Cabinet Gorge and Noxon Reservoir Fisheries Monitoring

2025 Annual Project Update

Montana Tributary Habitat Acquisition and
Recreational Fishery Enhancement Program, Appendix B

May 2026

Natural Resources
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Appendix B

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Introduction

Noxon and Cabinet Gorge reservoirs, the two lowermost hydroelectric impoundments on the Clark Fork River in western Montana (Figures 1–3), have presented numerous and evolving challenges for fisheries management since reservoir construction was completed in the 1950s. Challenges have included blocked upriver access for migratory native species, including adfluvial Bull Trout *Salvelinus confluentus* from Lake Pend Oreille, degraded conditions in the impounded mainstem reaches for native salmonids, introductions of non-native species (authorized and unauthorized), and changes in agency objectives, angler and societal preferences, and reservoir operations. Huston (1985) documented the diversity of fish introductions and management actions from the early 1950s through the mid-1980s, including early efforts to establish cold-water salmonid fisheries in marginal habitats created by the reservoirs. In addition to altered thermal conditions, low water retention time in the two reservoirs (about three weeks in Noxon and one week in Cabinet Gorge), and wide water-level fluctuations historically limited options for developing stable lentic fisheries.

Initial fisheries management efforts to create cold-water salmonid fisheries on the newly formed reservoirs were largely unsuccessful (Huston 1985). Noxon and Cabinet Gorge reservoirs did not emerge as relevant fisheries until the 1980s. At that time, the introduction and establishment of both Largemouth Bass *Micropterus salmoides* and Smallmouth Bass *M. dolomieu* populations, two non-native predatory sportfish, was facilitated by a cooperative agreement between angler groups, Montana Fish, Wildlife and Parks (FWP), and Avista which eliminated large water-level fluctuations (Huston 1985) to facilitate stable bass habitat. The presence of Northern Pike *Esox lucius* was first documented in Noxon Reservoir in 1972 and Cabinet Gorge Reservoir in 1974, stemming from an illegal introduction in Lone Pine Reservoir of the Flathead River drainage in the 1950s (Huston 1985). Since that time, populations of these species as well as native and non-native non-game fish species have become well-established, and annual fishing pressure has increased considerably from about 800 angler days per year on Noxon in 1982 to 39,759 angler days in 2021 (MFWP 2023).

Based on angler mail-in surveys (MFWP 2017, 2019) and the most recent creel survey (Blakney et al. 2017), bass remain popular target species, as well as non-native Northern Pike and Yellow Perch *Perca flavescens*. In 2025, bass tournaments were scheduled over five separate weekends on Noxon Reservoir. Additionally, one Northern Pike tournament was held on Cabinet Gorge Reservoir.

As early as the 1950s, management effectiveness in the two reservoirs was monitored occasionally by evaluating fish community structure, mainly through gillnetting. Fish community monitoring with gillnets had been standardized by 2000 and has continued to the present time. A quarter century after Huston's (1985) review, Horn and Tholl (2010), and Scarnecchia et al.

(2014) used slightly different durations of the historical gillnet data sets to evaluate trends in fish community composition and individual species abundance. Both evaluations documented statistically significant declines in several native fishes such as Peamouth *Mylocheilus caurinus,* Largescale Suckers *Catostomus macrocheilus*, and Northern Pikeminnow *Ptychocheilus oregonensis*, species of little interest to anglers but likely important components of the food web. Contemporaneously, they observed an increase in the frequency of non-native piscivorous fishes (bass, Northern Pike and Walleye *Sander vitreus*), species actively sought by anglers.

Walleye were illegally introduced into Noxon Reservoir, likely several times between the 1980s and 1990s (WWP 1995, Horn and Tholl 2010). Since 2000, the population of Walleye has become self-sustaining and has increased in abundance relative to other species. Stemming from the illegal introduction in Noxon Reservoir, Walleye have since become established in the downriver waterbodies of Cabinet Gorge Reservoir, Lake Pend Oreille (LPO), and the Pend Oreille River through Idaho and into Washington. Based on information obtained during a previous telemetry study (Horn et al. 2009), FWP began spring surveys for Walleye on suspected spawning grounds in 2012 to monitor year-class strength, the spawning population abundance, and collect fish for age and growth estimates. This work has continued through 2025, primarily using jet-boat electrofishing at night. Spring Walleye electrofishing is conducted from late March to early May to coincide with suitable spring spawning temperature and pre-runoff flows, (Willis and Stephen 1987). Efforts occur in two spawning areas in upper Noxon Reservoir directly downstream of Thompson Falls Dam, adjacent to the River's Bend Golf Course and upstream of the Highway 200 bridge (Figure 4).

Current harvest management on the reservoirs includes the use of general regional regulations for all species except for Westslope Cutthroat Trout *Oncorhynchus lewisi* (catch and release), Largemouth Bass, Smallmouth Bass, and Walleye (MFWP 2025). Special regulations have been enacted on both reservoirs to protect spawning bass. Both species of bass rely on nest-guarding males to protect newly hatched broods and angling during that time may negatively influence recruitment (Suski and Phillip 2004). These protective bass regulations include Noxon and Cabinet Gorge reservoirs and extends from the base of Thompson Falls Dam downstream to the Idaho border (MFWP 2025). This special regulation allows five fish to be harvested daily and in possession of any size, except between June 15 and July 15 when only one fish daily with a minimum length of 559 mm (22 inches) can be kept and in possession. This regulation provides protection by limiting harvest of spawning and nest-guarding bass and prevents tournaments from occurring during this time. Saffel (2003), found age-0 Largemouth Bass in Noxon Reservoir hatched between June 21 and July 3 in both low-water and high-water years. Because incubation of Largemouth Bass eggs is 3–5 days (Scott and Crossman 1973), it was assumed that spawning in Noxon began after June 15 even on low-water years, hence the reasoning behind the June 15 to July 15 exception. The regulation for Walleye is no limit in both Noxon and Cabinet Gorge Reservoirs, as opposed to the catch, keep and report requirement for the rest of Montana's

Western Fishing district. Walleye have become established in both reservoirs following illegal introductions, and the keep and report requirements are no longer warranted.

Fish community monitoring continues to be conducted in both Noxon and Cabinet Gorge reservoirs with gillnets to assess trends in fish community composition and species abundance. Monitoring fish lengths and catch composition during bass tournaments remains an important part of the monitoring program as bass have low capture vulnerability in gillnets. Specific objectives of the current reservoir monitoring plan are to:

1) Monitor trends in fish populations in Noxon and Cabinet Gorge reservoirs with emphasis on species of recreational value and potential predators of native salmonids which inhabit the reservoirs.
2) Monitor the overall status of the bass fishery in Noxon Reservoir.
3) Monitor the population of illegally introduced Walleye in Noxon Reservoir.

For a more thorough description of the study area and methods, refer to: Kreiner and Tholl (2013), Kreiner and Tholl (2016), Horn and Tholl (2010), and Scarnecchia et al. 2014.

Study Area

The Clark Fork River is Montana's largest river by discharge. It has its origins near Butte, Montana at the Continental Divide and flows for approximately 380 km before merging with the Flathead River near Paradise, Montana. The Lower Clark Fork River (LCFR) begins at the confluence with the Flathead River and continues northwestward 165 km before entering LPO, a large (380 km^2), deep (350 m) natural lake in the Idaho panhandle.

The LCFR historically was an important migratory corridor for Bull Trout and Westslope Cutthroat Trout which spawned in Montana tributaries but matured in LPO (Huston 1985). Other native non-game species also migrated extensively through the LCFR (e.g., Catastomids, Leuciscids). However, in the 20th century, three dams were constructed that have restricted migrations of native fishes and greatly altered the hydrology and habitat of the river. Thompson Falls Dam, the uppermost of the three dams and not a focus of this report, is also the oldest, completed in 1915 by Montana Power (currently owned by NorthWestern Energy). Cabinet Gorge Dam (completed 1952) and Noxon Rapids Dam (completed 1959) are owned and operated by Avista. Noxon Reservoir, the middle reservoir, is the largest LCFR reservoir with a surface area of 3,200 Ha, a maximum depth of greater than 61 meters, and a length of approximately 62 km. Just inside the Idaho border, Cabinet Gorge Dam creates a reservoir that is 1,200 Ha and approximately 31 km long. All three LCFR reservoirs are considered mainstream or run-of-the-river reservoirs (Kalff 2002) and are characterized by their short water retention times. Noxon Reservoir has a water retention time of three weeks during low-water and less than one week during run-off, while Cabinet Gorge Reservoir's retention time is never greater than seven days (Huston 1985). As a result, the reservoirs retain both lotic and lentic characteristics throughout. Many of the narrow upstream channels have visible current, while many bays, flats, and lacustrine areas above the dams are lake-like in appearance.

The run-of-the-river nature of these reservoirs impacts most of the fish species, especially those that evolved in more stable lentic habitats. For example, during larger run-off years, high water levels and cold-water temperatures delay Largemouth Bass spawning and reduce overwinter survival of age-0 Largemouth Bass (Saffel 2000). Additionally, low water retention time associated with high runoff from snow melt across the Clark Fork basin is generally associated with less successful spawning by reservoir-dwelling Walleye, similar to other populations in North America (Willis and Stephens 1987).

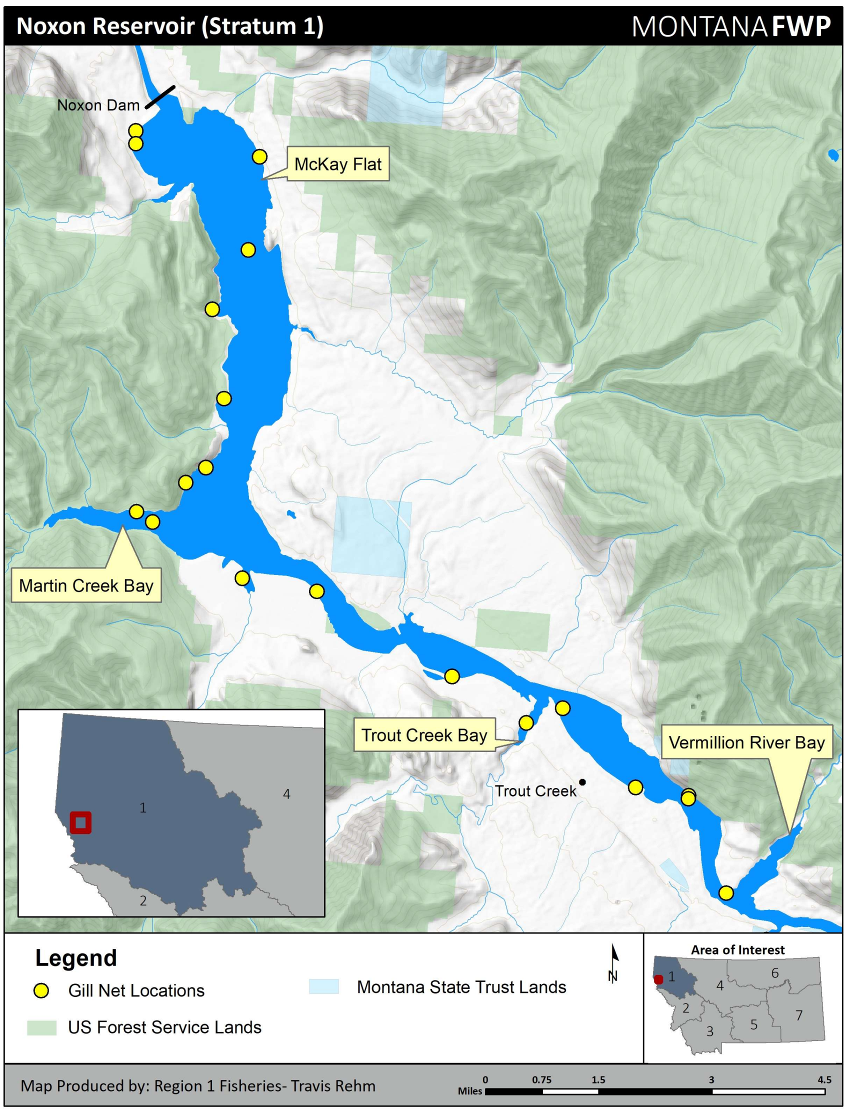

Figure 1. Gill net locations in Noxon Reservoir, Montana (stratum 1).

Methods

Fall Gillnetting

Standardized annual fall gillnetting in Noxon and Cabinet Gorge reservoirs provides the most comprehensive index of relative abundance for fish species and fish community composition in both reservoirs. Standard gillnet surveys are conducted annually in Noxon and Cabinet Gorge reservoirs in early October. The surveys have consisted of 45 total overnight gillnet sets, 30 in Noxon Reservoir and 15 in Cabinet Gorge Reservoir (Figures 1–3). In Noxon Reservoir, 19 sites are in the lower portion of the reservoir below Beaver Creek Bay (stratum 1), while the remaining 11 sites are in the upper riverine portion (stratum

2). Standardized (i.e., identical) sites have been sampled annually since 2000. Coldwater sites such as tributary mouths, have been intentionally avoided to reduce Bull Trout bycatch and mortality.

Nylon multifilament experimental sinking gillnets have been used during all gillnetting efforts. The nets are 38 m long and 1.8 m deep with five separate 7.6 m panels consisting of 1.9 cm, 2.5 cm, 3.2 cm, 3.8 cm, and 5.1 cm square mesh. The length and mesh sizes of these nets have been consistent throughout the duration of this monitoring and are the same specifications of standard experimental gillnets used throughout the state by FWP.

Gillnets are set in the afternoon, fished overnight, and retrieved the following morning. Most nets (87%) are set perpendicular to the shoreline with the net stretched just far enough to achieve full vertical extension (1.8 m). The small mesh (1.9 cm) end of each gillnet is set closest to shore for all near-shore net sets. The other six nets (13%) are open-water sets in which the net is set parallel to shore and both the front and back of the net anchored in deep water. Depths of sets has ranged from 1.5 to almost 35 m but has been consistent among locations and between years. Although minor variation has occurred between net-set durations through the years, nets have been set and pulled in an identical order each year, resulting in little annual variation in soak times among nets set at a given site. All gillnet data is summarized as total and species-specific catch per unit effort (i.e., number

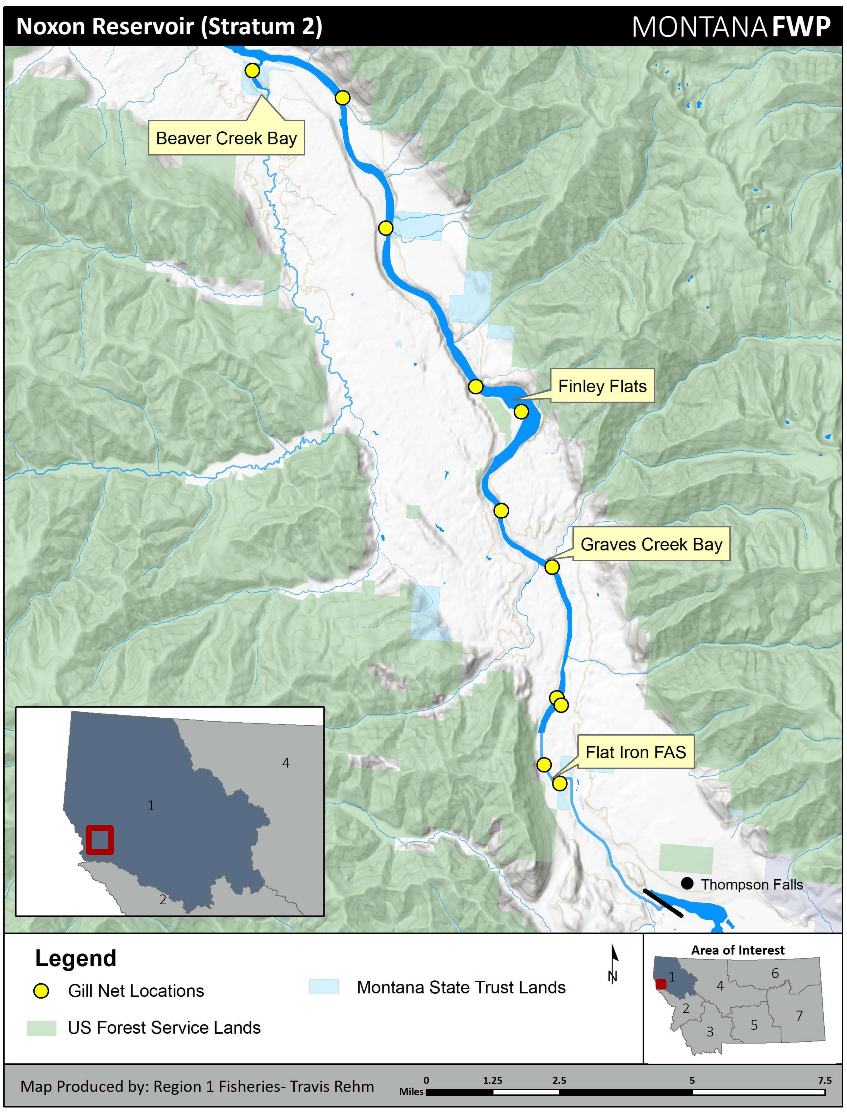

Figure 2. Gill net locations in Noxon Reservoir, Montana (stratum 2).

of fish per gillnet night). Species composition is based on total number of each species captured, as percent of total catch, and as a percent of total weight.

