

# Native Salmonid Abundance and Tributary Habitat Restoration Monitoring

Annual Project Update – 2024

Montana Tributary Habitat Acquisition and  
Recreational Fishery Enhancement Program

Appendix B

March 2026



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## **Annual Project Update – 2024**

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## Introduction

This is an annual update of work completed as part of the Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program, Appendix B of the Clark Fork Settlement Agreement. This update focuses on native salmonid population monitoring conducted in 2024 in tributaries to the lower Clark Fork River in Montana. Fish population estimates were conducted at long-term monitoring sites in the following streams: Prospect Creek, Glidden Gulch, Demont Creek, Crow Creek, Graves Creek, West Fork Trout Creek, Tuscor Creek, Rock Creek, and Pilgrim Creek. Westslope Cutthroat Trout *Oncorhynchus lewisi* genetic monitoring was conducted in Twentyfour Mile Creek, Daisy Creek, Brush Gulch, Wilkes Creek, Clear Creek, Tuscor Creek, West Fork Pilgrim, and Skeleton Creek. Additional sampling occurred in intermittent portions of Prospect Creek and East Fork Bull River to salvage native salmonids stranded in ephemeral pools. An investigation of a presumed illegal introduction of Northern Pike *Esox lucius* in the Bull River occurred that included gill netting of Berray Lake. Trend information by species for long-term electrofishing monitoring sites, yearly thermograph data, mean yearly Bull Trout *Salvelinus confluentus* growth by drainage, and summaries of fish detections on the Prospect Creek, Graves Creek, Vermilion River, Bull River, and East Fork Bull River passive integrated transponder (PIT) tag arrays can be found in appendices A through D respectively.

## Methods

In 2024, backpack electrofishing units were used at depletion sections of stream that were 89–114 m in length. All depletion sections were sampled from the upstream-most point in the section to a block net at the bottom of the site. Bull Trout were scanned for a PIT tag and a 12 mm long full duplex PIT tag was implanted in the dorsal sinus of all unmarked fish  $\geq 100$  mm. If a PIT tag was present the identification number was recorded.

Multi-pass population estimates for fish greater than or equal to 75 mm were conducted in Montana Fish, Wildlife and Parks (FWP) internal Fisheries Information System (FIS) using K-pass removal equations (Ogle 2010) derived for Zippin (1958) and modified by Carle and Strub (1978). This method was used to estimate populations for fish greater than or equal to 75 mm except for Graves Creek Site 5. Due to electrofishing equipment failure during the second pass fish abundance was estimated using a relationship derived from historical data collected from long-term monitoring sites in Graves Creek from 2003–2023 (Lewis 2021; Rehm and Tholl 2023). First pass fish capture numbers and the subsequent abundance estimates were plotted, and a linear regression model was fit to the data. The model indicated a strong relationship between the number of fish sampled on the first pass of a multi-pass depletion survey and the population estimate produced ( $b_0 = -2.18$ ,  $b_1 = 1.39$ ,  $r^2 = 0.97$ ,  $p = <0.0001$ ). Thus, data from the first pass was used to predict the abundance in the reach where only a single-pass electrofishing survey was completed. High and low abundance estimates were also calculated based on the 95% prediction intervals from the linear model.

Linear abundance for this report is defined as the population estimate (based on multiple passes, typically 2 or 3) standardized to a 100 m section of stream. Salmonid biomass (g/100m<sup>2</sup>) was estimated using the population estimate, mean fish weight at each sampling location and the area of stream that was sampled based on the section length and six wetted widths [(population estimate \* mean weight) / (reach length \* mean reach width) \* 100]. Density (fish/100m<sup>2</sup>) was estimated using the population estimate and the area of stream that was sampled [(population estimate \* 100) / (reach length \* mean reach width)].

Fish tissue samples were collected from Westslope Cutthroat Trout in select streams for genetic analysis. Genetic samples were analyzed for purposes of describing the presence and extent of non-native genetic admixture from Rainbow Trout *Oncorhynchus mykiss* and/or Yellowstone Cutthroat Trout *Oncorhynchus virginalis bouvieri*. A GTSeq panel was used to genotype all fish with 175 species diagnostic markers (combination of Westslope, Rainbow and Yellowstone diagnostic markers). In each stream, tissue samples were collected across the spatial extent of the population. Continued regular genetic analysis is crucial to inform conservation and management of Westslope Cutthroat Trout populations into the future.

Thermographs were deployed in most important native salmonid tributaries with data collected from July 1 through September 30. Stream temperature was recorded every 30 minutes over the entirety of the study period. Mean and maximum daily temperatures are displayed for each stream in Appendix B.

An overview of the long-term trends in stream salmonid abundance and biomass for monitoring sites sampled in 2024 is provided in Appendix A. Table A-1 provides the slope of the line (and direction of the trend), coefficient of determination, and *p*-value from linear regression of time (year) versus linear abundance and biomass for long-term sample sites, and is organized by stream, site, and species. In most instances, time was a poor covariate with abundance and biomass, as these metrics are likely influenced by environmental variables that were not quantified. Given the available data, a significant trend was noted when the *p*-value from the linear regression was less than or equal to 0.05. If the significance level is less than or equal to 0.05, it can be said that the relationship between time and the dependent variable (abundance or biomass) is different from zero. The direction and magnitude of this trend is expressed as the slope. A positive value would suggest the species to be increasing, while a negative value would imply a declining trend. If the *p*-value is greater than 0.05, that relationship is not different from zero (there is no relationship), regardless of the coefficient of determination (*r*<sup>2</sup>) value.

Significance levels at or below 0.05 coupled with moderate or higher coefficient of determination values (*r*<sup>2</sup> > 0.30 in ecological studies) would suggest that the described relationship has a high probability of not occurring by chance alone and that some portion of the variation within the data (*r*<sup>2</sup> value) can be attributed to changes in fish species' abundance or biomass over time. A specific site was included in this analysis if it had been sampled three or more times. The majority of species-specific metrics at a given site (abundance and biomass) did

not change over time and thus species at those sites can be considered stable (Table A-1). For these streams and sites with fewer sampling events it is likely that more regular sampling would be needed to detect changes to the fish community, therefore it is not surprising that many of these sites did not show statistically significant trends. Trends that appear at sites with a relatively low number of sampling events should also be interpreted with caution.

## **Results and Discussion**

### **Prospect Creek**

The Prospect Creek drainage is mainly occupied by non-native salmonids in the lower portions, while the upper drainage and its major tributaries are occupied solely by native fish species. This dichotomy is likely facilitated by the geology of the area where large unconsolidated substrate was deposited by Glacial Lake Missoula and underlies portions of the stream causing the mainstem and portions of its tributaries to go dry during low flow periods each year (Sando and Blasch 2015; M. Lawlor, U.S. Geological Survey, unpublished data). Two lengthy, naturally intermittent sections of stream occur on the mainstem of Prospect Creek. The lower dry reach begins just upstream of Brush Gulch and extends approximately 4.0 km upstream to above the Daisy Creek confluence. A short perennial section of stream occurs from an area between Daisy Creek and Therriault Gulch to just upstream of the Crow Creek confluence. Above where Crow Creek enters, Prospect Creek again becomes ephemeral for about 6.8 km.

A small-scale habitat project was completed in 2020 when nine large woody debris structures were created by selectively felling large conifer trees to facilitate spawning gravel deposition in upper Prospect Creek (Brissette et al. 2024). Notably, project associated gravel patches were documented being used by Bull Trout with two redds being observed in 2022 and one in 2023 and 2024 by FWP staff. Encroachment by non-native salmonids that dominate the lower perennial reach of Prospect Creek is a serious threat to the upper watershed which is an important native fish refugia in the lower Clark Fork River drainage. Genetic analyses from putative Westslope Cutthroat Trout in Crow Creek (2009 and 2017) and Therriault Gulch (2023) has noted low rates Rainbow Trout hybridization in the drainage (Kovach et al. 2019; Kovach 2023). It is likely that the perennial reach of Prospect Creek near Crow Creek facilitates the persistence of colonizing Rainbow Trout and hybrids that have caused the relatively low levels of hybridization that had occurred over the last two decades. Rainbow Trout that originate in lower Prospect Creek and the Clark Fork River may ultimately be influencing hybridization observed in the vicinity of Crow Creek (Moran and Storaasli 2013; Blakney and Tholl 2019). Genetic analyses from putative Westslope Cutthroat Trout in Cooper Gulch (2009 and 2017) and the upper mainstem of Prospect Creek (2007 and 2020) have found a non-hybridized population of Westslope Cutthroat Trout (Kovach et al. 2019; Kovach et al. 2021).

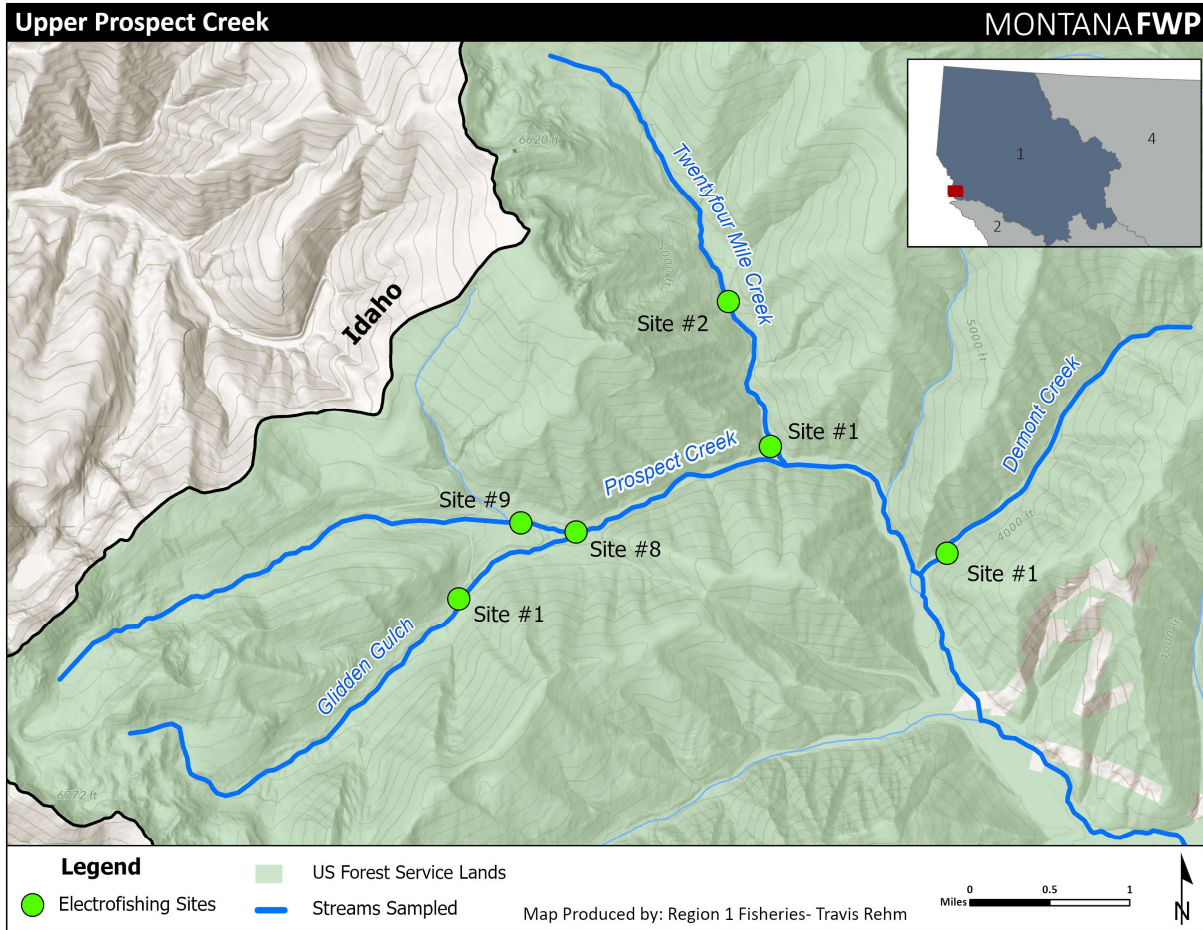


Figure 1. Electrofishing sites sampled in Prospect Creek, Glidden Gulch, Twentyfour Mile Creek, and Demont Creek during 2024.

Two long-term monitoring sites were sampled in Upper Prospect Creek in 2024 (Figure 1). Site 8 and Site 9 have both been sampled 2 times since 2012 (Moran and Storaasli 2013). Site 8 is located just downstream of the Glidden Gulch confluence at River Kilometer (Rkm) 32.5. Site 9 is located just downstream of the confluence Blossom Creek at Rkm 33.1.

Bull Trout were captured only at Site 9 in upper Prospect Creek in 2024. Bull Trout abundance at Site 9 was 5.6 fish/100 m in 2012, compared to 28 fish/100 m in 2024 (Table 1; Figure 3). Bull Trout abundances at Site 9 were notably higher in 2024 than those observed in 2012. This contrasts with recent sampling in Prospect Creek at long-term monitoring sites 1 and 2, where Bull Trout abundances were notably lower in 2023 than historic means and have shown significant declines since 1999 (Rehm et al. 2024). Recent exploratory redd surveys (2021-2024) have observed Bull Trout redds 2022 (n=3) and 2021 (n=1) in the close vicinity Site #9. Upper Prospect Creek still represents a stronghold for Bull Trout in the Lower Clark Fork drainage, despite declines at other long-term sites and the observation of few redds since 2013 (Moran 2024).

Abundances of Westslope Cutthroat Trout were near or above 2012 abundances, and the population appears stable in upper Prospect Creek. Westslope Cutthroat Trout abundance at Site 8 was 72.8 fish/100 m in 2012, compared to 68 fish/100 m in 2024 (Table 1; Figure 2). At Site 9 Westslope Cutthroat Trout abundance in 2021 was 24.4 fish/100 m, compared to 60.4 fish/100 m in 2023 (Table 1; Figure 3).

Table 1. Standardized linear abundance (#/100m), density (#/100m<sup>2</sup>) and biomass (g/100m<sup>2</sup>) estimates (fish<sub>≥</sub>75mm) for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) in Prospect Creek in 2024.

Site # (Rkm)	Section Length (m)	Spp.	Mean Length (fish>75mm)	Length Range (mm)	Estimate per 100 m (95% C.I.)	Estimate per 100 m <sup>2</sup> (95% C.I.)	g/100 m <sup>2</sup> (95% C.I.)
8 (32.6)	100	BULL	119.4	47–333	28.0 (25.0–35.6)	6.6 (5.9–14.2)	191.1 (183.5–198.7)
		WCT	133.8	60–224	68.0 (68.0–69.0)	16.0 (16.0–17.0)	448.0 (447.0–449.0)
9 (33.1)	96	WCT	127.7	65–193	60.4 (60.4–62.1)	17.1 (17.1–18.8)	376.5 (376.5–378.2)

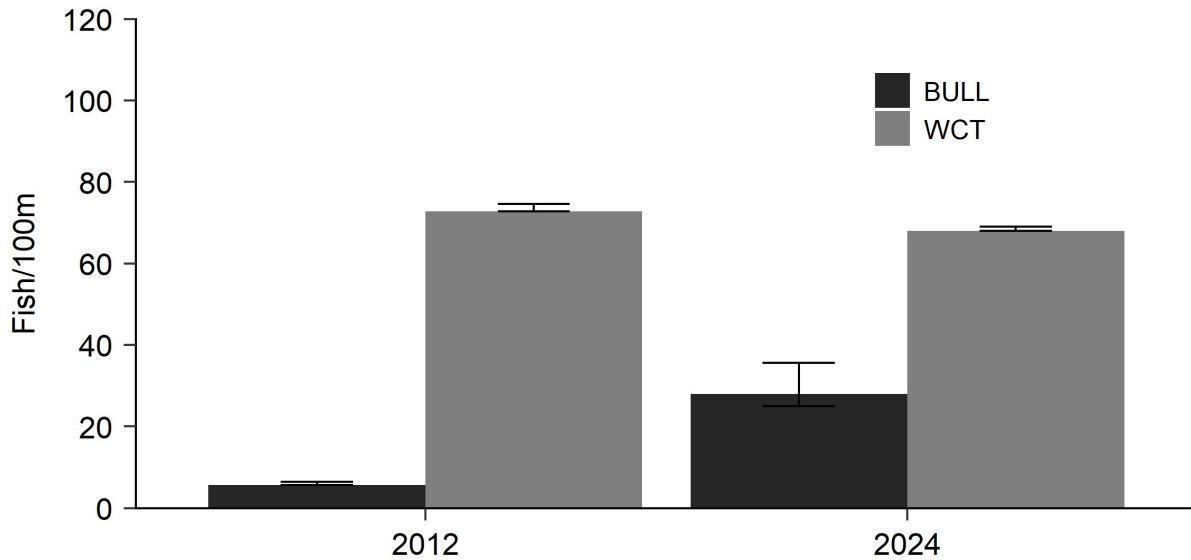


Figure 2. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) at Site 8 in upper Prospect Creek.

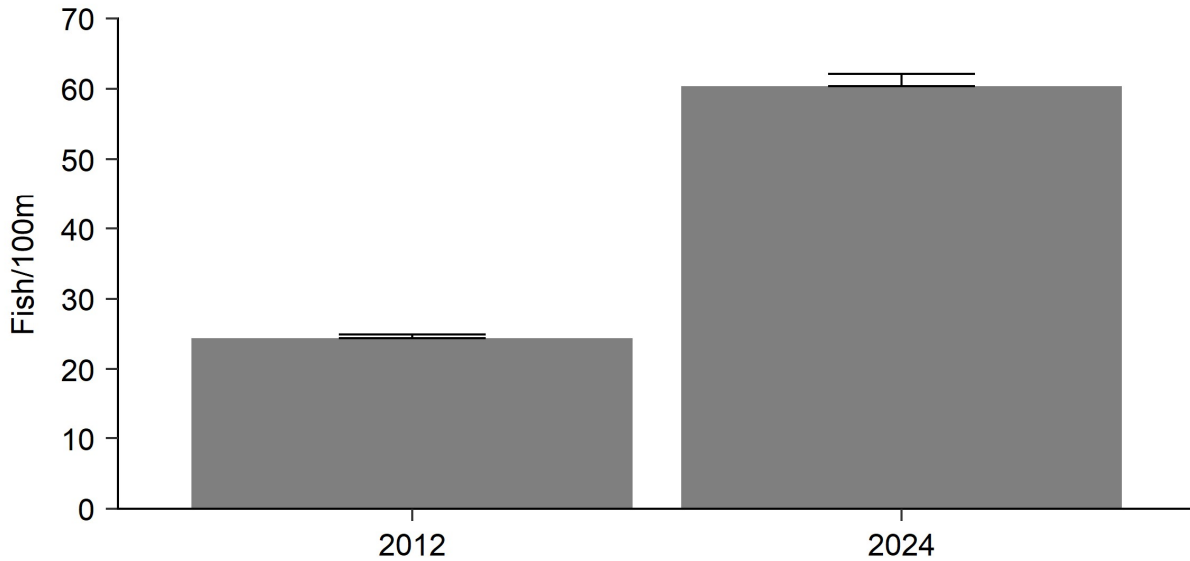


Figure 3. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Westslope Cutthroat Trout (WCT) at Site 9 in upper Prospect Creek.

### Glidden Gulch

Glidden Gulch is a tributary of Prospect Creek in the upper perennial section of the creek. The drainage is wholly within the Lolo National Forest and its fish community is comprised solely of native species including Bull Trout and Westslope Cutthroat Trout. Genetic analyses from putative Westslope Cutthroat Trout in Glidden Gulch (2007) have found a non-hybridized population of Westslope Cutthroat Trout. Anthropogenic impacts in the drainage include Montana State Highway 471 and forest motorized and non-motorized trails.

One long-term monitoring site was sampled in Glidden Gulch in 2024 (Site 1; Figure 1). The site has been sampled 2 times since 2012 (Moran and Storaasli 2013). Site 1 is located 200 meters upstream of where Glidden Gulch is crossed by Montana State Highway 471 at Rkm 1.5. Abundances of Westslope Cutthroat Trout were above 2012 abundances, and the population appears stable in Glidden Gulch. Westslope Cutthroat Trout abundance at Site 1 was 64.3 fish/100 m in 2012, compared to 102 fish/100 m in 2024 (Table 2; Figure 4).

Table 2. Standardized linear abundance (#/100m), density (#/100m<sup>2</sup>) and biomass (g/100m<sup>2</sup>) estimates (fish<sub>≥</sub>75mm) for Westslope Cutthroat Trout (WCT) in Glidden Gulch in 2024.

Site # (Rkm)	Section Length (m)	Spp.	Mean Length (fish>75mm)	Length Range (mm)	Estimate per 100 m (95% C.I.)	Estimate per 100 m <sup>2</sup> (95% C.I.)	g/100 m <sup>2</sup> (95% C.I.)
1 (1.5)	101	WCT	111.7	65–189	102.0 (100.0–106.1)	26.1 (25.6–30.3)	366.1 (362.0–370.2)

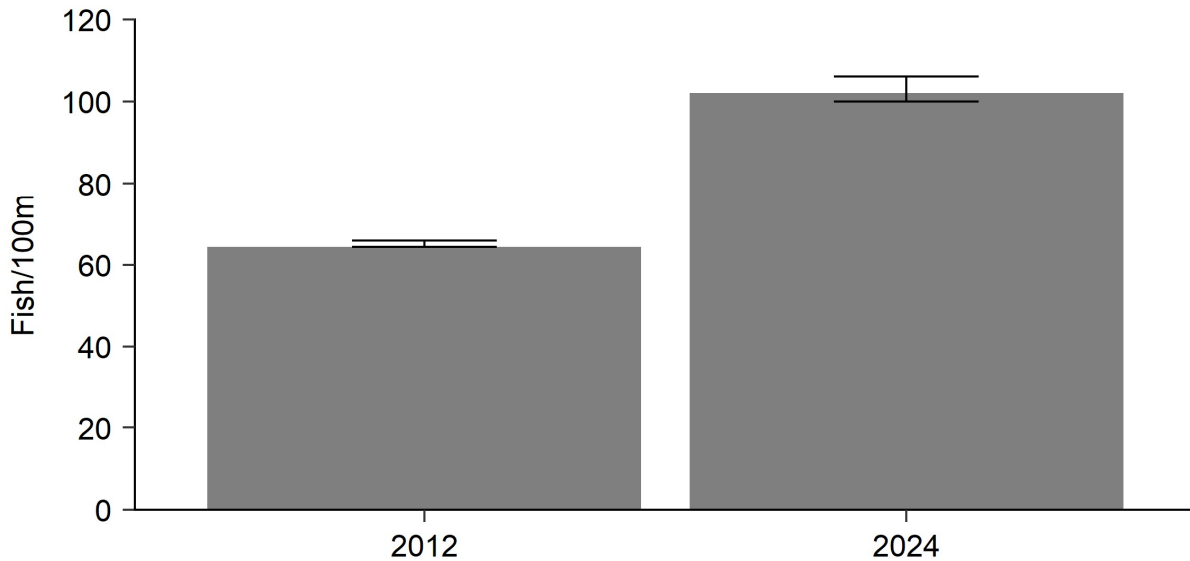


Figure 4. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Westslope Cutthroat Trout (WCT) at Site 1 in Glidden Gulch.

### Twentyfour Mile Creek

Twentyfour Mile Creek is a tributary of Prospect Creek in the upper perennial section of the creek. The drainage is wholly within the Lolo National Forest and its fish community is comprised solely of native species including Bull Trout and Westslope Cutthroat Trout. Anthropogenic impacts in the drainage include Montana State Highway 471 and forest motorized and non-motorized trails.

Two long-term monitoring sites were sampled in Twentyfour Mile Creek during 2024 (Figure 1). Site 1 has been sampled 3 times since 2012 (Moran and Storaasli 2013) and is located 100 meters upstream of where Twentyfour Mile Creek is crossed by Montana State Highway 471 at

Rkm 0.2. Site 2 has been sampled 2 times since 2012 (Moran and Storaasli 2013) and is located at Rkm 1.9.

Bull Trout were captured at Site 1 in 2024. At Site 1 mean abundance from 2012–2017 (n = 2) was 1.2 fish/100 m, compared to 3 fish/100 m in 2024 (Table 3; Figure 5). Low densities of adult resident Bull Trout appear to consistently use the lower reaches of Twentyfour Mile Creek.

Abundances of Westslope Cutthroat Trout were higher than those in 2012 and 2017, and the population appears stable in Twentyfour Mile Creek. At Site 1 mean abundance from 2012–2017 (n = 2) was 33.3 fish/100 m, compared to 51 fish/100 m in 2024 (Table 3; Figure 5). At Site 2 abundance in 2012 was 61.8 fish/100 m, compared to 99 fish/100 m in 2024 (Table 3; Figure 6).

Table 3. Standardized linear abundance (#/100m), density (#/100m<sup>2</sup>) and biomass (g/100m<sup>2</sup>) estimates (fish<sub>≥</sub>75mm) for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) in Twentyfour Mile Creek in 2024.

Site # (Rkm)	Section Length (m)	Spp.	Mean Length (fish>75mm)	Length Range (mm)	Estimate per 100 m (95% C.I.)	Estimate per 100 m <sup>2</sup> (95% C.I.)	g/100 m <sup>2</sup> (95% C.I.)
1	100	BULL	216.3	187–255	3.0 (3.0–10.0)	0.8 (0.8–7.7)	66.2 (59.2–73.1)
(0.2)		WCT	127.2	66–225	51.0 (49.0–56.0)	13.1 (12.6–18.1)	353.1 (348.1–358.1)
2	100	WCT	129.3	58–225	99.0 (96.2–104.5)	21.1 (20.5–26.6)	526.8 (521.4–532.3)
(1.9)							

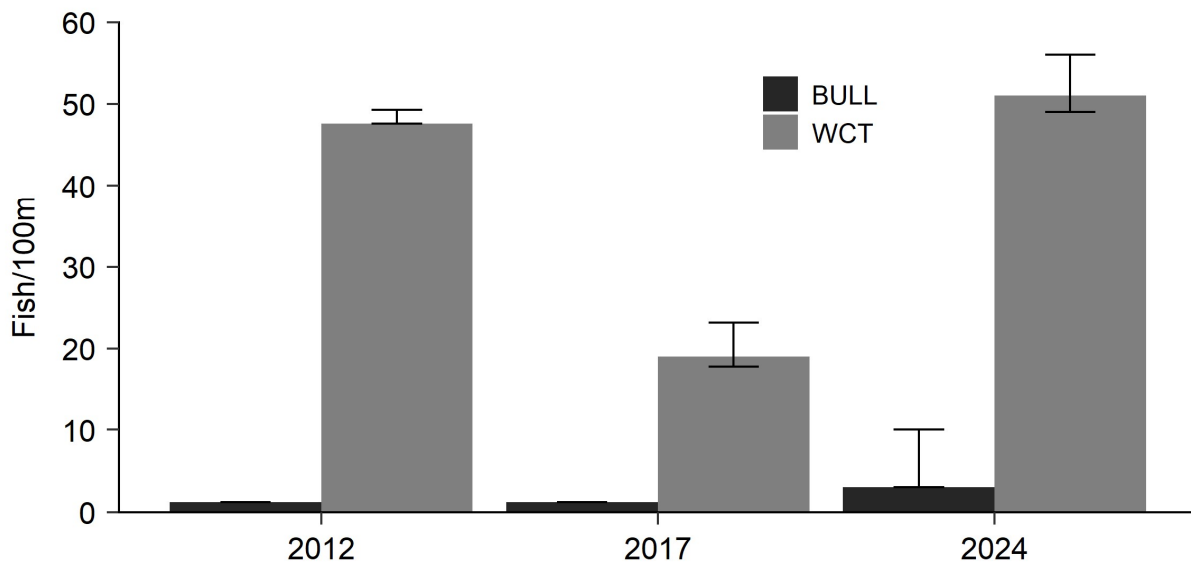


Figure 5. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) at Site 1 in Twentyfour Mile Creek.

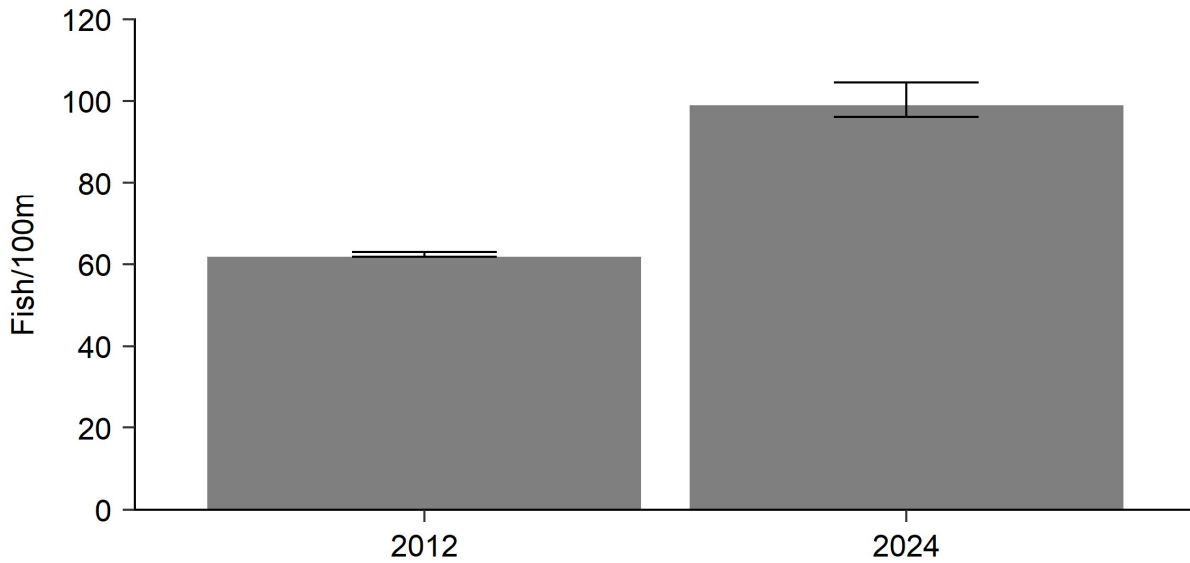


Figure 6. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Westslope Cutthroat Trout (WCT) at Site 2 in Twentyfour Mile Creek

### Demont Creek

Demont Creek is a tributary of Prospect Creek in the upper perennial section of the creek. The drainage is wholly within the Lolo National Forest, and its fish community is comprised solely of native species including Bull Trout and Westslope Cutthroat Trout. Demont Creek suffers from minimal anthropogenic impacts.

