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: 2011 (July 1, 2010 through June 30, 2011)

REPORT PERIOD: April 1, 2010 through March 30, 2011

ABSTACT

Two new ponds and forty managed ponds were visited in 2010 to evaluate fisheries information. Twenty-three of the managed ponds had fishable populations of target species, fourteen were checked for depth only, and four were void of fish. Wild fish were transferred by Montana Fish, Wildlife & Parks (FWP) into Baker Lake, Wibaux Pond, Johnson Dam, Lake Harold, Spotted Eagle, Lindsay Pond, and Rattlesnake Reservoir in 2010. Non-target species (species not stocked by FWP) were introduced by an unknown source at Hollecker, Pinnow #1, and Pinnow #2 ponds.

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: 125 foot long experimental gill net (panel sizes of 2, 1.5, 1.25, 1, and 0.75 inches), 100 foot long by ¼ 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.

RESULTS AND DISCUSSION

Wild Fish Transfers 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 at multiple ponds (Figure 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.

Date	Recieveing Water	County	Species	Number Transfered	Donar Water	County
4/14/2010	Baker Lake	Fallon	yellow perch	2000	South Sandstone	Fallon
4/30/2010	Baker Lake	Fallon	crappie	280	Tongue River Reservoir	Big Horn
4/16/2010	Johnson Dam	Dawson	yellow perch	300	South Sandstone	Fallon
4/28/2010	Rattlesnake	Dawson	crappie	550	Tongue River Reservoir	Big Horn
6/22/2010	Lindsay	Dawson	yellow perch	412	South Sandstone	Fallon
6/11/2010	Wibaux	Wibaux	yellow perch	893	South Sandstone	Fallon
6/14/10	Lake Harold	Treasure	yellow perch	277	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

Figure 1. Wild fish transfers conducted in 2010.

Two trout ponds were stocked with catchable trout (seven inches long) from Bluewater Hatchery (Appendix 1) in 2010. In 2010, the Miles City Hatchery stocked: trout fry (2 inches long) into 50 ponds, walleye fry and fingerlings into 2 ponds (Appendix 2).

Survey of New Ponds

One previous managed pond and one new pond were inspected in 2010; Pumpkin Creek Ranch pond (formally managed as Huston Rodgers) in Custer County and Steve Seiler pond in Fallon County (Table 1). The maximum potential depth of both ponds is eight feet deep. Fish stocking or additional management will not occur at either pond.

Survey of Managed Ponds

Custer County

Water depth at Dean S and Rest Reservoir have become chronically dewatered for several years and continued to be insufficient to support a fishery in 2010. Trout were present at Beardsley and Boulware ponds in 2010 and water depth is adequate to support the fisheries (Table 2).

Haughain Bass pond, like other ponds in the Cherry Creek area, has suffered from drought conditions and the water depth continues to decrease annually. Spring inspection determined that a significant but partial winterkill occurred. Dead perch were abundant along the shoreline. Few northern pike and fewer largemouth bass were found along the shoreline. Both of these two species were abundant in prior years sampling, indicating a partial winterkill. Angler comments about not being able to catch any fish in the fall of 2010 indicate that the previous winterkill may have been more significant than expected. Spring sampling will be conducted in 2011 to assess fish abundance.

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 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 2010. This was the sixth 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 (Figure 1). This increased the opportunity for anglers to catch a trophy-sized fish. Fyke net catch rates for most species at Spotted Eagle were highly variable but can be generalized as slightly decreasing over the last eight years (Table 2). Channel catfish was the only species with a significant upward trend, reflective of the adult stocking. Goldeye were collected in Spotted Eagle for the first time in 2008 and were also present in 2010, but 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 which provided a migration route for some species from the Tongue River.

Dawson County

The number of non-target species is increasing at Hollecker Pond. Eleven total species were collected when sampled in 2010. Common carp and gold fish were new species found in 2010. The relative abundance of any one species is low but the number of species at this point will likely reduce the success of stocked species. Largemouth bass, fathead minnow and rainbow trout are the only species stocked by FWP since it was drained in the fall of 2005. The remaining species have entered Hollecker via the irrigation water supply or from illegal introductions.

In order to establish a desirable fishery the pond should be drained to eliminate the undesirable species in the next year or two. Management of undesirable species at Hollecker may require pond rehabilitation by mechanical draining on a 5-6 year frequency. A second attempt to establish a largemouth bass/yellow perch fishery should occur as proposed in **Hollecker Lake Kid's Fishing Pond Proposal**, Jaegar 2005 (Appendix 3).

Fallon County

Black bullheads have been illegally established in both Pinnow ponds since last sampled in 2004. 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. Bullhead reproduction is unknown at Pinnow #1 since only one fish was found. However, mass numbers of young-of-year bullheads were dip netted at Pinnow #2. A scatter plot of trout from both ponds already indicates a negative impact to trout growth at Pinnow #2 (Figure 2). Future success of rainbow trout is unlikely unless the frequent history of winterkills at these ponds is repeated and eliminates the other species. Trout will be stocked until sampling indicates survival and growth of the trout is compromised by the presence of the other species.

