Montana Department of Fish, Wildlife and Parks
Fisheries Division

Job Progress Report

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

TITLE: Eastern Region 6 Flat Water Sampling

JOB: Northeast Montana Warmwater Ponds Investigations

FEDERAL GRANT:

FISCAL YEAR: 2010 (July 1, 2009 through June 30, 2010)

REPORT PERIOD: April 1, 2010 through November 1, 2010

ABSTACT

The routine management of northeast Montana prairie ponds (Daniels, McCone, Richland, Roosevelt, Sheridan and Valley Counties) began in the spring/summer of 2010. Infrequent sampling of these counties over the past decade or more has left the knowledge base of this area lacking. During 2010 many ponds were sampled for the first time in many years, although some have good trend data. In general, sampling of prairie ponds consisted of experimental mesh gill nets and trap nets, as well as maximum depth, water temperature and dissolved oxygen levels. Many northeast Montana reservoirs were very productive in the first couple of decades after being constructed and provided excellent fisheries. Sampling in 2010 found that many of these ponds have become very shallow and water quality issues may be preventing them from reaching their former potential. Along with monitoring the present ponds in the area to determine which ones can still provide recreational fishing opportunities, identifying any new reservoir in the area and creating new fisheries may be needed to maximize angling opportunities.

PROCEDURES

During 2010 various types of ponds were sampled by FWP. The two main types of waters that were sampled consisted of ponds that are either stocked on a routine basis (annual) or those that have been stocked at some point in the past with species that were meant to create self-sustaining populations. In the future, new ponds or ponds that have never been stocked by FWP will be sampled as well, for an evaluation of their fishery potential.

Basic physical data such as maximum and average depth, water temperature, dissolved oxygen concentrations, and surface area were collected on most sampled ponds. Maximum depth was found by using a weight attached to a rope with visible length increments (ft) dropped to the bottom throughout the pond. Average depth was simply derived by the average of all the depths taken. Water temperature and dissolved oxygen concentrations were taken using a Yellow Springs Instrument© Model 85 Temperature, Oxygen and Salinity probe. Water surface area was estimated using aerial photographs with FWP's Mapper Program.

Fish populations were usually sampled using the combination of a 125 foot long experimental gill net and a 3 x 4 ft tap net with 1/4 inch mesh. On occasion a fine meshed dip net was used to collect small bodied fishes in the littoral zone for presence/absence data. Fish collected were identified to species, counted, measured to total length (in) and larger bodied fishes were weighed (g). Pond locations were documented using latitude and longitude coordinates.

RESULTS AND DISCUSSION

Survey of Northeast Montana Ponds

The majority of northeast Montanan prairie ponds sampled in 2010 are lacking the needed depth to harbor productive self-sustaining fish populations. Since many of the ponds that FWP has managed over the past decades are relatively old stock ponds, many are shallow due to the sedimentation that has occurred over the ponds life. Identifying the highest quality waters within the region and actively manage those ponds will be key to the overall success of the ponds program. Additionally, low quality ponds may need to be dropped from the program to free up sufficient resources for the ponds that have potential as fisheries. Only a fraction of the managed ponds in many of counties listed below were sampled during 2010, while those that were not visited in 2010 are not listed.

Daniels County

Buer Pond

Buer Pond was sampled on October 12, 2010 with one gill net and two trap nets. Twenty two and 521 yellow perch were captured in the gill net and trap nets, respectively. Yellow perch were small, averaging 6.0 inches in the gill nets and 5.5 inches in the trap nets. The trap nets also captured 19 creek chubs. The landowner mentioned that there were largemouth bass in the pond as well. Buer Pond is a relatively new pond compared to most in the area. A spring creek that runs year round enters the pond at the east end. The maximum depth was approximately 14 ft. Yellow perch were last stocked into Buer Pond in 2002 with 35 fish. Largemouth bass were last stocked in 1999.

Danelson Reservoir

Danelson Pond was sampled on August 5, 2010 using one gill net and one trap net. No game fish were captured. Trap nets did capture 11 brook stickleback. Danelson Pond was last stocked with 1,000 largemouth bass averaging 1.2 inches in 2007. The pond has a maximum depth of approximately 14 ft near the dam. Aquatic macrophytes were visible throughout the pond in depths less than 8 ft. Abundant amphipods and leaches were observed. In general the pond has silted in since its construction in the 70's.

Chabot Reservoir

Chabot Reservoir was sampled using one gill net and one trap net on October 12, 2010. The gill net captured 42 rainbow trout averaging 9.6 inches in length, while 5 rainbow trout averaging 9.0 inches were captured in the trap net. The reservoir had a maximum depth of

approximately 10 ft. Rainbow trout have been stocked in Chabot Reservoir on almost an annual basis since 1966. Today, the majority of the pond has been filled with sediment and is very shallow, with aquatic macroyphytes dominating the majority of the reservoir. There were no indications that anyone had been fishing at this site throughout the summer. Due to the shallow nature of the pond and the lack of use, this reservoir will be removed from the stocking plan for the time being.

Hatfield Reservoir

Hatfield Reservoir was sampled on October 13, 2010 with one gill net and two trap nets. The gill net captured 50 rainbow trout, while the two trap nets caught 11 as well as 31 brook sticklebacks. The rainbow trout sampled using the gill net averaged 9.5 inches in length with the largest specimen measuring 11.5 inches. Hatfield Reservoir has been stocked annually with rainbow trout since the early 90's. The 2010 stocking occurred on May 19, with 3,000 rainbow trout averaging 3.6 inches. Hatfield Reservoir has a maximum depth of approximately 12 ft. During the 2010 sampling the stomach contents of rainbow trout mortalities were visually examined and were found to contain brook sticklebacks, leaches, snails, and various other aquatic invertebrates. This is a very productive pond with excellent access for sportsman.

