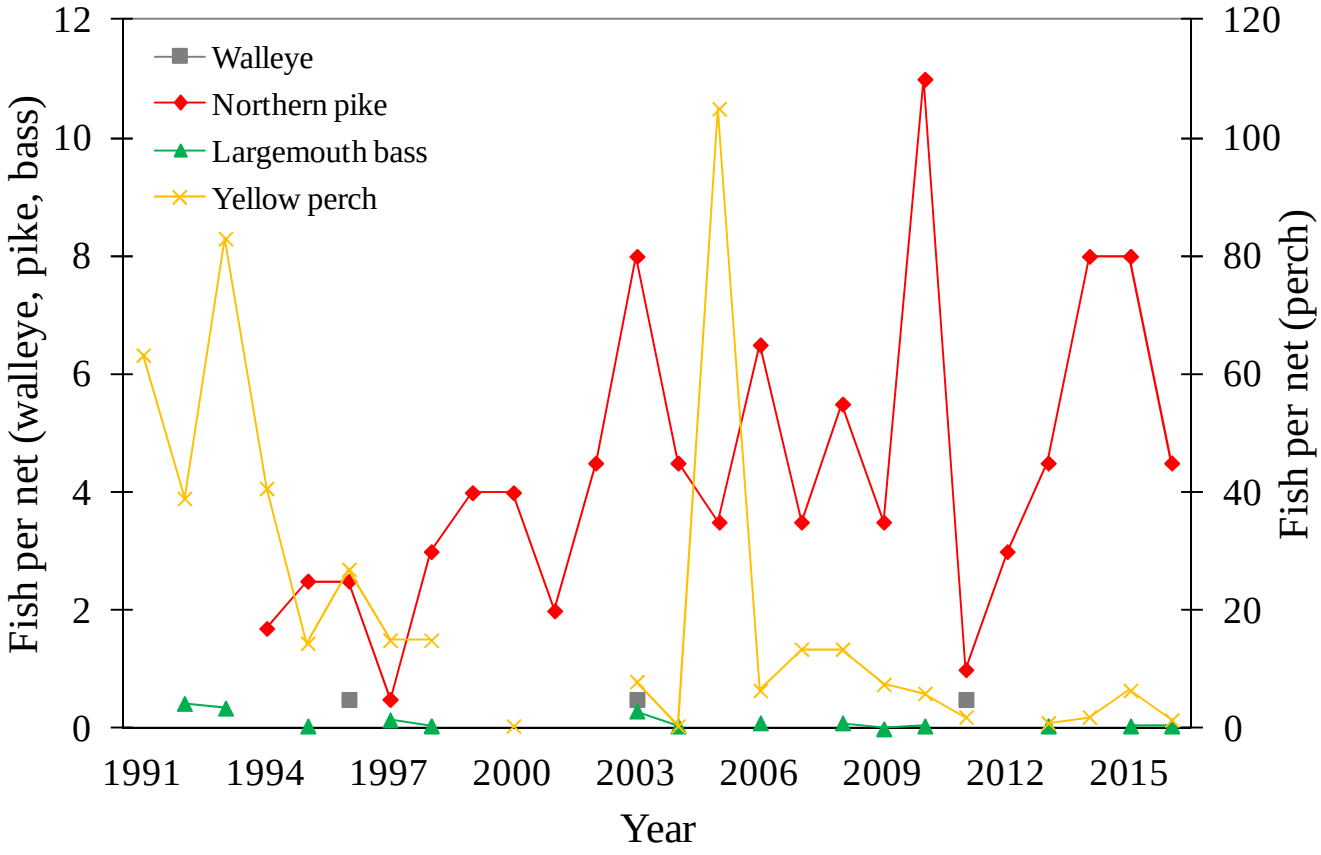

Figure 4. Catch rate (fish per gill net) of Walleye, Northern Pike, Largemouth Bass, and Yellow Perch from Gartside Reservoir, 1991-2016.

