Montana Department of Fish, Wildlife and Parks Fisheries Division

Job Progress Report

STATE: Montana PROJECT: Statewide Fisheries Management

TITLE: <u>Yellowstone River Drainage Investigations</u>

JOB: Southeast Montana Warmwater Lakes Investigations

FEDERAL GRANT: F-113-R-7

FISCAL YEAR: 2013 (July 1, 2012 through June 30, 2013)

REPORT PERIOD: April 1, 2012 through March 30, 2013

ABSTRACT

Three new ponds and forty-five managed ponds were visited in 2012 to evaluate the status of the fisheries. Thirty-one of the managed ponds had fishable populations of target species, two managed ponds were visited only to restock with wild fish, ten were void of fish or only had non-target species, four ponds were only checked for depth, and one new pond was found with a fishery already established. No new ponds visited in 2012 were stocked but several new ponds identified during the 2011 season received their first stocking in 2012. New ponds stocked in 2012 with rainbow trout (Arlee strain) include Lyle Lake (Randy Wolenetz), Dick Gaskill #1, and Norman Samualson #1. New ponds stocked with largemouth bass in 2012 include Dick Gaskill #2 and Norman Samualson #1. Norman Samualson #2 (trout) and Sid Samualson (bass) were supposed to be stocked but were not. Wild fish were transferred into five ponds by Montana Fish, Wildlife & Parks (FWP) in 2012. Crappies from South Sandstone Reservoir were transferred into Rattlesnake Reservoir. Yellow perch were transferred from South Sandstone Reservoir into Baker Lake, and Haughian Bass Pond. Yellow perch and northern pike from South Sandstone Reservoir were transferred to Homestead Reservoir. Yellow perch from Johnson Reservoir were transferred to Spotted Eagle as well as channel catfish, walleye, and northern pike from the Yellowstone River. Drought conditions in 2012 reduced the water level gains from 2011 for most ponds in region seven and some lost enough depth that winter kill is expected for the winter of 2012/2013.

PROCEDURES

Ponds are classified as either managed or new. Managed ponds are those that are currently stocked by FWP. New ponds are those that have not been sampled or stocked by FWP in the last 20 years. Pond depths were collected using a Hummingbird SmartCast portable depth finder. Pond locations were documented using township, range and section and GPS coordinates in decimal degrees. 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, 100 foot long by 0.25 inch mesh bag seine, and/or hook and line. Fish were counted and a sub-sample of up to 20 fish for each species were weighed (grams), and measured in millimeters total length (TL) in the field. Precise metric

measurements can be found in table six at the end of the report. Metric measurements were converted in the office and length measured in inches TL and weight measured in pounds (lbs) can be found throughout this report. English measurements are used to provide consistency in use of measurements between this report, stocking records, and the Region 7 Pond Fishing Guide.

RESULTS AND DISCUSSION

Wild Fish Transfer and Hatchery Stocking

Wild fish were transferred into five ponds by Montana Fish, Wildlife & Parks (FWP) in 2012 (Table 1). Transfers to Baker Lake, Rattlesnake, and Haughian Bass Pond were needed because these fisheries had recently suffered winter kill. Crappies from South Sandstone Reservoir were transferred into Rattlesnake Reservoir to re-establish the crappie population. Yellow perch were transferred from South Sandstone Reservoir into Baker Lake, and Haughian Bass Pond to re-establish these species. Yellow perch and northern pike from South Sandstone Reservoir were transferred to Homestead Reservoir to establish new populations after bass species winter killed. Public comment received on a draft environmental assessment (EA) favored this species combination to establish a year round fishing opportunity in this easy to access pond in the Cherry Creek drainage.

	Recieveing			Number	Donar	
Date	Water	County	Species	Transfered	Water	County
4/2/2012	Baker	Fallon	yellow perch	81	South Sandstone	Fallon
4/3/2012	Homestead	Prairie	northern pike	26	South Sandstone	Fallon
4/3/2012	Homestead	Prairie	yellow perch	117	South Sandstone	Fallon
4/5/2012	Haughian Bass	Custer	yellow perch	205	South Sandstone	Fallon
4/5/2012	Rattlesnake	Dawson	black crappie	19	South Sandstone	Fallon
8/3/2012	Spotted Eagle	Custer	yellow perch	1465	Johnson Reservoir	Dawson
8/28/2012	Spotted Eagle	Custer	channel catfish	27	Yellowstone River	Custer
8/28/2012	Spotted Eagle	Custer	northern pike	3	Yellowstone River	Custer
8/28/2012	Spotted Eagle	Custer	walleye	5	Yellowstone River	Custer
9/24/2012	Spotted Eagle	Custer	channel catfish	22	Yellowstone River	Custer
9/24/2012	Spotted Eagle	Custer	northern pike	7	Yellowstone River	Custer
9/24/2012	Spotted Eagle	Custer	walleye	2	Yellowstone River	Custer
10/4/2012	Spotted Eagle	Custer	yellow perch	309	Johnson Reservoir	Dawson

Table 1. Wild fish transfers conducted in 2012.

