

**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: 2012 (July 1, 2011 through June 30, 2012)

REPORT PERIOD: April 1, 2011 through March 30, 2012

ABSTRACT

Ten new ponds and 39 managed ponds were visited in 2011 to evaluate the status of the fisheries. New ponds stocked in 2011 included John Wielgosh (largemouth bass) and Madrie Baker (rainbow trout). New ponds to be stocked in 2012 with rainbow trout (Arlee strain) include Lyle Lake (Randy Wolentz), Dick Gaskill #1, and Norman Samualson #2. New ponds to be stocked with largemouth bass in 2012 include Dick Gaskill #2, Norman Samualson #1, and Sid Samualson. Twenty eight of the managed ponds had fishable populations of target species, seven were checked for depth only, three were void of fish and one contains a readily available bait source. Wild fish were transferred into five ponds by Montana Fish, Wildlife & Parks (FWP) in 2011. Crappie from Tongue River Reservoir were transferred into Wadsworth Pond and Dry Blood Reservoir in region 4, as well as Flintstone and Doll's Kids Pond in region 6. Black bullheads were transferred from South Sandstone Reservoir into Cody Taylor Pond in region 7. Non-target species (species not stocked by FWP) were found at MacNab, and Vic Hansen ponds in 2011. Snow melt and abundant rain in spring 2011 refilled ponds or reservoirs across the region and provided opportunity for restocking and wild fish transfers. There were some negative effects of the abundant water year. The dams of Beardsley bass pond and Bobby Phipps pond washed out in the spring of 2011.

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. 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 total length and weight were recorded for a sub-sample of 20 fish of each species. Pond locations were documented using township, range and section and GPS coordinates in decimal degrees.

RESULTS AND DISCUSSION

Wild Fish Transfer and Hatchery Stocking

Fish winterkill was significant in some waters located in Dawson, Fallon, and Wibaux counties during the winter of 2009/2010. Wild fish were transferred to reestablish a fishery in multiple ponds (Table 1). Adult yellow perch were transferred from South Sandstone Reservoir to Baker Lake, Wibaux Pond, Johnson Dam, Lake Harold, Spotted Eagle and Lindsay Pond in April or June 2010. Small numbers of young-of-year perch were also transferred with the adults to each pond. Adult white and black crappies were also transferred from Tongue River Reservoir to Baker Lake and Rattlesnake Reservoir in April 2010.

	Receiving			Number	Donor	
Date	Water	County	Species	Transferred	Water	County
4/14/2010	Baker	Fallon	yellow perch	2000	South Sandstone	Fallon
4/16/2010	Johnson	Dawson	yellow perch	300	South Sandstone	Fallon
4/28/2010	Rattlesnake	Dawson	crappie	550	Tongue River Reservoir	Big Horn
4/30/2010	Baker	Fallon	crappie	280	Tongue River Reservoir	Big Horn
6/11/2010	Wibaux	Wibaux	yellow perch	893	South Sandstone	Fallon
6/14/2010	Lake Harold	Treasure	yellow perch	277	South Sandstone	Fallon
6/22/2010	Lindsay	Dawson	yellow perch	412	South Sandstone	Fallon
6/23/2010	Lake Harold	Treasure	yellow perch	254	South Sandstone	Fallon
9/20/2010	Spotted Eagle	Custer	channel catfish	30	Yellowstone River	Custer
6/3/2011	Wadsworth Pond	Cascade	crappie	200	Tongue River Reservoir	Big Horn
6/29/2011	Flintstone Reservoir	Phillips	crappie	15	Tongue River Reservoir	Big Horn
6/29/2011	Doll Kids Pond	Phillips	crappie	15	Tongue River Reservoir	Big Horn
7/29/2011	Cody Taylor Pond	Custer	black bullhead	100	South Sandstone	Fallon
10/19/2011	Dry Blood Reservoir	Petroleum	crappie	200	Tongue River Reservoir	Big Horn

Table 1. Wild fish transfers conducted in 2010 and 2011.

Wild fish were transferred into five ponds by Montana Fish, Wildlife & Parks (FWP) in 2011. Crappie from Tongue River Reservoir were transferred into Wadsworth Pond and Dry Blood Reservoir in region 4, as well as Flintstone and Doll's Kids Pond in region 6. Black bullheads were transferred from South Sandstone Reservoir into Cody Taylor Pond in region 7 (Table 1).

The winter of 2010/2011 was even harsher than the previous winter in most areas of Eastern Montana and 2011 sampling demonstrated variable success for 2010 wild fish transfers. Baker Lake, Rattlesnake, and Lindsay are again in need of wild fish transfers for the 2012 season. Channel catfish were sampled in good numbers in Spotted Eagle and yellow perch have survived and reproduced at Johnson. Aquatic nuisance species (ANS) and disease testing was completed on Johnson and the pond will serve as a transfer source for yellow perch in 2012.

Date	Water Name	Number	Length	Hatchery	Latitude	Longitude	Strain
4/28/2011	Mud Turtle	1012	7.7	Bluewater Springs	45.28150	-105.96930	Arlee
4/28/2011	Roerick	219	7.7	Bluewater Springs	45.37556	-105.30163	Arlee
5/9/2011	Hollecker	314	8.2	Bluewater Springs	47.12810	-104.72890	Arlee
5/9/2011	McNabb	2016	8.2	Bluewater Springs	45.81575	-104.42258	Arlee
10/3/2011	Dean S	494	4.1	Big Springs	46.37900	-105.66570	Arlee
10/3/2011	Madrie Baker	494	4.1	Big Springs	47.17223	-106.76298	Arlee
10/3/2011	Rest	988	4.1	Big Springs	46.42405	-105.08134	Arlee

Table 2. Catchable rainbow trout stockings in 2011.

Seven trout ponds were stocked with catchable trout (7-9 inches long) from Bluewater and Big Springs hatcheries (Table 2) in 2011. Miles City Hatchery stocked: trout fry (2 inches long) into 51 ponds, and walleye fry and fingerlings into 3 ponds (Appendix 1) in 2011.

