Fisheries Division
Federal Aid Job Progress Report

Montana Statewide Fisheries Management

Federal Aid Project Number: F-113-R-6

July 1, 2024 – June 30, 2025

Project Title: Montana Statewide Fisheries Management

Job Title: Havre Area Warm Water Fisheries Management

Abstract: Smaller pond fisheries are still recovering from prolonged drought and winter conditions in 2022/2023, which resulted in a significant number of winterkills throughout the area prairie ponds. The spring runoff in 2024 was below average but significant precipitation events occurred throughout May and early June, which aided in the refill of many of the pond and reservoir fisheries, and lead to moderate flooding impacts in many of the streams originating in the Bear Paw Mountains. Flows on the Missouri River were marginal, and paddlefish tagging was conducted from late April through mid-May. Furthermore, four remote self-creel stations were fully operational in 2024 to collect paddlefish harvest information. Angler reported harvest on the upper Missouri River paddlefish population was 413 in 2024 (3-year average harvest is 351).

Young-of-year paddlefish surveys (visual counts) were conducted in August in the headwaters of Fort Peck Reservoir with no YOY paddlefish being observed. The average size of adult fish remains stable and observed spawning success has been good in recent years due to high spring flows and elevated reservoir levels (2008, 2011, 2018-2020 and 2023). Observed year-classes in 2008 and 2011 have started to recruit into the fishery, based on young male recruits aged.

The St. Mary's Siphon failed in June 2024, jeopardizing the transfer of water into the Milk River drainage and resulted in poor summer and fall flows, and uncertain reservoir pool elevations in 2024/2025. Standardized gill netting and beach seining surveys were conducted at Fresno, Nelson, and Beaver Creek Reservoirs. Select ponds and streams were sampled throughout Hill, Blaine, and Phillips Counties to assess fish populations, survival, and recruitment. Additional wild fish transfers were also completed to re-establish or supplement existing populations that winterkilled. Self-creel boxes were maintained at select ponds in Hill, Blaine, and Phillips Counties to assess fishing pressure. Results of all other sampling are presented.

Seining surveys were conducted on prairie streams throughout the management area to assess prairie stream fish distribution and abundance.

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. Provide landowners and other private parties with technical advice and information to sustain and enhance fisheries resources. Objective accomplished: (3) 310 and (18) 124 projects were reviewed along with one 310 violation that was mitigated with the Blaine County Conservation District and the landowner.

Angler Education- To enhance the public's understanding, awareness and support of the state's fishery and aquatic resources and to assist young people to develop angling skills and to appreciate the aquatic environment. Objective accomplished through staff participation in the "Hooked on Fishing" programs with local grade school children, planning and conducting of fall and winter fishing trips with area grade school and junior high students. Public presentations were also given on area fisheries in Havre and multiple articles and information on local fisheries were provided via Facebook posts, videos, and newspaper outlets.

Methods

Various sampling gears and methods were used to obtain the fisheries information presented in this report (Appendix 1). Whenever possible, captured fish were sorted by species, counted, measured for total length (TL: inches (in.)) and weighed to the nearest 0.01 pound (lbs.). Additionally, aging structures were collected from harvested paddlefish (jaw section) in the upper Missouri River and yellow perch and walleye (otolith) from select reservoirs.

Water conditions were monitored throughout the management area using stream and reservoir gauges where applicable and during onsite visits. Water temperature loggers were deployed in select prairie streams throughout Region 6 (Appendix 3). Voluntary creel boxes were maintained at many of the ponds to determine fishing pressure, catch rates, and satisfaction. Four self-creel boxes were used to collect data and aging structures on harvested paddlefish and a post-season phone creel was conducted to collect additional angler information.

Fort Peck Reservoir and Upper Missouri River Paddlefish Stock

The Fort Peck stock was isolated from the Yellowstone-Sakakawea population upon closure of the Fort Peck Dam in June of 1937. Completion of the Fort Peck Dam created productive rearing habitat, resulting in increased abundance and size of paddlefish, and established a valuable recreational snag fishery in the upper Missouri River. The alteration of flows from upstream dams and fluctuating water levels on Fort Peck Reservoir can impact reproductive success and survival of young paddlefish (Leslie 2007). The current management strategy is to provide a stable recreational fishery while ensuring a sustainable population size and diverse age structure.

Paddlefish are a long-lived, K selected species that exhibit slow growth and late maturation. To ensure sustainable harvest of this population, no more than 500 fish (three-year running average)

should be harvested. Several studies have recommended that exploitation of paddlefish should not exceed 15% (Combs, 1982; Pasch & Alexander, 1986). Some riverine paddlefish populations can sustain 6%–20% exploitation with little detrimental effect to survival (Combs, 1982; Pasch & Alexander, 1986; Rehwinkel, 1978). In the comprehensive review of population estimates for the Upper Missouri River paddlefish population, Glassic et al. (2019) determined that exploitation estimates for males or females never exceeded 10% from 2005 through 2017. Mean exploitation rate for all years was 2.6% (CI 2.0–3.5) for females and 2.9% (CI 2.2–4.0) for males. Maximum exploitation rate was 5.0% (CI 3.9%– 6.6%) for females in 2006 and 6.7% (CI 5.2%–8.7%) for males in 2006. Thus, with a 500 fish target, the Fort Peck paddlefish fishery is within the general recommendations of low exploitation rates for a K-selected species.

The 2024 season ran from May 1st – June 15th with 1,000 harvest tags allocated through a lottery draw. Anglers not successful in drawing a harvest tag automatically receive a snag and release tag. A third option to participate in the fishery is purchase an over-the-counter snag and release license that is valid throughout the season. Harvested paddlefish must be reported via phone, MyFWP, or on-site.

In 1993, a standardized monitoring program was established to assess population size, harvest rates, spawning periodicity, age structure, and to collect information on migration and identify spawning locations (Figure 1). Sampling occurs on the upper Missouri River during the spawning period when paddlefish are staging near the Fred Robinson Bridge (Appendix 1). This effort takes place from April through May on the ascending arm of the hydrograph, typically at or above 8,000 cubic feet per second (cfs).

Beginning in 1996, concern over spawning success and recruitment prompted the establishment of visual count surveys in the headwaters of Fort Peck Reservoir as a means of producing an annual index of year-class strength and recruitment of young-of-year (YOY) paddlefish (Appendix 1). Visual counts have been found to be the most effective means to survey YOY paddlefish (Fredericks and Scarnecchia 1997). Observed YOY paddlefish are divided into age groups based on estimated length (YOY, sub-adult, and adult).

Adult Paddlefish Monitoring and Tagging

In 2024, paddlefish tagging started on April 29th and continued until May 20th, with crews handling 84 paddlefish (Figure 1). Since tagging was initiated in 1977, 9,653 paddlefish have been tagged and 1,336 tagged paddlefish have been recaptured during annual drift netting surveys. On average, approximately 12.2% of the paddlefish captured in drift nets are recaptured fish. In 2024, 15.5% of paddlefish handled were recaptured fish (Figure 1). Based on the tagging and recapture data, the reproductive periodicity of male paddlefish is one to two years and for females every two to three years. Since 1973, FWP has monitored the number of female paddlefish weighing greater than 90 pounds captured during our tagging efforts (Figure 2). This data has confirmed a long-standing hypothesis that as Fort Peck Reservoir aged, the productivity within the reservoir would gradually decrease, resulting in smaller female paddlefish with lower fecundity. However, our data has shown a positive response in paddlefish condition and weight when Fort Peck Reservoir fills after several years of low pool conditions (trophic upsurge; Figure 2). In 2024, seven female paddlefish captured during our tagging efforts weighed 90 or more pounds (Figure 2). Females captured in 2024 averaged 75.6 pounds (n=37).

Since tagging was initiated in 1977, a total of 1,330-tagged paddlefish has been reported as harvested, which is about 13.8% of all tagged paddlefish. In 2024, 41 tagged paddlefish (all years) were reported as harvested and 17 tagged paddlefish were reported as snagged and released.

Figure 1. Number of paddlefish tagged and recaptured during spring drift net efforts from 1992-2024.

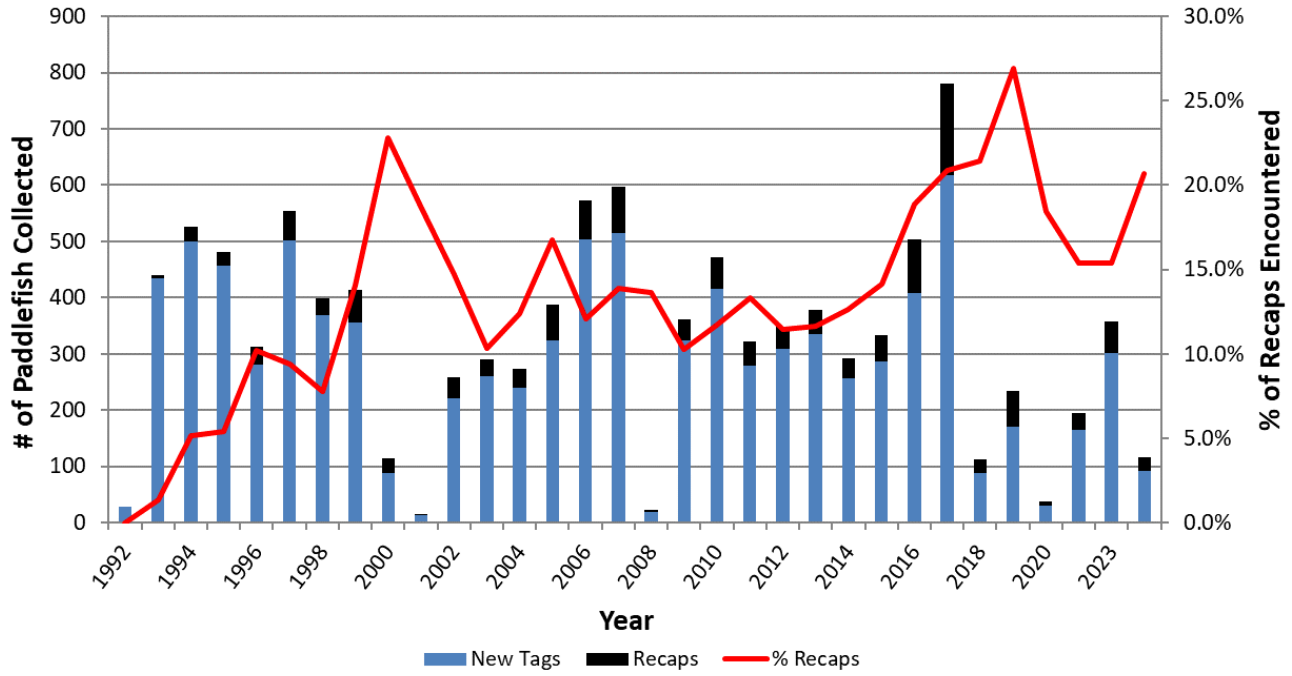
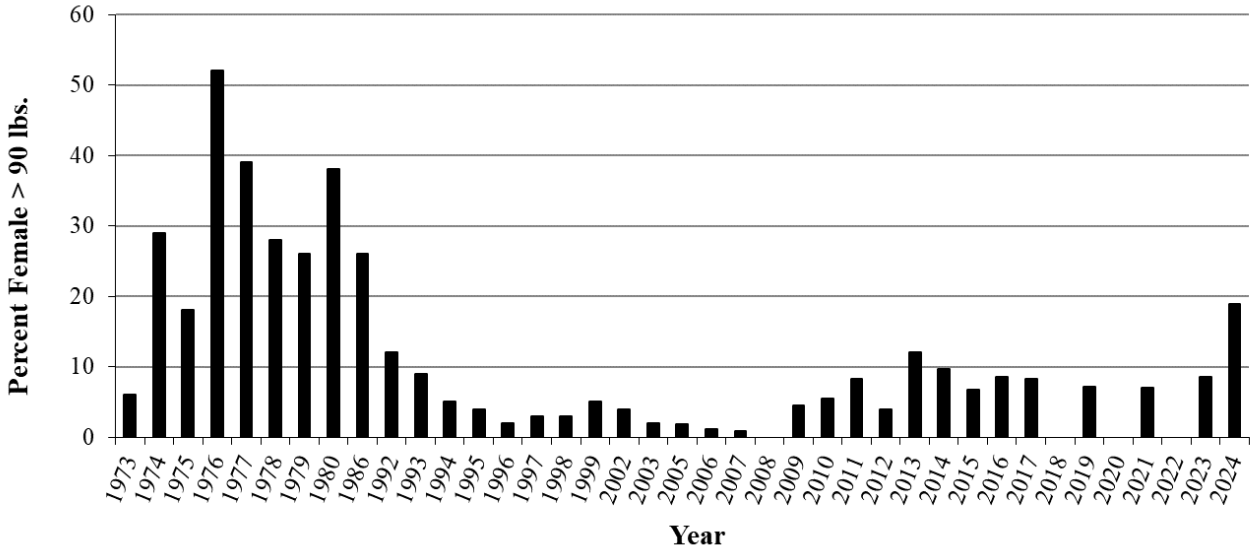


Figure 2. Percent of female paddlefish captured during adult tagging efforts weighing more than 90 pounds from 1973-2024.



Preliminary Population Estimates and Exploitation

Estimates of population size of the recruited portion of the Fort Peck stock were developed from 1993 through 2019 based on mark recapture sampling associated with gill netting and tagging, conducted prior to and during the paddlefish snagging season. Point estimates and confidence intervals were developed using two approaches for estimate verification purposes: a modified Schnabel estimate and a modified Peterson estimate. Modifications, which allow for multiple years of marking and recapture data, were necessary because only a fraction of the recruited paddlefish stock matures and migrates upstream each year.

Population estimates were obtained using mark-recapture data and the Peterson-Lincoln estimator (or Peterson estimator). Four separate estimates were performed. Years with no reported harvest (1997, 1999, 2001, 2003, and 2004) and one year with limited tagging effort (i.e. 2008 with only 22 new fish being tagged) were excluded. In 2019, the four estimates suggest an adult population consisting of approximately 18,000 paddlefish (95% CI 12,000 – 20,000).
An estimated 382 paddlefish were directly reported harvested by anglers in 2023 while 455 were reported as harvested based on post season phone creel interviews. The three-year running average (2021-2023) of paddlefish harvested via the phone creel is 384. Exploitation rates for 2023 was estimated to be 2.5%, when using estimated harvest from the phone creel.

Spawning and Recruitment

Spawning success of paddlefish is influenced by the magnitude, timing, and duration of peak flows. Berg (1981) postulated that a minimum flow of 14,000 cfs, maintained for a period of 30 days, is required to trigger paddlefish to move out of their staging areas and migrate upstream to spawning locations. This migratory trigger has been observed in the Fort Peck stock by monitoring flows (Table 1) and movement patterns; and comparing those to year class-strength through aging and YOY sampling. Our data suggests the closer flows resemble those postulated by Berg, the more likely we are to observe higher densities of YOY paddlefish during our summer visual counts. However, when flows are marginal to poor, our data suggests paddlefish in the upper Missouri are still reproducing, though the year-class is small when compared to year-classes observed during higher flow events.

In 2024, the Missouri River basin snow water equivalent ranged from 73-85% of normal on April 1st. Conditions improved in May, when heavy precipitation increased snow water equivalent to 83-104% of normal. The Missouri River at the Fred Robinson Bridge was free of ice cover in mid-March. Flows remained under 7,500 cfs through early May and quickly jumped to 12,000 cfs on May 8th, peaking at 15,800 cfs on May 18th. Flow remained above 10,000 cfs until June 8th but only remained at or above 14,000 cfs for seven total days.

Hydrograph information (Figures 3 and 4) suggests spawning conditions vary among years. Poor year-class strength and recruitment due to low river flows and reduced pool elevations on Fort Peck Reservoir from 2000-2007 was confirmed by YOY visual counts, which have been conducted annually since 1997 (Kozfkay & Scarnecchia 2002; Bowersox 2004; Miller 2005; Miller & Scarnecchia 2006). Good recruitment of YOY paddlefish was observed in 1997, 1998, 2008, 2011, 2018 and 2023; when flows exceeded the historical hydrograph and Fort Peck Reservoir water levels were high or rising.

In 2024, no YOY or sub-adult paddlefish were observed during the fixed transects between RM 1849.5 and 1864.5 (Table 2). In addition to the standardized counts, we applied a total of 1 hours of random search effort on August 26th to identify habitats containing YOY paddlefish not sampled during the transect counts (Table 3). These random searches were conducted near the river/reservoir interface and near the standard transect area (RM 1859-1865). Random counts observed a total of zero YOY, four sub-adult, and 10 adult paddlefish (Table 3).

Table 1. Paddlefish spawning and rearing condition ratings for the years 1974-2024, using trigger flow (> 14,000 cfs) incidence and duration, and Fort Peck pool elevations. Good rating is defined as trigger flow being met and exceeded for a minimum 30 consecutive days, marginal rating is trigger flow was met but didn't exceed 30 days, and poor rating is flow did not meet trigger flow requirement.

	Paddlefish Spawning Rating			**Fort Peck Summer Pool Elevations (July Elevation)**		
Year	Good	Marginal (#days> TF)	Poor	Decreasing	Neutral	Increasing
1974	X					X (2445.5')
1975	X					X (2251.6')
1976	X				X (2249')	
1977			X	X (2236.7')		
1978	X					X (2249.6)
1979		X (20)			X (2247.2')	
1980	X			X (2242.1')		
1981	X				X (2242.2')	
1982	X				X (2239.7')	
1983		X (29)			X (2241.7)	
1984	X				X (2243.2')	
1985			X	X (2232.8')		
1986		X (19)			X (2235.5')	
1987			X			X (2237.9)
1988			X	X (2230.4')		
1989		X (05)		X (2223.5')		
1990		X (03)		X (2216.2)		
1991	X				X (2220.1')	
1992			X	X (2213.2')		
1993	X					X (2223')
1994		X (06)				X (2238.6')
1995	X					X (2244')
1996	X					X (2247.3')
1997	X					X (2250.3)
1998		X (25)		X (2240.5')		
1999		X (13)			X (2238.3')	
2000			X	X (2233')		
2001			X	X (2222.6')		
2002		X (16)		X (2220.4')		
2003		X (05)		X (2213.6')		
2004			X	X (2203.7)		
2005		X (05)			X (2203.7')	
2006		X (09)			X (2206.3')	
2007			X		X (2203.2')	
2008	X					X (2210.1')
2009	X					X (2220.6')
2010	X					X (2235.8')
2011	X					X (2250.6')
2012		X (15)		X (2237.6')		
2013		X (15)		X (2227.1')		
2014	X				X (2230.3')	
2015		X (09)				X (2236')
2016			X		X	
2017	X				X (2238')	
2018	X					X (2246.5')
2019	X				X (2246.8')	
2020	X			X (2240.3')		
2021			X	X (2230.8')		
2022			X	X (2222')		
2023	X					X (2231')
2024		X (07)			X (2231')	

[1]Flows measured at the Landusky Measuring Station

Figure 3. - Historical and observed Missouri River hydrograph at the USGS Landusky, MT gaging station 2000-2008.