Gartside Reservoir received an experimental stocking of 400 Tiger Muskellunge approximately 10 inches long in October 2010. The fish were purchased from a certified, disease-free private hatchery in South Dakota. Tiger Muskellunge were stocked to improve pan-fish population size structure and to provide additional angler opportunity at Gartside. Tiger Muskellunge stocking and associated sampling goals are described in a five year stocking proposal, (Backes 2006). Tiger Muskies were supposed to be stocked annually, but the outbreak of viral hemorrhagic septicemia (VHS) virus in the Great Lakes region eliminated the muskellunge egg supply. The stocking proposal has expired for Tiger Muskellunge at Gartside. Survival of the first stocking in 2006 was not successful. Survival of individuals from the 2010 stocking was thought to be low. Three Tiger Muskie were sampled in 2011 gill net and seine haul efforts, but have not been sampled since.

Rosebud County

Far West

Far West was inspected in 2015 as a potential new pond to add to the Region 7 ponds program. Far West Pond is in close proximity to the Yellowstone River; sampling of the pond found numerous riverine species in the pond including Bigmouth Buffalo, Common Carp and River Carpsucker. Green Sunfish were also present at the pond. The depth of the pond in 2015 was 7 feet, and the water level was 2 feet from full pool. The lack of water and presence of unwanted species in 2015 lead to the decision not to add the pond the Region 7 ponds program at that time. In 2016, water levels in Far West rose and it was decided to stock the pond to give an added opportunity given its close proximity to a campground. Three Smallmouth Bass and 30 Channel Catfish were transferred to the pond from the Yellowstone River in October of 2016.

John Killen #2

John Killen #2 was sampled via hook and line 21 Rainbow Trout were captured. The Rainbow Trout averaged 13 inches, ranging from 10 to 15 inches long. The pond was 14 feet deep, 12 feet from full pool.

Ringstveit

Ringstveit was sampled with an experimental gillnet set overnight and no fish were found, the pond was 10 feet deep, 4 feet from full pool in June 2016.

Schlesinger

Schlesinger was sampled with an experimental gillnet set overnight and 58 Green Sunfish were found averaging 6 inches, the fish ranged from 4 to 7 inches long. The pond was 5.5 feet deep, 9 feet from full pool. Schlesinger is planted with 500 fingerling Rainbow Trout yearly.

Castle Rock Lake

Castle Rock Lake was renowned for large and abundant Bluegill in the 1980s and early 1990s. In 1996 Bluegill catch rates dropped to a record low of 3.3 per gill net. An expanding Walleye population was thought to be suppressing Bluegill abundance. Annual walleye stocking rates were reduced from 5,000 fingerlings to 1,000 fingerlings in 1997 to improve Bluegill abundance (Stewart 1996). Review of historic Dingell Johnson (DJ) reports and data indicated the abundant Bluegill population was not sustainable. The high Bluegill abundance resulted from a new and expanding population. Castle Rock Lake was constructed from 1974 to 1975 and Bluegills were stocked in 1979 to establish a forage base for Northern Pike. With little competition for forage, the Bluegill population expanded, reaching a peak in 1987. The Bluegill population stabilized around 1998 and has produced relatively consistent catch rates since then Bluegill catch rate in 2016 reached its highest since the early 1990's (Figure 5). Aquatic invasive species and disease testing was completed on Castle Rock Reservoir in 2015 so adult Largemouth Bass could be transferred to establish populations in water bodies with existing populations of non-target species that reduce establishment success of hatchery planted fingerling bass.