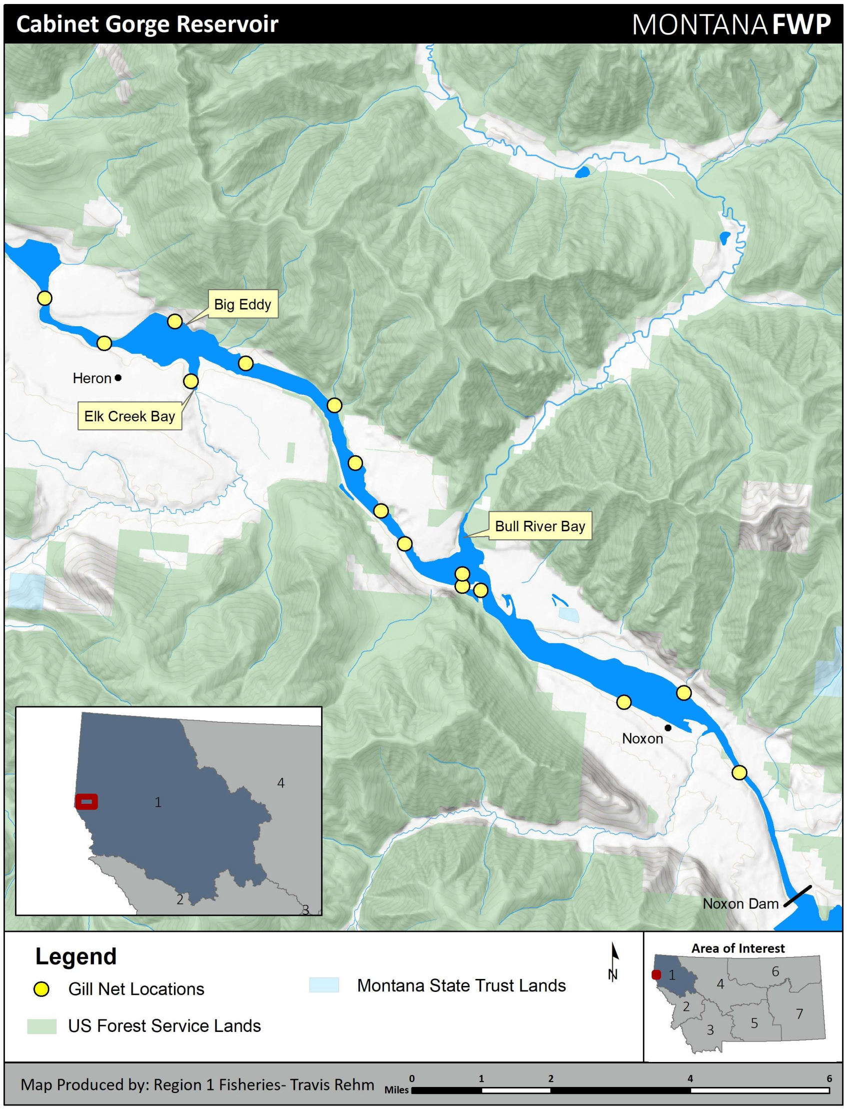

Figure 3. Gillnet locations in Cabinet Gorge Reservoir, Montana.

Retrieved gillnets are shuttled to a shoreline location where fish are removed from the nets and the appropriate data collected and recorded. Since the 1990s, processing of fish and nets has been a cooperative effort among FWP, Avista, and students from University of Idaho Fisheries Management class. Data collected from each fish include its species, total length (TL; mm), and weight (g), identified separately by individual net. Additionally, all Walleye previously marked via dorsal spine removal are scanned for passive integrated transponder (PIT) tags.

Since 2013, all Walleye captured have been identified to sex and their otoliths collected for age determination. Otoliths of walleye were removed using the “up through the gills method” (Stevenson and Campana 1992), embedded in epoxy, and transversely sectioned using a low-speed isometric saw. Sections are then aged independently by two readers and any fish with age discrepancies are aged by a third reader (Quist and Isermann 2017). Using ages derived from otolith analysis, separate growth curves were fitted for male and female Walleye populations (von Bertalanffy 1938). Using catch curve data derived from otolith analysis from 2021-2025, total annual survival rate (S) and instantaneous total mortality rate (Z) were calculated using Chapman-Robson method (Chapman and Robson 1960; Robson and Chapman 1961; Ogle

2016). Longitudinal data from the large 2019 year-class was used due to sporadic recruitment of Walleye in Noxon Reservoir.

Conditions of fishes were calculated as an index, using relative weight (Wr; Wege and Anderson 1978; Pope and Kruse 2007). Size structure was described using proportional size distribution (PSD), where species-specific lengths refer to stock, quality, preferred, memorable, and trophy length fish (Gabelhouse 1984; Neumann et al. 2012). Condition was compared between length groups using one-way ANOVA and Tukey's Honestly Significant Difference (Ogle 2016). Long-term trends in catch per unit effort (CPUE) and condition were investigated using linear regression.

Spring Walleye Monitoring
Additional sampling of Walleye occurs on upper Noxon Reservoir each spring. With varying degrees of effort, Walleye have been monitored using nighttime electrofishing during late March through early May since 2012. The objectives of spring sampling are to monitor year-class strength, the spawning population abundance, and collect fish for age and growth estimates. The primary sampling location was above the Montana state highway 200 bridge near Thompson Falls, based on information obtained from a previous telemetry study (Horn et al. 2009; Figure 4). Additional sampling began near the River's Bend Golf Course across from Flat Iron Fishing Access Site in 2016.

Walleye were collected by jet-boat mounted boom electrofishing during nighttime hours from April 14 to May 5 of 2025. Walleye captured were measured (TL; mm) and weighed (g). A subsample of up to five Walleye of each sex in 25 mm length bins for Walleye up to 500 mm and up to five Walleye of each sex in 50 mm length bins for Walleye greater than 500 mm in length were sacrificed for age analysis. Sex and maturity of Walleye was assessed by visual inspection of gonads of sacrificed fish or manipulating the abdomen following methodology outlined by Duffy et al. (2000). All remaining Walleye were scanned, and if not found to be previously tagged, were implanted with a 12 mm long half-duplex passive integrated transponder (PIT tag), the dorsal spine removed for additional identification, and the fish were released. Otoliths of sacrificed Walleye were removed using the "up through the gills method" (Stevenson and Campana 1992), embedded in epoxy, and transversely sectioned using a low-speed isometric saw. Sections were then aged independently by two readers and any fish with age discrepancies were aged by a third reader (Quist and Isermann 2017).

Ages derived from otolith analysis were used to construct age-length keys using Fisheries Stock Assessment (FSA) v0.8.12; R v3.3.2 (Ogle 2010; R Core Team 2020). Age-length keys were constructed for both female and male Walleye using 10 mm length bins and ages were assigned to all unaged fish based on the corresponding age-length keys (Isermann and Knight 2005; Ogle 2016). Using ages derived from otolith analysis we also fitted separate growth curves for male and female Walleye spawning populations (von Bertalanffy 1938).

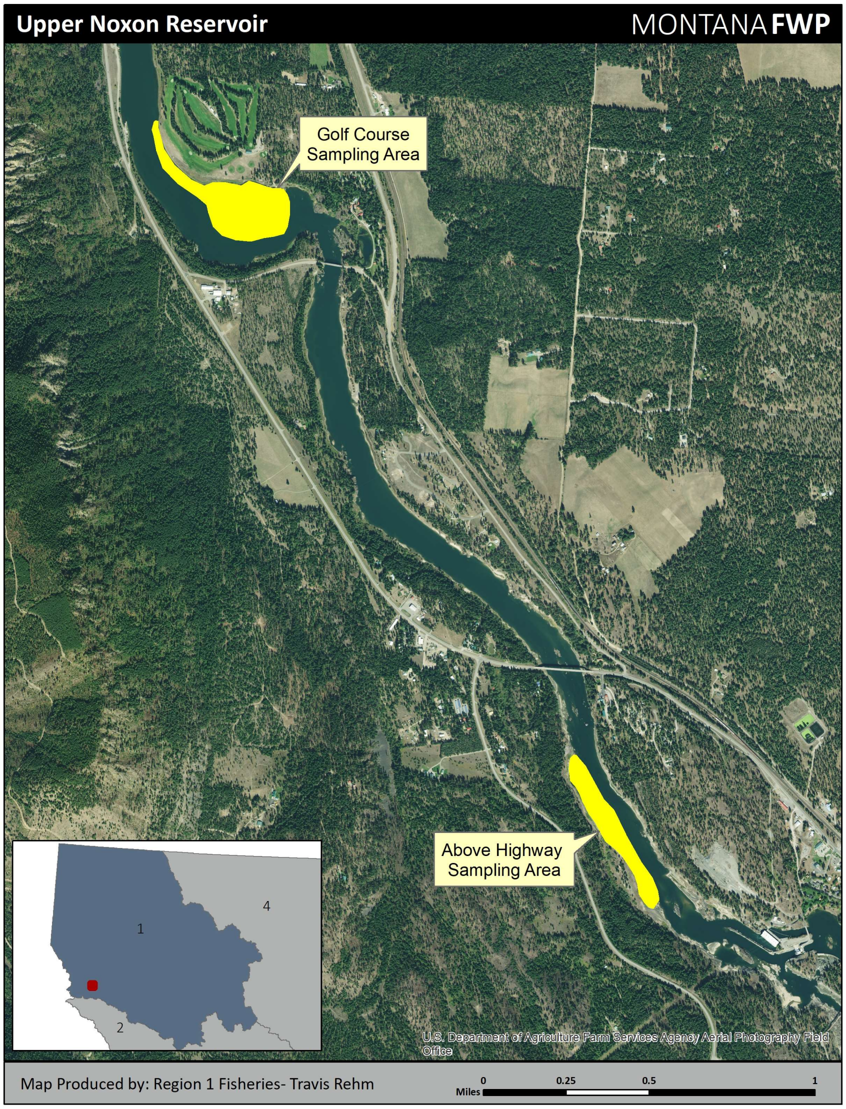

Figure 4. Map of two spring Walleye sampling locations in upper Noxon Reservoir, Montana.

Bass Tournament Monitoring

The status of adult Largemouth and Smallmouth bass populations has been assessed annually since 1997 by monitoring bass tournaments on Noxon Reservoir. In most years, between five and seven two-day bass tournaments occurred on Noxon Reservoir. Recently, two to three bass tournaments have been monitored per year. Lower Clark Fork Reservoir bass tournaments require that bass have a minimum length of 305 mm (12 inches) to be weighed in. Therefore, only bass this size or larger were monitored at tournaments. Indices collected at tournaments since the 1990s include the percentage of quality fish weighed in (fish greater than 380 mm or 15 inches; Gabelhouse 1984), mean length of fish weighed in (>305 mm), and proportion of species brought to weigh-in (Smallmouth versus Largemouth Bass). All tournaments held on Lower Clark Fork Reservoirs allow high-grading or culling (i.e., the replacement of smaller fish captured with larger fish after a 5-fish limit was attained) so catch rates cannot be accurately estimated.

Results and Discussion

Fall Gillnetting

Noxon Reservoir
Gill netting was conducted in Noxon Reservoir October 12–14, 2025. A total of 1,211 fish representing 11 species were captured (Table 1). Catch per unit effort trends are shown as a function of mean fish/net in Appendix B for commonly captured fish species 2000–2025. The catch rate of 40.3 fish/net was up from recent years and over the historic average (2000–2024 mean catch 34.2 fish/net). Yellow Perch were the most abundant species captured representing 47.6% of the total catch (n = 576). The mean number of Yellow Perch captured in 2025 was 19.2 fish/net which is substantially greater than the mean 2000-2024 catch of 13.4 fish/net (Figure 5). Pumpkinseed *Lepomis gibbosus* were the second most abundant fish species caught and comprised 28.9% of the total catch (n = 350). The mean catch rate for Pumpkinseed was 11.7 fish/net in 2025, which was over double the 2000-2024 mean of 4.9 fish/net and was the highest abundance observed since standardized netting began in 2000 (Figure 5). Pumpkinseed abundance has increased over time (linear regression, $r^2 = 0.42$, $p = 0.001$) in Noxon Reservoir. The mean number of Lake Whitefish *Coregonus clupeaformis* captured in 2025 was 1.3 fish/net which is substantially greater than the mean 2000-2024 catch of 0.8 fish/net. Lake Whitefish abundance has also increased over the sampling period (linear regression, $r^2 = 0.42$, $p = 0.001$), representing 3.2% of the total catch (n= 39) in 2025.

Yellow Perch, Pumpkinseed, and Lake Whitefish are likely an important prey base for the top four predators (i.e., Largemouth Bass, Smallmouth Bass, Northern Pike, and Walleye) in Noxon Reservoir. Close monitoring of these prey populations and their relative abundance over time is important to inform management decisions in this predator-heavy system (Scarnecchia et al. 2014; Scarnecchia and Lim 2016).

Table 1. Mean catch rates (fish/net night), total number caught, percentage of total species composition by number and biomass (percent of total weight), mean weight, weight range, mean length, and length range for species captured in Noxon Reservoir during gill netting surveys conducted in 2025. Species abbreviations are specified in Appendix A.

Species	Mean fish/net (STDEV)	Total # caught	Species Comp. (%)	Percent of Total Weight (%)	Mean Weight (g)	Weight Range (g)	Mean Length (mm)	Length Range (mm)
YP	19.2 (16.7)	576	47.6	20.8	124.6	35–445	211.0	130–310
PUMP	11.7 (12.3)	350	28.9	7.3	70.7	15–195	141.6	90–206
YLBH	2.4 (3.8)	71	5.9	6.0	290.3	35–765	262.6	130–350
NP	1.9 (2.1)	57	4.7	30.4	1824.9	85–6200	606.3	243–944
SMB	1.7 (2.9)	50	4.1	5.7	382.2	40–1540	290.8	140–464
LWF	1.3 (2.2)	39	3.2	13.4	1190.9	405–1670	487.0	330–550
WE	1.0 (1.7)	31	2.6	8.0	870.6	50–1945	437.0	185–585
NPMN	0.9 (1.3)	26	2.1	6.8	922.2	60–1930	420.8	190–560
LMB	0.3 (0.7)	9	0.7	0.5	193.9	35–770	216.1	145–355
LL	<0.1 (0.2)	1	0.1	0.5	1850.0	1850–1850	565.0	565–565
LSSU	<0.1 (0.2)	1	0.1	0.5	1590.0	1590–1590	530.0	530–530

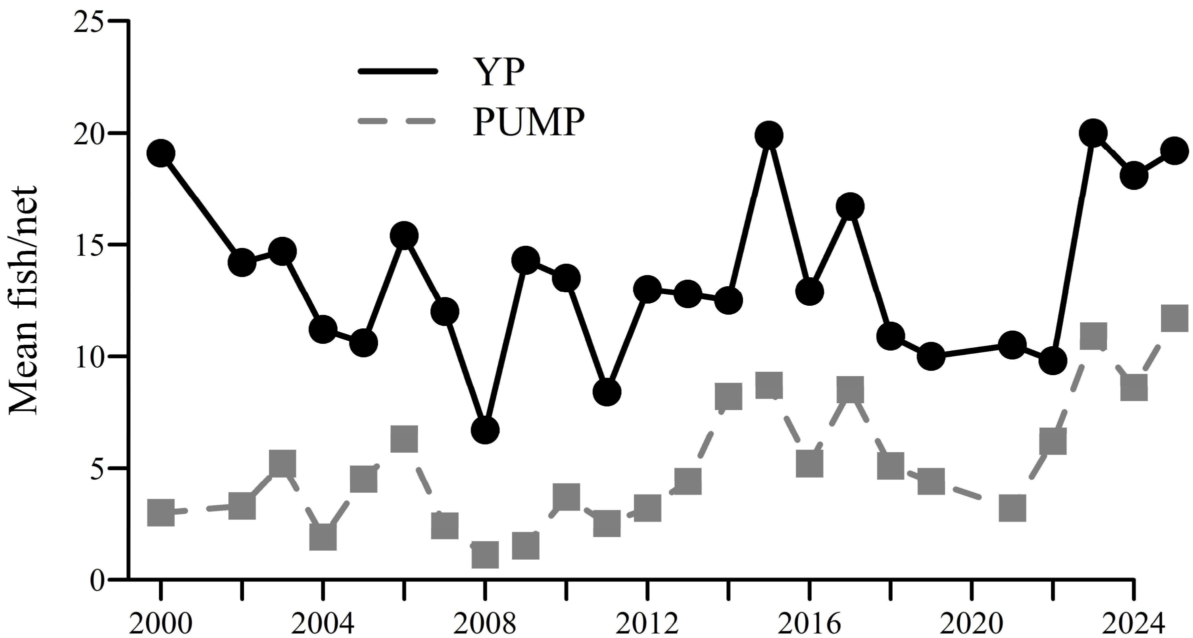

Figure 5. Mean number of fish per net for Yellow Perch and Pumpkinseed 2000–2025 in Noxon Reservoir during annual fall gill netting.

Gillnets are an effective method to monitor relative abundance of Walleye and Northern Pike, two of the four top predators in Noxon Reservoir. In general, bass are not susceptible to being captured in gillnets when compared to most other species in the reservoirs. Smallmouth Bass are captured at a higher rate than Largemouth Bass, but both species are underrepresented to an unknown degree in relation to their abundance in the fish community.

Walleye were the third most abundant top predator species captured representing 2.6% of the total catch (n = 31), which is substantially down from 2021 when the highest number since standardized netting began in 2000 was recorded (n = 96). However, Walleye abundance has increased over time (linear regression, $r^2 = 0.58$, $p < 0.001$), and the mean catch rate was 1.0 fish/net in 2025, which was near the mean 2000–2024 catch rate of 1.1 fish/net (Figure 10). All Walleye captured during fall gill netting efforts had sex determined, except for one immature age 1 fish (Table 2). The majority of Walleye captured were comprised of year-classes 2021 (42%) and 2023 (35%; Table 2; Figure 6). The once dominant 2015 year-class had shown signs of decline in previous years and was not sampled in 2025 (5.7% in 2024 5.8% in 2023, 10.6% in 2022; 19.8% in 2021). This was the fourth year in a row a strong 2021 year-class was detected during gill netting efforts. Male Walleye from the 2021 year-class now dominate the spawning population observed during spring electrofishing. Based on past sampling, we expect females from the 2021 year-class to fully recruit to the spawning populations in 2026.

