MONTANA FISH, WILDLIFE, & PARKS
FISHERIES DIVISION
JOB PROGRESS REPORT

STATE: MONTANA PROJECT TITLE: STATEWIDE FISHERIES INVESTIGATIONS

PROJECT NO.: F-113-R-4 STUDY TITLE: SURVEY AND INVENTORY OF COLDWATER AND WARMWATER ECOSYSTEMS

JOB NO.: V-d TITLE: NORTHEAST MONTANA COLDWATER ECOSYSTEM INVESTIGATIONS

PROJECT PERIOD: JULY 1, 2007 THROUGH JUNE 30, 2008

ABSTRACT

The coldwater fisheries in Hill, Blaine, and Phillips counties have been impacted by drought over the past five years, however the installation of windmill aeration systems and years with increased summer rains are allowing these populations to recover. However the summer of 2006 & 2007, was exceptionally dry and the effects of decreased water levels especially in Hill and Blaine Counties resulted in partial summer fish kills at Sentinel, Current, Nelson, Faber, North Faber, Beaver Creek, and Floyd Flynn Reservoirs.

Rainbow trout growth and survival in Beaver Creek Reservoir has been good in the past few years. Northern pike populations have been increasing in Beaver Creek Reservoir and the effects may have to be addressed in the future. Rainbow and Yellowstone cutthroat trout fisheries in Bearpaw Lake have responded well to control efforts of white suckers. Fishing pressure has increased in response in increased size of trout within Bearpaw. Growth and condition of rainbow trout in Grasshopper, H.C. Kuhr, and Faber Reservoir remains good. White suckers were found in H.C. Kuhr Reservoir and Ross Reservoir again and juvenile tiger muskies were stocked in response. An over abundance of yellow perch were also found in Reser Reservoir and tiger musky were stocked in response.

Ponds in Hill, Blaine, and Phillips, counties were monitored in 2007 and results and management recommendations for all these waters are presented.

OBJECTIVES AND DEGREE OF ATTAINMENT

Survey and Inventory: Objective is to survey and monitor the characteristics and trends of fish populations, angler harvest and preference, and to assess habitat conditions in selected waters. Objective accomplished, data presented.

Fish Population Management: Objective is to implement fish stocking programs and/or fish eradication actions to maintain fish populations at levels consistent with habitat conditions and other limiting factors. Objective accomplished, data presented.

Technical Guidance: To review projects by federal, state and local government agencies and private parties that have the potential to affect fisheries resources, and to provide technical advice or decisions to mitigate impacts on these resources. To provide landowners and other private parties with technical advice and information to sustain and enhance fisheries resources. Objective accomplished: four 310

projects were reviewed and four 124 projects were reviewed with state and local agencies; advised Rocky Boy Reservation on habitat enhancement projects and water flow regimes on the east fork of Beaver Creek; supplied comments to Bureau of Land Management (BLM) relative to development of new fishing Reservoirs; commented on oil and gas development in Hill, Blaine, and Phillips Counties; twelve meeting, school programs, and fishing events were attended with schools related to the "Hooked on Fishing" program.

METHODS

Floating and sinking multi-filament experimental gill nets 125 feet in length and 6 feet deep consisting of 25-foot panels of ¾", 1", 1 ¼", 1 ½", and 2" mesh were fished to acquire information on adult fish populations in ponds and reservoirs. Whenever possible, fish were measured for total length (TL: inches) and weighed to the nearest 0.01 pound.

RESULTS AND DISCUSSION

Beaver Creek Reservoir

Beaver Creek Reservoir, located south of Havre, is a 200-acre reservoir, which has a maximum depth of 90 feet. Its proximity to the city of Havre makes this reservoir a valuable local resource and it has been managed intensively in recent years for a variety of species. The statewide fishing pressure survey for 2005/2006 indicated it was the fifth most fished reservoir in Region Six (McFarland 2006).

This reservoir was established as a rainbow trout fishery in 1975. However, the illegal introduction of northern pike (1980s) and yellow perch (1980s) has resulted in the rainbow trout fishery having varying success. As a result, the fisheries management plan was expanded to include other warm water species, which were introduced to control undesirable species and enhance the fishing opportunity within the reservoir. Currently this reservoir receives annual plants of 70,000 catchable size Eagle Lake, Erwin and Arlee rainbow trout as well as 10,000 fingerling walleye.

In an effort to maintain the balance between the rainbow trout fishery and the warm water fishery, the use of live minnows for bait has been allowed since March of 2000. The regulation is intended to increase harvest of northern pike and perhaps open up a winter fishery for walleye. Though fishermen use live minnows regularly, a winter fishery for walleye has not developed. The trout daily limit was reduced from 5/day to 3/day in March of 2002 due to increasing fishing pressure.

Population Status of Young of Year Fishes

The abundance and reproductive success of sport and forage fishes were monitored at six predetermined stations. Beach seining was conducted in early August using a 100- x 9-foot x ¼ inch square mesh beach seine. The first 50 fish of each species were measured (TL: inches) and weight to the nearest 0.01 pound. All additional fish of each species were counted.

Seining results in 2007 indicated that forage fish and northern pike were decreased in levels (Table 2). However northern pike had a very successful spawn in 2005 and 2006. As a result northern pike populations may increase over the next few years and cause a significant decline in the abundance or rainbow trout within Beaver Creek Reservoir. The effects of increased pike populations will be monitored and stocking rate adjustments will be made if necessary.

Table 2. – Summary of young of year yellow perch (YP), white sucker (W SU), spottail shiner (SP SH), Iowa Darter (IOWA), fathead minnow (FH MN), largemouth bass (LMB), northern pike (NP), walleye (WE), and other fishes captured by beach seining in Beaver Creek Reservoir, 1980 to 2007.

Date	Sites	YP	W SU	SP SH	IOWA	FH MN	LMB	SMB	NP	WE	Other Sp.[1]
Jul-80	5	--	650	--	0	42	--	--	--	--	46
Jul-81	5	--	1,671	--	0	75	12	--	--	--	38
Jul-82	5	--	7	--	0	0	54	--	0	--	0
Jun-83	5	--	46	--	0	0	5	--	5	--	0
Aug-84	7	--	189	--	10	0	4	--	0	--	0
Sep-85	5	--	2,648	--	11	0	33	--	3	--	7
May-86	4	--	1,749	0	2	0	0	--	1	--	24
Jun-86	6	--	3,132	0	2	0	0	--	1	--	1
Aug-86	6	--	134	0	8	0	2	--	9	--	0
Sep-86	6	--	1,111	0	34	29	184	--	6	--	11
Jul-87	6	1,968	2,276	1	24	3	0	--	20	11	3
Aug-87	6	2,315	973	0	59	1	16	--	19	19	5
Jun-88	6	20	17	0	6	0	0	--	1	3	0
Aug-88	6	4,973	62	1	4	0	0	--	1	2	0
Aug-89	6	50	48	603	0	0	0	--	2	4	5
Aug-90	6	42	1	93	2	0	0	--	2	0	1
Aug-91	6	8,642	348	835	0	0	0	--	17	0	4
Aug-92	6	1,888	492	156	4	0	0	--	4	0	0
Aug-93	6	42	0	355	11	0	0	--	27	0	0
Aug-94	6	707	49	181	0	0	0	--	11	0	0
Aug-95	6	7,210	6	1,438	0	0	0	--	13	0	0
Aug-96	6	51	261	248	7	0	0	0	5	7	0
Aug-97	6	17	31	193	6	0	0	8	13	2	0
Aug-98	6	872	0	141	0	0	0	41	6	1	0
Aug-99	6	592	4	87	0	0	0	16	7	2	0
Aug-00	6	402	1	190	0	1	0	12	3	23	0
Aug-01	6	357	10	216	0	0	0	8	0	3	0
Aug-02	6	333	0	592	0	0	0	7	0	93	0
Aug-03	6	557	19	2,355	2	0	0	9	15	1	0
Aug-04	6	1,545	0	0	1	0	0	5	2	2	0
Jul-05	6	185	3	1	0	0	0	0	36	12	0
Aug-06	6	1,154	8	608	0	0	0	12	32	11	0
Jul-07	6	253	0	0	0	0	0	13	4	9	0

[1] Consists of emerald shiners, northern redbelly dace, lake chub, western silvery/plains minnow, brassy minnow, and longnose dace

Population Status of Adult Fishes

Adult fish populations were monitored at six fixed experimental gillnetting stations, which were established in 1986. Gillnetting was conducted over night utilizing three sinking and three floating experimental gill nets (6 net-days). The sinking and floating experimental gill nets were 125 feet in length and 6 feet deep consisting 25-foot panels of ¾", 1", 1 ¼", 1 ½", and 2" mesh. Fish were measured for total length (TL: inches) and weighted to the nearest 0.01 pound (lb). Prior to 1986,

adult fish populations were monitored, however sampling was neither uniform, nor consistent enough to develop useful trend data on game fish population size, or composition. As a result this data was excluded from analysis and is only included within the tables for reference to the illegal introduction of northern pike and yellow perch.