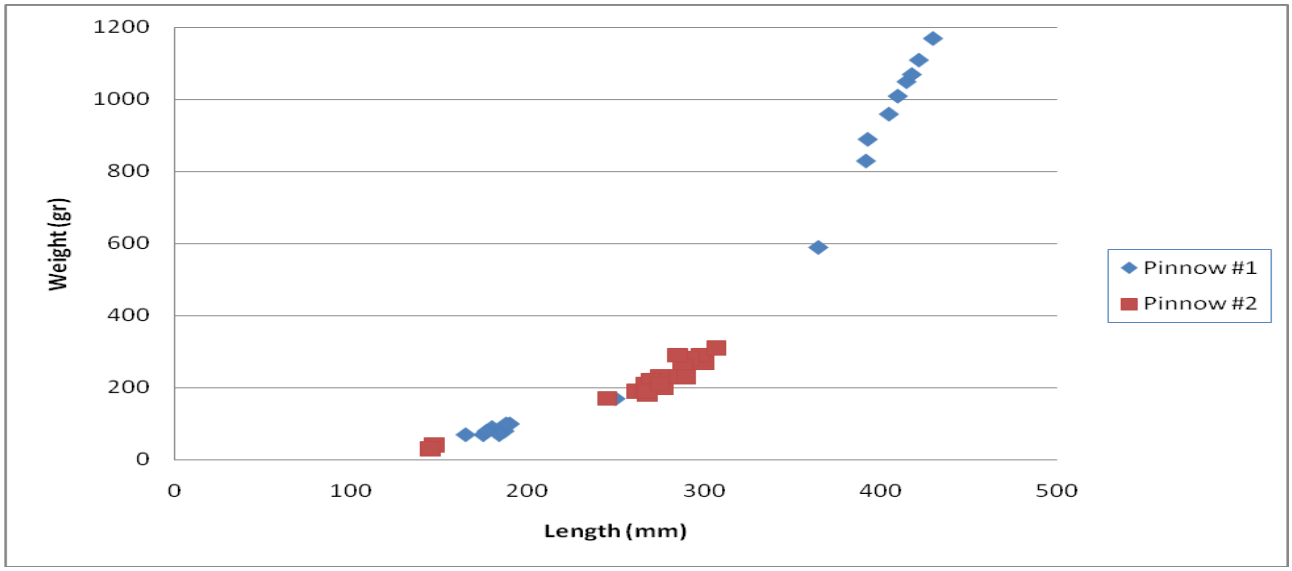

Figure 2. Length/Weight scatter plot of rainbow trout from gill nets at Pinnow ponds, 2010.

Black bullheads continue to be the most abundant species in gill nets at South Sandstone (Table 2). Catch rates for yellow perch have been low in recent years; the lowest catch rates have occurred in 2009 and 2010 when comparing the last 13 years sampled. High bullhead abundance and frequent removal of yellow perch by FWP staff for transplant may be reducing perch abundance. However, anglers reported good success on numbers and size of yellow perch in 2010.

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. Staff will continue to monitor this pond on an annual basis to see if changes occur. Sampling in 2010 once again failed to document trout survival.

The dam at McRae #2 Pond washed out in the spring of 2010. The landowner does not anticipate fixing the dam in near future. This pond will be dropped from management until further notice.

Prairie County

Disabling the aerator at Clark's Pond successfully winterkilled the largemouth bass during the 2009/2010 winter. Trout were stocked in 2010 but survival is minimal considering a maximum water depth of three feet. Water collection in this and other Cherry Creek ponds continues to be problematic. Water depths remain inadequate for fish survival or even stocking at Harms, Homestead, Silvertip, and South Fork ponds in 2010 (Table 2).

Richland County

Natural reproduction for northern pike is very successful at Gartside Reservoir. Catch rates are staying relatively high and set a record high in 2010 (Figure 3). Northern pike stocking was

terminated in 2004 to evaluate natural spawning and recruitment at Gartside Reservoir.