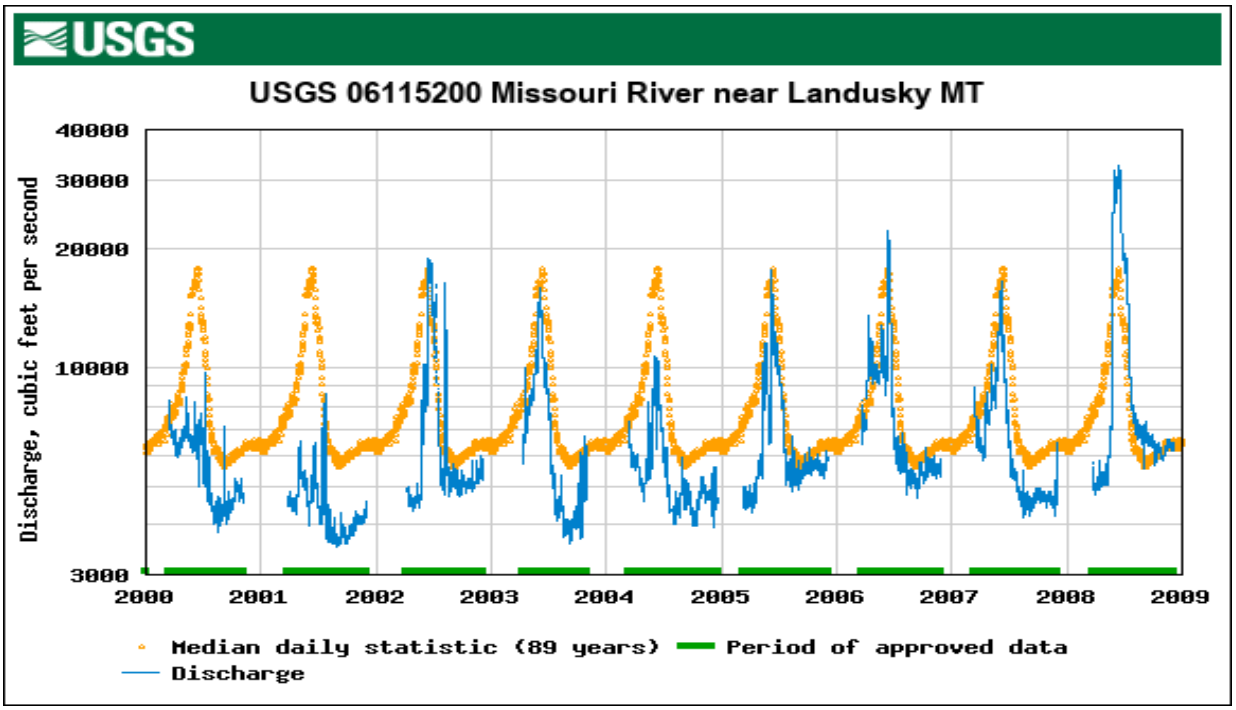


Figure 4. - Historical and observed Missouri River hydrograph at the USGS Landusky, MT gaging station 2009-2024.

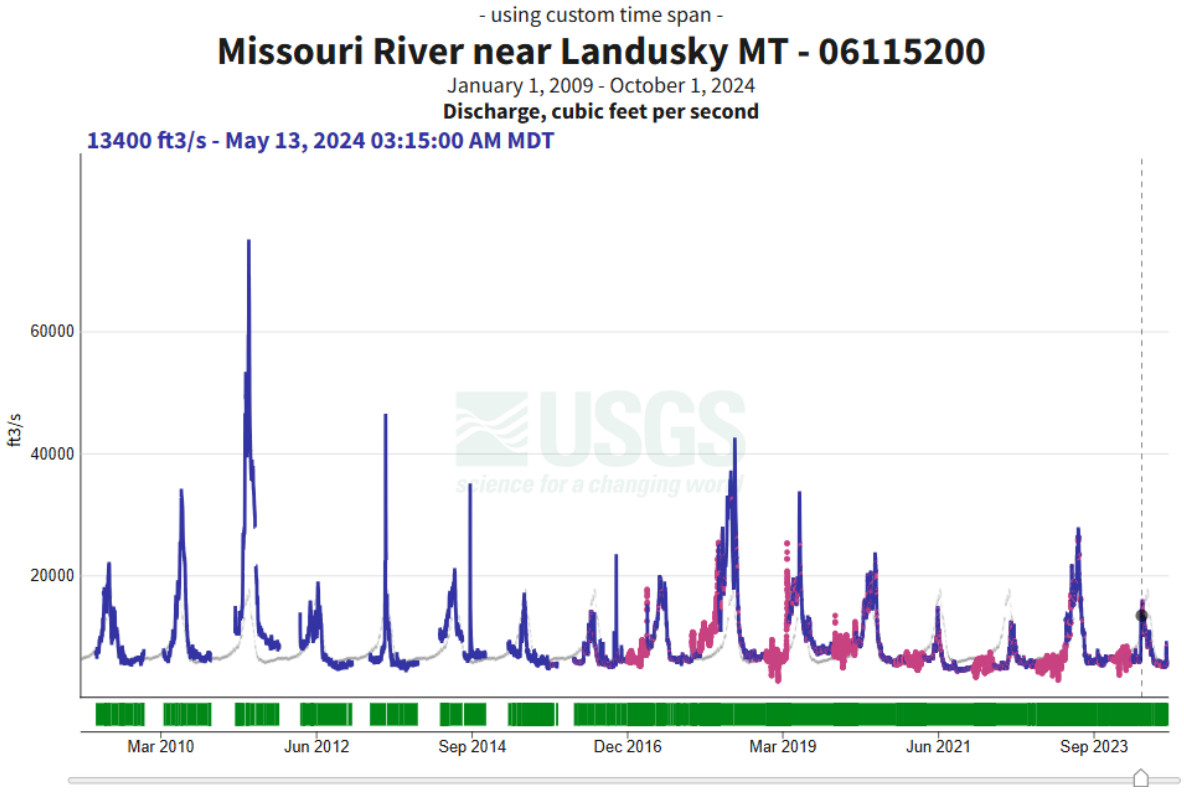


Table 2. - Results of standardized YOY paddlefish visual count surveys conducted in the headwaters of Fort Peck Reservoir from 1997 to 2024.

Year	Transect Dates	# Stations	Station Locations (RM)	# Transects	# YOY	# Sub-Adults	Reservoir Elevation (August)	Collector
97'				69	113	3	2248	
98'	7/27 to 9/23	8	1888 to 1866	216	97	54	2239	Kozfkay
99'	8/25 to 9/20	8	1888 to 1866	174	3	10	2236	Kozfkay
00'				90	0	11	2230	
01'				90	1	0	2221	
02'			1862 to 1856 ?				2219	Bowersox
03'			1862 to 1856 ?	54	2	4	2211	Bowersox
04'			1853 to 1838	54	0	3	2201	
05'	8/8 & 8/16	6	1853 to 1838	36	1	0	2202	Miller
06'	7/24 & 7/30	6	1853 to 1838	36	2	1	2204	Miller
07'	7/31 & 8/6	6	1854 to 1838	6	0	2	2201	Miller
08'	8/6 & 8/12	6	1844 to 1858	36	4	3	2209	Miller
09'	8/11 & 8/17	6	1843 to 1858	36	0	0	2220	Miller
10'	7/27 & 8/3	6	1863.5 to 1878.5	36	0	0	2236	Miller
11'	7/28 to 9/1	6	1866.5 to 1881.5	90	61	3	2242	Hemingway
12'	7/30 & 8/9	6	1863.5 to 1878.5	36	1	3	2234	Hemingway
13'	8/5 & 8/14	6	1855.5 to 1870.5	36	0	14	2226	Hemingway
14'	7/28, 8/4, & 8/17	6	1859.5 to 1874.5	54	0	0	2230	Hemingway
15'	8/3, 8/10, & 8/18	6	1866.5 to 1881.5	54	0	0	2236	Hemingway
16'	8/2 & 8/15	5	1863.5 to 1878.5	36	0	1	2235	Breen
17'	8/4 & 8/16	6	1867.5 to 1882.5	36	1	0	2239	Breen
18'	7/29 & 8/14	6	1866.5 to 1881.5	36	1	0	2245	Breen
19'	8/8 & 8/21	6	1866.5 to 1881.5	36	4	6	2246	Breen
20'	8/5 & 8/18	6	1863.5 to 1878.5	36	0	3	2240	Facer
21'	8/4 & 8/25	6	1849.5 to 1864.5	36	0	1	2230	Facer
22'	8/4 & 8/17	6	1846.5 to 1861.5	36	0	3	2221	Schott
23'	7/28, 8/17 & 8/22	6	1852.5 to 1869.5	54	61	10	2230	Schott
24'	8/5, 8/8 & 8/26	6	1849.5 to 1864.5	54	0	0	2228	Schott

Table 3. - Results of random YOY paddlefish visual count surveys conducted in the headwaters of Fort Peck Reservoir from 2008 to 2024.

Year	Transect Dates	Effort (Hours)	Station Locations (RM)	# YOY	# Sub-Adults	# Adults	August Pool Elevation	Collector
2008	8/6-8/13	24	1859-1861	42	0	--	2209	Miller
2009	8/11-8/17	12	1857-1862	2	3	--	2220	Miller
2010	7/26-9/27	75	1874.5-1884	0	26	--	2236	Miller
2011	7/25-8/8	27	1875-1888	205	2	13	2242	Hemingway
2012	7/31/, 8/9-8/10	14	1869.5-1884.7	1	16	75	2234	Hemingway
2013	8/ (6-7) (14-16) (21-22)	28	1859.5-1886	2	85	196	2226	Hemingway
2014	7/(29-30), 8/(5-6) (18-19)	27.25	1859-1887	0	7	54	2230	Hemingway
2015	8/4, 8/11, & 8/17	18	1865-1885	1	19	42	2236	Hemingway
2016	8/1, 8/2, & 8/16	10	1868-1880	0	1	25	2235	Breen
2017	8/3, 8/4, 8/15-8/17	15.25	1863-1887	1	1	6	2239	Breen
2018	7/29, 7/30, 8/15	11	1863-1887	11	1	6	2245	Breen
2019	8/9, 8/21, 8/22	9	1863-1887	4	10	28	2246	Breen
2020	8/4, 8/18, 8/19	8	1863-1881	3	20	40	2240	Facer
2021	8/4, 8/5, 8/25	3	1842-1867	0	1	1	2230	Facer
2022	8/3, 8/4, 8/16, 8/17, 8/18	12.75	1850-1864	4	18	29	2221	Schott
2023	7/27, 8/16, 8/17, 8/20	15	1850-1871	149	4	18	2230	Schott
2024	8/26	1	1859-1864.5	0	4	10	2228	Schott

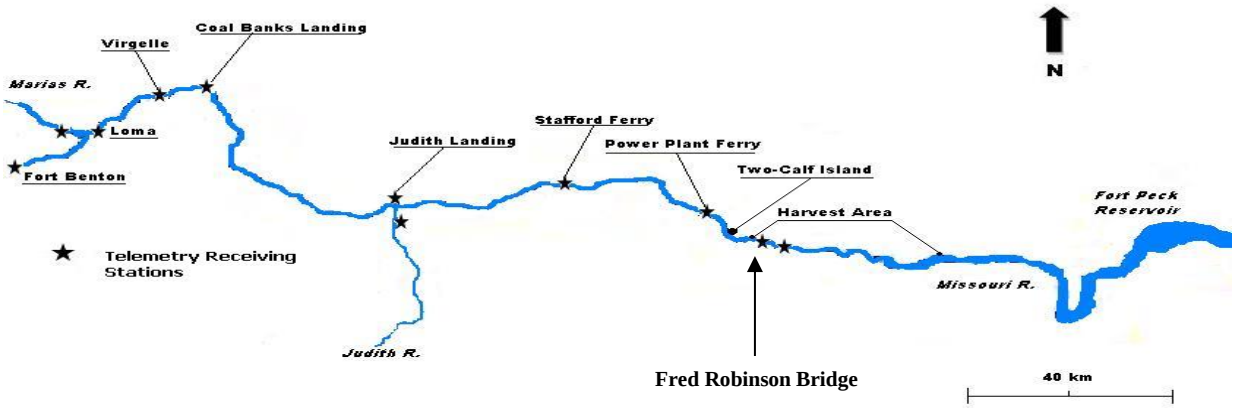
-- No data collected for observed period of record

Harvest: Paddlefish Creel Survey 2024

New regulations adopted on the upper Missouri paddlefish fishery altered the protocols surrounding the creel historically conducted during the paddlefish season. To accommodate anglers, four self-creel boxes were constructed to provide a location to report harvested paddlefish and collect additional harvest data. The boxes are located at Kipp, Jones Island, Slippery Ann and Rock Creek campgrounds, all boxes are located downstream of the Fred Robinson Bridge (Figure 5). Boxes were checked and cleaned twice a week for the duration of the paddlefish season. Anglers who provided harvest information along with a jaw sample of their harvested paddlefish received a paddlefish hat and age letter.

Anglers were also able to submit harvest information via phone hotline or filling out the harvest collection card which was issued to them when they received their harvest tag. A phone creel was also used to collect participation, angling effort, and success from both harvest and snag and release anglers.

Figure 5. Map of the creel area including locations of fixed telemetry receiving stations in the Upper Missouri River above Fort Peck Reservoir. Primary harvest area encompasses RM 1897-1921.



Paddlefish Phone Creel (2003-2024)

Phone creel statistics have been obtained for the Fort Peck population since 2003 (Table 4). On average, approximately 3,200 angler's purchase a tag to snag for paddlefish above Fort Peck Reservoir, representing approximately 5,600 fishing days. On average, 2,200 paddlefish are caught above Fort Peck Reservoir with approximately 76% of the paddlefish being released (Table 4).

In 2024, phone creels were performed for harvest tag holders, snag and release (unsuccessful), and snag and release over the counter (OTC). Approximately 75% of the harvest tag holders (n=750 (of 1,000)) and 23% of snag and release anglers were contacted.

Effort

In 2024, 5,239 anglers applied for an Upper Missouri River paddlefish harvest tag, via entering the lottery draw. A total of 1,000 harvest tags were issued and an additional 1,854 over-the-counter snag and release licenses were sold. The sale of 7,093 upper Missouri River paddlefish licenses was the highest on record. Increases in total licenses sold have occurred in ten of the last eleven years (Table 4). Estimated paddlefish snagging effort was 7,255 angler days, with an estimated 452 paddlefish being harvested and an additional 3,344 paddlefish being caught and released (Table 4). Approximately 72% of harvest tag holders fished for paddlefish in 2024 while 39% of OTC snag and release holders and 24% of snag and release holders (unsuccessful draw) fished, respectively.

Table 4. –Summary of estimates for the Fort Peck paddlefish population from the Montana paddlefish telephone creel survey (2003-2024).

Missouri River Above Fort Peck																							
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Number of Tags Sold**	2,545	2,473	2,329	2,605	2,481	2,284	2,118	2,366	2,460	2,439	2,356	2,087	2,410	2,717	3,238	3,488	4,038	1,001	5,480	5,653	6,241	7,093
Number of Anglers	1,902	2,859	2,705	2,476	--	1,816	1,579	1,729	1,901	1,910	1,911	1,599	2,082	1,542	1,881	1,629	1,763	763	2,238	1,896	2,343	2,449
Total Days Fished*	5,757	9,172	8,385	7,565	-	4,426	2,748	5,789	4,816	3,671	4,716	2,924	4,838	5,955	6,147	5,842	5,563	2,862	6,712	5,496	6,883	7,255
Total Hours Fished*	27,433	44,400	42,277	39,800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number Caught	1,583	1,102	1,516	2,290	-	845	2,342	1,851	1,411	1,841	1,637	2,048	1,802	3,997	5,103	1,994	2,553	1,078	3,207	1,474	2,693	3,796
Number Harvested	868	787	1,028	1,067	634	300	564	575	598	381	292	307	334	350	346	199	305	452	415	281	455	452
Catch Rate (fish/day)	0.27	0.12	0.18	0.30	-	0.19	0.44	0.32	0.29	0.40	0.48	0.66	0.61	0.7	0.96	0.4	0.51	0.44	0.53	0.28	0.42	0.56
Harvest Rate (fish/day)	-	-	-	-	-	-	-	-	-	-	-	-	-	0.28	0.18	0.11	0.19	0.2	0.21	0.14	0.24	0.26
Percent Released	45%	29%	32%	53%	-	65%	76%	69%	58%	80%	82%	85%	82%	91%	93%	90%	88%	58%	87%	81%	83%	88%
Percent Contacted by FWP Creel Clerk/Mandatory Report						85.71%	62.14%	38.61%	60.00%	78.00%	76.00%	78.80%	83.60%	97.80%	90.60%	95.50%	94.70%	93.90%	96.50%	99.30%	97.14%	96.60%

* Includes hours spent catch and release fishing

** Includes lottery allocation tags plus over-the-counter snag and release tags

Phone Creel-Supplemental Questions

In 2024, five supplemental questions were asked to anglers:

1) Satisfied with experience? Overall, 89% of respondents said they were satisfied with their 2024 paddlefish season.

2) Was a boat used to access snagging areas? Overall, 42.9% of respondents said they used a boat to access snagging areas (72.4% - Jet, 25.2% - Prop and 2.4% - Other).

3) Did you release at least one fish prior to harvesting a paddlefish? Overall, 27.2% of respondents said they released at least one paddlefish prior to harvest. Several reasons for release were stated but the most common response was either the fish was too small, or the fish was too big.

4) Did you use setlines to target other fish species? 22.3% of respondents said they used setlines.

5) Did you use a live sonar unit to aid in paddlefish snagging? Overall, 4.6% of respondents said they used sonar technology to aid in paddlefish snagging.

Harvest and Catch

Anglers are required to provide the following information on their harvested paddlefish: angler harvest tag #, angler name, angler ALS #, harvest date, length (eye to fork), sex, jaw tag present (Y/N), jaw tag color, and jaw tag #. Though not required, anglers could also provide the weight and piece of the lower jaw for aging purposes. These samples were then sent to the University of Idaho for analysis.

Non-resident anglers, representing nine states comprised 2.3% of the harvest tag holders (Figure 6). Harvest tag holders represented 130 Montana cities; with Billings (n=118), Great Falls (n=99), Bozeman (n=54), Helena (n=54), and Belgrade (n=43) having the highest representation.

Angler's reported harvesting 412-paddlefish during the 2024 season, with harvest being dispersed throughout the season (Figure 7). Overall success in 2024 was above average, good flow conditions had paddlefish staging near snagging locations, fish were generally dispersed but concentrated. Historically, angler's preferred to report their harvest to creel clerks stationed at Kipp and Rock Creek campgrounds, 2019 was the first-year anglers could report their harvested fish via the MyFWP portal. Reporting preference in 2023 reflected historic reporting, with the majority reporting at onsite self-creel boxes (Figure 8).

Figure 6. State of origin for non-resident anglers who successfully drew a paddlefish harvest tag on the upper Missouri River in 2024 (n=23).

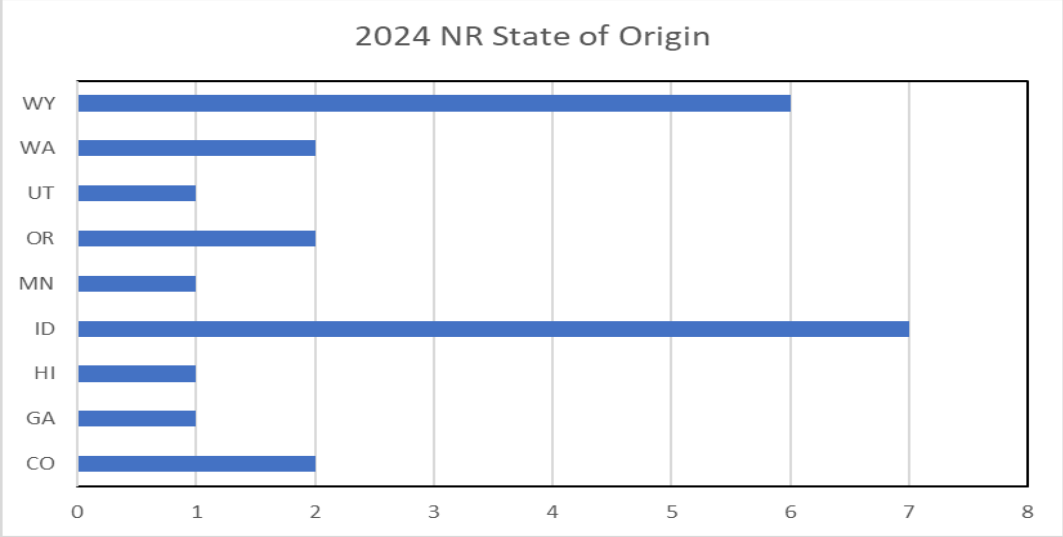


Figure 7. Daily harvest of paddlefish during the Upper Missouri River paddlefish season (May 1-June 15, 2024).