One long-term monitoring site was sampled in Demont Creek in 2024, however due to electrofishing equipment failure only one pass was completed (Figure 1). Unlike Graves Creek Site #5 a lack of historical data has been collected on the creek and a relationship between first pass fish capture and the subsequent population estimate was not able to be derived. The site has been sampled 2 times since 2012 (Moran and Storaasli 2013). Site 1 is located 380 meters upstream of the confluence with Prospect Creek at Rkm 0.2.

Abundances of Westslope Cutthroat Trout appear to be stable in Demont Creek with 29 fish greater than or equal to 75 mm captured during 1 pass, compared to 31 during the first pass in 2012 (Table 4). No Bull Trout were captured in 2024, compared to 2 observed in 2012.

Table 4. Minimum linear abundance (#/100m), density (#/100m<sup>2</sup>) and biomass (g/100m<sup>2</sup> ; fish<sub>≥</sub>75mm) for Westslope Cutthroat Trout (WCT) in Demont Creek in 2024.

Site # (Rkm)	Section Length (m)	Spp.	Mean Length (fish>75m m)	Length Range (mm)	Minimum fish per 100 m	Minimum fish per 100 m <sup>2</sup>	Minimum g/100 m <sup>2</sup>
1 (0.2)	94	WCT	103.2	62–165	29	13.8	1,592

## Crow Creek

Crow Creek is a tributary of Prospect Creek in the short perennial reach that typically flows from just upstream of Crow Creek downstream to an area between Therriault Gulch and Daisy Creek. The drainage is almost entirely within the Lolo National Forest and its fish community is comprised solely of native species including Bull Trout, Westslope Cutthroat Trout and Cedar Sculpin *Cottus schitsuumsh*. Anthropogenic impacts in the drainage include two power line transmission corridors, forest and powerline access roads, riparian timber harvest, and a gas pipeline. Crow Creek below the confluence of the East and West forks is impaired from power line corridor construction and maintenance (RDG and USFS 2004). In the 1950s, approximately 0.8 km of old growth forest along the mainstem of Crow Creek was removed to install Bonneville Power Administration power lines. This alteration of the riparian area led to unstable stream conditions, excessive bank erosion, low habitat complexity, and channel migration. Two restoration projects were conducted on the mainstem in 2007 and 2019 to improve habitat conditions for the native fish community and to help the stream recover (Moran and Poiesz 2025).

Four sites were sampled in Crow Creek in 2024 (Figure 7). Site 1 and Site 2 are the upper most sampling sites in Crow Creek. In 2024, Site 1 was sampled for the thirteenth time since 2005 and is within the 2007 mainstem restoration project where the stream has a handful of pools, larger cobble habitat, and the stream banks are protected with thick alder and willow regeneration. Site 2 was sampled for the twelfth time since 2006 and is located in the East Fork of Crow Creek at Rkm 0.2. When established, it was considered a reference reach for the 2007 channel reconstruction project. The site has many large wood debris complexes, undercut banks, and is heavily shaded by large old growth cedars and firs. In 2024, Site 3 was sampled for the seventh time and Site 4 the fifth time since 2016. Site 3 at Rkm 1.3, is considered the reference for the 2019 restoration project. The site is located in an old growth riparian forest dominated by large conifers and has comparably high habitat complexity in the form of large woody debris (LWD), pool habitat, and cover. Habitat characteristics of this reach mimic other undisturbed portions of Crow Creek, including the East Fork and West Fork. Site 4 is located within the new restoration reach at Rkm 1.7. Prior to restoration the stream channel at Site 4 was over-widened, shallow, braided, and lacked pools, shade, and habitat complexity associated with inputs of large and

small woody debris. Now at Site 4, the stream is in a single channel that has several pools and woody habitat structures that provide cover for salmonids.

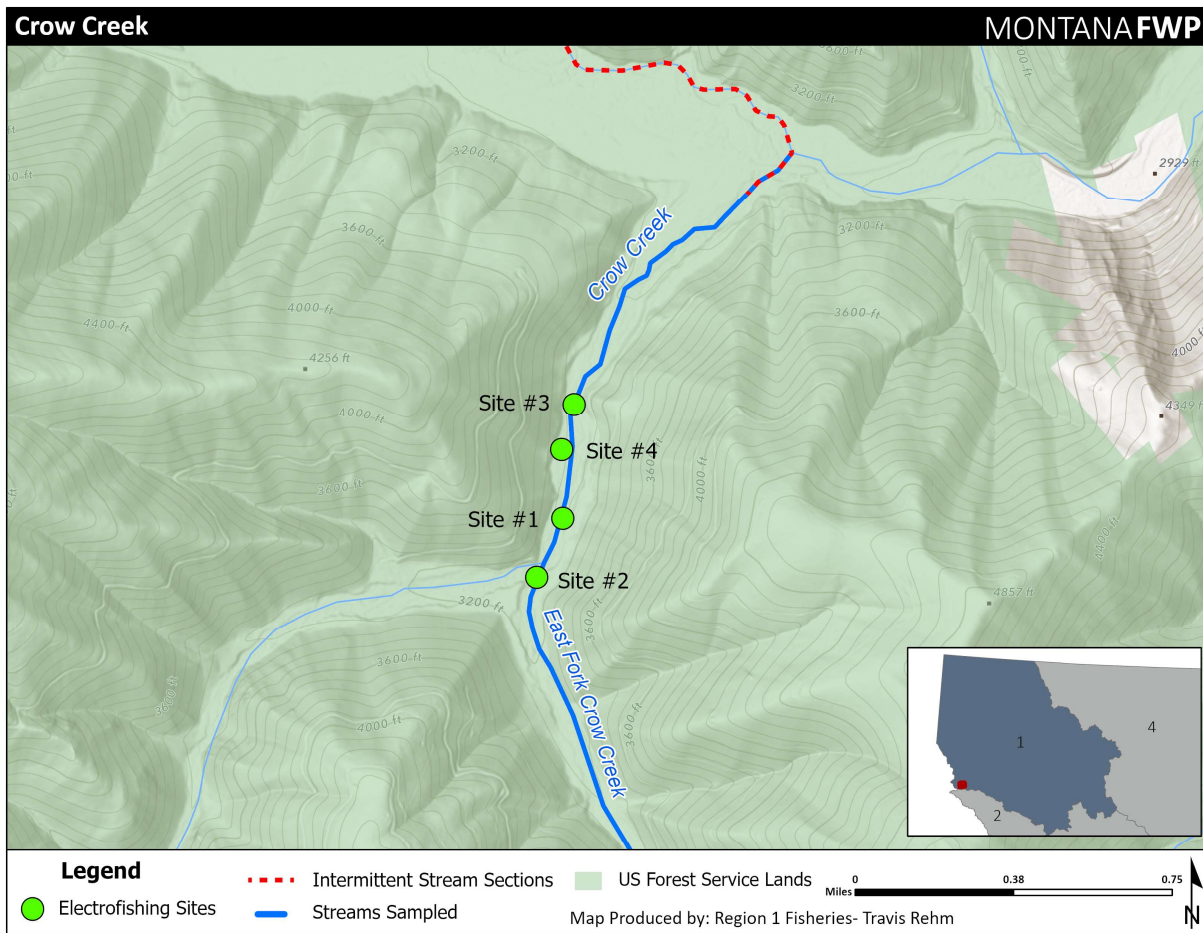


Figure 7. Electrofishing sites sampled in Crow Creek during 2024.

Bull Trout were captured at three sites sampled in Crow Creek in 2024. However, abundances remained very low at all sites. At Site 1 mean abundance from 2005–2021 ( $n = 12$ ) was 2.3 fish/100 m, compared to 2.7 fish/100 m in 2024 (Table 5; Figure 8). No Bull Trout were captured at Site 2 (Table 5; Figure 9). At Site 3 mean abundance from 2016–2021 ( $n = 6$ ) was 1.9 fish/100 m, compared to 1 fish/100 m in 2024 (Table 5; Figure 10). At Site 4 mean abundance from 2016–2021 ( $n = 4$ ) was 1.7 fish/100 m, compared to 2.8 fish/100 m in 2024 (Table 5; Figure 11). Unlike recent sampling events, no Bull Trout that were captured had been previously PIT tagged. It appears that annual Bull Trout translocation efforts (2017–2024) to Crow Creek with fish from stranded pools in ephemeral portions of Prospect Creek has not led to any meaningful population increase. Work is currently being conducted under another Clark Fork Settlement Agreement project the *Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program (Appendix B)*, *Prospect Creek Bull Trout Salvage Evaluation* to assess the efficacy of

Bull Trout salvaging efforts in the ephemeral sections of Prospect Creek, particularly reproduction and emigration of Bull Trout translocated to Crow Creek.

Westslope Cutthroat Trout abundances in 2024 were observed near or at all-time highs for all sites in Crow Creek. At Site 1 mean abundance from 2005–2021 ( $n = 12$ ) was 17.5 fish/100 m, compared to 36.4 fish/100 m in 2024 (Table 5; Figure 8). This marks a significant increase in Westslope Cutthroat Trout abundance over time (linear regression,  $r^2 = 0.3$ ,  $p = 0.05$ ; Appendix A). At Site 2 mean abundance from 2006–2021 ( $n = 11$ ) was 12.7 fish/100 m, compared to 23 fish/100 m in 2024 (Table 5; Figure 9). At Site 3 mean abundance from 2016–2021 ( $n = 6$ ) was 17.6 fish/100 m, compared to 40 fish/100 m in 2024 (Table 5; Figure 10). This marks a significant increase in Westslope Cutthroat Trout biomass over time (linear regression,  $r^2 = 0.7$ ,  $p = 0.02$ ; Appendix A). At Site 4 mean abundance from 2016–2021 ( $n = 4$ ) was 35.8 fish/100 m, compared to 49.5 fish/100 m in 2024 (Table 5; Figure 11). This marks a significant increase in Westslope Cutthroat Trout biomass over time (linear regression,  $r^2 = 0.81$ ,  $p = 0.04$ ; Appendix A). The Westslope Cutthroat population in Crow Creek appears to be stable or growing. Increases in abundance and biomass may be attributed to the 2007 and 2019 restoration projects (Moran and Poiesz 2025). However, there has also been a significant increase in Westslope Cutthroat biomass at Site 3 which is considered the reference site for the 2019 restoration project.

Table 5. Standardized linear abundance (#/100m), density (#/100m<sup>2</sup>) and biomass (g/100m<sup>2</sup>) estimates (fish $\geq$ 75mm) for Bull Trout (BULL), Westslope Cutthroat Trout (WCT) and Rainbow/Westslope Cutthroat trout hybrids (RBxWCT) in Crow Creek in 2024.

Site # (Rkm)	Section Length (m)	Spp.	Mean Length (fish>75mm)	Length Range (mm)	Estimate per 100 m (95% C.I.)	Estimate per 100 m <sup>2</sup> (95% C.I.)	g/100 m <sup>2</sup> (95% C.I.)
1 (1.8)	110	BULL	142.3	115–164	2.7 (2.7–4.2)	0.6 (0.6–2.0)	15.7 (14.2–17.1)
		WCT	148.2	64–239	36.4 (36.4–38.5)	7.7 (7.7–9.9)	317.2 (315.1–319.3)
2 (0.2)	100	WCT	122.7	60–158	23.0 (23.0–24.4)	5.9 (5.9–7.3)	106.2 (104.8–107.5)
3 (1.3)	105	BULL	97.0	97–97	1.0 (1.0–1.0)	0.2 (0.2–0.2)	10.9 (10.9–10.9)
		WCT	117.8	59–241	40.0 (38.1–45.3)	7.4 (7.1–12.7)	163.0 (157.7–168.3)
		RBxWCT	192.0	192–192	1.0 (1.0–1.0)	0.2 (0.2–0.2)	10.9 (10.9–10.9)
4 (1.5)	107	BULL	115.7	95–147	2.8 (2.8–4.3)	0.6 (0.6–2.0)	8.0 (6.5–9.5)
		WCT	152.2	65–258	49.5 (48.6–53.1)	10.1 (9.9–13.7)	404.3 (400.7–407.9)

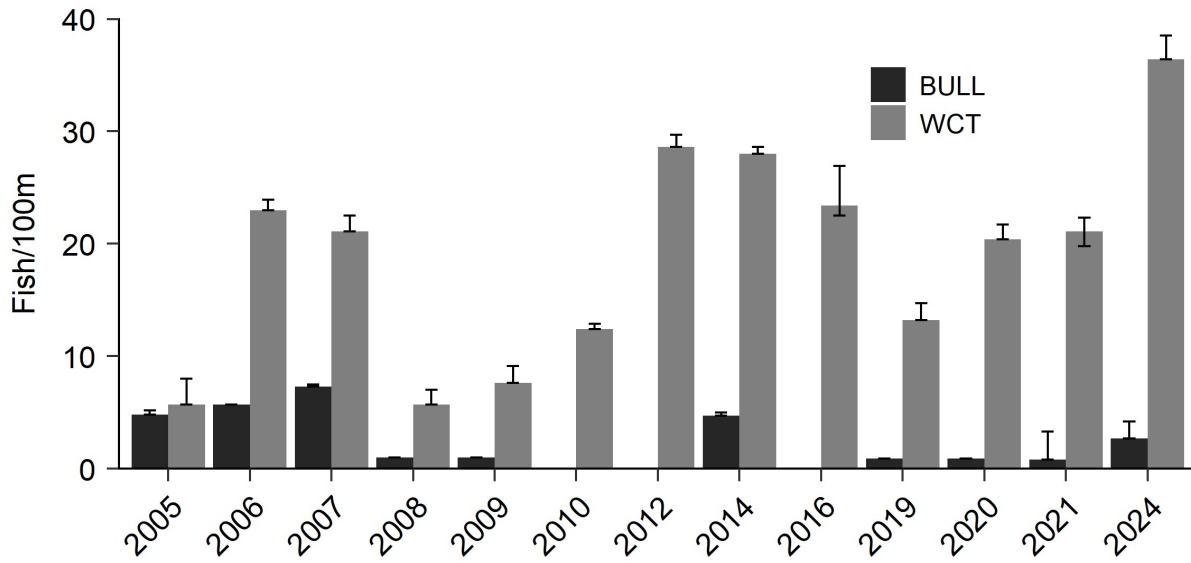


Figure 8. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) at Site 1 in Crow Creek.

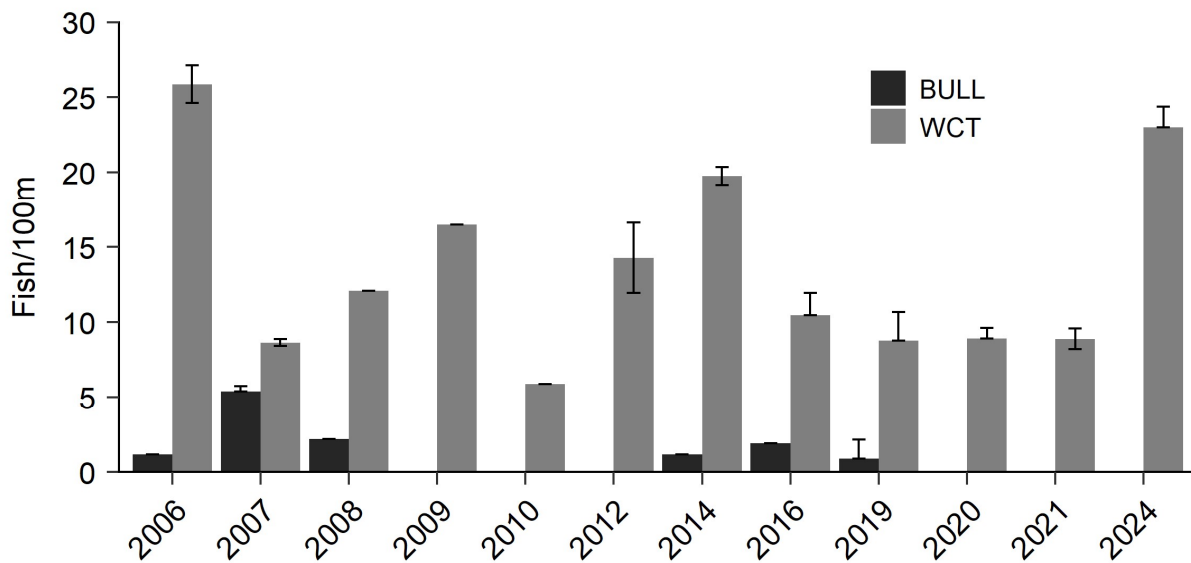


Figure 9. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) at Site 2 in Crow Creek.

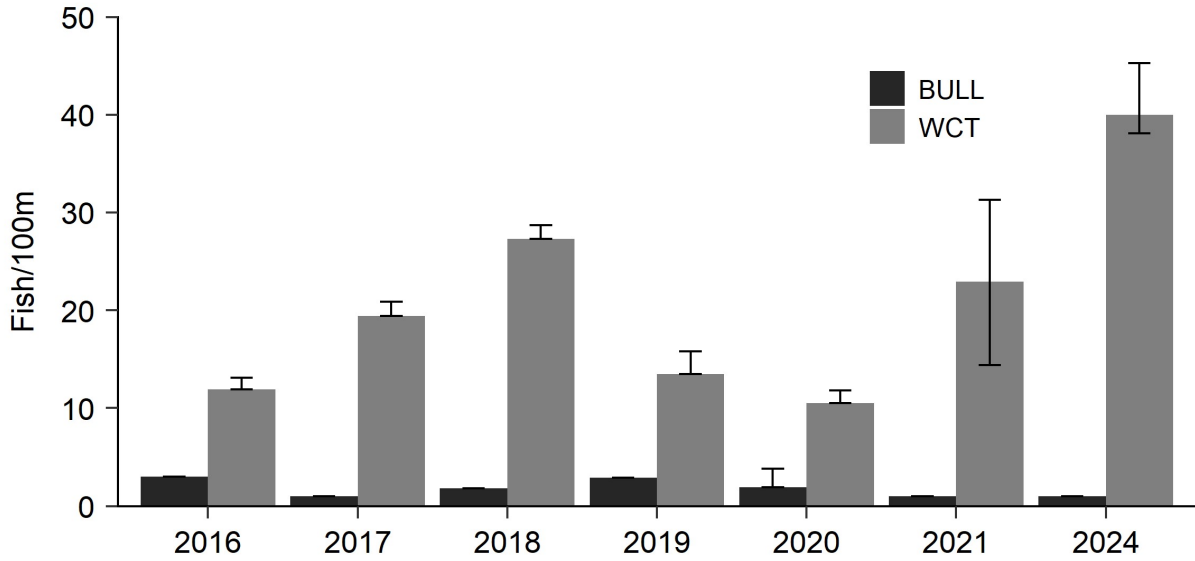


Figure 10. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) at Site 3 in Crow Creek.

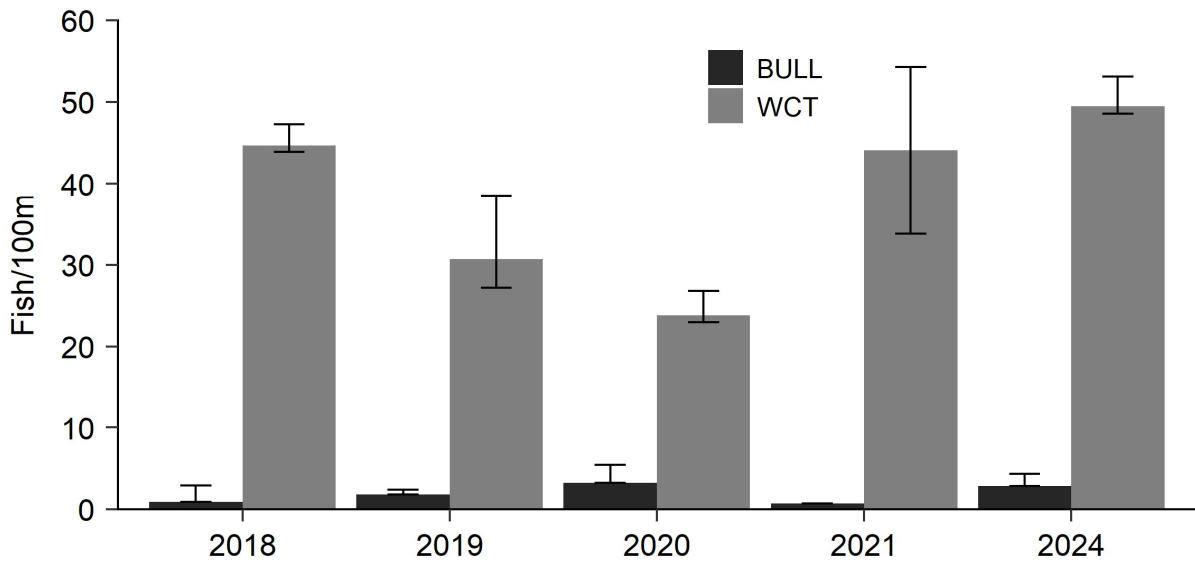


Figure 11. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) at Site 4 in Crow Creek.

## Graves Creek

Graves Creek is a tributary to Noxon Reservoir, draining ~74 km<sup>2</sup> of the western edge of the Cabinet Mountains. The watershed is functionally separated by a large waterfall at approximate Rkm 5.6. Migratory Bull Trout have access to lower Graves Creek below the falls, while only Westslope Cutthroat Trout and low abundances of Brook Trout *Salvelinus fontinalis* exist above the falls. Other salmonids species that occur at low densities in lower Graves Creek include Brown Trout *Salmo trutta*, Rainbow Trout, *Oncorhynchus* hybrids, and Mountain Whitefish *Prosopium williamsoni*. Recent increases in non-native fish have been observed in lower Graves Creek (Rehm and Tholl 2023). Human impacts in the watershed consist of timber harvest, roads, and development, with many of the impairments occurring below the falls. About half of the land bordering the stream in the lower drainage is privately owned. A stream restoration project on lower Graves Creek occurred in the summer of 2009 which included the addition of large woody debris jams and stabilization of an eroding bank near Rkm 1.0 (Horn 2011; Moran and Poiesz 2025). A second small-scale habitat project was completed in 2019 where four large woody debris structures were completed to facilitate spawning gravel deposition in lower Graves Creek (Trout Unlimited et al. 2022). In 2021, a large wildfire burned at high severity across most of the upper Graves Creek watershed. This wildfire increased stream temperature and likely productivity within Graves Creek.

Three monitoring sites were sampled in lower Graves Creek in 2024 (Figure 12). Site 6 sampled 1 time since 2022, is ~400 meters downstream of Graves Creek Falls at Rkm 5. Site 2 sampled 12 times since 2003, is located just above Winniemuck Creek downstream of the falls at Rkm 4.3. Site 5 sampled 2 times since 2022, is located a couple hundred meters on to Forest Service ownership at Rkm 3. These three sites were selected to be monitored in 2024 as lower Graves Creek is a perspective donor population for Bull Trout translocation efforts. Graves Creek above the falls is currently being evaluated under the *Fish Passage/Native Salmonid Restoration Plan (Appendix C), Graves Creek Bull Trout Translocation Project* as a perspective location for Bull Trout translocation. A permanent weir is located in the lower portion of Graves Creek just downstream of the Blue Slide Road bridge. The weir is operated to capture out-migrating juvenile Bull Trout that are subsequently driven to and released in the Clark Fork River below Cabinet Gorge Dam (Oldenburg 2018). PIT tag arrays are located above and below the weir to monitor movements of both juvenile and adult fish.

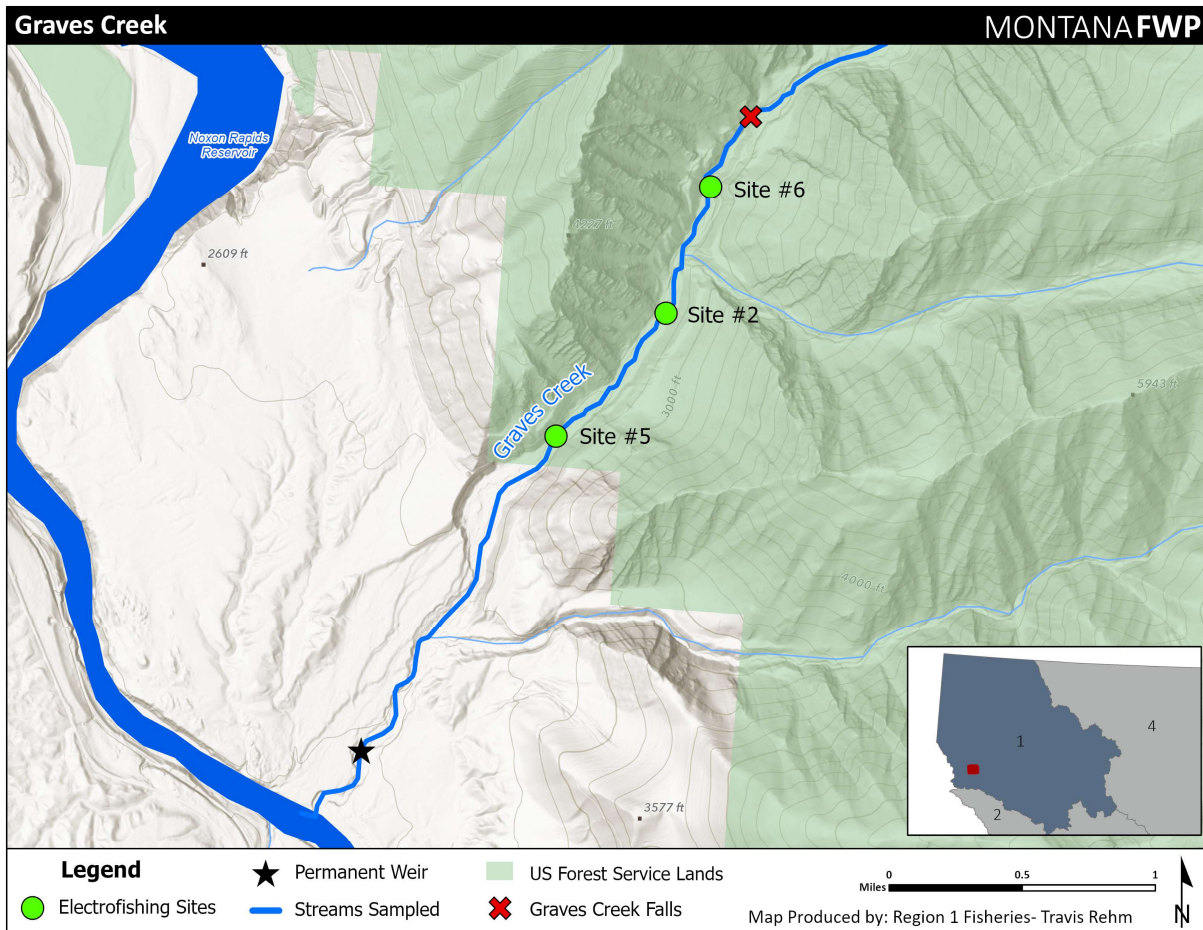


Figure 12. Electrofishing sites sampled in Graves Creek during 2024.

Bull Trout were captured at all three sites sampled in Graves Creek in 2024. At Site 2 mean abundance from 2003–2023 ( $n = 13$ ) was 32.1 fish/100 m, compared to 15.2 fish/100 m in 2024 (Table 6; Figure 13). At Site 5 mean abundance from 2022–2023 ( $n = 2$ ) was 16.4 fish/100 m, compared to 12.3 fish/100 m in 2024 (Table 6; Figure 14). This marks a significant decrease in Bull Trout abundance over time (linear regression,  $r^2 = 0.99$ ,  $p = <0.01$ ; Appendix A), this is likely attributed to the site being established during a high abundance Bull Trout year in 2022. At Site 6 abundance in 2022 was 29 fish/100 m, compared to 7.9 fish/100 m in 2024 (Table 6; Figure 15). Bull Trout abundances were substantially lower in 2024 compared to recent years. However, abundance continues to be relatively high throughout the drainage compared to the species abundance encountered in other lower Clark Fork River tributaries. These stable abundances are likely due to Bull Trout passage efforts by both the *Fish Passage/Native Salmonid Restoration Plan* (Appendix C), *Upstream Fish Passage Program* and *Tributary Trapping and Downstream Juvenile Bull Trout Transport Program*. This stable Bull Trout abundance within Graves Creek has also been observed during annual redd surveys. Eight redds were observed in the index reach during 2025 which is near the long-term 2001-2024 average of 8.7 (Moran *In Prep*).

Abundances of Westslope Cutthroat Trout have remained lower than in recent years, however the population appear stable in Graves Creek. At Site 2 mean abundance from 2003–2023 (n = 13) was 26.6 fish/100 m, compared to 9.1 fish/100 m in 2024 (Table 6; Figure 13). At Site 5 mean abundance from 2022–2023 (n = 2) was 27.7 fish/100 m, compared to 24.5 fish/100 m in 2024 (Table 6; Figure 14). At Site 6 abundance in 2022 was 29 fish/100 m, compared to 30.6 fish/100 m in 2024 (Table 6; Figure 15).

Table 6. Standardized linear abundance (#/100m), density (#/100m<sup>2</sup>) and biomass (g/100m<sup>2</sup>) estimates (fish<sub>≥</sub>75mm) for Bull Trout (BULL), Brook Trout (EB), Westslope Cutthroat Trout (WCT) and Mountain Whitefish (MWF) in Graves Creek in 2024.

