DEPARTMENT OF NATURAL RESOURCES

KNIFE RIVER FISH TRAP REPORT
2024

Report Completed by:
Nick Peterson

Field Crew Leaders:
Nick Peterson, Nathan Beckman, Cory Goldsworthy, Lauren Dagen, Dylan Undlin

Table of Contents

Purpose & Methods 3
Hydrological & Environmental Extremes in North Shore Rivers (2023-2024) 4
Challenges from Droughts and Floods in North Shore Rivers (1997-2024) 4
Trap Operations Summary 6
Catch by Species 6
Unclipped (wild-produced) Steelhead Rainbow Trout 6
Clipped (stocked) Steelhead & Kamloops 9
Brook Trout & Splake (Brook Trout x Lake Trout hybrid) 10
Brown Trout 11
Chinook, Coho, and Pink Salmon 11
Sea Lamprey Wounding Rates 12

Purpose & Methods

The Minnesota Department of Natural Resources (MNDNR) Knife River fish trap is used to monitor the abundance and health of migratory fishes in Minnesota waters of Lake Superior (particularly of migratory Rainbow Trout [steelhead]), and to monitor Sea lamprey control efforts in Lake Superior. The trap captures adult fish migrating upstream and adult and juvenile fish migrating downstream from the Knife River to Lake Superior. The adult trap is operated during annual spawning runs of steelhead in the spring and many other trout (Brook and Brown Trout) and salmon (Coho, Chinook, and Pink Salmon) in the fall.

All adult fish are measured, weighed, and checked for external signs of disease and lamprey wounds. All adult steelhead Rainbow Trout, Brown Trout, or Brook Trout are given a uniquely numbered grey Floy®Tag to identify individual fish for mark-recapture population estimates. All Kamloops Rainbow Trout (clipped, hatchery product) and salmon are given an unnumbered colored plastic tag to indicate when and where they were first captured. Non-lethal scale samples are collected from all adults and a subset of juveniles to evaluate age and growth. All fish are passed upstream of the trap after workup, except for Kamloops Rainbow Trout to limit reproductive and genetic risks associated with introgression into steelhead populations (Miller et al. 2020).

The number of juvenile fish captured in the juvenile trap each day is adjusted to account for daily flow conditions that might have allowed juvenile fish to bypass the trap. The total number of fish caught per day is adjusted using the average trap efficiency from all mark-recapture trials conducted in previous years (0.58) on all days when the gauge height at the trap was 0.20 or greater. Likewise, the number of adult steelhead captured in the trap is adjusted to account for fish that bypass the trap on their upstream migration. A population estimate is calculated during the spring spawning season using the number of adult steelhead tagged in the adult trap and put upstream, and the number of tagged and untagged steelhead recaptured in the juvenile trap headed back to Lake Superior after spawning. Population estimates for unclipped (wild-produced) steelhead are provided in this report.

Hydrological & Environmental Extremes in North Shore Rivers (2023-2024)

In late December 2023, a major flood event peaked at 1,200 cubic feet per second, breaking river ice—an unusual occurrence for the season. Duluth area experienced significantly lower snowfall than its historical annual average (63.1 inches) during the 2023-2024 winter season, with only 19.7 inches of snow accumulation before a late-March snowstorm on March 23-27, 2024. This storm that added approximately 15.4 inches, nearly doubling the season's total. The reduced snowfall during this season was part of a broader trend across Minnesota, with many areas receiving less than 50% of their normal snowfall through February 2024.

For the third year in a row, much of the North Shore experienced high water and turbid conditions due to frequent spring rains (Peterson 2022, Peterson 2023). Discharge stayed at or above average through mid-July. One major storm caused the Knife River to jump from 26 to 3,610 cfs in less than five hours, with similar flooding in other mid- and upper-shore rivers. Floods like these can harm fertilized eggs, newly hatched fry, and juvenile steelhead reducing recruitment, growth, and survival. Water levels were moderate to low for the rest of summer and stayed low through September and October, until a rainstorm on November 18 (Figure 1).

Challenges from Droughts and Floods in North Shore Rivers (1997-2024)

Aquatic life in North Shore rivers has faced increasingly erratic conditions, including droughts and floods, over the past few decades. These trends were analyzed using data from the USGS Knife River gage (location: 04015330), which represents flow conditions in lower shore rivers. While gages exist in the upper shore (e.g., Poplar and Brule Rivers), they lack consistent daily data, limiting their use for comparisons.

Stream conditions have become more variable in the past decade compared to 1997–2013, when there were only two flood years and one drought year. In contrast, from 2014–2024, there were three flood years, two drought years, and one year (2023) when maximum annual discharge exceeded the historic mean. These extreme events have likely impacted steelhead production in the Knife River over the past decade (Figure 2).

Droughts cause water scarcity, fluctuating levels, oxygen depletion, and dangerously high stream temperatures for cold-water fish. Floods, meanwhile, disrupt habitats and displace aquatic life, reducing survival and reproduction. The impact of a flood on a year-class of steelhead depends on its timing (frequency and duration) and magnitude (e.g., 2000 CFS or 8000 CFS). Timing, especially during spring/summer when eggs and early-life stages are vulnerable, likely matters more than flow magnitude. However, a major event, like seven inches of rain, likely affects all streams to some extent, particularly in the lower stream reaches. Floods and droughts impact steelhead production but what constitutes a significant impact remains unknown.