Table 2. Mean length-at-age of fall caught Walleye from Noxon Reservoir in 2025.

	Males			Females			Total		
Age	n	Mean Length (mm)	SD	n	Mean Length (mm)	SD	n	Mean Length (mm)	SD
1				-	-	-	1	185	-
2	6	340	26.3	5	371	16.9	11	354	26.8
3	-	-	-	2	438	46	2	438	46
4	3	416	35.7	10	515	47.9	13	492	61.7
5	-	-	-	-	-	-	-	-	-
6	2	553	19.1	1	530	-	3	545	18.7
7	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-
11	1	565	-	-	-	-	1	565	-

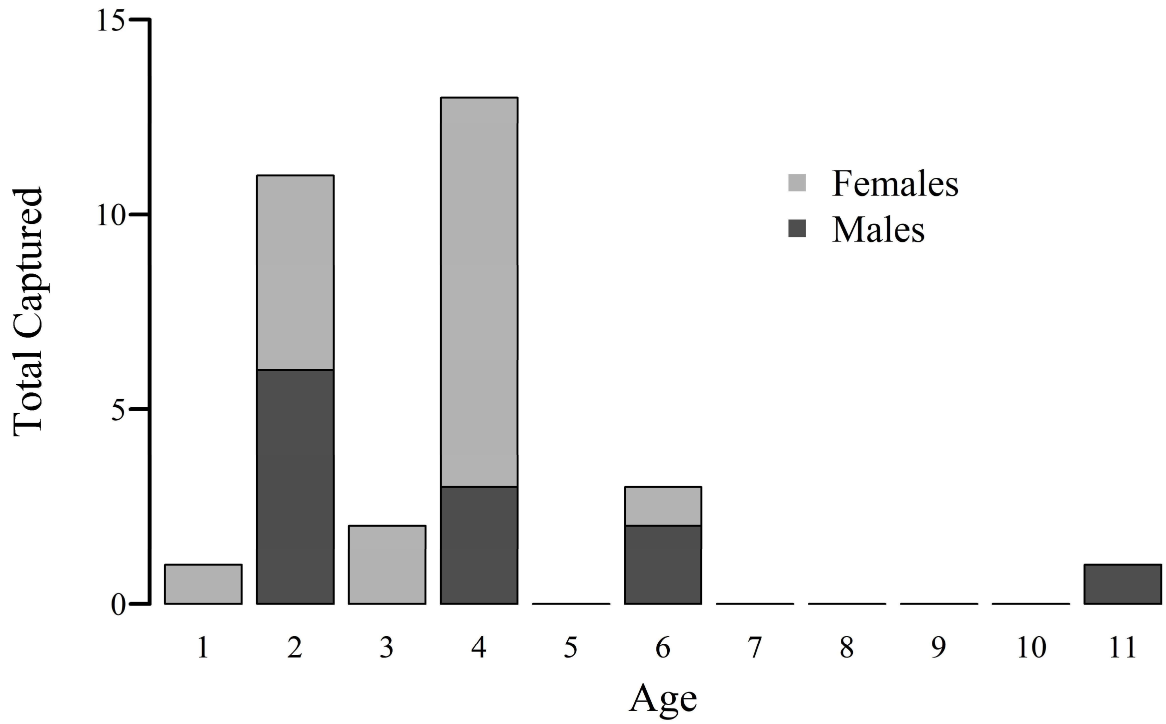

Figure 6. Age frequency distribution of fall caught Walleye from Noxon Reservoir in 2025.

Mean Wr for Walleye was 87.9 in 2025, which is less than the 2002–2024 mean (Wr = 95.5; Figure 7). A significant decline in mean Wr of Walleye has occurred since 2000 (linear regression, $r^2 = 0.65$, $p < 0.001$; Figure 9). When compared to Walleye caught using standardized gill nets in large standing water in North America, the smaller Walleye length groups in Noxon Reservoir have a greater Wr; but the larger length groups have a smaller Wr (Figure 7). Condition of Walleye has appeared to stabilize as population growth has slowed and even declined from highs in 2021. However, we expect Walleye condition to decline if predator populations continue to grow and competition for prey increases.

Proportional size distribution for Walleye captured during fall of 2025 (67) points to a smaller size structure within Noxon compared to past that likely represents moderate recruitment and moderate levels of mortality for adults (Anderson and Weithman 1978). Walleye condition among length groups showed no statistically significant difference (Figure 7; stock = 165–213 mm, quality = 297–338 mm, preferred = 371–455 mm, and memorable = 488–528 mm).

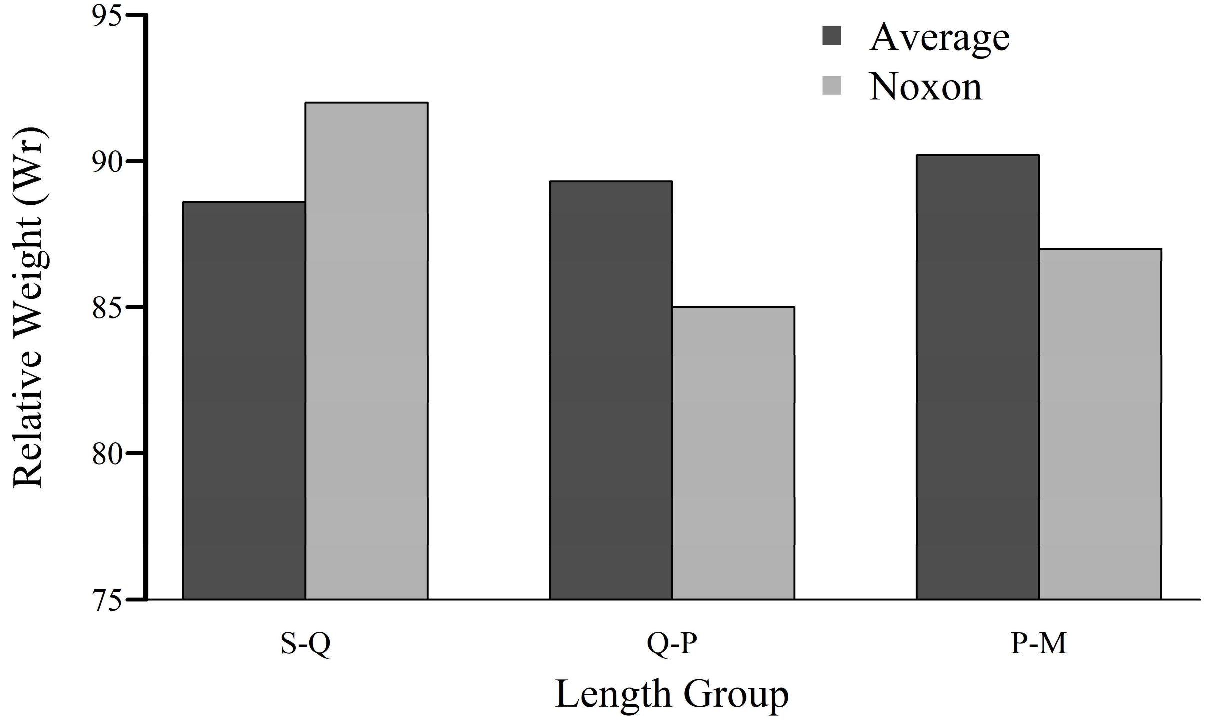

Figure 7. Average condition of Walleye caught using standardized gill nets in large standing waters in North America (Bonar et al. 2009) and average condition of fall caught Walleye from Noxon Rapids Reservoir in 2024. S = stock, Q = quality, P = preferred, M = memorable, and T = Trophy (Gabelhouse 1984).

Growth curves and parameters (Appendix D) were calculated for both males and females using the 31 Walleye used for age analysis (Table 2). Of those fish, 12 were male, 18 were female, and one was unknown. Supporting reported mean length-at-age data, female Walleye growth rates were greater than males. Total annual survival rate for Walleye was calculated at 45.2% with 95% confidence intervals (38.7–51.6). Instantaneous total mortality rate was calculated at 0.79 with 95% confidence intervals (0.65–0.92).No Walleye were recaptured that had previously been tagged during spring Walleye electrofishing.

Northern Pike comprised 4.7% (n=57) of the total catch and were the most abundant predator species sampled within Noxon Reservoir. Northern Pike also represented the highest amount of biomass at 30.4% of total weight of captured fish. Mean catch rate for Northern Pike in 2025 was 1.9 fish/net (Table 1), which is higher than the 2000–2024 mean catch rate (1.4 fish/net). Northern Pike abundance has increased significantly since standardized gillnetting began (linear regression, $r^2 = 0.53$, $p < 0.001$; Figure 10). Mean Wr for Northern Pike in 2024 was 94.8 which continues a significant decline since 2000 (linear regression, $r^2 = 0.78$, $p < 0.001$). Mean Wr in Northern Pike has declined from the 2000–2024 mean (Wr = 107.7; Figure 9) and is now below the 50th percentile for large standing waters of North America (Figure 8; Bonar et al. 2009).

Trends of increasing abundance and decreasing condition continue to be observed in Northern Pike in Noxon Reservoir. Proportional size distribution for Northern Pike captured during fall of 2025 (81) still points to a large size structure within Noxon Reservoir that represents high mortality of young fish and moderate to low levels of mortality for adults (Anderson and Weithman 1978). Northern Pike condition among length groups showed no statistically significant difference (sub-stock = <350 mm, stock = 350–529 mm, quality = 530–709 mm, preferred = 710–859 mm, and memorable = 860–1119 mm).

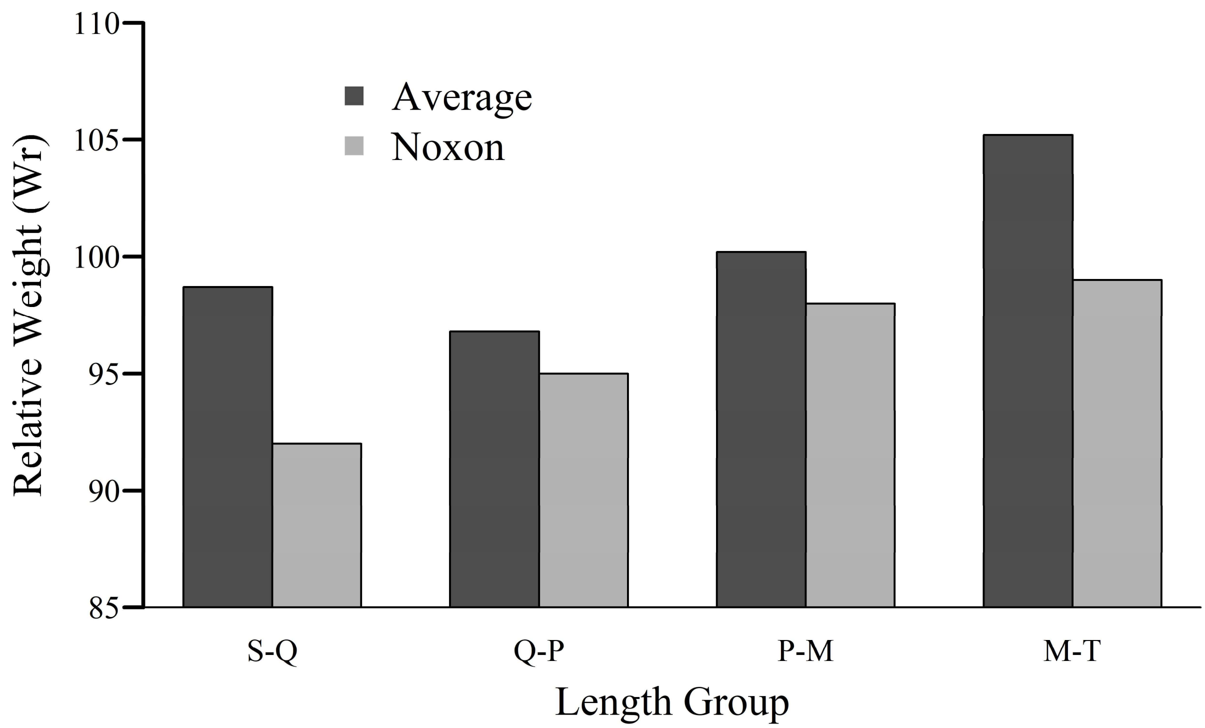

Figure 8. Average condition of Northern Pike caught using standardized gill nets in large standing waters in North America (Bonar et al. 2009) and average condition of fall caught Northern Pike from Noxon Reservoir in 2024. S = stock, Q = quality, P = preferred, M = memorable, and T = Trophy (Gabelhouse 1984).

Smallmouth Bass were the second most abundant top predator species captured within Noxon Reservoir, representing 4.1% of the total catch (n = 50; Table 1). Mean catch rate for Smallmouth Bass in 2025 was 1.7 fish/net (Table 1), which was substantially higher than the 2000–2024 mean catch rate (1.1 fish/net). Since an increase in Smallmouth Bass abundance was observed in 2021, abundance has remained high for the species. Smallmouth Bass abundance has increased significantly since standardized gillnetting began (linear regression, $r^2 = 0.46$, $p < 0.001$; Figure 10). Condition of Smallmouth Bass captured within Noxon Reservoir was similar to historic mean values in 2024 (Wr = 91.7). Smallmouth Bass Wr has ranged from a low of 84.1 (n = 11) in 2008 to a high of 102.9 (n = 63) in 2013 (Figure 9). No decline has been detected over the sampled period (linear regression, $p = 0.61$).

As stated earlier, the downward trends in Walleye and Northern Pike Wr may be indicative of increasing competition for prey resources and habitat among top predators in this complex ecosystem (Figures 9 and 10). The authors hypothesize that the ability to exploit the abundant Signal Crayfish *Pacifastacus leniusculus* and Virile Crayfish *Faxonius virilis* populations within Noxon Reservoir has allowed Smallmouth Bass condition to remain stable as the population grows (Clady 1974; Frey et al. 2003: Olson and Young 2003). While it is very likely that recent increases in Smallmouth Bass catch are indicative of increases in the overall population, it is still less clear how representative gill net data is of the actual population, given the notable difficulty catching the species in gillnets. Future efforts should be made to evaluate the potential for taking "snapshots" of the Noxon food web using stable isotopes and diet analysis which may provide a better understand of interactions among predators, prey, and environmental conditions in the reservoir.

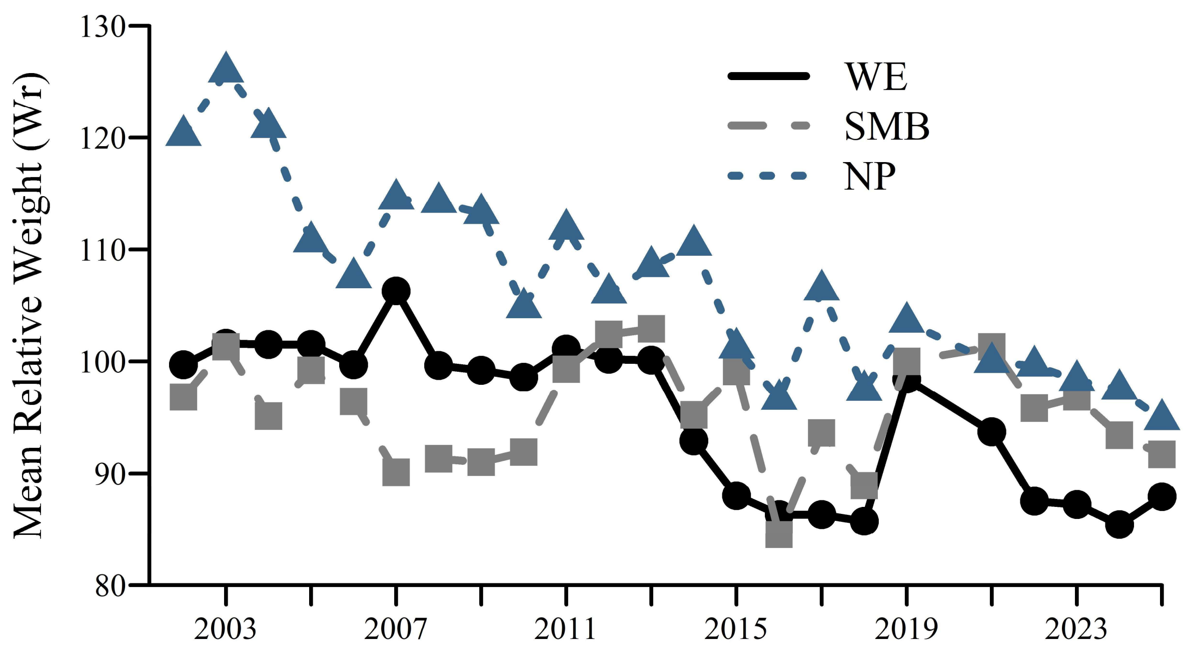

Figure 9. Mean relative weight for Walleye, Smallmouth Bass, and Northern Pike 2000–2025 in Noxon Reservoir during annual fall gill netting.