Site # (Rkm)	Section Length (m)	Spp.	Mean Length (fish>75mm)	Length Range (mm)	Estimate per 100 m (95% C.I.)	Estimate per 100 m <sup>2</sup> (95% C.I.)	g/100 m <sup>2</sup> (95% C.I.)
2 (4.1)	99	BULL	144.3	53–218	15.2 (15.2–16.3)	2.1 (2.1-3.3)	58.7 (58.7–59.8)
		WCT	186.3	72–322	9.1 (9.1–9.1)	1.3 (1.3-1.3)	147.2 (147.2–147.2)
5 (2.5)	106	BULL	131.1	61–150	12.3 (11.3–20.7)	2.0 (2.0-2.0)	41.5 (41.5–41.5)
		EB	175.0	175–175	0.9 (0.9–0.9)	0.2 (0.2-0.2)	8.5 (8.5–8.5)
		WCT	143.8	97–305	24.5 (18.9–33.2)	4.0 (4.0-4.0)	205.7 (205.7–205.7)
		MWF	97.0	97–97	0.9 (0.9–0.9)	0.2 (0.2-0.2)	1.1 (1.1–1.1)
6 (4.9)	108	BULL	135.3	58–186	7.4 (7.4–7.4)	1.3 (1.3-1.3)	30.7 (30.7–30.7)
		EB	115.0	115–115	0.9 (0.9–0.9)	0.2 (0.2-0.2)	2.4 (2.4–2.4)
		WCT	151.7	71–329	30.6 (30.6–31.7)	5.3 (5.3-6.4)	300.3 (299.2–301.4)
		MWF	105.0	105–105	0.9 (0.9–0.9)	0.2 (0.2-0.2)	1.4 (1.4–1.4)

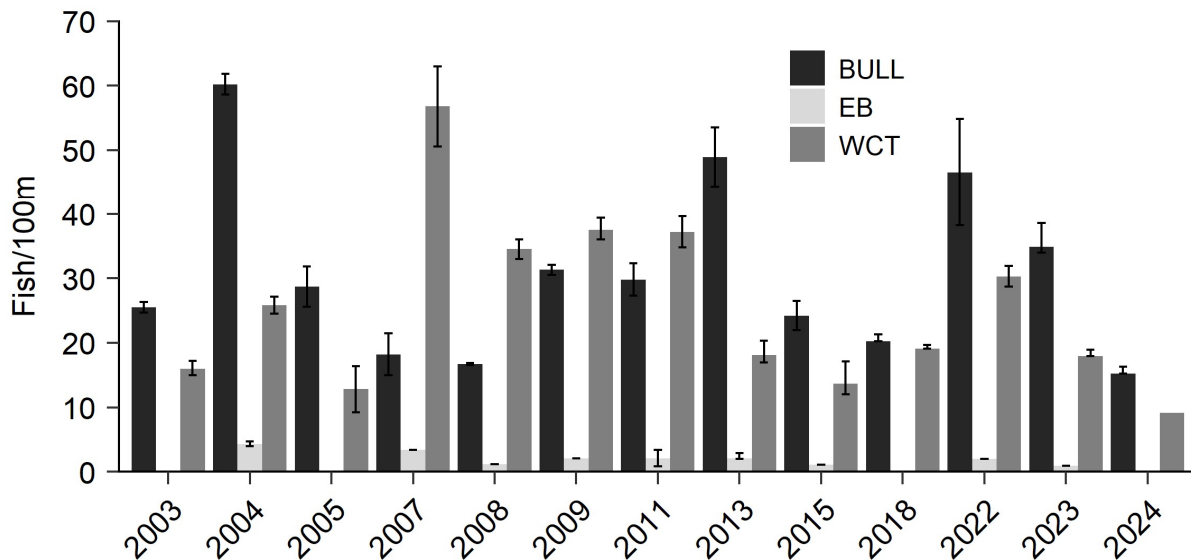


Figure 13. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL), Westslope Cutthroat Trout (WCT), and Brook Trout (EB) at Site 2 in Graves Creek.

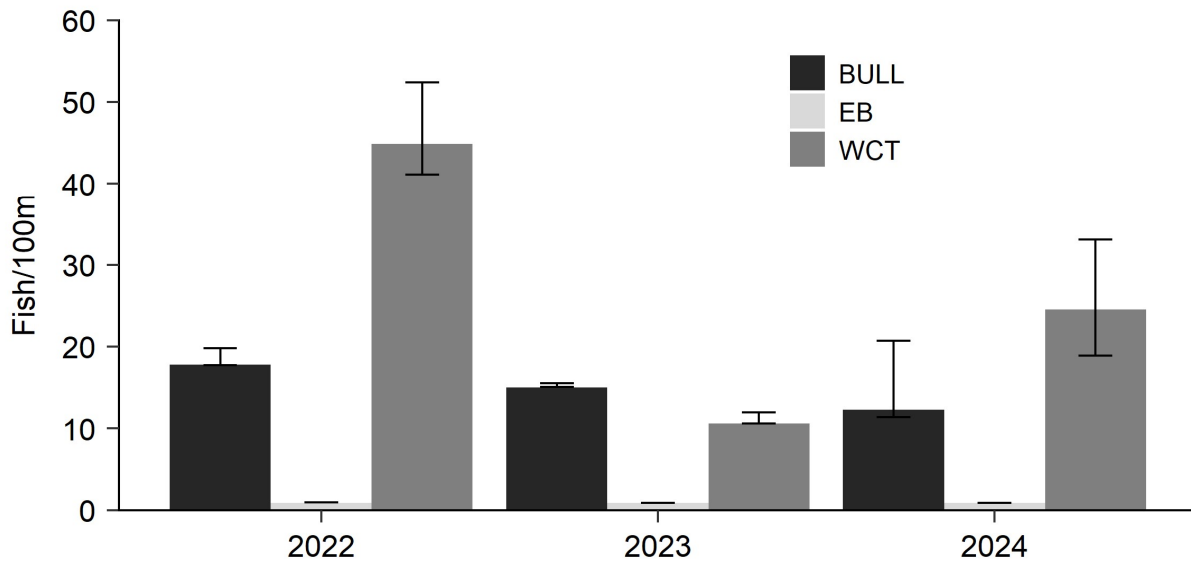


Figure 14. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL), Westslope Cutthroat Trout (WCT), and Brook Trout (EB) at Site 5 in Graves Creek.

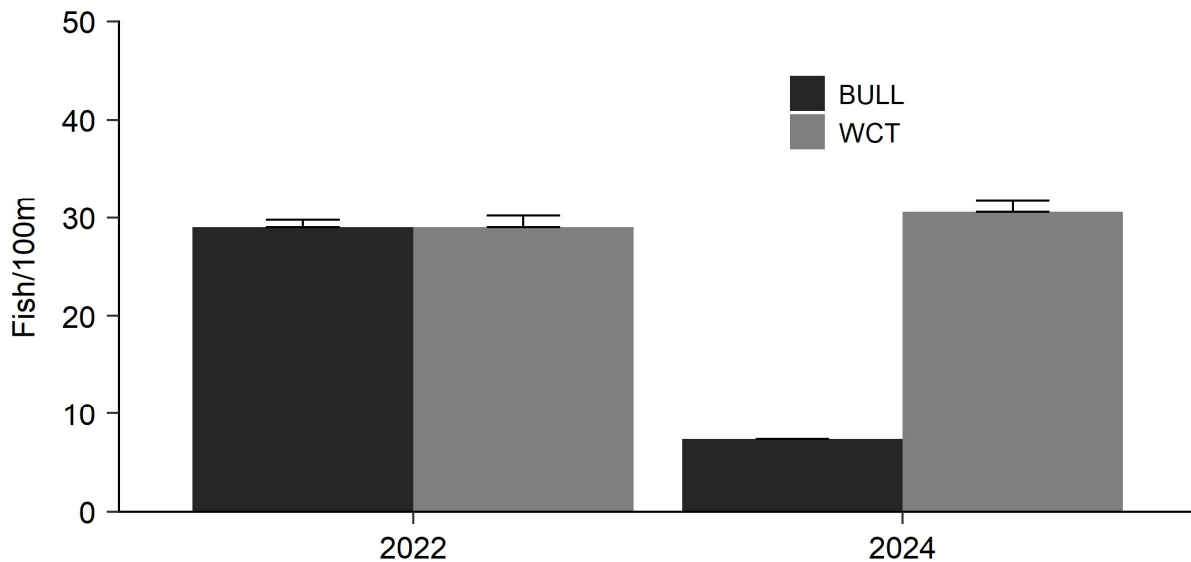


Figure 15. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) at Site 6 in Graves Creek.

## West Fork Trout Creek

West Fork Trout Creek is a tributary of Trout Creek that is formed at the confluence of East and West Fork Trout Creeks. The confluence is located in an ephemeral reach that extends 3 km downstream and includes the lowermost 1.2 km of West Fork Trout Creek (Moran and Storaasli 2014). This intermittency likely provides a degree of isolation for the native salmonid populations in the upper watershed, as non-native species comprised the vast majority of the salmonids captured below intermittent reaches (Moran and Storaasli 2014). West Fork Trout Creek is located entirely within the Kootenai National Forest. The fish community has appeared to be comprised solely of native fish species including Bull Trout and Westslope Cutthroat Trout. However, two Brook Trout were observed during wide-ranging sampling performed in 2010 (Horn and Tholl 2011) and no non-native fish have been observed since. Genetic analyses from putative Westslope Cutthroat Trout in West Fork Trout Creek (1983, 2010, and 2018) has noted Rainbow Trout hybridization in the drainage (Kovach et al. 2020).

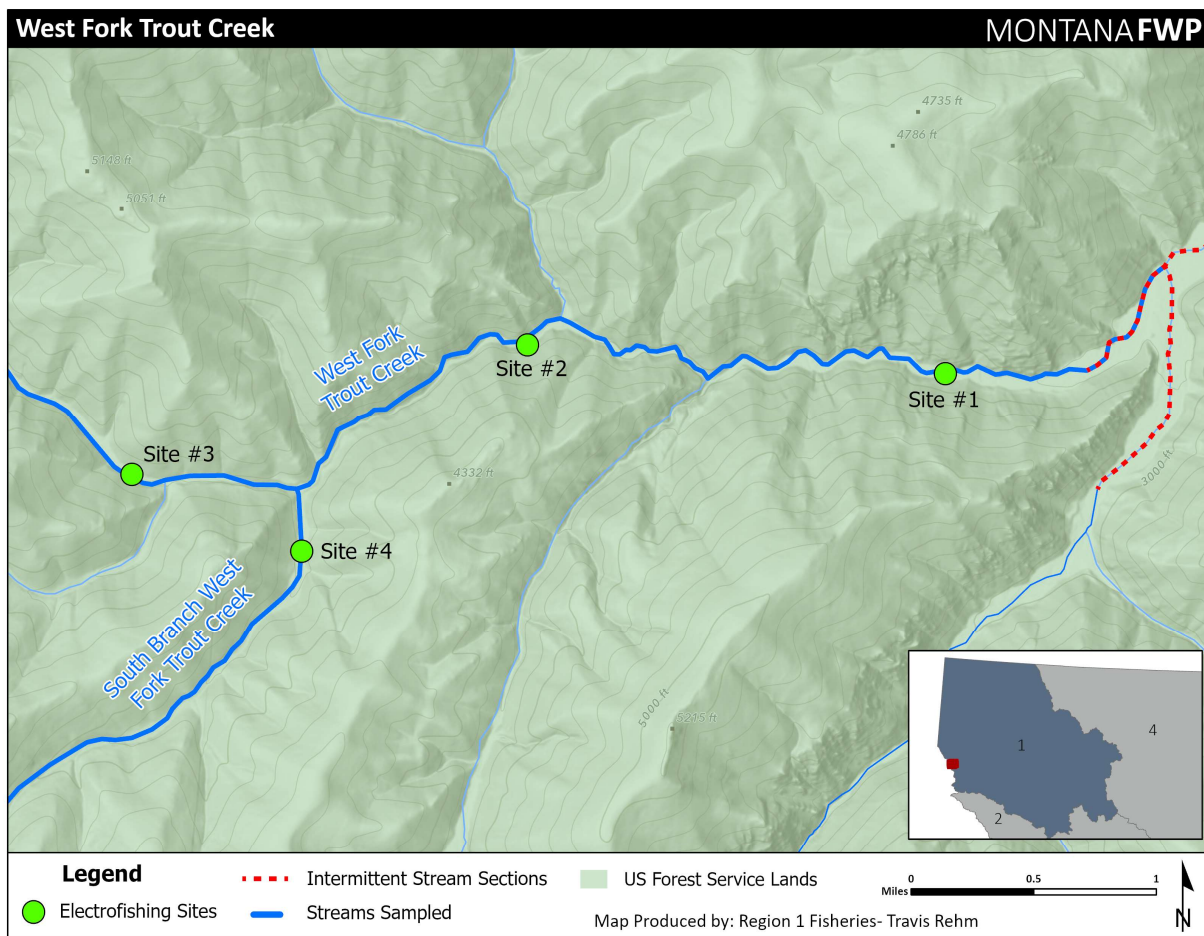


Figure 16. Electrofishing sites sampled in West Fork Trout Creek during 2024.

Four sites were sampled in the West Fork Trout Creek drainage (Figure 16). Sites 1, 2 and 3 were all sampled for fifth time since 2013. Site 1, the most downstream site located at Rkm 1.8, corresponds to Site WF 2 in Horn and Tholl (2011) and West Fork Section 2 in Moran and Storaasli (2014). Site 2 located just upstream of the confluence with Robin Run corresponds to Site WF 6 in Horn and Tholl (2011) and West Fork Section 6 in Moran and Storaasli (2014). Site 3, on the upper West Fork above the South Branch confluence, corresponds to Site WF 10 in in Horn and Tholl (2011) and West Fork Section 10 in Moran and Storaasli (2014). Site 3 was moved 250 m downstream in 2025 due to a windstorm depositing multiple large trees within the section. Site 4, sampled for the third time, was established in 2018 and is located in the South Branch of the West Fork of Trout Creek at Rkm 0.4 in order to assess the contribution of this upper tributary to the native salmonid assemblage of the West Fork Trout Creek.

Bull Trout were captured at two sites sampled in West Fork Trout Creek in 2024. At Site 1 mean abundance from 2013–2021 ( $n = 4$ ) was 5.9 fish/100 m, compared to 3 fish/100 m in 2024 (Table 7; Figure 17). At Site 2 mean abundance from 2013–2021 ( $n = 4$ ) was 18 fish/100 m, compared to 9.7 fish/100 m in 2024 (Table 7; Figure 18). For the first time since long-term monitoring began no Bull Trout were observed at Site 3 (mean abundance 6.7 fish/100 m from 2013–2021) and Site 4 (mean abundance 9.3 fish/100 m from 2018–2021). This marks a significant decrease in Bull Trout biomass over time for both sites (Site 3, linear regression,  $r^2 = 0.79$ ,  $p = 0.04$ ; Site 4, linear regression,  $r^2 = 0.99$ ,  $p = 0.05$ ; Appendix A). This continues an observed decline in Bull Trout abundance in West Fork Trout Creek (Rehm et al. 2022). Despite declines in Bull Trout abundance, recent redd surveys have been near long-term averages (5 redds per year in the index reach from 2010-2023) with 4 redds observed in 2024 and 2025 (Moran 2025; Moran *In Prep*).

Westslope Cutthroat Trout abundances in 2024 were observed at all-time highs for all sites in West Fork Trout Creek. At Site 1 mean abundance from 2013–2021 ( $n = 4$ ) was 52.6 fish/100 m, compared to 95 fish/100 m in 2024 (Table 7; Figure 17). At Site 2 mean abundance from 2013–2021 ( $n = 4$ ) was 69.1 fish/100 m, compared to 161.2 fish/100 m in 2024 (Table 7; Figure 18). At Site 3 mean abundance from 2013–2021 ( $n = 4$ ) was 80.6 fish/100 m, compared to 151.9 fish/100 m in 2024 (Table 7; Figure 19). At Site 4 mean abundance from 2018–2021 ( $n = 2$ ) was 62.1 fish/100 m, compared to 93.1 fish/100 m in 2024 (Table 7; Figure 20). The Westslope Cutthroat population in West Fork Trout Creek appears to be stable or growing.

For the first time since 2010 Brook Trout were observed in West Fork Trout Creek. Two Brook Trout (172 and 75 mm) were observed  $\geq 75$ mm that counted toward population estimates and nine additional young-of-the-year Brook Trout were captured ranging from 65–73 mm at Site 1. Twenty-three *Oncorhynchus* hybrids were also phenotypically identified in Site 1. As previously mentioned, genetic analysis has observed Rainbow Trout hybridization in the drainage (Kovach et al. 2020). However, this is the first time during long-term monitoring efforts that phenotypic *Oncorhynchus* hybrids have been observed. This most recent sampling data suggests that both Rainbow and Brook Trout are invading this section of West Fork Trout Creek. The likely source population is the lower perennial portion of the mainstem of Trout Creek that is dominated by

Brown Trout and Brook Trout (Moran and Storaasli 2014). The temperature regime of the West Fork is certainly conducive to non-native trout establishment as daily maximum temperatures in the lower perennial reaches exceeded 16°C on most days in July and August of 2024 (Appendix B).

Table 7. Standardized linear abundance (#/100m), density (#/100m<sup>2</sup>) and biomass (g/100m<sup>2</sup>) estimates (fish<sub>≥</sub>75mm) for Bull Trout (BULL), Brook Trout (EB), Westslope Cutthroat Trout (WCT) and Rainbow/Westslope Cutthroat trout hybrids (RBxWCT) in West Fork Trout Creek in 2024.

Site # (Rkm)	Section Length (m)	Spp.	Mean Length (fish>75mm)	Length Range (mm)	Estimate per 100 m (95% C.I.)	Estimate per 100 m <sup>2</sup> (95% C.I.)	g/100 m <sup>2</sup> (95% C.I.)
1 (1.9)	100	BULL	158.0	80–312	3.0 (3.0–3.0)	0.4 (0.4–0.4)	36.7 (36.7–36.7)
		EB	124.0	65–172	2.0 (2.0–2.0)	0.3 (0.3–0.3)	8.3 (8.3–8.3)
		WCT	130.0	53–291	95.0 (93.0–99.3)	12.8 (12.5–17.1)	370.6 (366.3–375.0)
		RBxWCT	159.0	90–255	23.0 (23.0–24.4)	3.1 (3.1–4.5)	154.7 (153.3–156.1)
2 (5.2)	103	BULL	169.0	121–308	9.7 (9.7–10.4)	1.8 (1.8–2.5)	108.9 (108.2–109.6)
		WCT	124.0	47–255	161.2 (159.2–165.2)	30.1 (29.8–34.1)	753.1 (749.1–757.1)
3 (8.3)	104	WCT	113.0	64–201	151.9 (149.0–156.9)	36.6 (35.9–41.6)	585.7 (580.7–590.7)
4 (0.4)	88	WCT	122.0	63–211	93.2 (92.0–96.5)	24.5 (24.2–27.8)	539.5 (536.2–542.7)

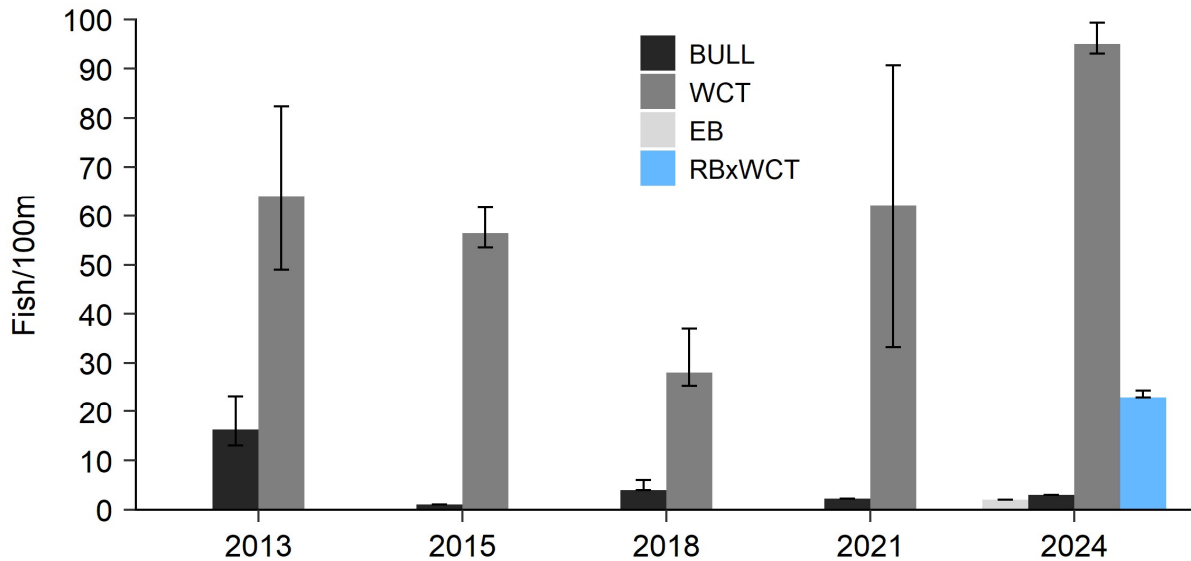


Figure 17. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL), Westslope Cutthroat Trout (WCT), Brook Trout (EB), *Oncorhynchus* hybrids (RBxWCT) at Site 1 in West Fork Trout Creek.

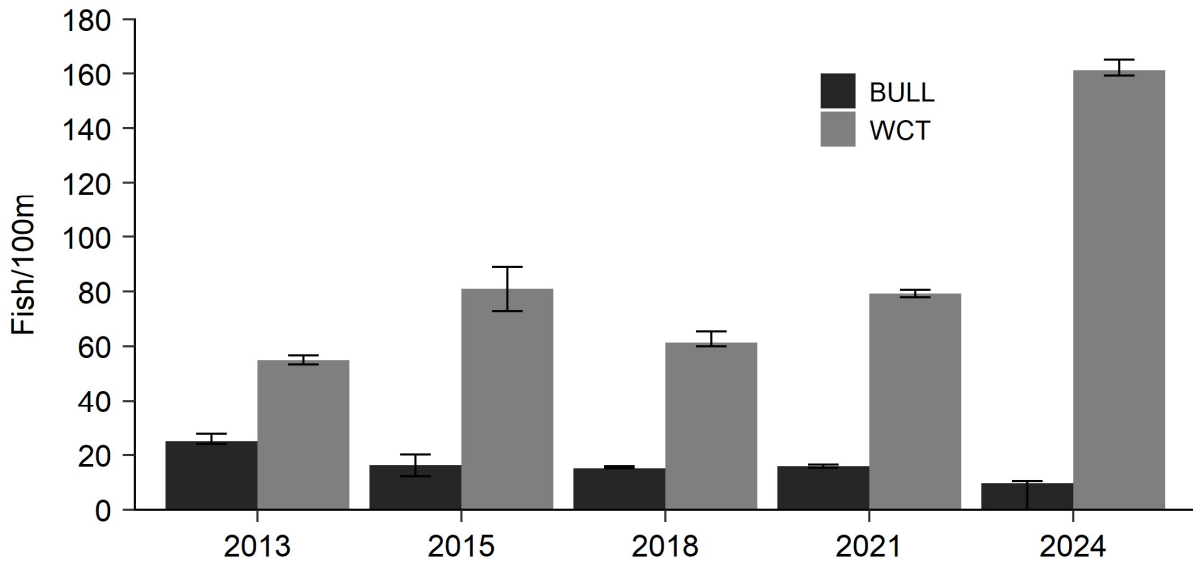


Figure 18. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) at Site 2 in West Fork Trout Creek.

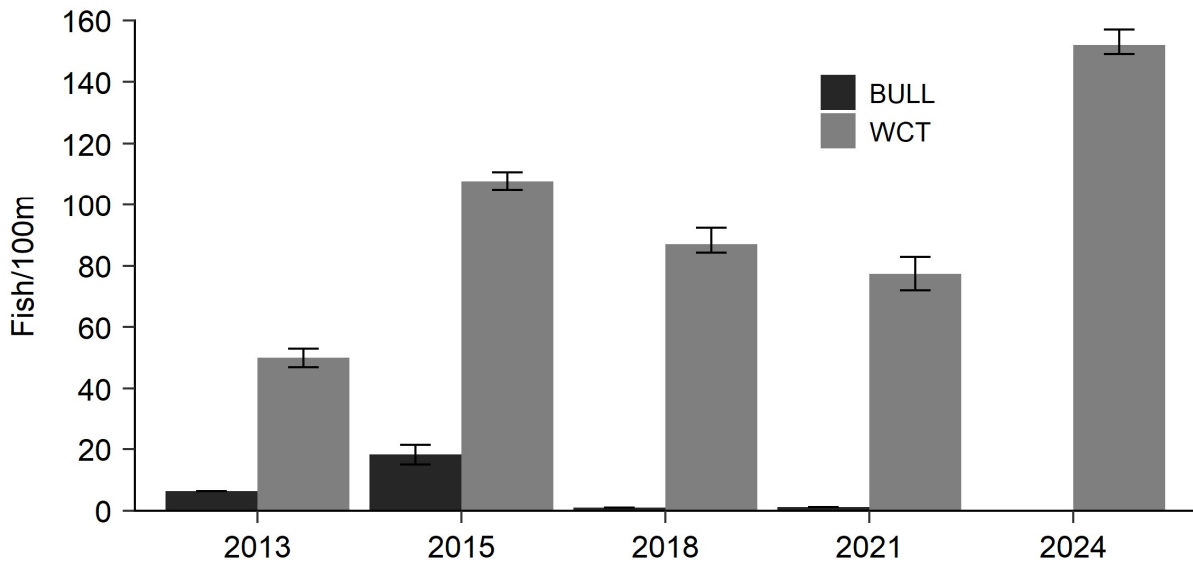


Figure 19. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) at Site 3 in West Fork Trout Creek.

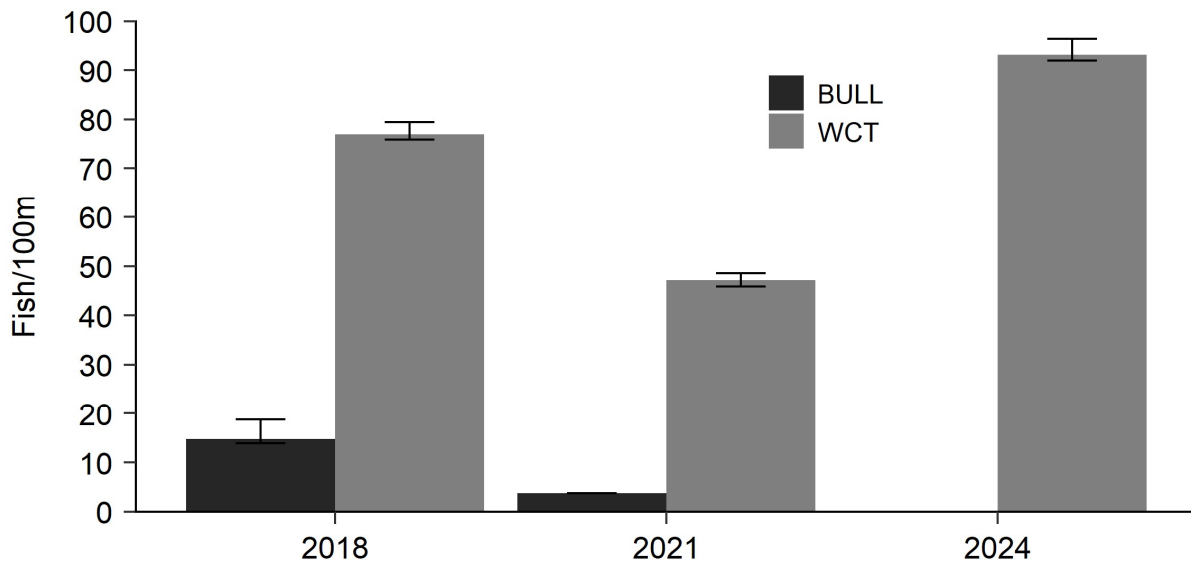


Figure 20. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) at Site 4 in West Fork Trout Creek.

### Tuscor Creek

Tuscor Creek is a small, third order tributary that enters Noxon Reservoir approximately 5 miles northwest of Trout Creek, Montana. Land ownership is 85% under Kootenai National Forest, with the remaining 15% under private ownership in its lower reaches. Anthropogenic impacts in the drainage consist of timber harvest, agriculture, roads, and development, with many of the impairments occurring in its lower reaches. Tuscor Creek loses flow through the coarse stream substrate and is intermittent in many portions of the lower reaches. Tuscor Creek supports Brook Trout and Westslope Cutthroat Trout. Genetic analyses from putative Westslope Cutthroat Trout in Tuscor Creek (1993) have found a non-hybridized population of Westslope Cutthroat Trout.

Two sites were sampled in Tuscor Creek in 2024 (Figure 21). Site 2 was sampled for the fifth time since 2009, is located in North Fork Tuscor Creek at Rkm 0.4. Site 3 was sampled for the first time in 2024 and is located in the mainstem of Tuscor Creek at Rkm 5.4.

Abundance of Westslope Cutthroat Trout appears stable in Tuscor Creek. At Site 2 mean abundance from 2009–2012 ( $n = 4$ ) was 8.6 fish/100 m, compared to 10.1 fish/100 m in 2024 (Table 8; Figure 22). At Site 3 abundance was 2 fish/100 m in 2024 (Table 8). In contrast, there has been a dramatic decline in Brook Trout observed in Tuscor Creek. At Site 2 mean abundance from 2009–2012 ( $n = 4$ ) was 21.4 fish/100 m, however no Brook Trout were captured in 2024.

Additionally, no Brook Trout were captured in Site 3 in 2024. It is unclear what has caused the severe decline of Brook Trout.