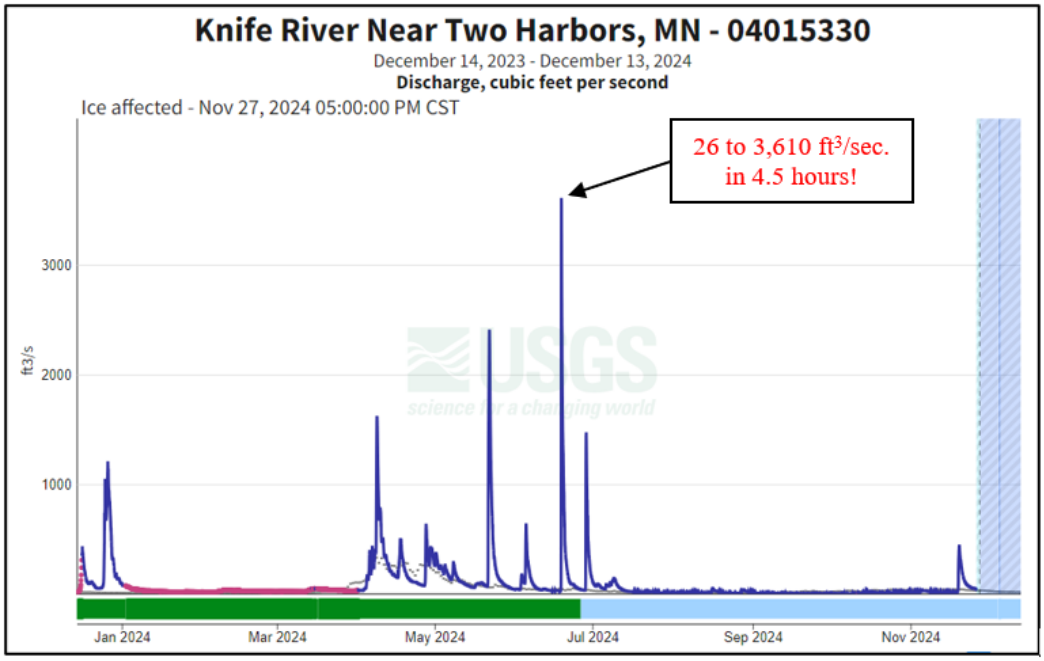


Figure 1. Knife River streamflow (cfs) from December 14, 2023, to December 31, 2024, based on data from the USGS gage (location: 04015330).

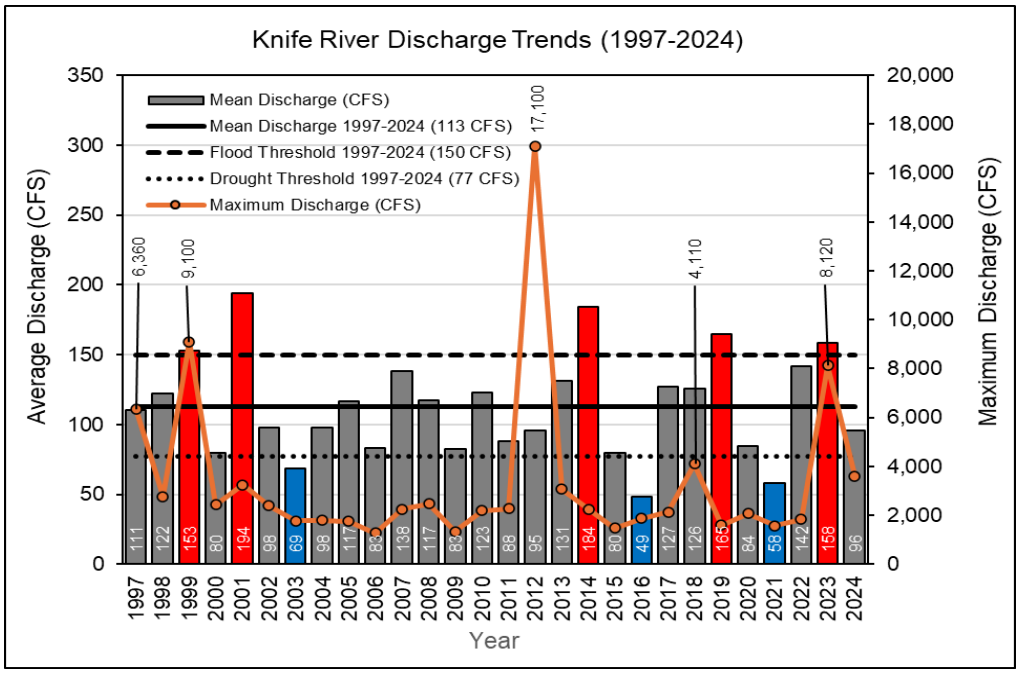


Figure 2. Average and maximum yearly discharge (cfs) for the Knife River from 1997 to 2024. The solid black line represents the overall average discharge, while the dashed lines mark the drought threshold (77 cfs) and flood threshold (150 cfs), based on one standard deviation from the mean. Years with average discharge below the drought threshold are shaded blue, and years above the flood threshold are shaded red. Data is from the USGS Knife River streamflow gage (location: 04015330).

Trap Operations Summary

The Knife River traps were opened for the spring steelhead run on April 6 (historic average trap opening date is April 8) and remained open for a total of 108 days throughout the spring and early-summer trap season. The trap was temporarily closed for three days in the spring (May 22, June 20, & June 28) to protect infrastructure from high water (Table 1). The traps were closed for summer on July 25 (Table 1). The trap was reopened for fall spawning runs on August 28 and remained open for 85 days until it was closed for winter on November 20 (Table 2).

Catch by Species

Unclipped (wild-produced) Steelhead Rainbow Trout

Emigration timing for juvenile steelhead in 2024 followed the historic trend with age-2 and older smolts leaving in May, a peak of the age-1 parr in the first week or two of June, and few to no fish captured after the first week of July (Figure 3). The timing and duration of juvenile steelhead emigration at Knife River is principally influenced by annual environmental and river conditions (i.e., water temperatures and discharge). Those conditions vary from year-to-year based on the timing of the annual winter-to-spring transition and resulting snow melt patterns, and the timing and frequency of rain events throughout the spring. Trap operation dates need to remain flexible and reflect the emigration timing observed each year.