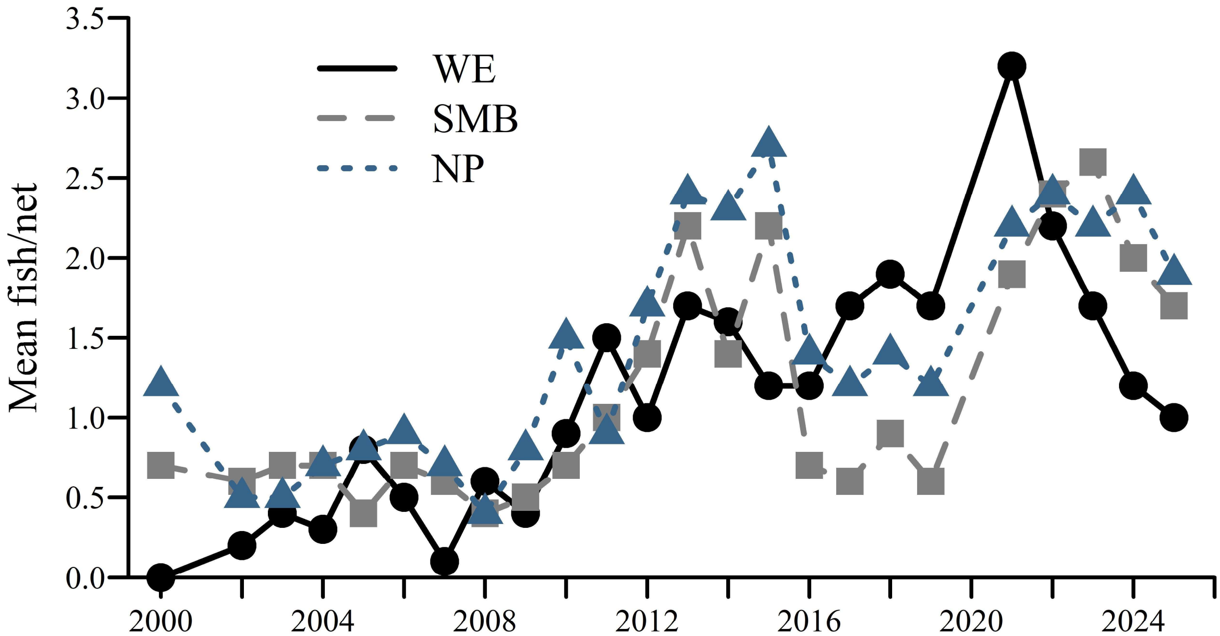

Figure 10. Mean number of fish per net for Walleye, Smallmouth Bass, and Northern Pike 2000–2025 in Noxon Reservoir during annual fall gill netting.

Native non-gamefish species such as Northern Pikeminnow, Peamouth, and Largescale Suckers continue to be captured at low levels. In 2025, 26 Northern Pikeminnow were captured comprising 2.1% of the sample (Table 1). A significant decline in the species has been documented since 2000 (linear regression, $r^2 = 0.93$, $p < 0.001$), where 6.1 fish/net was documented in 2000 (n = 178) and 2.7 fish/net in 2012 (n =78), compared to 0.9 fish/net in 2025 (n = 26; Appendix B; Figure 11).

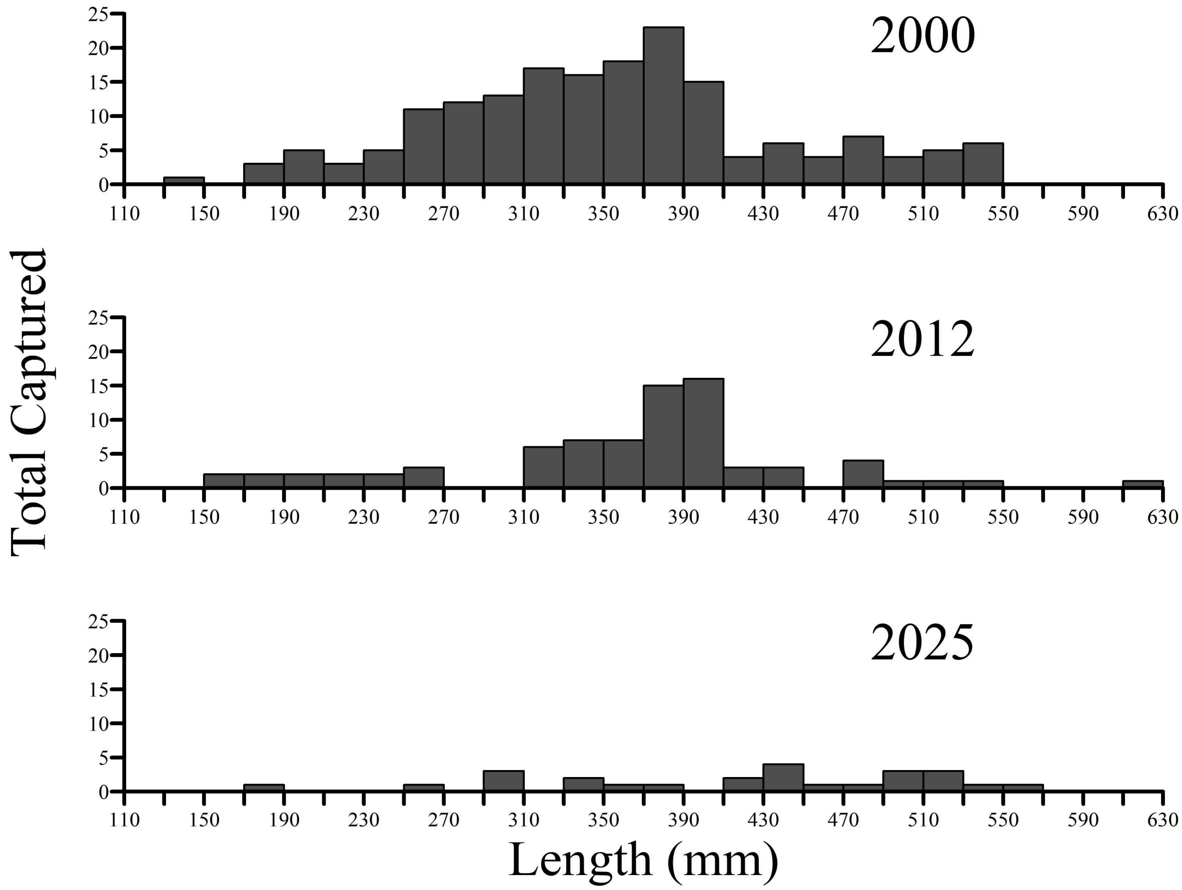

Figure 11. Length Frequency distribution of fall caught Northern Pikeminnow during annual gillnet monitoring in Noxon Reservoir in 2000 (n = 178), 2012 (n = 78), and 2025 (n = 26).

One Largescale Suckers was captured in 2025 (<0.1 fish/net), compared to 25 fish in 2012 (0.9 fish/net), and 56 fish in 2000 (1.9 fish/net; Table 1; Figure 12). Largescale Suckers have also shown a significant decline since standardized gillnetting began (linear regression, $r^2 = 0.82$, $p < 0.001$; Appendix B).

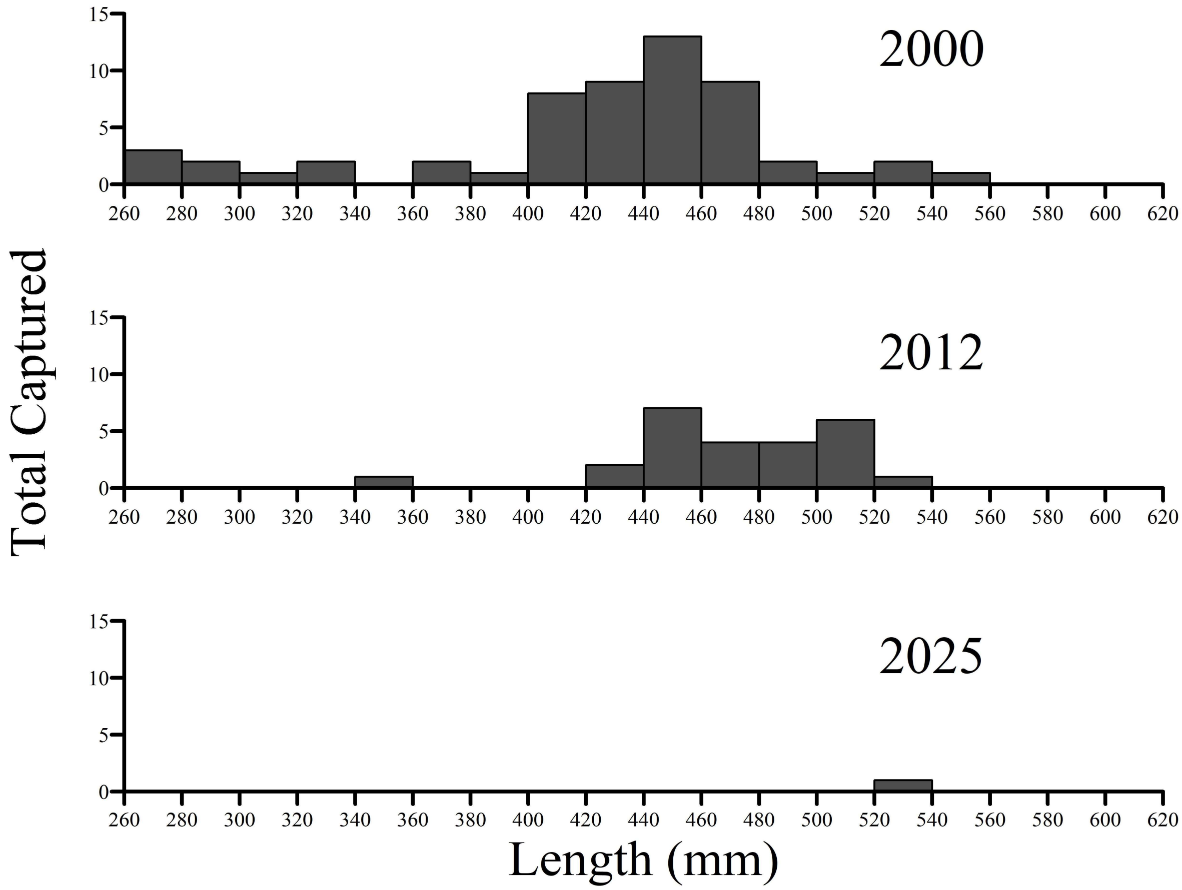

Figure 12. Length Frequency distributions of fall caught Largescale Suckers during annual gillnet monitoring in Noxon Reservoir in 2000 (n = 56), 2012 (n = 25), and 2025 (n = 1).

The most dramatic decline has been observed in Peamouth (linear regression, $r^2 = 0.89$, $p < 0.001$) where a mean catch of 11.6 fish/net (n = 338) was recorded in 2000 and 2.3 fish/net (n = 69) in 2012, compared to 0 fish/net in 2025 (Appendix B). This is the third year in which no Peamouth have been captured during fall gillnet surveys in Noxon Reservoir. This is likely signaling that Peamouth have now been functionally extirpated from both impoundments on the LCFR (Rehm et al. 2022). Size structure of Northern Pikeminnow and Largescale Sucker populations, which have likely served as an important prey resource for gamefish species, indicate little if any successful recruitment in recent years. Northern Pikeminnow, Largescale Sucker, and Peamouth captured in Noxon Reservoir during 2022 gill net surveys (Rehm et al. 2023) were aged in 2024 (Rehm et al. 2025). These ages provided additional evidence of recruitment failure for the native sucker and minnow species. The mean age of Northern Pikeminnow (n = 29) was 16.6 years (range = 2–38; Figure 13). The mean age of Largescale Sucker (n =14) was 16.4 years (range = 9–27; Figure 13). The mean age of Peamouth (n = 4) was 11.5 years (range = 10–15; Figure 13). These populations generally appear to be comprised of historically low numbers of large, old individuals and are in danger of local extirpation.

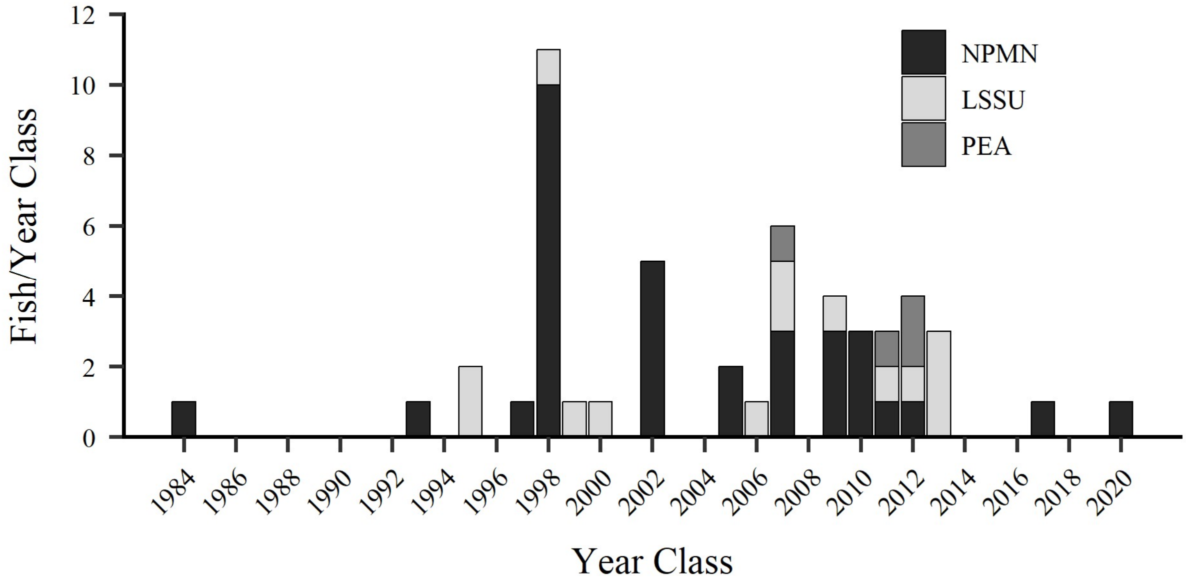

Figure 13. Year class distribution of Northern Pikeminnow, Largescale Sucker, and Peamouth collected in Noxon Reservoir during annual fall gill netting during 2022 (Rehm et al. 2023; Rehm et al. 2025).

Cabinet Gorge Reservoir

Gill netting was conducted in Cabinet Gorge Reservoir October 12–13, 2025 and produced a total of 213 fish representing 10 species (Table 3). Catch per unit effort trends are shown as a function of mean fish/net in Appendix C for commonly captured fish species 2000–2025. The catch rate of 14.3 fish/net is marginally down from the previous two years and above the historic average (2000–2024 mean catch 13.5 fish/net). Yellow Perch were the most abundant species captured in 2025, representing 49.8% of the total catch (n = 106). The mean number of Yellow Perch captured in 2025 was 7.1 fish/net, which is more than the 2000–2024 mean catch of 4.1 fish/net and was near the highest abundance observed since standardized netting began in 2000 (Figure 14; Table 3). Pumpkinseed were the sixth most abundant species captured in 2025, representing 4.7% of the total catch (n=10). The mean number of Pumpkinseed capture in 2025 was 0.7 fish/net, which is substantially down from the 2024 catch of 2.1 fish/net, but close to the 2000-2024 mean of 0.6 fish/net (Figure 14; Table 3). The mean number of Lake Whitefish captured in 2025 was 0.5 fish/net which is close to the mean 2000-2024 catch of 0.4 fish/net (Table 3).

Table 3. Catch rates (fish/net), total number caught, percentage of total species composition by number and biomass (percent of total weight), mean weight, weight range, mean length and length range for species captured in Cabinet Gorge Reservoir during gill netting surveys conducted in 2025. Species abbreviations are specified in Appendix A.

Species	Mean fish/net (STDEV)	Total # caught	Species Comp. (%)	Percent of Total Weight (%)	Mean Weight (g)	Weight Range (g)	Mean Length (mm)	Length Range (mm)
YP	7.1 (9.0)	106	49.8	7.4	85.5	30–295	181.6	133–275
NP	1.9 (2.7)	29	13.6	36.7	1393.6	1600–2170	573.6	300–721
SMB	1.4 (1.2)	21	9.9	10.9	610.5	35–1575	322.4	142–465
LSSU	0.9 (1.3)	14	6.6	17.1	1297.9	1010–1740	480.3	435–543
WE	0.9 (0.8)	13	6.1	10.7	876.9	335–2120	446.5	360–615
PUMP	0.7 (1.3)	10	4.7	0.5	63.8	20–120	136.0	100–170
NPMN	0.6 (0.8)	9	4.2	9.2	1088.3	505–1760	443.6	350–525
LWF	0.5 (1.3)	7	3.3	4.8	843.3	675–1025	452.7	430–485
LL	0.2 (0.4)	3	1.4	2.7	1410.0	1075–1745	537.5	505–570
LMB	0.1 (0.3)	1	0.5	0.1	75.0	75–75	165.0	165–165

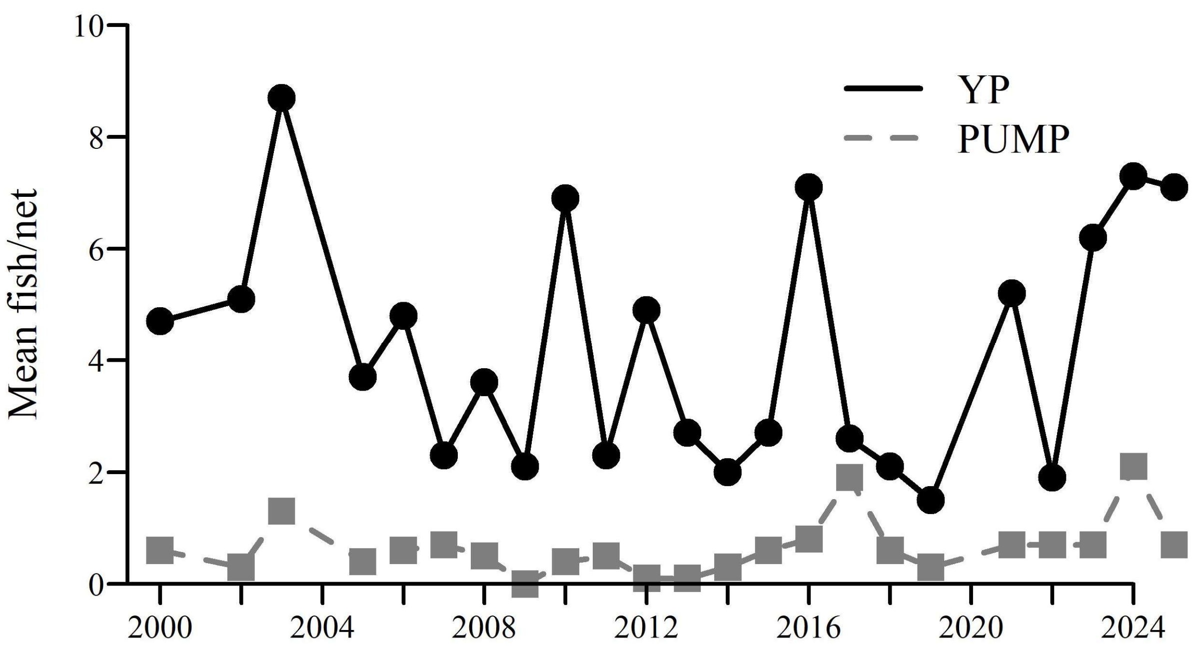

Figure 14. Mean number of fish per net for Yellow Perch and Pumpkinseed 2000–2025 in Cabinet Gorge Reservoir during annual fall gill netting.