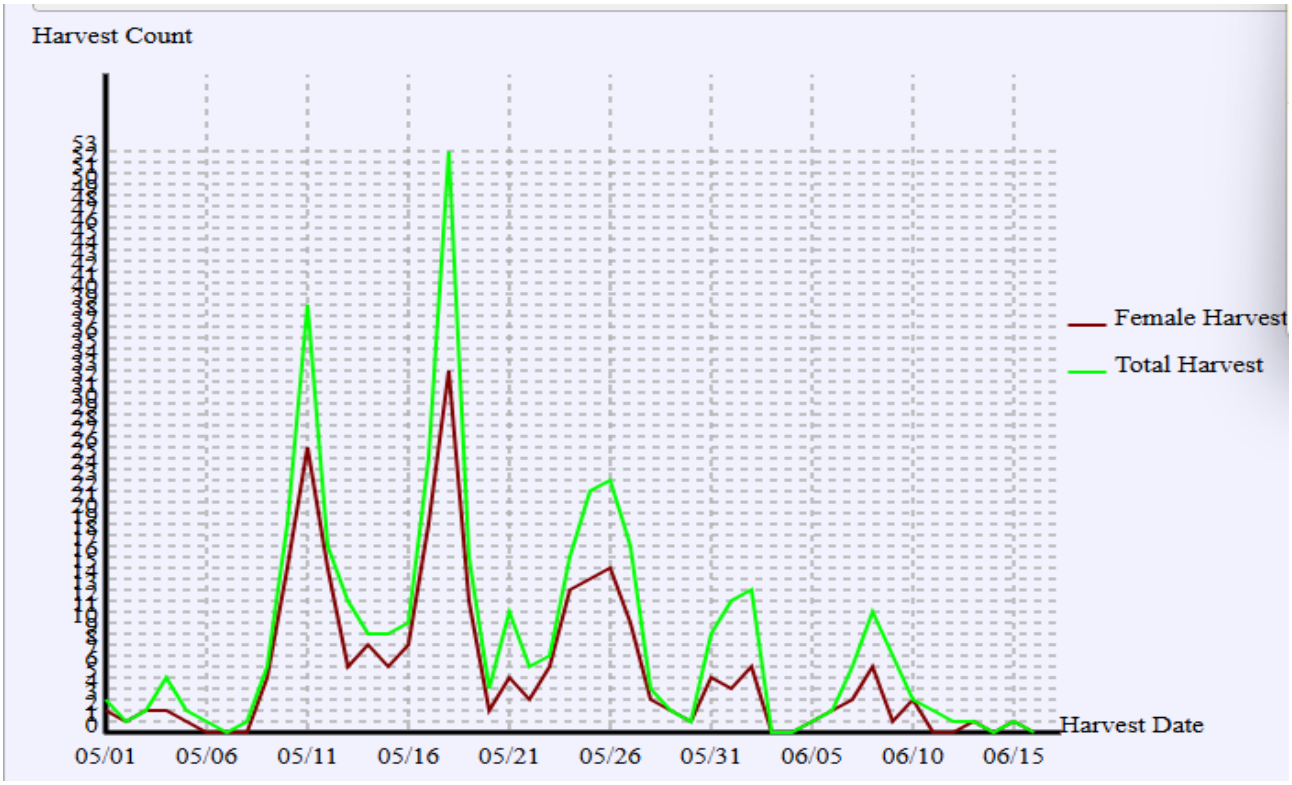
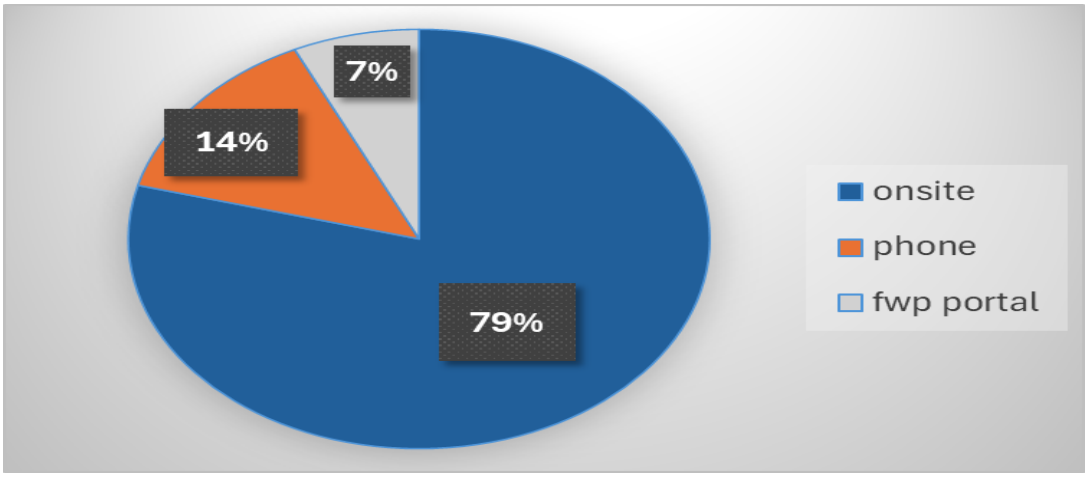


Figure 8. Preference for anglers reporting a harvested paddlefish on the upper Missouri River in 2024.



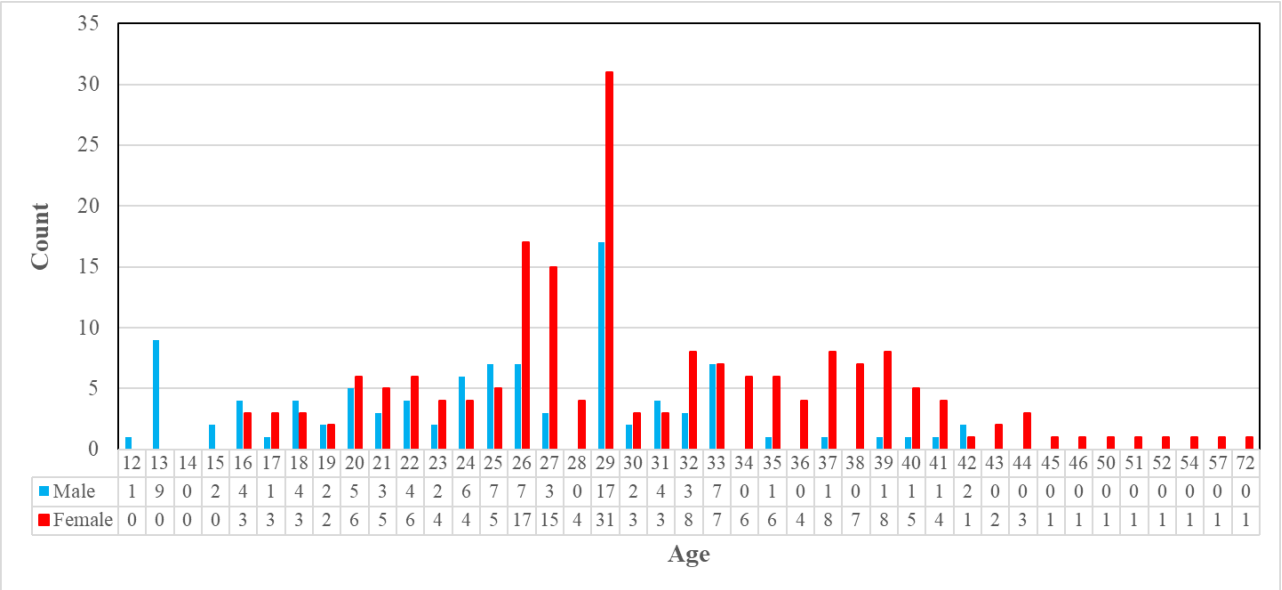
Harvest Statistics- Paddlefish

Harvested paddlefish ranged in length from 26.0 to 71.0 inches (eye-fork length) and weight from 15 to 112 pounds (Table 5). Sixty-five percent of the harvested paddlefish were females and 41/412 (10 %) of the harvested paddlefish had jaw tags. Harvested paddlefish ranged in age from 12 to 72 years with 77% of the harvested females (age 25-45) being classified as "prime spawners" and 7% of all harvested fish classified as new recruits (Figure 9).

Table 5. – Length, weight, and condition indices of harvested paddlefish on the Upper Missouri River (RM 1897-1921), May-June 2005-2024.

Species	Year	Sample Size	Length Range (in.)	Length Avg.	Length SD	Weight Range (lbs.)	Weight Avg.	Weight SD
PF	2005	241	33.3-60.5	41.7	1.2	12.0-90.0	40.3	47.6
PF	2006	259	28.1-65.0	42.7	1.3	15.1-112.0	47.0	36.5
PF	2007	179	27.0-72.0	42.3	1.1	24.5-69.0	47.7	97.3
PF	2008	322	26.0-56.8	41.0	5.7	13.0-104.0	43.5	20.8
PF	2009	249	24.0-54	41.7	5.9	16.0-100	47.6	21.2
PF	2010	300	28.0-60.0	42.0	5.5	16.0-115	49.4	21.8
PF	2011	484	32.0-57.0	42.7	5.3	19.0-127.0	50.5	21.4
PF	2012	408	30.0-54.1	42.5	5.2	20.0-119.1	48.8	21.9
PF	2013	255	31.5-54.1	44.0	5.9	20.0-131.1	54.7	22.7
PF	2014	203	23.5-56.5	41.8	4.8	21.0-127.0	46.9	20.2
PF	2015	171	30.0-55.4	44.5	6.0	16.0-119.0	55.6	25.1
PF	2016	291	25.0-70.0	43.4	5.9	18.0-119.0	54.2	24.0
PF	2017	300	22.0-57.0	43.3	5.9	16.0-112.0	54.3	23.8
PF	2018	198	27.0-58.1	43.1	5.6	16.0-115.1	53.5	23.7
PF	2019	223	31.0-57.1	44.6	5.6	16.0-121.1	59.3	21.8
PF	2020	324	24.0-57.0	44.0	6.6	17.0-117.0	56.0	24.1
PF	2021	337	34.0-74.0	43.8	7.3	15.0-105.0	53.9	24.0
PF	2022	254	28.0-58.0	42.5	5.4	20.0-103.0	50.3	21.3
PF	2023	369	27.0-60.0	43.1	5.6	14.5-110.0	52.1	22.5
PF	2024	391	26.0-71.0	45.1	5.4	15.0-112.0	61.0	25.0

Figure 9. Age structure of male (n=100) and female (n=191) paddlefish harvested in the upper Missouri River (RM 1897-1921) during the 2024 paddlefish season (May and June).



	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	50	51	52	54	57	72
Male	1	9	0	2	4	1	4	2	5	3	4	2	6	7	7	3	0	17	2	4	3	7	0	1	0	1	0	1	1	1	2	0	0	0	0	0	0	0	0	0	0
Female	0	0	0	0	3	3	3	2	6	5	6	4	4	5	17	15	4	31	3	3	8	7	6	6	4	8	7	8	5	4	1	2	3	1	1	1	1	1	1	1	1

Hill County Fishing Waters

Bailey Reservoir

Bailey Reservoir was constructed in 1968 covering approximately 70 surface-acres and has a maximum depth of 28 feet. In 2012, with the help of Montana Walleyes Unlimited, FWP acquired approximately 108 acres surrounding the reservoir for development of a Fishing Access Site.

Adult sport fish populations have been monitored since 1990 and a voluntary creel box was erected in the summer of 2005 and maintained through 2023 to determine angler use, catch rates, and satisfaction. Bailey ranked 27th in the region for angler pressure in 2023/2024 (277 angler days; MTFWP Fisheries Bureau 2023).

Since 2015, population densities of all species have fluctuated greatly (Figure 10 and 11). Water levels and spawning conditions have also been variable during this period and population densities have remained below long-term averages. Seining surveys conducted in 2015, 2016 and 2019 documented successful spawning and rearing, however no juvenile fish were observed in 2022 and very few fish seem to be recruiting to adults (Figures 10 and 11). Water levels have remained good since 2023 and fish densities responded positively following the re-fill of the reservoir. Additionally, over 200,000 fingerling bluegill were stocked in the fall of 2024 to help establish this species in the fishery.

Figure 10. – Relative abundance of northern pike, yellow perch, black crappie, and walleye, based on gill net surveys, Bailey Reservoir, 2015-2024.

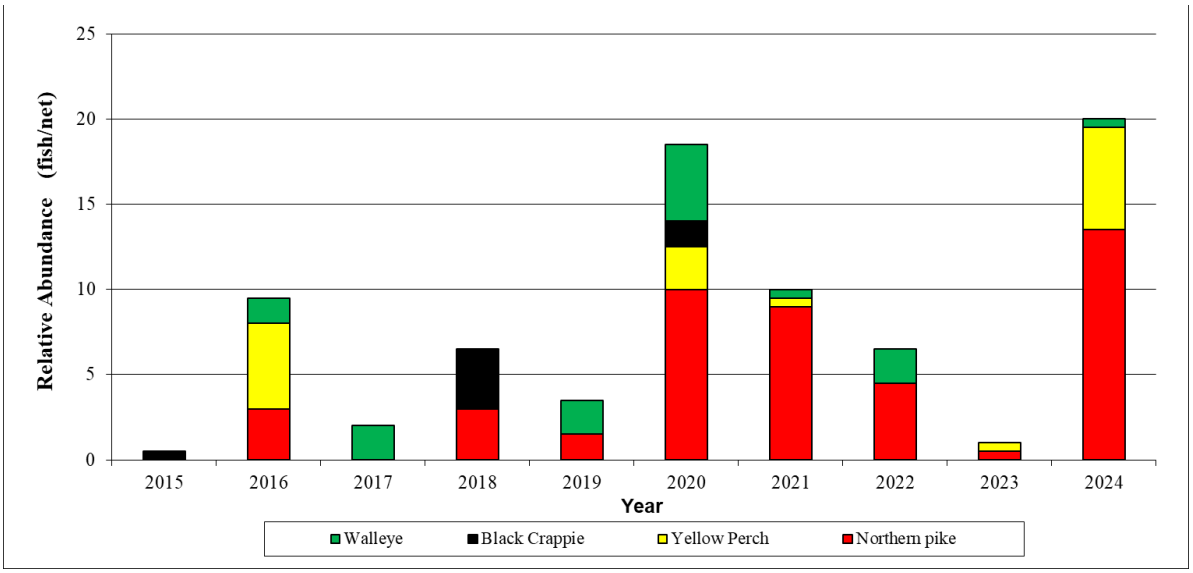


Figure 11. Summary of relative abundance for yellow perch, black crappie, northern pike, bluegill, and rainbow trout captured by trap nets in Bailey Reservoir, 2015-2024.

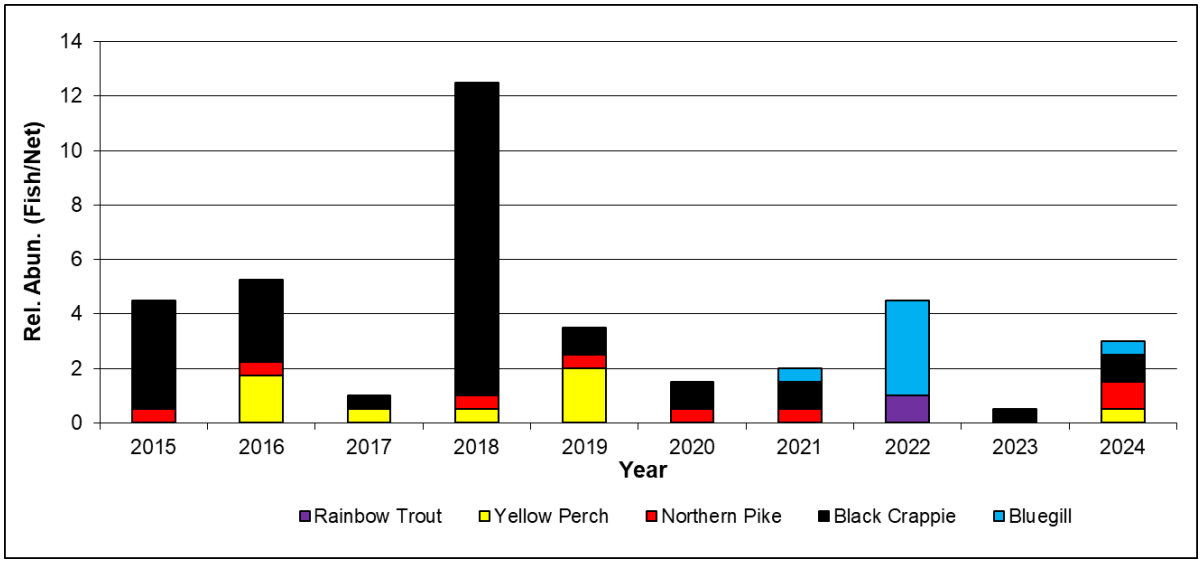


Table 6. Summary of young of year yellow perch (YP), black crappie (BLC), northern pike (NP), fathead minnow (FH MN), largemouth bass (LMB), walleye (WE), and rainbow trout (RB) captured by beach seining in Bailey Reservoir, 1982 to 2022.

Date	Year	Sites	YP (yoy)	YP (adult)	NP (yoy)	NP (adult)	WE (yoy)	WE (adult)	BLC (yoy)	BLC (adult)	RB	LMB	FH MN
9/6/1982	1982	3	--	--	--	--	--	--	--	--	3	--	--
8/6/1986	1986	5	--	--	46		--	--	--	--	66	4	45
8/4/1987	1987	4	--	1	--	44	--	--	76	--	25	--	356
8/11/1988	1988	3	38	--	--	2	--	--	12	2	--	24	24
8/7/1990	1990	4	--	1	1	--	--	--	309	21	--	--	--
9/26/1991	1991	5	68	--	--	--	--	--	--	--	--	9	--
9/10/1993	1993	5	1	70	--	--	--	--	60	--	--	--	--
7/27/1996	1996	4	--	1	1	--	--	--	5	--	--	40	--
7/29/2015	2015	4	809	--	2	1	--	--	39	--	--	--	--
7/26/2016	2016	4	426	3	7	0	3	--	1,322	--	--	--	--
7/31/2019	2019	1	681	1	2	0	0	--	131	--	--	--	--
7/27/2022	2022	4	--	--	--	--	--	--	--	--	--	--	--

Beaver Creek Reservoir

Beaver Creek Reservoir, located south of Havre, is a 200-surface-acre reservoir, with a maximum depth of 70 feet. Its proximity to the city of Havre makes this reservoir a valuable local resource and it has been managed intensively for a variety of species. Beaver Creek Reservoir ranked 11th in the region for angler pressure in 2022/2023 (2,229 angler days; MTFWP Fisheries Bureau 2023). Water levels in September were near full pool during our sampling effort, a weak algal bloom was also occurring.