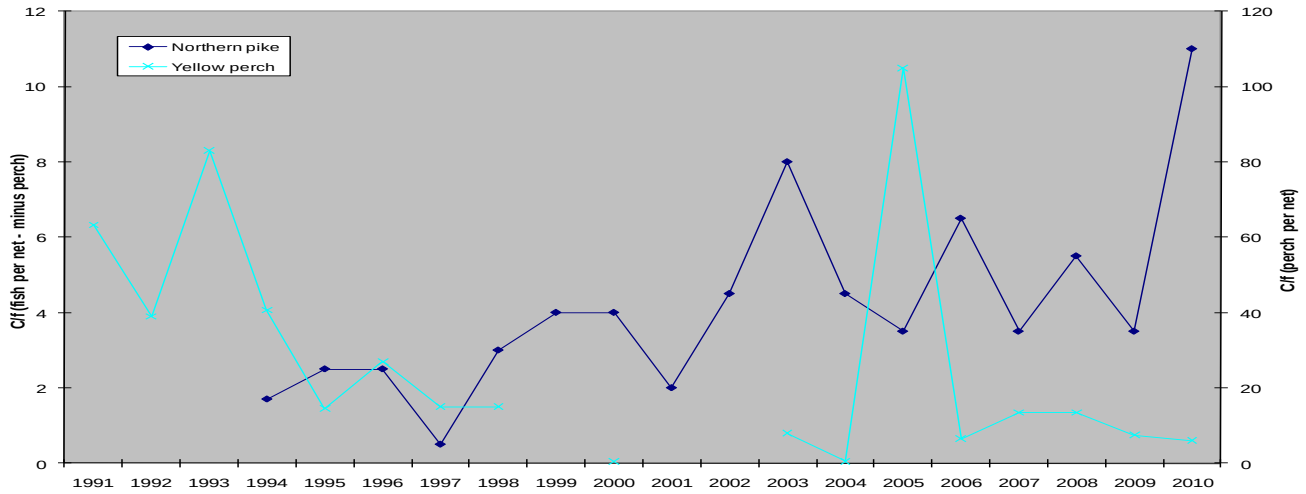

Figure 3. Catch per gill net for northern pike and perch from Gartside Reservoir, 1991-2010.

Gartside pond received 400, ten-inch tiger musky 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 another angler opportunity at Gartside. Tiger muskellunge stocking and associated sampling goals are described in a 5-year stocking proposal, (Backes 2006). This was the last year that the EA and stocking proposal covered to test success of tiger muskellunge at Gartside. Tigers were supposed to be stocked annually but the outbreak of VHS virus in the Great Lakes region eliminated the muskellunge eggs supply. Recruitment and survival of the first stocking in 2006 was not successful. Survival of the 2010 stock is questionable considering it coincides with a year of record high northern pike population. Spring sampling will occur in 2011, as outlined in 5-year proposal, to evaluate this final stocking effort.

Rosebud County

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 bluegill 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 rate since (Figure 4).

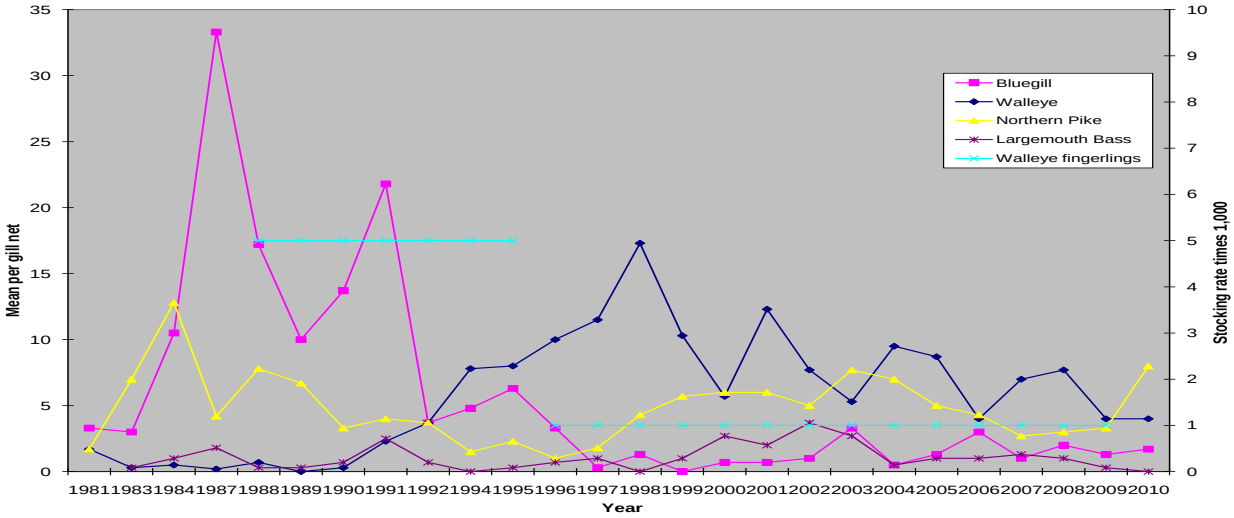

Figure 4. Catch per gill net for bluegill, walleye, northern pike and largemouth bass from Castle Rock Lake, 1981-2010.

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.

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.

Ponds Dropped from Management

McRae #2 Pond in Garfield County will be dropped from FWP management in 2010.

Prepared by: Kenneth M. Backes

Date: January 2011

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

Backes, K. M. 2006. Southeastern Montana Warmwater Lakes Investigations. Federal Grant Job Progress Report. Appendix B.

Backes, K. M. 2008. Southeastern Montana Warmwater Lakes Investigations. Federal Grant Job Progress Report. F-113-R-7.

Stewart, P.A. 1996. Southeastern Montana Warmwater Lakes Investigations. Federal Grant Job Progress Report. F-78-R-3.