Rainbow Trout

Rainbow trout population levels fell below target levels of 10 fish/net in 2005 and 2006 however they increased to 9 fish/net in 2006 (Table 3). In 2003 and 2004, the abundance of rainbow trout was above the target however during these years 84,443 and 61,459 Arlee and Eagle Lake rainbow trout were stocked, respectively. In 2005, 41,416 rainbow trout were stocked which may account for the decreased abundance (CPUE=5.5 fish/net) of rainbow trout. In addition the yellow perch populations were at their highest levels since 2001/2002 and northern pike have been increasing. Decreased stocking levels in 2005 due to PCB cleanup at Big Springs Fish hatchery, combined with increased competition and predation are the primary causes for decreased catch rates of rainbow trout. In 2006, stocking rates of rainbow trout returned to normal (70,000 RBT / year) and catch rates should continue to increase to target levels.

Table 3.- Summary of relative abundance (catch per unit effort (CPUE)), average total length, and relative weights of fishes collected in fall gillnetting surveys in Beaver Creek Reservoir, 1974-2007.

		Rainbow Trout			Yellow Perch			Northern Pike			Smallmouth bass			Walleye			Longnose sucker		White sucker	
Date	Nets	CPUE (fish/net)	Ave TL (in.)	Rel Wt	CPUE (fish/net)	Ave TL (in.)	Rel Wt	CPUE (fish/net)	Ave TL (in.)	Rel Wt	CPUE (fish/net)	Ave TL (in.)	Rel Wt	CPUE (fish/net)	Ave TL (in.)	Rel Wt	CPUE (fish/net)	Ave TL (in.)	CPUE (fish/net)	Ave TL (in.)
Sep-74	3	24.00	10.91	111.26	--	--	--	--	--	--	--	--	--	--	--	--	7.33	10.49	82.33	10.23
Nov-77	3	35.00	10.05	86.31	--	--	--	--	--	--	--	--	--	--	--	--	2.33	9.66	113.00	9.75
Sep-80	3	23.33	10.12	81.04	--	--	--	--	--	--	--	--	--	--	--	--	1.33	6.33	156.00	8.86
Sep-81	3	7.33	10.88	82.77	--	--	--	--	--	--	--	--	--	--	--	--	6.67	8.78	165.33	8.70
Oct-82	3	8.33	11.78	99.67	--	--	--	2.33	15.79	109.67	--	--	--	--	--	--	3.33	9.66	109.67	9.69
Oct-83	3	3.33	11.79	94.66	--	--	--	3.67	25.10	117.07	--	--	--	--	--	--	1.33	--	98.33	--
Sep-84	3	3.00	11.26	95.43	--	--	--	3.67	26.64	111.21	--	--	--	--	--	--	0.67	11.00	58.33	10.50
Sep-86	6	15.00	11.50	98.90	--	--	--	4.17	16.68	109.86	--	--	--	--	--	--	0.00	--	42.00	--
Sep-87	6	11.33	13.61	92.06	0.33	6.30	--	5.17	22.43	91.71	--	--	--	0.00	--	--	0.00	--	18.00	--
Sep-88	6	9.67	14.74	90.40	8.17	5.93	105.50	3.00	27.55	123.61	--	--	--	0.67	10.58	86.48	4.00	--	14.00	--
Sep-89	6	10.67	13.15	93.45	9.17	7.59	96.04	1.17	30.31	94.56	--	--	--	0.00	--	--	2.50	--	14.33	4.13
Sep-90	6	18.50	11.96	88.66	4.00	8.51	95.13	0.67	20.95	100.49	--	--	--	2.67	13.69	81.72	9.17	8.04	9.67	14.12
Sep-91	6	15.50	12.78	93.26	12.00	7.39	103.98	2.33	16.57	95.37	--	--	--	5.67	13.98	90.24	2.83	--	8.17	--
Sep-92	6	13.67	13.74	93.42	6.00	6.37	91.54	3.33	25.64	113.39	--	--	--	2.33	17.84	94.80	1.33	--	7.67	--
Sep-93	6	3.17	16.43	94.48	12.33	7.20	109.06	2.00	27.49	100.01	--	--	--	3.33	16.75	95.36	0.00	--	8.67	--
Sep-94	6	27.67	11.73	99.87	23.83	7.65	101.80	2.83	25.52	114.54	--	--	--	1.67	17.39	103.33	0.00	--	6.00	--
Sep-95	6	20.17	13.42	96.73	20.00	7.71	102.97	3.50	21.66	96.62	--	--	--	2.50	17.96	90.90	0.00	--	12.83	--
Sep-96	6	7.83	12.56	96.59	38.00	7.58	105.79	2.83	24.86	103.02	0.17	10.10	119.26	3.33	16.68	96.53	0.00	--	11.00	3.75
Sep-97	6	6.83	13.00	91.31	39.50	7.22	94.54	4.17	21.70	99.11	0.00	--	--	2.17	17.65	96.90	0.00	--	6.17	--
Sep-98	6	4.50	15.53	86.75	47.17	7.55	93.84	4.83	24.43	94.79	0.33	11.65	114.91	4.33	18.04	96.05	0.00	--	10.17	13.74
Sep-99	5	4.20	12.26	104.04	40.60	8.39	93.18	2.20	24.17	105.00	0.80	8.95	119.90	4.40	15.24	95.74	0.20	17.30	4.60	13.39
Sep-00	6	1.00	15.07	93.40	25.00	7.52	96.67	2.50	25.33	99.20	0.50	7.80	104.56	4.67	16.66	96.31	0.00	--	4.17	0.00
Sep-01	6	14.50	12.09	92.76	30.67	7.39	100.86	1.00	27.73	96.81	0.17	10.40	108.60	4.50	13.93	93.62	0.17	17.10	8.67	14.72
Sep-02	6	3.33	11.98	96.85	21.67	7.98	100.11	1.17	25.76	96.31	0.50	9.43	99.04	7.67	14.90	89.57	0.17	--	5.33	--
Sep-03	5	15.80	11.46	102.26	12.20	7.94	125.10	2.00	13.90	108.18	0.20	10.40	96.53	3.60	14.74	101.16	0.00	--	2.60	--
Sep-04	6	12.83	11.62	93.09	16.17	8.34	99.43	0.67	23.90	103.89	0.33	8.20	103.42	2.50	15.32	68.68	0.17	19.20	5.17	15.99
Sep-05	6	5.50	13.63	97.00	12.33	8.35	102.88	0.50	29.23	104.05	0.00	--	--	3.33	15.29	96.82	0.00	--	6.00	16.57
Sep-06	6	3.00	13.38	143.90	23.00	7.71	101.30	1.50	26.94	97.10	0.00	--	--	3.00	15.08	98.10	0.00	--	3.00	16.89
Sep-07	6	9.00	11.80	95.70	29.33	7.90	107.00	1.67	27.50	101.50	0.17	9.20	107.20	5.17	12.80	103.80	0.00	--	17.00	17.20

Bearpaw Lake

Bearpaw Lake is a very popular 45 surface-acre reservoir located on Beaver Creek in the Bearpaw Mountains and is currently ranked number four in Region 6 for fishing pressure (2005/2006; McFarland 2006). Bearpaw Lake has been managed as a trout fishery since 1960 and is currently maintained with annual stocks of 15,000 catchable size Arlee rainbow trout and 5,000 catchable size McBride Yellowstone cutthroat trout. Because of this lakes popularity and the desire by the public to catch larger fish, the daily limit for trout was reduced from five to three fish per day in the spring of 2002.