Killenbeck Reservoir

Killenbeck Reservoir was sampled on August 5, 2010 using two experimental gill nets and two trap nets. The netting rendered 105 rainbow trout averaging 9.0 inches in length and 0.3 lbs. The reservoir was stocked with rainbow trout on two occasions during 2010. The first occurred on July 13 with 1,009 rainbow trout averaging 5.3 inches and the second was on July 14 with 2,000 5.6 inch fish. Although the trap nets did not capture any fish, dip netting around the perimeter of the pond yielded fathead minnows. Dip netting also collected numerous amphipods. The pond had a maximum depth of 11 ft with a water temperature of 22.6 C^{o} and dissolved oxygen of 8.25 mg/l.

Carney Pond #1

Carney Pond #1 is adjacent to Killenbeck Reservoir approximately 50 yards to the south. The pond was very shallow with a maximum depth of approximately 7 feet. No game fish were sampled in the two gill nets and two trap nets that were deployed. Juvenile white suckers were abundant, with a total of 236 and 50 collected in the gill nets and trap nets, respectively. White suckers averaged 7.2 inches in length.

McCone County

No ponds were sampled in McCone County during 2010. However, Flat Lake adjacent to Fort Peck Lake was stocked with 452 rainbow trout averaging 7.0 inches on September 27. On March 9, 2011 holes were cut in the ice and a YSI meter was deployed into Flat Lake. Dissolved oxygen concentrations were very low with an average of approximately 0.2 mg/l, which likely killed all the remaining rainbow trout that were overwintering in the pond. We plan on surveying additional ponds in McCone County in 2011.

Richland County

Kuester Reservoir

Kuester Reservoir was sampled on November 3, 2010. Two gill nets and two trap nets were deployed, catching a total of 2 yellow perch and 48 fathead minnows. Kuester Reservoir was very low, averaging approximately 6 ft in depth. Kuester Reservoir was once a much larger, deeper reservoir and its recent decrease in size and depth is likely from failure at the outlet works. The dam outlet needs to be fixed before Kuester Reservoir can once again be a productive fishery.

Roosevelt County

No ponds were sampled in Roosevelt County during 2010. We plan on surveying some Roosevelt County ponds during 2011.

Sheridan County

Box Elder Creek Reservoir

Box Elder Reservoir is the largest reservoir in northeastern part of Region 6 with approximately 74 surface acres. The reservoir has a maximum depth of approximately 30 ft. Box Elder Reservoir has been sampled four of the past five years using gill and trap nets. Box Elder Reservoir has been stocked with walleye on almost an annual basis since 1985. The largest number of walleye stocked was in 2006, when just over 100,000 fish consisting of about half fingerlings and half fry were stocked. The stocking was reduced in 2010 to 25,000 walleye fry.

During 2010 Box Elder Creek Reservoir was sampled on September 20, using four gillnets and two trap nets. Walleye were the most abundant fish sampled in the gill nets with a total of 201 sampled. Gill net caught walleye averaged 9.8 inches in length with a range of 7.1 to 20.9 inches. Walleye CPUE was estimated at 50.25 fish/net in 2010, a substantial increase over the past three sampling years (Figure 1.).

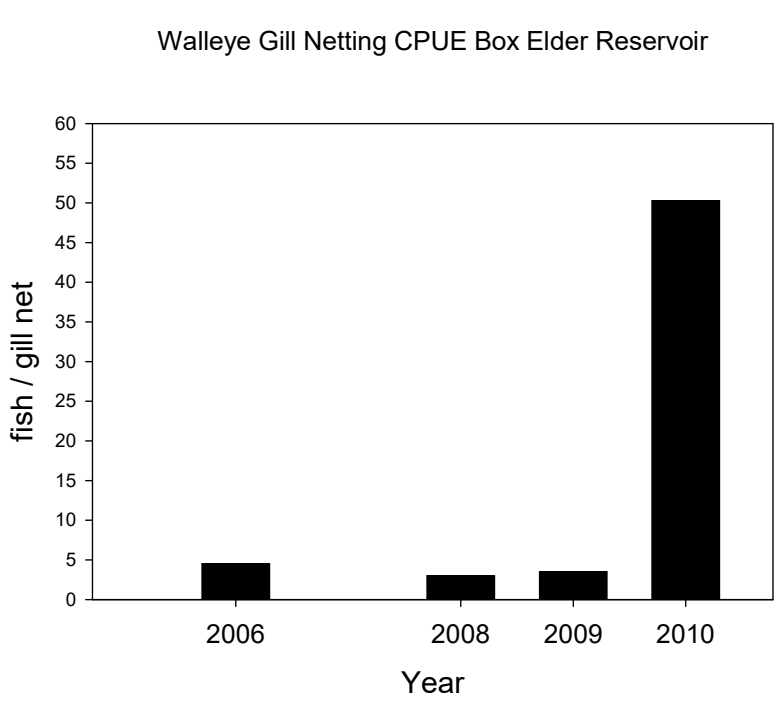

Figure 1. Box Elder Reservoir gill net walleye CPUE 2006-2010.

Walleye in the 7 to 10 inch range dominated the population in 2010 with a good number of 14 to 18 inch walleye present. The increase in smaller sizes of walleye sampled in 2010 give evidence to good recruitment of the 2010 stocked fish. Although few walleye were captured in the past sampling when compared to 2010, the size distribution of walleye sampled in the reservoir changed to a population dominated by the smaller size classes of fish (Figure 2).

Aging of walleye sampled in 2009 and 2010 give further evidence of strong recruitment of the 2010 year class (Figure 3). The large number of 7-inch fish collected in 2010, were confirmed as age-0 fish through aging otoliths. The 2010 year grew on average seven inches from the time of stocking on May 19 to September 20, which equates to a growth rate of approximately 0.06 inches/day. No age-0 fish were sampled during the 2009 effort. During 2009 walleye at 8 inches in length were confirmed as age-1 fish, suggesting these fish were from the 2008 year class, which had significantly lower growth than the 2010 year class.