Survey of New Ponds

Pond Name	County	Pond Location			Depth	Depth	Management	Actions
		TRS	Latitude	Longitude	(feet) *	(feet)**	Plan	
John Wielgosh	Dawson	T18 R51 S10	N47.32771	W105.20498	10	0	Largemouth bass	Stocked Aug. 2011
Randy Wolentz	Fallon	T4N R60E S17	N46.11037	W104.30511			Trout	To be stocked 2012
Madrie Baker	Garfield	T16N R39E S2	N47.17223	W106.76298			Trout	Stocked Oct. 2011
Scott Ross	Garfield				11			Owner decided not to stock
Dick Gaskill #1	Powder R.	T2S R48E S9	N45.67176	W105.81429			Trout	To be stocked 2012
Dick Gaskill #2	Powder R.	T2S R48E S16	N45.65892	W105.81396			Largemouth bass	To be stocked 2012
Norman Samuelson #1	Powder R.	T3S R48E S8	N45.58587	W105.83275	16	2	Largemouth bass	To be stocked 2012
Norman Samuelson #2	Powder R.	T3S R48E S18	N45.57032	W105.85175	10	2	Trout	To be stocked 2012
Sid Samuelson	Powder R.	T4S R48E S12	N45.50185	W105.74866	14	1	Largemouth bass	To be stocked 2012
Wilbur Creek Res.	Powder R.	T3S R47E S5			9	0		Recheck water level in 2012
* Water depth when sampled.								
** Depth between current water level and normal high water mark.								

Table 3. Summary of new ponds visited in 2011.

Ten new ponds were inspected in 2011. Schorsch Dam in Fallon County that was stocked with bass in 1960 will be stocked with trout and be called Lyle Lake (Randy Wolentz). John Wielgosh pond in Dawson County was previously stocked with bass by FWP then abandoned due to low water levels. It will be restocked with bass now that it has adequate water. Six ponds were inspected in Powder River County. These ponds ranged from 9-16 feet deep and five of the seven will be stocked in 2012. Norman Samuelson will have a bass pond and a trout pond, Sidney Samuelson will have a bass pond, and Dick Gaskill will have a trout pond and a bass pond (Table 3). Wilbur Creek Pond on Forest Service land will not be stocked at this time. The maximum potential depth of this pond is nine feet deep. Two new ponds were inspected in Garfield County, Madrie Baker and Scott Ross. Madrie Baker was stocked with trout in the fall of 2011 but will not be added to the 6-year stocking plan until it is sampled in 2012 (Table 3). Ponds associated with three landowners have been taken out of consideration for inclusion in the ponds program until the landowners initiate forward progress. Scott Ross was inspected and should be stocked if the landowner decides to commit to the program. Zemple Pond in Rosebud County should be stocked if Redge Hall and family commit to the program. Terry and Kay Fox requested inspection of three ponds in Custer County, but Terry passed away before a site visit was scheduled.

Survey of Managed Ponds

Carter County

Doug Gardner had trout that averaged 11 inches and Doug Gardner #2 had largemouth bass that averaged 13 inches. Both Gardner ponds had yellow perch that averaged 7 inches in 2011. Northern pike in Talcott averaged 21 inches but yellow perch were small averaging 3.6 inches.

Angling and visual survey of Cheesman found no fish. Black Bullheads were found in Bucholtz, MacNab, and Hansen ponds. Bullhead presence continues to stifle growth of rainbow trout in MacNab and their presence in Vic Hansen will likely hinder success of fingerling trout plants in the future. In 2011 the allocation of catchable trout for MacNab will be split and shared with Vic Hansen. Spring Canyon had 9 inch trout in 2011.

Custer County

Dean S and Rest reservoirs have been chronically dewatered but were full after spring 2011 and were restocked in the fall. Trout were present at Beardsley and Boulware ponds in 2011 and water depth is adequate to support the fisheries (Table 4). Black bullheads were transferred from South Sandstone Reservoir to Cody Taylor Pond in July 2011.

Haughain Bass Pond suffered winterkill for the second year in a row. Only one perch was surveyed in May. The landowner does not want pike replanted. Bass were replanted in July and perch will be transferred in 2012 or 2013. Beardsley Bass Pond dam washed out in the spring, but 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. Increased public use of Spotted Eagle demands continued monitoring and improvements to the fishery. A Christmas tree reef, consisting of 200 trees, was added to Spotted Eagle in 2011. This was the seventh consecutive year for this effort. Approximately 30 adult channel catfish ranging from 5–13 pounds were transferred from the Yellowstone River to Spotted Eagle in 2010, the same approximate number and sizes of fish were seen in fyke nets when surveyed in June 2011. This increased the opportunity for anglers to catch a trophy-sized fish. Goldeye were collected in Spotted Eagle for the first time in 2008 and were also present in 2010 and 2011 in low numbers. They entered Spotted Eagle through the outlet channel between Spotted Eagle and 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. Sport fish in Spotted Eagle would likely benefit from removal of river species like river carpsucker, common carp, smallmouth buffalo, bigmouth buffalo, goldeye, and shorthead redhorse sucker.

Dawson County

The number of non-target species is increasing at Hollecker Pond. Seven total species were collected when sampled in 2011. 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.

Bluegill, a non-target species are abundant and very vulnerable to angling and thus have created opportunity for anglers, particularly young anglers. 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. **Hollecker Lake Kid's Fishing Pond Proposal** contains a detailed description of proposed management for this pond (Appendix 2).

The pre-spawn wild fish transfer of yellow perch to Johnson reservoir from South Sandstone in 2010 was successful. Sampling in 2011 demonstrated multiple year classes and abundant numbers of yearling fish with an average size of 6 inches. Aquatic nuisance species (ANS) and disease testing was completed on Johnson and the pond will serve as a transfer source for yellow perch in 2012. Lindsay pond continues to have yellow perch, northern pike, and walleye but abundances are low in comparison to common carp and black bullhead. Gill nets set for multiple nights at Rattlesnake found no fish.

Fallon County

Baker Lake partially winterkilled again 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.

Sampling of Meccage found sunfish up to 6 inches long (Table 4). The landowner was contacted about possibly stocking a predator on top of the sunfish but was content to leave things as they currently are.