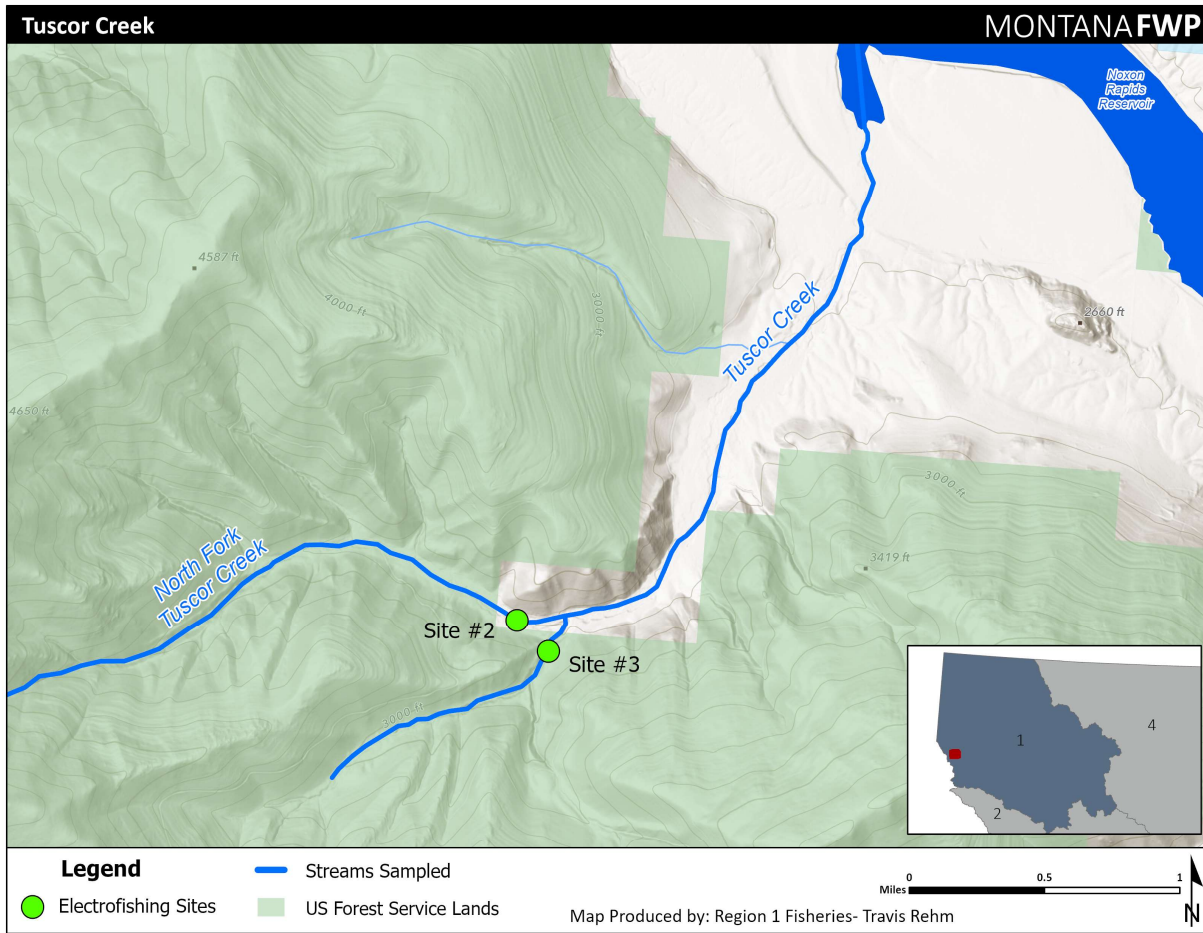


Figure 21. Electrofishing sites sampled in Tuscor Creek during 2024.

Table 8. Standardized linear abundance (#/100m), density (#/100m<sup>2</sup>) and biomass (g/100m<sup>2</sup>) estimates (fish<sub>≥75mm</sub>) for Westslope Cutthroat Trout (WCT) in Tuscor Creek in 2024.

Site # (Rkm)	Section Length (m)	Spp.	Mean Length (fish <sub>&gt;75mm</sub> )	Length Range (mm)	Estimate per 100 m (95% C.I.)	Estimate per 100 m <sup>2</sup> (95% C.I.)	g/100 m <sup>2</sup> (95% C.I.)
3 (5.4)	93	WCT	152.0	146–158	2.2 (2.2–2.2)	1.7 (1.7–1.7)	50.4 (50.4–50.4)
2 (0.4)	89	WCT	119.1	95–143	10.1 (10.1–11.7)	4.8 (4.8–6.3)	76.3 (76.3–77.9)

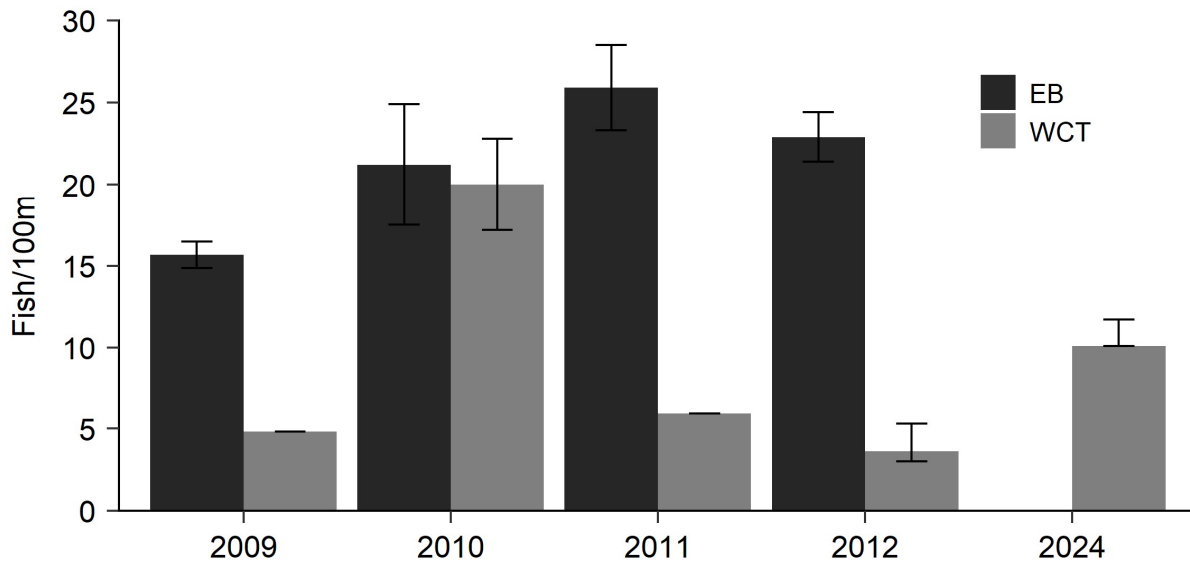


Figure 22. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Brook Trout (EB) and Westslope Cutthroat Trout (WCT) at Site 2 in Tuscor Creek.

## Rock Creek

Rock Creek is a tributary of the Clark Fork River, whose confluence lies within Cabinet Gorge Reservoir. The lower perennial portion of Rock Creek is dominated by non-native species and thus is not routinely sampled. Native salmonid monitoring in Rock Creek is focused above an intermittent stream reach, where the fish community is comprised of Bull Trout and Westslope Cutthroat Trout. Genetic analyses from putative Westslope Cutthroat Trout in Rock Creek (1984, 2002, 2007, and 2014) has noted both Rainbow Trout and Yellowstone Cutthroat Trout hybridization in the drainage (DeHaan et al. 2016). Four sites were sampled in Rock Creek in 2024 (Figure 23). Sites 1 and 2 have been sampled fifteen times since 2001. Site 1 is located just above the West Fork of Rock Creek confluence at Rkm 8.6 and Site 2 is at the Rock Creek-Rock Lake Trailhead at Rkm 11.4. Sites 3 and 4 have been sampled four times since 2015. Site 3 is located furthest up the drainage at Rkm 13.0 and Site 4 is at Rkm 1.3 in the West Fork of Rock Creek.

Bull Trout were captured at three sites sampled in Rock Creek in 2024. At Site 1 mean abundance from 2001–2021 ( $n = 14$ ) was 11.5 fish/100 m, compared to 1.8 fish/100 m in 2024 (Table 9; Figure 24). This marks a significant decrease in Bull Trout abundance over time (linear regression,  $r^2 = 0.28$ ,  $p = 0.04$ ; Appendix A). At Site 2 mean abundance from 2001–2021 ( $n = 14$ ) was 14.7 fish/100 m, compared to 19 fish/100 m in 2024 (Table 9; Figure 25). Site 3 mean abundance from 2015–2021 ( $n = 3$ ) was 8.2 fish/100 m, compared to 4 fish/100 m in 2024 (Table 9; Figure 26). No Bull Trout were observed at Site 4 (Table 9; Figure 27). In addition to



Table 9. Standardized linear abundance (#/100m), density (#/100m<sup>2</sup>) and biomass (g/100m<sup>2</sup>) estimates (fish<sub>≥</sub>75mm) for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) in Rock Creek in 2024.

Site # (Rkm)	Section Length (m)	Spp.	Mean Length (fish>75mm)	Length Range (mm)	Estimate per 100 m (95% C.I.)	Estimate per 100 m <sup>2</sup> (95% C.I.)	g/100 m <sup>2</sup> (95% C.I.)
1 (8.6)	114	BULL	200.0	66–207	1.8 (1.8–1.8)	0.3 (0.3–0.3)	17.5 (17.5–17.5)
		WCT	153.2	78–239	98.2 (96.5–102.2)	15.4 (15.1–19.3)	675.4 (671.5–679.3)
2 (11.4)	100	BULL	150.3	94–240	19.0 (18.0–23.4)	3.0 (2.9–7.4)	108.6 (104.1–113.0)
		WCT	137.4	79–217	103.0 (97.0–111.5)	16.3 (15.4–24.8)	506.8 (498.4–515.3)
3 (13.0)	100	BULL	212.0	197–224	4.0 (4.0–4.0)	0.6 (0.6–0.6)	46.0 (46.0–46.0)
		WCT	130.7	72–249	92.0 (89.0–97.4)	13.7 (13.3–19.1)	384.5 (379.1–389.9)
4 (1.3)	100	WCT	120.4	75–160	43.0 (42.0–46.3)	11.3 (11.1–14.6)	226.3 (223.0–229.6)

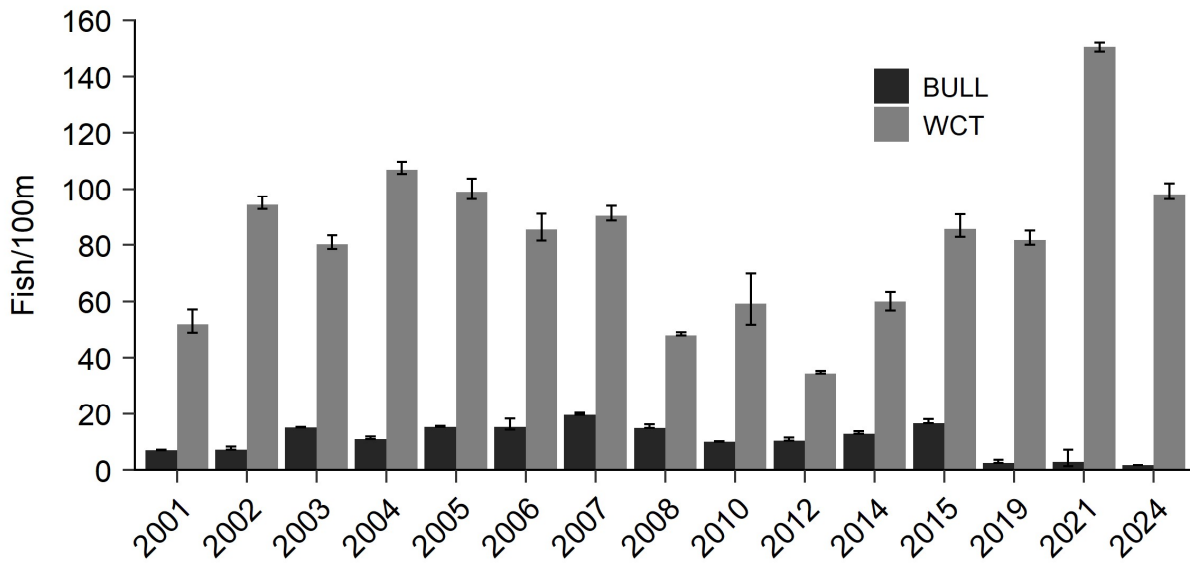


Figure 24. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) at Site 1 in Rock Creek.

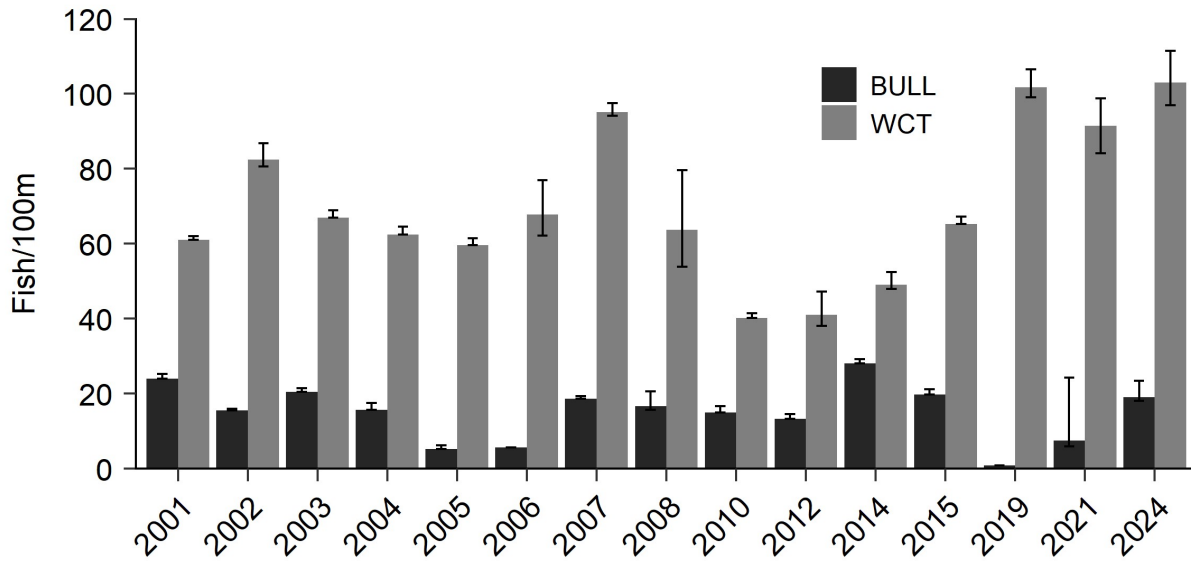


Figure 25. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) at Site 2 in Rock Creek.

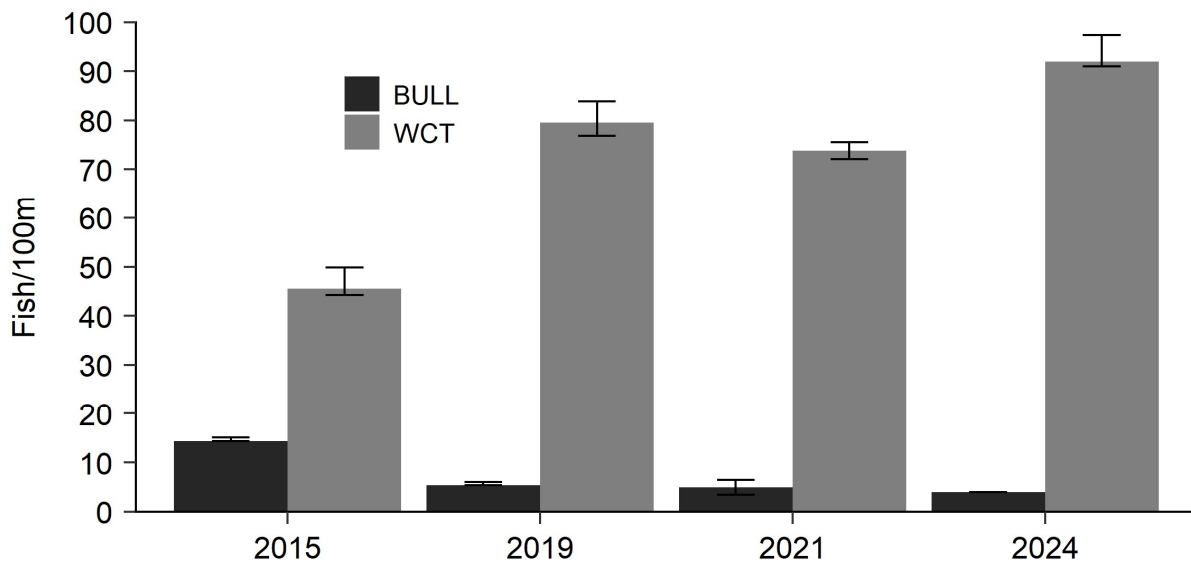


Figure 26. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) at Site 3 in Rock Creek.

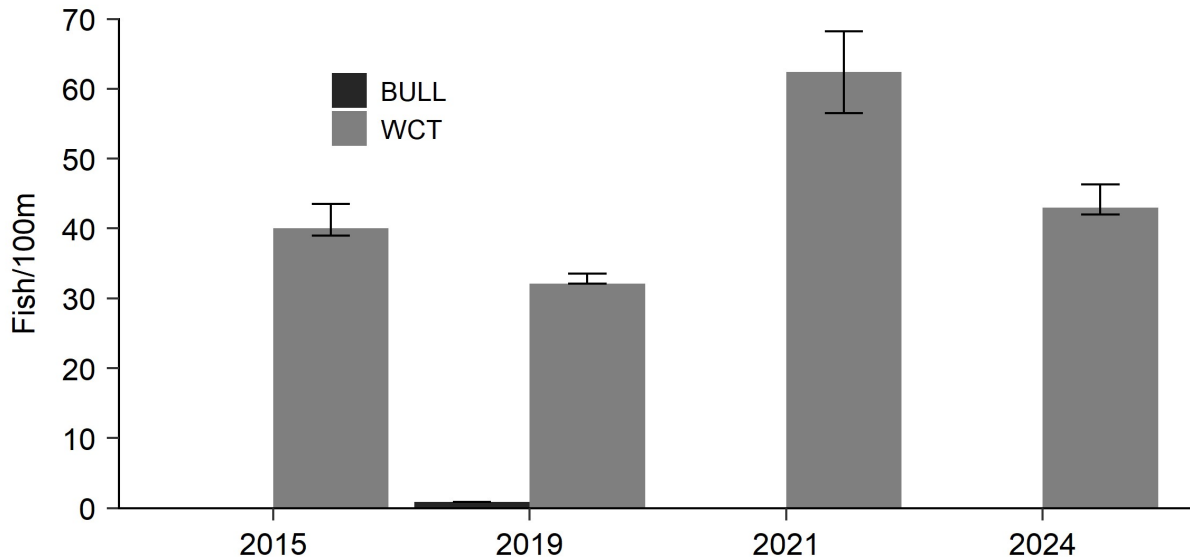


Figure 27. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Bull Trout (BULL) and Westslope Cutthroat Trout (WCT) at Site 4 in West Fork Rock Creek.

### Pilgrim Creek

Pilgrim Creek drains approximately 75 km<sup>2</sup> from the Coeur D'Alene Mountains into Cabinet Gorge Reservoir near Noxon, Montana. The fish community is dominated by non-native salmonids in the lower reaches (Moran and Storaasli 2017). Westslope Cutthroat Trout are abundant in headwater portions of the watershed. Hybridization with Rainbow Trout is widespread in the lower reaches of Pilgrim Creek (Ardren et al. 2008; DeHaan et al. 2016). Genetic analyses from putative Westslope Cutthroat Trout in West Fork Pilgrim Creek in 2014 has noted low rates Rainbow Trout hybridization in the drainage (DeHaan et al. 2016). Migratory Bull Trout and Bull-Brook Trout hybrids have been captured in the past in low numbers (Lockard et al. 2003). Human impacts in the drainage include agriculture, road development, and timber harvest throughout the drainage. In the middle portion of the mainstem, localized riparian alterations have caused degraded channel conditions and increased sedimentation (RDG and USFS 2004). Filamentous algae is common throughout much of Pilgrim Creek. The riparian habitats of middle Pilgrim Creek were converted from tree and shrub dominated vegetation to grasses by landowners. Subsequent high-water events altered the channel and deteriorated fish habitat.

One site was sampled in Pilgrim Creek in 2024 (Figure 28). Site 3, sampled eight times since 2005, is considered the control site in the drainage and occurs on USFS land at Rkm 3.4 in the West Fork Pilgrim Creek. Abundance of Westslope Cutthroat Trout appears stable in Pilgrim

Creek. At Site 3 mean abundance from 2005–2014 (n = 7) was 74.5 fish/100 m, compared to 71.3 fish/100 m in 2024 (Table 10; Figure 29).

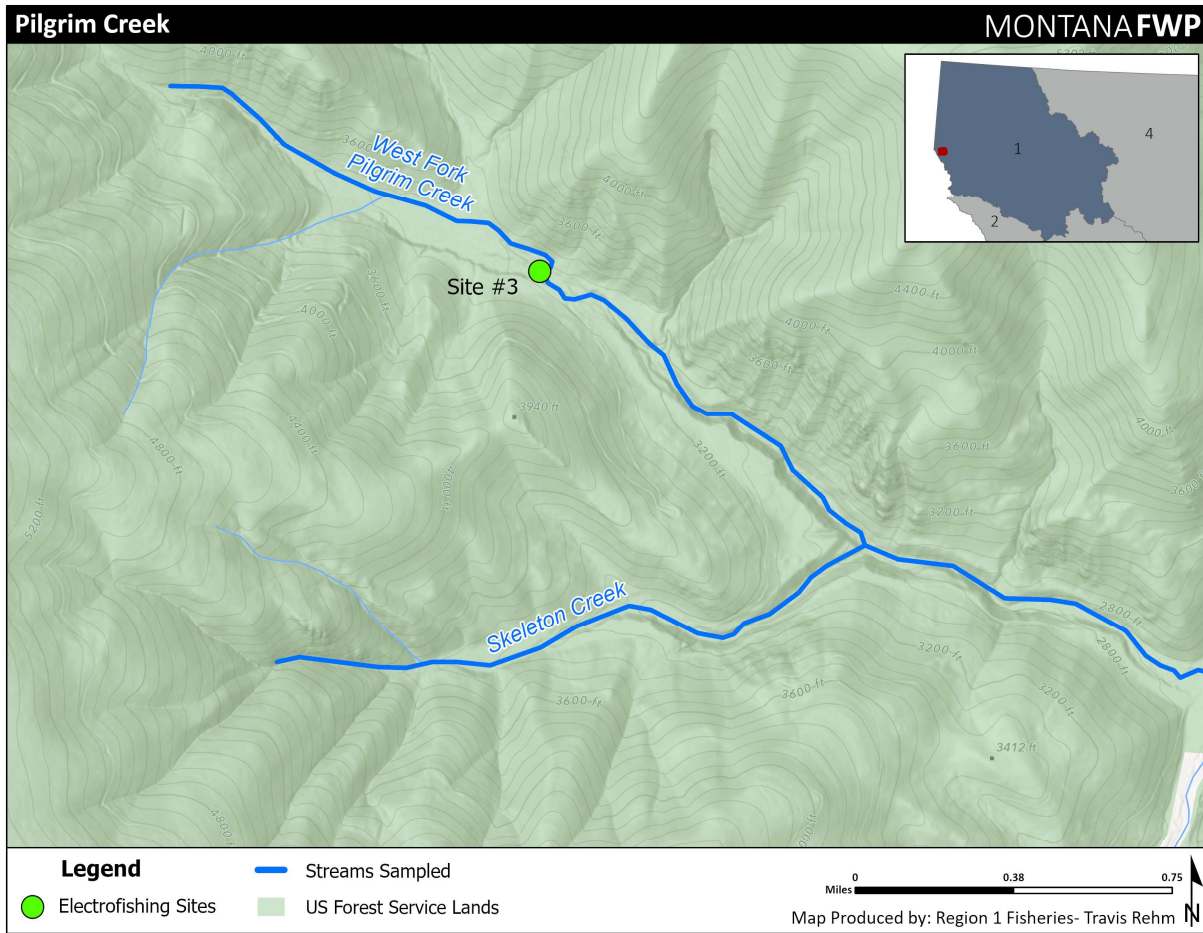


Figure 28. Electrofishing sites sampled in Pilgrim Creek during 2024.

Table 10. Standardized linear abundance (#/100m), density (#/100m<sup>2</sup>) and biomass (g/100m<sup>2</sup>) estimates (fish<sub>≥</sub>75mm) for Westslope Cutthroat Trout (WCT) in Pilgrim Creek in 2024.

Site # (Rkm)	Section Length (m)	Spp.	Mean Length (fish>75mm)	Length Range (mm)	Estimate per 100 m (95% C.I.)	Estimate per 100 m <sup>2</sup> (95% C.I.)	g/100 m <sup>2</sup> (95% C.I.)
3 (3.4)	101	WCT	106.7	60–181	71.3 (71.3–73.3)	18.8 (18.0–20.8)	225.1 (223.1–227.2)

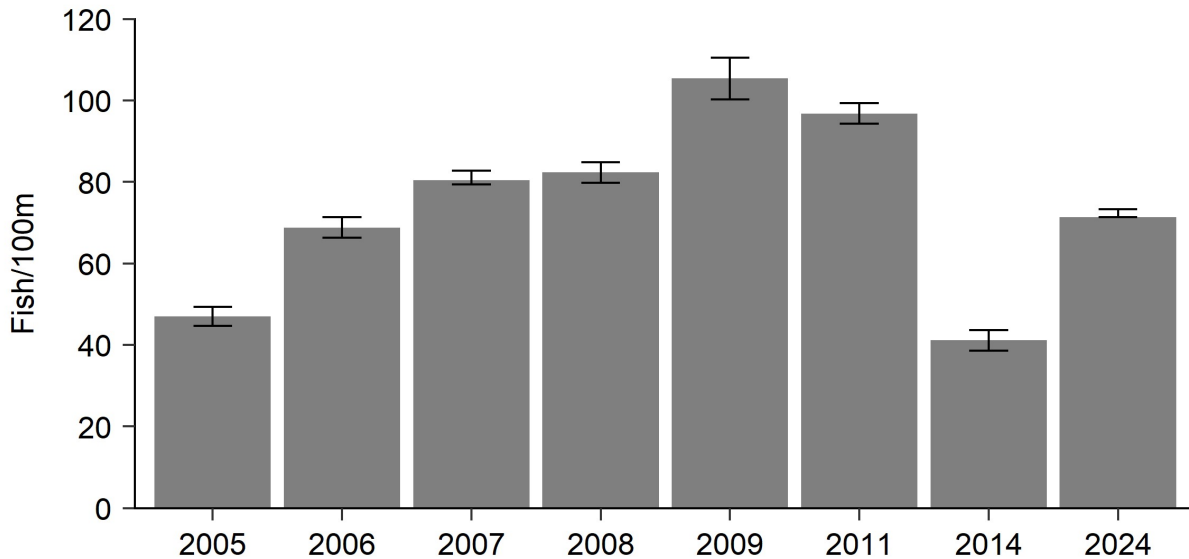


Figure 29. Linear abundance estimates (fish/100 m) with 95% confidence intervals for Westslope Cutthroat Trout (WCT) at Site 3 in West Fork Pilgrim Creek.

### Berray Lake

In 2024, FWP received a report from an angler who observed a single Northern Pike in the Bull River. FWP staff were able to capture and remove this fish. The presence of Northern Pike in the river is believed to be the result of an illegal introduction. The Bull River is a tributary of the Cabinet Gorge Reservoir in northwest Montana with populations of native Bull Trout, Westslope Cutthroat Trout, and Mountain Whitefish. Established populations of non-native Northern Pike exist in Bull Lake and Cabinet Gorge Reservoir, however this recent discovery was the first confirmed Northern Pike in the Bull River. This discovery prompted FWP staff to sample an unnamed lake near the location of the observed illegal introduction. This lake locally referred to locally as “Berray Lake” is located just off the Bull River at Rkm 19.5. The lake is approximately 16.5 acres and is connected to the river during high flows. The lake would likely provide high quality habitat for Northern Pike and was therefore sampled in 2024 in an effort to ascertain whether Northern Pike were present in this body of water.

Two gill nets were set in Berray Lake overnight during September 17-18, 2024. A total of 54 fish representing 4 species were captured (Table 11). No Northern Pike were captured or observed. Yellow Perch *Perca flavescens* were the most abundant species captured representing 66.7% of the total catch (n = 36). Pumpkinseed *Lepomis gibbosus* were the second most abundant fish species caught and comprised 22.2% of the total catch (n = 6). Three Northern Pikeminnow *Ptychocheilus oregonensis* and Largescale suckers *Catostomus macrocheilus* were captured both representing 5.6% of the sample. This represents a change in the fish assemblage from the last

time the water was sampled during 1992 (Huston 1992), when Largescale Sucker and Northern Pike minnow formed the majority of the fish assemblage.

Table 11. Catch rates (fish/net), total number caught, percentage of total species composition by number, mean weight, weight range, mean length and length range for species captured in Berray Lake during gill netting surveys conducted in 2024.

Species	Mean fish/net	Total # caught	Species Comp. (%)	Mean Weight (g)	Weight Range (g)	Mean Length (mm)	Length Range (mm)
YP	18	36	66.7	81.1	36–154	197.4	149–248
PUMP	12	6	22.2	35	16–49	121.7	99–41
NPMN	1.5	3	5.6	1142	673–1416	491.7	430–535
LSSU	1.5	3	5.6	997	531–1305	439	370–475

### Prospect Creek Fish Salvage

In 2012, the U.S. Geological Survey and FWP encountered Bull Trout in stranded pools in an ephemeral section of Prospect Creek just upstream of its confluence with Crow Creek while working on a stream intermittency study. (R. Kreiner, FWP, personal observation). Bull Trout and putative Westslope Cutthroat Trout were salvaged from these pools and moved downstream to the lower perennial portion of Prospect Creek. The next year, fish were left in these pools based on discussions with the U.S Fish and Wildlife Service. Fish rescue efforts resumed in 2014 and through 2016. During those efforts 37 of the 41 Bull Trout captured were transported to the lower Clark Fork River in Idaho, below Cabinet Gorge Dam. The four other fish that were too small to be PIT tagged or transported, were released near Brush Gulch (Eric Oldenburg, Avista, personal communication; Oldenburg et al. 2015). Bull Trout captured in ephemeral portions of Prospect Creek in 2017–2023 were moved into Crow Creek (n = 214; Rehm et al. 2024).

In 2024, efforts to capture Bull Trout in stranded pools in the mainstem of Prospect Creek occurred over four days in July (7/17, 7/24, and 7/25) and August (8/1). Similar to 2023, low flow conditions in 2024 pushed salvage dates significantly earlier than in past years. Observations indicate timing and extent of intermittency is quite variable where some stream reaches dry up in a matter of hours, while in other areas the stream and associated ephemeral pools may take days or weeks to go completely dry. A total of 25 Bull Trout were rescued from isolated pools ranging 156–246 mm in length and were relocated to Crow Creek. All Bull Trout were PIT tagged prior to release. The mean length of Bull Trout captured in ephemeral pools was 184 mm with 5 fish  $\geq$  200 mm. The remaining Bull Trout were between 156–198 mm. Based on length at time of capture fish ranged from an estimated age-3 to age-4+ (Zymonas 2006). Genetics were collected from all Bull Trout rescued from Prospect Creek and released into Crow Creek.