Bearpaw Lake also sustains a very healthy population of white suckers, which has negatively impacted the rainbow trout fishery. As a result walleye and smallmouth bass have been established within the reservoir. Smallmouth bass have been naturally reproducing within the reservoir since 1998. Walleye were illegally introduced in the 1990s and were then utilized as a control measure for white suckers with periodic stockings from 1992 to 1997. In 2006 & 2007, a supplemental plant of 5,000 advanced fingerlings was conducted to replenish the aging walleye population. In addition, since chemical rehabilitation of Bearpaw Lake was conducted in 1983 a manual sucker control program was initiated in 1989 in an effort to reduce food competition between trout and white suckers and thus improve growth and survival of rainbow trout.

Water levels within Bearpaw Lake have been relatively stable over the past few years, however in 2006, drought caused water levels to be reduced. In 2007 water levels returned to normal and no adverse effects on the fishery were observed from the reduced water levels in 2006.

Population Status of Adult Fishes

Adult fish populations were monitored at three fixed experimental gillnetting stations, which were established in 1984. Gill netting was conducted over night utilizing two sinking experimental gill nets and one floating experimental gill net (3 net-days). The sinking and floating experimental gill nets were 125 feet in length and 6 feet deep consisting of 25-foot panels of ¾", 1", 1 ¼", 1 ½", and 2" mesh. Fish were measured for total length (TL: inches) and weighted to the nearest 0.01 pound (lb).

Since 1989, manual control of white suckers has been attempted on an annual basis. Control efforts involve setting five trap nets for one to two weeks during the spawning season. Traps are checked daily and white suckers are transferred to other lakes, given to local farmers for fertilizer, or killed and returned to the lake.

Rainbow and Yellowstone Cutthroat Trout

Rainbow trout and Yellowstone cutthroat trout have been stocked in Bearpaw Lake since the 1960s and 1980s, respectively. Rainbow trout are currently stocked in Bearpaw Lake at a rate of 15,000 catchables per year. Yellowstone cutthroat trout are stocked annually at a rate of 5,000 catchables. In 2004, stocking rates were significantly increased due the need reduce the number of fish at the Big Springs Fish Hatchery for cleanup of PCB contamination. As a result, 12,550 catchables and 5,115 fingerling rainbow trout and 75,883 fingerling Yellowstone cutthroat trout were stocked.

The relative abundance of rainbow and Yellowstone cutthroat trout has fluctuated greatly since their introduction (Table 4). The primary reasons for these fluctuations are stocking densities, fishing pressure, and changes in survivability as a result of multiple factors including competition with white suckers. In 2005 & 2006, catch rates (Table 4) were significantly increased which is most likely due to the increased stocking density in 2004 and continued control efforts on white suckers. In 2007 catch rates of rainbow trout returned to normal levels (13.33 fish/net) and catch rates of Yellowstone cutthroat trout increased significantly to 2.33 fish/net.

Rainbow trout and Yellowstone cutthroat trout have had relatively poor growth rates due to fishing pressure and competition with white suckers for food. However, since the initiation of manual control of white suckers and the introduction of smallmouth bass (1992) and walleye (legally in 1995), the average length of trout has increased (Figure 1; Table 4). Since 2004, average length of trout has

decreased slightly, however this is most likely as a result of increased stocking of rainbow trout and Yellowstone cutthroat trout in 2004.

White Sucker

The white sucker population has been significantly reduced since control efforts were initiated in 1983 (Figure 2; Table 4). Chemical rehabilitation was attempted in 1983, however white suckers quickly re-populated the lake from Beaver Creek. In 1989, a manual removal program was initiated and in 1992 and 1995 smallmouth bass and walleye were introduced to help control YOY and adult white sucker populations. Since 1989, 144,099 white suckers have been removed using trap nets and gill nets (Table 5). Overall the average size of white suckers has been increasing, indicating that control efforts have helped prevent adults from spawning, and smallmouth bass have been helping control YOY populations. In 2007, spring trap-netting and fall gill-netting removed a total of 2,111 pounds of white suckers.

Smallmouth Bass

Smallmouth bass were introduced in 1992 to assist with the control of YOY white suckers. Since 1998, smallmouth bass have been successfully reproducing and recruiting into the population. In addition to providing control of white suckers, smallmouth bass have become an important addition to the fishery. In 2006 and 2007, fall gillnetting surveys resulted in high catch rates of smallmouth bass (Table 4). Bass collected ranged in length from 6.6 to 14.6 in. and weighted 0.21 to 0.58 lbs (Table 4). Also the abundance of crayfish has been significantly decreased with the increasing numbers of smallmouth bass.

Walleye

Walleye were illegally introduced within Bearpaw Lake in the early 1990s. They were first documented within the lake in 1992. From 1992 to 1997, walleye fry and fingerlings were stocked to help control adult white sucker populations. In 2006 and 2007, a supplemental plant of 5,000 advanced fingerlings were stocked to replenish the aging walleye population. Since their legal introduction, walleye have assisted with the control of white suckers and provided a new addition to this popular fishery.

Figure 1. - Comparison of white sucker catch rate during fall gill netting surveys and average length of trout (rainbow, brook, and Yellowstone cutthroat) in Bearpaw Lake (1979-2007).

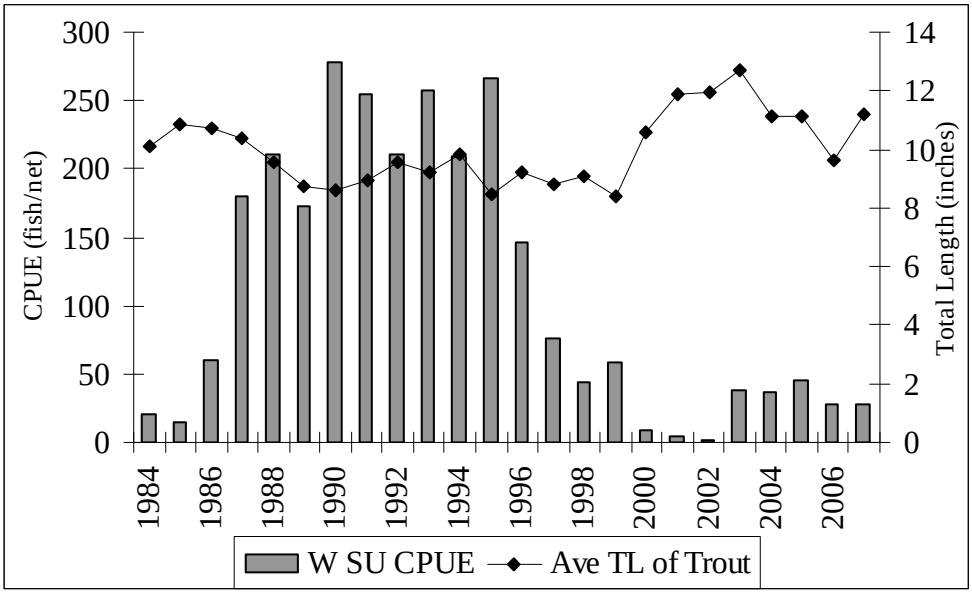


Table 4.- Summary of relative abundance (catch per unit effort (CPUE)), total length, and relative weights of fishes collected in fall gillnetting surveys in Bear Paw Lake since chemical rehabilitation in 1983.