Yellow perch from Johnson Reservoir were transferred to Spotted Eagle as well as channel catfish, walleye, and northern pike from the Yellowstone River. Non-target species were mechanically removed from Spotted Eagle then desired sport fish species were transferred to augment the existing populations. Drought conditions in 2012 reduced the water level gains from 2011 for most ponds in region seven and some lost enough depth that winter kill is expected for the winter of 2012/2013.

Date	Water Name	Number	Strain	Length (in)	Hatchery	Latitude	Longitude
4/12/2012	Hollecker Lake	301	Arlee X Erwin	8.8	Bluewater Springs	47.12810	-104.72890
4/12/2012	McNabb	1009	Arlee X Erwin	8.8	Bluewater Springs	45.81575	-104.42258
4/23/2012	Mud Turtle	1100	Arlee X Erwin	9.3	Bluewater Springs	45.28150	-105.96930
4/23/2012	Roerick Pond	220	Arlee X Erwin	9.3	Bluewater Springs	45.37556	-105.30163
4/30/2012	Hansen Pond	1085	Arlee X Erwin	9.3	Bluewater Springs	45.51704	-104.41127
6/4/2012	Dean S	500	Arlee X Erwin	10.8	Bluewater Springs	46.37900	-105.66570
10/1/2012	McNabb	500	Arlee X Erwin	10.9	Big Springs	45.81575	-104.42258

Table 2. Catchable rainbow trout stockings in 2012.

Six trout ponds were stocked with catchable trout (8-10 inches long) from Bluewater and Big Springs hatcheries (Table 2) in 2012. Miles City Hatchery stocked: trout fingerlings (2 inches long) into fifty-five ponds, walleye fry (<1 inch long) and fingerlings into three ponds, bass fingerlings into three ponds (Appendix 1) in 2012. Ft Peck hatchery stocked northern pike fry and fingerlings into three ponds in 2012.

	Pond Location		ocation	Depth	Depth		Species Present
Pond Name	County	Latitude	Longitude	(feet) *	(feet)**	Actions	in 2012 Survey
Exie Pond	Carter	45.59954	-104.17802	8	1		green sunfish, yellow perch
Burl & Vicki Beley	Dawson	47.45151	-105.30785	8	2	passed info to Region 6	not sampled
Randy Wolentz	Fallon	46.11037	-104.30511			stocked with trout 2012	not sampled
Dick Gaskill #1	Powder R.	45.67176	-105.81429	9	4	stocked with trout 2012	none
Dick Gaskill #2	Powder R.	45.65892	-105.81396	7	6.5	stocked with bass 2012	none
Norman Samuelson #1	Powder R.	45.58587	-105.83275	10	3.5	stocked with bass and trout 2012	none
Norman Samuelson #2	Powder R.	45.57032	-105.85175	6	3	to be stocked 2013	rainbow trout
Sid Samuelson	Powder R.	45.50185	-105.74866	7	8	to be stocked 2013	none
Wilbur Creek Res.	Powder R.	46.04698	-105.9045	6	3	do not stock	not sampled
* Water depth when san	npled.						

Survey of New Ponds

** Depth between current water level and normal high water mark.

Table 3. Summary of new ponds visited in 2012.

Two new ponds were inspected in 2012 in addition to six new ponds from 2011 that were revisited. Lyle Lake (Randy Wolenetz) was stocked with rainbow trout in 2012. Six ponds were inspected in Powder River County. The upland area around three of these ponds, Wilbur Creek Reservoir on the Custer National Forest and both Gaskill ponds burned in 2012. Wilbur Creek Reservoir will not be stocked and will be dropped from consideration for the ponds program. October survey of the Samualson and Gaskill ponds resulted in fish caught only in Norman Samualson #2 (Table 3). A pond owned by Burl and Vicki Beley was inspected in Dawson County. Beley's pond is marginal for minimum depth required to stock fish and was later determined to be just across the regional border in region six. Beley's pond will not be stocked by region seven. A new pond was discovered on the Exie road in the Long Pines of the Custer National Forest. The Exie pond has green sunfish and yellow perch. This pond will be added to the pond guide.