Similar to Noxon Reservoir, gillnets are an effective method to monitor relative abundance of Walleye and Northern Pike. In general, bass are not susceptible to being captured in gillnets when compared to most other species in the reservoirs. Smallmouth Bass are captured at a higher rate than Largemouth Bass, but both species are underrepresented to an unknown degree in relation to their abundance in the fish community.

Northern Pike were the most abundant top predator species captured within Cabinet Gorge Reservoir, representing 13.6% of the total catch (n = 29; Table 3), which was the second highest number since standardized netting began in 2000 (Figure 17). Mean catch was 1.9 fish/net, which was over double the historic average (2000–2024 mean catch 0.8 fish/net; Appendix C). Northern Pike abundance has shown a significant increase since standardized gillnetting began (linear regression, $r^2 = 0.64$, $p < 0.001$). Mean Wr for Northern Pike was 99.6 in 2025, which continues a significant decline since 2000 (linear regression, $r^2 = 0.38$, $p = 0.002$; Figure 16). While Wr in Northern Pike has declined from the 2000–2024 mean (110.1), Northern Pike condition is still considered near or greater than the 50th percentile in large standing waters of North America (Figure 15; Bonar et al. 2009).

Proportional size distribution for Northern Pike captured during fall of 2025 (81) still points to a large size structure within Noxon Reservoir that represents high mortality of young fish and moderate to low mortality for adults (Anderson and Weithman 1978). The population also may be maintained and/or supplemented by immigration from upstream sources as opposed to spawning within Cabinet Gorge Reservoir (Bernall and Moran 2005). Length groups showed no statistically significant difference (sub-stock = <350 mm stock = 350–529 mm, quality = 530–709 mm, preferred = 710–859 mm, and memorable = 860–1,119 mm). Trends of increasing abundance and decreasing condition observed in Northern Pike were similar to those observed in Noxon Reservoir.

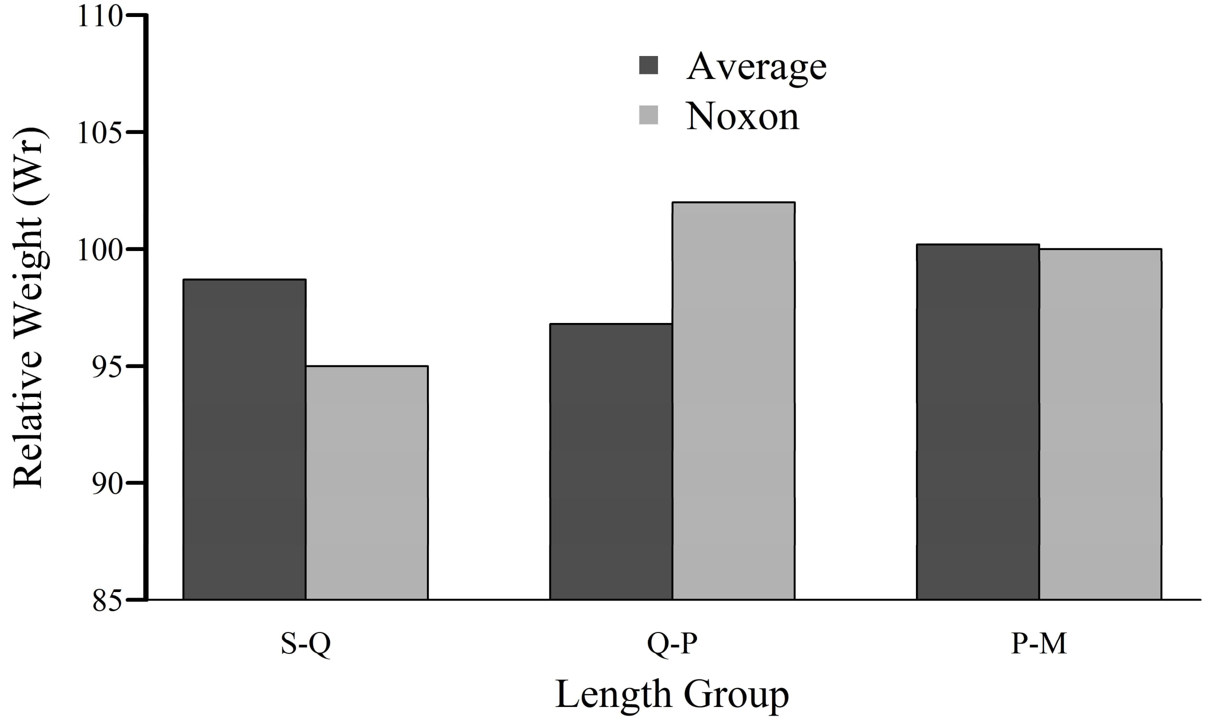

Figure 15 Average condition of Northern Pike caught using standardized gill nets in large standing waters in North America (Bonar et al. 2009) and average condition of fall caught Northern Pike from Cabinet Gorge Reservoir in 2024. S = stock, Q = quality, and P = preferred (Gabelhouse 1984).

Walleye were the third most abundant top predator species captured, within Cabinet Gorge Reservoir, representing 6.1% of the total catch (n = 13; Table 3). Mean catch was 0.9 fish/net, which is three times the mean 2000–2024 catch rate of 0.3 fish/net, and the highest abundance since standardized netting began in 2000 (Figure 17). Walleye abundance has shown a significant increase since standardized gillnetting began (linear regression, $r^2 = 0.59$, $p < 0.001$). Mean Wr for Walley was 85.5 in 2025, which continues a significant decline since 2000 (linear regression, $r^2 = 0.45$, $p < 0.001$; Figure 16).

All Walleye captured during fall gill netting efforts had sex determined (8 Males and 5 Females). Walleye captured in 2025 were comprised of the 2023 (15.4%), 2021 (61.5%), and 2019 (23.1%) year-classes. Similar to Noxon Reservoir, the 2021 year-class represent the majority of Walleye captured. With lower water residence time in Cabinet Gorge we suspect many of the Walleye captured within Cabinet Gorge are spawned and subsequently washing down from Noxon Reservoir. Beginning in 2023 submersible Biomark antenna systems were deployed in Cabinet Gorge Reservoir directly below Noxon Dam as part of the of the Fish Passage/Native Salmonid Restoration Plan (Appendix C), *Upstream Fish Passage Program*. A total of three Walleye tagged in Noxon Reservoir have been detected in Cabinet Gorge Reservoir directly below Noxon Dam since 2023. These detections provide evidence that entrainment in Cabinet Gorge Reservoir could be affecting some proportion of the adult Walleye population in Noxon Reservoir.

Smallmouth Bass were the second most abundant top predator species captured in Cabinet Gorge, representing 9.9% of the total catch (n = 21; Table 3). Mean catch rate for Smallmouth Bass in 2025 was 1.4 fish/net (Table 3), which is substantially higher than the 2000–2024 mean catch rate (0.7 fish/net). Smallmouth Bass abundance has shown a significant increase since standardized gillnetting began (linear regression, $r^2 = 0.40$, $p = 0.001$; Figure 17). Condition of Smallmouth Bass captured within Cabinet Gorge Reservoir continues to be high with a mean Wr of 99.7 in 2025. Smallmouth Bass Wr has ranged from a low of 88.6 (n = 3) in 2017 to a high of 112.4 (n = 8) in 2000 and no decline has been detected over the sampled period (linear regression, $p = 0.28$; Figure 16). The downward trend in Northern Pike Wr may be indicative of increasing competition for prey resources and habitat among top predators in this complex ecosystem. Similar to Noxon Reservoir, the authors hypothesize that the ability to exploit the abundant Signal Crayfish and Virile Crayfish populations within Cabinet Gorge Reservoir have allowed Smallmouth Bass condition to remain stable as predator populations grow (Clady 1974; Frey et al. 2003: Olson and Young 2003). While it is very likely that recent increases in Smallmouth Bass catch are indicative of increases in the overall population, it is still less clear how representative gill net data is of the actual population, given the notable difficulty catching the species in gillnets. Future efforts should be made to evaluate the potential for taking "snapshots" of the Cabinet Gorge Reservoir food web using stable isotopes and diet analysis which may help to provide a better understand of interactions among predators, prey, and environmental conditions in the reservoir.

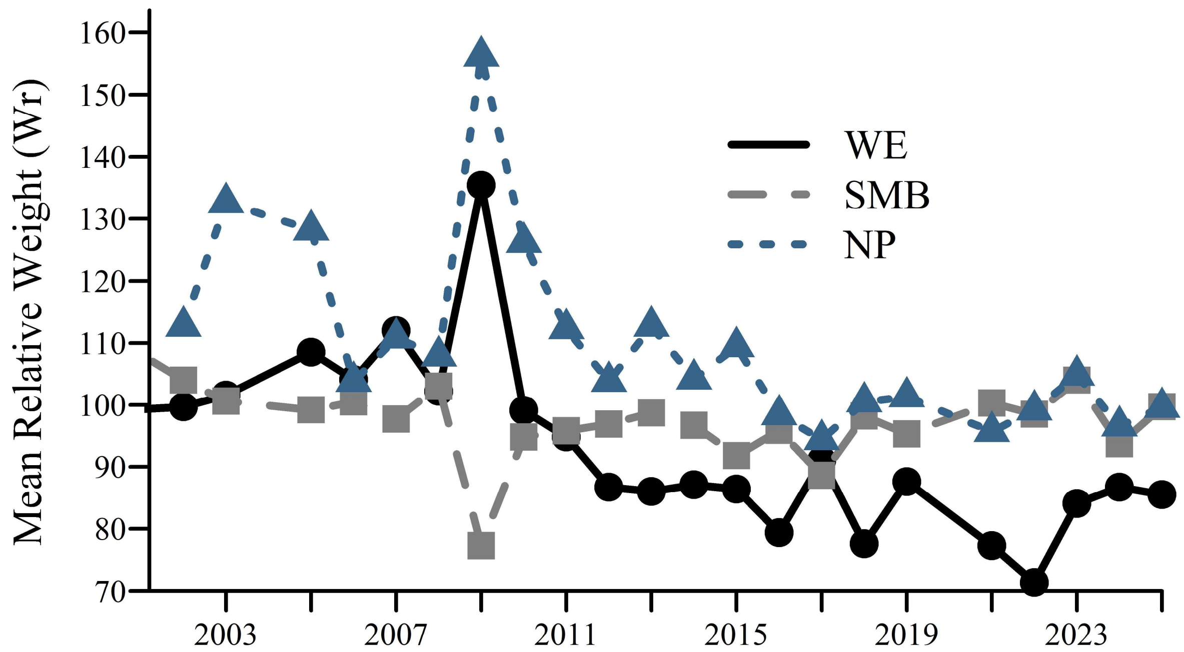

Figure 16. Mean relative weight for Walleye, Smallmouth Bass, and Northern Pike 2000–2025 in Cabinet Gorge Reservoir during annual fall gill netting.

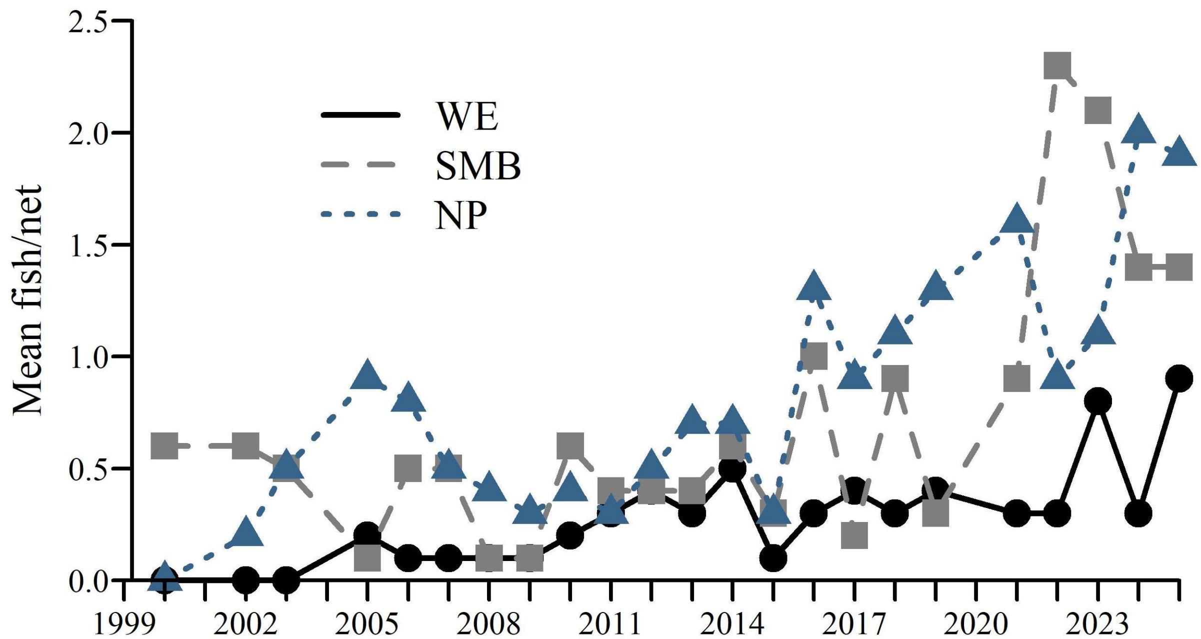

Figure 17. Mean number of fish per net for Walleye, Smallmouth Bass, and Northern Pike 2000–2025 in Cabinet Gorge Reservoir during annual fall gill netting.

Native non-gamefish species such as Northern Pikeminnow and Largescale Sucker continue to be captured at low levels in Cabinet Gorge. In 2025, 9 Northern Pikeminnow were captured comprising 4.2% of the total fish community (Table 3). A significant decline in the species has been documented since 2000 (linear regression, $r^2 = 0.78$, $p < 0.001$), when 7.1 fish/net in 2000 (n = 100) and 4.1 fish/net were documented in 2012 (n = 62), compared to 0.6 fish/net in 2025 (n = 9; Figure 18).

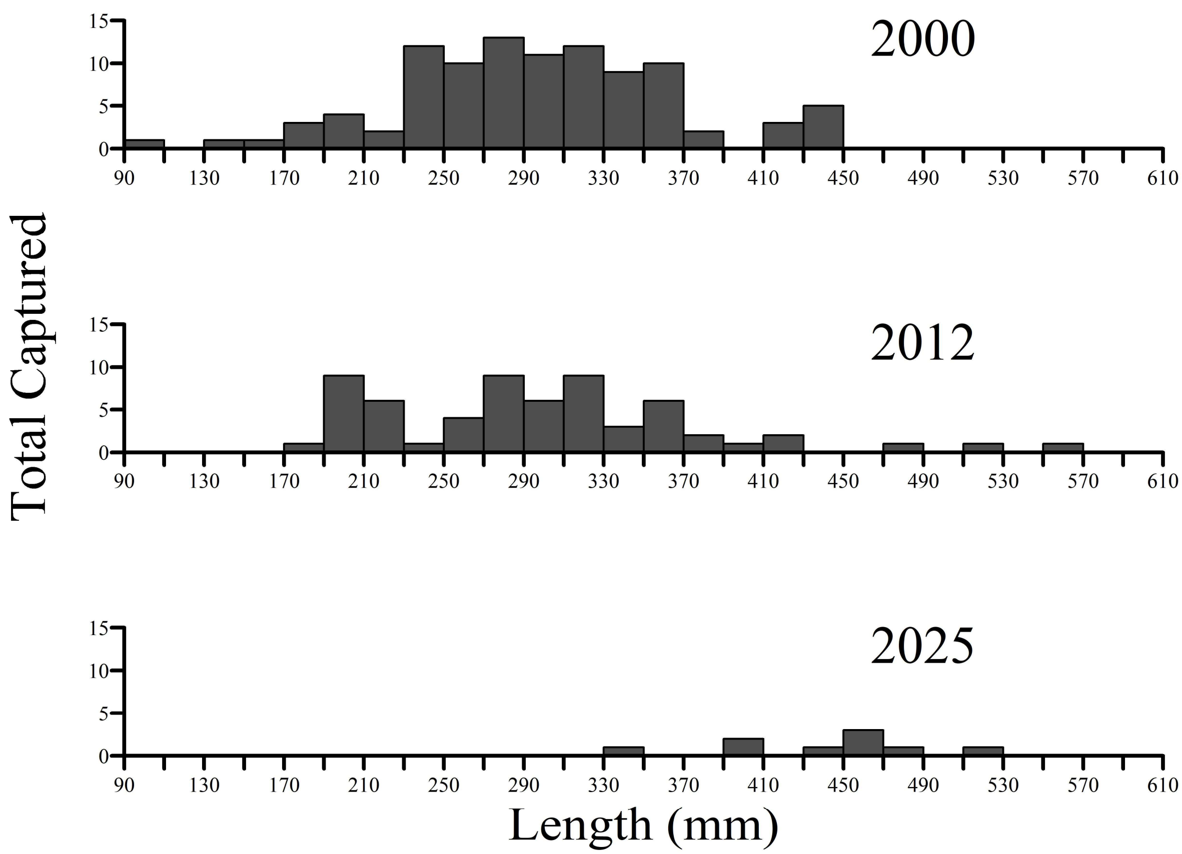

Figure 18. Length Frequency distribution of fall caught Northern Pikeminnow during annual gillnet monitoring in Cabinet Gorge Reservoir in 2000 (n = 100), 2012 (n = 62), and 2025 (n = 9).