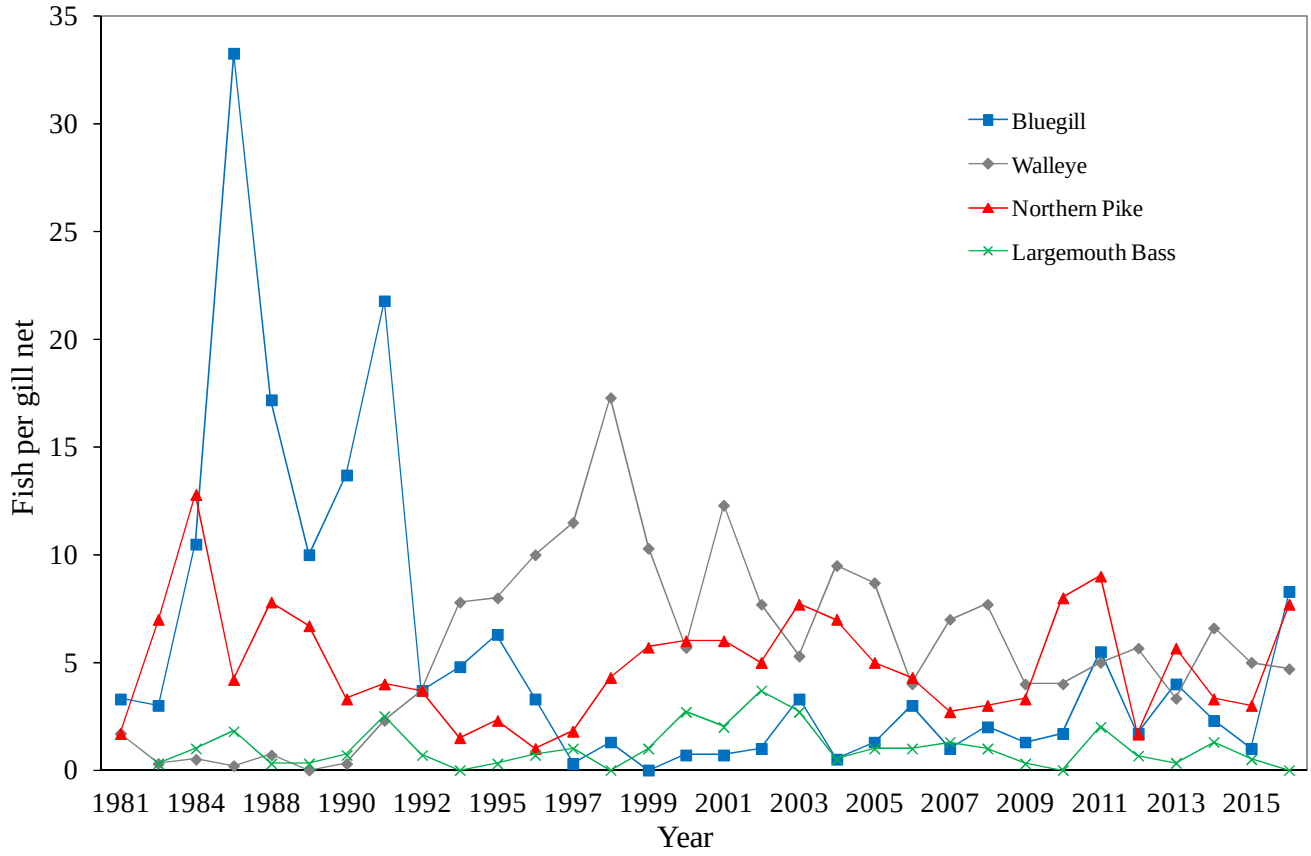

Figure 5. Catch per gill net for Bluegill, Walleye, Northern Pike and Largemouth Bass from Castle Rock Lake, 1981-2016.

Treasure County

Harlin Steiger Reservoir

Harlin Steiger Reservoir was a new pond inspected in 2015 in Treasure County. The pond had a depth of 13 feet at full pool and Green Sunfish were found in high abundance. It was decided to add this pond to the Region 7 ponds program. Largemouth Bass were stocked in the fall of 2015. Due to the high density of Green Sunfish and anticipated low survival of fingerling (3 inch) bass, stocking will be repeated for 2-3 years. In 2016 the Miles City Hatchery planted 5 inch Largemouth Bass to help establish this population.

Lake Harold

Lake Harold is small in size but was considered for the pond program because of limited fishing opportunities in Treasure County. Riverine species were presumably introduced through the Yellowstone Irrigation Canal, the pond's water source. Yellow Perch were transferred from South Sandstone Reservoir to Lake Harold in the spring of 2010. The landowner, Bob Fjelstad has excavated parts of the reservoir since stocking occurred to make the reservoir deeper and has made other shoreline improvements to enhance the recreational experience at the site. The landowner informed us in 2015 that

he would like to get Largemouth Bass established. In 2016, the Miles City Hatchery stocked 5 inch Largemouth Bass to help establish this population.