Survey of Managed Ponds

Carter County

Sidney (16 inches mean), Frigid (13 inches mean), Spring Canyon (10 inches mean), and MacNab (7-9 inches) all had fish in 2012 confirmed through hook and line or visual sampling. Sampling of Vic Hansen's pond in 2012 found slow growing rainbow trout (11 inches mean) in the presence of black bullheads, green sunfish, and white suckers. The 2011 allocation of catchable trout for MacNab was split and shared with Vic Hansen.

Cheesman had green sunfish over seven inches but averaged 5.4 inches TL. Water continues to leak around the overflow tube in the dam at Cheesman. A new pond was sampled in 2012 on the Exie road in the Long Pines of the Custer National Forest. The Exie pond had yellow perch that averaged eight inches and green sunfish that averaged six inches. No fish were found in West Plum.

Custer County

Dean S and Rest reservoirs have been chronically dewatered prior to filling in spring 2011 and were restocked in the fall. Sampling of Dean S and Rest found 10 inch trout in both reservoirs but they had lost over a third of their depth by the time of sample in 2012. Trout up to 16 inches were found in Henry Haughian #1. Ft. Keogh's trout pond was nearly dry with only two feet of water depth at time of sample and no fish were caught.

Haughain Bass Pond was replanted with both largemouth and smallmouth bass in July 2011. Yellow perch were transferred to Haughian Bass Pond in 2012 to provide forage for the bass and an additional opportunity for anglers. Beardsley Bass Pond dam washed out in the spring of 2011, was rebuilt in the fall, and should be restocked after it fills.

Spotted Eagle in Miles City has become a popular destination for local fisherman and other recreationist. 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 built a handicap accessible fishing pier near the outlet channel. In 2012 the City of Miles City installed a restroom purchased by Walleyes Unlimited. Increased public use of Spotted Eagle demands continued monitoring and improvements to the fishery. Christmas trees were not sunk to provide fish habitat in 2012 after seven consecutive years of this effort. The Christmas tree fish habitat project will be resumed in 2013. Goldeye were collected in Spotted Eagle for the first time in 2008 and were also present in 2010-2012 in low numbers. They entered Spotted Eagle through the outlet channel between Spotted Eagle and the Tongue River in 2007 (Backes, 2008). A very significant rain storm increased the volume and depth of water in the outlet channel providing a migration route for some species from the Tongue River. The prolonged high water in the Tongue and Yellowstone Rivers in spring 2011 allowed fish from the Tongue River to migrate into Spotted Eagle through both the outlet channel and across the floodplain. River species found in abundance in Spotted Eagle during 2012 samples include river carpsucker, smallmouth buffalo, and common carp. Bigmouth buffalo, shorthead redhorse, and goldeve were also found in low densities. A total of 573 non-target fish of eight species were removed from Spotted Eagle using netting and electrofishing methods in July of 2012 to benefit the sport fish populations (Table 4).

Species	7/13	7/16	7/17	7/18	7/19	Total
River carpsucker	97	87	27	13	7	231
Common carp	19	68	49	38	22	196
Smallmouth buffalo	26	20	9	9	4	68
Black bullhead	7	11	7	3	7	35
Bigmouth buffalo	4	7	7	9	4	31
Shorthead redhorse sucker	4	2	0	0	0	6
Goldeye	0	0	0	1	3	4
Yellow bullhead	2	0	0	0	0	2
					Total	573

Table 4. Summary of non-target fish mechanically removed from Spotted Eagle in July 2012.

Forty-four adult channel catfish ranging from three to six pounds were transferred from the Yellowstone River to Spotted Eagle in 2012. Walleye and northern pike were also transferred from the Yellowstone River to Spotted Eagle in the fall of 2012. Yellow perch were transferred to Spotted Eagle from Johnson Reservoir. Removal of river species like river carpsucker, common carp, smallmouth buffalo, bigmouth buffalo, goldeye, and shorthead redhorse sucker and transfer of sport fish should increase angler success and provide an opportunity to catch trophy-sized fish (Tables 4 and 5).