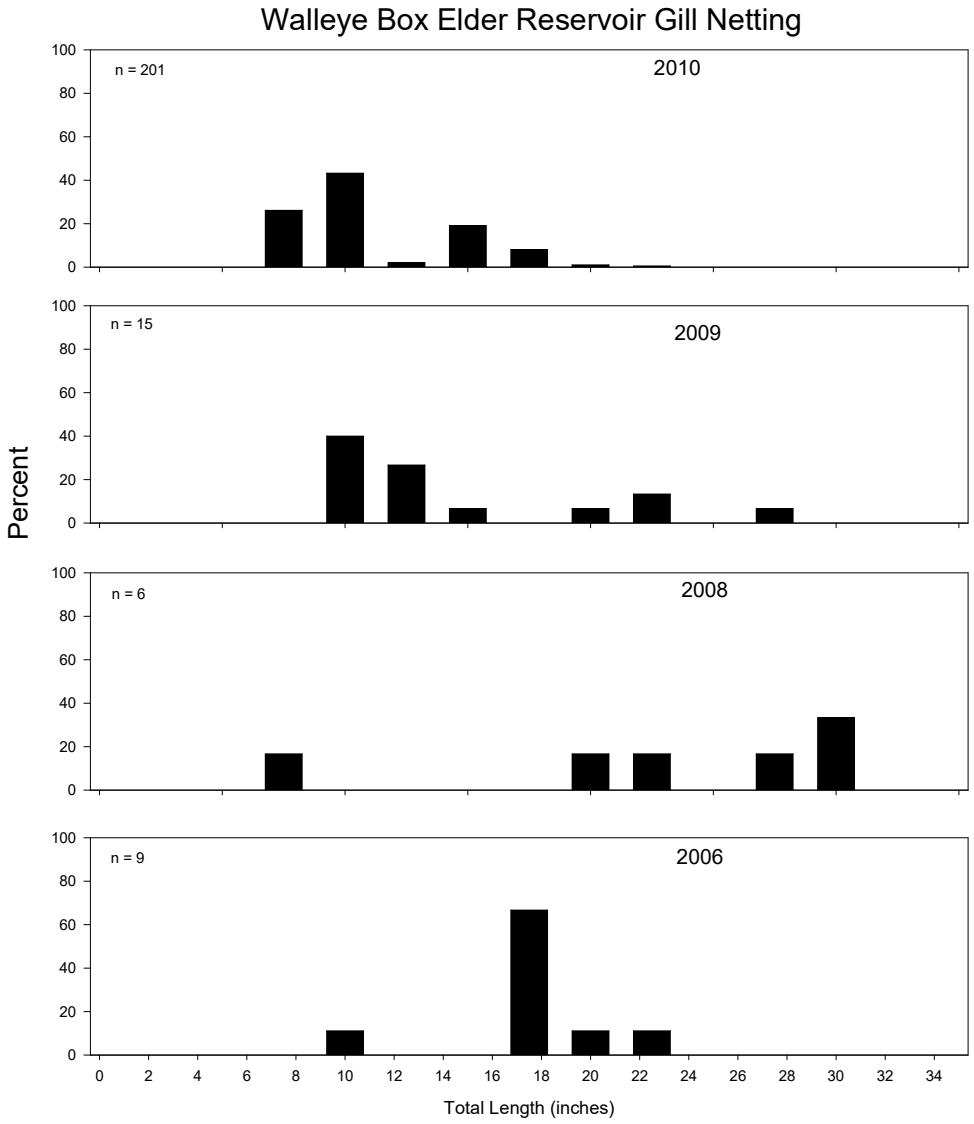

Figure 2. Length frequency histogram of walleye sampled in Box Elder Reservoir 2006-2010.

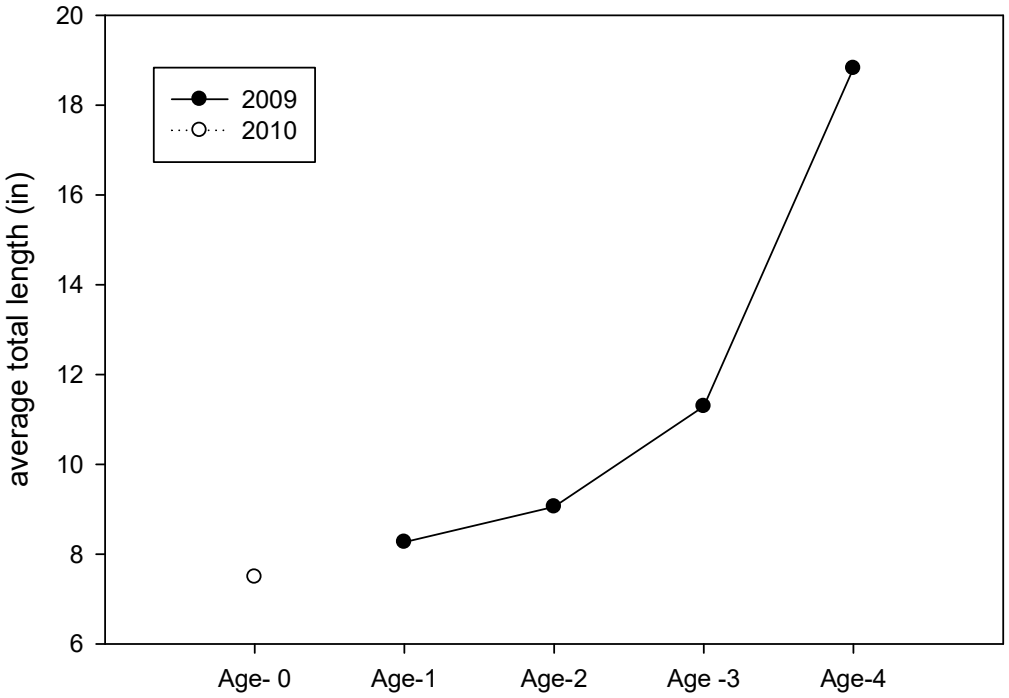

Figure 3. Length at age for Box Elder Reservoir walleye (2009-2010)

Higher reservoir elevations in 2010 likely contributed to the substantial recruitment and excellent growth of the 2010 year class of walleye. With the higher reservoir elevations we also observed a substantial increase in young-of-the-year (YOY) carp abundance. Trap nets in 2010 had an average of 222 YOY carp, a significant increase from 2009 when no YOY carp were collected in the trap nets. Visual stomach analysis of walleye also indicated that all size classes of walleye were foraging heavily on these YOY carp.