Wibaux County

No ponds were sampled in Wibaux County in 2016.

Prepared by: Kevin McKoy

Date: November 2016

Waters referred to:

Gartside	21-3250
Castle Rock	21-2527
Spotted Eagle	21-8815

Keywords

Small ponds	Yellow perch
Largemouth bass	Smallmouth bass
Northern pike	Bluegill
Rainbow trout	Walleye
Crappie	Black & Yellow bullhead

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Table 6. Results of sampling managed reservoirs in 2016.

Reservoir Nam	Date	Depth 10/Full (feet) *	Type of Sample	Species	Number Caught	Mean Length (mm)	Mean Weight (gr)	Length Range (mm)	Weight Range (gm)
				Carter County					
Bucholtz	7/20/2016	6/3	gillnet (1)	black bullhead	7	165	64	131-194	30-100
Cheesman	7/20/2016	5.5/6	hook and line	green sunfish	27	146	48	87-195	10-80
MacNab	7/20/2016	17/3	hook and line	largemouth bass	3	143	40	128-170	30-50
Sidney	7/20/2016	12/7	hook and line	rainbow trout	9	360	456	307-390	300-600
Spring Canyon	7/20/2016	6.5/1	hook and line	no fish	0				
				Custer County					
Boulware	3/17/2016	15/6	depth check						
Boulware	7/19/2016	12/9	hook and line	rainbow trout	11	257	133	240-270	90-180
Dean S	3/17/2016	5/8	depth check						
Rest Reservoir	3/17/2016	4/20	depth check						
Spotted Eagle	6/23/2016	10/0	fyke net (5)	bluegill	8	130	53	109-143	30-100
				black crappie	95	164	73	106-231	10-240
				channel catfish	8	455	905	370-525	480-1560
				common carp	2	446	1005	424-468	870-1140
				emerald shiner	1	75		75	
				flathead chub	1	210	130	210	130
				green sunfish	2	100	50	85-115	50
				pumpkinseed	1	114	80	114	80
				river carpsucker	26	365	860	211-490	160-1900
				shorthead redhorse	2	354	500	350-357	480-520
				smallmouth buffalo	2	288	480	190-385	130-830
				white sucker	1	327	420	327	420
				walleye	8	397	856	157-750	50-3810
				white crappie	133	150	53	97-271	20-260
				yellow perch	1	102	10	102	10
			seine haul (5)	bluegill	19	114	49	55-150	20-90
				black crappie	43	165	75	110-213	20-150
				emerald shiner	9	80		62-94	
				northern pike	1	490	650	490	650
				pumpkinseed	2	118	30	108-127	20-40
				river carpsucker	3	165	87	130-194	50-130
				shorthead redhorse	1	290	250	290	250
				smallmouth buffalo	6	333	702	245-427	250-1200
				white sucker	1	370	620	370	620
				walleye	1	311	260	311	260
				white crappie	22	151	50	106-228	10-140
				western silvery minnow	2	98		85-110	
				yellow perch	5	108	16	104-112	10-20
Spotted Eagle	4/5/2016	10/0	Fish Transfer In	yellow perch	14	167	111	82-208	50-170
				northern pike	24	468	655	392-700	350-2000
	4/14/2016	10/0	Fish Transfer In	yellow perch	1068	154	282.7	92-317	40-610
	9/30/2016	10/0	Fish Transfer In	channel catfish	9	466	984	343-622	250-2560
				smallmouth bass	4	274	348	210-324	140-590
				walleye	10	425	721	340-580	320-1800
				black crappie	1	271	280	271	280
	10/6/2016	10/0	Fish Transfer In	yellow perch	3108	165	76	92-308	40-410
	10/7/2016	10/0	Fish Transfer In	yellow perch	1364	173	80	143-262	40-280
	10/14/2016	10/0	Fish Transfer In	yellow perch	2	149	170	95-202	170.0
				northern pike	3	722	2823	483-848	600-3950

Table 6. Results of sampling managed reservoirs in 2016 continued.