		Mean total	Mean	Length	Weight
Species	Count	length (in)	weight (lbs)	range (in)	range (lbs)
Yellow perch	1774	6	1/8	4 to 8	1/20 to 1/4
Channel catfish	44	21	4	13 to 26	3 to 6
Northern pike	10	24	3	22 to 27	2 to 5
Walleye	6	16	2	13 to 22	1 to 4

Table 5. Summary of sport fish transferred to Spotted Eagle in 2012.

Dawson County

Six total species were collected in Hollecker Lake when sampled in 2012. Largemouth bass, fathead minnow and rainbow trout are the only species stocked by FWP since it was drained in the fall of 2005. All other species present entered Hollecker through the irrigation water supply or from illegal introductions. Besides bluegill the relative abundance of any one non-target species is low and at this point will likely not reduce the success of stocked species.

Bluegills, a non-target species being abundant and vulnerable to angling have created opportunity for anglers, particularly young anglers. **Hollecker Lake Kid's Fishing Pond Proposal** contains a detailed description of proposed management for this pond (Appendix 2). The original proposal was to create a bass/perch fishery however bluegill have created opportunity and are likely a suitable alternative to yellow perch. If this opportunity is lost or the bass population declines significantly and undesirable species dominate the assemblage the management plan allows pond rehabilitation by mechanical draining.

The pre-spawn wild fish transfer of yellow perch to Johnson Reservoir from South Sandstone Reservoir in 2010 was successful. Aquatic nuisance species (ANS) and disease testing was completed so Johnson Reservoir could be used as a transfer source for yellow perch in 2012. A total of 1774 yellow perch were transferred to Spotted Eagle from Johnson Reservoir in 2012 (Table 5). Yellow perch that were transferred averaged six inches. Adult white suckers were found in Johnson while netting for perch transfers in 2012 (Table 6). Pre-spawn white and black crappies were transferred to Rattlesnake from South Sandstone Reservoir in 2012.

A pond owned by Burl and Vicki Beley was inspected by region seven staff on May 8, 2012. The pond was too shallow to stock with fish and turned out to be located in region six. The owners and region six staff were contacted with the results of the inspection.

Fallon County

Baker Lake partially winter killed during the winter of 2010/2011. Sampling in late May 2011 found black bullheads and northern pike but indicated that the pre-spawn yellow perch transfer in 2010 either failed to establish or winterkilled. Pre-spawn yellow perch were transferred from South Sandstone Reservoir again in 2012 but will not likely survive the winter as the water level at Baker Lake was very low going into the winter of 2012/2013. Northern pike, black bullheads, and a few black crappie and yellow perch were found in 2012 gill net and seine samples.

Black bullheads were illegally established in both Pinnow ponds sometime between 2004 and 2010. This is the second illegally stocked species at these ponds following green sunfish appearance in 2004. Successful reproduction of both of these species is preventing survival and growth of rainbow trout. Bullheads still appear to be in low numbers at Pinnow #1 with seven found in 2011. Trout are still doing well in Pinnow #1 and are more abundant than green sunfish and bullheads. Pinnow #2 is dominated by non-target green sunfish and black bullheads with trout found in low numbers. Future success of rainbow trout is unlikely as long as the other species persist. Trout will be stocked until sampling indicates survival and growth of the trout is completely compromised by the presence of the other species.



Figure 1. Catch per gill net for northern pike, walleye, yellow perch and black bullhead in South Sandstone Reservoir, 1990-2012.

Black bullhead catch rates have been declining but continue to be the most abundant species in gill nets at South Sandstone Reservoir (Figure 1). Catch rates for yellow perch have also been low in recent years but size structure is improving. Yellow perch caught in gill nets averaged eight inches and some were over 10 inches in 2012. Bullhead abundance and frequent removal of yellow perch by FWP staff for transplant has likely contributed to reducing perch abundance. Angler opportunity for yellow perch, northern pike, and crappie at South Sandstone continue to make this reservoir one of the best in the region.

Garfield County

In spite of adequate water levels, trout were not surviving at Childers Pond because of excessive nutrient levels from turkey and livestock manure and potentially a leaking septic system. The landowner committed to reducing nutrient run-off into the pond after suggestions from FWP in 2008. Sampling in 2010 failed to document trout survival. Like many ponds in the region Childers spilled for an extended period of time during the spring of 2011. Rainbow trout sampled in 2012 averaged 11 inches.

Largemouth bass averaged eight inches at Chamberlain #1 in 2012. Common carp were found in Chamberlain #2 but channel catfish and yellow perch were absent from samples. A transfer of black and white crappie will be attempted in 2013. Rainbow trout averaged 12 inches in Chamberlain #3. The

dam at Bobby Phipps pond washed out in the spring of 2011. Sampling at Cottonwood found largemouth bass and yellow perch as well as white sucker and common carp.