Seventy Bull Trout  $\geq$  200 mm in length have been rescued from the intermittent sections of

Prospect Creek since 2012. Of these 70 fish, 58 Bull Trout have been released into Crow Creek from 2017–2024. Resident Bull Trout  $\geq 200$  mm in length are likely age-4 or older and should be at or near sexual maturity (Rieman and McIntyre 1993; Zymonas 2006). Annual supplementation with fish from stranded pools could increase Bull Trout production in Crow Creek. Because of the low densities of Bull Trout in the drainage, even a few more large fish in Crow Creek could benefit the population. One redd in 2018, 2022, and 2024 and two redds in 2019 were observed in Crow Creek, while only two redds were found in the drainage from 2003–2017. However, no redds were observed in 2020, 2021, 2023 and 2025 (Moran 2024; Moran *In Prep*).

In 2023, efforts began to determine if Bull Trout rescued from pools in ephemeral sections of Prospect Creek are producing offspring in Crow Creek and what percentage of Bull Trout are emigrating out of the creek after salvaging efforts. This work is being completed under another Clark Fork Settlement Agreement project the *Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program (Appendix B), Prospect Creek Bull Trout Salvage Evaluation*. Detections in 2023 and 2024 from PIT tag arrays placed in Crow Creek show multiple years (2021-2024) of salvaged Bull Trout occupying Crow Creek (FWP, unpublished data).

Westslope Cutthroat Trout were also salvaged from ephemeral pools in portions of Prospect Creek. A total of 46 Westslope Cutthroat Trout were rescued and released in the lower perennial reach of Prospect Creek just downstream of Brush Gulch (Rkm 13.0) in 2024. Fish ranged from 131–339 mm in length with an average length of 200 mm. All Westslope Cutthroat Trout received PIT tags and 7 fish rescued in 2024 were later detected on the Prospect Creek PIT tag array located downstream at Rkm 0.7. Four Westslope Cutthroat Trout rescued in 2023 were also detected on the Prospect Creek PIT array in 2024 (Appendix D-1). For the second year in a row a single Westslope Cutthroat Trout originally tagged during salvaging efforts in 2020 was detected on a PIT tag array below Cabinet Gorge Dam, Idaho.

### **East Fork Bull River Fish Salvage**

In 2022, Avista personnel while working under *Fish Passage/Native Salmonid Restoration Plan (Appendix C), Tributary Trapping and Downstream Juvenile Bull Trout Transport Program* encountered Bull Trout in stranded pools in an ephemeral side channel of East Fork Bull River near Rkm 6.6. Bull Trout were captured in these pools in 2022 and transported to the lower Clark Fork River in Idaho, below Cabinet Gorge Dam. During 2024 salvaging efforts in the ephemeral side channel occurred much earlier due to low flow conditions and all fish were relocated into the adjacent mainstem of East Fork Bull River.

In 2024, efforts to capture Bull Trout in stranded pools occurred on August 6<sup>th</sup>. A total of 12 Bull Trout were rescued from isolated pools ranging 42–59 mm in length with an average length of 46

mm. All Bull Trout captured in 2024 were likely young-of-the-year fish. Westslope Cutthroat Trout were also salvaged from ephemeral pools in portions of East Fork Bull River. A total of 47 Westslope Cutthroat Trout were rescued ranged from 64–184 mm in length with an average length of 89 mm. Eight Sculpin *Cottus spp.* were also rescued from the ephemeral side channel. All fish were relocated to the directly adjacent mainstream of the East Fork Bull River.

## **Westslope Cutthroat Trout Genetic Monitoring**

### *Clear Creek*

Genetic samples (n = 36) from putative Westslope Cutthroat Trout were collected from three reaches of Clear Creek in 2024 at Rkm 15.4, 16.7, and 18.2. No definitive Rainbow Trout or Yellowstone Cutthroat Trout ancestry was detected. All individuals in the sample appear to be non-hybridized Westslope Cutthroat Trout (Kovach et al. 2025). Westslope Cutthroat Trout in Clear Creek have slightly lower genetic variation compared to other populations in the Columbia River basin (Kovach et al. 2025).

### *Wilkes Creek*

Genetic samples (n = 36) from putative Westslope Cutthroat Trout were collected from three reaches of Wilkes Creek in 2024 at Rkm 3.6, 5.8, and 7.4. Definitive evidence of Rainbow Trout ancestry was detected in 4 fish, with ancestry ranging from 16 to 24%. All hybrids were sampled in the lowest reach (Rkm 3.6). The presence of hybrids with high Rainbow Trout ancestry and otherwise non-hybridized Westslope Cutthroat Trout suggests that Rainbow Trout may be invading this section of Wilkes Creek (Kovach et al. 2025). Westslope Cutthroat Trout in Wilkes Creek have relatively similar genetic variation when compared to other populations in the Columbia River basin (Kovach et al. 2025).

### *Daisy Creek*

Genetic samples (n = 36) from putative Westslope Cutthroat Trout were collected from three reaches of Daisy Creek in 2024 at Rkm 1.1, 1.9, and 2.6. No definitive Rainbow Trout or Yellowstone Cutthroat Trout ancestry was detected. All individuals in the sample appear to be non-hybridized Westslope Cutthroat Trout (Kovach et al. 2025). Westslope Cutthroat Trout in Daisy Creek have slightly lower genetic variation compared to other populations in the Columbia River basin (Kovach et al. 2025).

### *Brush Gulch*

Genetic samples (n = 36) from putative Westslope Cutthroat Trout were collected from two reaches of Brush Gulch in 2024 at Rkm 2.1 and 2.6. One rainbow trout allele and one non-Westslope Cutthroat Trout allele was detected in the sample collected from Brush Gulch (Kovach et al. 2025). While this may suggest there is a very tiny amount of Rainbow Trout ancestry in this population, it may instead be a false positive. In either case, the management

implications are unchanged; the Westslope Cutthroat Trout population in Brush Gulch is afforded the highest conservation priority, and at worst, has less than 0.02% non-native rainbow trout ancestry. Westslope Cutthroat Trout in Daisy Creek have slightly lower genetic variation compared to other populations in the Columbia River basin (Kovach et al. 2025).

#### *Twentyfour Mile Creek*

Genetic samples (n = 36) from putative Westslope Cutthroat Trout were collected from two reaches of Twentyfour Mile Creek in 2024 at Rkm 0.3 and 1.9. Rainbow Trout alleles were detected at two diagnostic loci. These putative Rainbow Trout alleles were detected in 22% (n=8) of the fish in the sample (Kovach et al. 2025). Normally, this would be fairly strong evidence of small amounts of Rainbow Trout ancestry. However, in this case the results are inconclusive, as Rainbow Trout ancestry was only detected in singletons (single rainbow trout alleles), and did not observe Rainbow Trout ancestry in other loci that were immediately adjacent along the chromosomes. Under a pessimistic interpretation, the fish in Twentyfour Mile Creek may have ~0.1% Rainbow Trout ancestry, but alternatively they may be non-hybridized. Genomic data would be required to provide additional clarity. At this time, genomic data seems unnecessary as the fish in Twentyfour Mile Creek meet the criteria for highest conservation priority under either interpretation (Kovach et al. 2025). Westslope Cutthroat Trout in Twentyfour Mile Creek have high genetic variation compared to other populations in the Columbia River basin (Kovach et al. 2025).

#### *Tuscor Creek*

Genetic samples (n = 11) from putative Westslope Cutthroat Trout were collected from one reach of North Fork Tuscor Creek at Rkm 0.2 and one reach of Tuscor Creek at Rkm 5.3 in 2024. Definitive evidence of Rainbow Trout ancestry was detected in 91% (n=10) of the fish in the sample and was detected across approximately 22% of the genome (Kovach et al. 2025). While the latter value suggests the population in Tuscor Creek is not yet genomically extinct, this is a relatively small sample, and the population would be relatively close to meeting the criteria for genomic extinction with a larger sample size. As such, this population should receive lower (or no) priority with respect to active conservation action. The mean Rainbow Trout ancestry across individuals was 3.1%. Westslope Cutthroat Trout in Tuscor Creek have relatively similar genetic variation when compared to other populations in the Columbia River basin (Kovach et al. 2025).

#### *West Fork Pilgrim Creek*

Genetic samples (n = 36) from putative Westslope Cutthroat Trout were collected from one reach of West Fork Pilgrim Creek in 2024 at Rkm 3.3. Definitive evidence of Rainbow Trout ancestry was detected in 22% (n=8) of the fish in the sample (Kovach et al. 2025). The mean Rainbow Trout ancestry across individuals was 0.3%. Westslope Cutthroat Trout in West Fork Pilgrim Creek have relatively similar genetic variation when compared to other populations in the Columbia River basin (Kovach et al. 2025).

### *Skeleton Creek*

Genetic samples (n = 36) from putative Westslope Cutthroat Trout were collected from one reach of Skeleton Creek in 2024 at Rkm 0.8 to 1.0. Definitive evidence of Rainbow Trout ancestry was detected in 11% (n=4) of the fish in the sample (Kovach et al. 2025). The mean Rainbow Trout ancestry across individuals was 0.1%. Westslope Cutthroat Trout in West Fork Pilgrim Creek have relatively similar genetic variation when compared to other populations in the Columbia River basin (Kovach et al. 2025).

Table 12. Summary of hybridization results. The RBT and YCT columns denote the mean individual Rainbow Trout and Yellowstone Cutthroat Trout ancestry observed.

Sample	Year	N	#Hybrids	#WCT	RBT	YCT
Clear Creek	2024	36	0	36	0	0
Wikes Creek	2024	36	4	32	2.5	0
Daisy Creek	2024	36	0	36	0	0
Brush Gulch	2024	36	0	36	0.02?	0
Twentyfour Mile Creek	2024	36	0	36	0.1?	0
Tuscor Creek	2024	11	10	1	3.1	0
West Fork Pilgrim Creek	2024	36	8	28	0.3	0
Skeleton Creek	2024	36	4	32	0.3	0

### **PIT Tag Array Detection Summary**

#### *Prospect Creek Array*

A PIT tag array was installed in lower Prospect Creek (Rkm 0.7) in August of 2018 and was a cost-share between the Avista and NorthWestern Energy mitigation programs (Biomark 2018c). In 2024, 24 fish were detected on the array including Bull Trout, Brown Trout, Rainbow Trout, *Oncorhynchus* hybrid, and Westslope Cutthroat Trout (Appendix D-1). The two Bull Trout were adults transported upstream from below Cabinet Gorge Dam under the *Fish Passage/Native Salmonid Restoration Plan (Appendix C), Upstream Fish Passage Program*. One of those Bull Trout was transported to Fishtrap Creek in 2022 and appears to have made a spawning movement up Prospect Creek. The other Bull Trout was transported to the South Fork Jocko River in 2021. This fish has made apparent spawning movements up Prospect Creek in 2022, 2023, and 2024. Both upstream transport fish likely overwintered in Noxon Reservoir and failed to ascend the Thompson Falls Fish Ladder.

Eleven Westslope Cutthroat Trout were detected on the Prospect Creek array in 2024. All those fish came from salvaging efforts in the ephemeral reaches of Prospect Creek (2023–2024). The remaining fish detected on the array included one *Oncorhynchus* hybrid, nine Rainbow Trout,

and one Brown Trout. All the Brown Trout, Rainbow Trout, and the *Oncorhynchus* hybrid were initially tagged at the Thompson Falls Fish Ladder. The Brown Trout was detected on the Graves Creek Array and subsequently captured in the permanent weir trap on Graves Creek. The *Oncorhynchus* hybrid was also detected on the Graves Creek Array in 2024. Two of the Rainbow Trout were detected on submersible arrays in 2024 below Thompson Falls Dam that were deployed by Northwestern Energy.

#### *Graves Creek Array*

The current Graves Creek PIT array was installed in 2015 at Rkm 0.6. In 2024, sixty-nine fish were detected on the array including Bull Trout, Brown Trout, Rainbow Trout, *Oncorhynchus* hybrid, and Westslope Cutthroat Trout (Appendix D-1). Forty-one Bull Trout were detected on the array in 2024. Five of these fish were tagged in Graves Creek as part of the *Fish Passage/Native Salmonid Restoration Plan (Appendix C)*, *Bull Trout Emigration Study* as juveniles in 2019 and 2020. Fourteen additional Bull Trout were tagged during electrofishing efforts in Graves Creek from 2022, 2023, and 2024 as part of the *Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program (Appendix B)*, *Habitat Restoration Monitoring and Native Salmonid Abundance Monitoring Plan* and *Lower Clark Fork River Pathogen Survey*. Seven of those fish tagged electrofishing were later caught in the permanent weir on Graves Creek and subsequently transported downstream below Cabinet Gorge Dam as part of the *Fish Passage/Native Salmonid Restoration Plan (Appendix C)*, *Tributary Trapping and Downstream Juvenile Bull Trout Transport Program*. Twenty-seven Bull Trout detected were adults transported upstream from below Cabinet Gorge Dam under the *Fish Passage/Native Salmonid Restoration Plan (Appendix C)*, *Upstream Fish Passage Program* from 2020-2024. Out of twenty-seven adult Bull Trout transported upstream, twenty-six were released in Graves Creek and one in the Vermilion River. Twenty-one of these fish were also transported downstream from Graves Creek to below Cabinet Gorge Dam as juveniles under the *Fish Passage/Native Salmonid Restoration Plan (Appendix C)*, *Tributary Trapping and Downstream Juvenile Bull Trout Transport Program*. One was originally tagged on a gillnetting boat in 2024. The remaining three Bull Trout were tagged at the Cabinet Gorge Fishway in 2024.

Ten Westslope Cutthroat Trout were detected on the Graves Creek array in 2024. All of those fish were tagged at the permanent weir site in Graves Creek in 2024. The remaining fish detected on the array included ten Brown Trout, five Rainbow Trout, and three *Oncorhynchus* hybrids. One Brown Trout and one *Oncorhynchus* hybrid were initially tagged at the Thompson Falls Fish Ladder in 2022 and 2021, respectively. One Brown Trout was tagged at the permanent weir site in Graves Creek in 2023. The remaining eight Brown Trout, two *Oncorhynchus* hybrids, and all five Rainbow Trout were all tagged at the permanent weir site in Graves Creek in 2024.

#### *Vermilion River Array*

In the summer of 2019, a PIT tag array was installed on the lower Vermilion River at Rkm 2.8. (Biomark 2019). In 2024, five fish were detected on the array, all were Bull Trout (Appendix D-1). Two of the Bull Trout were initially tagged on a gillnetting boat in Lake Pend Oreille in 2023 and 2024. These two were then captured at the Cabinet Gorge Fishway in 2024, then subsequently transported upstream under the *Fish Passage/Native Salmonid Restoration Plan (Appendix C), Upstream Fish Passage Program*. One was genetically assigned to Graves Creek and was originally transported upstream to Graves Creek. However, it migrated downstream into the Noxon pool and into the Vermilion River, where the fish presumably spawned. The remaining three Bull Trout were adults transported upstream from below Cabinet Gorge Dam to the Vermilion River under the *Fish Passage/Native Salmonid Restoration Plan (Appendix C), Upstream Fish Passage Program* from previous years. Two of the upstream transports were also transported downstream from the Vermilion River to below Cabinet Gorge Dam as juveniles under the *Fish Passage/Native Salmonid Restoration Plan (Appendix C), Tributary Trapping and Downstream Juvenile Bull Trout Transport Program* in 2019 and 2020. These two Bull Trout were transported upstream in 2023 and appear to have made another spawning migration to the Vermilion after overwintering in Noxon Reservoir. The third upstream transport fish was transported in 2020. This fish has likely overwintered in Noxon Reservoir and has made apparent spawning movements in the Vermilion River in 2020, 2021, 2022, 2023, and 2024.

#### *Bull River Array*

In August of 2018, a PIT tag array was installed on the lower Bull River at Rkm 4.5 (Biomark 2018a). In 2024, 117 fish were detected on the array including Bull Trout, Lake Trout, Brook Trout, Brown Trout, Mountain Whitefish, Rainbow Trout, *Oncorhynchus* hybrids and Westslope Cutthroat Trout (Appendix D-1). Six Bull Trout were detected on the array in 2024. Five of these Bull Trout were upstream transports under the *Fish Passage/Native Salmonid Restoration Plan (Appendix C), Upstream Fish Passage Program*. The last Bull Trout was tagged during salvaging efforts in the ephemeral reaches of East Fork Bull River under the *Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program (Appendix B), Habitat Restoration Monitoring and Native Salmonid Abundance Monitoring Plan* in 2023.

Twenty-three Westslope Cutthroat Trout were detected on the Bull River array in 2024. Eight of those fish came from tags associated with the *Fish Passage/Native Salmonid Restoration Plan (Appendix C), Westslope Cutthroat Trout Transport Evaluation* tagged in 2022 and 2023. Five of those Westslope Cutthroat appeared to have out-migrated during the month of January. Based on length at time of capture those fish ranged from an estimated age 2-4. One fish was tagged after capture in the weir trap on East Fork Bull River as part of the *Fish Passage/Native Salmonid Restoration Plan (Appendix C), Tributary Trapping and Downstream Juvenile Bull Trout Transport Program*. The remaining fourteen Westslope Cutthroat Trout were transported upstream from below Cabinet Gorge Dam to Cabinet Gorge Reservoir under the *Fish Passage/Native Salmonid Restoration Plan (Appendix C), Upstream Fish Passage Program*. Only two of the fourteen upstream transport fish were detected on the East Fork Bull River array,

presumably on a spawning migration. Based on past telemetry data (Bernall et al. 2021) and results of the *Westslope Cutthroat Trout Transport Evaluation* (Rehm 2025), the majority of transported Westslope Cutthroat Trout likely spawned just below the confluence of the Middle, North, and South Fork of the Bull River or in South Fork Bull River.

Seventy-six Brown Trout, seven Brook Trout, one Lake Trout, one Mountain Whitefish, one Rainbow Trout, and two *Oncorhynchus* hybrids were detected on the Bull River array in 2024. Fourteen Brown Trout and two *Oncorhynchus* hybrids came from tags associated with the *Fish Passage/Native Salmonid Restoration Plan (Appendix C)*, *Westslope Cutthroat Trout Transport Evaluation* all tagged in 2022 and 2023. Ten of those Brown Trout and two *Oncorhynchus* hybrids had also been detected on the array in 2023. One Rainbow Trout and one Lake Trout were initially tagged at the Thompson Falls Fish Ladder in 2021 and 2022, respectively. The same Rainbow Trout was detected on the Thompson River array in 2022 and circular PIT arrays below Noxon Rapids Dam in 2024. The remaining sixty-two Brown Trout and seven Brook Trout were fish tagged during East Fork Bull River weir exclusion efforts as part of the *Fish Passage/Native Salmonid Restoration Plan (Appendix C)*, *Tributary Trapping and Downstream Juvenile Bull Trout Transport Program*. A single Mountain Whitefish was also detected for the sixth consecutive year on the Bull River Array that was tagged in 2019 at the East Fork Bull River screw trap associated with *Fish Passage/Native Salmonid Restoration Plan (Appendix C)*, *Tributary Trapping and Downstream Juvenile Bull Trout Transport Program*.

#### *East Fork Bull River Array*

In September of 2018, a PIT tag array was installed on East Fork Bull River at Rkm 0.2 (Biomark 2018b). In 2024, thirty-two fish were detected on the array including Bull Trout, Brown Trout, *Oncorhynchus* hybrids, and Westslope Cutthroat Trout (Appendix D-1). Eight Bull Trout were detected on the array in 2024. Two Bull Trout were tagged in the East Fork Bull River as part of salvaging efforts in the ephemeral reaches of East Fork Bull River under the *Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program (Appendix B)*, *Habitat Restoration Monitoring and Native Salmonid Abundance Monitoring Plan* in 2023. One Bull Trout were tagged as part of long-term monitoring under the *Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program (Appendix B)*, *Habitat Restoration Monitoring and Native Salmonid Abundance Monitoring Plan* in 2022. One Bull Trout was tagged and released in the East Fork Bull River as part of the *Fish Passage/Native Salmonid Restoration Plan (Appendix C)*, *Tributary Trapping and Downstream Juvenile Bull Trout Transport Program*. The remaining four Bull Trout detected were transported upstream as an adult from below Cabinet Gorge Dam to the East Fork Bull River under the *Fish Passage/Native Salmonid Restoration Plan (Appendix C)*, *Upstream Fish Passage Program* in 2024.

Nine Westslope Cutthroat Trout were detected on the East Fork Bull River array in 2024. Two initially tagged at the Cabinet Gorge Fishway were transported upstream under the *Fish*

*Passage/Native Salmonid Restoration Plan (Appendix C), Upstream Fish Passage Program.* Four were tagged in the East Fork Bull River as part of the *Fish Passage/Native Salmonid Restoration Plan (Appendix C), Tributary Trapping and Downstream Juvenile Bull Trout Transport Program* in 2024. One was tagged in the Bull River and two in the East Fork Bull River as part of sampling efforts for the *Fish Passage/Native Salmonid Restoration Plan (Appendix C), Westslope Cutthroat Trout Transport Evaluation* in 2023.

Thirteen Brown Trout and two *Oncorhynchus* hybrids were detected on the East Fork Bull River array in 2024. Three Brown Trout and the two *Oncorhynchus* hybrids came from tagging events associated with the *Fish Passage/Native Salmonid Restoration Plan (Appendix C), Westslope Cutthroat Trout Transport Evaluation* all tagged in 2022 and 2023. The remaining ten Brown Trout were tagged during East Fork Bull River weir exclusion efforts as part of the *Fish Passage/Native Salmonid Restoration Plan (Appendix C), Tributary Trapping and Downstream Juvenile Bull Trout Transport Program*.

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**Appendix A. Long-term abundance (fish/100 m) and biomass (grams/100 m<sup>2</sup>) trends for stream reaches sampled in 2024.**

Table A-1. Coefficient of determination ( $r^2$ ), slope and  $P$ -value from linear regression analyses of abundance (fish/100m) and biomass (g/100m<sup>2</sup>) over time organized by sites and species for long-term monitoring sites in lower Clark Fork tributaries sampled in 2024. Bold text signifies significant relationships. Sampling Period (Period) and sample size (n) indicate how many times a site was sampled within year period. Species abbreviations include Bull Trout (BULL), Brook Trout (EB), Oncorhynchus hybrids (RBxWCT), and Westslope Cutthroat Trout (WCT).

Stream	Site (Rkm)	Period (n)	Species	Abundance			Biomass		
				$r^2$	Slope	$P$ -value	$r^2$	Slope	$P$ -value
Crow	1 (1.8)	2005-2024 (13)	BULL	0.19	-0.17	0.13	0.2	-3	0.13
Crow	1 (1.8)	2005-2024 (13)	WCT	0.3	0.82	<b>0.05</b>	0.28	7.53	0.06
Crow	2 (0.2)	2006-2024 (12)	BULL	0.22	-0.12	0.12	0.05	-0.75	0.49
Crow	2 (0.2)	2006-2024 (12)	WCT	0.01	-0.09	0.79	0.03	0.79	0.6
Crow	3 (1.3)	2016-2024 (7)	BULL	0.28	-0.17	0.22	0.14	3.19	0.4
Crow	3 (1.3)	2016-2024 (7)	WCT	0.45	2.6	0.1	0.7	13.17	<b>0.02</b>
Crow	4 (1.5)	2018-2024 (5)	BULL	0.19	0.21	0.45	0.36	-3.09	0.76
Crow	4 (1.5)	2018-2024 (5)	WCT	0.2	2.12	0.45	0.81	52.64	<b>0.04</b>
Graves	2 (4.1)	2003-2024 (13)	BULL	0.01	-0.16	0.78	0.24	-1.91	0.09
Graves	2 (4.1)	2003-2024 (13)	WCT	0.1	-0.58	0.29	0.00	0.26	0.95
Graves	2 (4.1)	2003-2024 (13)	EB	0.1	-0.06	0.3	0.05	-0.19	0.45
Graves	5 (2.5)	2022-2024 (3)	BULL	0.99	-2.73	<b>&lt;0.01</b>	0.00	-0.02	0.99
Graves	5 (2.5)	2022-2024 (3)	WCT	0.35	-10.18	0.6	0.00	-0.01	0.99
WFTC	1 (1.9)	2013-2024 (5)	BULL	0.35	-0.83	0.3	0.37	-7.43	0.27
WFTC	1 (1.9)	2013-2024 (5)	WCT	0.23	2.6	0.41	0.00	1.85	0.94
WFTC	1 (1.9)	2013-2024 (5)	RBxWCT	0.53	1.7	0.16	0.53	11.39	0.16
WFTC	1 (1.9)	2013-2024 (5)	EB	0.53	0.15	0.16	0.53	0.61	0.16
WFTC	2 (5.2)	2013-2024 (5)	BULL	0.74	-1.07	0.06	0.17	-5.05	0.49
WFTC	2 (5.2)	2013-2024 (5)	WCT	0.63	6.92	0.11	0.22	19.99	0.43
WFTC	3 (8.3)	2013-2024 (5)	BULL	0.44	-1.11	0.24	0.79	-12.31	<b>0.04</b>
WFTC	3 (8.3)	2013-2024 (5)	WCT	0.49	6.03	0.19	0.46	-23.38	0.21
WFTC	4 (0.4)	2018-2024 (3)	BULL	0.92	-2.47	0.18	0.99	-25.0	<b>0.05</b>
WFTC	4 (0.4)	2018-2024 (3)	WCT	0.12	2.7	0.77	0.04	8.4	0.88
Tuscor	2 (0.4)	2009-2024 (5)	WCT	0.00	0.05	0.94	0.05	-4.41	0.71
Tuscor	2 (0.4)	2009-2024 (5)	EB	0.75	-1.45	0.06	0.35	-19.43	0.29
Rock	1 (8.6)	2001-2024 (15)	BULL	0.28	-0.4	<b>0.04</b>	0.26	-2.12	0.06
Rock	1 (8.6)	2001-2024 (15)	WCT	0.07	1.09	0.32	0.22	12.68	0.09
Rock	2 (11.4)	2001-2024 (15)	BULL	0.03	-0.19	0.52	0.13	-3.3	0.18
Rock	2 (11.4)	2001-2024 (15)	WCT	0.18	1.19	0.12	0.03	2.49	0.54
Rock	3 (13)	2015-2024 (4)	BULL	0.87	-1.24	0.07	0.73	-22.7	0.15
Rock	3 (13)	2015-2024 (4)	WCT	0.87	4.85	0.07	0.00	0.95	0.94
Rock	4 (1.3)	2015-2024 (4)	BULL	0.02	-0.02	0.87	0.02	-0.51	0.87
Rock	4 (1.3)	2015-2024 (4)	WCT	0.1	1.09	0.68	0.10	2.82	0.69
Pilgrim	3 (3.4)	2005-2024 (8)	WCT	0.00	-0.22	0.89	0.05	-4.41	0.71

## Appendix B. Stream Temperature Monitoring Data 2024

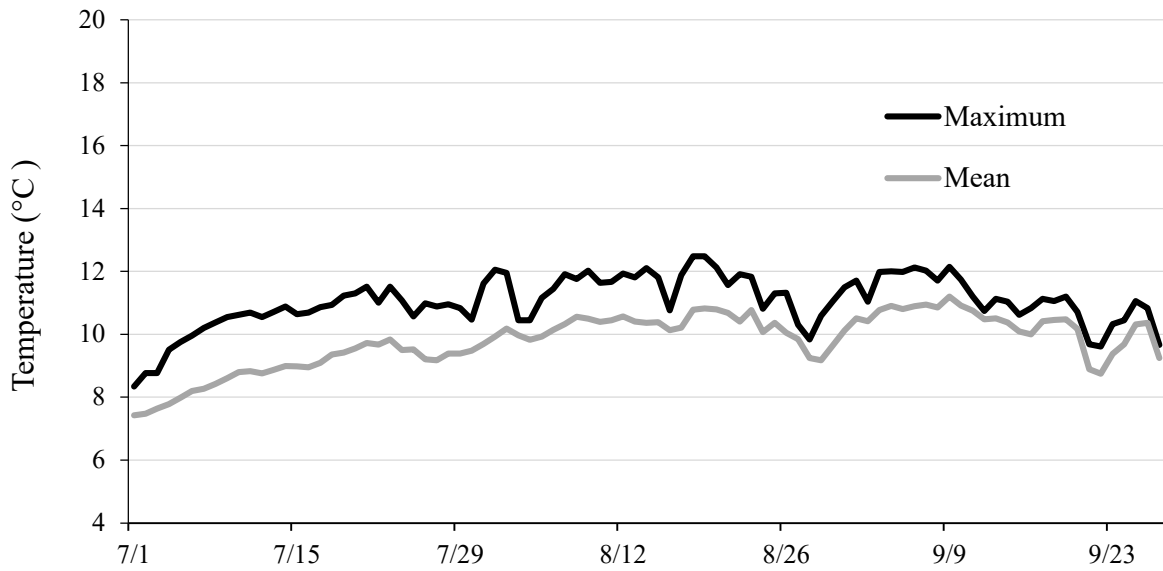


Figure B-1. Maximum and mean daily water temperatures in East Fork Blue Creek (Rkm 0.3), 2024.

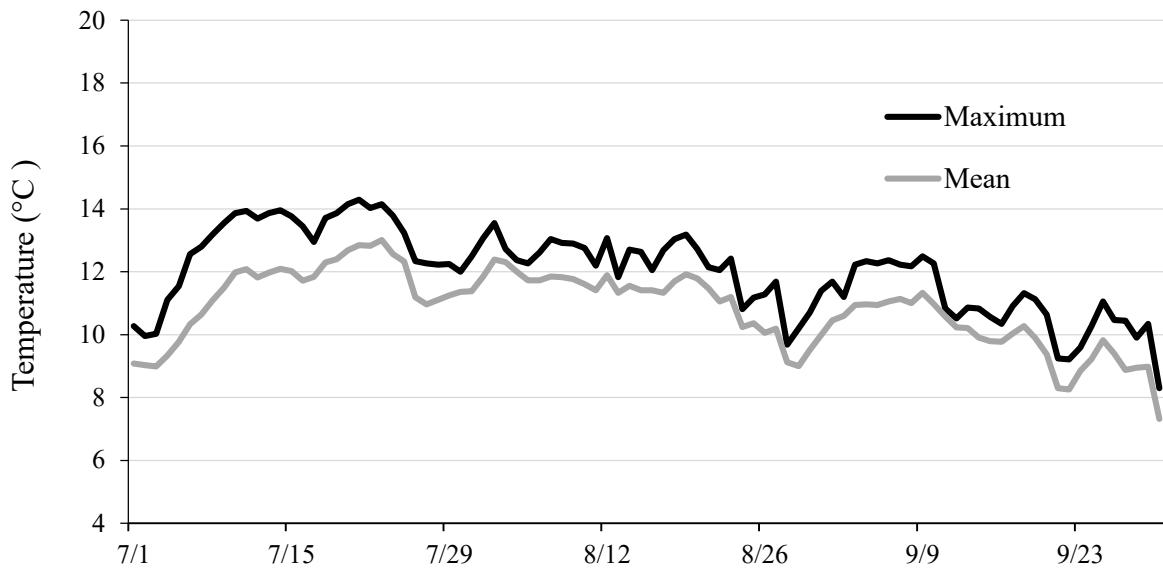


Figure B-2. Maximum daily water temperatures in upper Prospect Creek (Rkm 29.3), 2024.