		Rainbow Trout			Brook Trout			Yellowstone Cutthoat Trout			White Sucker			Smallmouth Bass			Walleye		
Date	Nets	CPUE (fish/net)	Ave TL (in.)	Rel Wt	CPUE (fish/net)	Ave TL (in.)	Rel Wt	CPUE (fish/net)	Ave TL (in.)	Rel Wt	CPUE (fish/net)	Ave TL (in.)	Rel Wt	CPUE (fish/net)	Ave TL (in.)	Rel Wt	CPUE (fish/net)	Ave TL (in.)	Rel Wt
Sep-84	2	0.00	--	--	0.00	--	--	15.50	10.13	86.34	13.50	8.00	--	--	--	--	--	--	--
Sep-85	3	1.33	12.03	97.49	1.00	9.05	109.72	27.33	11.50	86.83	6.33	--	--	--	--	--	--	--	--
Sep-86	3	0.00	--	--	3.33	10.41	106.78	16.67	11.01	86.45	94.33	6.40	--	--	--	--	--	--	--
Sep-87	3	17.00	11.27	93.31	3.00	10.31	103.48	25.67	9.52	86.21	192.67	7.00	--	--	--	--	--	--	--
Aug-88	3	9.33	10.66	83.05	1.33	10.48	100.24	9.00	7.60	90.08	210.33	11.67	93.74	--	--	--	--	--	--
Sep-89	3	15.33	8.64	88.09	0.67	9.50	106.91	19.33	8.08	85.50	173.67	8.00	--	--	--	--	--	--	--
Aug-90	3	9.00	9.95	81.94	0.33	7.20	86.56	22.33	8.71	77.85	277.67	8.00	--	--	--	--	--	--	--
Aug-91	3	4.00	10.23	88.55	0.67	7.45	104.75	15.00	9.12	85.36	255.33	8.00	--	--	--	--	--	--	--
Sep-92	3	17.00	9.83	90.97	0.33	10.10	90.14	58.67	8.79	77.22	212.00	8.00	--	--	--	--	0.33	13.90	97.61
Sep-93	3	0.00	--	--	0.33	9.30	105.94	6.00	9.15	81.65	258.33	8.00	--	0.00	--	--	0.00	--	--
Sep-94	3	6.33	10.59	101.87	0.00	--	--	13.67	9.09	79.87	208.67	8.00	--	0.00	--	--	0.00	--	--
Sep-95	2	21.50	9.07	92.20	0.00	--	--	89.50	7.82	81.30	399.00	8.00	--	1.00	5.80	111.70	0.00	--	--
Sep-96	3	1.67	10.36	102.97	0.33	8.40	90.25	60.67	8.94	85.64	146.00	8.80	--	0.67	6.80	96.44	1.33	8.73	81.46
Sep-97	3	24.67	9.16	93.58	0.00	--	--	26.00	8.47	80.26	76.00	10.00	--	0.67	9.90	103.82	1.00	7.73	72.03
Sep-98	3	10.00	9.34	86.71	0.00	--	--	3.67	8.84	72.68	44.33	12.02	84.89	0.33	6.00	90.19	1.33	8.43	80.59
Sep-99	3	43.33	8.31	97.60	0.00	--	--	19.33	8.54	79.14	57.33	12.00	--	0.00	--	--	1.33	10.43	83.95
Sep-00	2	46.00	11.36	97.54	1.50	9.67	98.77	20.00	10.81	80.53	14.00	12.00	--	6.00	9.76	103.09	3.50	11.30	88.39
Sep-01	2	11.00	13.39	98.99	6.50	11.36	101.16	15.00	10.91	81.14	6.00	8.00	--	2.00	10.83	102.66	0.00	--	--
Sep-02	2	19.50	12.58	98.57	0.00	--	--	6.50	11.31	83.45	3.00	13.52	99.67	0.00	--	--	2.00	19.50	82.57
Sep-03	3	16.33	12.72	94.32	0.00	--	--	0.00	--	--	37.67	8.00	--	5.67	12.21	112.80	1.00	19.60	101.96
Sep-04	3	13.33	11.11	--	0.00	--	--	0.00	--	--	36.67	12.60	--	0.33	14.50	--	0.67	20.45	--
Sep-05	3	24.67	11.12	92.19	0.00	--	--	0.33	--	--	44.67	13.14	99.05	5.67	9.07	112.75	1.33	20.53	101.17
Sep-06	3	32.00	10.62	98.00	0.00	--	--	0.67	9.35	96.10	28.00	15.31	108.20	9.00	9.84	109.80	0.33	15.40	104.20
Sep-07	3	13.33	11.20	96.30	0.00	--	--	2.33	9.20	80.90	28.00	13.40	102.30	9.00	9.00	115.70	4.33	7.60	96.10

Table 5. - Numbers of white suckers removed from Bearpaw Lake by trap netting and fall gill netting, 1989-2007.

Year	Number Trap Netting	Number Gill netting	Total Number	Total Pounds
1989	12,545	521	13,066	9,359.19
1990	44,622	833	45,455	10,396.52
1991	18,140	766	18,906	4,932.86
1992	4,133	636	4,769	955.42
1993	5,239	775	6,014	1,205.33
1994	6,995	626	7,621	882.49
1995	5,653	798	6,451	2,396.44
1996	1,991	438	2,429	817.39
1997	13,485	228	13,713	8,227.80
1998	6,708	133	6,841	5,309.22
1999	8,239	172	8,411	7,614.72
2000	2,225	28	2,253	2,591.20
2001	331	12	343	562.69
2002	17	6	23	21.65
2003	1,564	113	1,677	2,362.17
2004	222	110	332	418.32
2005	1,895	134	2,029	2,311.74
2006	1,893	84	1,977	2,491.02
2007	1,705	84	1,789	2,111.02
Totals	137,602	6,497	144,099	64,967

Blaine County Ponds

Ponds throughout Blaine County were either sampled using gillnets to assess species composition, relative abundance, and size distribution of fish or the voluntary creel boxes were maintained.

Brookie Pond

Brookie Pond is a privately owned reservoir that has been managed as a brook trout fishery by Montana Fish, Wildlife & Parks since 2003. In 2005, Brookie Pond was entered into a five-year contract under the Private Lands Fishing Access Program. This pond has a windmill aeration system and from 2004 to 2007 the pond was managed with annual stocks of 3,000 fingerling brook trout. From 2008 to 2012 the pond will be managed with alternate year plants of 1,500 fingerling brook trout.

In 2007, one gill net was set overnight and a total of six brook trout were collected ranging in length from 14.3 to 16.4 inches ($\bar{x}$ =14.9 inches) and in weight from 1.82 to 2.47 pounds ($\bar{x}$ =2.09 pounds).

Faber Reservoir

Faber Reservoir, a 25-surface-acre reservoir located 30 miles south of Chinook near Cleveland, is one of the most popular fishing access sites in north central Montana. This reservoir became a fishing access site in 1986 and the contract was renewed in 2006 for another 20 years. Faber reservoir ranked 12th in the region for fishing pressure in 2005/2006, with a total of 2,316 angler days. Faber has been a consistent producer of quality rainbow trout for three decades.

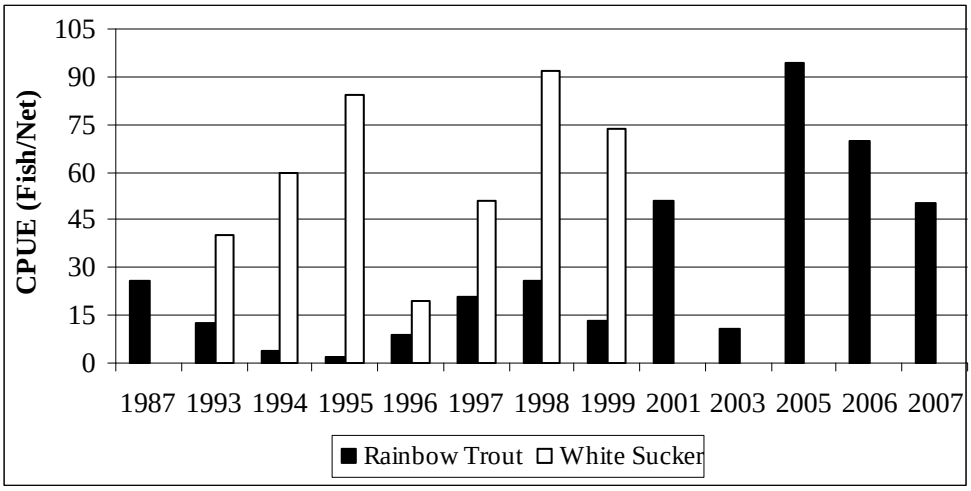
This reservoir was rehabilitated in 2000 due to the illegal introduction of largemouth bass and white suckers. Fingerling Arlee rainbow trout were re-stocked in the spring of 2001 and approximately

10,000 fingerling trout are stocked annually. However, in 2004 an additional 10,000 fingerling rainbow trout were stocked. In 2007 a partial summer kill of rainbow trout was reported.