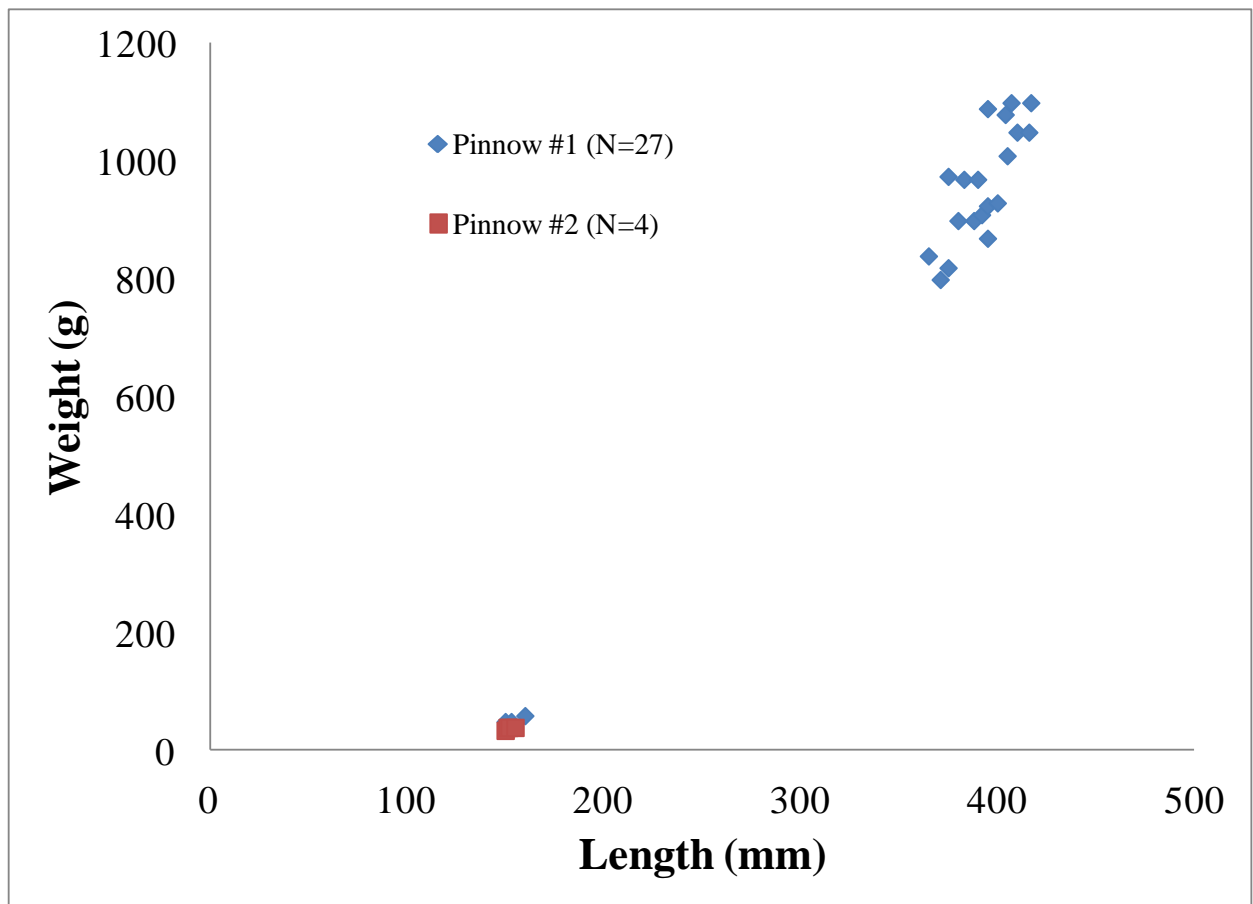


Figure 1. Length/weight scatterplot of rainbow trout from gill nets at Pinnow ponds 2011.

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 will prevent survival and growth of rainbow trout. Bullheads still appear to be in low numbers at Pinnow #1 with 7 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. A scatter plot of trout from both ponds demonstrates the progressively negative impact of bullheads and sunfish on trout growth at Pinnow #2 (Figure 1). 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.

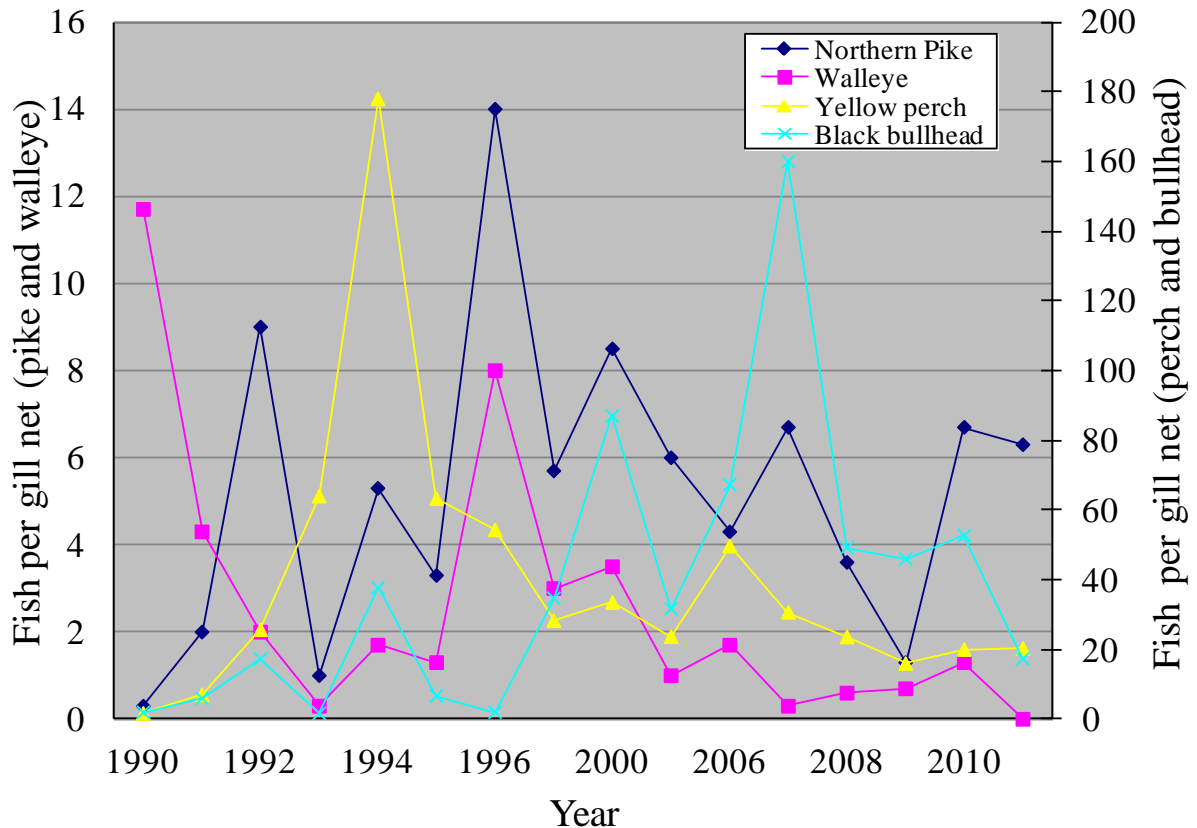


Figure 2. Catch per gill net for northern pike, walleye, yellow perch and black bullhead in South Sandstone Reservoir, 1990-2011.