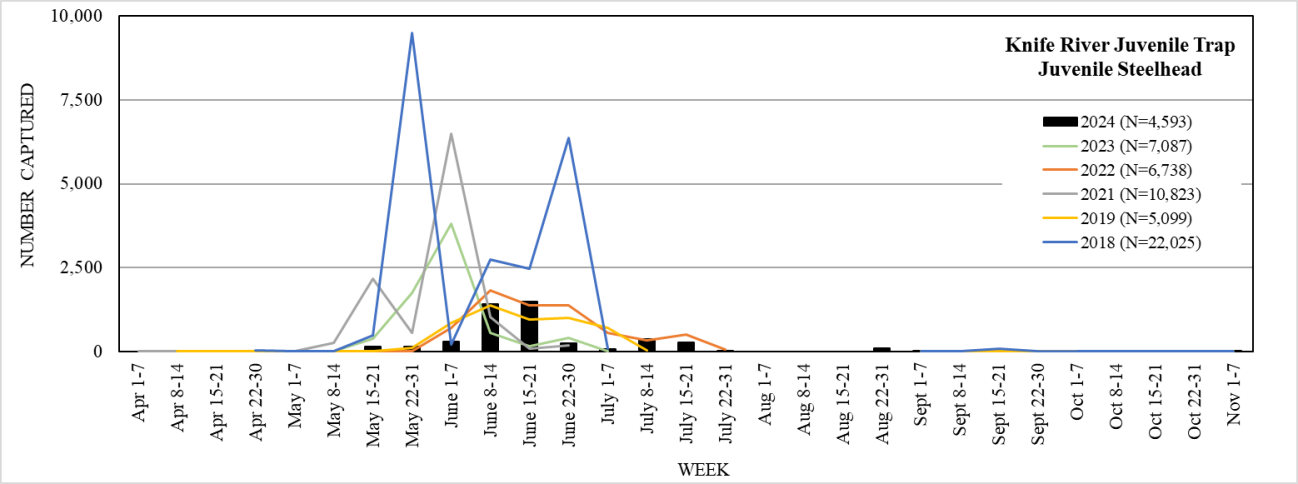


Figure 3. The number of juvenile steelhead captured in the Knife River juvenile fish trap by week in 2024 (black bars) and 2018 thru 2023.

In total, 4,593 juvenile steelhead (all ages) were captured in 2024 which was lower than the historic average of 11,546 (range: 1,856-23,971). Accounting for daily trap capture efficiencies, the estimated total number of juvenile steelhead that emigrated from Knife River in 2024 was 4,840, which was lower than the historic average of 13,278 (range: 2,069-34,108). Approximately 72% (3,497) were age-1, 25% (1,234) were age-2, and 2% or less were age-0 (106) and age-3 (3) (Figure 4).

Adult steelhead returning to the Knife River are most likely fish that emigrated as age-2 or older juveniles, known as smolts. Smolts are larger than age-1 parr, better at avoiding predators in Lake Superior, and more likely to return to the Knife River after imprinting on it as juveniles (Negus 2011). Smolt production was below the long-term average (3,126) in two of the past three years. This drop reflects poor stream conditions for rearing during those years (Figure 2). Strong smolt year-classes are typically produced when stream conditions are stable—without major floods or droughts—and particularly following years when adult steelhead returns (egg supply) are high (Table 1; Figure 5).

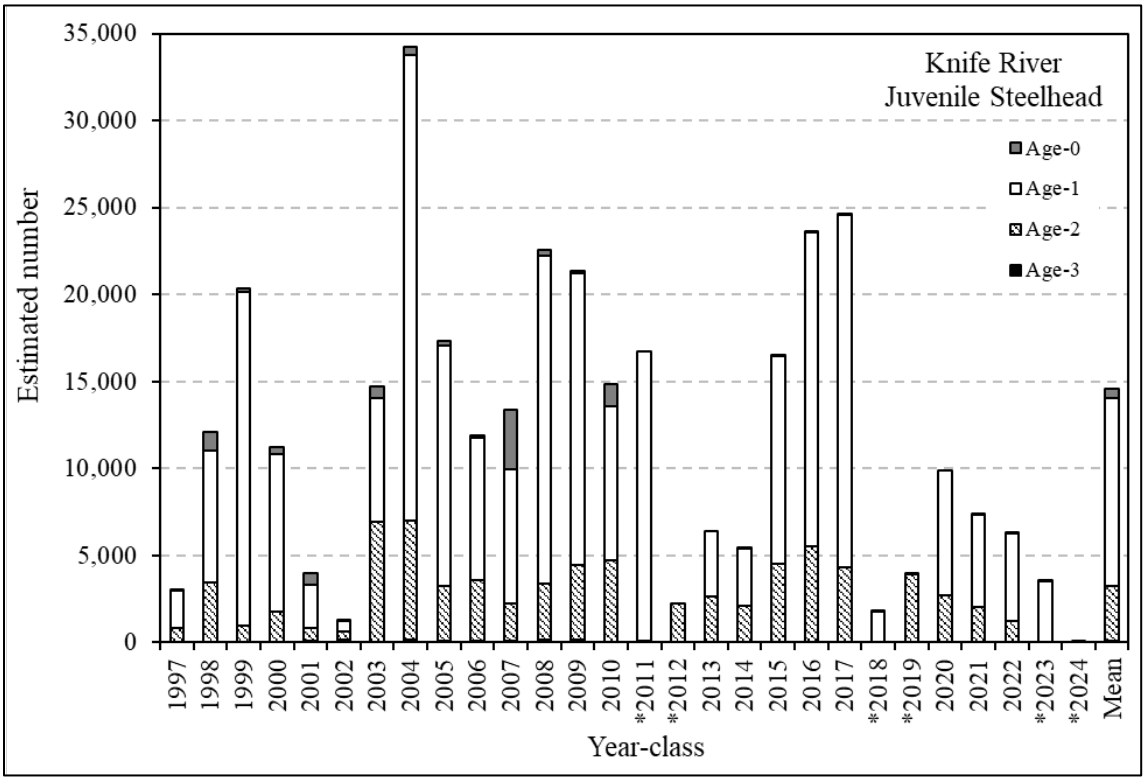


Figure 4. The number of juvenile steelhead captured by age in the Knife River juvenile fish trap by year. The historic average (Mean) excludes all incomplete year-classes shown with an asterisk (*).