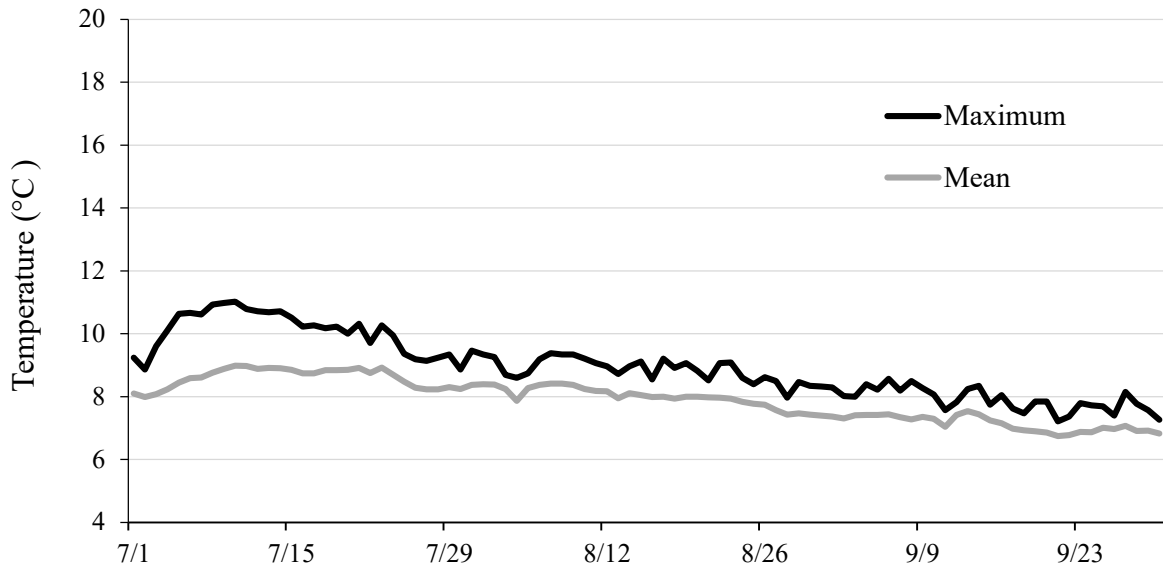


Figure B-3. Maximum and mean daily water temperatures in Prospect Creek below Crow Creek (Rkm 19.5), 2024.

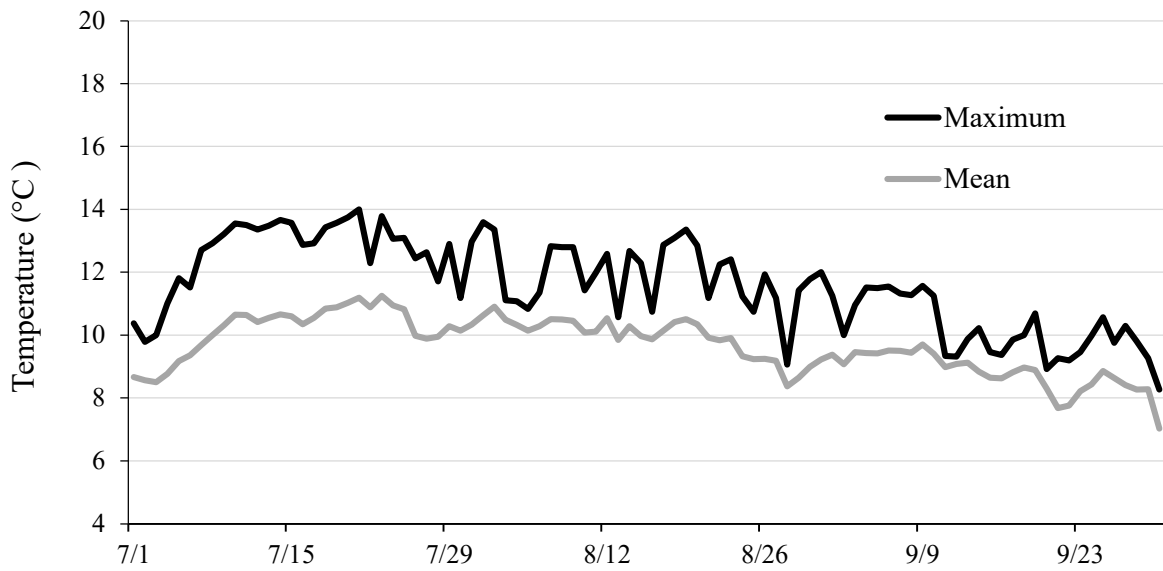


Figure B-4. Maximum and mean daily water temperatures in Cooper Gulch above long-term monitoring Site 1 (Rkm 3.7), 2024.

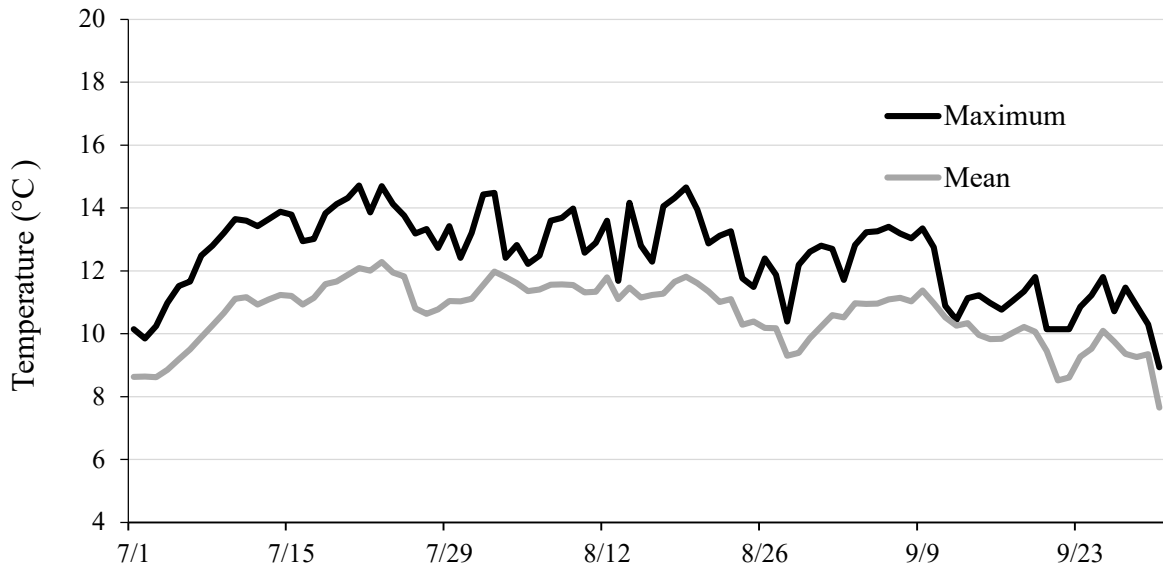


Figure B-5. Maximum and mean daily water temperatures in Cooper Gulch below Chipmunk Creek (Rkm 5.5), 2024.

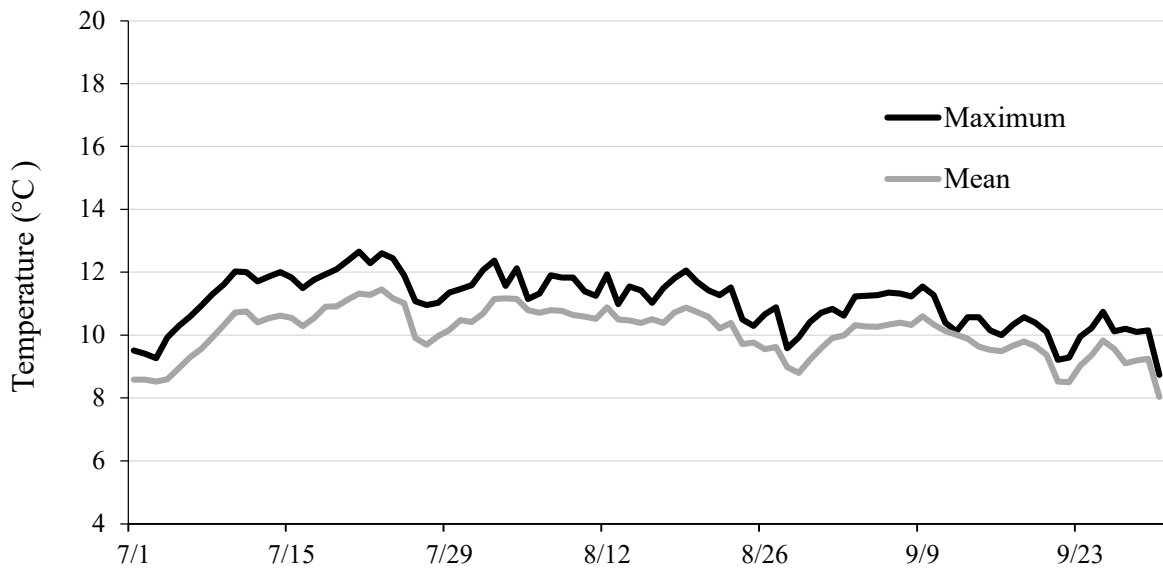


Figure B-6. Maximum and mean daily water temperatures in Crow Creek restoration reach (Rkm 1.8), 2024.

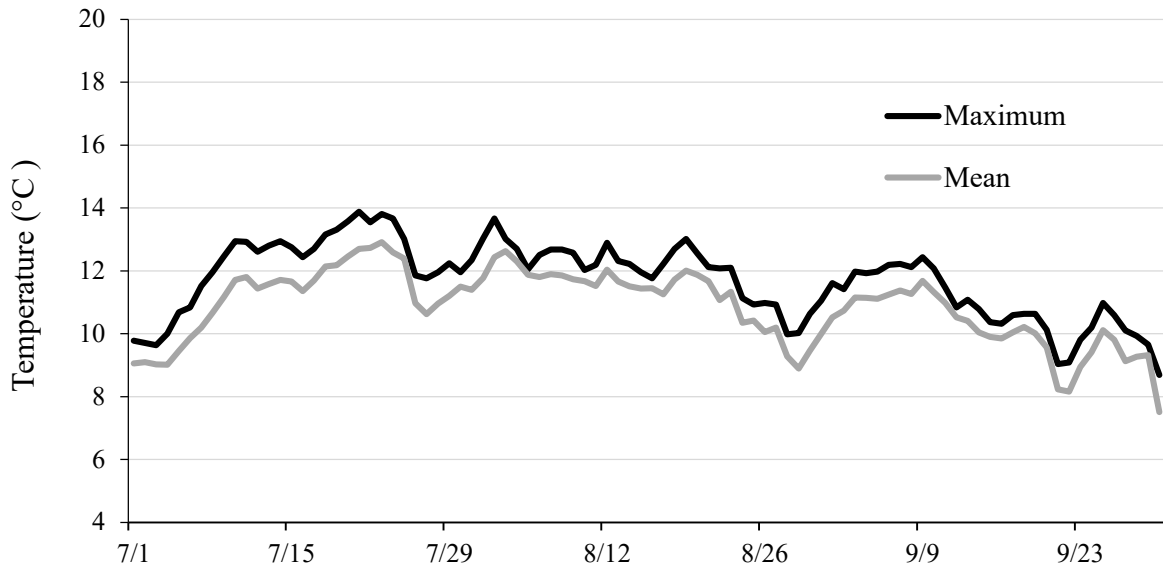


Figure B-7. Maximum and mean daily water temperatures in West Fork Crow Creek (Rkm 0.6), 2024.

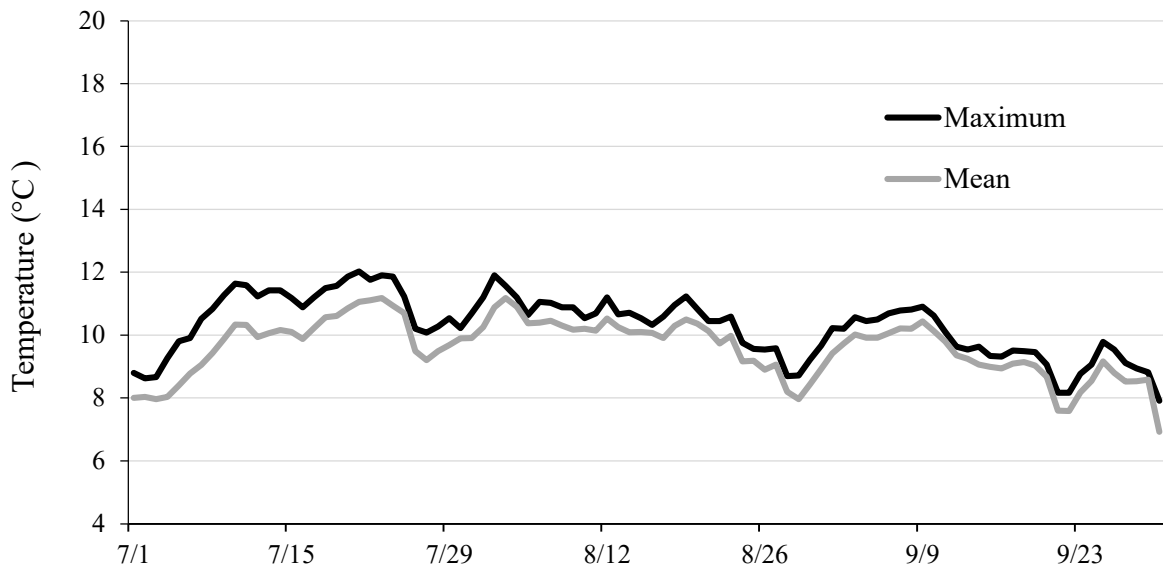


Figure B-8. Maximum and mean daily water temperatures in East Fork Crow Creek (Rkm 2), 2024.

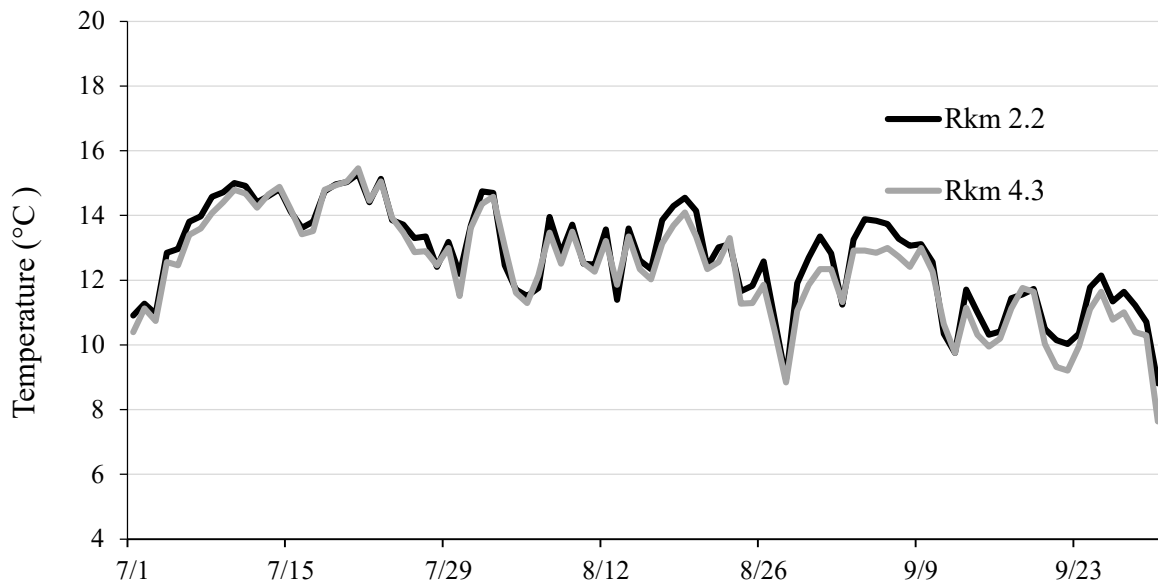


Figure B-9. Maximum daily water temperatures in Graves Creek at Thorne Creek (Rkm 2.2) and below Winniemuck Creek (Rkm 4.3), 2024.

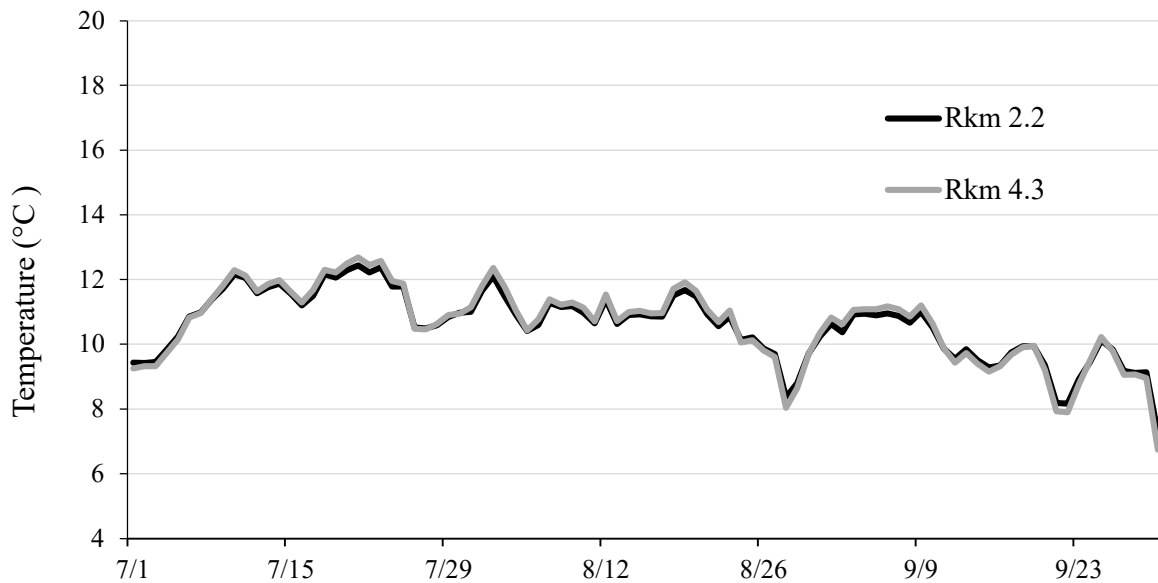


Figure B-10. Mean daily water temperatures in Graves Creek at Thorne Creek (Rkm 2.2) and below Winniemuck Creek (Rkm 4.3), 2024.

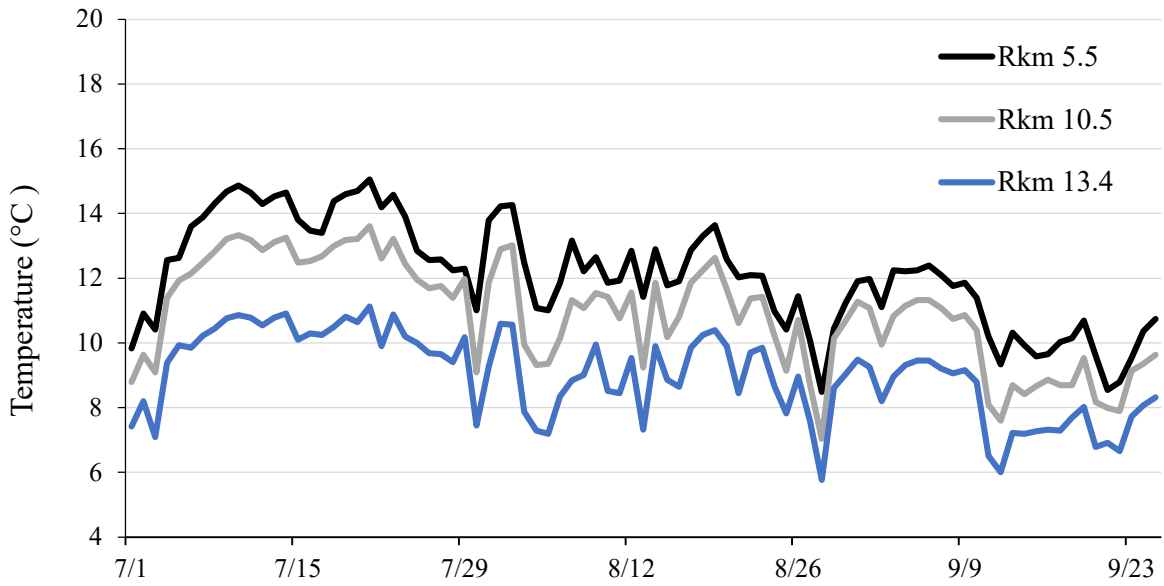


Figure B-11. Maximum daily water temperatures in Graves Creek above the falls (Rkm 5.5), upstream of second bridge (Rkm 10.5), and at Lawn Lake Trailhead (Rkm 13.4), 2024.

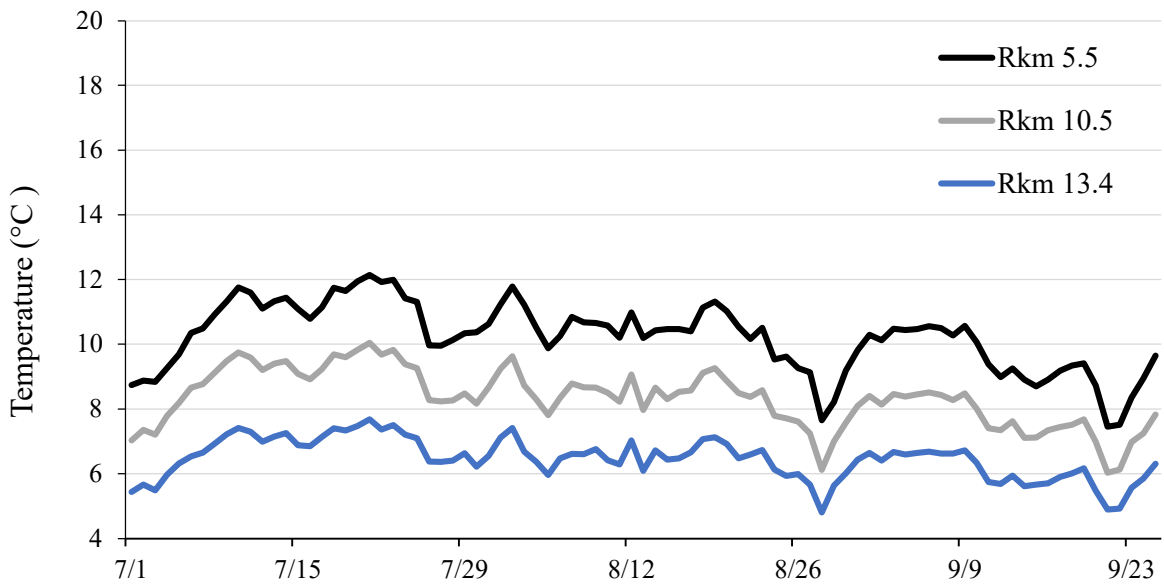


Figure B-12. Mean daily water temperatures in Graves Creek above the falls (Rkm 5.5), upstream of second bridge (Rkm 10.5), and at Lawn Lake Trailhead (Rkm 13.4), 2024.

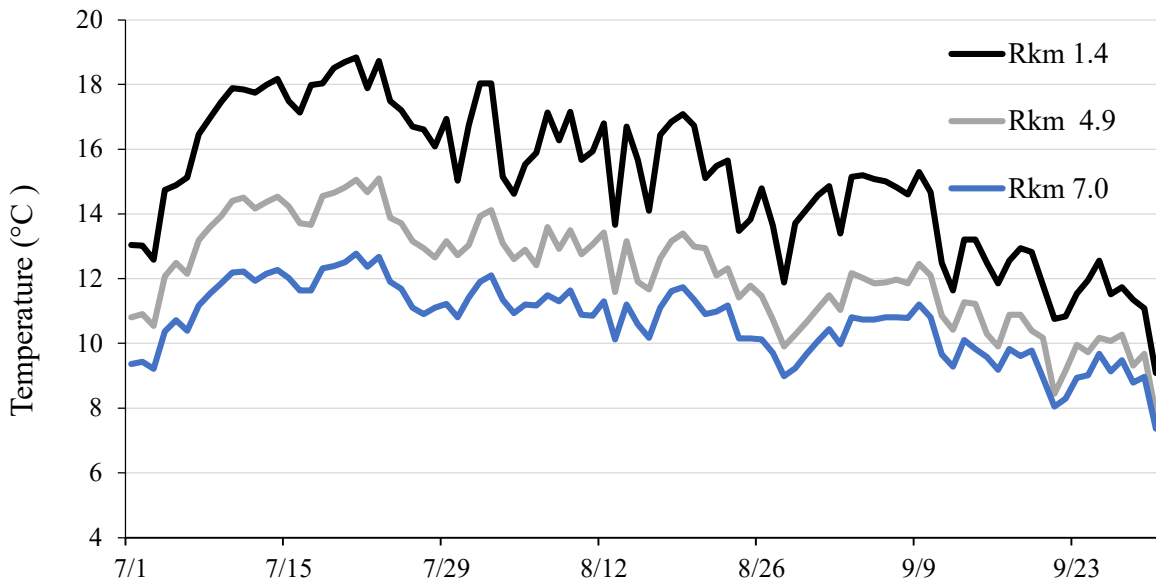


Figure B-13. Maximum daily water temperatures in lower West Fork Trout Creek (Rkm 1.4), above Robins Run (Rkm 4.9), and below the South Branch (Rkm 7.0), 2024.

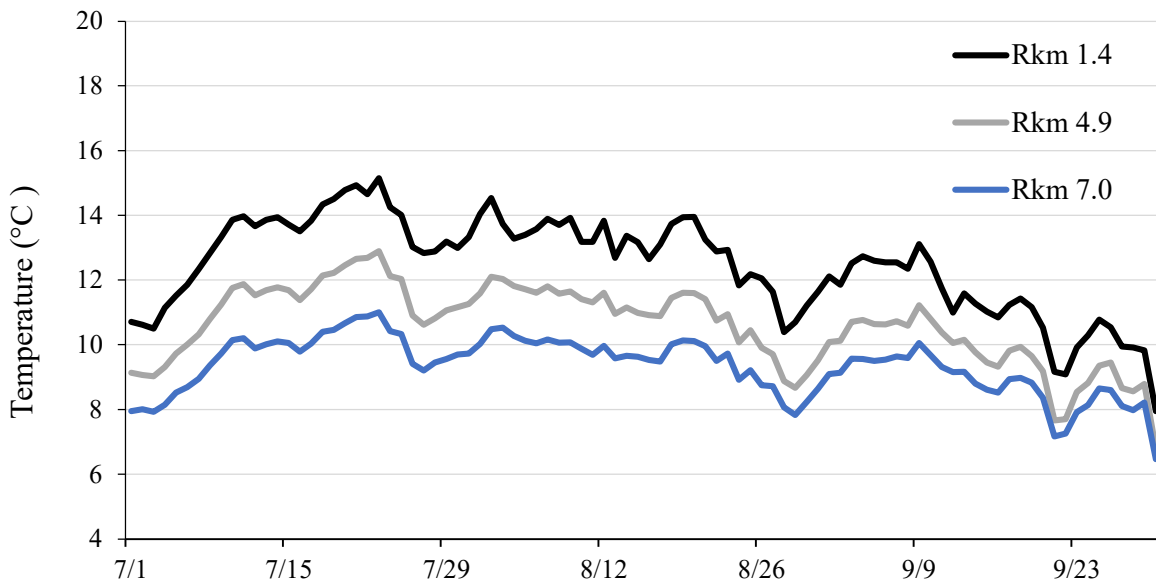


Figure B-14. Mean daily water temperatures in lower West Fork Trout Creek (Rkm 1.4), above Robins Run (Rkm 4.9), and below the South Branch (Rkm 7.0), 2024.

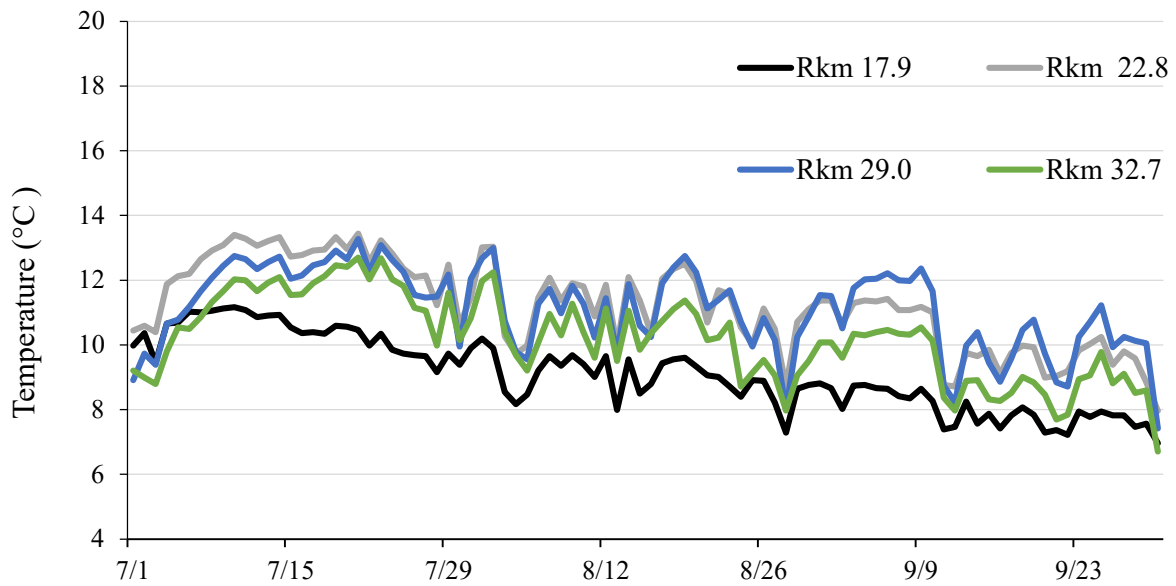


Figure B-15. Maximum daily water temperatures in Vermilion River above Chapel Slide (Rkm 17.9), below Willow Creek (Rkm 22.8), below Charred Creek (Rkm 25.8), below Miller Creek (Rkm 29), and at Control Creek (Rkm 32.7), 2024.