Since the rehabilitation in 2000, rainbow trout populations have been recovering (Figure 2). In 2005, gill netting resulted in very high catch rates of rainbow trout, which was most likely a result of increased stocking rates in 2004. Rainbow trout ranged in size from 6.5 to 18.8 inches TL ($\bar{x}$ =8.54 in.) and weighed 0.13 to 2.76 pound ($\bar{x}$ =0.3 lb). In 2006, catch rates were slightly decreased (CPUE = 70 fish/net) because no surplus rainbow trout were stocked since 2004, however the size of rainbow trout present increased. Rainbow trout ranged in size from 5.5 to 21.0 inches TL ($\bar{x}$ =10.82 in.) and weighed 0.08 to 4.1 pounds ($\bar{x}$ =0.62 lbs). In 2007, rainbow trout catch rates and size decreased slightly to 50 fish/net and ranged in size from 5.7 to 15.2 inches TL ($\bar{x}$ =11.5 in.) and weighed 0.10 to 1.50 pounds ($\bar{x}$ =1.27 lbs.).

From 2005 to 2006, a voluntary creel box was erected to assess fishing pressure and angler success rates. The box was destroyed and not replaced in 2007. In 2005, anglers from Hill (33.3%), Blaine (33.3%), Cascade (16.7%), and Flathead (16.7%) counties reported summer and fall catch rates of 2.59 rainbow trout (RBT)/ hour (n=6). In 2006, a low percentage of anglers filled out creel cards (n=9). Anglers who did fill out cards, reported summer catch rates of 1.19 RBT/hour (n=9).

Figure 2. - Relative abundance of rainbow trout and white sucker in Faber Reservoir based on gill netting surveys from 1987 to 2007.



Grasshopper Reservoir

Grasshopper Reservoir is a privately owned 19-surface-acre reservoir located approximately 12 miles south of Chinook. Grasshopper Reservoir was first stocked with rainbow trout in 1947, and trout have exhibited good growth and survival rates in this reservoir. Grasshopper is currently maintained with annual plants of 2,500 fingerling Arlee rainbow trout and alternate year plants of 3,000 advanced fingerling Eagle Lake rainbow trout. Additionally, Grasshopper ranked 23rd in the region for angler pressure in 2005/2006 (McFarland 2006).

A winterkill occurred in 2002/2003, recent drought and increased irrigation has resulted in marginal over winter water levels. The reservoir was restocked with 5,600 four-inch rainbow trout in the summer and fall of 2003, and they exhibited excellent growth reaching 8.6 to 10.7 inches by the fall. In the spring of 2004, 2,000 four-inch rainbow trout were stocked into the reservoir. During the summer of 2004, a sinking experimental gill net fished for 14 hours, captured 19 rainbow trout (Figure 3; 1.36 fish/hour) ranging in length from 8 to 18 inches ($\bar{x}$ TL = 11.9in, $\bar{x}$ wt. = 0.8 lbs.) with an average relative weight of 112.4.

In 2005, water levels were a few feet low but stable. A voluntary creel box was installed and a sinking experimental gill net was fished overnight to determine the relative abundance of rainbow trout.

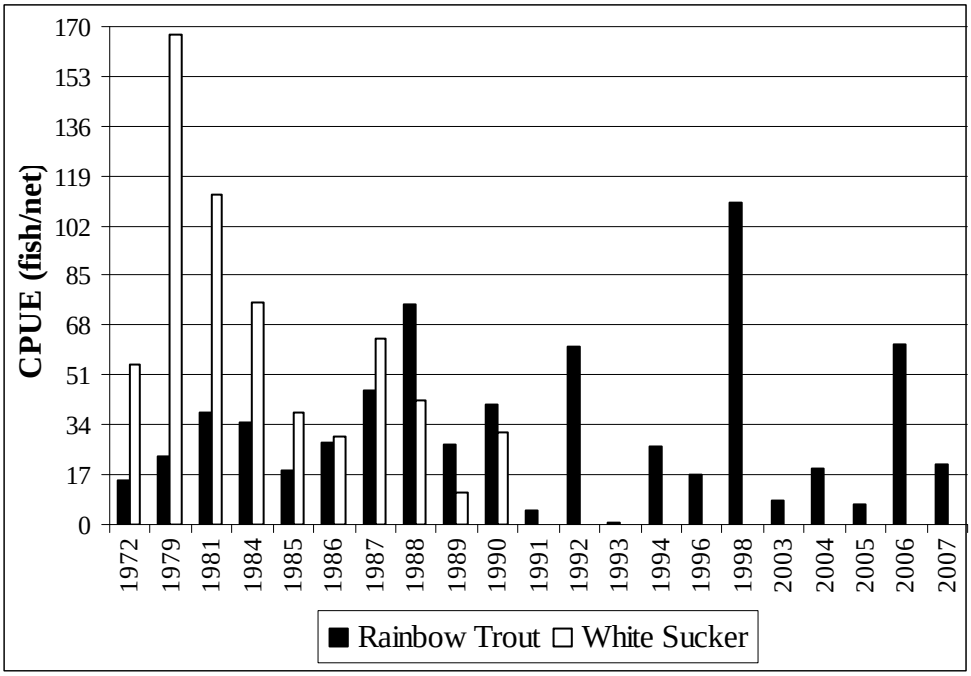
In 2005, anglers reported summer catch rates of rainbow trout of 0.49 fish/hour (n=21) and fall catch rates of 0.2 fish/hour (n=5) with an occasional catch of 4 and 5-pound trout. .

In 2006, water levels were still well below full pool and the effects of decreased water levels on the fishery will have to be monitored. The volunteer creel survey box was continued in 2006 and two sinking experimental gill net was fished overnight to determine the relative abundance of rainbow trout.

In 2006, anglers who filled out creel cards reported winter catch rates of rainbow trout as 0.62 fish/hour (n=13), spring catch rates of 0.96 fish/hour (n=9), and summer catch rates of 1.57 fish/hour (n=13). Anglers had a high satisfaction rate based on the size and number of fish caught. Additionally, gill netting surveys indicate that the rainbow trout fishery has rebounded nicely from the winterkill in 2002/2003. Gill netting surveys resulted in a catch rate of 61.5 rainbow trout/net (3.57 fish/hr; Figure 2). On average rainbow trout collected were 10.19 inches in length (TL= 5.0 to 22.0 in.) and weighed 0.74 pounds (weight= 0.02 to 4.20 lbs.).

In 2007, anglers who filled out creel cards reported spring catch rates of rainbow trout as 0.93 fish/hour (n=2) and summer catch rates of 1.16 fish/hour (n=6). Anglers again had a high satisfaction rate based on the size and number of fish caught. Gill netting surveys resulted in a decreased catch rate due the return to normal stocking levels (CPEU= 20.5 rainbow trout/net; Figure 3). On average rainbow trout collected were 12.0 inches in length (TL= 5.9 to 24.7 in.) and weighed 1.01 pounds (weight= 0.01 to 4.90 lbs.).

Figure 3. - Relative abundance of rainbow trout and white suckers in Grasshopper reservoir based on gill netting surveys from 1972 to 2007.



H.C. Kuhr Reservoir

H.C. Kuhr reservoir is a 25-acre privately owned reservoir located south of Chinook. H.C. Kuhr has been open to public fishing since the 1960s and was entered into a 10-year contract under the Private Lands Fishing Access program in 2005. H.C. Kuhr is currently managed as a rainbow trout fishery with annual stocks of 3,000 4-inch trout. Additionally, in 2005/2006 H.C. Kuhr ranked 24th in the region for angler pressure with a total of 1,139 angler days (McFarland 2006).