Black bullhead catch rates have been declining but continue to be the most abundant species in gill nets at South Sandstone (Figure 2). Catch rates for yellow perch have also been low in recent years but size structure is improving. Bullhead abundance and frequent removal of yellow perch by FWP staff for transplant has likely contributed to reducing perch abundance. However, anglers reported good success on numbers and size of yellow perch in 2011. Catch rates of northern pike have been better than long term average in the last two years and the 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

Despite adequate water levels, trout are not surviving at Childers Pond. Excessive aquatic vegetation growth from turkey and livestock manure and potentially a leaking septic system has prevented fish survival at this pond for several years. 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 and the landowner reported some fish being caught in the fall of 2011 and no obvious fish kill after ice out spring 2012. Landowner has requested crappie be stocked after seeing trout are surviving. Staff will continue to monitor this pond on an annual basis and if trout continue to survive a wild fish transfer for crappie will be attempted.

Rainbow trout averaged five to six inches in samples at Clyde Saylor, K.V. Watt, and Dan Meckel #1 in 2011. Largemouth bass averaged seven inches at Dale Kreider #1. The dam at Bobby Phipps pond washed out in the spring of 2011.

Powder River County

Rainbow trout were present in both Mud Turtle and Losinski #3 in 2011.

Prairie County

Water levels had prohibited stocking and fish survival in many of the Cherry Creek ponds after the recent drought period. Disabling the aerator at Clark's successfully winterkilled the largemouth bass during the 2009/2010 winter. Trout were stocked in 2010 and survival was presumed to be minimal considering a maximum water depth of three feet. Rain and snow melt in spring 2011 filled Clark's as well as the other Cherry Creek ponds and ice angling at Clark's during winter 2011/2012 yielded two year classes. Reukauf (Harms), Homestead, and South Fork were stocked with trout in 2011. Two gill net sets in 2011 found no fish at Marshall. Silvertip and Marshall were restocked with bass in 2011. Rainbow trout averaging six inches were caught in Ayer's pond.

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 moderately low in 2011 compared to the long term relative abundance and dramatically lower compared to 2010 relative abundance (Figure 3). 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.

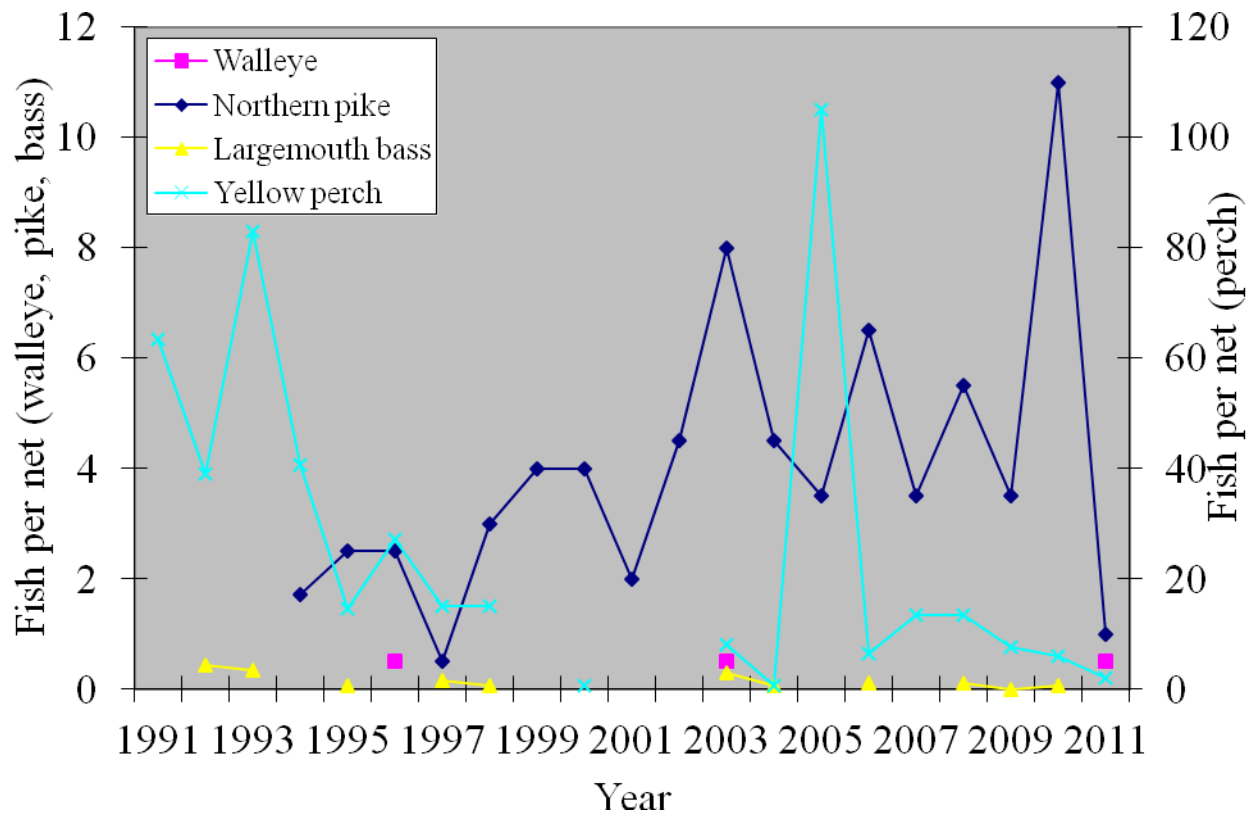


Figure 3. Catch rate fish per gill net for walleye, northern pike, largemouth bass, and yellow perch from Gartside Reservoir, 1991-2011.

Gartside Reservoir received 400, tiger muskellunge approximately ten 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 5-year stocking proposal, (Backes 2006). Tigers 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 however three tiger musky were sampled in 2011 gill net and seine haul efforts.

Kuester Reservoir is no longer public and has been removed from both Region 6 and 7 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 6 and will be managed under their pond program if a successful arrangement can be made between FWP region 6 staff and the landowner in the future.

Rosebud County

Blacks Sawmill pond on the Custer National Forest had rainbow trout up to 11 inches. Fathead minnows were collected in a seine haul in abundant numbers.

Castle Rock Lake was renowned for large and abundant bluegill in the 1980's and early 1990's. 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 DJ reports and data indicated the abundant bluegill population was likely not sustainable. The high bluegill abundance resulted from a new and expanding population. Castle Rock Lake was constructed in 1974 & 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 4).