Over the past several decades the yellow perch fishery in Box Elder Reservoir has deteriorated from an excellent ice fishery to an almost non-existent fishery. Only one yellow perch was sampled from 2006 to 2009, even though 2,500 adult perch were transplanted into Box Elder during 2008. Transplanting adult perch occurred again in 2010 with approximately 6,500 adult perch moved from Beaver Creek Reservoir in Blaine County. The 2010 fall sampling indicated that a substantial number of these fish did survive through the summer, although no recruitment of YOY yellow perch was observed. A total of 32 adult yellow perch were captured in 4 gill nets in 2010, an increase from zero in 2009. We believe that walleye have been the likely culprit in the demise of the yellow perch population in Box Elder Reservoir over the past couple decades. For the future, we plan on continuing the adult yellow perch transfers and drastically reducing the walleye stocking.

Raymond Dam

Raymond Dam is a 13 acre impoundment that was dredged out in 2009 to make the pond deeper. The maximum depth near the dam is currently at 15 ft. The deep area of the pond only makes up a small percentage of the total surface acres, with the majority being very shallow. Before 2010 the last stocking occurred in 1997 with yellow perch. In 2009 the pond was sampled with a gill net and a trap net and only fathead minnows and brook sticklebacks were observed. In 2010 the pond was stocked with 500 7.2 inch rainbow trout on May 17th and 1,000 3.6 inch fish on May 19th. The pond was subsequently sampled using one gill net and one trap net on September 20th. The gill net captured 8 rainbow trout averaging 11.0 inches in length and weighing on average 0.69 lbs. The trap net captured 346 fathead minnows and 3 brook stickleback.

Valley County

Atlas Reservoir

Atlas Reservoir was sampled with two gill nets and two trap nets on October 5, 2010. No fish were captured in the gill nets, while 1,400 fathead minnows were captured in the trap nets. Atlas Reservoir has been managed as a largemouth bass fishery in the past. The last stocking of largemouth bass occurred in 2007 with 1,000 fish averaging 1.2 inches in length. In 2006 2,000 fish averaging 2.6 inches in length were stocked.

The maximum depth of Atlas Reservoir was estimated at 12 ft at the west side of the pond. No aquatic macrophytes were visible in the middle of the pond. Dip netting showed an abundance of leaches and other aquatic invertebrates. Water temperature was 14.1 C and dissolved oxygen was 9.5 mg/l.

Atlas is a Bureau of Land Management pond with a fencing enclosure and a cattle guard. The pond has excellent vegetation around its perimeter. There was no evidence of recent human use of the pond during the October sampling date.

Big Reservoir

Big Reservoir was sampled on September 2, 2010 using one gill net and two trap nets. No fish were captured in the gill net. The trap nets captured 70 black crappie and 167 fathead minnows. Black crappie averaged 4.2 inches in length with the largest fish measuring 10.2 inches. Fathead minnows averaged 2.7 inches.

The windmill at Big Reservoir was not working on September 2 when the pond was sampled. A new windmill was installed in October.

Burke Reservoir (Desert Coulee Reservoir)

Burke Reservoir was sampled on August 9, 2010 with one gill net and one trap net. Ninety three yellow perch averaging 7.2 inches in length were captured in the gill net. Yellow perch ranged in size from 0.8 to 12 inches. The trap net captured 28 yellow perch and 36 fathead minnows. Burke Reservoir was also sampled in 2009 using a gill net and a trap net. Yellow perch were more abundant in the gill net in 2010 than 2009. During 2009 no yellow perch

smaller than 8 inches were collected in the gill net, although substantially more YOY perch were found in the trap nets during 2009 than in 2010. The abundant 2009 year class was well represented in the gill net in 2010, while the 2010 year class may be relatively weak based on trap net data.

The deepest water we could find in Burke Reservoir in 2010 was 9 feet, with an estimated average depth of 8 feet. Water temperature ranged from 23.4 C near the dam to 25.0 C in the inlet area. Similarly, dissolved oxygen ranged from 8.5 mg/ l near the dam to 11.4 mg/l in the shallower upper end. Aquatic macrophytes were only present along the littoral zone of the pond, with no emergent vegetation in the middle of the reservoir. We observed a large algae bloom in the water column as well as numerous fathead minnows in the shallows.

Fort Peck Dredge Cut Trout Pond

Fort Peck Dredge Cut Trout Pond was sampled on October 6, 2010 with three gill nets and two trap nets. Gill nets caught a total of 52 yellow perch averaging 6.6 inches in length, with a range of 0.07 to 8.2 inches. Gill nets also captured six northern pike averaging 22.2 inches, five common carp, one bluegill and one white sucker. The trap net caught 150 bluegills averaging 1.7 inches in length. Abundant YOY largemouth bass were observed around the trap nets although none were captured. Trout Pond was also sampled in 2009 with similar results as the 2010 sampling, with the exception that three walleye and two channel catfish were captured in gill nets in 2009.

On May 25, 2010 a total of 9,952 rainbow trout averaging 3.8 inches were stocked into Trout Pond. We did not see any of these fish in our October sampling effort. This pond will likely be sampled again in 2011 to see if any of these fish are persisting. Trout Pond is a relatively deep pond with depths over 20 ft, which should sustain cold enough water during the summer for trout to persist. However, there are quite a few predators in this system, which could explain the lack of recruitment from this age class.

Glasgow Air Force Base Pond

The upper Glasgow Air Force Base Pond was sampled on August 4, 2010 using one gill net and one trap net. The gill net collected 19 yellow perch averaging 6.6 inches in length, 2 rainbow trout averaging 10.7 inches and one northern pike of 23.2 inches. The trap net captured one northern pike of 16.1 inches. The yellow perch that were captured were robust fish and their stomachs were filled with chironomids. The pond has a maximum depth of approximately 20 ft.

One thousand rainbow trout averaging 9.0 inches were stocked into the upper Base Pond on June18, 2010.