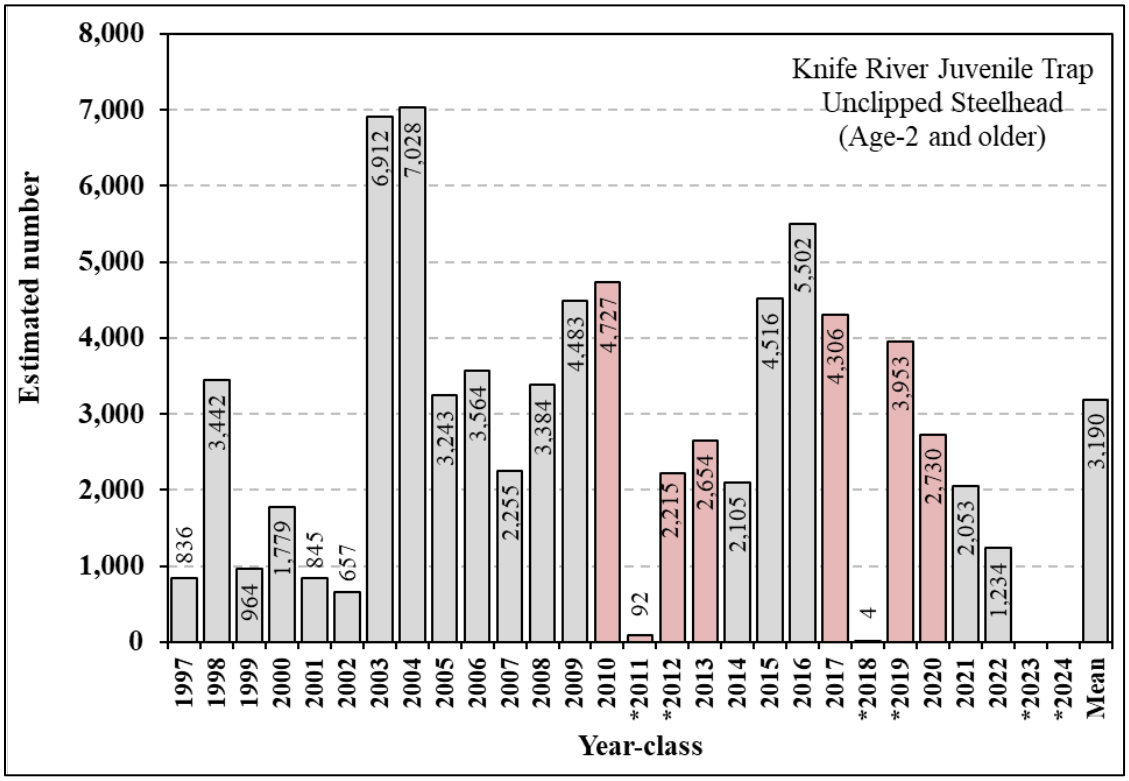


Figure 5. Estimated number of age-2 and older unclipped juvenile steelhead emigrants in the Knife River by year-class. The historic average (Mean) excludes all incomplete year-classes shown with an asterisk (*).

A total of 204 individual unclipped adult steelhead were captured in the Knife River traps in spring 2024. One hundred ninety-three individual steelhead were captured in the adult trap (upbound) and 11 in the juvenile trap (downbound). No steelhead were recaptured multiple times in spring 2024. The mark-recapture population estimate that accounts for fish that bypassed the trap during upstream migration estimated that 274 (95% C.I.: 221-326) adult steelhead returned to Knife River in spring 2024 (Table 1; Figure 6). Approximately 88% (179) of all unclipped steelhead were captured in April, 12% (24) in May, and <1% (1) in June.

Adult unclipped steelhead captured in the spring were age-3 through age-12. Approximately 16% (33) were age-4 or younger, 36% (73) were age-5 (36) or age-6 (37), and 48% (98) were age-7 (30) or older (68). Average size of females was 25 inches (range: 17-29) and 5.8 pounds (range: 1.9-8.2). Average size of males was 23 inches (range: 15-28) and 4.3 pounds (range: 1.3-6.5). Forty-precent (82) of all unclipped fish captured had a numbered Floy®Tag from a previous year, and 3% (6) had a tag stub or mark that indicated tag loss. Thirteen unclipped steelhead were captured in the fall (Table 2).