Northern pike

Since 2014 northern pike relative abundance has remained stable within Beaver Creek Reservoir (Figure 12). Northern pike reproduction and adult abundance varies within Beaver Creek Reservoir due to reservoir fluctuations and spring water conditions. Good northern pike reproduction has been documented following periods of reduced water levels and quick refill events in the spring (Table 7). The current northern pike population is made up of multiple year-classes and the condition of these fish is great, when compared to other northern pike populations in the area.

Yellow perch

Yellow perch have thrived within this reservoir (Figure 12). As a result, Beaver Creek Reservoir has become a popular ice fishing destination and has also been utilized as a donor source of yellow perch within Region 6.

Yellow perch abundance has trended upward recently. From 2015-2018, yellow perch relative abundance had been declining. A strong year-class from 2018 recruited into the adult population and the population has remained stable since (Figure 12). The current perch population consists mostly of stock and quality sized fish (6-9 in.). Severe drought conditions have occurred across the region in 2017 and 2021-2022, which increased the water demands from Beaver Creek Reservoir. From July to October, reservoir pool elevations dropped approximately 15 feet, increasing terrestrial vegetation growth in the littoral zone which benefits yellow perch spawning and rearing habitat.

Walleye

Walleye were initially stocked by FWP in 1987 to provide a greater diversity of fishing opportunities within the reservoir. Natural reproduction is limited and as a result, approximately 10,000 fingerling and 5,000 advanced walleye fingerlings are stocked annually.

Walleye in Beaver Creek Reservoir have maintained stable abundances in recent years (Figure 12). A good forage base consisting of yellow perch and high rainbow trout stocking rates allow walleye in Beaver Creek Reservoir to achieve memorable and trophy sizes. Walleye size structure has been slowly increasing since 2016 (PSD 25). In 2024, walleye PSD was 63, with a strong year-class of stock-sized walleye (10”-15”) observed during netting surveys.

Smallmouth bass

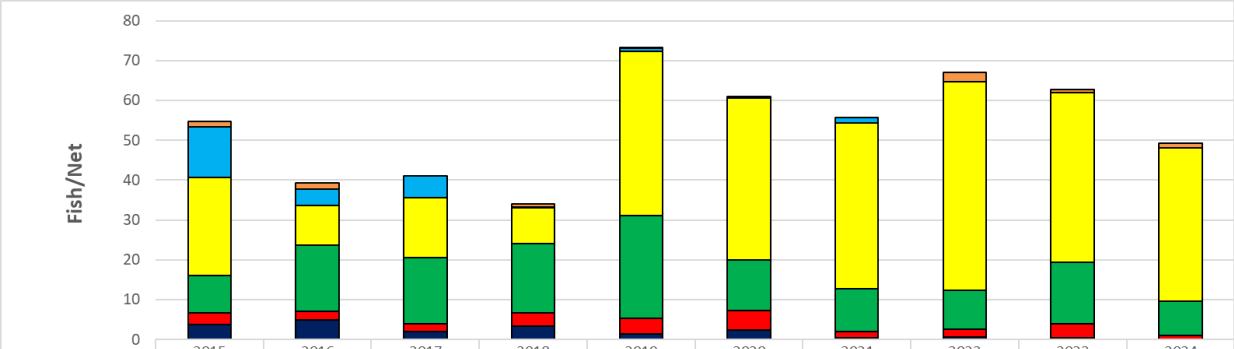
Smallmouth bass were first introduced by FWP in 1997. A self-sustaining population of smallmouth bass now exists in Beaver Creek Reservoir. Smallmouth bass have historically had low relative abundance during gill netting surveys due to the selectivity of the gear (Figure 12). Catches of 8”-16” bass by anglers are common. Smallmouth bass reproduction is variable due to reservoir pool levels during the spawning and rearing periods, but reproductive success appears to be increasing (Table 7). FWP trapped smallmouth bass from Beaver Creek Reservoir and transferred them to East Fork Reservoir (upstream impoundment) in 2023, we are planning to do this again in 2025.

Table 7. 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, 2015 to 2024.

Date	Sites	YP (yoy)	YP (adult)	W SU	SP SH	SMB (yoy)	SMB (adult)	NP (yoy)	NP (adult)	WE (yoy)	WE (adult)	Other Sp.[1]
Aug-15	6	1,342	0	4	16	13	0	7	2	1	0	0
Aug-16	6	499	493	0	5	0	0	0	0	10	0	0
Aug-17	6	75	41	1	0	3	0	8	0	1	0	0
Aug-18	6	981	1	31	8	9	0	1	0	1	0	0
Aug-19	6	2	667	0	13	0	0	2	0	1	0	0
Aug-20	6	162	116	0	6	5	0	0	0	6	0	0
Aug-21	6	18	8	0	0	51	0	0	0	4	0	0
Aug-22	6	1,639	256	1	9	2	2	0	1	11	0	0
Aug-23	6	561	103	1	2	80	0	4	0	0	0	1
Aug-24	6	0	2	0	0	24	0	0	0	0	0	0

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

Figure 12. Relative abundance of fishes collected during fall netting surveys (sinking gill nets), at Beaver Creek Reservoir 2015-2024.



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Smallmouth Bass	1.3	1.7	0.0	0.7	0.3	0.0	0.0	2.3	0.7	1.3
Rainbow Trout	12.7	4.0	5.5	0.3	0.7	0.3	1.3	0.0	0	0
Yellow Perch	24.7	10.0	15.0	9.0	41.3	40.7	41.7	52.3	42.7	38.3
Walleye	9.3	16.7	16.5	17.3	25.7	12.7	10.7	9.7	15.3	8.7
Northern Pike	3.0	2.0	2.0	3.3	4.0	5.0	1.7	2.0	3.7	1.0
White Sucker	3.7	5.0	2.0	3.3	1.3	2.3	0.3	0.7	0.3	0.0

Fresno Reservoir

Fresno Reservoir is a main-stem reservoir built in 1939 on the Milk River as an irrigation storage facility managed by the Bureau of Reclamation (Reclamation). Fresno is a highly fluctuating reservoir of 5,200 surface acres. On average, water levels in Fresno fluctuate 10-25 feet per year with an annual water retention rate of 85 (±25) days (mean storage (acre-feet)/average daily in/out flows (acre-feet)). The timing of this fluctuation greatly impacts the reproduction and survival of forage and sport fish. Fresno ranked 6th in the region for angler pressure in 2022/2023 (4,615 +/- 3,211 angler days; MTFWP Fisheries Bureau 2023).

In 2020, FWP solicitated applications to serve on a Fresno Fisheries Management Plan Advisory Committee. Over the course of four meetings, The Advisory Committee, in concert with FWP, developed the following fisheries management objectives for Fresno Reservoir. The overarching goal of the Advisory Committee for the Fresno fishery was to improve angler catch rates for walleye. This will be achieved through the stocking of hatchery fish that will supplement wild walleye reproduction.

The Management Goal under this Plan is: **The Fresno Reservoir fisheries will be managed as a walleye fishery with the primary goal of high angler catch rates for Stock (10-15") and Quality (15-20") walleye. This will be accomplished by stocking hatchery walleye to augment the wild walleye population. An emphasis will be placed on habitat enhancement efforts to support other species of interest (yellow perch, black crappie and forage species).** Under this Management Goal, angler harvest of walleyes will be essential to maintain a healthy fishery.

Since 2017, FWP has partnered with the Fresno Chapter of Walleyes Unlimited to increase yellow perch spawning habitat utilizing recycled Christmas trees. Approximately 1400 trees have been donated and used to construct “spawning reefs” at locations in Kremlin and Keihn’s Bay, as well as bays near the dam.

Severe drought conditions and infrastructure failures have occurred along the Hi-Line and within the Milk River Project since 2017. The demands for irrigation water have been high and Fresno has been drawn down approximately 30+ feet in five of the last eight years (>13% of storage capacity). Poor water conditions in the spring of 2021 and 2022 limited Reclamation’s ability to re-fill the reservoir in spring, during critical spawning periods. The reduced water levels impacted the fish community but also allowed terrestrial vegetation to establish in the littoral zone, creating ideal spawning habitat for several fish species when good water conditions returned in 2023 (Table 8; Figures 15-17). In June 2024, the siphon

tubes that divert water from the St. Mary's watershed into the Milk River watershed failed. The failure of this critical infrastructure immediately stopped all diversion of supplemental water which resulted in emergency water conservation measures being established throughout the Milk River watershed. The Milk River above Fresno was reduced to intermittent pools and Fresno pool elevations were once again reduced to extremely low pool elevations by late October.

Population Status of Young-of-Year Fishes

Historically, the abundance of YOY fishes has correlated with the magnitude of spring run-off and annual fluctuations in water levels within Fresno Reservoir. Extreme water drawdowns in Fresno greatly reduce the reproductive success and survival of most juvenile fishes (Table 8). This also correlates to the amount of available forage for walleye, the most popular gamefish targeted by anglers in Fresno (Figure 13).

Excellent water conditions had persisted within the reservoir from 2008-2016, Fresno filled to capacity and flooded a substantial amount of shoreline vegetation, creating excellent spawning and rearing habitat. In these years walleye, northern pike, yellow perch, spottail shiner, and black crappie, all benefited from this rise in water levels with excellent reproduction and survival (Table 8). Walleye and spottail shiners have been the two species that have shown both spawning success and subsequent survival and recruitment of juveniles during the recent severe drawdowns (Table 8; Figure 17).

Table 8. – A summary of forage and YOY sport fish collected using a beach seine in Fresno Reservoir, 2015-2024.

Year	Seine Hauls	*Sanders*	Walleye	Sauger	Northern Pike	YP (yoy)	YP (adult)	Emerald Shiner	Black Crappie	Spottail Shiner	Sucker sp.[1]	Minnow sp.[2]	Other[3]
2015	12	--	12	1	3	926[-]	88	634	332	1,337	0	5	0
2016	12	--	21	0	1	399[-]	5	263	357	641	0	6	0
2017	12	--	16	0	1	115[-]	2	3	88	207	0	15	0
2018	12	--	30	0	4	377[-]	1	0	136	957	1	0	0
2019	12	--	43	0	1	782[-]	2	0	1,214	1,066	0	14	0
2020	12	--	70	2	2	574	3	0	76	449	52	0	1
2021[+]	12	--	25	0	2	429	0	2	24	243	0	59	1
2022[+]	12	--	22	0	1	1,360	0	0	23	222	1	11	0
2023[+]	12	--	2	0	13	261	2	107	573	630	4	1	5
2024[+]	12	--	19	0	0	206	4	10	309	1,117	0	2	0

[1]Consists of white and longnose sucker

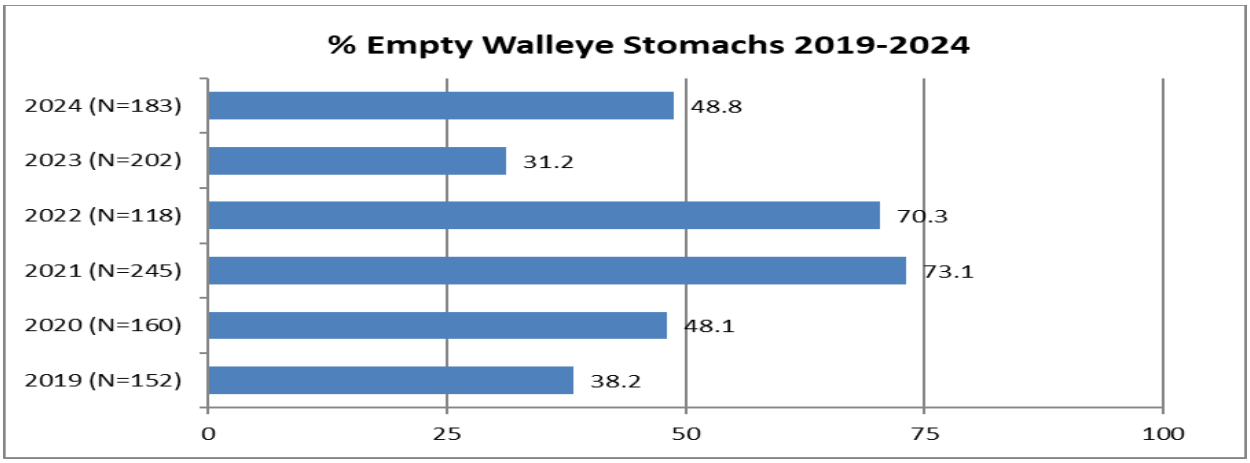
[2]Consists of western silvery minnows, lake chubs, flathead chubs, and fathead minnows

[3]Consists of burbot, smallmouth bass, pumpkinseed sunfish, lake whitefish and brook sticklebacks

[+] Years in which walleye fry or fingerling were stocked

- Years in which pre-spawn adult yellow perch were supplementally stocked

Figure 13. – Percentage of empty walleye stomachs observed during fall netting surveys in Fresno Reservoir, 2019-2024 (N= number of individual stomachs checked).



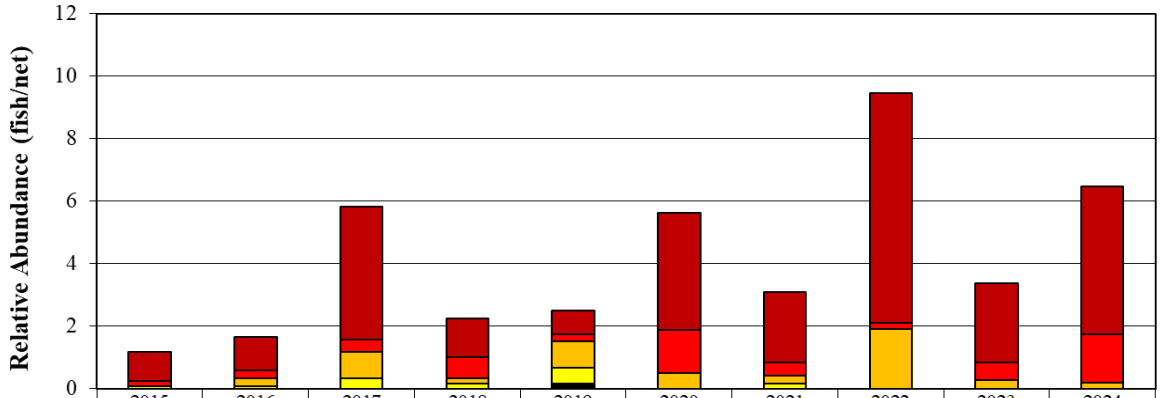
Population Status of Adult Fishes

In 2024, reduced water levels eliminated one standardized net location and 11 of 12 nets were set over a two-day period (Appendix 1).

Lake Superior Whitefish

Lake Superior whitefish (whitefish) in Fresno Reservoir have historically comprised a portion of the gill net catch but are rarely targeted by anglers (Figure 14). Whitefish exhibit fast growth rates in the reservoir and thereby avoid predation from all but the largest walleye and northern pike.

Figure 14. - Relative abundance and size structure of lake whitefish collected with sinking experimental gill nets in Fresno Reservoir, 2015-2024.



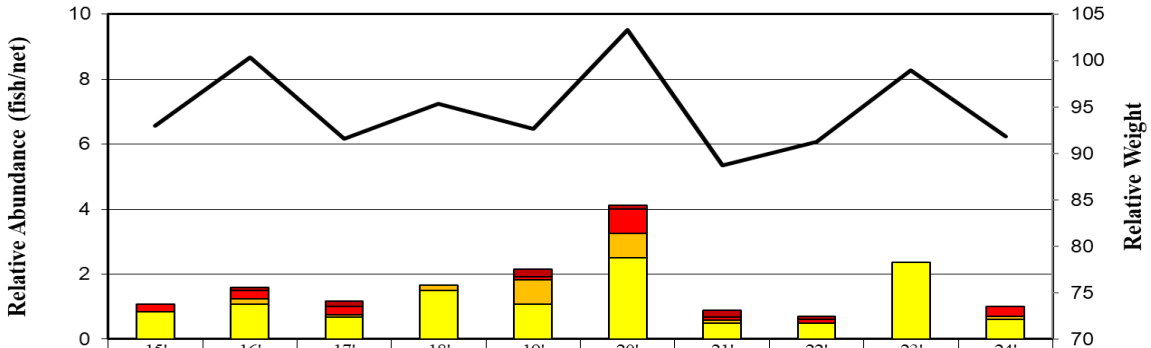
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Memorable (>18.0 in.)	0.917	1.08	4.25	1.25	0.75	3.75	2.25	7.36	2.55	4.73
Preferred (14.0-17.9 in.)	0.167	0.25	0.42	0.67	0.25	1.38	0.42	0.2	0.55	1.55
Quality (11.0-13.9 in.)	0	0.25	0.83	0.167	0.83	0.5	0.25	1.9	0.27	0.18
Stock (6.0-10.9 in.)	0.083	0.083	0.33	0.167	0.5	0	0.167	0	0	0
Sub Stock (<6.0 in.)	0	0	0	0	0.167	0	0	0	0	0

Yellow Perch

Available spawning habitat, water level management, and predator densities have the greatest impacts on yellow perch population dynamics in Fresno.

Low water levels throughout the fall and winter months limit overwinter rearing habitat and increases the vulnerability of YOY yellow perch to walleye and northern pike predation. The current yellow perch population is near average historical population densities and is comprised of stock sized fish (Figure 15).

Figure 15. - Relative abundance, size structure, and relative weight of yellow perch collected with sinking experimental gill nets in Fresno Reservoir, 2015-2024.

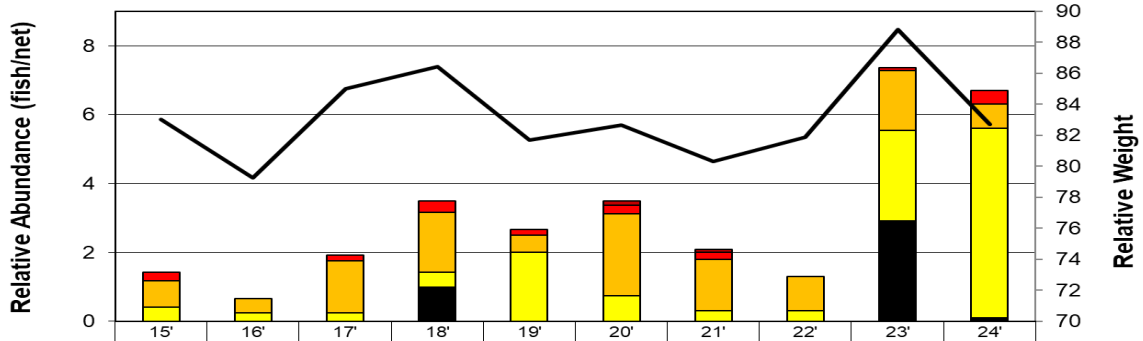


	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'
Memorable (>12 in.)	0.0	0.1	0.2	0.0	0.3	0.1	0.2	0.1	0.0	0.0
Preferred (10-11.9 in.)	0.3	0.3	0.3		0.1	0.8	0.1	0.1	0.0	0.3
Quality (8-9.9 in.)		0.2	0.1	0.2	0.8	0.8	0.1	0.0	0.0	0.1
Stock (5-7.9 in.)	0.8	1.1	0.7	1.5	1.1	2.5	0.5	0.5	2.4	0.6
Sub Stock (<5 in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Series1	93.0	100.3	91.6	95.4	92.7	103.3	88.7	91.2	98.9	91.8

Northern pike

Northern pike densities in Fresno Reservoir has fluctuated over the years but generally stay between two and four pike/net (Figure 16). Northern pike reproduction in 2023 was exceptional, with high densities of sub-stock and stock size classes entering the population and shifted to stock sized fish dominating the population in 2024 (Table 8; Figure 16). Northern pike relative abundance and condition (relative weight) rebounded quickly following consecutive years of low water followed by excellent spring and early summer water conditions.