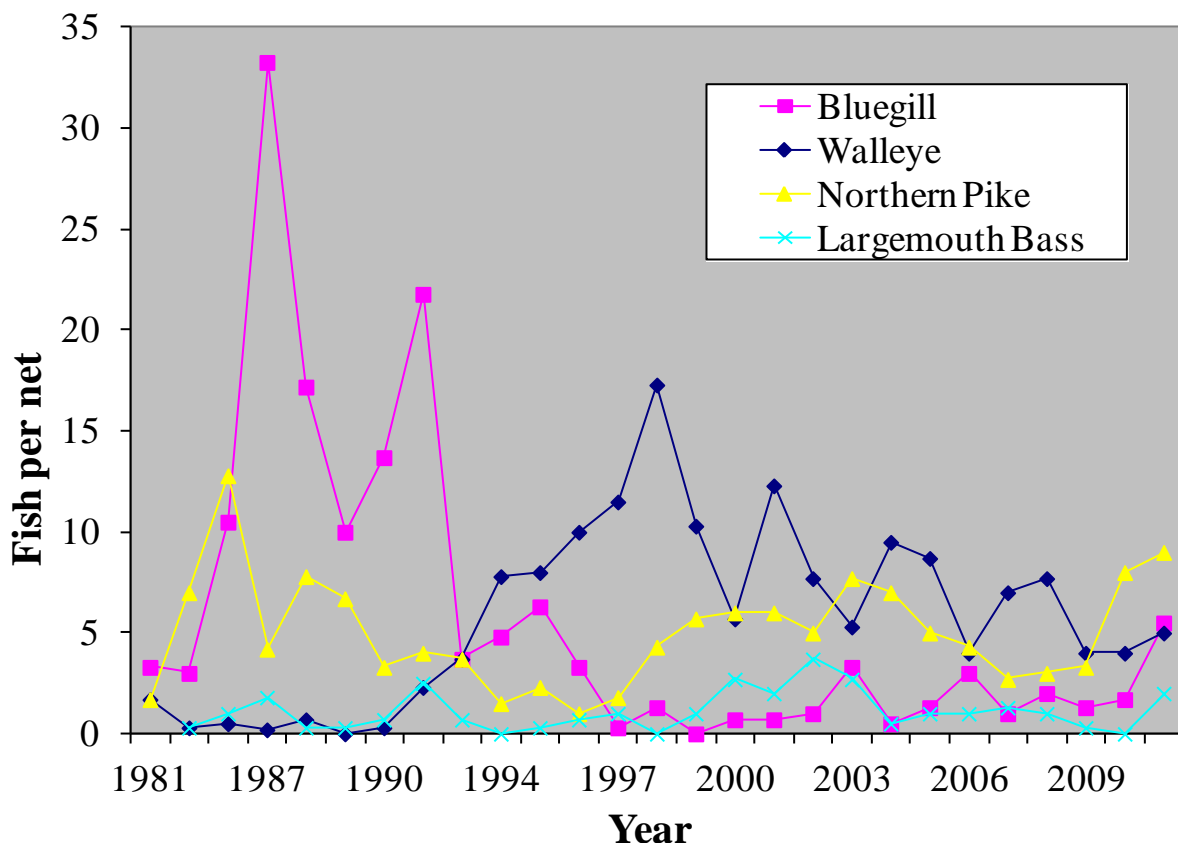


Figure 4. Catch per gill net for bluegill, walleye, northern pike and largemouth bass from Castle Rock Lake, 1981-2011.

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. Lake Harold is scheduled to be sampled in the spring of 2012.

Wibaux

White suckers, golden shiners, and fathead minnows were abundant at Wibaux Pond in 2010. Yellow perch transplanted from South Sandstone 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.

Prepared by: Caleb Bollman

Date: July 2012

Waters referred to:

Gartside Pond	21-3250
Castle Rock Pond	21-2527
Spotted Eagle Pond	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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Stewart, P.A. 1996. Southeastern Montana Warmwater Lakes Investigations. Federal Grant Job Progress Report. F-78-R-3.

Table 4. Results of sampling managed reservoirs in 2011.

Reservoir Name	Date	Depth /Full (feet) *	Type of Sample	Species	Number Caught	Mean Length (mm)	Mean Weight (gr)	Length Range (mm)	Weight Range (gm)
<u>Carter</u>									
Gardner, Doug #2	7/8/2011	23/Full	2 Gill Nets	Largemouth bass	8	329	539	272-402	260-1010
				Yellow perch	180	199	90	179-240	60-150
				Golden shiner	60	199	105	167-220	60-160
Gardner, Doug	7/8/2011	26/Full	2 Gill Nets	Rainbow trout	5	284	262	235-410	120-550
				Yellow perch	520	193	84	173-212	60-110
				White sucker	4	386	760	330-442	490-1050
Talcott	7/8/2011	10/full	2 Gill Nets	Northern pike	22	557	1325	472-760	850-2720
				Yellow perch	169	91	9	127-205	40-150
Cheesman	7/20/2011	6/4	Angling	No fish caught or seen					
MacNab	7/20/2011	18/Full	2 Gill Nets	Rainbow Trout	43	210	91	165-285	40-220
				Black Bullhead	15	153	66	130-175	40-100
			1 Seine Haul	Rainbow Trout	2	239	133	237-240	120-145
				Black Bullhead	3	160	67	135-185	40-80
			Dipnet	Black Bullhead YOY	500	20			
Bucholtz	7/21/2011	6/Full	1 Gill Nets	Black bullhead	13	166	63	157-179	60-70
Spring Canyon	7/21/2011	8-9/full	Angling	Rainbow Trout	3	225	103	207-238	80-120
Hansen	7/21/2011	17/1	2 Gill Nets	Rainbow Trout	10	352	451	326-384	380-550
				Black Bullhead	20	191	106	172-213	80-150
				Golden Shiner	8	146	43	140-153	35-50
				Green Sunfish	17	119	32	105-143	20-50
			Dipnet	Black bullhead	1000	22			
			Visual	Fathead minnow	numerous				
<u>Custer</u>									
Spotted Eagle	6/22/2011	Full	5 Seine hauls	Black Crappie	44	96		72-176	
				Bluegill	31	66		34-155	
				Common carp	3	436	1030	412-455	850-1300
				Emerald Shiner	7	100		75-118	
				Freshwater drum	6	202	222	100-386	10-720
				Largemouth bass	2	252	290	195-309	120-460
				Pumpkinseed	1	111	30		
				River carpsucker	4	416	143	368-515	780-1800
				Smallmouth bass	1	86			
				Smallmouth buffalo	3	358	1367	231-561	220-3500
				Walleye	3	258	157	207-311	80-280
				Yellow perch	13	104	18	96-113	10-20
			6 Trap Nets	Black bullhead	10	220	143	191-320	80-200
				Black crappie	148	189	125	10-296	10-420
				Channel catfish	36	456	1041	270-659	200-3240
				Common carp	2	324	535	285-362	390-680
				Golden shiner	1	120	50		
				Goldeye	6	350.6	343.3	338-370	300-400
				Green sunfish	2	108	40	98-118	20-60
				Northern pike	2	794	3105	791-797	2960-3250
				River carpsucker	57	432	1253	163-1238	80-2980
				Shorthead redhorse sucker	1	430	980		
				Smallmouth bass	2	229	353	113-390	20-980
				Smallmouth buffalo	1	228	200		
				Walleye	1	246	110		
				Western silvery minnow	12	115	13	105-130	10-20
				White crappie	28	214	155	102-355	10-520