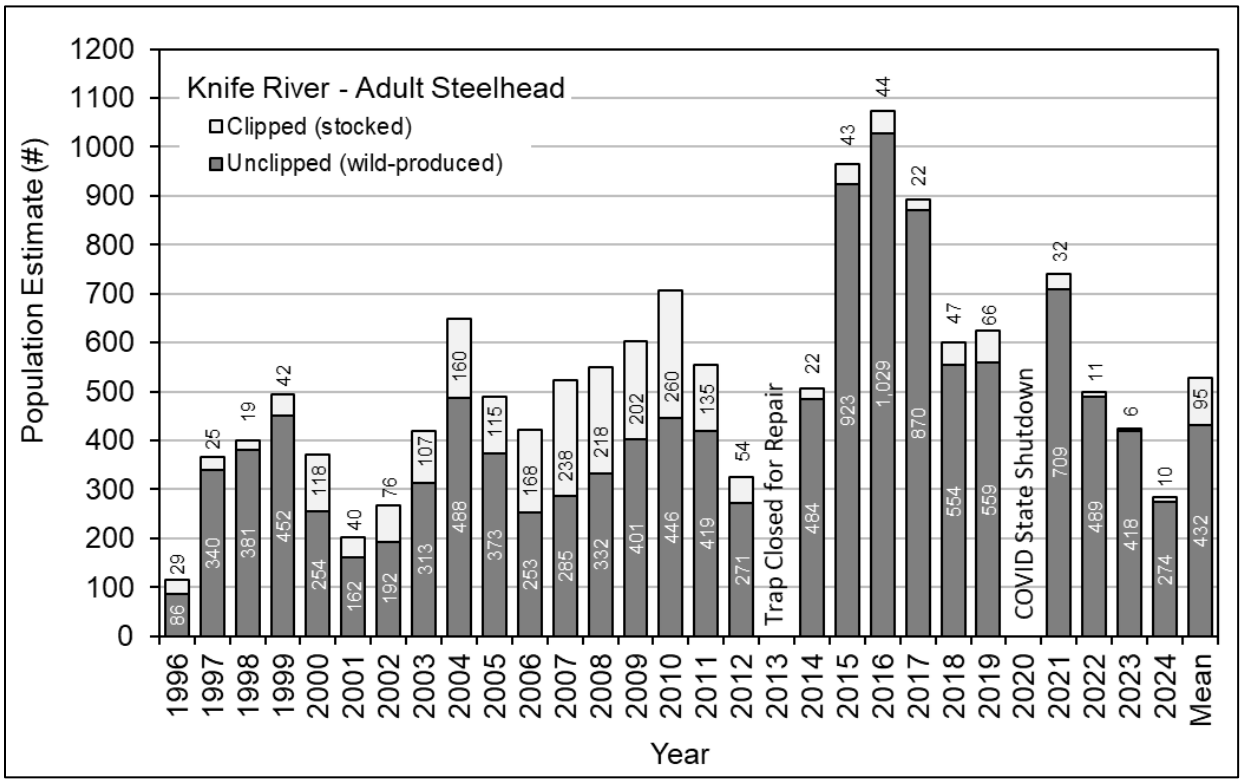


Figure 6. Number of unclipped (wild-produced) and clipped (stocked) adult steelhead that returned to the Knife River in the spring by year from 1996 to 2024, including the historic average (Mean).

Over the past decade, adult steelhead returns to the Knife River have been steady or above average, largely due to successful wild reproduction. Many recent returns include older fish (age 7+), with over 40% being repeat spawners—fish previously tagged in earlier years. This reflects strong adult survival and suggests that the catch-and-release regulations established in 1997 have been effective.

However, the overall number of adults—especially fish aged 4 to 6—has been lower than expected. Although those year-classes produced above-average smolt numbers (Figure 5), few returned as adults, pointing to poor lake survival beyond the DNR's control. The recent declines in both juvenile and adult steelhead in the Knife River and other North Shore streams are concerning, and supplemental stocking has been used to help offset these losses.

Clipped (stocked) Steelhead & Kamloops

The Superior strain steelhead stocking program began in 2018 with pre-smolt yearlings (2017 year-class) averaging 4 inches in length. These fish were stocked above barriers in the Lester and French rivers to improve imprinting and increase the chances of adult returns to Minnesota waters of Lake Superior. The Knife River trap does not accurately reflect returns from the clipped steelhead stocking program because, before 2024, no clipped steelhead were stocked there. All clipped steelhead caught at Knife River are strays from stocking efforts in the Lester and French rivers.

In fall 2023 and spring 2024, the Knife River was stocked with Superior strain steelhead for the first time. This was done in response to four consecutive years of poor juvenile survival (2020–2023) (Figure 4). The fish used came from surplus production at Crystal Springs Hatchery, where a captive Superior strain broodstock was recently established. Before fall 2023, these broodstock fish were not yet mature enough to produce surplus beyond the 120,000-fish quota set for the Lester and French rivers.

A total of 9,704 surplus unclipped fingerling steelhead (average size at stocking: 3 inches) were available and stocked in the Little Knife River at Korkki Road on November 17, 2023. In spring 2024, 16,577 surplus adipose clipped yearlings were available and stocked at two locations in the Knife River watershed: 6,992 in the main Knife River at Westover Road and 6,873 in the West Branch, Knife River at Fox Farm Road. A subset (approx. 850) of these fish were given passive integrated transponder (PIT) tags prior to stocking to evaluate habitat use and movements and support an ongoing research project in the Knife and Stewart river watersheds.

Three-hundred three juvenile clipped steelhead were recaptured in the juvenile trap in 2024. All but one of these fish were yearling adipose clipped steelhead stocked in the Knife River in spring 2024. The average size of adipose clipped yearlings recaptured at the trap was 6.4 inches (range: 4.2-9.0). One clipped juvenile had an adipose and right-rear clip and measured 9.9 inches; this fish was three years-old and was originally stocked in the French or Lester river in 2022. This fish may have left the Lester or French River after being stocked, then moved into the Knife River and stayed there for another year.

Ten adult clipped steelhead were captured in the spring and three different fin clip combinations were found: two right-maxillary (RM), one adipose plus left-rear (ALR), and seven adipose plus right-pelvic (ARR) clips (Table 1). All RM clipped steelhead were Knife River captive adult broodstock that were clipped and released into Lake Superior prior to closure of the French River Coldwater Hatchery (FRCWH) in 2018. These fish were originally wild-produced fish captured as age-1 parr at the Knife River smolt trap, transported to the FRCWH where they were grown out and spawned to produce fish to stock. All these fish were tagged and released to Lake Superior in 2018 or earlier. The one ALR clipped steelhead was 5 years old (2019 year-class) and a male that measured 23.0 inches and 3.8 pounds. Six of seven ARR clipped steelhead were 6 years old (2018 year-class) and from the second year of the Superior strain clipped steelhead stocking program; average length of this year-class was 22.5 inches (range: 19.9-25.6) and 4.3 pounds (range: 3.0-6.5). One ARR clipped steelhead was a male from the 2021 year-class that measured 9.9 inches and weighed 0.3 pounds (Table 2). The variability in growth of Superior strain steelhead that return to Knife River is largely influenced by the number of years they spend in the stream versus the lake. No clipped steelhead were captured in the fall (Table 2).