Table 1. Results of sampling new reservoirs in 2010.

		Pond Location			Water Depth	Max. Depth	Fish Species	Management
Pond Name	**County**	**TRS**	**Latitude**	**Longitude**	**(feet) ***	**(feet)****	**Present**	**Plan**
Steve Seiler	Fallon	T7N R58E S3	46.39452	104.44024	7	1	not sampled	none
Pumpkin Cr. Ranch'	Custer	T5N R49E S20	46.17076	105.62988	7	1	none	none
'- formally managed as Huston Rodgers Pond.								

* Water depth when sampled.

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

Table 2. Results of sampling managed reservoirs in 2010.

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)
				Custer County					
Beardsley	7/9/2010	13/5	gill net (2)	rainbow trout	16	177	69	150-203	40-110
Boulware	3/31/2010	6/?	depth only						
	6/28/2010	8/8	visual	rainbow trout	1				
Dean S	6/28/2010	5/8	depth only						
Haughain (bass)	3/29/2010	--	winterkill	perch/pike/bass (partial winterkill)					
Rest	6/28/2010	3/15	depth only						
Spotted Eagle	6/17/2010	11/0	seine (5)	bigmouth buffalo	1	540	2450	540-540	2450-2450
				black bullhead	4	203	139	176-240	65-240
				black crappie	2	195	105	190-200	100-110
				bluegill	18	98	64	43-160	30-120
				common carp	2	394	795	380-408	790-800
				emerald shiner	27	76		41-97	
				largemouth bass	1	450	1500	450-450	1500-1500
				pumpkinseed	1	111	40	111-111	40-40
				smallmouth buffalo	2	360	745	360-360	740-750
				walleye	2	132	20	130-134	20-20
				yellow perch	6	126	46	43-160	20-60
	6/18/2010	11/0	fkye (6)	bigmouth buffalo	1	243	210	243-243	210-210
				black bullhead	59	200	122	151-262	50-265
				black crappie	77	195	103	135-260	35-220
				bluegill	31	142	68	125-170	25-100
				channel catfish	36	414	891	263-720	110-4500
				common carp	2	305	490	305-305	490-490
				freshwater drum	3	393	780	365-425	500-940
				goldeye	8	349	326	331-370	250-400
				green sunfish	1	137	55	137-137	55-55
				largemouth bass	1	462	1500	462-462	1500-1500
				northern pike	8	728	2485	515-895	820-4500
				pumpkinseed	1	116	30	116-116	30-30
				river carpsucker	17	454	1616	320-593	325-3400
				smallmouth buffalo	3	202	168	152-245	70-285
				walleye	5	487	1238	344-620	400-2200
				western silvery minnow	1	112	15	112-112	15-15
				white crappie	41	188	98	92-225	15-170
				yellow bullhead	1	188	70	188-188	70-70
				yellow perch	1	207	130	207-207	130-130
				Dawson County					
Burman	7/19/2010	8/6	depth only						
Hollecker	7/19/2010	--	gill net (2)	black bullhead	1	265	300	265-265	300-300
				channel catfish	1				
				common carp	1	628	3350	628-628	3350-3350
				gold fish	1	285	430	285-285	430-430
				largemouth bass	4	320	573	232-357	160-740
				rainbow trout	5	203	74	193-212	60-80
				river carpsucker	4	377	808	365-400	700-910
				shorthead redhorse sucker	3	303	475	220-385	370-580
				white crappie	6	164	53	135-177	30-60
				yellow perch	1	160	50	160-160	50-50
			seine (1)	bluegill	119	104	30	75-132	10-45
Johnson Dam	3/30/2010	10/?	depth only						
Lindsay	3/30/2010	--	winterkill	carp (little winterkill)					
Oil pump	3/31/2010	7/?	depth only						
Rattlesnake	3/30/2010	12/0	gill net (2)	none					
			seine (2)	fathead minnow	79				
	7/6/2010	12/0	depth only						

* Water depth when sampled and depth from full.