Figure 16. - Relative abundance, size structure, and relative weight of northern pike collected with sinking experimental gill nets in Fresno Reservoir, 2015-2024.



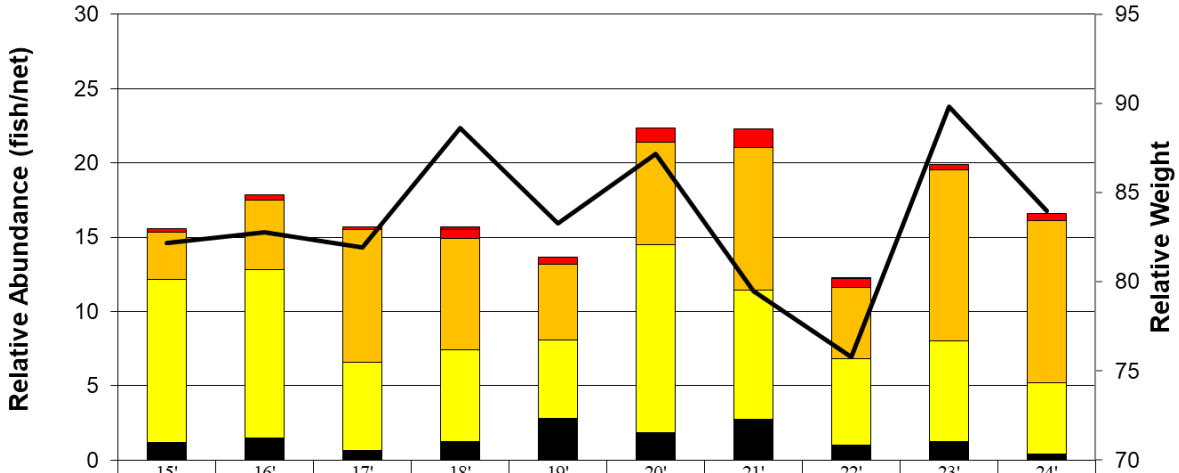
	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'
Memorable (>34 in.)						0.1	0.1	0.0	0.0	
Preferred (28-33.9 in.)	0.3		0.2	0.3	0.2	0.3	0.2	0.0	0.1	0.4
Quality (21-27.9 in.)	0.8	0.4	1.5	1.8	0.5	2.4	1.5	1.0	1.7	0.7
Stock (14-20.9 in.)	0.4	0.3	0.3	0.4	2.0	0.8	0.3	0.3	2.6	5.5
Sub Stock (<14 in.)				1.0					2.9	0.1
Series1	83.0	79.3	85.0	86.4	81.7	82.7	80.3	81.9	88.8	82.7

Walleye

Approximately 75,000 walleye fingerlings were stocked in 2024 and follow walleye stocking strategies set forth in the Fresno Management Plan (Nagel and Dalbey 2022). The re-establishment of annual walleye plants is to increase inter and intra specific competition, thus increasing walleye catch rates for anglers. Continued declines in walleye relative weights were observed for several years, and fell to 76 in 2022, the lowest relative weight observed in walleye since 2001 (Wr 71; Figure 17). Forage production quickly changed in 2023, due to favorable water and habitat conditions. Walleye relative weights reflected this and the average Wr observed on walleye in 2023 was 89.8, falling slightly in 2024 (Figure 17). Walleye growth was slightly below average in 2024 for aged 5+ walleye and near average for younger walleye (Figure 20).

Sampling efforts in 2024 documented walleye relative abundance at 16.6 walleye/net with a high percentage (94%) of these fish being stock-quality sized (Figures 17). The current population still maintains a good age and size structure with walleye to age 13 being observed and walleye PSD was 70 (Figure 18 and 19).

Figure 17. - Relative abundance, size structure, and relative weight of walleye in Fresno Reservoir for the years 2015-2024.



	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'
Memorable (>25 in.)				0.2				0.1		
Preferred (20-24.9 in.)	0.3	0.3	0.2	0.6	0.5	1.0	1.3	0.6	0.4	0.5
Quality (15-19.9 in.)	3.2	4.7	8.9	7.5	5.1	6.9	9.6	4.8	11.6	10.9
Stock (10-14.9 in.)	11.0	11.3	5.9	6.2	5.3	12.6	8.7	5.8	6.7	4.8
Sub-stock (<10 in.)	1.2	1.5	0.7	1.3	2.8	1.9	2.8	1.0	1.3	0.4
Series1	82.2	82.8	81.9	88.7	83.3	87.2	79.5	75.8	89.8	84.0

Figure 18. Proportional Stock Density (PSD) of walleye captured during fall gill net surveys 2015-2024.

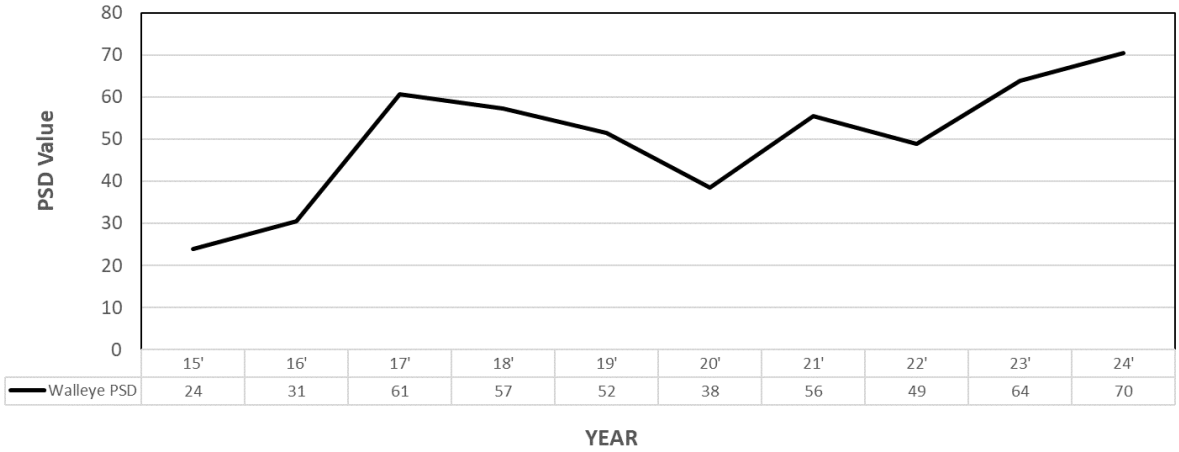


Figure 19. Observed walleye age structure and distribution in Fresno Reservoir, 2024.

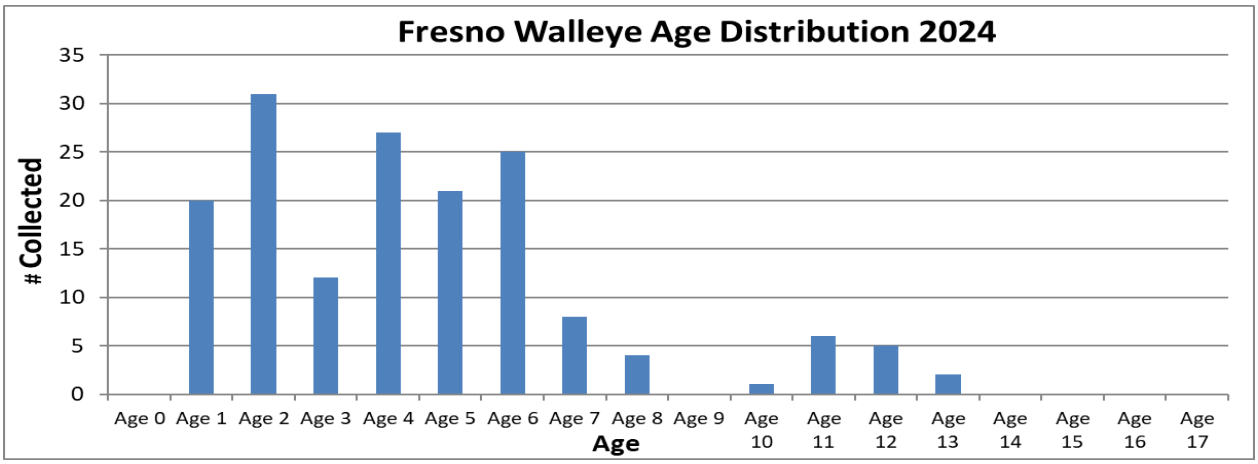
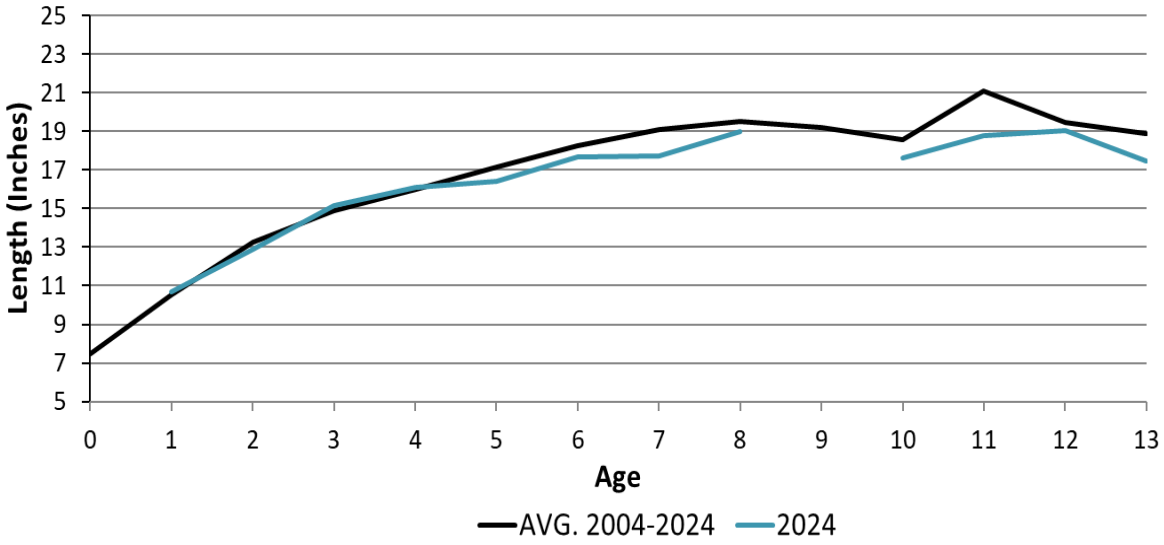


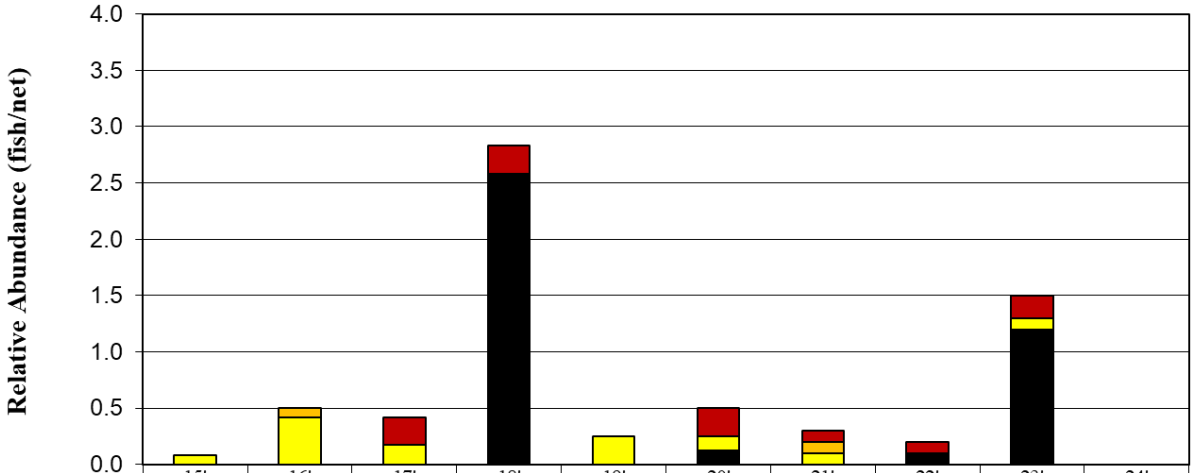
Figure 20. Walleye length at age in Fresno Reservoir, 2004-2024.



Black Crappie

In 2010, YOY black crappie abundance was the highest observed since 1974 and good reproduction occurred again in 2018, 2019, and 2023 (Table 8; Figure 21). The recent spawning success of black crappie is attributed to timely spring rains and good reservoir pool levels during the spawning period (June), with water levels rising or remaining stable during this period. Although several good year-classes of black crappie have been observed since 2008, recruitment to adults has been poor, no black crappie were observed during 2024 fall netting surveys (Figure 21). Rapid reductions to Fresno's pool elevations in 2017 and 2020-2022 impacted black crappie spawning conditions and likely increased entrainment and predation of the YOY black crappie produced (Table 8).

Figure 21. - Relative abundance and size structure of black crappie collected with sinking experimental gill nets in Fresno Reservoir, 2015-2024.



	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'
Memorable (>12.0 in.)	0.0	0.0	0.3	0.3	0.0	0.3	0.1	0.1	0.2	0.0
Preferred (10.0-11.9 in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quality (8.0-9.9 in.)	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Stock (5.0-7.9 in.)	0.1	0.4	0.2	0.0	0.3	0.1	0.1	0.0	0.1	0.0
Sub Stock (<5.0 in.)	0.0	0.0	0.0	2.6	0.0	0.1	0.0	0.1	1.2	0.0

Blaine County Fishing Waters

Anita Reservoir

Anita Reservoir is a 50-acre reservoir located on BLM land in northern Blaine County. The reservoir was originally constructed in 1996 to increase waterfowl habitat and created a fishery. In 2011, the reservoir filled and FWP trap and transferred pre-spawn yellow perch, black crappie, and fathead minnows to establish a forage base within the reservoir. In 2014, walleye fingerlings were stocked, and the reservoir now receives alternate year plants of 5,000 walleye fingerlings. From 2015-2023, 5,000 rainbow trout were stocked annually, this stocking event ceased in 2024 due to the presence and establishment of northern pike. A supplemental plant of 1,100 adult black crappie occurred in 2018 to aid in the establishment of this species.

Yellow perch and walleye have established good population densities and black crappie densities continue to remain low (Figure 22). Though yellow perch growth has been slow, trap net surveys suggest reproduction occurs annually (Table 9). Walleye stocking has been successful, with

age-2 walleye obtaining 13+ inches and are likely utilizing the abundant yellow perch population as its primary forage (Figure 22; Table 9). Rainbow trout (Gerrard) stocking was very successful, and these fish exhibited good growth rates, rainbow trout exceeded 25 inches in total length (Figure 22; Table 9).

In 2022 FWP started to receive angler reports of catching northern pike. In 2023 twelve juvenile pike were captured in our trap net surveys and additional angler reports, with pictures, continued to be provided. These fish continue to grow, and they finally recruited into the gill nets in 2024 (Figure 22). A spawning stock of pike exists in this reservoir and early signs are pointing to at least one large year-class being produced thus far. Additional sampling will need to occur to determine the best approach dealing with the establishment of this undesirable species.

Figure 22. Relative abundance of yellow perch, walleye, black crappie and rainbow trout collected using two sinking gill nets in Anita Reservoir 2014-2024.

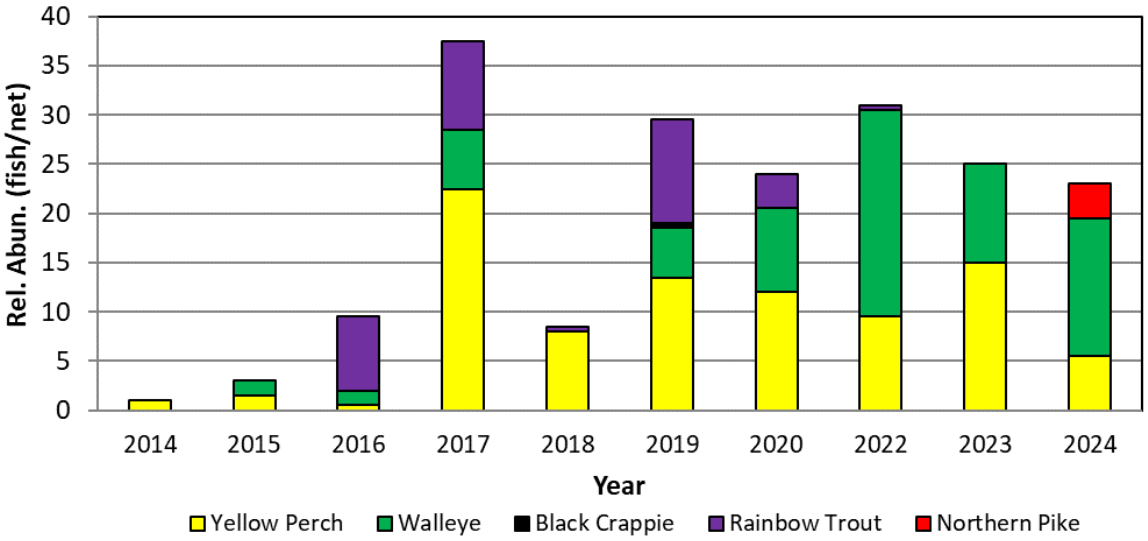


Table 9. Relative abundance (fish/net) and average length of yellow perch, walleye, black crappie, fathead minnow, brook stickleback and rainbow trout using trap nets in Anita Reservoir (2013-2024).

			Yellow Perch		Walleye		Black Crappie		Fathead Minnow	Brook Stickleback	Rainbow Trout		Northern Pike	
Year		Net #	Rel. Abun.	Avg. Length	Rel. Abun.	Avg. Length	Rel. Abun.	Avg. Length	Rel. Abun.	Rel. Abun.	Rel. Abun.	Avg. Length	Rel. Abun.	Avg. Length
Jun-13	2013	2	47	3	--	--	--	--	1,149	24.5	--	--	--	--
Jun-14	2014	2	19.5	4.41	--	--	--	--	367	11	--	--	--	--
Jun-15	2015	2	8	4.60	0.5	7.50	--	--	2.5	1.5	--	--	--	--
Jun-16	2016	2	101.5	4.10	0.5	13.00	--	--	65	--	0.50	11.6	--	--
Jun-17	2017	2	93.5	4.33	2	12.63	--	--	0.5	--	0.50	10.3	--	--
Jun-18	2018	2	35.5	2.75	0.5	19.6	--	--	70.5	--	0.50	21.6	--	--
Jul-19	2019	2	5	4.67	1.5	7.57	0.50	10.8	--	--	--	--	--	--
Jul-20	2020	2	9	4.06	5.5	11.95	1.00	3.15	3	--	--	--	--	--
Jun-22	2022	2	0.5	3.6	--	--	--	--	4	--	--	--	--	--
Jun-23	2023	2	1	1.9	1.5	14.07	--	--	0	--	--	--	6.00	6.28
Jun-24	2024	2	0	--	0	--	--	--	0	--	--	--	0.50	15.6

BR 012

BR 012 is a 68-acre reservoir located on BLM lands 10 miles north of Zurich. The reservoir was first stocked with largemouth bass in 1937. Black bullhead, black crappie, bluegill, channel catfish, and rainbow trout have all been stocked periodically since then. The dam breached in 2011 and was re-built and finished in 2022. The reservoir has refilled and in approximately 200 yellow perch were trap and transferred in 2023.