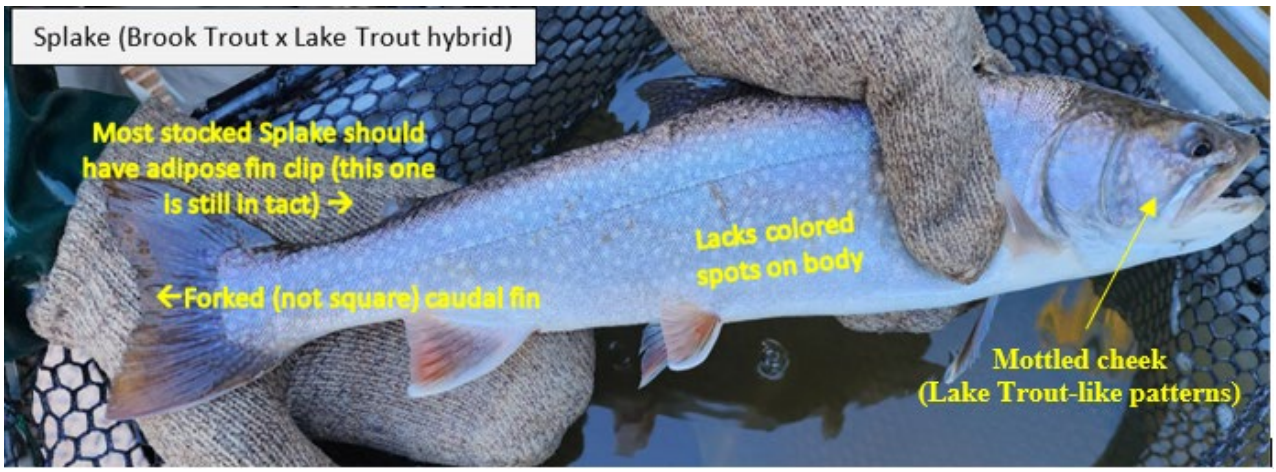
One adipose and left-rear clipped Kamloops was captured this spring (Table 1). This fish was 8 years old (2016 year-class) that was originally stocked in the Lester River in 2017 and strayed to the Knife River. It measured 26.6 inches and weighed 6.8 pounds. The Kamloops stocking program ended after stocking pre-smolt yearlings in 2017 (2016 year-class). Kamloops have now well exceeded their average life-expectancy (5 years old), therefore any adipose-clipped (stocked) Rainbow Trout caught in Minnesota waters moving forward will likely be the Superior strain steelhead and not Kamloops. No Kamloops were captured in the fall (Table 2).

Brook Trout & Splake (Brook Trout x Lake Trout hybrid)

Brook Trout are a primary management species in the Knife River and populations are currently supported solely by natural reproduction. The peak emigration patterns of juvenile Brook Trout at Knife River typically correspond to the upstream and downstream peak migrations of adult steelhead, and a lesser degree related to seasonal water temperatures than is observed with juvenile steelhead.

A total of 56 Brook Trout were captured in the Knife River traps in 2024, 43 were captured in the juvenile trap (downbound) and 13 in the adult trap (upbound). Average total length of Brook Trout caught in the juvenile trap was 8.7 inches (range: 6.1-12.9) and 11.1 inches (range: 8.0-21.1) in the adult trap. Only one large Brook Trout that measured 21.1 inches and 4.1 pounds was captured in the adult trap in the fall, all others were captured in the spring (Tables 1 and 2). In total, 29 Brook Trout were given a numbered pink Floy®Tags prior to release. A small left pectoral fin clip was collected from a subset of Brook Trout for the Coaster Genetics Project. If you catch a Brook Trout or any other species with a tag, please DO NOT remove the tag, record the tag number, and report it to the Minnesota DNRs Tagged Fish Reporting website.

One unclipped Splake (Brook Trout x Lake Trout hybrid) was captured at Knife River on July 1, 2024. This fish measured 12.1 inches and weighed 0.6 pounds. It was estimated to be age-3 (2021 year-class).



Brown Trout

Brown Trout populations in the Knife River are supported solely by natural reproduction. Eighty-two juvenile Brown Trout were captured in the juvenile trap in 2024, 35 were captured in April through July and 8 in August; no juvenile Brown Trout were captured in the fall (Sept.-Nov.). Average total length was 5.4 inches (range: 2.5-9.6). Seven were age-0 (2024 year-class), 77 were age-1 (2023 year-class), and 2 were age-2 (2022 year-class).

Three Brown Trout were captured in the adult trap in the spring that were sub-adult size (<16 inches) and two or three years old. Eleven adult Brown Trout were captured in the fall of 2024; the first was captured on August 30 and the last on November 6. Ten were females and one was a male. The average size was 20.0 inches (range: 14.5-26.4) and 3.1 pounds (range: 0.9-7.5). Two were recaptures tagged at the Knife River trap in previous years; one was seven years old (2017 year-class), and one was three years old (2021 year-class).

Chinook, Coho, and Pink Salmon

Pacific salmon species typically spend one year or less in the rivers prior to emigrating to Lake Superior; Chinook and Coho typically spend 1 year in the streams, and Pink salmon emigrate to Lake Superior as fry soon after they hatch. It is assumed that most of the juvenile Pacific salmon species born in Lake Superior streams emigrate to Lake Superior early in the spring when river conditions are high from snowmelt and at small sizes that are not conducive to being captured in the Knife River traps (<2.0 inches). Chinook, Coho, and Pink salmon are not primary management species in Knife River and any captured here are most likely produced in other jurisdictions and strayed to Knife River; however, natal origins of adult salmon that return to spawn in Minnesota waters of Lake Superior has never been corroborated. Adult Coho and Chinook salmon are very rare at Knife River and the historic average annual return of Chinook salmon at Knife River is only two fish and Coho is 14 fish. Abundant returns of adult Pink salmon typically appear on a two- or three-year cycle (Table 2; Beckman 2022).

No adult or juvenile Chinook salmon were captured in 2023. Two adult Coho Salmon were captured in the adult trap in the fall; one was a female that measured 25.3 inches and 4.85 pounds, and the other was a male that measured 10.7 inches and 0.8 pounds (Table 2).

No juvenile Pink salmon were captured in 2023. One adult Pink salmon was captured in the adult trap in the fall that measured 15.9 inches and 1.2 pounds. Pink salmon catches at Knife River trap do not necessarily reflect annual shore wide Pink salmon abundance. This reflects the known tendencies of this species to spawn in stream habitat relatively close to Lake Superior and not try to traverse migration barriers to find additional spawning habitats (Table 2).