Langen Reservoir

Langen Reservoir was sampled with two gill nets and two trap nets on September 3, 2010. Gill nets captured nine largemouth bass averaging 10.7 inches in length. Trap nets caught 562 fathead minnows averaging 2.4 inches. Langen Reservoir was lasted stocked in 2002 with 3,000 1.2 inch largemouth bass.

Missouri River Dredge Cuts

The Missouri River Dredge Cuts have been sampled annually using both experimental and smelt gill nets since 1979. The monitoring began as a monitoring tool to evaluate the fishery since a re-regulation dam downstream of Fort Peck Dam was being proposed. Until 2010 the dredge cuts and the Fort Peck Dam tailrace were sampled twice a year, once in June and once in September using 10-125 ft experimental mesh and 4-100 x 6 ft gill nets with ½ inch mesh nets (smelt nets). In 2010 the spring sampled was eliminated, given that an evaluation of the data showed redundancy.

Due to the hypolimnetic withdrawals from Fort Peck Dam the tailrace area can be characterized as a relatively stable area with cold summer water temperatures and warm winter temperatures as well as low productivity due to Fort Peck Reservoir acting as a nutrient sink. The Dredge Cuts are connected to the Missouri River, but a much higher retention time equates to warmer summer water temperatures and a more diverse littoral area. Both areas have become very popular recreation areas with anglers, boaters and water skiers.

In 2010 the Dredge Cuts were sampled on September 2nd and 3rd using 10 experimental mesh gill nets and four smelt nets. A total of 237 fish consisting of 14 species were collected. Channel catfish were the most abundant game fish with 61 fish sampled averaging 16.3 inches in length and1.4 lbs. Gil nets also captured nine sauger averaging 15.1 inches, three walleye averaging 14.5 inches, two northern pike averaging 31.3 inches and eight shovelnose sturgeon averaging 24.4 inches, as well as other game and non game fish listed in Table 1.

The relative abundance of sauger was estimated at 0.9 fish/net, which was the lowest since 2003. Sauger abundance has continuously declined from a 19 year high in 2007 (4.9 fish/net) to 2010 (Figure 4). Interestingly, the relative abundance of sauger and walleye in the Dredge Cuts seem to be inversely related (Figure 4). In the mid-1990's the walleye relative abundance was up, while sauger abundance was down and during the early to mid-2000's as sauger abundance increased walleye abundance decreased. Walleye abundance was at a 19 year high in 1997, the same year that the spillway at Fort Peck Dam was operated.

While the relative abundance of sauger has declined over the past three years, the average relative weight of sauger has increased to a 19 year high in 2010, although sample size was limited (Figure 5). Walleye have shown a steady decline in relative weight since 1997 to a 19 year low in 2010 (Figure 5). In most years the relative weights of walleye have been higher than those of sauger, although both species have never approached 100.

Northern pike abundance has remained relatively stable although low in the Dredge Cuts over the past 19 years, with a CPUE of 0.2/net night in 2010 (Figure 4). While channel catfish abundance has also been relatively stable over the same time period, their catch has been significantly higher with a CPUE of 6.1/net night in 2010. Although the abundance of northern pike has been relatively low when compared to other game fishes, their relative weights have been at 90 or above over the past 13 years.

Channel catfish abundance was at a 19 year high in 2010 with 6.1/net night (Figure 4). They have consistently been one of the most abundant game fishes in the Dredge Cuts over that period. Similar to abundance, channel catfish condition was also at a 19 year high in 2010, with an average relative weight of 93.4 (Figure 5).

Shovelnose sturgeon are abundant in the Dredge Cuts, although their relative abundance was at a 19 year 0.8 fish/net night in 2010. During the past 19 years shovelnose sturgeon gill net CPUE has ranged from a high of 3.6 fish/night to the 2010 low.

Many other less abundant game fishes and abundant non-game species were sampled in the Dredge Cuts in 2010. The catches of those fishes can be found in Table 1.