Reservoir Name	Date	Depth 10/Full (feet) *	Type of Sample	Species	Number Caught	Mean Length (mm)	Mean Weight (gr)	Length Range (mm)	Weight Range (gm)
				Dawson County					
Hollecker	7/27/2016		gillnet (2)	bluegill	2	125	50	124-126	50
				largemouth bass	5	258	308	151-322	70-430
				rainbow trout	1	236	140	236	140
				shorthead redhorse	1	350	470	350	470
				white crappie	17	183	80	164-222	70-120
				yellow perch	3	182	117	140-216	60-190
			seine haul (1)	bluegill	28	101	44	44-161	20-80
				largemouth bass	1	300	400	300	400
				largemouth bass yoy	1	81		81	
Johnson Reservoir	3/14/2016	7/3	depth check						
Oil Pump Reservoir	3/14/2016	12/2	depth check						
Prairie Goat Res.	3/14/2016	7/3	depth check						
Rattlesnake Res.	3/14/2016	10/2	depth check						
Rattlesnake Res.	7/18/2016	9/3	gillnet (2)	black crappie	2	191	195	116-266	30-360
				Fallon County					
Baker Lake	7/11/2016		gillnet (2)	black bullhead	216	240	260	133-270	60-350
				rainbow trout	11	321	512	205-442	130-940
Clyde Pruett	7/18/2016	4/6	depth check						
Maier Reservoir	4/14/2016	14/4	Fish Transfer Out	yellow perch	1068	154	283	92-317	40-610
Meccage	7/19/2016	1/?	depth check	No Fish					
Pinnow #1	6/27/2016	5.5/5	gillnet (1)	No Fish					
			seine haul (1)	No Fish					
Pinnow #2	6/27/2016	7/4	gillnet (2)	black bullhead	19	134	40	112-160	30-50
				green sunfish	117	142	63	124-155	40-80
				largemouth bass	8	160	68	150-193	60-110
			seine haul (1)	black bullhead	1018	120	23	103-155	10-50
				green sunfish	6	135	53	122-152	40-70
South Sandstone	8/4/2016		seine haul (3)	black bullhead	1	291	130	291	130
				largemouth bass	2	167	75	113-221	20-130
				largemouth bass yoy	4	57		50-71	
				yellow perch	80	152	41	135-172	20-60
				yellow perch yoy	2	63		61-65	
			gillnet (3)	black bullhead	85	182	126	131-215	50-250
				black crappie	2	193	140	190-196	120-160
				northern pike	13	640	1743	501-730	850-2740
				walleye	2	558	1750	556-560	1650-1850
				yellow perch	149	155	51	138-190	30-100
Wilbert Schweighert	10/20/2016	4/8	depth check	No Fish					
				Garfield County					
Beecher Trout	6/29/2016	4/8	depth check						
Chamberlain #2	9/13/2016	26/1	gillnet (2)	channel catfish	3	660	2893	622-691	2140-3280
Clark	9/13/2016	21/10	hook and line	rainbow trout	8	428	1090	212-545	190-1740
Clyde Saylor	9/19/2016	7/2	gillnet (1)	rainbow trout	25	320	471	150-390	60-760
Irvine Saylor	9/19/2016	9/6	hook and line	rainbow trout	6	392	900	366-406	760-990
Kreider #1	8/25/2016	13/12	gillnet (2)	largemouth bass	17	287	432	250-327	220-660
Kreider #2	8/25/2016	18/2	hook and line	rainbow trout	7	428		342-505	
Kreider #3	8/25/2016	12/4	gillnet (2)	largemouth bass	8	280	370	280	370
KV Watt	9/13/2016	12/3	gillnet (1)	rainbow trout	20	391	836	202-580	110-2120
LC Brooks	6/29/2016	10/1	gillnet (1)	No Fish					
Mardrie Baker	9/19/2016	13/10	gillnet (1)	No Fish					

Table 6. Results of sampling managed reservoirs in 2016 continued.