Powder River County

Rainbow trout up to 11 inches were found in Samualson #2. Roerick trout pond had 10 inch trout. Two size classes were found in Losinski #3 in 2012, but pond had only three feet of water and will likely winter kill. Fish were not found in Gaskill #1, Gaskill #2, Samualson #1, or Sidney Samualson ponds. Rainbow trout in Samualson #2 averaged nine inches. The upland area around Wilbur Creek Reservoir on the Custer National Forest and both Gaskill ponds burned in 2012. Wilbur Creek reservoir on the forest was checked only for depth. The reservoir had lost three feet of water since 2011. The burned upland area surrounding the ponds will result in silt accumulation in the ponds in the short term and water retention in post fire ponds has historically been poor.

Prairie County

Water levels had prohibited stocking and fish survival in many of the Cherry Creek ponds after the recent drought period. Rain and snow melt in spring 2011 filled the Cherry Creek ponds. Sampling of Clarks, Reukauf (Harms), Homestead, and South Fork found trout in 2012. Rainbow trout up to three pounds were found in South Fork and trout up to four pounds were found in Homestead. All 26 northern pike transferred into Homestead in spring 2012 were tagged with yellow floy brand T-style tags. Northern pike and rainbow trout were caught at Homestead by fisherman in 2012. No tag returns have been reported from Homestead northern pike. Transfer of additional yellow perch to Homestead may be considered in 2013.

Richland County

Natural reproduction for northern pike has been generally successful at Gartside Reservoir. Northern pike stocking was discontinued in 2004 to evaluate natural spawning and recruitment at Gartside Reservoir. The lake level at Gartside was reduced by 10 vertical feet to facilitate the construction of a fishing pier in 2010. Numbers of northern pike in the 2010 sample were above average likely a function of increased sampling gear efficiency due to the reduced pool level. Catch rates of northern pike were back to average in 2012 after a low dip in 2011 (Figure 2). This trend should continue to be monitored to determine if the relative abundance difference between the 2011 sample and past samples reflects sampling bias due to environmental manipulation or if the trend reflects a biologically significant change in the population.



Figure 2. Catch rate fish per gill net for walleye, northern pike, largemouth bass, and yellow perch from Gartside Reservoir, 1991-2012.

Gartside Reservoir received 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 structures 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 muskie 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 EA and stocking proposal has expired for tiger muskellunge at Gartside. Survival of the first stocking in 2006 was not successful and survival of the 2010 stock coincided with a year of record high northern pike catch rates. Three tiger musky were sampled in 2011 gill net and seine haul efforts, but none were sampled in 2012.

Kuester Reservoir is no longer public and has been removed from both region six and seven pond booklets. The dam has been leaking and the owner is looking for assistance in repairing the dam. Conversation has been initiated between FWP staff and Rick Baldwin owner of Kuester about the possibility of restoring public recreational opportunity at the site. This pond falls in region six and will be managed under their pond program if a successful arrangement can be made between FWP region six staff and the landowner in the future.

Rosebud County

Big Timber trout pond had rainbow trout up to 10 inches. Ed Grebe # 2 had rainbow trout up to two pounds and average length was 14 inches. The pond only had seven feet of water depth at time of sample and is likely to winter kill. Ed Grebe #1 had only two feet of water in it and it appeared that trucks had been hauling away water from the pond. A.G. Lee Pit and A.G. Lee Pit #2 had very little water the only fish found were a few fathead minnows in A.G. Lee Pit #2. The landowner was consulted and these two ponds will no longer be managed for fish. Green sunfish were abundant in A.G. Lee #2 and Al Lee requested planting a predator in the pond. Since bass have struggled to overwinter in the shallow pond northern pike will be stocked in 2013.

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. Management decided to reduce annual walleye stocking rates from 5,000 fingerlings to 1,000 fingerlings in 1997 to improve bluegill abundance (Stewart 1996). Review of old 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 (Figure 3).



Figure 3. Catch per gill net for bluegill, walleye, northern pike and largemouth bass from Castle Rock Lake, 1981-2012.