Table 2. Results of sampling managed reservoirs in 2010 (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)
Trangmoe	7/7/2010	--	gill net (2)	black bullhead	20	157	54	142-177	30-70
				channel catfish	9	474	1231	293-660	170-3060
				common carp	2	263	295	185-340	90-500
				green sunfish	1	108	20	108-108	20-20
				shorthead redhorse sucker	4	462	1010	413-510	710-1310
				white crappie	22	168	55	153-180	40-65
				white sucker	2				
				yellow perch	6	174	67	169-178	60-70
			seine (1)	black bullhead	3	166	67	157-174	60-80
				white crappie	19	151	55	100-174	45-60
				yellow perch	17	112	17	100-174	10-60
				Fallon County					
Baker Lake	3/31/2010	15/0	winterkill	bullheads, crappie, northern pike, yellow perch (total winterkill)					
	7/27/2010	13/2	gill net (2)	black bullhead	7	288	530	270-307	420-620
				northern pike	26	418	734	226-742	140-2800
				yellow perch	38	215	196	124-294	30-470
			seine (2)	yellow perch	3	154	60	150-160	50-70
				yoy crappie	3	32		27-42	
				yoy yellow perch	9	58		45-73	
Maier	6/29/2010	13/0	gill net (2)	green sunfish	1	184	130	184-184	130-130
				yellow perch	192	166	56	135-240	20-170
Pinnow #1	6/30/2010	10/0	gill net (2)	black bullhead	1	280	510	280-280	510-510
				green sunfish	22	106	111	86-177	65-140
				rainbow trout	39	291	505	165-430	70-1170
Pinnow #2	6/30/2010	14/0	dip net	black bullhead	406	67		55-80	
			gill net (2)	black bullhead	3	262	312	235-315	220-495
				green sunfish	95	118	30	100-137	10-50
				rainbow trout	48	266	212	145-307	30-310
South Sandstone	4/22/2010	24/0	seine (7)	yellow perch	1077	(transferred to other waters)			
	5/14/2010	24/0	seine (12)	yellow perch	130	(transferred to other waters)			
	7/27/2010	23/1	gill net (3)	black bullhead	158	196	121	167-232	10-200
				northern pike	20	543	1201	282-738	120-2670
				walleye	4	387	563	353-465	390-990
				yellow perch	60	195	111	135-257	40-210
			seine (3)	black bullhead	13	196	119	183-208	80-140
				black crappie	3	194	117	118-234	20-170
				crappie	20				
				white crappie	1	236	180	236-236	180-180
				yellow perch	258	121	30	91-227	10-180
				yoy crappie	37	32		19-52	
				yoy largemouth bass	6	53		48-55	
				yoy yellow perch	52	58		51-64	
				Garfield County					
Chamberlain (bass)	7/14/2010	8/2	gill net (2)	largemouth bass	5	242	200	220-259	140-240
Childers	7/14/2010	23/4	gill net (2)	none					
Jarden (bass)	8/14/2010	8/6	gill net (2)	largemouth bass	2	196	125	181-210	80-170
Jarden (trout)	8/14/2010	9/2	gill net (1)	rainbow trout	31	208	131	196-228	100-160
Kreider #1 (bass)	4/9/2010	15/5	depth only						
Kreider #2 (trout)	4/9/2010	20/2	depth only						
McRae #2	6/10/2010	0	washed out						
Phipps, Bob	7/14/2010	9/10	gill net (1)	rainbow trout	7	276	447	157-420	60-1050

* Water depth when sampled and depth from full.

Table 2. Results of sampling managed reservoirs in 2010 (continued).									
		Depth				Mean	Mean	Length	Weight
		10/Full	Type of		Number	Length	Weight	Range	Range
Reservoir Name	Date	(feet) *	Sample	Species	Caught	(mm)	(gr)	(mm)	(gm)
				Prairie County					
Clarks	3/30/2010	3/?	gill net (2)	none					
Harms	3/29/2010	2/?	depth only						
Haughain (trout)	3/29/2010	11/?	depth only						
Homestead	3/29/2010	1/16	depth only						
	6/25/2010	2/15	depth only						
Oil pump	7/6/2010	13/1	gill net (2)	rainbow trout	33	185	104	148-210	50-130
Silvertip	3/29/2010	5/?	depth only						
Singleton	7/9/2010	14/3	gill net (2)	largemouth bass	1	326	640	326-326	640-640
South Fork	3/29/2010	0	depth only						
				Richland County					
Gartside	7/20/2010	17/0	gill net (2)	bluegill	4	108	50	92-140	50-50
				largemouth bass	1	221	120	221-221	120-120
				northern pike	22	566	1163	464-683	550-1990
				yellow perch	12	168	52	152-235	20-160
			seine (3)	black crappie	1	210	120	210-210	120-120
				bluegill	354	107	41	45-208	20-200
				largemouth bass	7	205	119	140-263	45-270
				northern pike	1	168	50	168-168	50-50
				yellow perch	6	145	54	48-190	30-90
				Rosebud County					
Caslte Rock	7/29/2010	40/2	gill net (3)	black crappie	1	280	360	280-280	360-360
				bluegill	5	119	63	94-166	20-100
				northern pike	24	462	648	284-620	150-1350
				smallmouth bass	1	239	570	239-239	570-570
				walleye	12	378	522	210-462	160-900
				white sucker	1	443	1140	443-443	1140-1140
	7/30/2010	40/2	seine (4)	black crappie	39	139	46	90-275	5-320
				bluegill	1637	72	49	38-215	15-210
				green sunfish	1	47		47-47	
				largemouth bass	99	120	34	94-213	10-170
				northern pike	2	256	105	245-267	100-110
				white crappie	1	100	20	100-100	20-20
				yoy crappie	5	41		40-45	
				yoy largemouth bass	56	51		32-66	
				yoy walleye	2	61		36-85	
Killen (trout)	7/25/2010	7/15	gill net (1)	rainbow trout	13	161	44	153-170	30-60
Lee Pit #1	7/25/2010	15/0	gill net (1)	green sunfish	5	140	58	124-162	35-90
				largemouth bass	1	286	320	286-286	320-320
Lee Pond #2	7/25/2010	7/5	gill net (1)	none					
				Wibaux County					
Wibaux Pond	7/20/2010	16/0	gill net (2)	golden shiner	13	133	30	119-143	20-40
				white sucker	48	173	53	160-220	40-100
				yellow perch	63	199	121	163-263	60-270
			seine (1)	fathead minnow	200				
				white sucker	191	62		55-75	
				yellow perch	14	115	26	100-171	10-60
* Water depth when sampled and depth from full.									