Reservoir Name	Date	Depth 10/Full (feet) *	Type of Sample	Species	Number Caught	Mean Length (mm)	Mean Weight (gr)	Length Range (mm)	Weight Range (gm)
				Powder River County					
Losinski #3	7/21/2016	1/15	depth check	no fish					
Roerick	7/21/2016	6.5/2	seine haul (1)	black bullhead	29	88	30	67-142	30
				channel catfish	1	179	40	179	40
				common carp	12	120	43.8	115-177	20-60
				sand shiner	20	63		54-70	
				western silvery minnow	3	133	20	92-159	20
				Prairie County					
Clarks	3/15/2016	8/4	depth check						
Courtney Ayers	7/14/2016	12/5	hook and line	largemouth bass	88	246	281	173-358	90-670
Grants	3/15/2016	8/4	depth check						
	10/6/2016		mini-fyke (12)	yellow perch	3108	165	76	137-308	40-410
	10/7/2016		mini-fyke (11)	yellow perch	1364	173	80	143-262	40-280
Harms	3/15/2016	3/12	depth check	no fish					
Homestead	3/14/2016		fyke net (3)	yellow perch	1				
				northern pike	90				
	4/5/2016		Fish transfer out,	yellow perch	14	167	111	82-208	50-170
				northern pike	24	468	655	392-700	350-2000
	10/14/2016	10/0	Fish transfer out,	yellow perch	2	149	170	95-202	170.0
				northern pike	3	722	2823	483-848	600-3950
Marshall	7/14/2016	10.5/4	hook and line	largemouth bass	85	293	423	225-398	200-870
Oil Pump	7/18/2016	10/5	hook and line	rainbow trout	8	309	300	280-329	230-350
Silvertip	3/15/2016	10/4	depth check						
South Fork	3/15/2016	4/10	depth check	no fish					
				Richland County					
Gartside	7/27/2016		gillnet (2)	bluegill	5	145	52	127-163	30-80
				largemouth bass	1	348	700	348	700
				northern pike	9	589	1361	470-753	620-2650
				yellow perch	3	154	47	140-170	40-60
			seine haul (2)	bluegill	194	105	54	45-176	20-90
				largemouth bass	7	140	59	105-244	10-230
				largemouth bass yoy	29	54		47-65	
				yellow perch	37	113	27	52-182	10-70
				Rosebud County					
Castle Rock	7/25/2016		seine haul (3)	bluegill	231	105	68	42-198	10-180
				black crappie	1	100	10	100	10
				crappie yoy	28	43		27-52	
				largemouth bass	30	158	107	99-358	10-960
				largemouth bass yoy	10	54		41-68	
				northern pike	6	219	77	130-261	20-110
				smallmouth bass	3	156	47	127-174	40-50
				sunfish yoy	3	20		16-23	
			gillnet (3)	bluegill	25	144	72	93-199	10-150
				northern pike	23	515	797	351-710	200-1540
				walleye	14	343	508	180-550	20-1470
John Killen #2	7/13/2016	14/12	hook and line	rainbow trout	21	338	394	267-395	220-560
Ringstveit	6/29/2016	10/4	gillnet (1)	No fish					
Schlesinger	7/7/2016	5.5/9	gillnet (1)	green sunfish	58	157	106	104-191	20-190

Appendix 1. Hollecker Lake Kid's Fishing Pond Proposal, 2005.

PROJECT SUMMARY:

Hollecker Lake does not support a socially desirable fishery, despite a variety of attempted management alternatives over the past 40 years. From 1964 to 2005 cool and warm-water species (rainbow trout, brook trout, Yellowstone cutthroat trout, bluegill, crappie, largemouth bass, smallmouth bass, yellow perch, northern pike, and channel catfish) were stocked at various densities, sizes, and seasons. However, viable fisheries failed to establish; stocked species were infrequently sampled in the years following stocking and sampling efforts indicated an assemblage dominated by Yellowstone River fishes. Yellowstone River fishes access Hollecker Lake through the Buffalo Rapids Canal, which is the lone inlet. Although an inlet screen was installed to prevent invasion from the canal, design and maintenance logistics reduced its effectiveness; large mesh size and removal when debris accumulation was common allowed invasion. Hollecker Lake was chemically treated in 1994 to eliminate nonstocked species but was again dominated by Yellowstone River fishes the following year. Because of the difficulty of establishing stocked fish, Hollecker Lake is currently managed as a put-and-take trout pond; 1000 to 2000 catchable rainbow trout are stocked each spring and autumn. However, local angling and sporting groups have indicated that this management strategy is undesirable and establishment of a warmwater kid's fishing pond is preferred. Therefore, the goal of this project is to modify the Hollecker Lake stocking strategy, angling regulations, inlet screen, and spawning and rearing habitats to establish a viable warmwater kid's fishery.