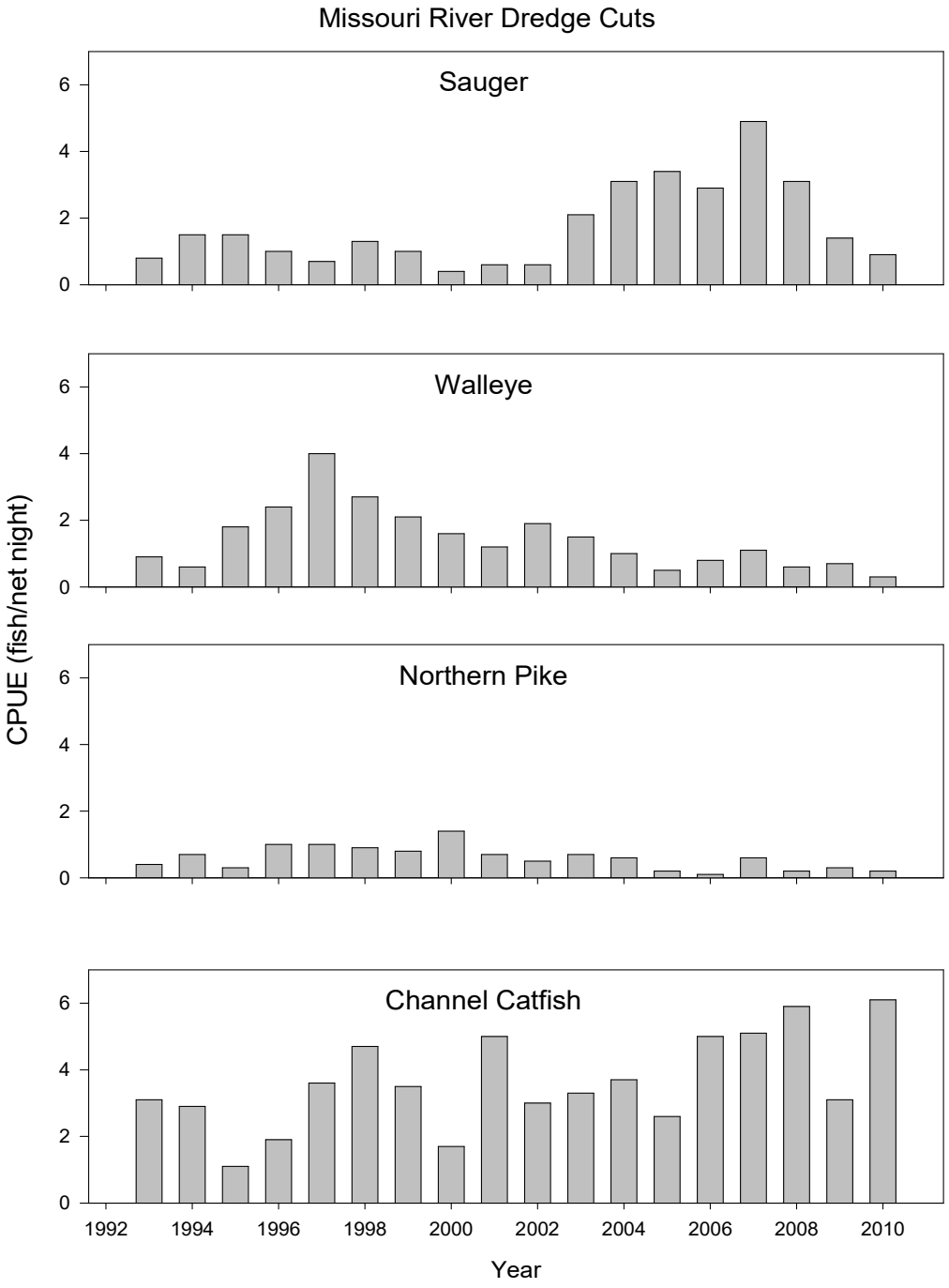

Figure 4. Gill netting CPUE of sauger, walleye, northern pike and channel catfish in the Missouri River Dredge cuts from 1992-2010.

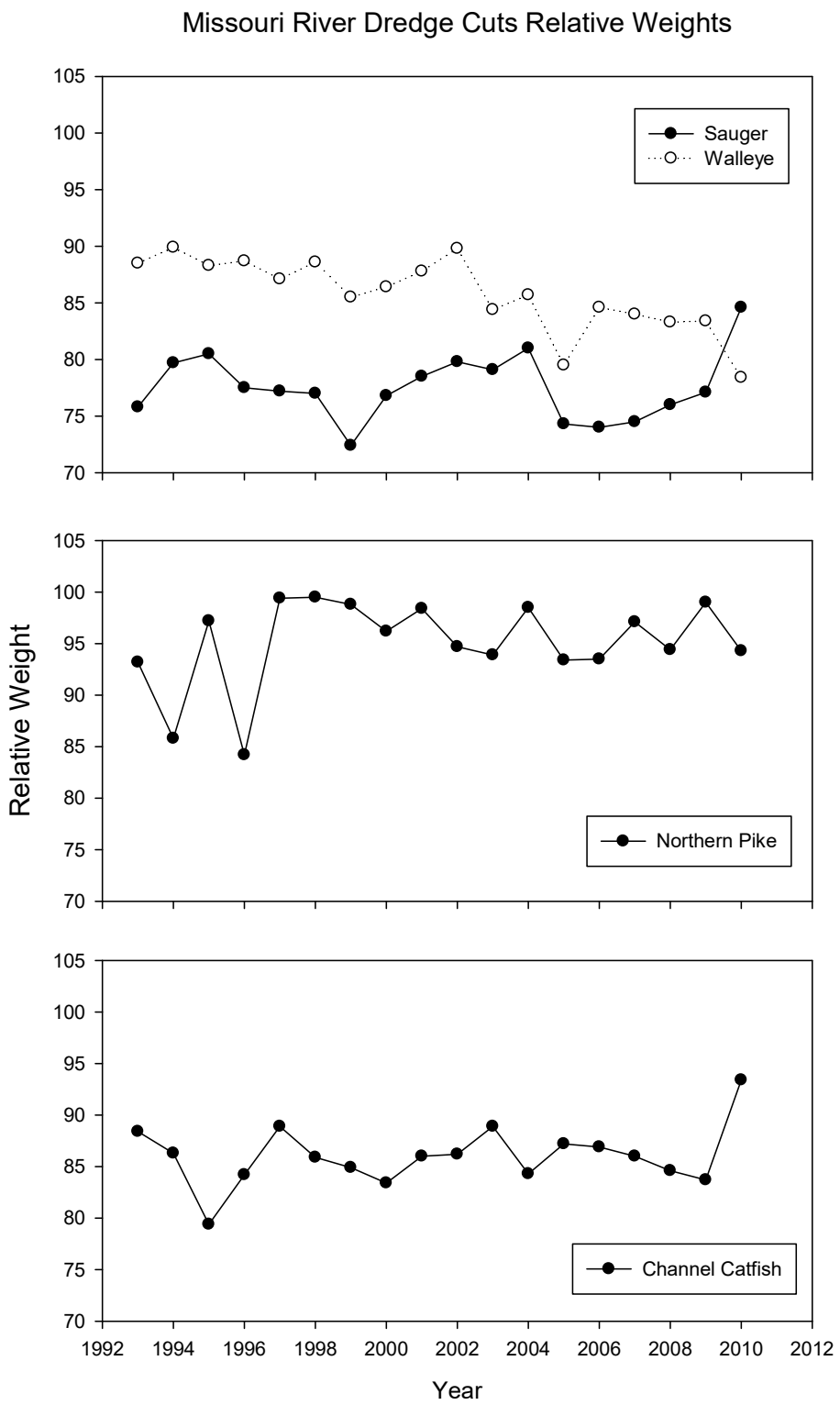

Figure 5. Relative weights of sauger and walleye (top panel), northern pike (middle panel) and channel catfish (bottom panel) captured in the Missouri River Dredge Cuts 1992-2010.