Prior in 1996, this fishery was managed as a warm water fishery with varying densities of black crappie, yellow perch, tiger muskie, walleye, sauger, and white suckers (Figure 4). In 1996 as a result of decreased white sucker populations, the rainbow trout fishery began to increase. And in 2003, drought all

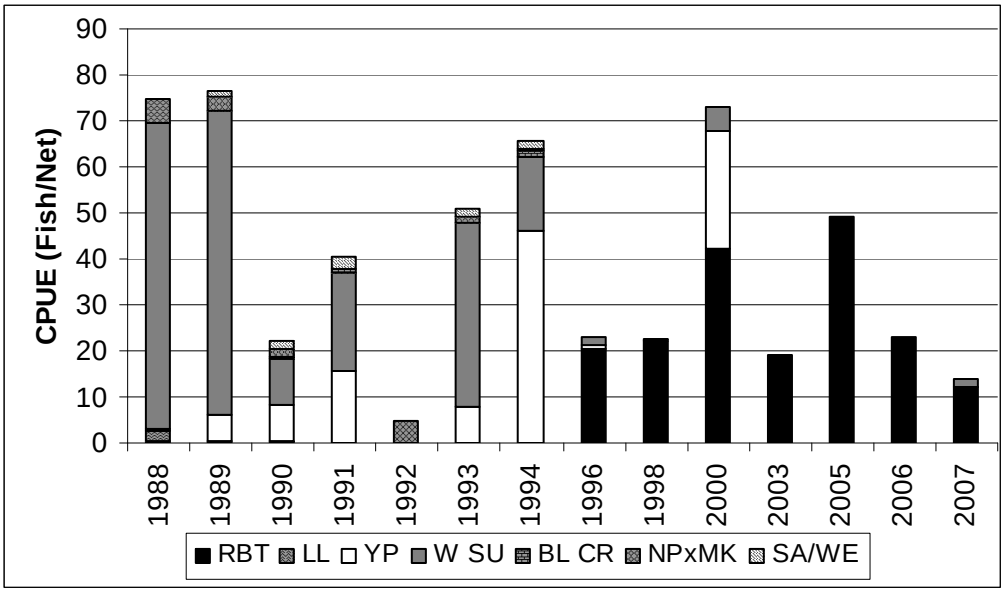
but dewatered H.C. Kuhr and the opportunity was seized to kill off a remnant yellow perch, tiger muskie, and white sucker population. The reservoir was restocked in 2003 and closed to fishing until 2004. When the fishery reopened in 2004, there were reports of 3 to 4 pound rainbow trout being caught in the reservoir.

Since the restoration in 2003, the fishery has been monitored using summer gill netting surveys. In addition, a voluntary creel box was erected in 2005 to assess fishing pressure and angler success rates. In the fall of 2003, a gill netting survey captured trout ranging from 6.8 to 10.6 inches (CPUE=19 fish/net). The fish were in excellent shape and no white suckers or yellow perch were netted, indicating a successful rehabilitation. In 2005, the abundance of rainbow trout had increased (CPUE= 49 fish/net) and the fish ranged in size from 7.43 to 21.5 inches ($\bar{x}$ =10.56 in.) and in weight from 0.19 to 4.82 pounds ($\bar{x}$ =0.95 lbs.). In 2005, anglers from Hill, Blaine, and Flathead counties reported summer and fall catch rates of 0.292 rainbow trout (RBT) / hour (n=11) and ice fishing catch rates of 1.2 RBT/hour (n=1).

In 2006, the overall abundance was decreased (CPUE = 23 fish/net) however the average size of fish was increased. Fish collected ranged in total length from 6.0 to 17.25 inches ($\bar{x}$ =14.02 in.) and in weight from 0.15 to 2.6 pounds ($\bar{x}$ =1.75 lbs.). The decreased abundance may be the result of increased fishing pressure after the restoration in 2003. Additionally, fall water levels were very low due to high temperatures and lack of rain during the summer. In 2006, anglers from Hill and Blaine counties reported spring catch rates of 0.571 RBT/hour (n=14) and summer catch rates of 2.06 fish/hr (n=6). In addition angler satisfaction was high with numerous comments about the size of fish caught.

In 2007, white suckers (n=2) were again found within this reservoir and as a result 15 tiger musky ($\bar{x}$ TL=14.6 in.) were collected from Cow Creek and Cow Creek Reservoir and transferred to H.C. Kuhr Reservoir. Rainbow trout abundance decreased again in 2007 to 12 fish/net. The decreased abundance is most likely the result of decreased water levels in 2006. No summer kills were reported in 2007. Rainbow trout collected ranged in total length from 5.1 to 19.8 inches ($\bar{x}$ TL=13.6 in.) and in weight from 0.10 to 3.38 pounds ($\bar{x}$ =1.59 lbs.).

Figure 4.- Relative abundance of rainbow trout (RBT), brown trout (LL), white sucker (W SU), black crappie (BL CR), tiger muskie (NPxMK), and sauger/walleye (SA/WE) in H.C. Kuhr based on gillnetting data from 1988 to 2007. Rehabilitation of this reservoir and restocking of rainbow trout occurred in 2003.



Jensen Pond

Jensen pond is a privately owned pond, which has been open to public fishing since 2003. A windmill aeration system was installed to assist with over winter survival and the reservoir is maintained with annual plants of 1,000 fingerling Arlee rainbow trout. In 2006, the voluntary-creel survey box was maintained.

In 2005, anglers expressed high satisfaction rates with their fishing experience, primarily due to the size of fish caught. Anglers reported summer catch rate of rainbow trout as 0.35 fish/hour (n=11) and fall catch rates of 0.37 fish/hour (n=16) with frequent catches of one to six pound trout. However in 2006 anglers did not report catching any fish during the spring and summer (n=6).

No gill netting was conducted in 2007 however anglers reported good catch rates of rainbow trout and high satisfaction with the size of fish caught. Anglers reported spring catch rates of 2.90 fish/hour (n=3) and summer catch rates of 0.78 fish/hour (n=6).

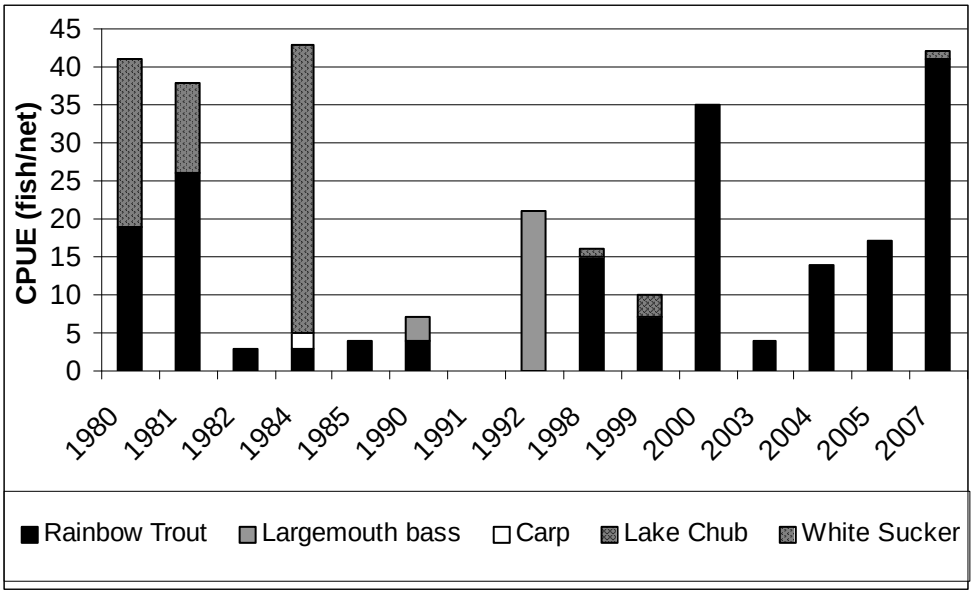
North Faber Reservoir

North Faber reservoir is a five-acre pond that has been managed as a rainbow trout fishery since 1972. This reservoir is maintained with annual plants of approximately 2,500 fingerling rainbow trout. Various other species have been found within the reservoir during annual surveys however the stocking records are not complete so it is not clear if these fish were legally or illegally introduced. However, since the partial winter kills in 1991 and 1992, rainbow trout has been the predominate species in North Faber.