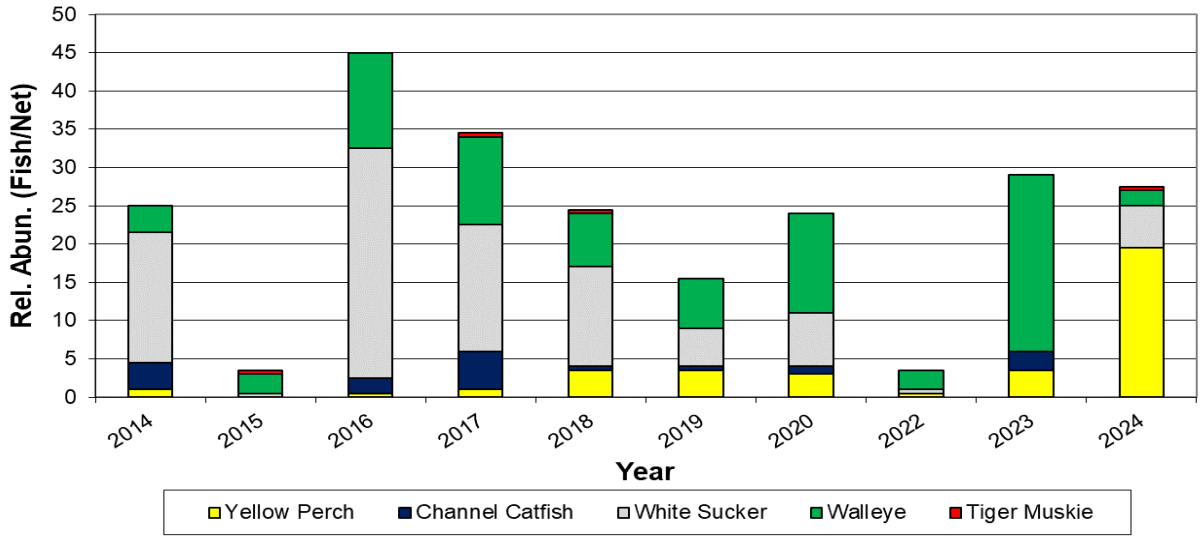
In 2024, one gill net and two trap nets were set overnight. The gill net captured one yellow perch and the trap nets captured nine fathead minnows.

Cow Creek Reservoir

Cow Creek Reservoir is a privately owned, 65 surface-acre reservoir, located in the Bearpaw Mountains. Cow Creek Reservoir receives 3,000 walleye fingerlings biennially and channel catfish, yellow perch, and tiger muskie are stocked as needed. Cow Creek Reservoir ranked 33rd in the region for angler pressure in 2019/2020 (152 +/- 108 angler days; MTFWP Fisheries Bureau 2020).

In 2017 and 2023, a combination of natural and artificial habitat structures were placed near the boat ramp to increase offshore habitat and potentially increase yellow perch spawning and rearing habitat. In 2020, water levels were reduced approximately four feet and an extensive algal bloom occurred in early August. On August 12th FWP fisheries investigated a reported fish kill that had occurred a few days prior. Approximately 100+ yellow perch (6-12+"), 20 walleye (10-20") and one channel catfish (24") were observed dead along the shoreline. The observed kill was concentrated near the upper end of the reservoir in shallower water near known vegetative flats. Fish health samples and additional netting was conducted in September. All disease testing results were negative, and sampling confirmed that the kill was partial and impacted primarily yellow perch. The cumulative impacts of the 2020 fish kill were observed during sampling conducted in 2022 but the population responded positively in 2023 and 2024 (Figure 23). The walleye and perch population are comprised mostly of stock sized fish.

Figure 23. Relative abundance (fish/net) of yellow perch, channel catfish, white sucker, walleye, and tiger muskie using gill nets in Cow Creek Reservoir (2014-2024).



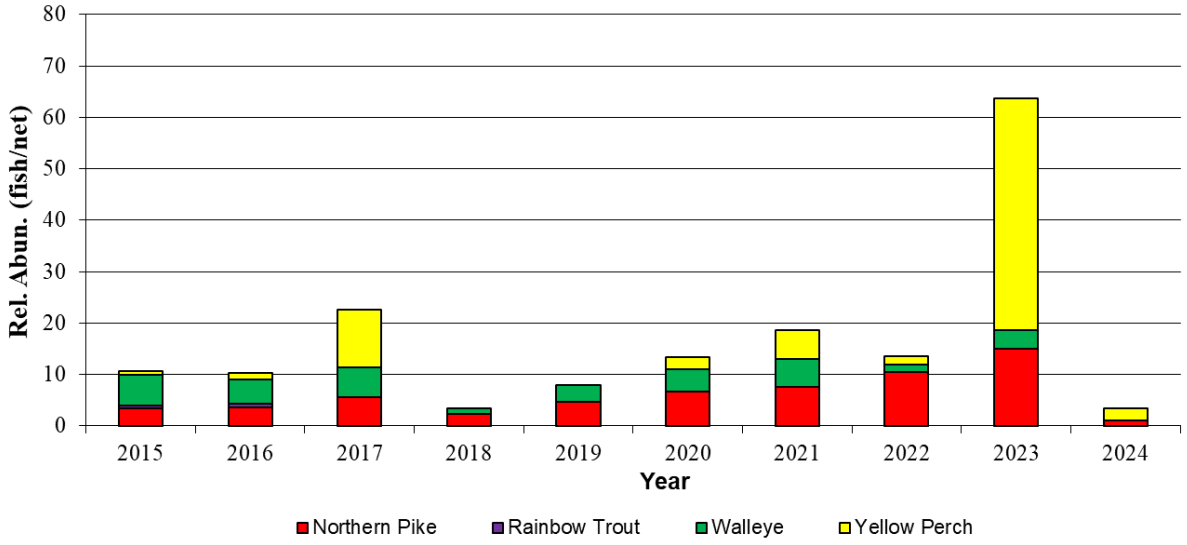
Dry Fork Reservoir

Dry Fork Reservoir is a 300 surface-acre reservoir located seven miles north of Chinook. Dry Fork is a popular yellow perch and northern pike fishery, which has been limited by drought and subsequent water demands (irrigation) that severely reduce water levels. This reservoir has been dewatered three times (2001, 2008, and 2023).

Walleye fingerlings have been stocked since 2012 at a rate of 10,000/biennially and yellow perch, black crappie, rainbow trout, and largemouth bass have been stocked periodically to supplement the fishery. In 2019/2020 this reservoir received 1,232 (± 755) angler days which ranked 15th in regional use (MTFWP Fisheries Bureau 2020).

Good snowpack and run-off in early 2018 re-filled Dry Fork to capacity but severe drought conditions in 2021-2022 had reservoir water levels down approximately 18 feet. The reservoir re-filled to near capacity in the spring of 2023 and gamefish populations were the highest observed in several years (Figure 24). The operating gate malfunctioned in November 2023 and the landowners had to dewater Dry Fork to repair the outlet works. In the spring of 2024 two gill and two trap nets were set to evaluate the fish population following the drawdown. The nets captured both adult and juvenile yellow perch, northern pike, black crappie, and fathead minnow (Figure 24).

Figure 24. Relative abundance of yellow perch, northern pike, rainbow trout, and walleye in Dry Fork Reservoir, 2015-2024.



Harry's Pond

Harry's Pond is a private one-acre pond located just NW of Chinook, MT. The landowner entered into a 20-year access agreement with FWP in 2024 through the Private Ponds Public Access Agreement and secured some funding through the Community Pond Program to improve the access and habitat around the pond. FWP stocked bluegill, black crappie, and yellow perch in 2023, additional plants of rainbow trout and largemouth bass occurred in 2024.

In 2024, fisheries crews set two trap nets overnight to assess the fish population and determine species composition. The traps captured bluegill, black crappie, yellow perch, northern redbelly dace, and fathead minnow. The pond is being managed as a community type pond open to all anglers. FWP will continue to stock and manage this pond for high angler catch rates and continue to monitor survival under various weather and water conditions.

Reser Reservoir

Reser reservoir is 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, channel catfish, tiger muskie, black crappie, bluegill, and rainbow trout. This reservoir had frequent winterkills occur in the early 1990s and as a result a windmill aeration system was installed. Since the installation of the aeration system, two partial fish kills have occurred. One was suspected to have occurred because of chemical runoff from surrounding fields and the other occurred during the winter of 2010/2011.

Following the winterkill in 2010/2011, FWP stocked largemouth bass, rainbow trout, black crappie, and bluegill. Reser's fish assemblage continued to be dominated by golden shiner and yellow perch. Largemouth bass stocked in 2011 reached 18+ inches and exceeded three pounds, suggesting good forage conditions for this species. Trap netting confirmed successful spawning and recruitment of stocked bluegill and black crappie.

In 2018 Reser was drained to repair the outlet structure and make repairs to the dam. FWP partnered with the BLM to also address some fish habitat during this low reservoir period. Several gravel spawning beds, rock piles, weirs, and brush piles were strategically constructed and placed throughout the reservoir, a channel connecting the south arm was also constructed. The reservoir filled considerably in 2023 and FWP immediately stocked bluegill, black crappie, and fathead minnows. Additional plants of rainbow trout and largemouth bass occurred in 2024. Reser was sampled in 2024 using four trap nets, the traps captured 1,225 bluegills, mostly small (<2") fish with some larger sub-adult fish present (3-6").

Salmo Reservoir

Salmo reservoir is a four-acre pond with a windmill aerator located on BLM land northeast of Chinook. Salmo currently has rainbow trout, largemouth bass, and bluegill. The rainbow trout fishery is maintained with annual plants of approximately 1,000 catchables.

In 2022, two trap nets were set overnight and captured two rainbow trout ($\bar{x}$ TL=8 in.) and six bluegill ($\bar{x}$ TL=5.7 in). Water levels were down 14 feet, and max depth was seven feet, which led to a complete winterkill in 2022/2023. Trap nets set in 2024 captured fathead minnows, but rainbow trout, bluegill, and largemouth were stocked in 2024.

Phillips County Fishing Waters

Ester Lake

Ester Lake is a 139-acre reservoir located on state land and has been managed by FWP since the 1950s. From 2009-2018 adult yellow perch were trap and transferred into Ester to boost densities and forage. This strategy increased yellow perch densities, providing both additional forage and established another angling opportunity during the winter months (Figure 25 and 26). The perch population has been able to sustain itself since, withstanding several significant drawdowns in recent years due to drought conditions and irrigation demands.

In 2020/2021 Ester received 231 (± 231) estimated angler days (MTFWP Fisheries Bureau 2021). Northern pike and yellow perch densities remain good, and the presence of black crappie remain in this fishery (Figures 25 and 26).

Figure 24. - Relative abundance of yellow perch, northern pike, black crappie, and walleye in Ester Lake (gill net 2014 to 2024).

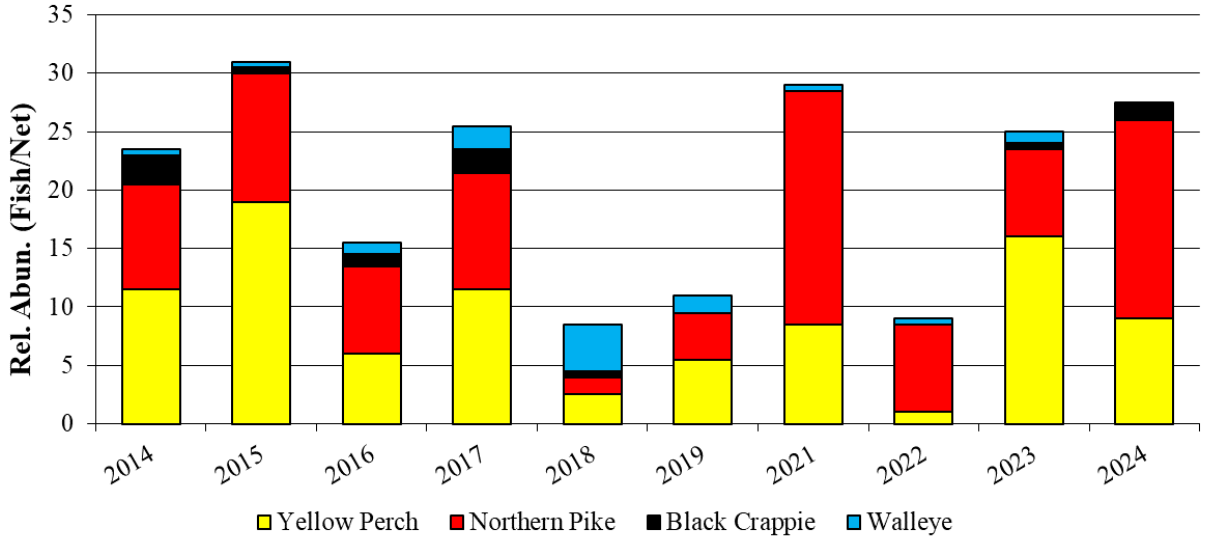
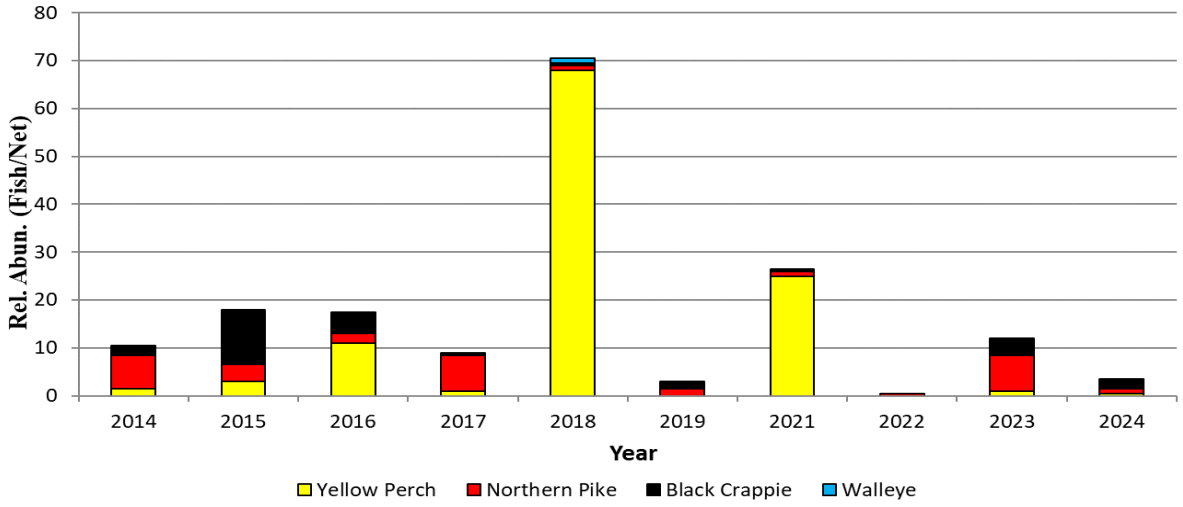


Figure 26. - Relative abundance of yellow perch, northern pike, black crappie, and walleye in Ester Lake (trap net 2014 to 2024).



Little Nelson Reservoir

Nelson Reservoir is a 175-surface acre reservoir located south of Malta on both private and public lands (BLM). The reservoir is primarily used for irrigation however, water levels have remained good for several years. A depth profile conducted in 2014 identified a maximum depth of 18-20 feet near the dam.

Black crappie were introduced in 2015 and walleye fingerlings have been planted biennially since 2016. Common carp were first sampled in 2017, likely entraining into the reservoir from an upstream source following a high-water event in 2016. Carp abundance has slowly declined since. Additionally, one northern pike was sampled in 2023, the first time this species was observed in Little Nelson and its source is unknown.

In 2024, a spring trap and transfer of black crappie was conducted. During the netting of these fish we captured two adult northern pike, one exceeded 10 pounds. It's unknown how this species was introduced into this reservoir, we'll continue to monitor the population to see if northern pike densities continue to increase.

Nelson Reservoir

Nelson Reservoir located 19 miles northeast of Malta is an off-stream storage reservoir constructed in 1915 for irrigation along the Milk River. At full storage capacity, Nelson covers approximately 4,320 surface acres, has a mean depth of 14.2 feet, and a maximum depth of 45 feet. Nelson is a relatively stable reservoir which is not as severely impacted by drought conditions, when compared to other regional reservoirs. On average, Nelson water levels fluctuate 8.36 feet and has an average water retention time of 610 days (storage capacity (acre-feet)/average annual inflow (acre-feet)).

Nelson contains approximately 26 fish species and is managed primarily as a walleye fishery. Walleye reproduce naturally in Nelson; however, walleye fingerlings have been stocked annually since 2003 to supplement the population. In 2022/2023 it was estimated Nelson received approximately 18,729 angler days (MTFWP Fisheries Bureau 2023).

Due to a Reclamation safety of dam's project and persistent drought conditions from 2020-2022, Nelson has been drawn down approximately 12+ feet four times since 2016. The unstable water conditions have impacted some fish species but also allowed a substantial amount of terrestrial vegetation to establish in the littoral areas of the reservoir. This vegetation was inundated throughout the open water period in 2023 and immediate benefits to the fishery were observed. Since 1993, fish populations have been monitored at 10 fixed sites (Appendix 1).

Table 10. - A summary of young-of-year forage and sport fish collected at ten fixed sites using a beach seine in Nelson Reservoir, 2015-2024.

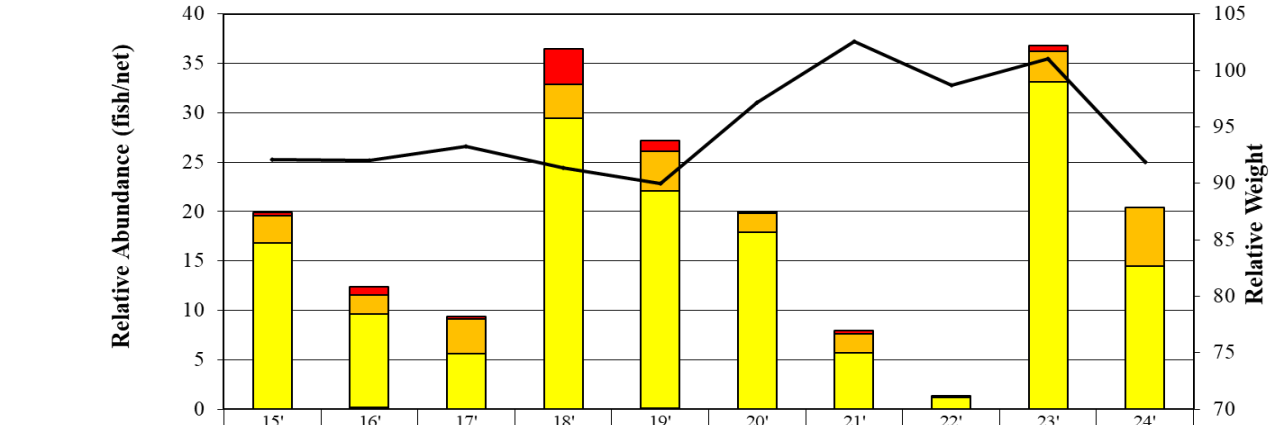
Year	Seined (ft)	Walleye	Yellow Perch	YP (Adult)	Northern Pike	Spottail Shiner	White Sucker	Black Crappie	Goldeye	Carp	Smallmouth Bass	Longnose Sucker	Pumpkinseed
2015*	750	1	883	8	5	6	26	80	0	2	60	0	0
2016*	750	11	126	16	0	108	213	1,362	0	1	2	0	5
2017	750	14	952	0	6	311	191	639	0	4	33	0	0
2018*	750	8	1,196	0	0	251	75	12	0	25	24	0	0
2019*	750	0	5	14	1	253	95	100	0	0	22	1	0
2020*	750	0	274	3	5	71	40	387	0	24	5	0	80
2021*	750	3	104	0	0	2,180	35	14	1	48	12	0	0
2022*	750	11	22	0	1	201	70	127	0	22	79	0	0
2023*	750	0	1,019	1	4	7	18	18	0	5	73	0	3
2024*	750	4	416	2	5	7	144	94	0	2	24	0	4

*Years in which walleye fry or fingerlings were stocked

Yellow Perch

The yellow perch population in Nelson Reservoir historically maintains good population densities and is the primary forage species for walleye and northern pike. Since 2017, spawning success and adult relative abundance has been variable (Table 10; Figure 27). The yellow perch population responds quickly to exceptional water and habitat conditions in Nelson, as were the conditions in 2018 and 2023. Yellow perch relative abundance immediately increased to near record levels in both years (>36 yellow perch/net; Figure 27). Currently, the yellow perch population is comprised of mostly stock to quality sized fish.