Paulo Reservoir

Paulo Reservoir was sampled with two gill nets and two trap nets on September 15, 2010. Gill nets captured six largemouth bass averaging 9.9 inches, nine bluegill averaging 5.8 inches and a 10.0 inch black bullhead. Trap nets captured 94 bluegill averaging 4.4 inches, 2 largemouth bass averaging 2.6 inches and 3 black bullheads averaging 9.9 inches. In February 2011 Paulo Reservoir was sampled for dissolved oxygen concentrations through the ice and an average of 1.1 mg/l was observed. This pond has a windmill and it was working, however the dissolved oxygen near the area of the aerator stone was only at 1.5 mg/l. This pond will likely be sampled again in 2011 to see if winter kill was an issue to the largemouth bass fishery.

Paulo Reservoir was last stocked with largemouth bass in 2007 with 1,500 fish averaging 1.2 inches.

Shoot Reservoir

Shoot Reservoir was sampled on September 3, 2010 with one gill net. Five rainbow trout averaging 8.6 inches were captured. The reservoir was stocked with 1,000 rainbow trout averaging 5.3 inches on July 7, 2010.

Troika Reservoir

Troika Reservoir was sampled with two gill nets and two trap nets on October 6, 2010. No fish were captured in the gill nets, while trap nets captured 3,500 fathead minnow averaging 2.7 inches in length.

Troika Reservoir had a maximum depth of 11 ft in front of the dam and in the spillway corner. The north and south west sides of the reservoir were approximately four feet deep. Water temperature was 14 C. No emergent vegetation was present.

Troika Reservoir was stocked with largemouth bass in July 2007 with 3,000 fish averaging 1.2 inches in length. There was no evidence that these fish are still in the reservoir, or that younger age classes of largemouth bass persist.

Valley Reservoir

Valley Reservoir was sampled using one gill net and one trap net on August 8, 2010. The gill net captured 82 yellow perch averaging 7.2 inches. The trap net captured two yellow perch and five fathead minnows. The perch population did not change much from 2009, where one gill net captured 71 yellow perch that also averaged 7.2 inches in length.

Valley Reservoir has a maximum depth of approximately 12 ft near the dam and in the middle. The inlet area had a depth of 8 feet. Water temperature on August 8th was 24 C and dissolved oxygen concentrations were at 11.5 mg/l. The reservoir was slightly higher in 2010 than in 2009. Aquatic macrophytes could be seen throughout the reservoir.

VR009 (Lower Glasgow Air Force Base Pond)

VR009 was checked on August 4, 2010 and due to extremely low water conditions no nets were set. The pond was very shallow and aquatic macrophytes choked all areas where water was present. VR009 was stocked with rainbow trout twice in 2010, on June 30th with 1,000 catchables and on July 7 with 3,000 fish averaging 5.3 inches. Due to the extremely low water levels it is unlikely that any of these fish made it through the winter of 2010-2011.

Ponds Dropped from Management

Valley Reservoir 009 (VR009) in Valley County will not be stocked in 2011 due to the extremely low water conditions that were observed in the late summer in 2010. Although VR009 had sufficient water in the pond during the spring when rainbow trout were stocked, water levels dropped throughout the summer. In 2011 the pond will be visually inspected throughout the summer months to see if water elevations are maintained. With all the snow in Valley County during the spring of 2011 it will be interesting to see if this pond holds water into the late summer season. If water levels are maintained, rainbow trout stocking will begin again in the spring of 2012.

Chabot Reservoir in Daniels County has been stocked on an annual basis with rainbow trout for more than a decade. However, due to extremely low water levels in 2010 and infrequent use by anglers the stocking of rainbow trout will be halted.

2011 Wild Fish Transfers

Adult yellow perch will be transplanted into Box Elder Reservoir in Sheridan County in the spring of 2011. These perch are meant to give a jump start to the existing yellow perch population that have seen very little natural recruitment over the past few years.

Adult yellow perch will also likely be transplanted into Danelson Reservoir in Daniels County. This pond currently has no game fish and the last stocking of largemouth bass in 2007 did not take. The landowner would like a fishery and since the pond has a relatively good maximum depth (14ft) we'd like to get a self-sustaining game fish population established.

Troika Reservoir in Valley County will also get a fish transplant in 2011. The species of fish has yet to be determined, but will likely be yellow perch. Troika has a healthy population of fathead minnow, but currently no game fish. A largemouth bass transplant in 2007 appears to not have taken.

Prepared by: Tyler M Haddix

Date: April 2011

Waters referred to:

Missouri River Section 05	16-00AK
Box Elder Creek Reservoir	16-4495
Dredge Cut Trout Pond	16-5145

Keywords

Small ponds	Shovelnose sturgeon
Yellow Perch	Largemouth bass
Northern pike	Bluegill
Rainbow trout	Walleye
Black bullhead	Fathead minnow
Brook stickleback	

Table 1. Fish species sampled by gear for ponds sampled in northeast Montana during 2010 (numbers in parentheses under gear represent the # of deployments).

County	Reservoir Name	Date	Maximum Depth (ft)	Gear	Species	Total Number Sampled	Mean Length (in)	Length Range (in)	Mean Weight (lbs)
Daniels	Buer Pond	10/12/2010		Gill net (1)	Yellow Perch	22	6.0	5.2-7.5	
				Trap (2)	Yellow Perch	521	5.5	4.5-7.5	0.1
					Creek Chubs	19	4.9	4.1-5.4	
Daniels	Carney Pond #1	8/5/2010		Gill net (2)	White Sucker	236	7.2	6.0-9.5	0.2
				Trap (2)	White Sucker	50	7.2		
					Fathead Minnow	25	2.6		
					Brook Stickleback	35	1.8		
Daniels	Chabot Reservoir	10/12/2010	10	Gill net (1)	Rainbow Trout	42	9.6	8.5-11.5	0.48
				Trap net (1)	Rainbow Trout	5	9	8.3-9.6	
Daniels	Danelson Reservoir	8/6/2010	14	Gill net (1)	No Fish				
				Trap net (1)	Brook Stickleback	11	1.3	0.9-1.6	
Daniels	Hatfield Reservoir	10/14/2010	12	Gill net (1)	Rainbow Trout	50	9.5	7.5-11.5	0.46
				Trap net (2)	Rainbow Trout	11	9.1		0.49
					Brook Stickleback	126	1.7	1.2-3.0	
Daniels	Killenbeck Reservoir	8/5/2010	11	Gill net (2)	Rainbow Trout	105	9	5.0-11.5	0.3
				Trap (2)	No Fish				
Richland	Keuster	11/3/2010	7	Gill net (2)	Yellow Perch	2	8.6	8.5-8.6	0.35
				Trap (2)	Fathead Minnow	48	2.4		

Table 2 continued. Fish species sampled by gear for ponds sampled in northeast Montana during 2010 (numbers in parentheses under gear represent the # of deployments).