In 2005, fishing pressure or angler response rates were very low. Anglers who did participate reported catch rates of 0.40 rainbow trout/hour (n=4). In 2006, angler response rates were again low. Anglers reported catch rates of rainbow trout as 0.53 fish/hour (n=3) during the spring, 0.73 fish/hour (n=6) during the summer, and 0.2 fish/hour (n=2) during the fall.

In 2007, summer gill netting survey's resulted in high catch rates of rainbow trout, 41 fish/net (Figure 5). Rainbow trout collected ranged in total length from 5.7 to 15.3 inches ($\bar{T}$ =9.8 in.) and in weight from 0.08 to 1.24 pounds ($\bar{T}$ =0.49 lbs.). In August 2007, a partial summer kill was observed due to low water levels and increased temperatures. Anglers reported spring catch rates o f 2.85 fish/hour (n=6) and summer catch rates of 1.6 fish/hour (n=1)

Figure 5. - Relative abundance of rainbow trout, largemouth bass, carp, lake chub, and white suckers in North Faber Reservoir, 1980 to 2007.



Petrie Pond

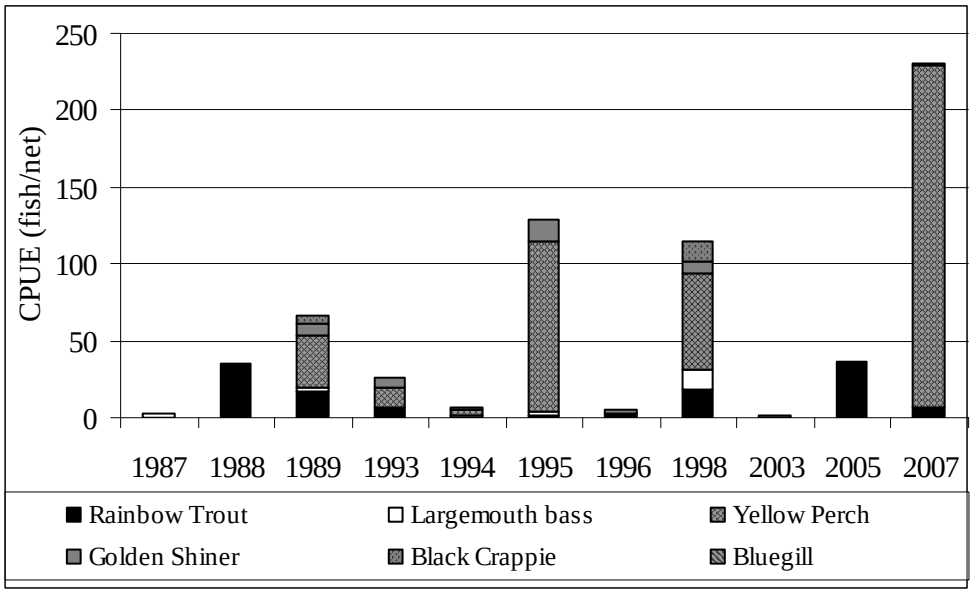
Petrie pond is a privately owned spring fed 2.5-acre pond north of Turner, which has been managed as a rainbow trout fishery since 1996. In 2003, white suckers were illegally introduced, most likely as a result of illegal bait fishing. Since that time, white suckers have over populated the reservoir and chocked out the rainbow trout fishery. In 2004, bluegill and largemouth bass fishery was established in an attempt to control the white sucker population, however this was unsuccessful. As a result Petrie Pond was drained in 2006 to eliminate the white sucker population. Draining of the pond was completed in July of 2006 and the spring water was re-diverted into Petrie Pond in August. Fathead minnows were introduced in the spring of 2007 and in 2008 the pond will be stocked with alternate year plants of brook trout.

Reser Reservoir

Reser reservoir is located in northwestern Blaine County. This reservoir has been managed as a fishery since 1981 and over the years has been stocked with fathead minnows, lake chub, northern redbelly dace, western silvery/plains minnows, golden shiners, largemouth bass, black crappie, bluegill sunfish, and rainbow trout. This reservoir had frequent winterkills occur in the early 1990s and as a result two windmill aeration systems were installed. Since the installation of the aeration systems only one fish kill has occurred and this was suspected to have occurred as a result of chemical runoff from surrounding fields.

Since the late 1990s, this reservoir has been managed primarily as a rainbow trout fishery. In 2003, 20,000 rainbow trout were stocked and since then 3,000 four to five inch rainbow trout are stocked. In 2007, rainbow trout stockings were cancelled due to an over abundance of yellow perch found during summer gill netting surveys (Figure 6). Fifteen tiger muskie ($\bar{x}$ TL=14 inches) were stocked in September 2007 to help control the yellow perch population.

Figure 6. - Relative abundance of rainbow trout, largemouth bass, yellow perch, golden shiner, black crappie, and bluegill in Reser Reservoir, 1987 to 2007.



Ross Reservoir

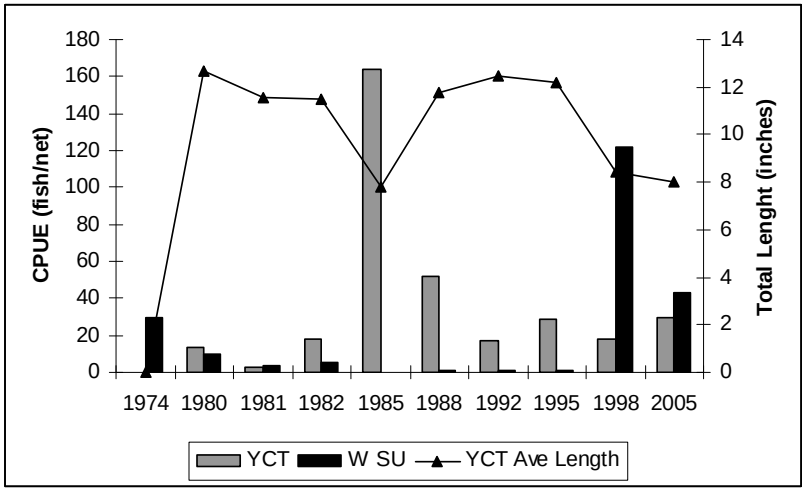
Ross Reservoir is located in the Bearpaw Mountains on Wind Creek. This is a privately owned reservoir, which was managed as a rainbow trout fishery from 1953 to 1974 at which point it was

switched to a Yellowstone cutthroat trout fishery. Additionally in 2005, this reservoir ranked 74th in angler pressure for the region with a total of 34 angler days (McFarland 2006).

The fishery is currently maintained with annual stocks of 2,000 catchable size cutthroat trout and in 2004, 5,352 fingerling cutthroat trout were stocked. This beautiful mountain cutthroat fishery and Wind Creek were rehabilitated in 2000 to rid it of white suckers. It was closed in 2001 to allow fish to grow to acceptable size. Fishermen were not disappointed when the pond was opened in May of 2002. Good catches of 13- to15-inch cutthroat were made. However, this pond is again plagued with a white sucker problem (Figure 7), most likely as a result of the use of illegal live bait. The abundance of white suckers has a negative impact on the growth of Yellowstone cutthroat trout (Figure 7) and will have to be dealt with.

In 2006, trap nets were set to remove white suckers and assess the size and distribution of white suckers in the reservoir. Four traps (3' x 4' with ¼" mesh) were set for two nights and a total of 581 white suckers were removed (CPUE =3.63 fish/hr; $\bar{x}$ TL = 8.06 in., $\bar{x}$ wt.=0.45 lbs.). Additionally 302 Yellowstone cutthroat trout were collected (CPUE =1.88 fish/hr; $\bar{x}$ TL = 10.88 in., $\bar{x}$ wt.=0.41 lbs.). In an attempt to control white sucker population levels within the reservoir tiger musky (n=6, $\bar{x}$ TL=6.0 in.) were introduced in 2007. The population levels will continue to be monitored and the effectiveness of the tiger musky introduction will be determined.