Figure 27. - Relative abundance, size structure, and relative weight of yellow perch collected with sinking experimental gill nets in Nelson Reservoir, 2015-2024.



	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'
Memorable (>12 in.)	0	0	0	0	0	0	0	0	0	0
Preferred (10-11.9 in.)	0.3	0.8	0.3	3.6	1.1	0.2	0.4	0.1	0.6	0
Quality (8-9.9 in.)	2.8	2	3.5	3.5	4	1.9	1.9	0.1	3.1	5.9
Stock (5-7.9 in.)	16.8	9.4	5.6	29.4	22	17.9	5.7	1.2	33.1	14.5
Sub Stock (<5 in.)	0	0.2	0	0	0.1	0	0	0	0	0
Relative weight	92.1	92.02	93.28	91.41	90.01	97.16	102.55	98.7	101.05	91.92

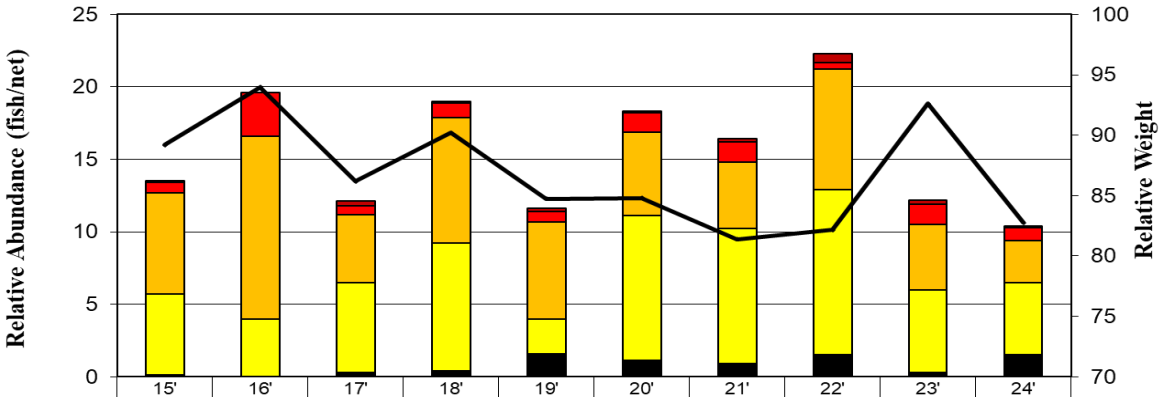
Walleye

Nelson has been maintained with annual plants of 100,000 fingerling walleye since 2003. An OTC evaluation was conducted from 2007-2020 to look at survival of stocked walleye, the study estimated the average annual stocked walleye contribution to the adult population was roughly 25% (Nagel 2020). Even with the addition of these fish, catch of YOY walleye during seining surveys remained similar to historic numbers (Table 10). However, the high proportion of stock (10-14.9 in.) and quality sized (15.0-19.9 in.) walleye in the population indicates consistent recruitment of walleye, resulting in stable adult relative abundances (Figure 28).

Since 2017, walleye relative abundance has fluctuated from 10.4 to 22.3 walleye/net (Figure 28). The current age structure of walleye in Nelson is dominated by age-2 produced in 2022 (Figure 29).

Walleye growth was above average in 2024 for walleye age 3+, likely due to increased water elevations in 2023 and good yellow perch densities (Figure 29 and 30).

Figure 28. - Relative abundance, size structure, and relative weight of walleye collected with sinking experimental gill nets in Nelson Reservoir, 2015-2024.



	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'
Memorable (>25 in.)	0.1	0.0	0.3	0.1	0.2	0.1	0.2	0.6	0.3	0.1
Preferred (20-24.9 in.)	0.7	3.0	0.6	1.0	0.7	1.3	1.4	0.5	1.4	0.9
Quality (15-19.9 in.)	7.0	12.6	4.7	8.7	6.7	5.8	4.6	8.3	4.5	2.9
Stock (10-14.9 in.)	5.6	4.0	6.2	8.8	2.4	10.0	9.3	11.4	5.7	5.0
Sub-stock (<10 in.)	0.1	0.0	0.3	0.4	1.6	1.1	0.9	1.5	0.3	1.5
Relative weight	89.2	94.0	86.2	90.2	84.7	84.8	81.4	82.2	92.6	82.8

Figure 29. Observed walleye age structure and distribution in Nelson Reservoir, 2024.

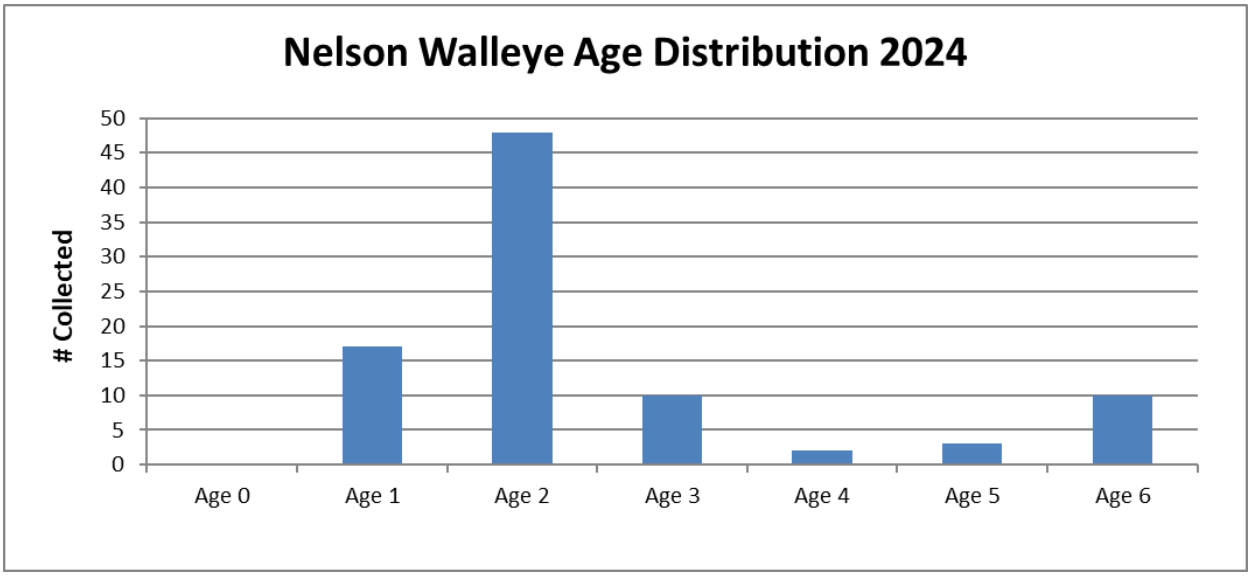
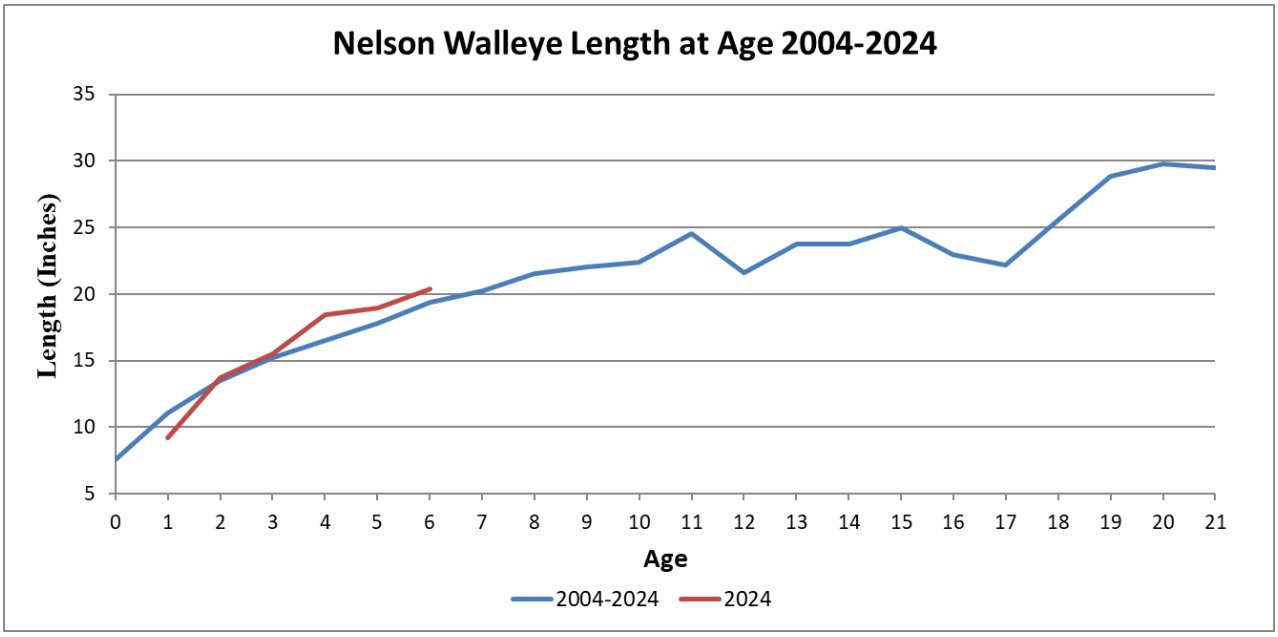


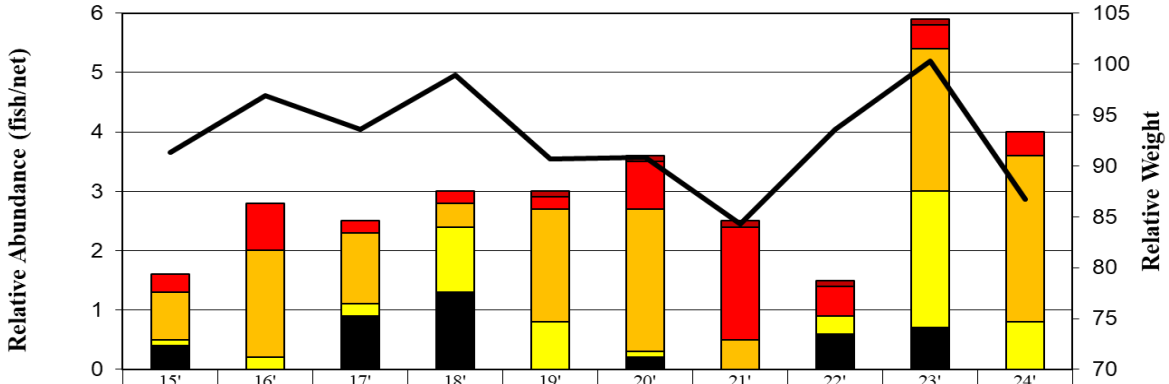
Figure 30. Walleye length at age in Nelson Reservoir, 2004-2024.



Northern Pike

Relative abundance of adult northern pike has remained stable, consisting of a high proportion of quality and preferred sized fish (Figure 31). Low reservoir pool elevations promote terrestrial vegetation growth in the littoral areas surrounding Nelson and young (sub-stock/stock) northern pike have comprised a significant proportion of the catch during fall netting surveys conducted in 2017, 2018, 2022, and 2023 (Figure 31). These year-classes exhibited excellent growth, and the current pike population is comprised of a diversified age and size structure (Figure 31).

Figure 31. - Relative abundance, size structure, and relative weight of northern pike collected with sinking experimental mesh gill nets in Nelson Reservoir, 2015-2024.

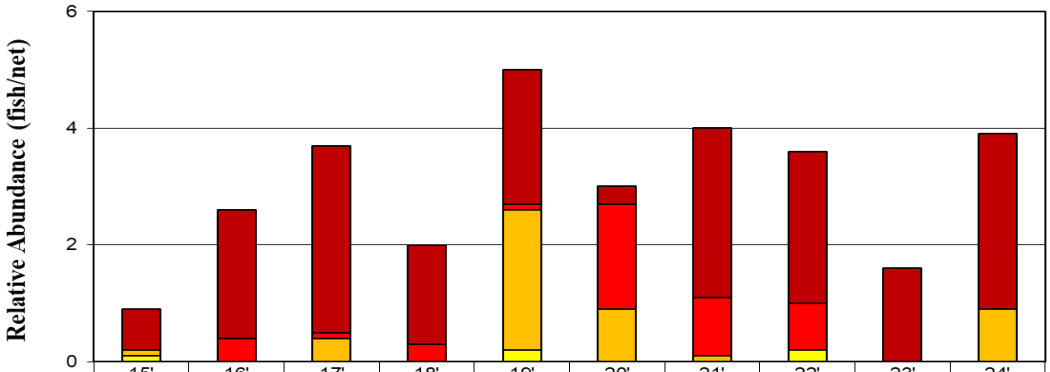


	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'
Memorable (>34 in.)	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Preferred (28-33.9 in.)	0.3	0.8	0.2	0.2	0.2	0.8	1.9	0.5	0.4	0.4
Quality (21-27.9 in.)	0.8	1.8	1.2	0.4	1.9	2.4	0.5	0.0	2.4	2.8
Stock (14-20.9 in.)	0.1	0.2	0.2	1.1	0.8	0.1	0.0	0.3	2.3	0.8
Sub Stock (<14 in.)	0.4	0.0	0.9	1.3	0.0	0.2	0.0	0.6	0.7	0.0
Relative weight	91.3	96.9	93.6	98.9	90.6	90.9	84.3	93.6	100.3	86.7

Lake Whitefish

The lake whitefish population has remained stable for several years with the majority of whitefish collected falling in the preferred and memorable size classes (Figure 32). Whitefish exhibit fast growth rates in Nelson but are underutilized by anglers as a gamefish.

Figure 32. - Relative abundance and size structure of lake whitefish collected with sinking experimental gill nets in Nelson Reservoir, 2015-2024.



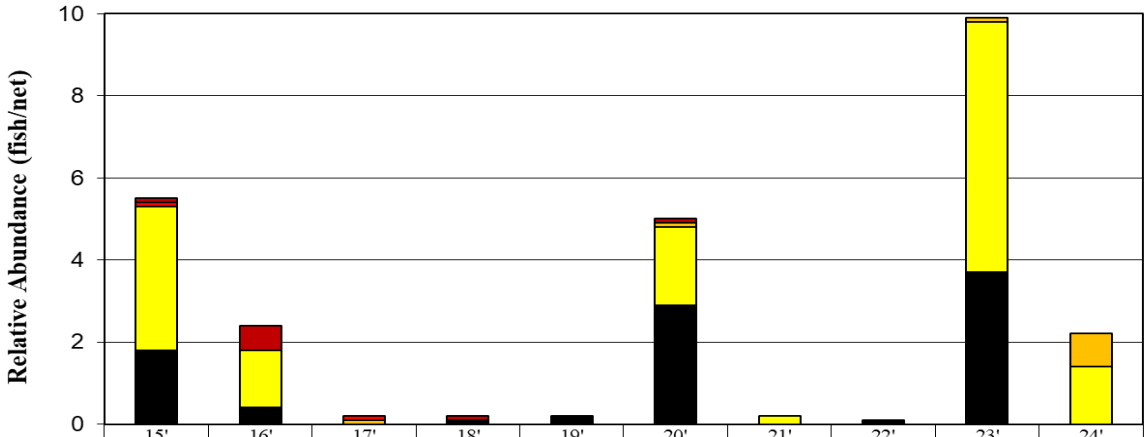
	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'
Memorable (>18.0 in.)	0.7	2.2	3.2	1.7	2.3	0.3	2.9	2.6	1.6	3
Preferred (14.0-17.9 in.)	0	0.4	0.1	0.3	0.1	1.8	1	0.8	0	0
Quality (11.0-13.9 in.)	0.1	0	0.4	0	2.4	0.9	0.1	0	0	0.9
Stock (6.0-10.9 in.)	0.1	0	0	0	0.2	0	0	0.2	0	0
Sub Stock (<6.0 in.)	0	0	0	0	0	0	0	0	0	0

Black Crappie

Black crappie persists at low adult densities in Nelson Reservoir. Strong year-classes of black crappie have been observed during annual surveys but often vanish a year or two later for reasons not yet known (Table 10; Figure 33). Reproductive success has been attributed to high stable water levels during the early summer spawning period in June (Table 10).

Significant reductions in adult black crappie relative abundance was observed during fall gill net surveys in 2017-2019 and 2021-2022 (Figure 33). It is unknown whether this was directly correlated with reductions in pool elevations for two straight years or whether the reductions in pool elevations increased predation and/or entrainment of black crappie. Crappie relative abundance observed in 2023 were the highest ever recorded, and a significant reduction was observed in 2024, similar to historic trends previously documented (Figure 33).

Figure 33. - Relative abundance and size structure of black crappie collected with sinking experimental gill nets in Nelson Reservoir, 2015-2024.



	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'
Memorable (>12.0 in.)	0.1	0.6	0	0.1	0	0.1	0	0	0	0
Preferred (10.0-11.9 in.)	0.1	0	0.1	0	0	0	0	0	0	0
Quality (8.0-9.9 in.)	0	0	0.1	0	0	0.1	0	0	0.1	0.8
Stock (5.0-7.9 in.)	3.5	1.4	0	0	0	1.9	0.2	0	6.1	1.4
Sub Stock (<5.0 in.)	1.8	0.4	0	0.1	0.2	2.9	0	0.1	3.7	0

Other Fishes

A variety of other fishes are found within Nelson Reservoir; however, they are rarely utilized as sport fish due to low abundances or their non-game status. Channel catfish, stonecats, bigmouth buffalo, smallmouth buffalo, goldeye, white sucker, shorthead redhorse, pumpkinseed and smallmouth bass are all present at lower densities within Nelson Reservoir

The smallmouth bass population is starting to show signs of population growth, both in adult relative abundance as well as annual reproductive success being observed (Table 10). Pumpkinseeds also showed up in higher numbers during our summer seining surveys in 2020 (Table10). This species was first documented in Nelson Reservoir in 2016 but their presence in our sampling gear has been highly variable. FWP will continue to monitor this species abundance, recruitment, and impacts/contributions to the Nelson fish community.

Plutz Reservoir

Plutz is located on BLM land in south Phillips County and has been managed as a fishery since 1994. This reservoir received annual plants of 1,000 fingerling rainbow trout since 2000, this was discontinued in 2023.

Since 2017, no rainbow trout have been observed in either the gill or trap nets and it appears the impacts to trout abundance likely occurred following the historic water event in 2011. Fathead minnows were observed in 2022, and both white suckers and western silvery minnows were captured in the trap net in 2019 but weren't observed in 2022. No fish were captured during 2024 surveys.

Water quality issues have been thought to be a limiting factor at Plutz, even though max depths approach 20 feet. Fisheries personnel has monitored dissolved oxygen readings at Plutz the last few years. Dissolved oxygen levels have remained very low from mid to bottom depths (8-14 feet D.O. ranged from 6.3-0.30 ppm) during both the summer and winter months. Continued water quality data will be collected throughout the year to determine the next steps needed to restore the fishery value at Plutz.