County	Reservoir Name	Date	Maximum Depth (ft)	Gear	Species	Total Number Sampled	Mean Length (in)	Length Range (in)	Mean Weight (lbs)
Sheridan	Box Elder Reservoir	9/20/2010	25+	Gill net (4)	Walleye	201	9.8	7.1-20.9	1.02
					Northern Pike	24	17.3	13.3-38.0	1.78
					Yellow Perch	32	9.1	7.3-10.1	0.38
					White Sucker	14	17.3	16.0-19.2	2.25
					Black Bullhead	22	8.9	5.0-12.2	0.53
					Carp	5	4.7	4.1-4.9	0.03
				Trap net (2)	Walleye	1	7.3		
					Black Bullhead	858	3.8		
					Carp	222	2.9		
					White Sucker	4	13.3		
Sheridan	Raymond Dam	9/20/2010	15	Gill net (1)	Rainbow Trout	8	11	8.6-12.7	0.69
				Trap (1)	Fathead Minnow	346	2.3		
Valley	Atlas Reservoir	10/5/2010	12	Gill net (2)	No Fish				
				Trap net (2)	Fathead Minnow	1,400	2.2	1.8-2.7	
Valley	Big Reservoir	9/2/2010	14	Gill net (1)	No Fish				
				Trap (2)	Black Crappie	70	4.2	2.8-10.4	0.11
					Fathead Minnow	167	2.7		
Valley	Burke Reservoir	8/9/2010	9	Gill net (1)	Yellow Perch	93	7.5	0.8-12.0	0.3
				Trap (1)	Yellow Perch	28	4.6	3.0-7.1	
					Fathead Minnow	32	2.2		

Table 3 continued. Fish species sampled by gear for ponds sampled in northeast Montana during 2010 (numbers in parentheses under gear represent the # of deployments).

County	Reservoir Name	Date	Maximum Depth (ft)	Gear	Species	Total Number Sampled	Mean Length (in)	Length Range (in)	Mean Weight (lbs)
Valley	Dredge Cuts Trout Pond	10/6/2010	20+	Gill Net (3)	Yellow Perch	52	6.6	0.07-8.1	0.13
					Northern Pike	6	22.2	19.2-32.0	3.23
					Bluegill	1	3.9		
					Carp	5	26.3		8.25
					White Sucker	1	17.4		
				Trap (2)	Bluegill	150	1.7	1.4-2.0	
Valley	Glasgow Air Force Base Pond	8/4/2010	14	Gill net (1)	Yellow Perch	19	6.6	5.9-7.0	
					Northern Pike	1	23.2		
					Rainbow Trout	2	10.7	10.2-11.2	
				Trap (1)	Northern Pike	1	16.1		
Valley	Langen Reservoir	9/3/2010		Gill net (2)	Largemouth Bass	9	10.7	9.5-12.9	0.83
				Trap net (2)	Fathead Minnow	562	2.4	2.2-2.9	

Table 4 continued. Fish species sampled by gear for ponds sampled in northeast Montana during 2010 (numbers in parentheses under gear represent the # of deployments).

County	Reservoir Name	Date	Maximum Depth (ft)	Gear	Species	Total Number Sampled	Mean Length (in)	Length Range (in)	Mean Weight (lbs)
Valley	Missouri River Dredge Cuts	9/1 & 9/2/2010	20+	Gill Nets (10)	Walleye	3	14.5	11.2-19.3	1.1
					Sauger	9	15.1	12.4-17.0	1
					Northern Pike	2	31.3	21.7-40.9	9.1
					Channel Catfish	61	16.3	13.0-22.6	1.4
					Shovelnose Sturgeon	8	24.4	22.6-26.1	2.1
					Yellow Perch	2	5.9	5.5-6.3	0.1
					Lake Whitefish	4	18.3	17.7-18.7	2.6
					Cisco	43	11.6	4.7-14.7	0.7
					River Carpsucker	12	16.9	15.0-18.1	2.3
					Carp	6	21.1	18.0-29.4	5.1
					Rainbow Smelt	2	6	5.9-6.0	0.07
					Goldeye	25	13.9	12.6-17.1	0.8
					White Sucker	59	15.3	6.4-18.5	1.9
					Spottail Shiner	1	4.1		
Valley	Paulo Reservoir	9/15/2010		Gill net (2)	Largemouth Bass	6	9.9	6.9-11.7	0.54
					Bluegill	9	5.8	4.0-7.2	0.18
					Black Bullhead	1	10		0.56
				Trap (2)	Largemouth Bass	2	2.6	1.7-3.5	
					Bluegill	94	4.4	1.1-7.2	0.12
					Black Bullhead	3	9.9	8.7-10.8	0.56

Table 5 continued. Fish species sampled by gear for ponds sampled in northeast Montana during 2010 (numbers in parentheses under gear represent the # of deployments).

County	Reservoir Name	Date	Maximum Depth (ft)	Gear	Species	Total Number Sampled	Mean Length (in)	Length Range (in)	Mean Weight (lbs)
Valley	Shoot Reservoir	9/3/2010		Gill net (1)	Rainbow Trout	5	8.6	8.4-9.3	
Valley	Troika Reservoir	10/6/2010	11	Gill net (2)	No Fish				
				Trap Net (2)	Fathead Minnow	3,500	2.7	2.1-3.1	
Valley	Valley Reservoir	8/9/2010	12	Gill net (1)	Yellow Perch	82	7.2	5.3-10.0	0.21
				Trap (1)	Yellow Perch	2			
				Trap (1)	Fathead Minnow	5	2.7		
Valley	VR 009	8/4/2010	< 5	Visual	Extremely low water				