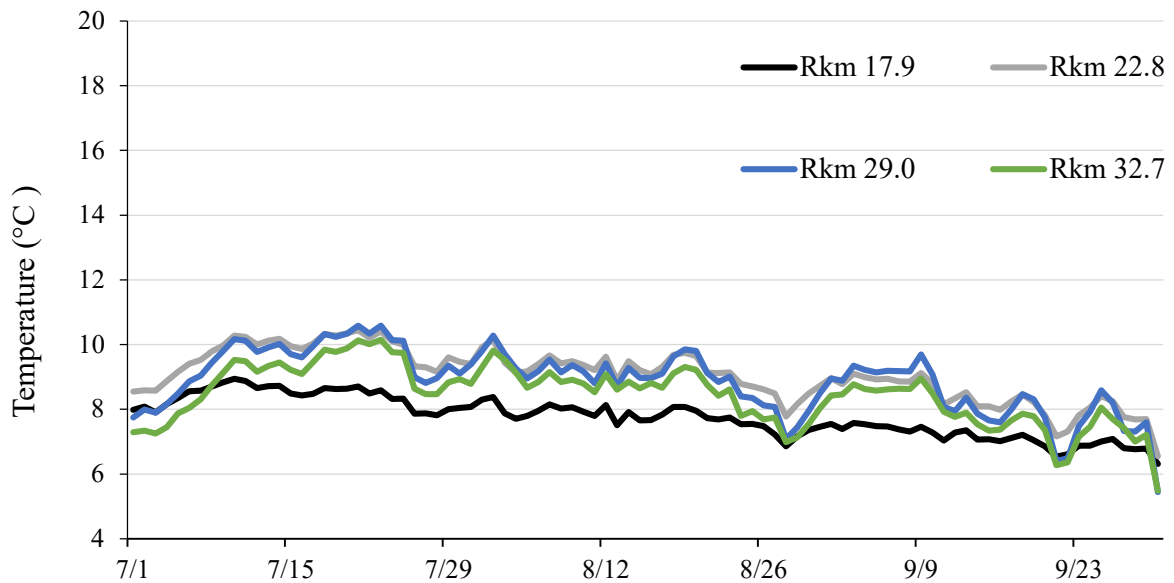


Figure B-16. Mean daily water temperatures in Vermilion River above Chapel Slide (Rkm 17.9), below Willow Creek (Rkm 22.8), below Charred Creek (Rkm 25.8), below Miller Creek (Rkm 29), and at Control Creek (Rkm 32.7), 2024.

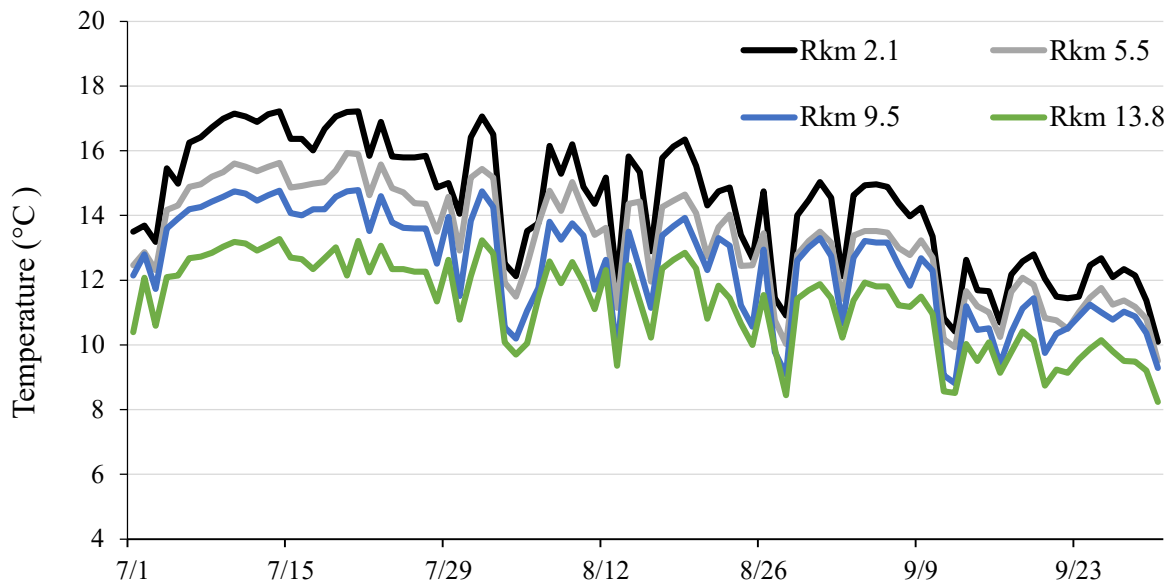


Figure B-17. Maximum daily water temperatures in the Vermilion River below Grouse Creek (Rkm 13.8), below Cataract Creek (Rkm 9.5), below Canyon Creek and Roe Gulch (Rkm 5.5), and near mouth (Rkm 2.1), 2024.

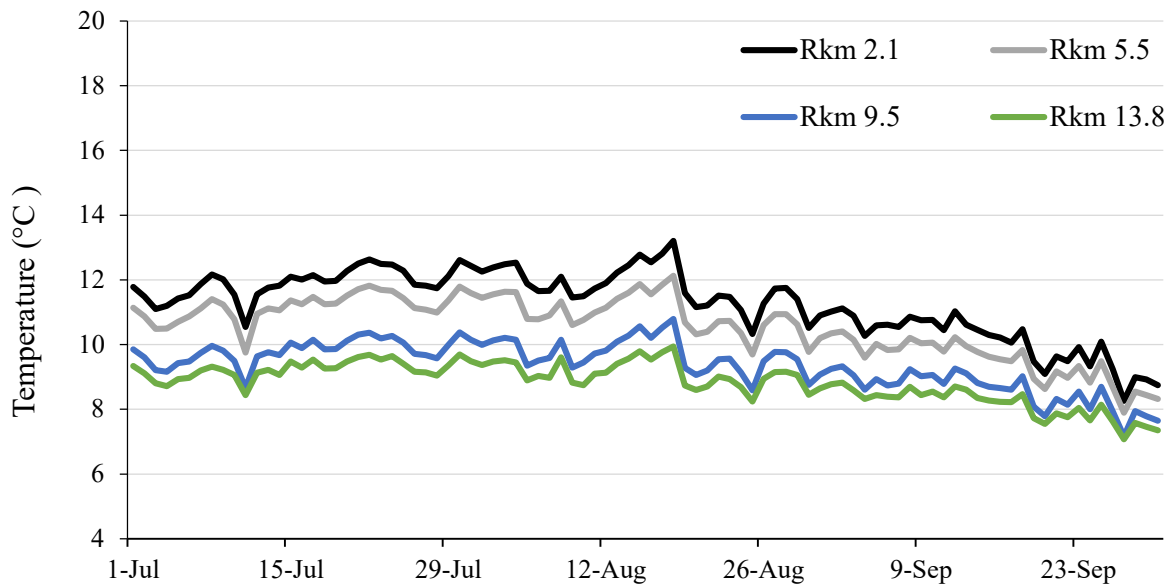


Figure B-18. Mean daily water temperatures in the Vermilion River below Grouse Creek (Rkm 13.8), below Cataract Creek (Rkm 9.5), below Canyon Creek and Roe Gulch (Rkm 5.5), and near mouth (Rkm 2.1), 2024.

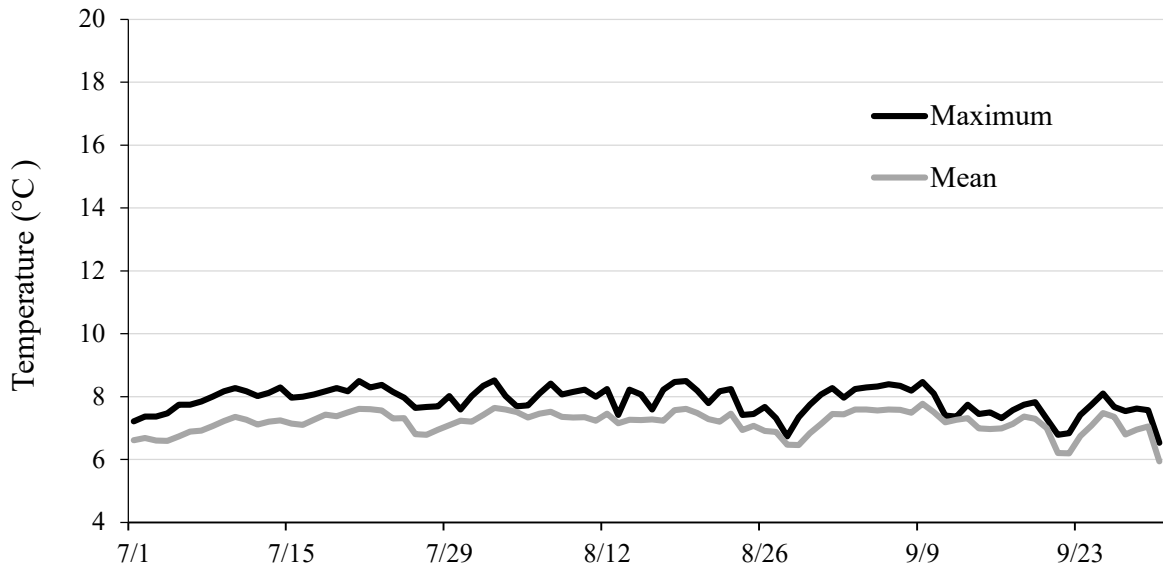


Figure B-19. Maximum and mean daily water temperatures in Sims Creek (Rkm 0), 2024.

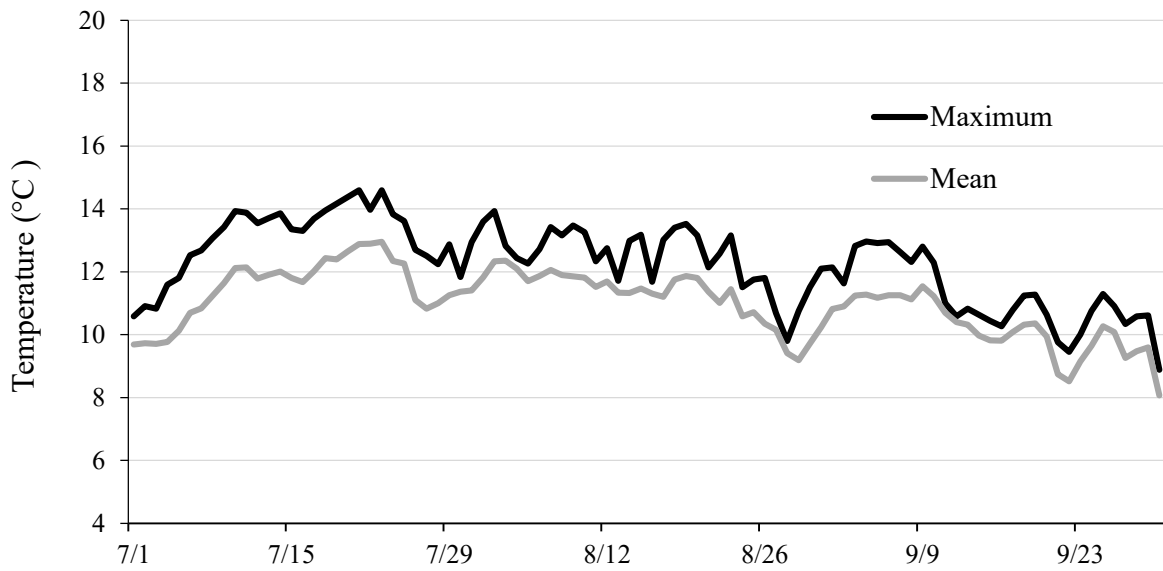


Figure B-20. Maximum and mean daily water temperatures in Canyon Creek (Rkm 0.8), 2024.

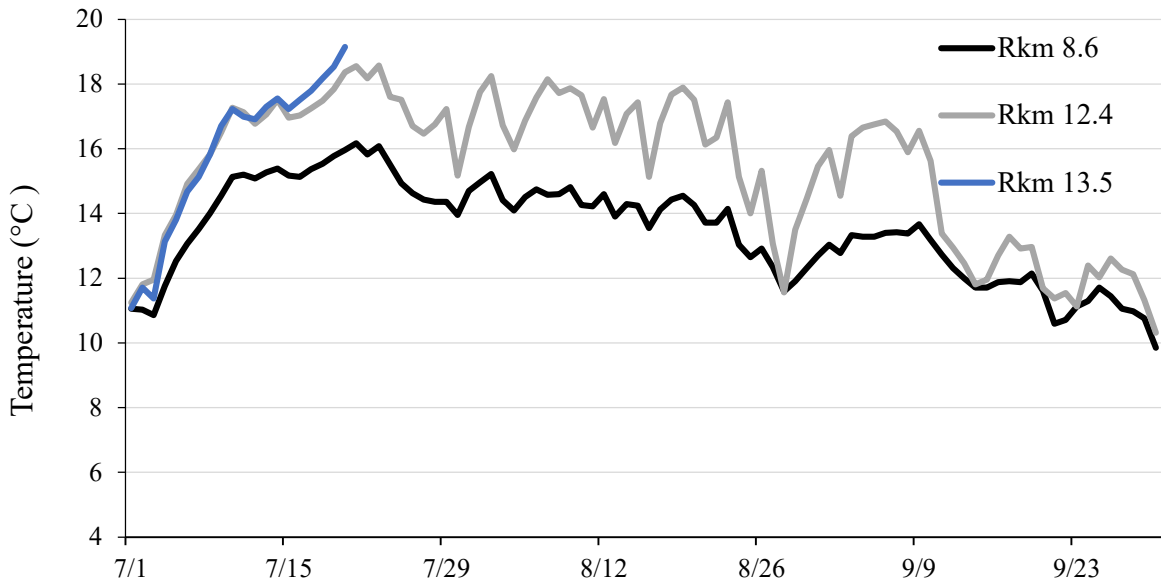


Figure B-21. Maximum daily water temperatures in Rock Creek above the West Fork of Rock Creek (Rkm 8.6), above trailhead (Rkm 12.4), and below upper cascade (Rkm 13.5), 2024.

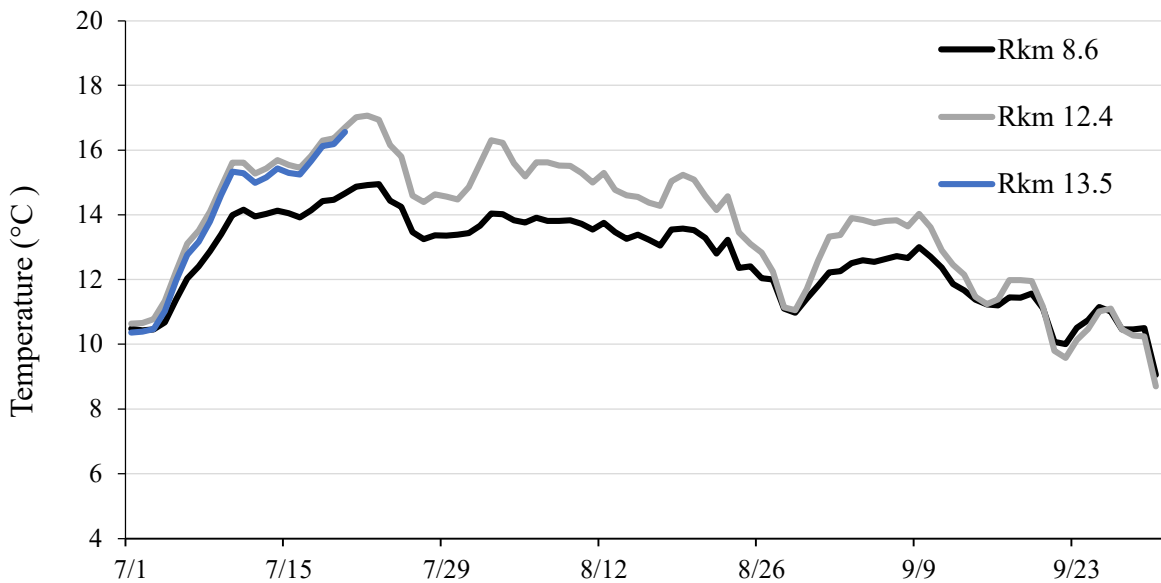


Figure B-22. Mean daily water temperatures in Rock Creek above the West Fork of Rock Creek (Rkm 8.6), above trailhead (Rkm 12.4), and below upper cascade (Rkm 13.5), 2024.

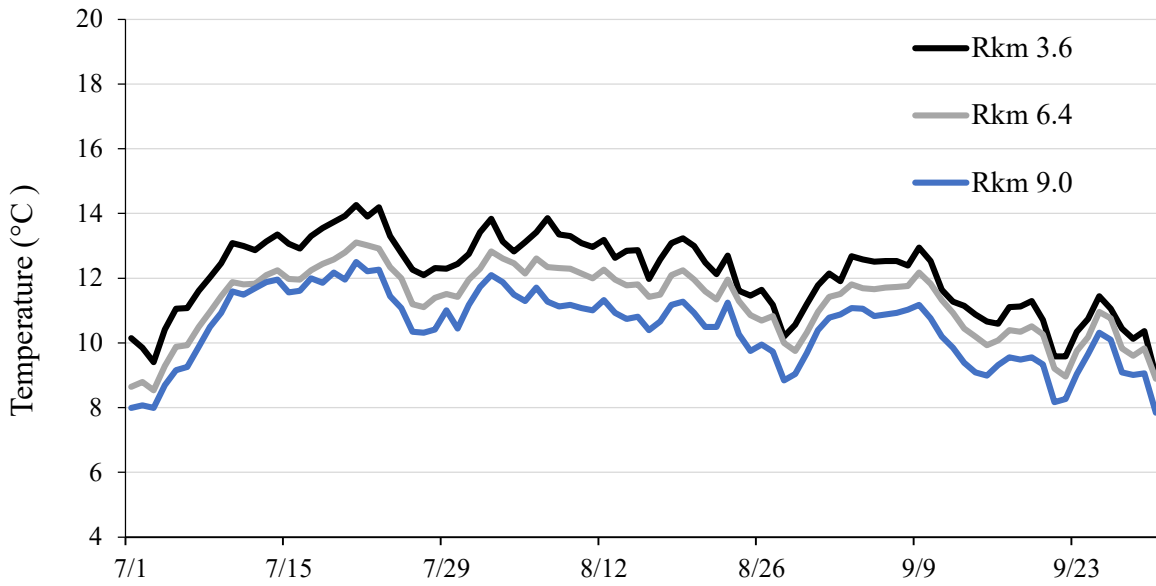


Figure B-23. Maximum daily water temperatures in East Fork Bull River below the Lost Girl Creek (Rkm 3.6), at St. Paul trailhead (Rkm 6.4), and below Isabella Creek (Rkm 9), 2024.

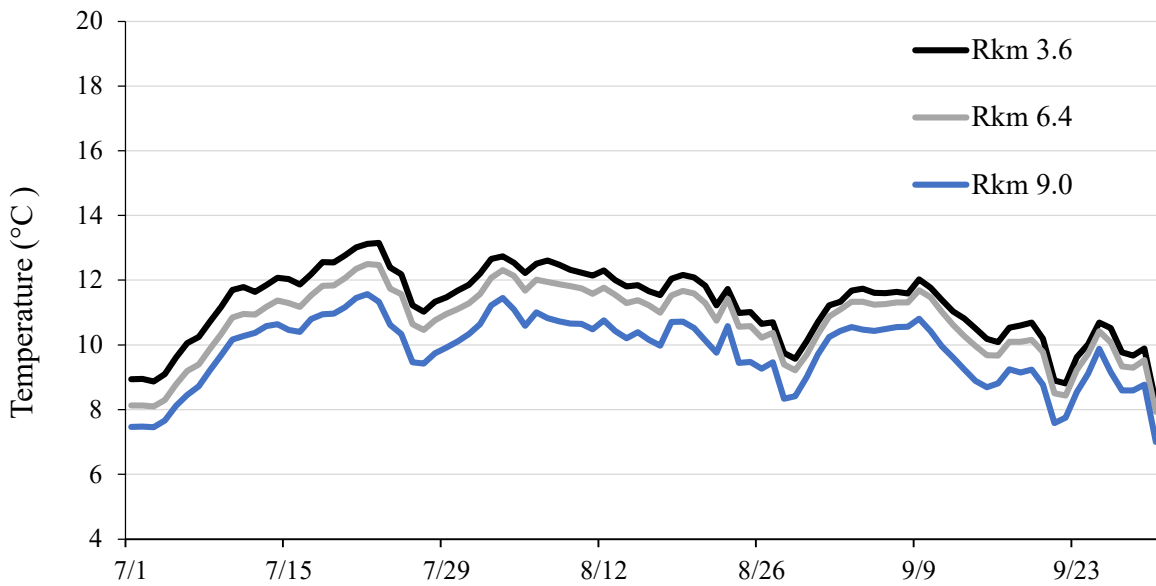


Figure B-24. Mean daily water temperatures in East Fork Bull River below the Lost Girl Creek (Rkm 3.6), at St. Paul trailhead (Rkm 6.4), and below Isabella Creek (Rkm 9), 2024.

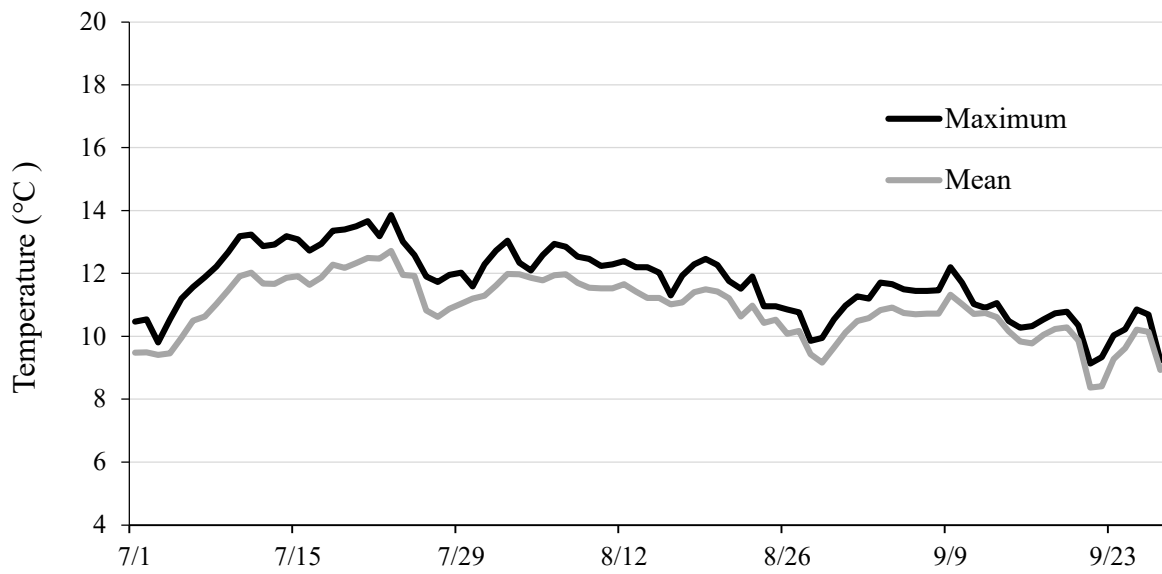


Figure B-25. Maximum and mean daily water temperatures in South Fork Bull River (Rkm 0.03), 2024.

### Appendix C. Mean Yearly Growth Rates for Recaptured Bull Trout

Table C-1. Data summary of calculated mean yearly growth rates for recaptured Bull Trout in streams and tributaries in the Lower Clark Fork drainage. Initial and recapture data ranges 2001–2024.

Stream	Mean Yearly Growth (mm)	Mean Yearly Growth (g)	Number of Fish
Cooper Gulch	39.9	70.7	17
Crow Creek	47.5	65.0	2
East Fork Bull River	50.8	58.3	78
Fishtrap Creek	55.5	32.0	2
Graves Creek	48.8	37.8	93
Jungle	34.0	25.5	2
Lower Prospect	74.6	150.8	3
Rock Creek	34.3	21.2	18
South Fork Bull River	56.5	48.0	1
Upper Prospect	35.1	27.7	70
Vermilion River	63.5	98.3	30
West Fork Thompson	29.5	28.0	26
West Fork Trout Creek	40.8	50.3	3

## Appendix D. Fish Detected on Lower Clark Fork River PIT Tag Arrays

Table D-1. PIT tag number, species, length and weight at initial tagging; initial tagging location, activity associated with initial tagging, river kilometer (Rkm) and date; and range of date detections on PIT tag arrays in lower Prospect Creek, Graves Creek, Vermilion River, Bull River, and East Fork Bull River in 2024. Species abbreviations include Bull Trout (BULL), Brook Trout (EB), Brown Trout (LL), Mountain Whitefish (MWF), *Oncorhynchus* hybrids (RBxWCT), Rainbow Trout (RB), and Westslope Cutthroat Trout (WCT).

Array	PIT Tag No.	Species	Length (mm)	Weight (g)	Tagging location	Initial tagging	Rkm	Date tagged	Date Detected
Prospect	982126050371177	BULL	655	2446	Below Cabinet Gorge	Upstream Transport	0.0	9/13/2021	7/19- 9/1
Prospect	989001030299617	BULL	597		LPO	Gillnetting Boat	0.0	5/24/2022	7/29, 7/30, 8/8, 9/14
Prospect	989001033212689	LL	413	696	Thompson Fall Dam	Ladder	105.5	9/12/2022	10/20
Prospect	989001030300688	RB	537	1578	Thompson Fall Dam	Ladder	105.5	3/30/2020	3/19, 4/12
Prospect	989001033212651	RB	385	606	Thompson Fall Dam	Ladder	105.5	5/5/2022	4/17, 4/22, 12/27
Prospect	989001033212722	RB	342	398	Thompson Fall Dam	Ladder	105.5	10/27/2021	4/2, 4/23-29
Prospect	989001033212118	RB	490	1222	Thompson Fall Dam	Ladder	105.5	4/12/2024	4/17, 4/30
Prospect	989001033212270	RB	478	1020	Thompson Fall Dam	Ladder	105.5	9/20/2023	4/12, 4/13, 5/3
Prospect	989001033212355	RB	319	348	Thompson Fall Dam	Ladder	105.5	6/13/2023	4/12, 7/18, 7/25
Prospect	989001033212461	RB	335	430	Thompson Fall Dam	Ladder	105.5	4/18/2023	4/12
Prospect	989001033212665	RB	268	172	Thompson Fall Dam	Ladder	105.5	6/3/2022	3/2, 3/27
Prospect	989001033212759	RB	318	328	Thompson Fall Dam	Ladder	105.5	10/25/2021	3/6, 3/31

Array	PIT Tag No.	Species	Length (mm)	Weight (g)	Tagging location	Initial tagging	Rkm	Date tagged	Date Detected
Prospect	989001033211891	RBxWCT	424	714	Thompson Fall Dam	Ladder	105.5	4/20/2021	5/16, 5/24, 5/25
Prospect	989001040870626	WCT	213	95	Prospect Creek	Salvage	20.3	7/17/2023	1/14, 1/21
Prospect	989001033212057	WCT	182	65	Prospect Creek	Salvage	20.3	7/17/2024	7/28
Prospect	989001040870340	WCT	209	93	Prospect Creek	Salvage	20.3	7/24/2024	11/19
Prospect	989001040870342	WCT	215	89	Prospect Creek	Salvage	20.3	7/24/2024	7/26
Prospect	989001040870351	WCT	195	74	Prospect Creek	Salvage	20.3	7/24/2024	7/27,
Prospect	989001040870361	WCT	191	73	Prospect Creek	Salvage	20.3	7/24/2024	7/26
Prospect	989001040870366	WCT	198	76	Prospect Creek	Salvage	20.3	7/24/2024	11/28
Prospect	989001040870372	WCT	212	92	Prospect Creek	Salvage	20.3	7/24/2024	7/26
Prospect	989001040870540	WCT	202	90	Prospect Creek	Salvage	20.3	7/13/2023	5/13
Prospect	989001040870649	WCT	168	41	Prospect Creek	Salvage	20.3	7/19/2023	5/30
Prospect	989001040870671	WCT	152	37	Prospect Creek	Salvage	20.3	7/24/2023	5/28
Graves Creek	982126050371253	BULL	189	52	Graves Creek	Permanent Weir	0.5	9/10/2014	4/30, 9/22
Graves Creek	989001026316906	BULL	179	39.6	Graves Creek	Permanent Weir	0.7	10/23/2019	6/25, 10/8
Graves Creek	989001026316280	BULL	141	20.1	Graves Creek	Permanent Weir	0.7	9/27/2019	6/26, 9/30
Graves Creek	989001033409751	BULL	178	43.5	Graves Creek	Permanent Weir	0.7	5/23/2021	10/17, 10/18
Graves Creek	989001033409581	BULL	154	26.2	Graves Creek	Permanent Weir	0.7	11/5/2020	10/5
Graves Creek	989001026316905	BULL	165	36.2	Graves Creek	Permanent Weir	0.7	10/22/2019	10/17, 10/18, 10/21, 10/26, 10/27