Treasure

Lake Harold is located in Treasure County, and was recently renovated by the landowner. The pond is small in size but was considered for the pond program because of limited fishing opportunities in Treasure County. This is the only pond stocked by FWP in Treasure County in the last 20 years. Sampling in 2009 found black crappie, common carp, green sunfish, river carpsucker and white sucker. These species were presumably introduced through the Yellowstone Irrigation Canal, the ponds 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 value of the site. Nine to ten inch yellow perch and five to six inch black crappies were found when Lake Harold was sampled in 2012.

<u>Wibaux</u>

White suckers, golden shiners, and fathead minnows were abundant at Wibaux Pond in 2010. Yellow perch transplanted from South Sandstone Reservoir to Wibaux Pond in June 2010 were present and in excellent condition in July 2010. A seine haul made in 2011 found no yellow perch but yielded suckers and minnows.

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Date: February 2013

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

Literature Cited

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- Backes, K. M. 2008. Southeastern Montana Warmwater Lakes Investigations. Federal Grant Job Progress Report. F-113-R-7.
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Table 6. Results of sampling managed reservoirs	reservoirs in	2012.							
		Depth				Mean	Mean	Length	Weight
		/Full	Type of		Number	Length	Weight	Range	Range
Reservoir Name	Date	(feet) *	Sample	Species	Caught	(mm)	(gr)	(mm)	(gm)
				Carter County					
Cheeseman	9/11/2012	9/4	hook and line	green sunfish	10	138	58	108-191	20-130
Exie Pond	9/11/2012	8/1	hook and line	green sunfish	58	150	71	120-172	40-100
				yellow perch	9	200	116	188-216	100-140
Frigid Reservoir	9/10/2012	8/5	hook and line	rainbow trout	11	326	318	315-340	220-400
Hansen Reservoir	9/11/2012	12/4	gillnet (2)	black bullhead	4	199	135	178-212	100-150
				green sunfish	23	144	65	107-180	20-130
				rainbow trout	23	271	194	228-370	70-450
				white sucker	2	320	435	308-331	420-450
MacNab	9/10/2012	18/1.5	hook and line	no fish					
Sidney Reservoir	9/10/2012	?/5	hook and line	rainbow trout	6	424	785	380-480	600-960
Spring Canyon	9/11/2012	11/0	hook and line	rainbow trout	13	251	148	192-303	70-260
West Plum	9/11/2012	9/2.5	gillnet (1)	no fish					
				Custer County					
Dean S	9/11/2012	8/6	hook and line	rainbow trout	5	258	218	225-284	160-260
Ft. Keogh	9/20/2012	2/7	hook and line	no fish					
Henry Haughian #1	8/29/2012	13+/5	hook and line	rainbow trout	13	333	484	183-410	60-800
Rest Reservoir	4/26/2012	17/9	seine haul (1)	rainbow trout	2	250	200	235-264	150-250
Spotted Eagle	6/20/2012	10/0	seine haul (5)	sunfish hybrid	1	135	60	135	60
				bluegill	30	114	40	63-160	10-110
				common carp	1	433	970	433	970
				crappie	64	152	64	66-214	10-140
				freshwater drum	2	123	30	115-131	20-40
				emerald shiner	15	89	6	75-97	5-10
				green sunfish	2	123	35	120-126	30-40
				pumpkinseed	4	105	28	86-128	10-40
				river carpsucker	4	451	1900	285-602	380-4200
				shorthead redhorse	1	346	470	346	470
				smallmouth bass	1	96	10	96	10
				smallmouth buffalo	1	444	1480	444	1480
				walleye	2	211	100	143-279	40-160
				white sucker	1	254	180	254	180
				yellow perch	2	139	35	132-145	30-40
				yoy crappie	5	53		45-64	
				yoy yellow perch	4				
	6/21/2012	10/0	fyke net (6)	bluegill	2	133	50	124-142	40-60
				black bullhead	6	200	118	151-263	50-240
				black crappie	149	180	92	78-299	10-430
				bigmouth buffalo	1	162	80	162	80
				channel catfish	10	413	667	312-597	240-2280
				crappie	68	164	78	73-316	10-480
				goldeye	4	340	343	328-351	310-370
				green sunfish	1	124	40	124	40
				northern pike	4	806	4093	682-990	1900-8200
				pumpkinseed	1	122	30	122	30
				river carpsucker	7	467	2223	173-619	80-3990
				smallmouth bass	1	107	20	107	20
				walleye	6	305	283	209-392	70-540
				white crappie	57	183	86	127-288	20-410
				yellow bullhead	4	229	170	194-265	90-250