Table 4. Continued									
Haughian, Dan	5/2/2011	Full	2 Trap Nets	Yellow perch	1				
				Fathead minnow	474				
Boulware	6/27/2011	21/Full	Depthfinder						
Dean S.	6/27/2011	13/Full	Depthfinder						
Rest Reservoir	6/27/2011	23/Full	Depthfinder						
Beardsley, Pat	7/12/2011	13/Full	2 Gill Nets	Rainbow Trout	45	167	60	147-184	50-70
				<u>Dawson</u>					
Johnson Reservoir	5/2/2011	Full	2 trap Nets	Yellow perch	1751	161	79	96-246	10-220
Lindsay (Jim Young)	5/2/2011	Full	3 Trap Nets	Black bullhead	1494	167	61	156-177	40-80
				Common carp	64	411	778	374-487	580-1200
				Northern pike	4	489	823	405-590	450-1320
				Walleye	1	221	100		
				Yellow perch	21	194	119	85-281	10-280
Rattlesnake	6/27/2011	11/Full	3 Gill Nets	No fish in nets					
Hollecker Pond	7/18/2011	11/Full	1 Seine Haul	Bluegill	87	79			
				Bluegill YOY	8	19			
				Largemouth bass	3	178	83	148-220	50-140
				Largemouth bass YOY	4	37			
				Shorthead redhorse sucker	1	385	570		
				Yellow perch	1	130	30		
			2 Gill Nets	Bluegill	1	102	20		
				Largemouth bass	2	143	35		
				Rainbow trout	1	220	110		
				River carpsucker	1	408	1130		
				Shorthead redhorse sucker	5	387	659	332-430	420-850
				White sucker	1	410	720		
				Yellow perch	11	153	47	141-165	40-60
				<u>Fallon</u>					
Maier	4/13/2011	Full	Visual	No winter kill observed					
Pinnow, Arnold #1	6/28/2011	9/Full	2 Gill Nets	Black bullhead	7	167	87	160-180	60-100
				Green sunfish	17	32	111	90-196	10-190
				Rainbow trout	27	360	839	150-417	50-1100
Pinnow, Arnold #2	6/28/2011	14/Full	3 Gill Nets	Rainbow trout	4	152	39	150-155	35-40
				Green sunfish	37	113	24	94-155	10-70
				Black bullhead	14	176	116	150-315	40-650
Meccage	6/29/2011	15/Full	1 Gill Net	Green sunfish	8	120	100	78-160	20-170
South Sandstone	7/28/2011	24/Full	3 Seine Hauls	Black bullhead	2	208	180	205-210	180
				Black bullhead YOY	9	33			
				Crappie YOY	106	37			
				Largemouth bass YOY	44	46			
				Northern pike	5	546	1156	387-790	330-3050
				Yellow perch	112	150	57	100-266	10-290
				Yellow perch YOY	71	57			
			3 Gill Nets	Black bullhead	143	207	151	144-230	50-200
				Black crappie	1	258	260		
				Northern pike	14	515	884	445-755	540-2900
				Yellow perch	98	193	105	135-270	40-250
Baker Lake	5/31/2011	Full	4 Gill Nets	Black bullhead	58	299		275-330	
				Northern pike	20	478		370-805	
				Yellow perch	1	270			
			6 seine Hauls	Northern pike	1	450			

Table 4. Continued				<u>Garfield</u>					
Saylor, Clyde	7/13/2011	14/Full	1 Gill Net	Rainbow trout	6	163	52	153-171	40-60
Watt, K.V. (Doug)	7/13/2011	14/Full	2 Gill Nets	Rainbow trout	2	168	65	165-170	60-70
Dale Krieder #1	7/15/2011	29/1	2 Gill Nets	Largemouth bass	7	172	87	148-206	50-160
Meckel, Dan #1	7/15/2011	11/Full	1 Gill Net	Rainbow Trout	4	143	40	139-145	40
				<u>Powder River</u>					
Mud Turtle	7/5/2011	12/Full	Visual	Rainbow trout	numerous	165			
Losinski #3	7/6/2011	13/Full	1 Gill Net	Rainbow trout	11	171	67	147-186	50-85
				<u>Prairie</u>					
Ayers	7/1/2011	13/Full	2 Gill Nets	Rainbow trout	6	158	60		
Marshall	7/1/2011	14/Full	2 Gill Nets	No fish, lots of tadpoles					
Clark	07/19/11	10/1	Depthfinder						
Reukauf, Walt (Harms)	07/19/11	14/2	Depthfinder						
Silvertip	07/19/11	16/1	Depthfinder						
				<u>Richland</u>					
Gartside	5/6/2011		Electrofishing	Bluegill	35	129	35	102-200	10-140
				Common carp	1	783	9300		
				Largemouth bass	10	359	851	255-520	260-2280
				White sucker	1	470	1280		
				Yellow perch YOY	7	79			
				Yellow perch	5	144	16	135-153	15-20
	07/19/11	20/Full	2 Gill Nets	Bluegill	5	128	37	120-137	30-45
				Northern pike	2	633	1635	585-680	1270-2000
				Tiger muskie	1	310	100		
				Walleye	1	545	1680		
				Yellow perch	4	160	38	143-188	30-70
			3 Seine Hauls	Black crappie	1	160	30		
				Bluegill YOY	21	54			
				Bluegill	564	134	52	107-238	15-260
				Largemouth bass	2	330	600	290-370	370-830
				Largemouth bass YOY	14	46			
				Tiger muskie	2	327	135	315-338	120-150
				Yellow perch YOY	7	75			
				Yellow perch	2	162	48	160-163	40-55
				<u>Rosebud</u>					
Blacks Sawmill	7/6/2011	17/Full	1 Gill Net	Rainbow trout	4	277	400	150-415	40-880
			1 Seine Haul	Fathead minnow	numerous				
Castle Rock	8/8/2011		4 Seine Hauls	Black crappie	22	113	26	96-129	10-35
				Black crappie YOY	149	49			
				Bluegill	98	121	44	80-190	10-180
				Bluegill YOY	89	52			
				Largemouth bass	24	121	23	102-133	10-30
				Largemouth bass YOY	72	60			
				Northern pike	1	282	130		
			2 Gill Nets	Bluegill	11	153	117	99-230	40-300
				Largemouth bass	4	276	443	153-334	60-670
				Northern pike	18	452	610	335-674	240-1730
				Shorthead redhorse sucker	1	446	940		
				Smallmouth bass	3	317	593	230-365	190-850
				Walleye	10	421	700	365-496	450-1030
				<u>Wibaux</u>					
Wibaux Pond	5/2/2011		1 Seine Haul	White sucker	present				
				Fathead minnows	numerous				