Figure 7. - Comparisons of gill net catch rates (CPUE) of Yellowstone cutthroat trout (YCT), white suckers (W SU) and average length of Yellowstone cutthroat trout (YCT), (1974 to 2005).



Salmo Reservoir

Salmo reservoir is a four-acre pond with a windmill aerator located on BLM land north of Chinook. This pond has been managed primarily as a rainbow trout fishery since 1978. Salmo currently has a rainbow trout, channel catfish, largemouth bass, and bluegill fishery. In addition, 272 tiger muskie were stocked in 1999. The rainbow trout fishery is maintained with annual plants of approximately 3,000 three-inch fingerlings. In 2004, 4,000 seven-inch and 3,000 three-inch rainbow trout were stocked due to needed repairs at the Giant Springs Fish Hatchery in Lewistown. Four hundred four-inch channel catfish were stocked in 2003.

Salmo Reservoir received 345 angler days in 2005 and ranked 28th in the region. In 2005 and 2006, angler response rates were low for the voluntary creel. In 2005, five anglers participated and none reported catching any fish. In 2006, anglers reported spring catch rates of rainbow trout as 0.24 fish/hour (n=11) and summer catch rates of 0.67 fish/hour (n=3). In 2007, anglers reported spring catch rates of rainbow trout as 1.67 fish/hour and bluegill as 0.08 fish/hour (n=3) and summer catch rates of rainbow trout as3.00 fish/hour and bluegill as 0.99 fish/hour (n=7).

Phillips County Ponds

The voluntary creel boxes were maintained and gillnetting surveys conducted on the following ponds and results are reported.

Batosh Reservoir

Batosh Reservoir is located on BLM land is south Phillips County and has been managed as a rainbow trout fishery since 1996. This reservoir is maintained with alternate year plants of 1,000 fingerling Arlee rainbow trout. Anglers from four states, Montana, Utah, Illinois, and Oregon fished at Batosh Reservoir in the fall of 2005, most likely during big game hunting trips. In 2005, anglers reported catch rates of rainbow trout as 4.38 fish/hour. No creel cards were collected in 2006 or 2007.

Hart Reservoir

Hart Reservoir is a privately owned reservoir located in Phillips County near Dodson. This reservoir has been stocked was stocked with rainbow trout from 2003 to 2006. In 2007 a gill netting survey was conducted and the reservoir was so low and overgrazed by cows that future stockings of rainbow trout were discontinued. In 2007, gill netting sampled a total of 7 rainbow trout, (CPUE=3.5 fish/net; $\bar{x}$ TL=9.5 in.), 42 yellow perch (CPUE=22 fish/net; $\bar{x}$ TL=7.5 in.), and one black crappie ($\bar{x}$ TL=712.5 in.).

King Reservoir

King is a 9.8-acre pond located on BLM land in south Phillips County. This reservoir has been managed as a fishery since the 1930s and has been managed as a rainbow trout fishery since the 1960s. King is maintained with annual plants of 3,000 fingerling Arlee rainbow trout. This fishery has a windmill aeration system and is fenced to exclude livestock. In 2005, a voluntary creel box was erected and one angler from Phillips County reported a summer catch rate of rainbow trout as 0.86 fish/hour (n=1). This angler had a high satisfaction rate due to the number of fish caught. In 2006, the box was destroyed by cows and not replaced.

Thundercloud Reservoir

Thundercloud is located on BLM land and contains largemouth bass and rainbow trout. Largemouth bass were introduced through 1985 and rainbow trout have been stocked since 2003. The rainbow trout fishery is maintained with annual plants of 800 fingerling rainbow trout. Water levels have been good in recent years and a windmill aeration system was installed in 2001. A partial winterkill consisting of rainbow trout and largemouth bass was reported in the spring of 2004. In 2005, gill netting surveys revealed good survival of stocked rainbow trout and no largemouth bass were collected. In 2005, a voluntary creel box was also erected and anglers from Gallatin, Blaine, and Sweet Grass Counties reported summer and fall catch rates of rainbow trout as 0.45 fish/hour (n=4) and catch rates of largemouth bass as 2.0 fish/hour (n=4). In 2006, the box was destroyed by cows and not replaced.

Wrangler Reservoir

Wrangler reservoir is located on BLM land and has been managed as a rainbow trout fishery since 1980 and for channel catfish since 2001. The fishery is currently maintained with annual plants of 1,500 fingerling rainbow trout and alternate year plants of 500 four-inch channel catfish. Water levels have been good in recent years and a windmill aeration system was installed in 2000 in an effort to increase over winter survival. In 2004, several dead rainbow trout were reported along the shore after ice-off. In 2005, a voluntary creel box was erected and in the fall of 2005 anglers from Gallatin County reported catch rates of rainbow trout as 0.27 fish per hour (n=5) with no catches of channel catfish. In 2006, the box was destroyed by cows and not replaced.

RECOMMENDATIONS

Beaver Creek Reservoir: Continue annual stocking of 70,000 catchable size Eagle Lake, Erwin and Arlee rainbow trout. Adjustments may need to be made if the northern pike population fluctuates significantly. Continue to monitor fishery annually with the use of seining and gillnetting at fixed stations. Continue with three fish/day fishing limits.

Bearpaw Lake: Continue annual stockings of 8,000 catchable- size McBride strain Yellowstone cutthroat and 15,000 catchable- size Arlee rainbow trout. Add additional walleye stockings to supplement the walleye population and/or consider stocking tiger muskie at low densities to assist with the control of white sucker. Continue manual removal of adult suckers by trapping and/or electrofishing in the spring, and gillnetting in the fall. Continue to monitor fishery annually with the use of fall gillnetting at fixed stations.

Grasshopper Reservoir: Continue with annual plants of 2,500 Arlee fingerlings and alternate- year plants of 3, 00 fingerling Eagle Lake rainbow trout. Continue to monitor fishery annually with the use of fall gillnetting and established two fixed monitoring stations.

Faber Reservoir: Continue with annual plants of 10,000 fingerling Arlee rainbow trout. Established two fixed gill net sampling stations within the reservoir and continue to monitor fishery annually. Assess the effects of the partial summer kill in 2007.

H.C. Kuhr Reservoir: Assess the effects of low water levels and adjust stocking as necessary. Continue with annual plants of 3,000 fingerling Arlee rainbow trout. Continue to monitor the survival and growth of rainbow trout annually at the fixed gill-net site established in 2005. Continue to monitor the white sucker population.

Blaine County Ponds: Continue with stocking rates as described above. Monitor ponds every three years to assess survival and growth of stocked fish. Also, start a more aggressive public education program alerting the public to the problems associated with the use of live bait. Assess the effects of the 2007 summer kill at North Faber and Floyd Flynn Reservoirs.

Phillips County Ponds: Continue with stocking rates as described in the five year stocking plan which was adjusted in 2006. Monitor ponds every three years to assess survival and growth of stocked fish. Also, attempt to establish fencing along some of the ponds to prevent over grazing of shoreline vegetation to improve the fisheries. Monitor Sentinel and Current to assess the effects of the summer kill.

Waters Codes:

154770	Beaver Creek Reservoir	156535	North Faber Reservoir
154560	Bearpaw Lake	158860	Reser Reservoir
154719	Brookie Pond	159160	Ross Reservoir
155140	Faber Reservoir	159175	Salmo Reservoir
153880	Grasshopper Reservoir	164405	Batosh Reservoir
165670	Hart Reservoir	167880	King Reservoir
158880	(H.C.) Kuhr Reservoir	168490	Thundercloud Reservoir
155780	Jensen Pond	168990	Wrangler Reservoir

Key Words or Fish Species:

Arlee; Eagle Lake; Erwin; rainbow trout, Yellowstone cutthroat trout; brown trout; brook trout; mottled sculpin; longnose dace; mountain sucker; fathead minnow; lake chub; white sucker; white sucker control; smallmouth bass; walleye; northern pike; largemouth bass; yellow perch;

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McFarland, B. 2006. 2005 Statewide Angling Pressure Use Report. Montana Fish, Wildlife & Parks, Helena, MT. Pp. 173.

Prepared by: Laura L. Leslie

Date: September 14, 2007