Table 6. Continued									
		Depth				Mean	Mean	Length	Weight
		/Full	Type of		Number	Length	Weight	Range	Range
Reservoir Name	Date	(feet) *	Sample	Species	Caught	(mm)	(gr)	(mm)	(gm)
Spotted Fagle	6/28/2012	10/0	Electrofishing	bluegill	18	126	45	64-168	5-100
Spotted Engle	0/20/2012	10/0	Lavenousing	black bullhead	4	208	135	190-226	100-180
				black crappie	2	134	53	70-197	5-100
				bigmouth buffalo	2	583	4175	545-620	3050-5300
				common carp	9	383	751	338-425	520-1100
				freshwater drum	4	179	140	122-343	20-500
				emerald shiner	5	103	11	90-126	5-20
				green sunfish	1	71	5	71	5
				largemouth bass	4	292	555	121-400	20-1040
				pumpkinseed	3	116	30	104-126	20-40
				river carpsucker	17	370	919	116-451	20-1500
				sauger	3	131	17	127-136	10-20
				shorthead redhorse	3	310	347	283-351	260-480
				smallmouth bass	1	110	20	110	20
				smallmouth buffalo	1	505	1950	505	1950
				walleve	6	247	145	197-345	50-360
				white crappie	3	175	60	169-180	50-70
				white sucker	1	215	100	215	100
				vellow bullhead	1	177	80	177	80
				vellow perch	8	149	40	138-156	40
Haughian Bass	4/5/2012		fish transfer	vellow perch	205	279	144	150 150	-10
Thughan Duss	4/3/2012		hish d'anister	Jenow peren	205	217	111		
				Dawson County					
Hollicker	8/9/2012		seine haul (1)	bluegill	98	117	21.5	101-138	10-40
Tiometer	0/ // 2012		Selle Intel (1)	largemouth bass	5	306	388	245-345	210-580
				hybrid sunfish	1	138	30	138	30
				white crappie	6	120	20	80-154	15-30
				vellow perch	3	120	20	132-145	10-30
				yoy bluegill	30	81	20	50-99	10-50
			gillnet (2)	river carpsucker	1	01		50-77	
			gillitet (2)	white crannie	6	193	95	131-259	15-200
				vellow perch	1	146	30	146	30
Iohnson	8/3/2012		fyke net (2)	vellow perch	1465	146	44	113-187	20-90
301113011	10/4/2012		fyke net (2)	vellow perch	309	183	74	140-209	30-110
	10/4/2012		lyke het (3)	white sucker	6	105	/ +	140-207	30-110
Pattlesnake	4/5/2012		fich transfer	black crappie	10	253	282		
Burl & Vicki Belev	5/8/2012	8 5/2	inspection	оваек старри	17	233	202		
Durie Vicki Deky	5/0/2012	0.5/2	Inspection						
				Fallon County					
South Sandstone	7/23/2012		gillnet (3)	black bullbead	113	217	180	173-250	80-300
South Sandstone	112512012		gilliet (3)	black crappie	2	217	275	270-271	270-280
				northern nike	<u> </u>	557	1350	340-670	270-2300
				wallow	- -	202	×10	220 542	00 1520
				walleye	57	202	127	128 265	40,200
			coino baul (1)	Jargamouth bass	0	135	52	116 160	30,130
			Sellie Haul (4)	northern nike	2	133	145	131 456	400 400
				numpkinseed	ے 1	120	440	120	400-490
				vallow perch	1 60	150	52	04 227	10 160
				block bullbacd	1	221	190	24-237	10-100
				orannia vev	1	221	180	22.20	160
				crappie yoy	10	33		33-39	
				yoy largemouth bass	12	4/		30-03	
				yoy yellow perch	262	57		46-67	