Sea Lamprey Wounding Rates

The Knife River trap plays a key role in blocking Sea Lamprey. Without it, lamprey would have access to miles of prime upstream spawning habitat. This would cause serious harm to stream and lake fisheries, requiring costly and intensive lampricide treatments to control their numbers.

A field guide for classifying Sea Lamprey wounds on fish that is used by agencies throughout the Great Lakes for estimating sea lamprey-induced mortality of target fish species, evaluating the success of the sea lamprey control program, allocating resources for sea lamprey control, and setting fish community targets (Ebner et al. 2006). This guide has been used by Minnesota DNR at the Knife River traps since 2008. Prior to 2008, lamprey wounds were recorded but without any sort of classification system. Annual wounding rates observed at the Knife River traps are regularly shared with others who manage the Lake Superior fishery (i.e., Lake Superior Technical Committee).

In total, 29 lamprey wounds were found on 277 steelhead examined at the Knife River traps in 2024. Eight were classified as fresh wounds (A1-A3 type) and 21 as old wounds (A4-B4 type). The fresh wounding rate (A1-A3 types) was 3.5% in 2024, which was the highest rate since 2008 (Avg.: 1.4%, range: 0.4-2.9%; Figure 7). Combining all wound types, all wound rate was 12.8%, which was also the highest since 2008 (Avg.: 5.4%, range: 2.7 to 9.8%).

Overall, wounding rates at the Knife River remain relatively low and below maximum standards set for other species (e.g., annual fresh wound standards for Lake Trout is less than 3.0% with 5% being critical concern; Goldsworthy et al. 2017). Lamprey wounds were only present on steelhead captured in the spring and no lamprey wounds were found on Brook Trout other salmonids.

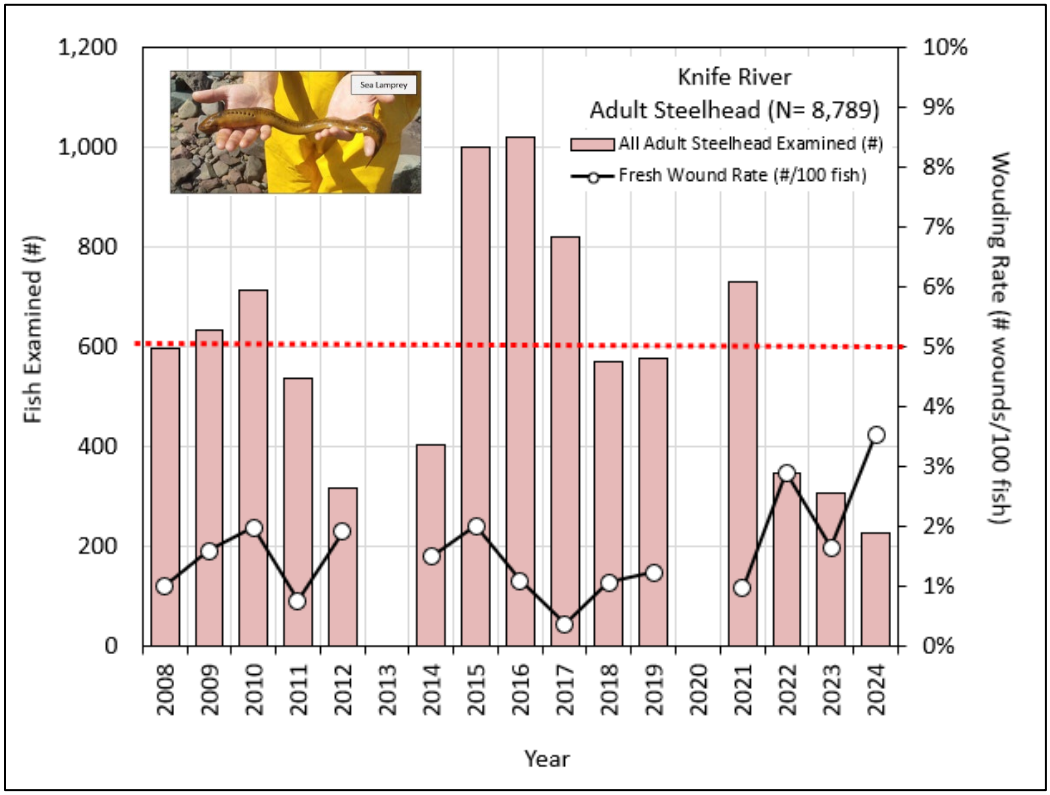


Figure 7. The total number of adult steelhead evaluated for lamprey marks and the wounding rate (# A1-A3 wounds/100 fish) by year. The threshold where fresh wounding rates are critical concern (5%) is shown as a red dashed line.

Table 1. Operation dates and total number of adult fish collected at the Knife River adult trap in the spring by year and species, including the historic averages (Mean). The trap was not operated in 2013 (trap repairs) and 2020 (COVID state shutdown).