Appendix 1. 2010 Blue Water Springs Hatchery Stocking Summary

Blue Water Spgs Trout Hatchery

Fish Planting Report - By Date

Date Range 1/1/2010 - 12/31/2010

Species: Rainbow Trout

Selections: All Current Lots All Archived Lots Region 7

Date	Wtr Code	Water Name	Nbr Fish	Strain	Sterile	Len	Wt	Latitude	Longitude	Miles	Cost	Prdm
04/27/2010	215885	Mud Turtle Reservoir	1,002	Arlee	93% Sterile	7.21	150.00	45.28150	-105.96930	288	138.48	9.00
04/27/2010	217890	Roerick Pond	200	Arlee	93% Sterile	7.21	30.00			288	138.48	9.00
05/10/2010	213832	Hollecker Lake	324	Arlee	93% Sterile	7.51	55.00	47.12810	-104.72890	356	170.88	48.95
05/10/2010	122640	McNabb Reservoir	2,006	Arlee	93% Sterile	7.51	340.00	45.81575	-104.42258	356	170.88	48.95
			Total				Total			Total	Total	Total
			3,532				575.00			1,288	618.72	115.90

Appendix 2. 2010 Miles City Hatchery Stocking Summary

Fish, Wildlife & Parks

Fish Planting Report - By Water

Date Range:
Selections:

Date / Rgn	Wtr Cd / Latitude	Water Name / Longitude	Nbr Fish / Lot Nbr	Species / Strain	Sterile	Len / Wt	Miles / Cost	Prdm / Emp	Cnd / Mrk	Tmp
04/21/2010	211769	Ayers Pond #1	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.63554	-104.82539	A020409BFG	Arlee		6.80	243.80	MR		
07/13/2010	211778	Baker Lake	5,000	017M - Largemouth Bass		1.00	171	0.00	2	
7	46.36337	-104.27070	M141410L01	Miles City		2.10	82.10	JK		
04/21/2010	211821	Beardsley Pond	2,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.53500	-105.13680	A020409BFG	Arlee		13.60	243.80	MR		
06/23/2010	120100	Beaver Creek	2,000	082F - Walleye		1.50	0	3.00	2	
7	47.32981	-103.65609	F141410W01	Fort Peck		2.50	0.00	JL		
04/19/2010	164433	Beecher Trout Reservoir	1,500	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.78500	-106.69410	A020409BFG	Arlee		10.00	243.80	MR		
04/20/2010	211886	Big Timber Trout Pond #1	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7		-107.36502	A020409BFG	Arlee		6.80	243.80	MR		
04/21/2010	211915	Blacks Sawmill Pond	2,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	45.34750	-106.28680	A020409BFG	Arlee		13.60	243.80	MR		
04/21/2010	211945	Boulware Reservoir	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.31311	-104.98663	A020409BFG	Arlee		6.80	8.23	MH		
04/19/2010	164549	Brooks Reservoir #3	2,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.94100	-106.89185	A020409BFG	Arlee		13.60	243.80	MR		
04/21/2010	212240	Burman Pond	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	47.11561	-104.40818	A020409BFG	Arlee		6.80	243.80	MR		
06/22/2010	212527	Castle Rock Lake	1,000	082F - Walleye		1.50	0	3.00	2	
7	45.87800	-106.63160	F141410W01	Fort Peck		1.20	0.00	JL		
04/20/2010	164650	Chamberlain Reservoir #3	1,500	001A - Rainbow Trout		2.60	18	1.50	2	
7	47.47960	-107.52080	A020409BFG	Arlee		10.30	243.80	MR		
04/20/2010	164660	Childers Pond	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	47.47630	-107.54500	A020409BFG	Arlee		6.80	243.80	MR		
04/19/2010	164703	Clark Reservoir	2,500	001A - Rainbow Trout		2.60	18	1.50	2	
7	47.47021	-107.40700	A020409BFG	Arlee		17.00	243.80	MR		
04/19/2010	212450	Clarks Reservoir	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.88742	-105.70442	A020409BFG	Arlee		6.80	243.80	MR		
04/20/2010	164725	Clyde Saylor Pond	1,500	001A - Rainbow Trout		2.60	18	1.50	2	
7	47.38160	-107.40685	A020409BFG	Arlee		10.20	243.80	MR		
04/21/2010	121051	Craft Pond #2	1,500	001A - Rainbow Trout		2.60	18	1.50	2	
7	45.12303	-104.88123	A020409BFG	Arlee		10.00	243.80	MR		
04/19/2010	213198	Fort Keogh Bass Pond	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.40850	-105.95990	A020409BFG	Arlee		6.80	243.80	MR		
04/21/2010	121308	Frigid Reservoir	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	45.46226	-104.60713	A020409BFG	Arlee		6.80	243.80	MR		
04/21/2010	121310	Gardner Reservoir	6,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	45.26494	-104.84123	A020409BFG	Arlee		41.00	8.23	MR		
04/19/2010	187725	Grebe Reservoir #1	2,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.66306	-107.57733	A020409BFG	Arlee		13.60	243.80	MR		
04/19/2010	165305	Grebe Reservoir #2	1,000	001A - Rainbow Trout		2.60	18	1.50	1	
7	46.69334	-107.64098	A020409BFG	Arlee		6.80	243.80	MR		
04/19/2010	213570	Haughian Reservoir #1	2,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.83530	-105.76030	A020409BFG	Arlee		0.00	243.80	MR		
04/19/2010	213790	Hofer Reservoir #2	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.58648	-107.48983	A020409BFG	Arlee		6.80	243.80	MR		