Appendix 1. 2011 Miles City Hatchery Stocking Summary

Montana Fish, Wildlife & Parks

Miles City Fish Hatchery

Fish Planting Report - By Date

Date Range: 01-01-11 - 12-30-11

Selections: All Current Lots Region 7

	Latitude	Longitude			Sterile				
04/20/2011	164433	Beecher Trout Reservoir	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.78500	-106.69410	A020411MFG	Arlee		5.70	101.38	JMR	
04/20/2011	164549	Brooks Reservoir #3	2,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.94100	-106.89185	A020411MFG	Arlee		11.40	101.38	JMR	
04/20/2011	212450	Clarks Reservoir	4,000	001A - Rainbow Trout	Not Sterile	2.00	280	12.00	1
7	46.88742	-105.70442	A020411MFG	Arlee		14.20	98.00	CH,	
04/20/2011	213570	Haughian Reservoir #1	2,000	001A - Rainbow Trout	Not Sterile	2.00	0	2.00	1
7	46.83530	-105.76030	A020411MFG	Arlee		10.50	101.38	JMR	
HELICOPTER PLANT									
04/20/2011	213840	Homestead Reservoir	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.99125	-105.56265	A020411MFG	Arlee		5.70	101.38	JMR	
04/20/2011	213845	Hook Reservoir #1	600	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.59722	-106.21485	A020411MFG	Arlee		3.40	101.38	JMR	
04/20/2011	213985	Jason Phipps Reservoir	2,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.89303	-107.20797	A020411MFG	Arlee		11.40	101.38	JMR	
HELICOPTER PLANT									
04/20/2011	166199	Killen, John #2 Res.	1,500	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.80359	-106.48830	A020411MFG	Arlee		8.50	101.38	JMR	
04/20/2011	167108	Murnion, Fred #1	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	47.01189	-106.43500	A020411MFG	Arlee		5.70	101.38	JMR	
04/20/2011	167109	Murnion, Fred #2	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.98280	-106.47750	A020411MFG	Arlee		5.70	101.38	JMR	
04/20/2011	167210	NEWMAN RES	800	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.94840	-107.42910	A020411MFG	Arlee		4.75	101.38	JMR	
HELICOPTER PLANT FROM INGOMAR									
04/20/2011	217846	Reukauf Reservoir	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.84156	-105.68956	A020411MFG	Arlee		5.70	101.38	JMR	
04/20/2011	217870	Ringstveit Lake	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.82625	-106.71735	A020411MFG	Arlee		5.00	101.38	JMR	
04/20/2011	218352	Schlesinger Reservoir #1	500	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.76980	-107.19630	A020411MFG	Arlee		2.63	101.38	JMR	
04/20/2011	218650	Silvertip Reservoir	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.86693	-105.59117	A020411MFG	Arlee		5.70	101.38	JMR	
04/20/2011	218760	South Fork Reservoir	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.88244	-105.67190	A020411MFG	Arlee		5.70	101.38	JMR	
04/21/2011	211769	Ayers Pond #1	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.63554	-104.82539	A020411MFG	Arlee		5.70	101.38	JMR	
04/21/2011	211821	Beardsley Pond	2,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.53500	-105.13680	A020411MFG	Arlee		11.40	101.38	JMR	
04/21/2011	211886	Big Timber Trout Pond #1	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.59833	-107.36502	A020411MFG	Arlee		5.70	101.38	JMR	
HELICOPTER									
04/21/2011	211915	Blacks Sawmill Pond	2,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	45.34750	-106.28680	A020411MFG	Arlee		11.40	101.38	JMR	
04/21/2011	211945	Boulware Reservoir	2,000	001A - Rainbow Trout	Not Sterile	2.00	100	2.00	1
7	46.31311	-104.98663	A020411MFG	Arlee		11.40	40.00	CH	
04/21/2011	212240	Burman Pond	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	47.11561	-104.40818	A020411MFG	Arlee		5.70	101.38	JMR	
04/21/2011	121051	Craft Pond #2	1,500	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	45.12303	-104.88123	A020411MFG	Arlee		5.70	101.38	JMR	
HELICOPTER PLANT									

Appendix 1. Continued

Montana Fish, Wildlife & Parks

Fish Planting Report - By Date

Date Range: 01-01-11 - 12-30-11

Selections: All Current Lots Region 7

	Latitude	Longitude			Sterile				
04/21/2011	121308	Frigid Reservoir	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	45.46226	-104.60713	A020411MFG	Arlee		5.70	101.38	JMR	
04/21/2011	121310	Gardner Reservoir	6,000	001A - Rainbow Trout	Not Sterile	2.00	250	6.00	1
7	45.26494	-104.84123	A020411MFG	Arlee		34.28	87.50	JL	
04/21/2011	187725	Grebe Reservoir #1	2,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.66306	-107.57733	A020411MFG	Arlee		11.40	101.38	JMR	
HELICOPTER									
04/21/2011	165305	Grebe Reservoir #2	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.69334	-107.64098	A020411MFG	Arlee		5.70	101.38	JMR	
HELICOPTER									
04/21/2011	213790	Hofer Reservoir #2	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.58648	-107.48983	A020411MFG	Arlee		5.70	101.38	JMR	
HELICOPTER									
04/21/2011	213976	Janssen Reservoir	2,500	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	45.72170	-105.47190	A020411MFG	Arlee		14.20	101.38	JMR	
04/21/2011	214800	Labree Reservoir	2,500	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	45.99950	-104.79110	A020411MFG	Arlee		14.20	101.38	JMR	
04/21/2011	215117	Losinski Reservoir #3	400	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	45.63704	-105.73283	A020411MFG	Arlee		2.20	101.38	JMR	
04/21/2011	216238	Oil Pump Reservoir	2,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.85404	-104.66796	A020411MFG	Arlee		11.40	101.38	JMR	
04/21/2011	217275	Pinnow Reservoir	1,500	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.27822	-104.20039	A020411MFG	Arlee		8.50	101.38	JMR	
04/21/2011	217276	Pinnow Reservoir #2	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.27911	-104.21082	A020411MFG	Arlee		5.70	101.38	JMR	
04/21/2011	217302	Potts Reservoir	2,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.52872	-106.62675	A020411MFG	Arlee		11.40	101.38	JMR	
HELICOPTER									
04/21/2011	217305	Pruett Pond	500	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.58795	-104.40959	A020411MFG	Arlee		2.80	101.38	JMR	
04/21/2011	124000	Schweigert Dam	500	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	46.49862	-104.21142	A020411MFG	Arlee		2.80	101.38	JMR	
04/21/2011	124050	Sidney Reservoir	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	45.36900	-104.47350	A020411MFG	Arlee		5.70	101.38	JMR	
04/21/2011	124112	Spring Canyon Reservoir	400	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	45.70525	-104.20183	A020411MFG	Arlee		2.20	101.38	JMR	
04/21/2011	125150	West Plum Reservoir	600	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	45.62910	-104.10100	A020411MFG	Arlee		3.40	101.38	JMR	
04/23/2011	164650	Chamberlain Reservoir #3	1,500	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	47.47960	-107.52080	A020411MFG	Arlee		5.30	101.38	JMR	
04/23/2011	164660	Childers Pond	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	47.47630	-107.54500	A020411MFG	Arlee		3.50	101.38	JMR	
04/23/2011	164703	Clark Reservoir	2,500	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	47.47021	-107.40700	A020411MFG	Arlee		8.80	101.38	JMR	
04/23/2011	164725	Clyde Saylor Pond	1,500	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	47.38160	-107.40685	A020411MFG	Arlee		5.30	101.38	JMR	
04/23/2011	166092	Jarden Reservoir #2	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	47.23610	-107.27320	A020411MFG	Arlee		3.50	101.38	JMR	
04/23/2011	166415	Kreider Reservoir #2	1,500	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	47.18540	-107.48470	A020411MFG	Arlee		5.30	101.38	JMR	