A largemouth bass-yellow perch fishery will be established in Hollecker Lake. During December 2005 the lake will be drained and allowed to freeze to remove all fish. Largemouth bass fingerlings will be stocked in spring 2006 and 2007 at a density of 250 fish per hectare (Dauwalter and Jackson 2005). Because of the short growing season in eastern Montana, largemouth bass will likely not reach sexual maturity until the second or third season following stocking (Ball 1952, Salia 1952). Accordingly, adult yellow perch will be stocked in autumn 2007 or spring 2008 so their progeny will provide forage to the first lake-produced year class of juvenile bass (Ball 1952, Dauwalter and Jackson 2005). Delayed perch stocking will also safeguard against stunting while bass become established. Adult perch will be stocked at a density of 250 fish per hectare (Dauwalter and Jackson 2005). To provide angling opportunities while largemouth bass become established, 1000 catchable rainbow trout will be stocked in spring 2006 and 2007. Largemouth bass and rainbow trout will be obtained from the Miles City State Fish Hatchery and yellow perch will be transplanted from Johnson's Reservoir, Baker Lake, or Castle Rock Reservoir.

Hollecker Lake will be managed for high densities of small largemouth bass and low densities of large yellow perch. High densities of largemouth bass will create a high-quality kid's fishing pond (i.e., large numbers of catchable fish) and large yellow perch will provide a year-round angling opportunity for a highly desirable species. This management option requires overpopulation of small largemouth bass, which will reduce perch densities thereby preventing stunting and allowing attainment of large size (Guy and Willis 1991, Flinckinger et al. 1999). Accordingly, a 38-cm minimum length limit for largemouth bass will be imposed to establish high densities (Flinckinger et al. 1999). Management goals are a largemouth bass PSD of 20 and a yellow perch PSD of at least 50 by 2009 (Guy and Willis 1991). Largemouth bass will be annually sampled by night electrofishing and yellow perch by trap netting to assess attainment of management goals. Signs describing this management strategy, and all phases of the project, will be installed.

New screen installation and maintenance practices will reduce invasion and competition by canal fishes and enhance the foraging ability of largemouth bass. The primary factor contributing to the failure of previous stocking efforts has been invasion of fish from the Buffalo Rapids Canal. To reduce the likelihood of invasion, the Glendive Chapter of Walleyes Unlimited has installed a new head gate structure with removable screens of two mesh sizes and a gate that will shut off all flow to the lake. Smaller mesh sizes will prevent access by juvenile or smaller-bodied fishes and the head gate can be closed to reduce access by larval fishes. Additionally, Walleyes Unlimited will assume responsibility for screen cleaning and maintenance to ensure that barriers to canal fish are in place at all times. The canal head gate will also be closed during periods of high turbidities to maintain clear water in the lake. Because largemouth bass are visual predators their growth and survival is positively correlated with water clarity (Stone and Modde 1982). Maintenance of water clarity to depths of at least 46 cm is essential to allow adequate largemouth bass predation to prevent overpopulation and stunting by yellow perch (Flinckinger et al. 1999).

Habitat enhancement will improve bass and perch spawning habitats and concentrate fish to improve angling opportunities. Christmas tree clusters will be placed throughout the lake to provide perch spawning habitat (Kratz 2005) and concentrate perch and bass for anglers (Johnson and Lynch 1992, Rogers and Bergersen 1999). Christmas trees will be placed at depths (4 feet) and orientation to prevailing winds (north and southeast edges) to maximize perch egg deposition (Kratz 2005). Littoral shallow-water bass spawning grounds will be constructed using gravel, logs, and boulders. A floating island will be installed to concentrate fish within casting distance of the handicap fishing access. Use and efficacy of all habitat features will be assessed with annual SCUBA surveys. All materials will be obtained and installed by the Glendive Chapter of Walleyes Unlimited and Montana Fish, Wildlife and Parks during winter 2006 when the lake is drained.

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