PR 161 Reservoir

PR 161 is an 87-acre reservoir located on BLM land in south Phillips County. PR 161 was first stocked by FWP in 1937 with the introduction of largemouth bass and black bullheads. Northern pike were stocked in 1969 and have provided a self-sustaining fishery ever since. In 2008, PR 161 was sampled for the first time on record. Two sinking gill nets and one trap net were set for approximately 21 hours. The gill net contained one northern pike (TL = 23.5 in.); the trap contained one northern pike (TL = 19.4 in.) and 237 fathead minnows. PR 161 was stocked with 500 fingerling northern pike in 2009 and 2010.

In 2016, two gill nets and two trap nets were set overnight to detect any changes in northern pike densities. Northern pike relative abundance was 19.5 pike/net, ranging in length from 12.3-27.4 inches ($\bar{x}$ TL= 20.5 in.). No northern pike were captured during 2024 sampling efforts; however, crews did capture 2,275 fathead minnows, suggesting a robust forage base currently inhabits PR 161.

Stocking of northern pike was very successful, and this population was naturally reproducing. A winterkill was documented in 2018 and FWP shifted away from restocking this reservoir with northern pike, due to their negative interactions with native minnow populations in nearby prairie streams. FWP did stock yellow perch in 2024, and we'll continue to monitor their survival and growth moving forward.

Prairie Stream Sampling

Additional prairie stream sampling occurred at randomized sites in 2024 (Appendix 3). From the 25+ sites selected; sampling occurred at eighteen of them (Appendix 4). The effort in 2024 was our second attempt to capture a broad regional snapshot of prairie fish distribution, abundance, and trends. This effort will continue to be refined and developed with the goal to track long-term trends in our Region 6 prairie stream fish assemblages.

RECOMMENDATIONS

Paddlefish: Fort Peck Stock

Annual variability in Fort Peck Reservoir pool elevations and flows in the Missouri River influence the reproductive success, recruitment, and growth of this paddlefish stock. Reproduction is variable and adult fish captured during spring tagging efforts appear in good condition, and new recruits are being observed, based on aging structures.

Upper Missouri River spring flows and Fort Peck pool elevations were marginal in 2024 and YOY transects conducted in August reflect that. The increase in popularity by anglers on this fishery is being closely monitored, especially the number of paddlefish being snagged and released, and the amount of boat traffic occurring during the season. A snag and release/prop strike mortality study will be conducted on this population from 2024-2026. Seventeen paddlefish were tagged and tracked in 2024.

The Upper Missouri River paddlefish population is unique. It remains one of the last self-sustaining populations that has never been augmented with hatchery fish. Natural reproduction and recruitment occur annually, at some level, depending on river flows and reservoir pool elevations. Annual tagging efforts should continue with a target of tagging 300 or more new paddlefish. On-site paddlefish creel survey boxes should be provided in 2025 to allow on-site mandatory reporting of harvested fish and to collect data (length, weight, sex, and jaw samples). A phone survey should be conducted in 2025, using the database of anglers who drew harvest tags, as well as anglers participating in snag and release, to assess angler demographics, effort, and success during the paddlefish season. YOY visual counts should be conducted to assess reproductive success and year-class strength.

Fresno and Nelson Reservoir

Standardized late-summer seining should continue to assess sport fish reproduction and forage fish abundance in Fresno and Nelson Reservoirs. Standardized sampling of adult sport fishes should be continued utilizing fall gill netting to gather recruitment information relating to walleye and other key sport and forage fish year-class strength and winter reservoir water levels. Fresno walleye stocking strategies and management will follow the plan set forth in the Fresno Management Plan. Continue to stock 100k walleye annually into Nelson and look for habitat enhancement opportunities at both reservoirs (Christmas trees, artificial structures, etc.). Continue to be involved in the Milk River Project and various water related studies, infrastructure upgrades, and construction activities currently ongoing within the watershed.

Beaver Creek Reservoir

Standardized late-summer seining should continue to assess sport fish reproduction and forage fish abundance at Beaver Creek Reservoir. Standardized sampling of adult sport fishes should be continued utilizing fall gill netting to gather recruitment information relating to sport and forage fish year-class strength and to monitor growth and survival of stocked walleye, rainbow trout, and forage availability. Spring and fall plants of walleye fingerlings and advanced fingerlings should be continued.

Hill, Blaine & Phillips Co. Ponds

Sampling of adult sport fish populations should continue annually at Bailey Reservoir, Ester Reservoir, Dry Fork, Anita and Cow Creek Reservoirs. All other ponds should be sampled every two to five years to assess adult fish populations, growth, and recruitment. In addition, new self-creel survey boxes will be distributed and/or maintained throughout each county to assess the fishing pressure at these ponds. This information will allow us to tailor our management and stocking efforts to meet the needs

of the public. Continue to identify habitat enhancement projects that benefit the fisheries and extend a ponds production and fishery value.

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Key words:
Region 6, prairie ponds, warm water species, Fresno Reservoir, Nelson Reservoir, Beaver Creek Reservoir, Bearpaw Lake, Blaine County, Hill County, Phillips County, paddlefish, walleye, Lake Superior whitefish, northern pike, black crappie, yellow perch, largemouth bass, bluegill, rainbow trout.
Prepared by: Cody Nagel
Date: April 1, 2025

Appendix 1. Sampling methods and equipment used to conduct fish monitoring activities at various regional waterbodies.

Waterbody	Gear Type	Mesh Size (Inches)	Net Dimensions (L X W)	Number of Nets Used	Time of Year (month)	Frequency	Purpose
Bearpaw Lake	Experimental Floating Gill Net	0.75"-2.0"	125' X 6'	2	September	Annually	Species trends and abundance
	Experimental sinking Gill Net	0.75"-2.0"	125' X 6'	1	September	Annually	Species trends and abundance
	Trap Net	0.25"	3' X 4'	Multiple	April-June	Periodic	White sucker removal
Beaver Creek Reservoir	Experimental Floating Gill Net	0.75"-2.0"	125' X 6'	3	September	Annually	Species trends and abundance
	Experimental sinking Gill Net	0.75"-2.0"	125' X 6'	3	September	Annually	Species trends and abundance
	Beach Seine	0.25"	75' X 10'	6 Hauls	August	Annually	Reproduction success and forage availability
Fresno Reservoir	Experimental sinking Gill Net	0.75"-2.0"	125' X 6'	12	September	Annually	Species trends and abundance
	Beach Seine	0.25"	75' X 10'	12 Hauls	August	Annually	Reproduction success and forage availability
Nelson Reservoir	Experimental sinking Gill Net	0.75"-2.0"	125' X 6'	10	September	Annually	Species trends and abundance
	Beach Seine	0.25"	75' X 10'	10 Hauls	August	Annually	Reproduction success and forage availability
Mid-Sized Reservoirs (25-400 surface acres)	Experimental sinking Gill Net	0.75"-2.0"	125' X 6'	2-3	June/July	Variable	Species trends and abundance
	Trap Net	0.25"	3' X 4'	2-4	June/July	Variable	Species trends and abundance
	Beach Seine	0.25"	75' X 10'	1-4 Hauls	July/August	Variable	Reproduction success and forage availability
Small Ponds (< 20 surface acres)	Experimental sinking Gill Net	0.75"-2.0"	125' X 6'	1	June/July	Variable	Species trends and abundance
	Trap Net	0.25"	2' X 3' and/or 3' X 4'	1-2	June/July	Variable	Species trends and abundance
Paddlefish							
Missouri River	Drift Net	4"	150' X 8'	1 -2	April/May	Annually	Jaw tag adults to track movements, spawning periodicity, habitat use, and obtain population estimates
Fort Peck Headwaters	Visual Transects	--	--	6 sites and 18 total transects	August	Annually	Reproduction success
Prairie Streams	Seine	0.25"	25' X 4'	1	Variable	Variable	Species trends, abundance, and presence/absence

Appendix 2. Average daily water temperatures (F) observed in 2022, 2023 and 2024 from select prairie streams located in Hill, Blaine, and Phillips Counties. Temperature loggers collected water temperature data at one-hour increments and were placed from late May - early October.

Site Name	Lat	Long	Period of Record	2022 Avg Temp (Max) (F))	Period of Record	2023 Avg Temp (Max) (F))	Period of Record	2024 Avg Temp (Max) (F))
Battle 1	48.88397	-109.3941	Not Recovered	--	5/30/23 - 10/11/23	**66.34***	6/5/24 - 10/2/24	**67.76 (85.01)**
Bean Creek 1	48.40167	-109.29886	6/29/22 - 10/11/22	**74.95***	Not Recovered	--	6/5/24-9/27/24	**64.02***
Beaver Creek 1	48.3912	-109.69	5/13/22 - 9/30/22	**63.93 (81.97)**	5/26/23 - 10/11/23	**63.69 (79.68)**	6/8/24 - 9/27/24	**64.34 (81.09)**
Beaver Creek 2	48.51046	-109.79018	6/21/22 - 9/30/22	**66.84 (94.44)**	5/26/23 - 10/6/23	**64.18 (78.98)**	Logger Malfunc.	--
Beaver 3	48.43755	-107.51821	5/13/22 - 9/26/22	**68.57 (85.19)**	5/26/23 - 10/13/23	**69.53 (84.12)**	6/11/24 - 9/27/24	**70.72 (86.5)**
Big Sandy 1	48.35561	-109.9988	5/13/22 - 9/30/22	**65.98 (78.10)**	Not Recovered	--	6/5/24-9/30/24	**69.13 (85.37)**
Clear Creek 1	48.58986	-109.40259	6/21/22 - 9/29/22	**69.55 (94.63)**	Logger Malfunc.	--	6/5/24-9/26/24	**67.13 (83.22)**
Clear Creek 2	48.26035	-109.52479	6/29/22 - 9/29/22	**57.76 (80.38)**	5/26/23 - 10/11/23	**55.77 (71.68)**	6/5/24 -9/27/24	**55.66 (68.76)**
Cottonwood Creek 1	48.54743	-107.76503	6/21/22 - 9/26/22	**66.65 (80.03)**	5/26/23 - 10/10/23	**67.77 (82.15)**	6/11/24 - 8/13/24	**70.43 (81.27)**
Cow Creek 1	48.08653	-109.30728	6/29/22 - 9/29/22	**60.28 (85.19)**	5/26/23 - 10/11/23	**59.59 (71.86)**	6/5/24 - 6/7/24 Logger Malfunc.	**55.69**
Little Boxelder 1	48.56165	-109.53288	6/21/22 - 9/29/22	**67.47 (83.22)**	5/26/23 - 10/11/23	**65.41 (83.04)**	6/5/24 - 6/19/24 Logger Malfunc.	**61.52**
Lodge 1	48.5932	-109.21572	Not Recovered	--	5/26/23 - 10/5/23	**67.12 (79.50)**	6/5/24 - 9/23/24	**67.61 (80.60)**
Milk 1	48.3789	-108.2488	Not Recovered	--	Not Recovered	--	6/11/24-7/26/24	**65.66 (75.14)**
Milk 2	48.6007	-109.94212	Not Recovered	--	5/30/23 - 10/6/23	**67 (74.1)**	6/5/24 - 9/28/24	**66.62 (76.35)**
Milk 3	48.798	-110.1336	Not Recovered	--	Not Recovered	--	6/5/24-7/15/24	**67.68 (92.17)**
Milk 4	48.54082	-107.5172	6/21/22 - 9/26/22	**72.68 (86.5)**	Not Recovered	--	6/11/24-6/22/24	**66.8***
Peoples 1	48.273	-109.15813	Not Recovered	--	5/26/23 - 10/4/23	**60.32 (68.59)**	6/5/24 - 9/27/24	**62.57***
Snake 1	48.46423	-109.06365	5/13/22 - 10/20/22	**62.62 (80.21)**	5/26/23 - 10/11/23	**64.58 (77.23)**	6/5/24 - 9/27/24	**67.08 (86.5)**
Whitewater 1	48.55038	-107.42693	7/6/22 - 9/26/22	**66.01 (82.69)**	5/25/23 - 10/7/23	**65.19* (80.74)**	6/11/24 - 6/15/24 Logger Malfunc.	**65.48**
Whitewater 2	48.89606	-107.81606	6/21/22 - 9/26/22	**63.93 (73.41)**	5/26/23 - 10/13/23	**64.8 (80.91)**	6/11/24 - 9/26/24	**65.54 (78.62)**

* Stream went dry during portion of data collection period.

Appendix 3. List of sites selected for 2024 prairie stream sampling effort. Sites were broken out into visited with sampling (green), visited with no sampling (orange), and explored but no visit occurred (white).

siteID	Site Type	lon_WGS84	lat_WGS84	Stream	County	Date	Sampled/Dry	New Lat.	New Long.	Photo ID
Site-01	Legacy	-109.66	48.27761	Beaver Creek	Hill	8/2/2024	Sampled	48.27813	-109.6602	Site-01
Site-02	Legacy	-108.9543	48.49399	Snake Creek	Blaine	7/29/2024	Sampled	48.49413	-108.9547	Site-02
Site-03	Legacy	-109.8008	48.56548	Big Sandy Creek	Hill	8/23/2024	Sampled	48.55662	-109.809	Site-03
Site-05	Legacy	-109.6589	48.31218	Beaver Creek	Hill	8/2/2024	Sampled	48.31265	-109.6583	Site-05
Site-015	Base	-110.5199	48.332025	East Fork Black Coulee	Hill	7/31/2024	Sampled	48.31518	-110.5605	Site-015
Site-016	Base	-108.9615	48.772985	Thirtymile Creek	Blaine	8/12/2024	Sampled	48.7005	-108.9805	Site-016
Site-018	Base	-109.6766	48.71545	Redrock Coulee	Hill	8/12/2024	Sampled	48.71522	-109.6801	Site-018
Site-020	Base	-107.8253	48.071242	Beaver Creek	Phillips	8/20/2024	Sampled	48.08742	-107.8118	Site-020
Site-021	Base	-109.5177	48.97213	Woodpile Coulee	Hill	8/12/2024	Sampled	48.95009	-109.4759	Site-021
Site-022	Base	-107.4171	48.550248	Stinky Creek	Phillips	9/16/2024	Sampled	48.55663	-107.4152	Site-022
Site-023	Base	-107.5266	48.428126	Beaver Creek	Phillips	8/22/2024	Sampled	48.43171	-107.5157	Site-023
Site-026	Base	-109.6298	48.434647	Bullhook Creek	Hill	8/2/2024	Sampled	48.43626	-109.6327	Site-026
Site-027	Base	-109.0218	48.002216	Suction Creek	Blaine	7/30/2024	Sampled	48.00094	-109.0228	Site-027
Site-028	Base	-109.2185	48.655565	Dry Fork Battle Creek	Blaine	9/30/2024	Sampled			Site-028
Site-030	Base	-108.2768	48.470002	Dodson Creek	Phillips	7/24/2024	Sampled	48.37708	-108.2456	Site-030
Site-051	Over	-108.4107	47.752258	CK Creek	Phillips	8/20/2024	Sampled	47.76508	-108.4216	Site-051
Site-053	Over	-107.4702	48.224715	Moss Coulee	Phillips	7/24/2024	Sampled	48.22245	-107.5111	Site-053
Site-054	Over	-107.2513	48.641471	Frenchmen Creek	Phillips	9/26/2024	Sampled	48.65059	-107.2485	Site-054
2024 Sites (Visited with no sampling)										
Site-011	Base	-110.6653	48.779166	Little Sage Creek	Hill	7/31/2024	Dry	48.7797	-110.6855	Site-011
Site-012	Base	-108.9827	48.506879	Unnamed	Blaine	7/29/2024	Dry	48.515	-108.9999	Site-012
Site-013	Base	-107.262	48.797755	Cottonwood Creek	Phillips	8/29/2024	Dry	48.8814	-107.407	Site-013
Site-014	Base	-108.9063	48.222371	Fogarty Coulee	Blaine	7/29/2024	Dry	48.2175	-108.9404	Site-014
Site-017	Base	-108.623	47.634063	Duval Creek	Phillips		Dry			Site-017
Site-019	Base	-108.3479	48.723236	Black Coulee	Blaine	7/30/2024	Dry	48.6983	-108.3937	Site-019
Site-024	Base	-110.6586	48.401699	Rocky Coulee	Hill	8/23/2024	Dry	48.3781	-110.5473	Site-024
Site-025	Base	-109.2982	48.76721	Unnamed	Blaine	7/30/2024	Dry	48.7702	-109.3081	Site-025
Site-052	Over	-107.4416	48.892931	Dunham Coulee	Phillips	8/29/2024	Dry	48.8983	-107.5134	Site-052
2024 Sites (explored but inaccessible)										
Site-004	Base	-107.2814	48.43238	Beaver Creek	Valley					
Site-029	Base	-107.9638	48.048725	Big Warm Creek	Phillips					

Appendix 4. Water temperature, species composition, and observed abundance of fishes in streams sampled across prairie streams in western Region 6, 2024. (*=none observed).

System	County	Date	Water Temp (F)	Species	# Captured
Beaver Creek- Site 001	Hill	8/2/2024	60	longnose dace	3
				fathead minnow	256
				white sucker	76
				lake chub	28
				longnose dace	20
Snake Creek- Site 002	Blaine	7/29/2024	76	flathead chub	7
				fathead minnow	5
				white sucker	14
				lake chub	82
				longnose dace	17
				stonecat	3
				walleye	1
				black crappie	1
Big Sandy Creek- Site 003	Hill	8/23/2024	66	virille crayfish	28
				white sucker	12
				longnose dace	6
				rainbow trout	1
				brook trout	2
Beaver Creek- Site 005	Hill	8/2/2024	62	virille crayfish	2
East Fork Black Coulee- Site 015	Hill	7/31/2024	72	NO FISH	*
				fathead minnow	182
				white sucker	24
				northern redbelly dace	1
Thirtymile Creek- Site 016	Blaine	8/12/2024	70	brook stickleback	5
				fathead minnow	319
Redrock Coulee- Site 018	Hill	8/12/2024	74	brook stickleback	149
				fathead minnow	3
				northern pike	1
				common carp	4
				black bullhead	9
				shorthead redhorse	22
				golden shiner	1
				western silvery minnow	1
Beaver Creek- Site 020	Phillips	8/20/2024	72	virille crayfish	2
Woodpile Coulee- Site 021	Hill	8/12/2024	66	NO FISH	*
				fathead minnow	1
				northern pike	1
				yellow perch	3
				common carp	43
				black bullhead	10
				bluegill	31
				golden shiner	351
Stinky Creek- Site 022	Phillips	9/16/2024	64	virille crayfish	5

				fathead minnow	20
				channel catfish	4
				spottail shiner	15
				common carp	9
				black bullhead	2
				shorthead redhorse	1
Beaver Creek- Site 023	Phillips	8/22/2024	70	virille crayfish	4
				fathead minnow	1
				northern redbelly dace	1
Bullhook Creek- Site 026	Hill	8/2/2024	72	brook stickleback	108
				fathead minnow	17
				white sucker	15
				longnose dace	2
				brassy minnow	11
				brook stickleback	1
Suction Creek- Site 027	Blaine	7/30/2024	74	western silvery minnow	77
Dry Fork Battle Creek- Site 028	Blaine	9/30/2024	56	NO FISH	*
				white sucker	7
Dodson Creek- Site 030	Phillips	7/24/2024	70	virille crayfish	>250
				fathead minnow	89
				white sucker	28
				lake chub	16
				northern redbelly dace	1
CK Creek- Site 051	Phillips	8/20/2024	74	brook stickleback	7
				fathead minnow	20
Moss Coulee- Site 053	Phillips	7/24/2024	86	black bullhead	16
				fathead minnow	29
				white sucker	2
				lake chub	3
				longnose dace	2
				northern pike	2
				stonecat	1
				common carp	1
				shorthead redhorse	5
				walleye	2
Frenchman Creek- Site 054	Phillips	9/26/2024	63	virille crayfish	11