Fourteen Largescale Suckers, comprising 6.6% of the total fish community, were captured in 2025 (1.3 fish/net), compared to 23 fish in 2012 (1.5 fish/net) and 31 fish in 2000 (2.1 fish/net; Table 3; Figure 19). Declines in the Cabinet Gorge Reservoir Largescale Sucker population have not been as prominent as other native non-gamefish species. However, length-frequency histograms still show a size structure that continues to increase, suggesting an aging population with limited recruitment (Figure 19).

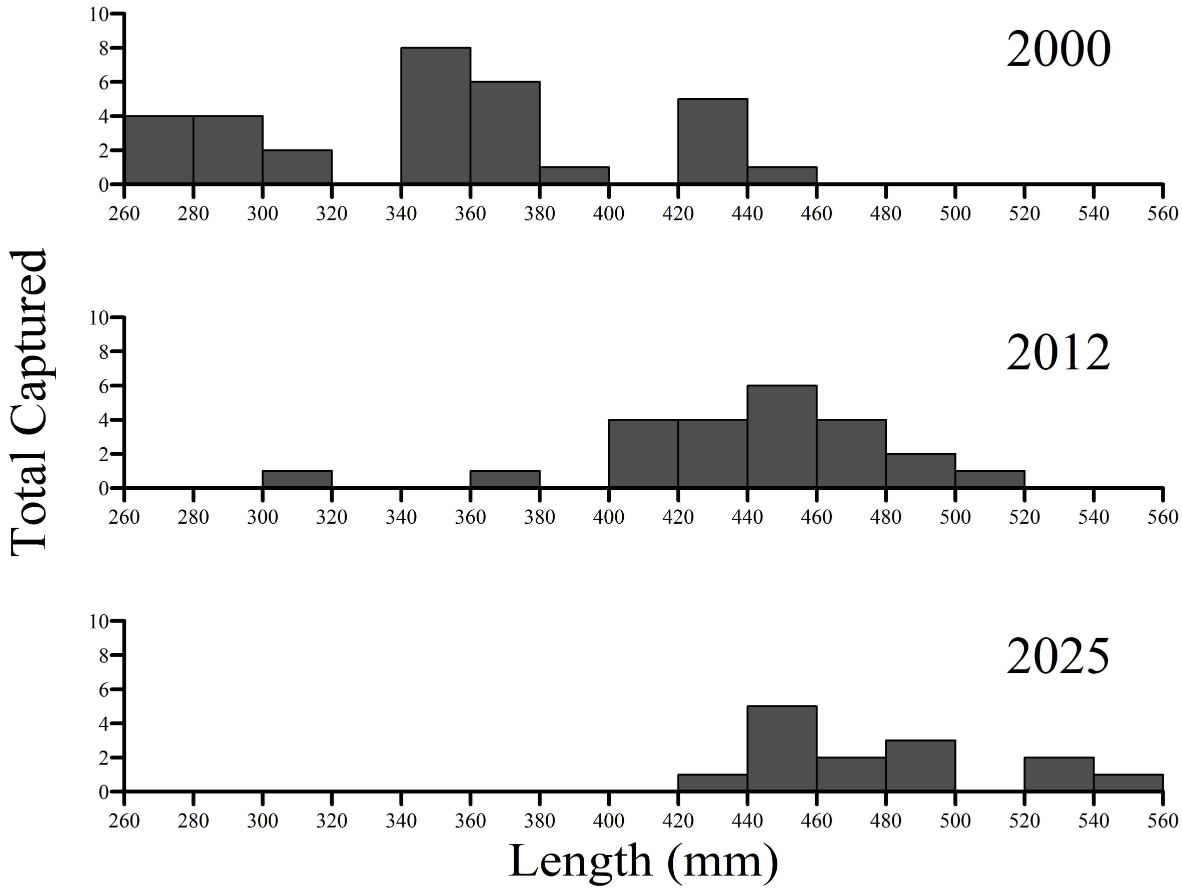

Figure 19. Length Frequency distribution of fall caught Largescale Sucker during annual gillnet monitoring in Cabinet Gorge Reservoir in 2000 (n = 31), 2012 (n = 23), and 2025 (n = 14).

For the eighth consecutive year, no Peamouth were captured in Cabinet Gorge Reservoir. It appears that Peamouth have been functionally extirpated from Cabinet Gorge Reservoir. Size structure of Northern Pikeminnow and Largescale Sucker populations, which have likely served as an important prey resource for gamefish species, indicate little if any successful recruitment in recent years. Northern Pikeminnow, Largescale Sucker, and Peamouth captured in Cabinet Gorge Reservoir during 2022 gill net surveys (Rehm et al. 2023) were aged in 2024. These ages provide additional evidence of recruitment failure for the native sucker and minnow species. The mean age of Northern Pikeminnow (n = 19) was 16.8 years (range = 8–26; Figure 20). The mean age of Largescale Sucker (n = 12) was 22.1 years (range = 13–27; Figure 20). These populations generally appear to be comprised of historically low numbers of large, old individuals and are in danger of local extirpation.

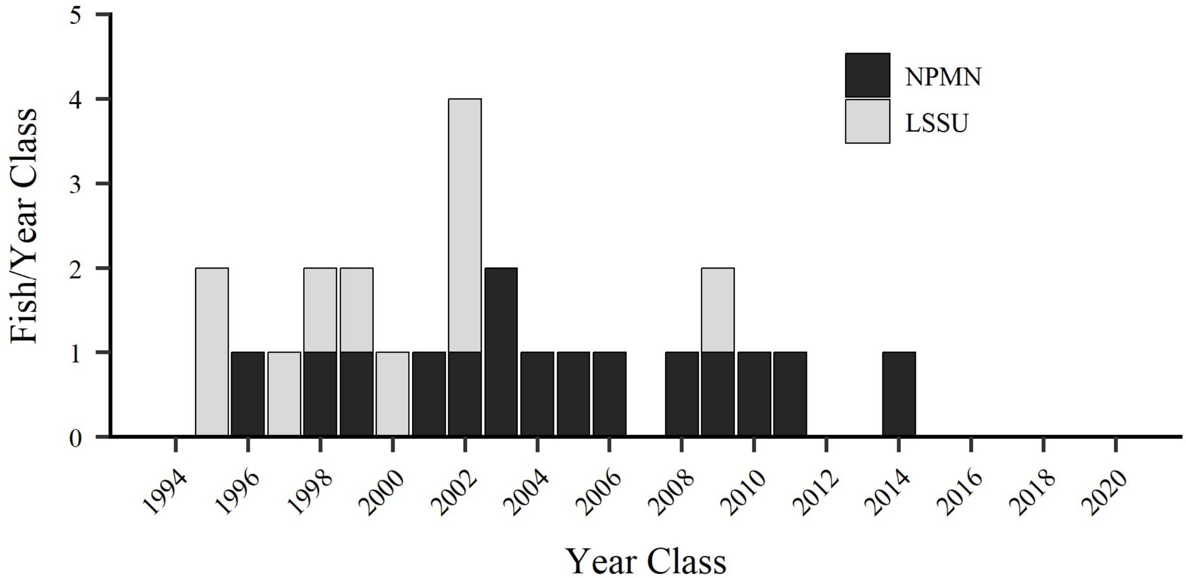

Figure 20. Year class distribution of Northern Pikeminnow (NPMN) and Largescale Sucker (LSSU) collected in Cabinet Gorge Reservoir during annual fall gill netting during 2022 (Rehm et al. 2023).

Over the past decade, the major fish community change in Noxon and Cabinet Gorge reservoirs has been the result of establishment and continued increase of Walleye and to a less degree continued increases in Northern Pike and Smallmouth Bass abundance (Kreiner and Tholl 2016; Kreiner et al. 2020; Rehm et al. 2022). Concurrently, abundance of native sucker and minnow species has declined. Recent declines in condition of Walleye and Northern Pike, also indicate that the increase in total piscivores has ultimately resulted in a substantial decrease of forage fishes. If trends in condition, growth, and prey abundance continue on this trajectory, both the native species and quality of angling for non-native predators could suffer. The continued monitoring of the fish community and population of Walleye in Noxon Reservoir and Cabinet Gorge Reservoir will be paramount to inform management decisions into the future.

Spring Walleye Sampling

Electrofishing in upper Noxon Reservoir for Walleye occurred on three separate occasions during the spring of 2025. Sampling effort and dates were affected by boat ramp accessibility due to low reservoir levels in spring and staff availability. Sampling time has been historically split between the area above the Highway 200 bridge and the area adjacent to the River's Bend Golf Course, but due to water levels and staff limitation, only the area above the Highway 200 bridge was sampled in 2025 (Figure 4). A total of 110 sexually mature fish were captured, of which 28 (25%) were females and 82 (75%) were males (Figure 21). Of the 110 fish captured, 70 (64%) were sacrificed for age analysis.

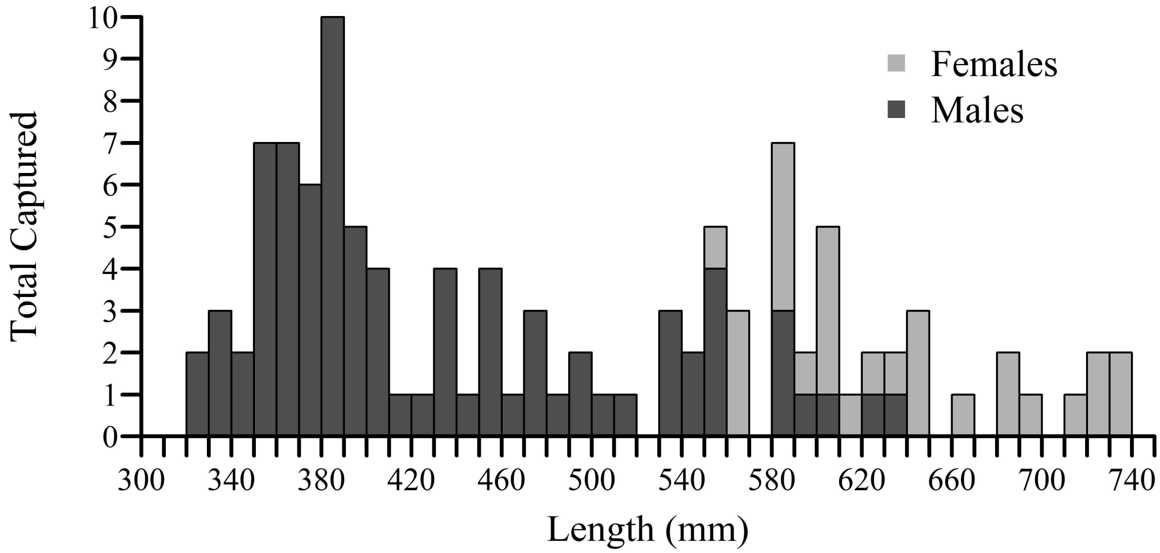

Figure 21. Length frequency distribution of spring caught walleye from Noxon Reservoir in 2025.

A strong 2019 year-class was first detected during 2021 fall gill netting efforts (Rehm et al. 2022). This year-class has continued to be observed in both fall gill netting efforts and spring Walleye sampling (Rehm et al. 2023; Rehm et al. 2025). As predicted, the majority of females of the 2019 year-class recruited to the spawning population in 2023. A strong 2021 year-class was also first detected during 2023 fall gill netting efforts (Rehm et al. 2024). This year-class was observed in both fall gill netting efforts and spring Walleye sampling in 2024 and 2025. As predicted, males of the 2021 year-class have recruited to the spawning population. However, females have yet to mature and are expected to recruit to the spawning population during the spring of 2026. Males were represented primarily by the 2021 year-class (66%) followed next by the 2019 and 2015 year-class (11%; Figure 22). Females' most abundant year-class is 2015 (64%) followed next by the 2016 year-class (25%; Figure 22). Mature males and females were captured from eight different year-classes (Table 4). Spring Walleye sampling in 2025 showed a spawning population that continues to be dominated by the 2021, 2019, and 2015 year-classes (age 4, 6, and 10; Figure 22). Past monitoring has shown that even moderate year classes can make noticeable contributions to the overall population up to seven years later (Kreiner et al. 2020 and Blakney and Tholl et al. 2021). Walleye from the 2021 and 2019 year-classes will persist for several more years and will have the opportunity to contribute to another strong year-class when favorable spawning conditions permit.

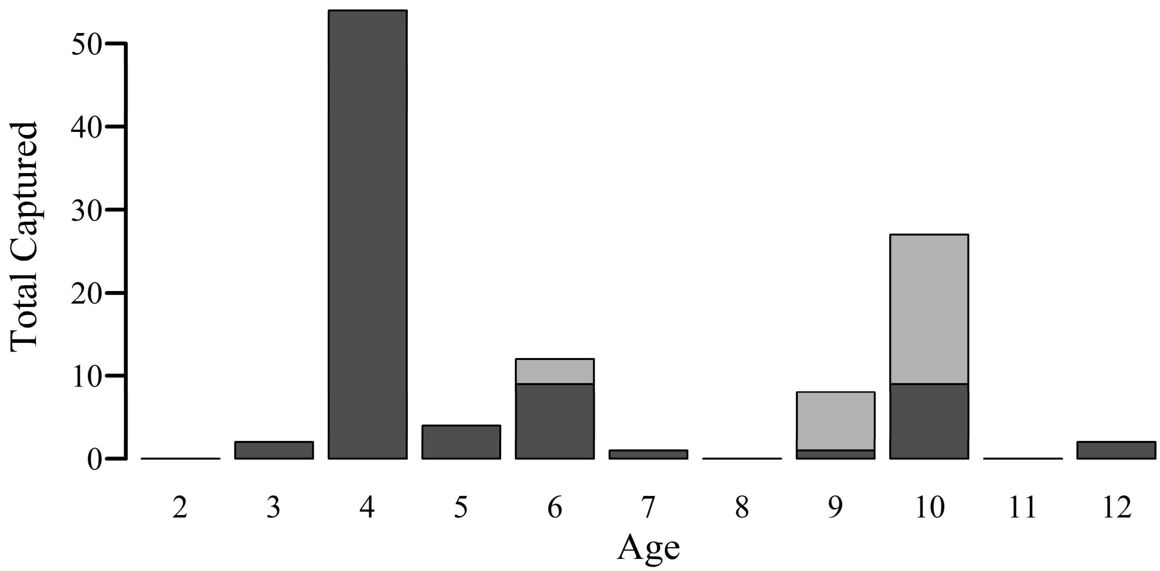

Figure 22. Age frequency distribution of spring caught Walleye from Noxon Reservoir in 2025.

Mean length of males captured was 434 mm (range = 323–638; Table 4). Of these fish, 40 (49%) exceeded 400 mm in length. Size structure increased in 2025 with strong influence from the young 20 year-class. In contrast, mean length of females captured was 636 mm (range = 552–735; Table 4). All females exceeded 400 mm in length with the majority being represented by the 2015 year-class. The 2015 year-class, that has dominated the female spawning populations since 2018 (Kreiner et al. 2020), should begun to age out of the population and will be replaced by the strong year-classes of 2019 and 2021. Size structure of the female spawning population of Walleye is similar to recent years. However, over the next couple of years, we predict that overall size structure could decrease as we expect influx of Female Walleye from the 2021 year-class and both males and female from the 2023 year-class (detected during fall gill netting efforts in 2025) to recruit to the spawning population. Additionally, while we have shown that Walleye can persist in Noxon Reservoir for up to 18 years (Rehm et al. 2022), we expect the majority of the 2015 year-class to age out the population over the coming years.

Table 4. Mean length-at-age for spring caught Walleye from Noxon Reservoir in 2025.

Age	Males			Females			Total		
	n	Mean Length (mm)	SD	n	Mean Length (mm)	SD	n	Mean Length (mm)	SD
3	2	341	5.7	-	-	-	2	341	5.7
4	54	393	39.2	-	-	-	54	393	39.2
5	4	383	35	-	-	-	4	383	35
6	9	518	33	3	565	4	12	529	35
7	1	511	-	-	-	-	1	511	-
8	-	-	-	-	-	-	-	-	-
9	1	630	-	7	688	36.4	8	681	39.5
10	9	585	28	18	627	52.9	27	613	49.8
11	-	-	-	-	-	-	-	-	-
12	2	539	0	-	-	-	2	539	0

Overall catch rate was 36.9 fish per hour and ranged 30–47.9 fish per hour. Total catch peaked on April 30 when water temperature was 11.5°C and flow was 23,400 cfs (Figure 23). Female catch rate also peak on April 30 at 14.6 per hour. Total fish captured was highest prior to the increasing limb of the hydrograph, when Walleye are responding to spring temperature and flows and moving to spawning areas (Colby et al. 1979). However, as flows continued to rise, the catchability with our sampling equipment quickly declined as did catch rates.