Appendix 2. (continued)

Montana Fish, Wildlife & Parks

Fish Planting Report - By Water

Date Range:
Selections:

Date / Rgn	Wtr Cd / Latitude	Water Name / Longitude	Nbr Fish / Lot Nbr	Species / Strain	Sterile	Len / Wt	Miles / Cost	Prdm / Emp	Cnd / Mrk	Tmp
04/19/2010	213845	Hook Reservoir #1	600	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.59722	-106.21485	A020409BFG	Arlee		4.10	243.80	MR		
04/21/2010	213976	Janssen Reservoir	2,500	001A - Rainbow Trout		2.60	18	1.50	2	
7	45.72170	-105.47190	A020409BFG	Arlee		17.00	8.23	JL		
04/20/2010	166091	Jarden Reservoir #1	2,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	47.25140	-107.25240	A020409BFG	Arlee		13.60	8.23	MR		
04/20/2010	166092	Jarden Reservoir #2	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	47.23610	-107.27320	A020409BFG	Arlee		6.80	243.80	MR		
04/19/2010	213985	Jason Phipps Reservoir	2,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.89303	-107.20797	A020409BFG	Arlee		13.60	243.80	MR		
04/19/2010	166199	Killen, John #2 Res.	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.80359	-106.48830	A020409BFG	Arlee		6.80	243.80	MR		
04/20/2010	166415	Kreider Reservoir #2	1,500	001A - Rainbow Trout		2.60	18	1.50	2	
7	47.18540	-107.48470	A020409BFG	Arlee		10.00	243.80	MR		
07/27/2010	166410	Krieder Res. #1	4,000	017M - Largemouth Bass		0.00	220	26.00	2	
7	47.25140	-107.25240	M141410L01	Miles City		5.40	105.60	MR		
04/20/2010	166410	Krieder Reservior #1	2,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	47.18540	-107.48470	A020409BFG	Arlee		13.60	8.23	MR		
04/21/2010	214800	Labree Reservoir	2,500	001A - Rainbow Trout		2.60	18	1.50	2	
7	45.99950	-104.79110	A020409BFG	Arlee		17.00	243.80	MR		
07/29/2010	214900	Lee Pond #2	1,500	017M - Largemouth Bass		1.80	70	0.00	2	
7	46.41490	-106.67932	M141410L01	Miles City		3.90	33.60	MR		
04/21/2010	215117	Losinski Reservoir #3	400	001A - Rainbow Trout		2.60	18	1.50	2	
7	45.63704	-105.73283	A020409BFG	Arlee		2.70	8.23	JL		
04/20/2010	166967	McRae Reservoir #1, Jack	2,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	47.36740	-106.45450	A020409BFG	Arlee		13.60	8.23	MR		
04/20/2010	166970	Meckle Reservoir #1	700	001A - Rainbow Trout		2.60	18	1.50	2	
7	47.21560	-107.43830	A020409BFG	Arlee		4.70	243.80	MR		
04/19/2010	167108	Murnion, Fred #1	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	47.01189	-106.43500	A020409BFG	Arlee		6.80	243.80	MR		
04/19/2010	167109	Murnion, Fred #2	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.98280	-106.47750	A020409BFG	Arlee		6.80	243.80	MR		
04/19/2010	167210	Newman Reservoir #1	800	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.94840	-107.42910	A020409BFG	Arlee		5.50	243.80	MR		
04/21/2010	216238	Oil Pump Reservoir	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.85404	-104.66796	A020409BFG	Arlee		6.80	243.80	MR		
04/21/2010	217275	Pinnow Reservoir	1,500	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.27822	-104.20039	A020409BFG	Arlee		10.00	243.80	MR		
04/21/2010	217276	Pinnow Reservoir #2	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.27911	-104.21082	A020409BFG	Arlee		6.80	243.80	MR		
04/19/2010	217302	Potts Reservoir	2,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.52872	-106.62675	A02O409BFG	Arlee		13.60	243.80	MR		
07/29/2010	217303	Potts Reservoir #2	1,000	017M - Largemouth Bass		1.80	70	0.00	2	
7	46.56632	-106.64965	M141410L01	Miles City		5.20	33.60	MR		
04/21/2010	217305	Pruett Pond	600	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.58795	-104.40959	A020409BFG	Arlee		4.10	243.80	MR		
04/19/2010	217870	Ringstveit Lake	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.82625	-106.71735	A020409BFG	Arlee		6.80	243.80	MR		