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Average
Date trap was opened	4/23	4/14	3/25	4/7	3/26	4/18	4/14	4/21	4/7	4/10	4/6	4/15	4/16	4/12	3/28	4/18	3/25	—	4/28	4/13	3/27	4/5	4/24	4/5	—	4/1	4/9	4/24	4/6	4/10
Date trap was closed	6/5	6/30	6/22	6/30	6/30	6/30	6/30	6/28	6/30	6/30	5/25	6/26	6/30	6/22	5/31	6/20	6/1	—	7/7	7/6	7/19	7/14	7/5	7/12	—	6/24	7/29	7/3	7/24	6/28
Days trap was open	43	77	89	84	96	73	77	68	84	81	49	72	75	71	64	63	68	—	70	85	115	101	68	99	—	84	105	70	104	79
Brook Trout	0	3	3	7	3	11	1	0	0	0	1	0	0	0	0	4	6	—	0	7	39	5	14	5	—	7	6	1	13	5
Brown Trout	0	2	0	1	2	4	2	0	1	0	0	0	0	0	0	0	1	—	0	5	4	0	2	0	—	1	1	0	3	1
Chinook Salmon	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	—	0	0	0	0	0	0	—	0	0	0	0	0
Kamloops (clipped)	37	48	48	82	65	108	44	72	120	97	27	22	21	46	26	29	20	—	29	17	19	44	43	58	—	15	6	1	1	42
Splake (Brook x Lake Trout)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	0	0	0	0	0	0	—	0	0	0	1	0
Steelhead (unclipped)[1]	86	340	381	452	254	162	192	313	488	373	253	285	332	401	446	419	271		484	923	1,029	870	554	559	—	709	489	418	274	435
Steelhead (clipped)	29	28	20	43	120	40	76	111	201	136	204	284	274	258	290	182	62	—	21	47	47	28	48	71	—	44	16	15	10	100
Adipose only (A)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*0*	*1*	*0*	*0*	*0*
Adipose + Left-pelvic (ALR)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*0*	—	*2*	*2*	*2*	*1*	1
Adipose + Right-pelvic (ARR)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*0*	—	*1*	*2*	*6*	*7*	3
Left-pelvic (LR)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*0*	*3*	—	*8*	*3*	*2*	*0*	3
Right-pectoral (RF)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*1*	*2*	—	*4*	*1*	*1*	*0*	*2*
Right-pelvic (RR)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*2*	*1*	—	*0*	*0*	*0*	*0*	1
Right-maxillary (RM)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*45*	*64*	—	*29*	*7*	*4*	*2*	25
Total (all species)	**153**	**426**	**480**	**585**	**477**	**334**	**357**	**568**	**862**	**656**	**562**	**593**	**627**	**705**	**765**	**634**	**360**	**—**	**533**	**999**	**1,138**	**947**	**661**	**693**	**—**	**776**	**518**	**405**	**304**	**597**

[1] *Numbers estimated using a mark-recapture population estimate to account for fish that bypassed the trap during upstream migration.*

Table 2. Operation dates and total number of adult fish collected at the Knife River adult trap in the fall by year and species, including the historic averages (Mean). The trap was not operated in fall 2012 and 2013 (trap repairs), and 2020 (COVID).

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004 [1]	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Average
Date trap was opened	8/19	8/18	8/17	8/9	8/4	8/13	8/16	9/8	9/8	9/5	9/5	9/5	9/2	9/21	9/13	9/19	—	—	9/9	9/9	9/6	8/25	9/4	8/30	—	9/7	9/13	9/5	8/28	8/31
Date trap was closed	11/8	11/7	11/6	11/12	11/10	11/16	11/8	11/7	11/5	11/4	11/4	11/2	11/7	11/7	11/5	11/4	—	—	11/6	11/18	11/16	11/6	11/7	11/6	—	11/1	11/2	10/27	11/20	11/7
Days trap was open	81	81	81	95	98	95	84	60	58	60	60	58	66	47	53	46	—	—	58	71	72	74	63	62	—	56	33	47	85	67
Brook Trout	0	2	3	1	0	3	2	0	3	2	0	1	1	0	0	1	—	—	1	1	1	3	2	0	—	0	1	0	1	1
Brown Trout	32	67	43	61	58	20	45	30	27	26	9	7	17	8	7	1	—	—	7	5	5	0	15	23	—	28	3	16	11	22
Chinook Salmon	4	1	9	9	2	0	2	0	0	0	0	11	5	0	0	0	—	—	1	3	0	1	3	1	—	0	0	0	0	2
Coho Salmon	6	16	37	10	5	1	16	0	3	3	0	9	11	9	71	0	—	—	0	8	17	5	53	32	—	6	2	11	2	13
Kamloops	4	0	12	1	4	1	0	0	0	0	0	5	7	0	3	10	—	—	0	2	0	0	1	0	—	0	0	0	0	2
Pink Salmon	0	9	20	39	48	0	3	0	0	2	7	10	0	2	258	103	—	—	0	1	4	207	2	10	—	94	5	20	1	33
Splake (Brook Trout x Lake Trout)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—	—	0	1	0	0	1	4	—	1	2	0	0	0
Steelhead Rainbow Trout (unclipped)	60	16	105	17	37	19	23	6	63	9	1	50	49	21	18	2	—	—	8	155	22	25	35	53	—	31	0	4	13	32
Steelhead Rainbow Trout (clipped)	2	0	16	6	9	0	2	0	0	7	0	22	10	5	2	0	—	—	0	5	3	1	10	7	—	0	0	0	0	4
Adipose only (A)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*0*	*0*	*0*	*0*	*0*
Adipose + Left-pelvic (ALR)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*2*	—	*0*	*0*	*0*	*0*	*0*
Adipose + Right-pelvic (ARR)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*0*	—	*0*	*0*	*0*	*0*	*0*
Left-pelvic (LR)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*1*	*0*	—	*0*	*0*	*0*	*0*	*0*
Right-pectoral (RF)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*0*	*2*	—	*0*	*0*	*0*	*0*	*0*
Right-pelvic (RR)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*0*	*0*	—	*0*	*0*	*0*	*0*	*0*
Right-maxillary (RM)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*9*	*3*	—	*0*	*0*	*0*	*0*	*2*
Total (all species)	**108**	**111**	**245**	**144**	**163**	**44**	**93**	**36**	**96**	**49**	**17**	**115**	**100**	**45**	**359**	**117**	**—**	**—**	**17**	**181**	**52**	**242**	**122**	**130**	**—**	**160**	**13**	**51**	**26**	**109**

[1] *Counts made from fishway and video survalence, specific clips/strains were not identifiable on videotape for 14 rainbow trout, added to unclipped totals.*

SUPPLEMENTAL REPORT

Knife River Fish Trap Report
2024

Prepared by:
Nick Peterson

Edited by:
Cory Goldsworthy

Area Fisheries Supervisor: Cory Goldsworthy Digitally signed by Cory Goldsworthy Date: 2025.04.14 16:21:58 -05'00'

David Weitzel Digitally signed by David Weitzel Date: 2025.06.17 11:57:08 -05'00'

Regional Fisheries Supervisor: _____