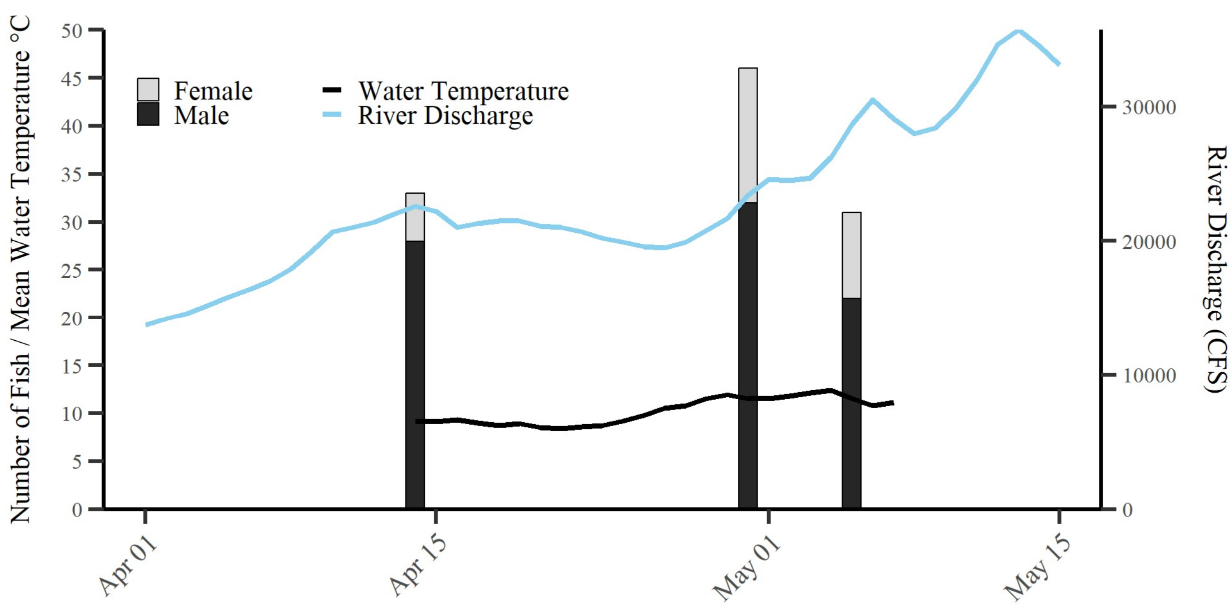

Figure 23. Catch per unit effort of Walleye during spring 2025, with river discharge and mean water temperature.

Of the 43 fish PIT tagged and released alive, none were subsequently captured during a later sampling date in 2025 (within year recaptures). However, 17 fish were captured in 2025 had been captured and tagged in prior years (previous year recaptures; Table 5). Most of the Walleye tagged in previous years were recaptured after only one growing season (47.1%). Walleye recaptured after three growing seasons is the second most common (17.6%). The remaining fish were captured after two (11.8%), four (11.8%), five (5.9%), and seven (5.9%) growing seasons (Table 5). Recapture rates for fish PIT tagged in 2018 and 2020 through 2024 were 1.1%, < 1%, < 1%, 1.7%, 1.3%, and 3.3% respectively. The majority of recaptured Walleye were male; little inferences may be drawn from this as most previously PIT tagged Walleye are also male. The mean length of recaptured fish was 491 mm. Recaptured fish grew between 2 and 55 mm per year with a mean value of 26 mm (Table 5).

Table 5. Mean yearly growth of recaptured Walleye sampled during spring 2025.

PIT Tag Number	Initial Capture Date	Initial Capture Length (mm)	Recapture Date	Recapture Length (mm)	Sex	Mean Yearly Growth (mm)
982000357016312	4/22/2021	510	4/30/2025	630	Male	30
982000362929421	4/28/2020	475	4/14/2025	585	Male	22
982000362929509	4/12/2021	487	5/5/2025	600	Male	28
982000363519216	4/23/2018	332	4/30/2025	555	Male	32
982000365414981	4/6/2022	395	4/30/2025	459	Male	21
982091070216126	4/18/2022	405	4/14/2025	505	Male	33
982091070216180	4/20/2022	610	4/14/2025	690	Female	27
982091070216328	4/24/2023	414	4/14/2025	495	Male	41
982091070216460	4/17/2024	335	4/14/2025	355	Male	20
982091070216498	4/17/2024	380	4/14/2025	405	Male	25
982091070216547	4/8/2024	370	5/5/2025	389	Male	19
982091070216548	4/10/2024	475	4/30/2025	480	Male	5
982091070216583	5/1/2023	465	4/30/2025	550	Male	43
982091070216743	5/1/2024	411	4/30/2025	435	Male	24
982091070216745	4/22/2024	391	5/5/2025	393	Male	2
982091070216756	4/22/2024	404	4/30/2025	460	Male	56

Beginning in 2024 submersible Biomark antenna systems were deployed in upper Noxon Reservoir directly below Thompson Falls Dam as part of efforts to evaluate the efficacy of the Thompson Fall Dam Fish Ladder (NWE 2025). Since 2024 these antennas have detected ten Walleye originally tagged during spring electrofishing efforts in 2017 (n = 1), 2019 (n = 2), 2020, (n = 3), 2021 (n = 1), 2023 (n = 1), 2024 (n = 1) and 2025 (n=1). Detection dates have ranged from June 4th to October 21st providing evidence that Walleye inhabit the upper reaches of Noxon Reservoir outside their spawning season.

Growth curves and parameters (Appendix E) were calculated for all Walleye and both sexes from otoliths of 49 males and 20 females. Supporting reported mean length-at-age data, female Walleye growth rate was greater than that of males (Table 4; Appendix E).

Bass Tournament Monitoring
Three bass tournaments, all spanning two days, were monitored to help assess the overall status of the bass fishery in Noxon Reservoir The first being the Montana Bass Team Open (May 3 and 4), the second being The Bass Federation Draw Series Qualifier (June 7 and 8), and the third was the Tri-State Buddy Tournament (July 26 and 27). Two other bass tournaments occurred on Noxon Reservoir but were not monitored in 2025. Similar to recent years, mean length and proportion of quality fish were near or at all-time highs for both species in Noxon Reservoir (Table 6, Figures 23 and 24). Bass weighed in at Noxon Reservoir tournaments continued to be mostly Largemouth Bass (70%; Table 6). A total of 918 bass were measured during the three Noxon Reservoir tournaments with a mean length of 415 mm for Largemouth Bass and 425 mm for Smallmouth Bass. Of checked-in bass, 16% of Largemouth Bass and 22% of Smallmouth Bass were greater than 460 mm (18 inches; Table 6).

Table 6. Catch statistics for Largemouth (LMB) and Smallmouth Bass (SMB) caught during Noxon Reservoir bass tournaments (listed by dates held) monitored in 2025. Numbers DO NOT include culled fish.

Statistic	Species	5/3-5/4	6/7-6/8	7/26-7/27	Combined
% of Catch	LMB	63	81	67	70
	SMB	37	19	33	30
$\% \geq 380$ mm	LMB	76	75	77	76
	SMB	87	73	86	84
	Both	81	75	80	78
$\% \geq 460$ mm	LMB	17	12	20	16
	SMB	21	20	24	22
	Both	19	13	21	18
Total Caught	LMB	199	221	218	638
	SMB	119	51	108	278
	Both	318	272	326	916
Mean Length (mm)	LMB	416	410	419	415
	SMB	430	410	427	425

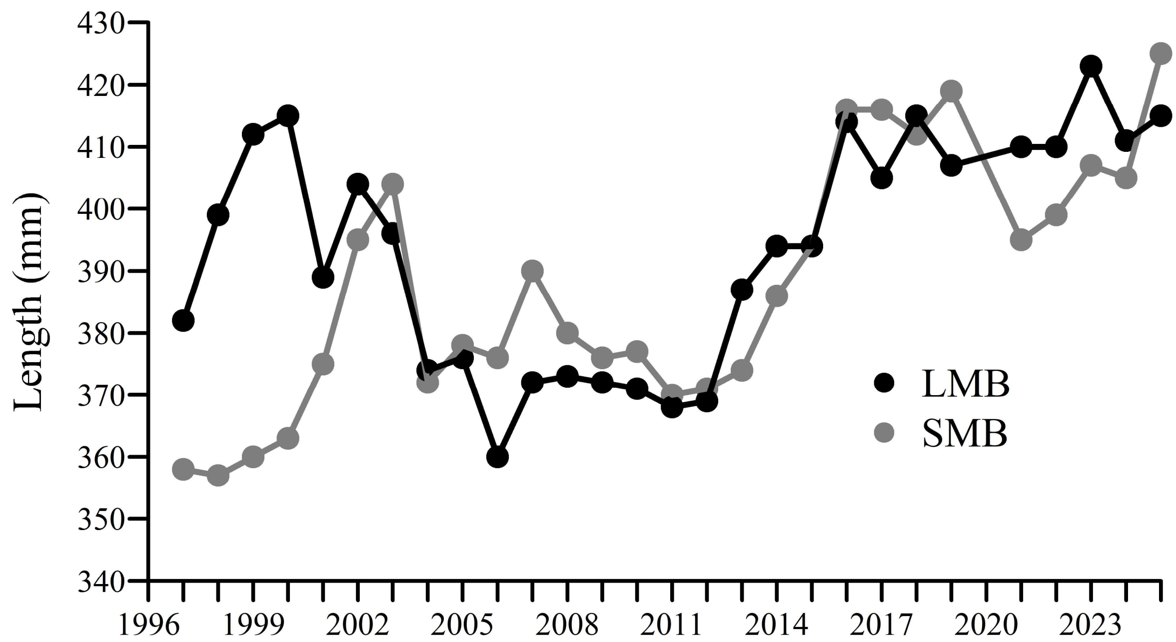

Figure 24. Mean length of both bass species checked in at monitored bass tournaments over time.

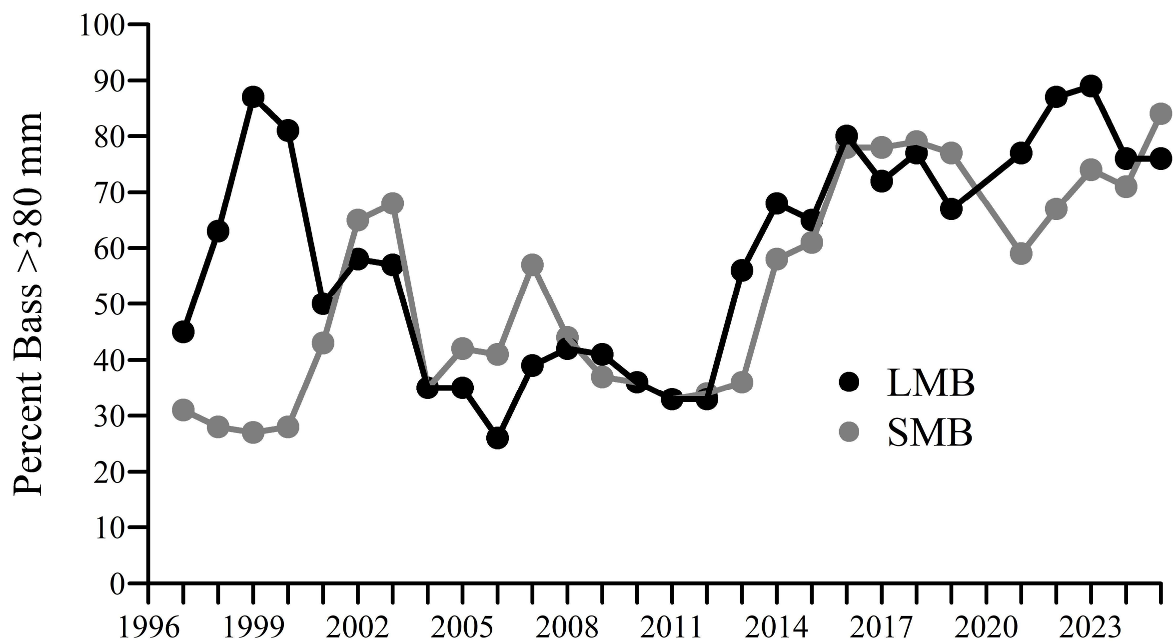

Figure 25. Percent 'quality' fish (≥380 mm) checked in at bass tournaments over time.

Bass tournament monitoring continues to show a productive bass fishery in Noxon Reservoir. Sizes and proportion of quality fish of both Largemouth and Smallmouth Bass captured during tournaments are at or near record highs (Figure 24; Figure 25). Additionally, anecdotal accounts from anglers of Noxon Reservoir have shown high satisfaction with the current bass fishery, no doubt due in part to the consistently higher percentage of quality size bass recorded since 2013. Continued monitoring of bass tournaments will be important moving forward, particularly if abundance of other predators (i.e., Walleye and Northern Pike) within Noxon Reservoir increases.

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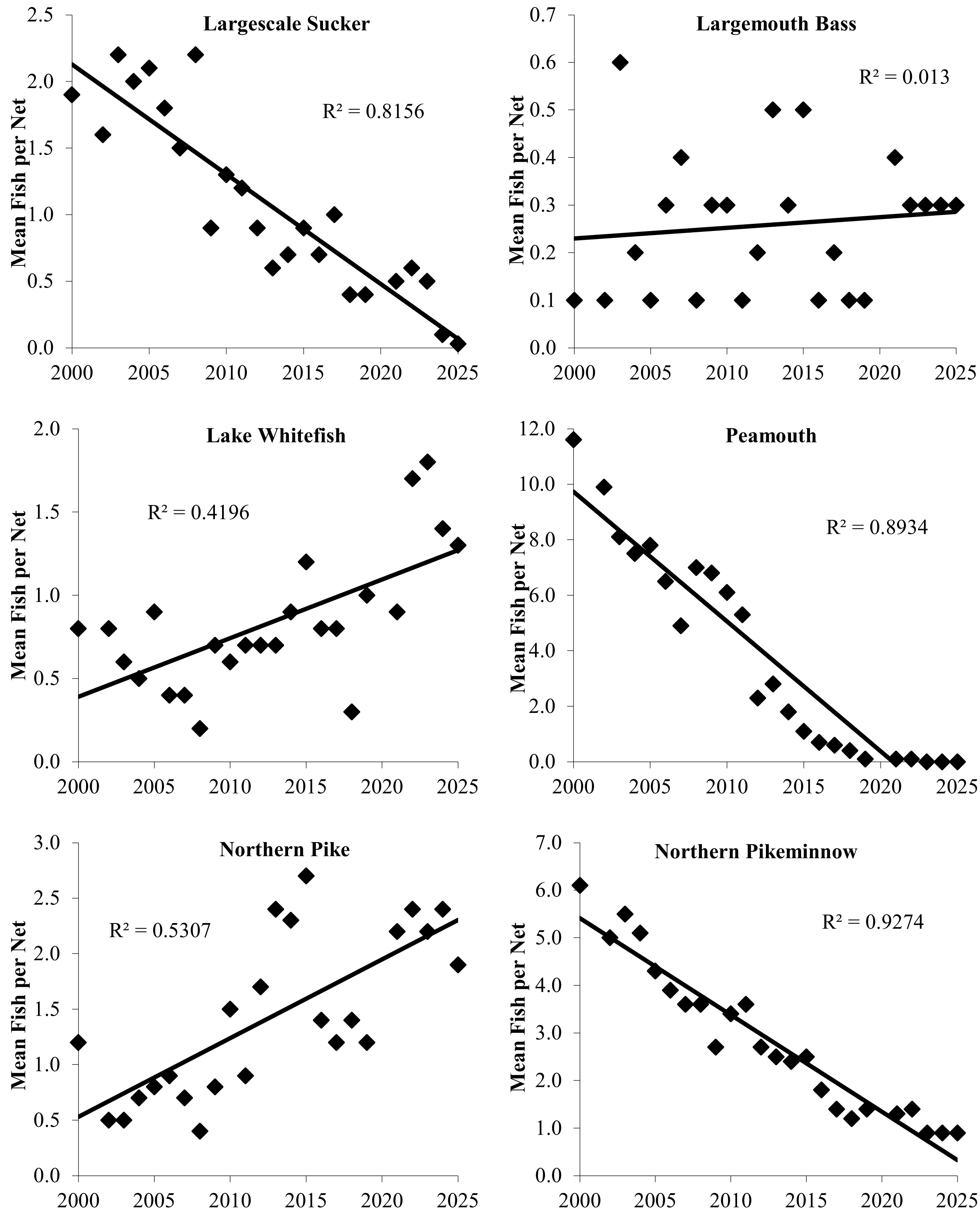
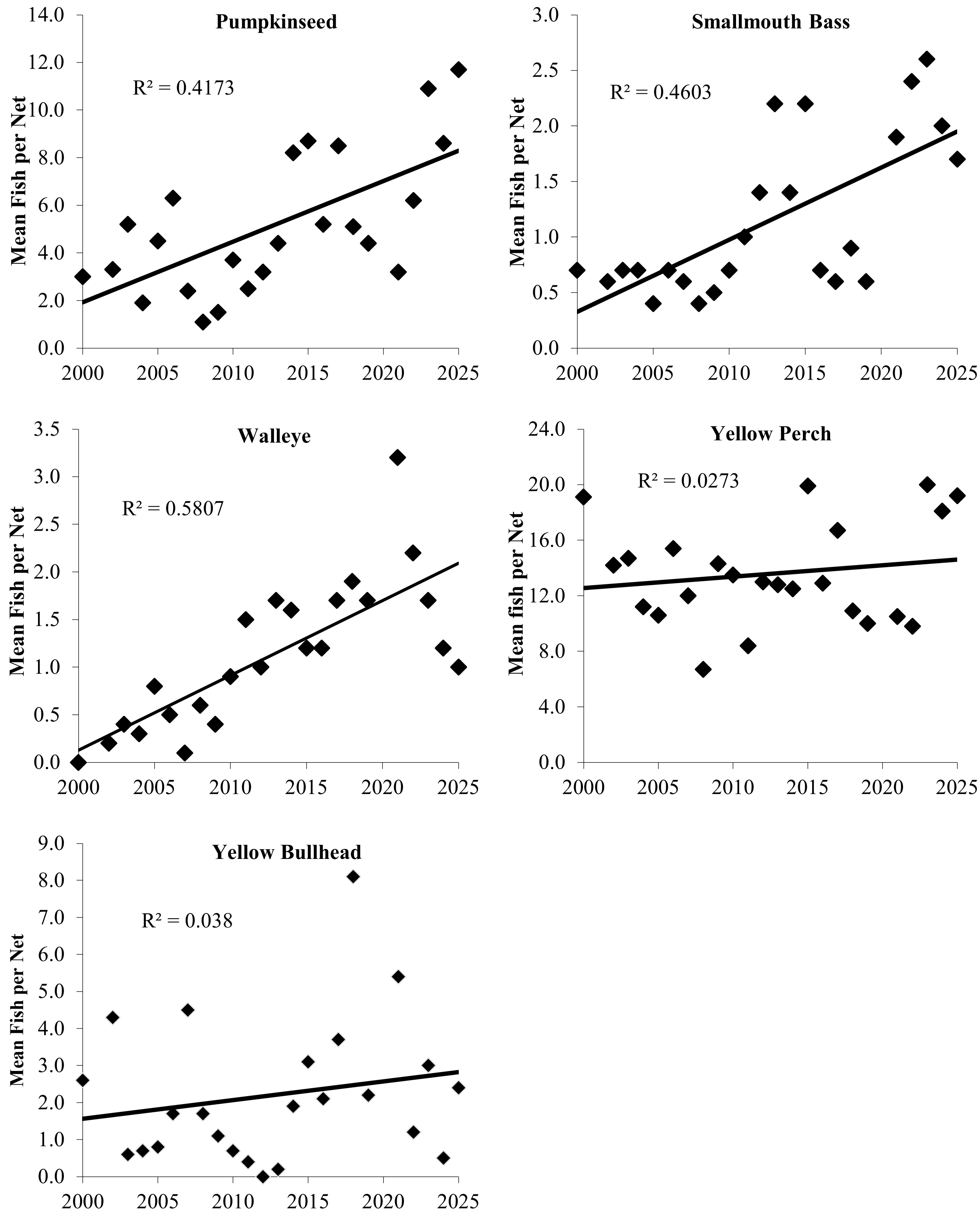
Appendix A. Current relative abundance (A=abundant, C=common, R=rare) and abundance trend from 2000 to 2025 (I=increasing, S=stable, D=decreasing, U=unknown) of fish species present in Noxon and Cabinet Gorge Reservoirs.