Appendix 2. (continued)

Montana Fish, Wildlife & Parks

Fish Planting Report - By Water

Date Range:
Selections:

Date / Rgn	Wtr Cd / Latitude	Water Name / Longitude	Nbr Fish / Lot Nbr	Species / Strain	Sterile	Len / Wt	Miles / Cost	Prdm / Emp	Cnd / Mrk	Tmp
04/20/2010	168045	Ryan Ponds	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	47.41800	-107.52450	A020409BFG	Arlee		6.80	243.80	MR		
04/20/2010	168056	Saylor Reservoir	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	47.36680	-107.41310	A020409BFG	Arlee		6.80	243.80	MR		
04/19/2010	218352	Schlesinger Reservoir #1	500	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.76980	-107.19630	A020409BFG	Arlee		3.40	243.80	MR		
04/21/2010	124000	Schweigert Dam	500	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.49862	-104.21142	A020409BFG	Arlee		3.40	243.80	MR		
04/21/2010	124050	Sidney Reservoir	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	45.36900	-104.47350	A020409BFG	Arlee		6.80	243.80	MR		
04/19/2010	218650	Silvertip Reservoir	1,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	46.86693	-105.59117	A020409BFG	Arlee		6.80	243.80	MR		
05/04/2010	218775	South Sandstone Reservoir	200,000	082F - Walleye		0.22	152	0.00	2	
7	46.32745	-104.43631	F141410W01	Fort Peck		1.00	72.96	JMR		
06/23/2010	218775	South Sandstone Reservoir	5,000	082F - Walleye		1.50	0	3.00	2	
7	46.32745	-104.43631	F141410W01	Fort Peck		6.00	0.00	JL		
04/21/2010	124112	Spring Canyon Reservoir	500	001A - Rainbow Trout		2.60	18	1.50	2	
7	45.70525	-104.20183	A020409BFG	Arlee		3.40	243.80	MR		
08/21/2010	000000	State of New Mexic0	25,937	017M - Largemouth Bass		1.90	0	0.00	2	
7			M141410L01	Miles City		161.00	0.00	JMR		
Rock Lake Hatchery										
05/04/2010	219000	Tongue River Reservoir	1,000,000	082F - Walleye		0.22	0	0.00	2	
7	45.08357	-106.80005	F141410W01	Fort Peck		4.50	0.00	RM		
06/22/2010	219000	Tongue River Reservoir	50,000	082F - Walleye		1.50	0	0.00	2	
7	45.08357	-106.80005	F141410W01	Fort Peck		61.00	0.00	JL		
04/20/2010	168709	Watt Reservoir	2,000	001A - Rainbow Trout		2.60	18	1.50	2	
7	47.53290	-107.27410	A020409BFG	Arlee		13.60	243.80	MR		
04/21/2010	125150	West Plum Reservoir	600	001A - Rainbow Trout		2.60	18	1.50	2	
7	45.62910	-104.10100	A020409BFG	Arlee		4.00	243.80	MR		
10/07/2010	211350	Yellowstone River Sec 01	250	091M - Pallid Sturgeon		5.00	0	0.00	1	
7	47.80690	-104.04245	M141410PS1	Missouri Below Fort Peck		4.30	0.00	RH	EL	
Fallon, Intake										
10/07/2010	211350	Yellowstone River Sec 01	250	091M - Pallid Sturgeon		5.00	0	0.00	1	
7	47.80690	-104.04245	M141410PS3	Missouri Below Fort Peck		4.30	0.00	RH	EL	
Fallon, Intake										
10/07/2010	211350	Yellowstone River Sec 01	250	091F - Pallid Sturgeon		5.00	0	0.00	1	
7	47.80690	-104.04245	M141410PS2	Missouri Above Fort Peck		4.30	0.00	RH	EL	
Fallon, Intake										

Ttl Nbr Fish: 1,366,887 **Ttl Miles:** 1,601 **Ttl Perdiem:** 111.50
Ttl Weight: 733.30 **Ttl Veh Cost:** 11,112.67

Appendix 3. 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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