Appendix 1. Continued

Montana Fish, Wildlife & Parks

Fish Planting Report - By Date

Date Range: 01-01-11 - 12-30-11

Selections: All Current Lots Region 7

	Latitude	Longitude			Sterile				
04/23/2011	166967	McRae Reservoir #1, Jack	2,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	47.36740	-106.45450	A020411MFG	Arlee		7.10	101.38	CH	
04/23/2011	166970	Meckle Reservoir #1	700	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	47.21560	-107.43830	A020411MFG	Arlee		2.50	101.38	JMR	
04/23/2011	168045	Ryan Ponds	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	47.41800	-107.52450	A020411MFG	Arlee		3.50	101.38	JMR	
04/23/2011	168056	Saylor Reservoir	1,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	47.36680	-107.41310	A020411MFG	Arlee		5.60	101.38	JMR	
04/23/2011	168709	Watt Reservoir	2,000	001A - Rainbow Trout	Not Sterile	2.00	16	2.00	1
7	47.53290	-107.27410	A020411MFG	Arlee		7.10	101.38	CH	
05/13/2011	218775	South Sandstone Reservoir	200,000	082F - Walleye	Not Sterile	0.25	170	6.00	1
7	46.32745	-104.43631	F141411W01	Fort Peck		0.90	59.50	JL	
05/17/2011	219000	Tongue River Reservoir	1,000,000	082F - Walleye	Not Sterile	0.25	400	6.00	1
7	45.08357	-106.80005	F141411W01	Fort Peck		4.50	140.00	JL	
06/21/2011	212527	Castle Rock Lake	1,000	082F - Walleye	Not Sterile	1.12	140	6.00	0
7	45.87800	-106.63160	F141411W01	Fort Peck		0.52	49.00	JL	
06/21/2011	219000	Tongue River Reservoir	50,000	082F - Walleye	Not Sterile	1.12	360	6.00	1
7	45.08357	-106.80005	F141411W01	Fort Peck		26.00	126.00	JL	
Rattle Snake Point									
06/23/2011	120100	Beaver Creek	2,000	082F - Walleye	Not Sterile	1.20	240	6.00	1
7	47.32981	-103.65609	F141411W01	Fort Peck		1.17	84.00	JL	
06/23/2011	218775	South Sandstone Reservoir	5,000	082F - Walleye	Not Sterile	1.20	160	6.00	1
7	46.32745	-104.43631	F141411W01	Fort Peck		2.90	56.00	JL	
07/29/2011	213568	Haughian Reservoir	1,000	017M - Largemouth Bass	Not Sterile	1.50	70	0.00	1
7	46.82040	-105.69280	M141411L01	Miles City		1.56	24.50	JL	
07/29/2011	214915	Lee, A. G. Pit #2 Reservoir	500	017M - Largemouth Bass	Not Sterile	1.50	110	0.00	1
7	46.35735	-106.67502	M141411L01	Miles City		0.78	38.50	JL	
08/02/2011	213570	Haughian Reservoir #1	2,000	073M - Smallmouth Bass	Not Sterile	2.00	70	3.00	1
7	46.83530	-105.76030	M141411S01	Miles City		3.60	24.50	JL	
08/02/2011	218650	Silvertip Reservoir	1,000	073M - Smallmouth Bass	Not Sterile	2.00	70	3.00	
7	46.86693	-105.59117	M141411S01	Miles City		1.81	24.50	JL	
08/03/2011	210847	Yellowstone River Drainage	960	091M - Pallid Sturgeon	Not Sterile	11.00	260	6.00	1
7			M141410PS6	Missouri Below Fort Peck		240.00	91.00	JR	
FORSYTH262,FALLON132,INTAKE173,CULBERT262 WLFPT									
26 COMB OF LOTS 1,2,3,4,5									
08/06/2011	000000	NEW MEXICO	123,022	017M - Largemouth Bass	Not Sterile	2.00	0	0.00	1
7			M141411L01	Miles City		245.00	0.00	JMR	
AUTHORIZED BY ROD GALLEGOS									
08/10/2011	211770	Ayers Pond #2	1,000	017M - Largemouth Bass	Not Sterile	1.60	63	6.00	
7	46.62683	-104.83261	M141411L01	Miles City		1.66	22.16	CH	
08/10/2011	215287	Marshall Reservoir	2,000	017M - Largemouth Bass	Not Sterile	1.60	63	6.00	1
7	46.63626	-104.95579	M141411L01	Miles City		3.38	22.16	CH	
08/10/2011	218650	Silvertip Reservoir	1,000	017M - Largemouth Bass	Not Sterile	1.50	63	6.00	
7	46.86693	-105.59117	M141411L01	Miles City		1.66	22.16	JL	
08/11/2011	219687	Wilgosh Reservoir	300	017M - Largemouth Bass	Not Sterile	1.60	170	6.00	1
7	47.32690	-105.20750	M141411L01	Miles City		0.50	59.50	JMR	
Ttl Nbr Fish: 1,464,282 Ttl Miles: 3,791 Ttl Perdiem: 188.00									
Ttl Weight: 909.40 Ttl Veh Cost: 5,935.22									

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 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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