Common Name	Scientific Name	Abbreviation	Relative Abundance	Trend	Native
Game fish species					
Bull Trout	*Salvelinus confluentus*	BULL	R	U	Y
Brook Trout	*Salvelinus fontinalis*	EB	R	U	N
Brown Trout	*Salmo trutta*	LL	C	U	N
Kokanee	*Oncorhynchus nerka*	KOK	R	U	N
Lake Trout	*Salvelinus namaycush*	LT	R	U	N
Lake Whitefish	*Coregonus clupeaformis*	L WF	A	I	N
Largemouth Bass	*Micropterus nigricans*	LMB	A	S	N
Mountain Whitefish	*Prosopium williamsoni*	MWF	R	U	Y
Northern Pike	*Esox lucius*	NP	A	I	N
Rainbow Trout	*Oncorhynchus mykiss*	RB	R	U	N
Smallmouth Bass	*Micropterus dolomieu*	SMB	A	I	N
Walleye	*Sander vitreus*	WE	A	I	N
Westslope Cutthroat Trout	*Oncorhynchus lewisi*	WCT	R	U	Y
Yellow Perch	*Perca flavescens*	YP	A	S	N
Non-game fish Species					
Black Bullhead	*Ameiurus melas*	BL BH	R	U	N
Brook Stickleback	*Culaea inconstans*	BR SB	R	U	N
Longnose Sucker	*Catostomus catostomus*	LN SU	R	D	Y
Largescale Sucker	*Catostomus macrocheilus*	LS SU	C	D	Y
Northern Pikeminnow	*Ptychocheilus oregonsis*	N PMN	C	D	Y
Peamouth	*Mylocheilus caurinus*	PEA	R	D	Y
Pumpkinseed	*Lepomis gibbosus*	PUMP	A	I	N
Redside Shiner	*Richardsonius balteatus*	RD SH	R	U	Y
Yellow Bullhead	*Ameiurus natalis*	YL BH	C	S	N

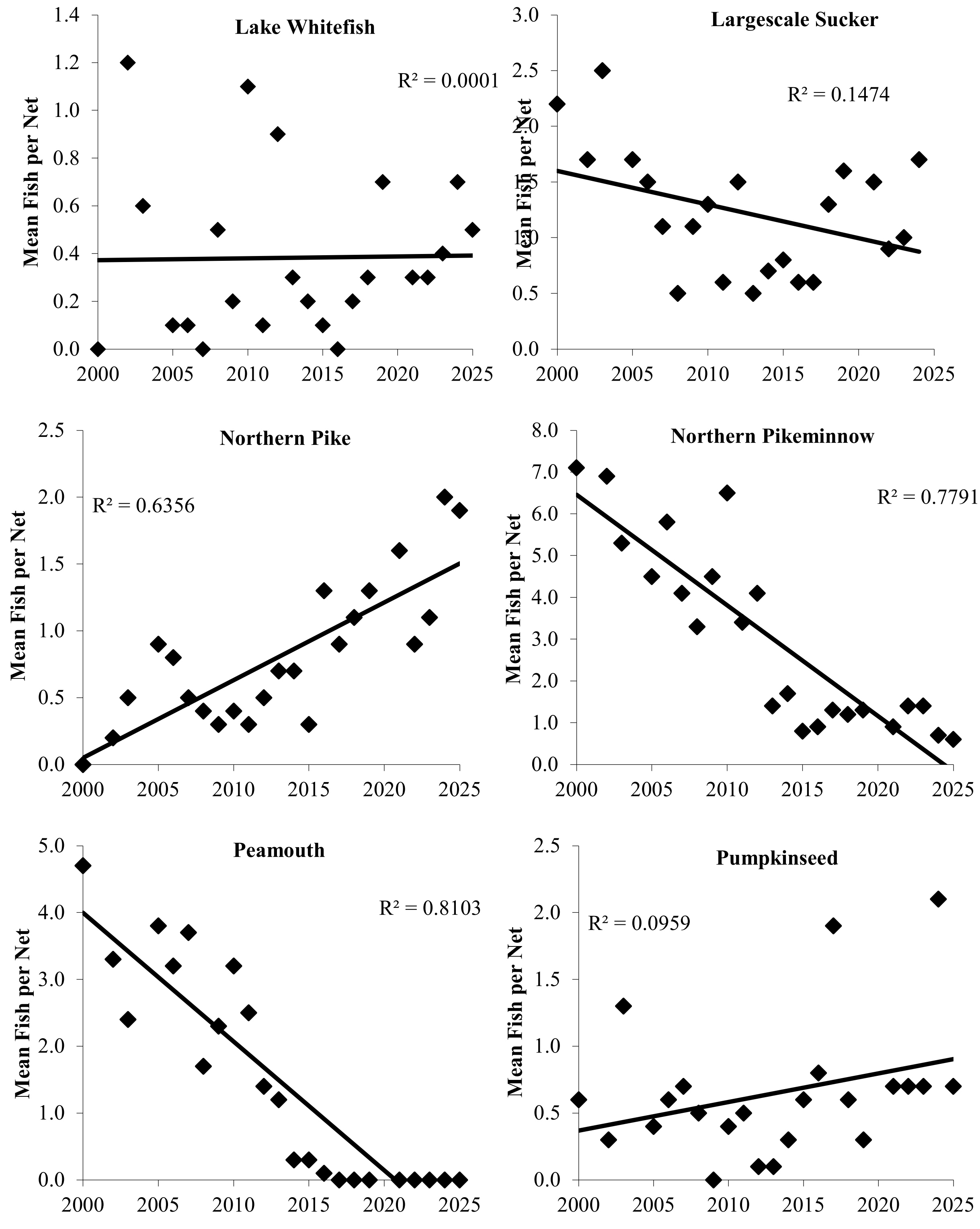
Appendix B. Catch per Unit Effort (CPUE) trends of selected fish from annual gill net surveys in Noxon Reservoir, 2000-2025.



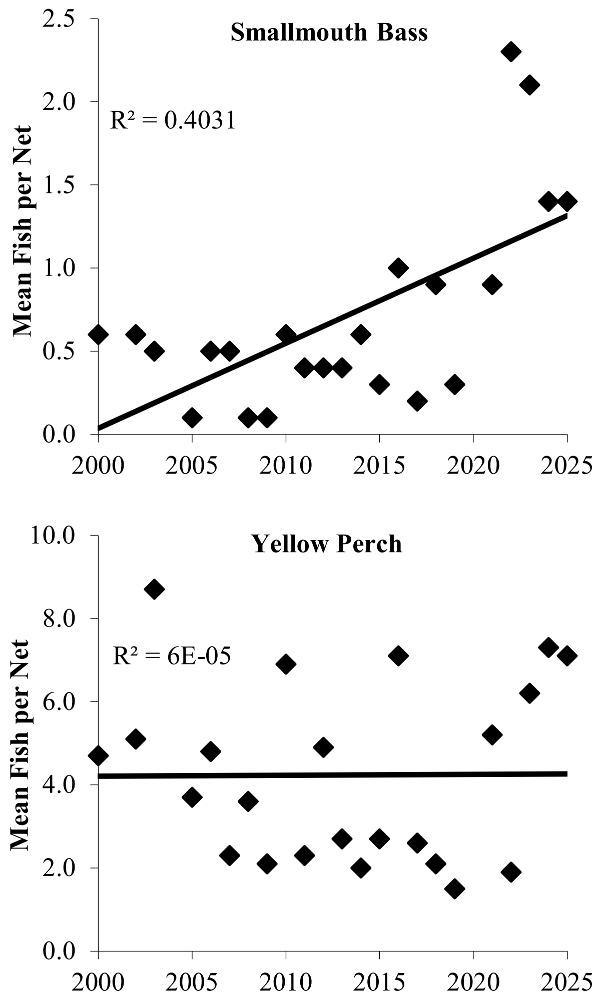
Appendix B (continued). Catch per Unit Effort (CPUE) trends of selected fish from annual gill net surveys in Noxon Reservoir, 2000–2025.



Appendix C. Catch per Unit Effort (CPUE) trends of selected fish from annual gill net surveys in Cabinet Gorge Reservoir, 2000–2025.



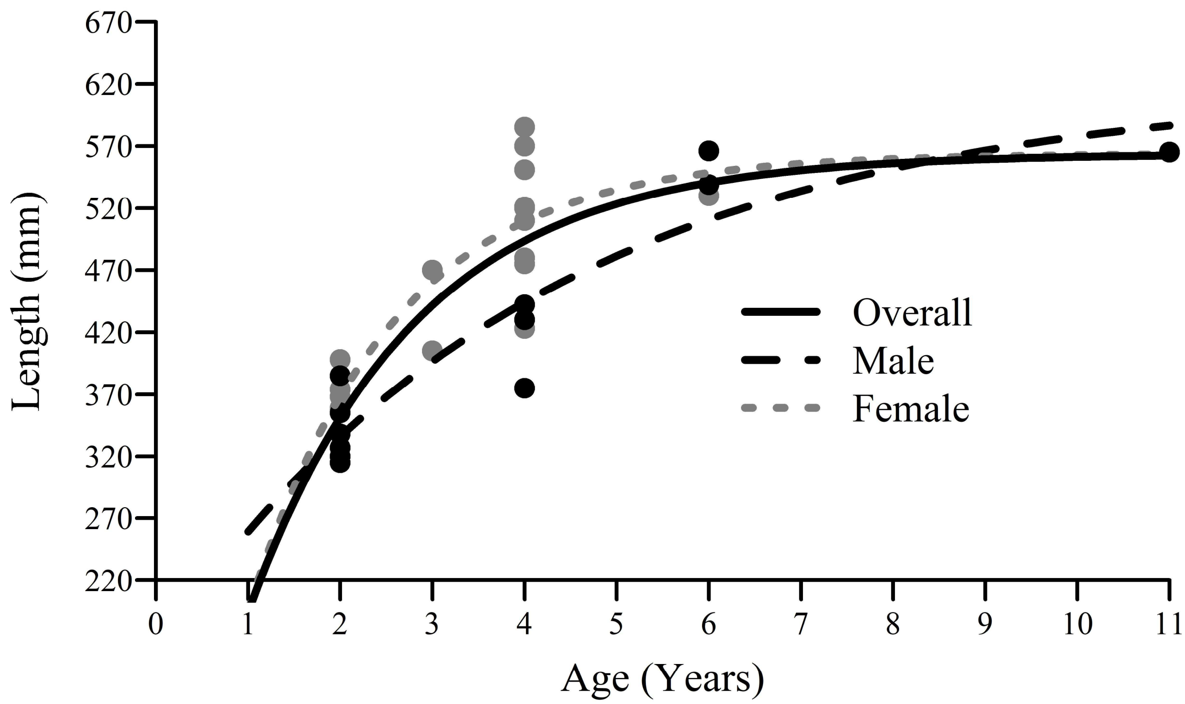
Appendix C (continued). Catch per Unit Effort (CPUE) trends of selected fish from annual gill net surveys in Cabinet Gorge Reservoir, 2000–202.



Appendix D. Von Bertalanffy growth curves and parameters for both male and female Walleye using estimates derived from Walleye collected from Noxon Reservoir in fall 2025.

Von Bertalanffy parameter estimates derived from Walleye collected from Noxon Reservoir in Fall 2025.

Von Bertalanffy parameter	Data Source					
	Female		Male		All Walleye	
	Est.	95% CI	Est.	95% CI	Est.	95% CI
L_{inf}	563	426–700	619	472–766	564	505–623
K	0.64	0.00–1.56	0.24	0.00–0.48	0.55	0.28–0.82
T_0	0.33	-1.51– 2.17	-1.26	-3.61– 1.09	0.24	-0.36– 0.84

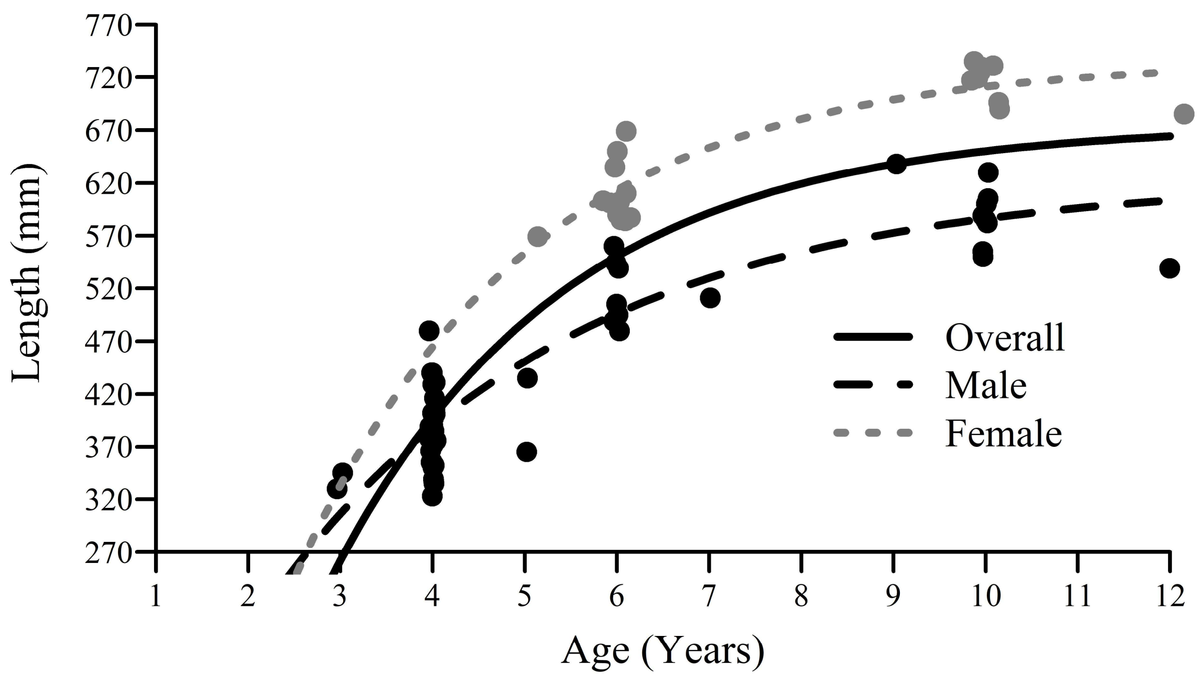


Von Bertalanffy growth curves for Walleye using estimates derived from Walleye collected from Noxon Reservoir in fall 2025.

Appendix E. Von Bertalanffy growth curves and parameters for both male and female Walleye using estimates derived from Walleye collected from Noxon Reservoir in spring 2025.

Von Bertalanffy parameter estimates derived from Walleye collected from Noxon Reservoir in spring 2025.

Von Bertalanffy parameter	Data Source					
	Female		Male		All Walleye	
	Est.	95% CI	Est.	95% CI	Est.	95% CI
L_{inf}	736	676–796	624	562–686	676	630–722
K	0.40	0.0–0.83	0.30	0.14–0.46	0.40	0.25–0.55
T_0	1.5	-2.4– 5.4	0.8	-0.5– 2.1	1.8	1.1–2.5



Von Bertalanffy growth curves for Walleye using estimates derived from Walleye collected from Noxon Reservoir in spring 2025.