Table 6. Continued									
		Depth				Mean	Mean	Length	Weight
		/Full	Type of		Number	Length	Weight	Range	Range
Reservoir Name	Date	(feet) *	Sample	Species	Caught	(mm)	(gr)	(mm)	(gm)
Baker Lake	7/26/2012		seine haul (1)	northern pike	1	430	440	430	440
				black bullhead	3	323	737	316-329	730-750
				yoy black bullhead	537	94		78-131	
			gillnet (1)	black bullhead	12	294	548	115-353	10-850
				black crappie	2	303	435	300-305	430-440
				northern pike	8	524	873	460-725	500-2250
				yellow perch	3	251	260	233-270	150-350
				Garfield County					
Chamberlain #1	9/12/2012	4/2	gillnet (1)	largemouth bass	11	210	191	135-367	30-720
Chamberlain #2	9/12/2012	26/2	gillnet (2)	common carp	1	160	50	160	50
Chamberlain # 3	9/12/2012	20/4	gillnet (2)	rainbow trout	13	310	364	186-418	60-800
Cottonwood	9/12/2012	12/5	gillnet (2)	common carp	12	259	218	238-285	160-290
				largemouth bass	2	255	220	242-267	170-270
				white sucker	1	350	420	350	420
				yellow perch	17	198	103	153-279	40-280
Ross Childers	9/12/2012	26/3	gillnet (1)	rainbow trout	6	276	406	180-390	80-850
				Powder River County					
Gaskill #1	10/2/2012	9/4	hook and line	no fish					
Gaskill #2	10/2/2012	7/6.5	hook and line	no fish					
Losinski Pond	10/3/2012	3/11	hook and line	rainbow trout	4				
Roerick Trout Pond	10/2/2012	6.5/2	gillnet (1)	rainbow trout	2	248	155	243-252	130-180
Samuelson #1	10/2/2012	10/3.5	hook and line	no fish					
Samuelson #2	10/2/2012	6/3	hook and line	rainbow trout	13	223	210	193-272	150-320
Sidney Samuelson	10/2/2012	7/8	hook and line	no fish					
Wilbur Creek	10/3/2012	6/3		depth check					
				Prairie County					
Clarks Reservoir	8/6/2012		hook and line	rainbow trout	15	321	335	290-353	220-440
Harms Reservoir	8/29/2012	6/7	hook and line	rainbow trout	35	330	399	300-370	330-480
Marshall Reservoir	9/20/2012	10/4	hook and line	largemouth bass	14	252	246	220-271	170-300
Silvertip Reservoir	8/29/2012	11/4	depth check						
South Fork Reservoir	8/6/2012		hook and line	rainbow trout	15	434	1128	380-475	880-1400
Homestead Resevoir	4/3/2012		fish transfer	yellow perch	117	201	144		
				northern pike	26	513	856		

Table 6. Continued									
		Depth				Mean	Mean	Length	Weight
		/Full	Type of		Number	Length	Weight	Range	Range
Reservoir Name	Date	(feet) *	Sample	Species	Caught	(mm)	(gr)	(mm)	(gm)
				Richland County					
Gartside Reservoir	8/9/2012		gillnet (2)	bluegill	2	98	8	96-99	5-10
				northern pike	6	562	1257	417-745	500-2470
			seine haul (3)	bluegill	244	141	46	122-163	30-70
				largemouth bass	15	133	20	106-159	10-50
				hybrid sunfish	1	185	170	185	170
				yellow perch	177	122	18	100-159	10-40
				black crappie	3	193	120	133-225	30-170
				yoy bluegill	7	61		53-71	
				yoy largemouth bass	51	81		48-100	
				yoy yellow perch	5	96		89-99	
				Rosebud County					
Big Timber Trout	9/19/2012	16/6	hook and line	rainbow trout	11	246	186	227-263	160-220
Castle Rock Lake	7/30/2012		gillnet (3)	bluegill	5	158	88	130-180	40-130
				black crappie	4	115	23	110-123	20-30
				largemouth bass	2	240	240	230-250	230-250
				northern pike	5	399	402	280-515	100-800
				walleye	17	388	588	260-520	120-1600
			seine haul (4)	bluegill	299	125	46	100-239	10-320
				black crappie	54	123	38	76-193	10-120
				largemouth bass	68	130	45	94-241	5-250
				yoy bluegill	540	71		37-101	
				yoy largemouth bass	17	91		48-99	
Ed Grebe #1	9/19/2012	2/4	depth check						
Ed Grebe #2	9/19/2012	7/5	hook and line	rainbow trout	71	363	582	310-416	360-850
A.G Lee #2	7/3/2012		gillnet (1)	green sunfish	286	126	65	98-177	20-150
A.G Lee Pit	7/3/2012		seine haul (1)	no fish					
A.G Lee Pit #2	7/3/2012		seine haul (1)	fathead minnow	6				
				Treasure County					
Lake Harold	7/3/2012	full	gillnet (1)	yellow perch	7	228	166	213-255	140-200
				western silvery minnow	1	220	100	220	100
			fyke net (1)	yellow perch	2	233	175	230-235	170-180
				black crappie	15	140	41	123-160	30-60
				green sunfish	2	114	45	92-136	30-60

Appendix 1. 2012 Miles City Hatchery Stocking Summary

Appendix 2. 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, 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 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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