Array	PIT Tag No.	Species	Length (mm)	Weight (g)	Tagging location	Initial tagging	Rkm	Date tagged	Date Detected
Graves Creek	989001033409608	BULL	210	73	Vermilion River	Downstream Transport	3.5	11/2/2020	6/23, 10/13
Graves Creek	989001040632471	BULL	622	2218	Clark Fork River	Cabinet Fishway	0.0	4/27/2024	5/1, 5/2, 6/24, 9/17-24
Graves Creek	989001033211147	BULL	186	47	Graves Creek	Permanent Weir	0.7	9/19/2020	5/15
Graves Creek	989001026316448	BULL	156	30	Graves Creek	Permanent Weir	0.7	11/4/2018	5/17, 6/14, 10/5,
Graves Creek	989001026316753	BULL	124	14	Graves Creek	Permanent Weir	0.7	10/18/2019	5/29, 6/23, 7/2, 10/8
Graves Creek	989001026316820	BULL	170	35	Graves Creek	Permanent Weir	0.7	10/20/2019	6/2, 9/23-30, 10/14-22, 11/22
Graves Creek	989001033409190	BULL	194	54	Graves Creek	Permanent Weir	0.7	11/10/2021	5/30, 6/1, 9/29
Graves Creek	989001033408875	BULL	153	29	Graves Creek	Bull Trout Emigration Study	2.8	8/5/2020	6/4, 9/24, 9/25
Graves Creek	989001040398986	BULL	569		LPO	Gillnetting Boat	0.0	1/26/2024	6/5
Graves Creek	989001040632429	BULL	562	1432	Clark Fork River	Cabinet Fishway	0.0	5/30/2024	6/5, 10/5-22, 11/23
Graves Creek	989001030299985	BULL	109	11	Graves Creek	Bull Trout Emigration Study	2.8	8/8/2019	6/12, 6/13, 10/11
Graves Creek	989001033409673	BULL	205	60	Graves Creek	Permanent Weir	0.7	11/14/2021	6/29, 9/12-10/22, 11/14-24
Graves Creek	989001033409773	BULL	146	26	Graves Creek	Permanent Weir	0.7	5/9/2021	7/2

Array	PIT Tag No.	Species	Length (mm)	Weight (g)	Tagging location	Initial tagging	Rkm	Date tagged	Date Detected
Graves Creek	989001040632406	BULL	574	1726	Clark Fork River	Cabinet Fishway	0.0	7/12/2024	7/15, 9/22
Graves Creek	989001030300100	BULL	108	10	Graves Creek	Bull Trout Emigration Study	4.2	7/25/2019	8/25, 10/17, 10/18-20
Graves Creek	989001040185483	BULL	174	36	Graves Creek	Permanent Weir	0.7	11/5/2021	10/2
Graves Creek	989001033409139	BULL	123	17	Graves Creek	Bull Trout Emigration Study	2.7	8/5/2020	10/17, 10/18
Graves Creek	989001026316853	BULL	139	21	Graves Creek	Permanent Weir	0.7	10/23/2019	12/4
Graves Creek	989001033211139	BULL	160	30	Graves Creek	Permanent Weir	0.7	9/19/2020	10/16
Graves Creek	989001030299954	BULL	124	15	Graves Creek	Bull Trout Emigration Study	2.8	8/8/2019	12/30
Graves Creek	989001033409590	BULL	151	25	Graves Creek	Permanent Weir	0.7	11/3/2020	10/14
Graves Creek	989001040632251	BULL	112	12	Graves Creek	Site 2	4.0	8/9/2022	9/26
Graves Creek	989001040632254	BULL	196	60	Graves Creek	Site 2	4.0	8/9/2022	3/28, 3/30
Graves Creek	989001040870751	BULL	130	19	Graves Creek	Site 2	4.0	8/30/2023	4/27
Graves Creek	989001040870883	BULL	140	22	Graves Creek	Site 5	3.0	8/31/2023	5/29
Graves Creek	989002026316586	BULL	212	82	Graves Creek	Site 2	4.0	7/31/2024	9/8, 9/9, 9/12
Graves Creek	989001040870876	BULL	167	45	Graves Creek	Pathogen Collection	0.1	7/11/2024	7/12, 9/19-22
Graves Creek	989002026316560	BULL	146	26	Graves Creek	Site 2	4.0	7/31/2024	8/20
Graves Creek	989002026316608	BULL	132	19	Graves Creek	Site 2	4.0	7/31/2024	10/3
Graves Creek	989002026316582	BULL	151	32	Graves Creek	Site 2	4.0	7/31/2024	10/15
Graves Creek	989002026316530	BULL	141	25	Graves Creek	Site 6	3.0	8/1/2024	10/17, 10/18

Array	PIT Tag No.	Species	Length (mm)	Weight (g)	Tagging location	Initial tagging	Rkm	Date tagged	Date Detected
Graves Creek	989001040870856	BULL	203	66	Graves Creek	Pathogen Collection	1.8	7/11/2024	10/17
Graves Creek	989001040870862	BULL	146	28	Graves Creek	Pathogen Collection	1.8	7/11/2024	10/21, 10/22
Graves Creek	989002026316573	BULL	137	24	Graves Creek	Site 5	3.0	7/31/2024	10/22
Graves Creek	989001040870906	BULL	135	19	Graves Creek	Pathogen Collection	1.8	7/11/2024	10/22
Graves Creek	989001042386150	LL	167	42.3	Graves Creek	Permanent Weir	0.7	4/27/2023	7/17-25
Graves Creek	989001033212689	LL	413	696	Thompson Fall Dam	Ladder	105.5	9/12/2022	4/22, 10/10
Graves Creek	989001042385772	LL	185	58	Graves Creek	Permanent Weir	0.7	4/3/2024	4/3
Graves Creek	989001042385847	LL	169	47	Graves Creek	Permanent Weir	0.7	4/29/2024	4/29
Graves Creek	989001042385789	LL	377	434	Graves Creek	Permanent Weir	0.7	6/23/2024	6/23
Graves Creek	989001042385826	LL	117	15	Graves Creek	Permanent Weir	0.7	6/24/2024	6/24
Graves Creek	989001042385792	LL	166	37	Graves Creek	Permanent Weir	0.7	6/28/2024	6/28
Graves Creek	989001042385532	LL	116	15	Graves Creek	Permanent Weir	0.7	9/22/2024	9/22
Graves Creek	989001042385467	LL	377	483	Graves Creek	Permanent Weir	0.7	9/30/2024	9/30
Graves Creek	989001042385624	LL	396	397	Graves Creek	Permanent Weir	0.7	11/5/2024	11/5, 11/7
Graves Creek	989001042385821	RB	226	107	Graves Creek	Permanent Weir	0.7	4/12/2024	4/12
Graves Creek	989001042385811	RB	152	57	Graves Creek	Permanent Weir	0.7	6/24/2024	6/24
Graves Creek	989001042385855	RB	250	166	Graves Creek	Permanent Weir	0.7	9/11/2024	9/11
Graves Creek	989001042385593	RB	105	11	Graves Creek	Permanent Weir	0.7	10/30/2024	11/2, 11/4, 11/5, 11/7
Graves Creek	989001042385782	RB	152	29	Graves Creek	Permanent Weir	0.7	9/13/2024	9/13, 9/18

Array	PIT Tag No.	Species	Length (mm)	Weight (g)	Tagging location	Initial tagging	Rkm	Date tagged	Date Detected
Graves Creek	989001042385817	WCT	205	76	Graves Creek	Permanent Weir	0.7	6/6/2024	6/6
Graves Creek	989001042385810	WCT	380	418	Graves Creek	Permanent Weir	0.7	6/12/2024	6/12
Graves Creek	989001042385774	WCT	158	37	Graves Creek	Permanent Weir	0.7	9/7/2024	9/7, 9/8
Graves Creek	989001042385776	WCT	213	88	Graves Creek	Permanent Weir	0.7	9/15/2024	9/15
Graves Creek	989001042385806	WCT	182	58	Graves Creek	Permanent Weir	0.7	9/18/2024	9/18, 9/19, 11/14-12/23
Graves Creek	989001042385508	WCT	307	296	Graves Creek	Permanent Weir	0.7	9/25/2024	9/25
Graves Creek	989001042385439	WCT	225	106	Graves Creek	Permanent Weir	0.7	11/5/2024	11/5
Graves Creek	989001042385410	WCT	251	136	Graves Creek	Permanent Weir	0.7	11/5/2024	11/5
Graves Creek	989001042385528	WCT	249	147	Graves Creek	Permanent Weir	0.7	10/2/2024	10/2
Graves Creek	989001042385631	WCT	281	22	Graves Creek	Permanent Weir	0.7	11/5/2024	11/4
Graves Creek	989001042385779	RBxWCT	204	65	Graves Creek	Permanent Weir	0.7	4/26/2024	4/26
Graves Creek	989001042385805	RBxWCT	542	1575	Graves Creek	Permanent Weir	0.7	5/8/2024	5/8
Graves Creek	989001033211891	RBxWCT	424	714	Thompson Fall Dam	Ladder	105.5	4/20/2021	6/2, 6/8
Vermilion River	982126050371121	BULL	638	2420	Below Cabinet Gorge	Upstream Transport	0.0	9/21/2020	6/22, 10/2
Vermilion River	989001026317336	BULL	141	21.2	Vermilion River	Downstream Transport	8.2	10/21/2019	6/12, 9/20
Vermilion River	989001033409467	BULL	234	116	Vermilion River	Downstream Transport	6.3	11/3/2020	7/15, 10/9

Array	PIT Tag No.	Species	Length (mm)	Weight (g)	Tagging location	Initial tagging	Rkm	Date tagged	Date Detected
Vermilion River	989001040399042	BULL	-	-	LPO	Gillnetting Boat	0.0	4/14/2023	6/15, 7/22, 8/5, 9/21, 9/25
Vermilion River	989001040398986	BULL	569	-	LPO	Gillnetting Boat	0.0	1/26/2024	9/18, 9/25
Bull River	989001040398289	BULL	545	-	LPO	Gillnet Boat	0.0	9/29/2023	6/16
Bull River	989001040398284	BULL		-	LPO	Gillnet Boat	0.0	1/3/2023	5/30
Bull River	989001040399024	BULL	618	-	LPO	Gillnet Boat	0.0	2/14/2024	5/29
Bull River	989001040632486	BULL	620	2276	Clark Fork River	Cabinet Fishway	0.0	6/2/2024	6/6
Bull River	989001026317953	BULL	621	-	LPO	Gillnet Boat	0.0	9/30/2021	6/21
Bull River	989001040871035	BULL	139	19	East Fork Bull River	Trailhead Side Channel Salvage	6.5	8/8/2023	4/8
Bull River	989001033212465	LT	748	3088	Thompson Fall Dam	Ladder	105.5	10/24/2022	6/26
Bull River	989001026316569	MWF	395	541	East Fork Bull River	Screw Trap	0.7	6/23/2019	4/1, 12/2
Bull River	989001044940278	EB	160	39	East Fork Bull River	EF Bull River Exclusion	0.7	9/12/2024	9/13
Bull River	989001044940246	EB	142	27	East Fork Bull River	EF Bull River Exclusion	0.7	9/29/2024	9/29, 10/21, 10/22
Bull River	989001044940308	EB	157	33	East Fork Bull River	EF Bull River Exclusion	0.7	9/29/2024	9/29, 11/14, 11/15
Bull River	989001044940266	EB	130	19	East Fork Bull River	EF Bull River Exclusion	0.7	10/17/2024	10/17
Bull River	989001044940260	EB	205	61	East Fork Bull River	EF Bull River Exclusion	0.7	10/21/2024	10/21, 10/22
Bull River	989001044940151	EB	158	36	East Fork Bull River	EF Bull River Exclusion	0.7	11/14/2024	11/14, 11/20
Bull River	989001044940193	EB	152	27	East Fork Bull River	EF Bull River Exclusion	0.7	11/15/2024	11/15

Array	PIT Tag No.	Species	Length (mm)	Weight (g)	Tagging location	Initial tagging	Rkm	Date tagged	Date Detected
Bull River	989001033409829	LL	441	660	East Fork Bull River	EF Bull River Exclusion	0.7	11/21/2020	11/12, 11/13
Bull River	989001040185376	LL	222	97	East Fork Bull River	EF Bull River Exclusion	0.7	9/19/2021	11/2, 11/3, 11/5, 11/10-14, 11/22
Bull River	989001042385763	LL	426	846	East Fork Bull River	EF Bull River Exclusion	0.7	10/23/2023	11/13, 11/16, 12/19
Bull River	989001044940306	LL	195	63	East Fork Bull River	EF Bull River Exclusion	0.7	9/11/2024	9/11, 9/12
Bull River	989001044940294	LL	166	32	East Fork Bull River	EF Bull River Exclusion	0.7	9/8/2024	9/8
Bull River	989001044940292	LL	159	35	East Fork Bull River	EF Bull River Exclusion	0.7	9/8/2024	9/8
Bull River	989001044940233	LL	124	16	East Fork Bull River	EF Bull River Exclusion	0.7	9/11/2024	9/11, 9/13, 9/15, 9/16
Bull River	989001044940267	LL	110	14	East Fork Bull River	EF Bull River Exclusion	0.7	9/12/2024	9/12
Bull River	989001044940253	LL	209	79	East Fork Bull River	EF Bull River Exclusion	0.7	9/13/2024	9/13, 9/17
Bull River	989001044940299	LL	115	13	East Fork Bull River	EF Bull River Exclusion	0.7	9/13/2024	9/13
Bull River	989001044940256	LL	183	36	East Fork Bull River	EF Bull River Exclusion	0.7	9/13/2024	9/13
Bull River	989001044940251	LL	134	21	East Fork Bull River	EF Bull River Exclusion	0.7	9/15/2024	9/15
Bull River	989001044940301	LL	165	39	East Fork Bull River	EF Bull River Exclusion	0.7	9/16/2024	9/16, 9/17
Bull River	989001044940319	LL	151	31	East Fork Bull River	EF Bull River Exclusion	0.7	9/23/2024	9/24
Bull River	989001044940229	LL	180	52	East Fork Bull River	EF Bull River Exclusion	0.7	9/24/2024	9/24, 9/25
Bull River	989001044940303	LL	141	23	East Fork Bull River	EF Bull River Exclusion	0.7	9/24/2024	9/25
Bull River	989001044940226	LL	148	29	East Fork Bull River	EF Bull River Exclusion	0.7	9/24/2024	9/24
Bull River	989001044940318	LL	205	78	East Fork Bull River	EF Bull River Exclusion	0.7	9/24/2024	9/24

Array	PIT Tag No.	Species	Length (mm)	Weight (g)	Tagging location	Initial tagging	Rkm	Date tagged	Date Detected
Bull River	989001044940275	LL	167	41	East Fork Bull River	EF Bull River Exclusion	0.7	9/24/2024	9/24, 9/25
Bull River	989001044940234	LL	135	21	East Fork Bull River	EF Bull River Exclusion	0.7	9/24/2024	9/24
Bull River	989001044940219	LL	141	28	East Fork Bull River	EF Bull River Exclusion	0.7	9/24/2024	9/24, 9/25
Bull River	989001044940262	LL	165	39	East Fork Bull River	EF Bull River Exclusion	0.7	9/24/2024	9/24
Bull River	989001044940281	LL	123	19	East Fork Bull River	EF Bull River Exclusion	0.7	9/24/2024	9/24
Bull River	989001044940249	LL	130	19	East Fork Bull River	EF Bull River Exclusion	0.7	9/25/2024	9/25, 9/26
Bull River	989001044940297	LL	180	53	East Fork Bull River	EF Bull River Exclusion	0.7	9/26/2024	9/26
Bull River	989001044940238	LL	155	31	East Fork Bull River	EF Bull River Exclusion	0.7	9/27/2024	9/27
Bull River	989001044940236	LL	172	48	East Fork Bull River	EF Bull River Exclusion	0.7	9/9/2024	9/28
Bull River	989001044940221	LL	142	25	East Fork Bull River	EF Bull River Exclusion	0.7	9/29/2024	9/29
Bull River	989001044940241	LL	149	27	East Fork Bull River	EF Bull River Exclusion	0.7	10/17/2024	10/18-20
Bull River	989001044940283	LL	265	199	East Fork Bull River	EF Bull River Exclusion	0.7	10/20/2024	10/20, 10/21, 10/24, 10/27
Bull River	989001044940223	LL	258	152	East Fork Bull River	EF Bull River Exclusion	0.7	10/21/2024	10/21-29, 11/10, 11/17
Bull River	989001044940280	LL	250	134	East Fork Bull River	EF Bull River Exclusion	0.7	10/21/2024	10/21, 10/24
Bull River	989001044940287	LL	187	59	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/22, 10/24, 10/28, 11/27
Bull River	989001044940269	LL	455	-	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/22, 10/23, 12/23
Bull River	989001044940285	LL	556	-	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/22-24, 11/8
Bull River	989001044940309	LL	136	24	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/22
Bull River	989001044940302	LL	186	63	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/22

Array	PIT Tag No.	Species	Length (mm)	Weight (g)	Tagging location	Initial tagging	Rkm	Date tagged	Date Detected
Bull River	989001044940257	LL	249	134	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/22
Bull River	989001044940268	LL	159	36	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/22
Bull River	989001044940163	LL	491		East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/22
Bull River	989001044940225	LL	150	28	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/22
Bull River	989001044940311	LL	199	70	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/22
Bull River	989001044940310	LL	505		East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/22, 10/23, 11/12, 11/13
Bull River	989001044940298	LL	524	-	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/22, 10/23, 10/25-29, 10/31, 11/1, 11/3, 11/4, 11/11, 11/21
Bull River	989001044940277	LL	156	31	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/23
Bull River	989001044940315	LL	150	29	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/23
Bull River	989001044940290	LL	150	29	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/23
Bull River	989001044940286	LL	165	41	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/23
Bull River	989001044940239	LL	185	54	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/23
Bull River	989001044940261	LL	369	-	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/24, 11/12, 11/14
Bull River	989001044940289	LL	144	25	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	10/26, 10/27
Bull River	989001044940177	LL	139	24	East Fork Bull River	EF Bull River Exclusion	0.7	11/2/2024	11/2
Bull River	989001044940119	LL	172	45	East Fork Bull River	EF Bull River Exclusion	0.7	11/7/2024	11/7, 11/8
Bull River	989001044940180	LL	422	650	East Fork Bull River	EF Bull River Exclusion	0.7	11/11/2024	11/11, 11/12, 11/13, 11/14

Array	PIT Tag No.	Species	Length (mm)	Weight (g)	Tagging location	Initial tagging	Rkm	Date tagged	Date Detected
Bull River	989001044940124	LL	115	13	East Fork Bull River	EF Bull River Exclusion	0.7	11/11/2024	11/12, 11/14
Bull River	989001033210289	LL	489	1285	Bull River	WCT Evaluation	9.6	7/5/2022	3/20, 4/10, 4/13, 4/14, 4/18-30, 5/2, 5/3, 5/14-31, 6/2-11, 6/18, 11/24, 11/27, 12/16, 12/18
Bull River	989001033210349	LL	418	861	Bull River	WCT Evaluation	9.6	7/5/2022	5/13-15, 5/17-31, 6/1, 6/2, 6/4-19, 6/21, 6/23, 6/24, 6/26-28, 10/30
Bull River	989001033210438	LL	300	342	Bull River	WCT Evaluation	9.6	7/13/2022	1/1-12, 1/14, 1/15, 1/18, 1/20, 1/21, 1/23-31, 2/1-17, 2/19-29, 3/1-31, 4/1-10, 4/12-16, 4/18-20, 4/22-24, 4/26-30, 5/1-18, 5/20, 5/22-24, 5/26-31, 6/1-30, 7/1-14, 7/16, 7/17, 7/19-31, 8/1-9/30, 10/1-14, 10/16-31, 11/1-9, 11/12-19, 11/21-23, 11/26-30, 12/1-8

Array	PIT Tag No.	Species	Length (mm)	Weight (g)	Tagging location	Initial tagging	Rkm	Date tagged	Date Detected
Bull River	989001033210365	LL	356	444	Bull River	WCT Evaluation	9.6	7/13/2022	2/4
Bull River	989001033210290	LL	352	495	Bull River	WCT Evaluation	9.6	7/5/2022	11/5
Bull River	989001033210336	LL	321	-	Bull River	WCT Evaluation	2.6	7/8/2022	1/13, 3/18, 12/7
Bull River	989001040632053	LL	352	482	Bull River	WCT Evaluation	9.6	6/8/2023	1/17, 1/30, 2/17, 2/26
Bull River	989001040632086	LL	406	694	Bull River	WCT Evaluation	9.6	6/8/2023	1/2-2/16, 3/10-20, 3/23-30, 4/1, 4/2, 4/4-9, 4/12, 4/13, 4/16, 4/18, 4/23-26, 4/29-5/5, 5/8, 5/13, 5/20, 5/23, 5/28-31, 6/2, 6/5, 6/6, 6/10-13, 11/25-12/7, 12/23-31
Bull River	989001040870875	LL	382	-	Bull River	WCT Evaluation	19.0	9/25/2023	11/3, 12/8
Bull River	989001040870849	LL	257	-	Bull River	WCT Evaluation	22.0	9/26/2023	1/1
Bull River	989001040870904	LL	257	-	Bull River	WCT Evaluation	19.0	9/25/2023	1/16, 1/17
Bull River	989001040632131	LL	410	853	Bull River	WCT Evaluation	9.6	6/8/2023	1/18, 4/11, 12/22
Bull River	989001033210282	LL	354	542	Bull River	WCT Evaluation	9.6	7/5/2022	1/19, 1/30
Bull River	989001040870831	LL	299	-	Bull River	WCT Evaluation	16.0	9/20/2023	10/27-11/1, 11/22
Bull River	989001044940140	LL	442	-	East Fork Bull River	EF Bull River Exclusion	0.7	11/12/2024	11/12-14, 11/22
Bull River	989001044940147	LL	131	19	East Fork Bull River	EF Bull River Exclusion	0.7	11/14/2024	11/14, 11/15

Array	PIT Tag No.	Species	Length (mm)	Weight (g)	Tagging location	Initial tagging	Rkm	Date tagged	Date Detected
Bull River	989001044940149	LL	494	1012	East Fork Bull River	EF Bull River Exclusion	0.7	11/13/2024	11/13, 11/14
Bull River	989001044940156	LL	465	-	East Fork Bull River	EF Bull River Exclusion	0.7	11/12/2024	11/12, 11/13, 11/15
Bull River	989001044940167	LL	596	1050	East Fork Bull River	EF Bull River Exclusion	0.7	11/23/2024	11/23, 12/2
Bull River	989001044940203	LL	464	886	East Fork Bull River	EF Bull River Exclusion	0.7	11/15/2024	11/15-24, 12/6
Bull River	989001044940205	LL	245	120	East Fork Bull River	EF Bull River Exclusion	0.7	11/12/2024	11/12-17
Bull River	989001033212698	RB	380	522	Thompson Fall Dam	Ladder	105.5	9/17/2021	4/14, 5/11
Bull River	989001040632181	RBxWCT	310	-	Bull River	WCT Evaluation	2.0	8/8/2022	6/8, 6/9, 6/16
Bull River	989001040870241	RBxWCT	298	-	Bull River	WCT Evaluation	2.0	8/29/2022	4/27, 7/10
Bull River	989001040632452	WCT	414	772	Clark Fork River	Cabinet Fishway	0.0	4/17/2024	4/19
Bull River	989001040632364	WCT	450	848	Clark Fork River	Cabinet Fishway	0.0	4/21/2024	4/23, 7/4
Bull River	989001026318008	WCT	382	604	Clark Fork River	Cabinet Fishway	0.0	4/29/2024	4/30, 12/30
Bull River	989001040632403	WCT	387	636	Clark Fork River	Cabinet Fishway	0.0	5/9/2024	5/10, 7/10
Bull River	989001026318003	WCT	380	526	Clark Fork River	Cabinet Fishway	0.0	5/7/2024	5/8, 7/15
Bull River	989001026317895	WCT	258	192	Clark Fork River	E-Fishing Below Cabinet Gorge	0.0	4/25/2021	5/11, 7/7
Bull River	989001040632468	WCT	382	536	Clark Fork River	Cabinet Fishway	0.0	5/11/2024	5/12, 7/21
Bull River	989001026317742	WCT	304	274	Clark Fork River	E-Fishing Below Cabinet Gorge	0.0	4/30/2019	5/13
Bull River	989001026317995	WCT	372	534	Clark Fork River	Cabinet Fishway	0.0	5/20/2024	5/21, 7/7
Bull River	989001026317990	WCT	378	538	Clark Fork River	Cabinet Fishway	0.0	5/23/2024	5/24, 6/6
Bull River	989001040632411	WCT	381	520	Clark Fork River	Cabinet Fishway	0.0	5/25/2024	5/26

Array	PIT Tag No.	Species	Length (mm)	Weight (g)	Tagging location	Initial tagging	Rkm	Date tagged	Date Detected
Bull River	989001026317970	WCT	325	314	Clark Fork River	E-Fishing Below Cabinet Gorge	0.0	4/11/2023	5/25
Bull River	989001044940263	WCT	188	60	East Fork Bull River	Weir Trap	0.7	9/8/2024	9/14
Bull River	989001040870859	WCT	220	-	Bull River	WCT Evaluation	16.5	9/28/2023	3/3
Bull River	989001040870522	WCT	105	10	Bull River	WCT Evaluation	38.0	9/1/2022	1/10, 1/11
Bull River	989001040632064	WCT	183	-	Bull River	WCT Evaluation	32.0	6/29/2023	1/5, 1/6
Bull River	989001040870589	WCT	190	-	Bull River	WCT Evaluation	27.0	7/7/2023	1/10
Bull River	989001040870688	WCT	377	-	Bull River	WCT Evaluation	17.0	8/1/2023	1/17, 1/29
Bull River	989001040870305	WCT	206	84	Bull River	WCT Evaluation	37.0	8/31/2022	1/27, 1/28
Bull River	989001040870855	WCT	228	-	Bull River	WCT Evaluation	17.0	9/20/2023	5/5, 5/8, 11/5
Bull River	989001040870731	WCT	146	31	South Fork Bull River	WCT Evaluation	0.1	8/23/2023	7/31, 8/1, 9/12
Bull River	989001026318016	WCT	402	628	Clark Fork River	Cabinet Fishway	0.0	5/28/2024	5/29, 5/30
Bull River	989001040632458	WCT	417	714	Clark Fork River	Cabinet Fishway	0.0	5/15/2024	5/16
EFBR	989001040398289	BULL	545	-	LPO	Gillnet Boat	0.0	9/29/2023	6/25, 6/29
EFBR	989001040398284	BULL	-	-	LPO	Gillnet Boat	0.0	1/3/2023	6/9, 6/11
EFBR	989001040632486	BULL	620	2276	Clark Fork River	Cabinet Fishway	0.0	6/2/2024	8/31,
EFBR	989001026317953	BULL	621	-	LPO	Gillnet Boat	0.0	9/30/2021	6/23,
EFBR	989001033211177	BULL	109	10	East Fork Bull River	Downstream Transport	6.0	10/20/2022	5/17, 5/19
EFBR	989001040871035	BULL	139	19	East Fork Bull River	Trailhead Side Channel Salvage	6.5	8/8/2023	4/5,
EFBR	989001040870774	BULL	133	20	East Fork Bull River	Trailhead Side Channel Salvage	6.5	8/10/2023	7/3,

Array	PIT Tag No.	Species	Length (mm)	Weight (g)	Tagging location	Initial tagging	Rkm	Date tagged	Date Detected
EFBR	989001044940139	BULL	117	11	East Fork Bull River	East Fork Bull River Weir	0.7	10/22/2024	10/23,
EFBR	989001026316384	LL	363	500	East Fork Bull River	EF Bull River Exclusion	0.7	10/17/2018	11/12, 11/13, 11/23, 11/25
EFBR	989001033409829	LL	441	660	East Fork Bull River	EF Bull River Exclusion	0.7	11/21/2020	11/11,
EFBR	989001042385763	LL	426	846	East Fork Bull River	EF Bull River Exclusion	0.7	10/23/2023	11/12,
EFBR	989001044940306	LL	195	63	East Fork Bull River	EF Bull River Exclusion	0.7	9/11/2024	9/19,
EFBR	989001033210556	LL	360	-	Bull River	WCT Evaluation	33.3	4/29/2022	11/23, 12/3
EFBR	989001040632060	LL	470	1130	Bull River	WCT Evaluation	9.6	6/8/2023	11/11,
EFBR	989001040632050	LL	346	433	Bull River	WCT Evaluation	9.6	6/8/2023	11/6, 11/13
EFBR	989001044940149	LL	494	1012	East Fork Bull River	EF Bull River Exclusion	0.7	11/13/2024	11/24,
EFBR	989001044940180	LL	422	650	East Fork Bull River	EF Bull River Exclusion	0.7	11/11/2024	11/16,
EFBR	989001044940203	LL	464	886	East Fork Bull River	EF Bull River Exclusion	0.7	11/15/2024	11/26, 12/2
EFBR	989001044940269	LL	455	-	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	11/5, 12/18
EFBR	989001044940285	LL	556	-	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	11/4,
EFBR	989001044940310	LL	505	-	East Fork Bull River	EF Bull River Exclusion	0.7	10/22/2024	11/5, 11/6, 11/9, 11/10, 11/11
EFBR	989001026317995	WCT	372	534	Clark Fork River	Cabinet Fishway	0.0	5/20/2024	5/27, 6/12
EFBR	989001040632411	WCT	381	520	Clark Fork River	Cabinet Fishway	0.0	5/25/2024	5/27, 6/16
EFBR	989001044940263	WCT	188	60	East Fork Bull River	Weir Trap	0.7	9/8/2024	9/13,
EFBR	989001044940276	WCT	125	18	East Fork Bull River	Weir Trap	0.7	10/9/2024	10/9,
EFBR	989001044940274	WCT	167	38	East Fork Bull River	Weir Trap	0.7	9/24/2024	10/21,

Array	PIT Tag No.	Species	Length (mm)	Weight (g)	Tagging location	Initial tagging	Rkm	Date tagged	Date Detected
EFBR	989001040870752	WCT	130	17	East Fork Bull River	WCT Evaluation	0.7	8/28/2023	1/25, 1/28, 2/8
EFBR	989001040870792	WCT	170	47	East Fork Bull River	WCT Evaluation	0.7	8/28/2023	1/23, 1/24, 2/1, 2/2, 2/8, 3/3, 4/2, 4/10, 4/12-16, 4/23, 4/24, 5/2-4, 5/11
EFBR	989001040870709	WCT	162	38	Bull River	WCT Evaluation	38.5	8/3/2023	5/8,
EFBR	989001044940317	WCT	204	73	East Fork Bull River	Weir Trap	0.7	10/22/2024	10/22,
EFBR	989001040632181	RBxWCT	310	-	Bull River	WCT Evaluation	2.0	8/8/2022	4/15, 4/16, 5/8, 6/6
EFBR	989001040870241	RBxWCT	298		Bull River	WCT Evaluation	2.0	8/29/2022	5/11, 5/29
EFBR	989001040870321	WCT	100	9	Bull River	WCT Evaluation	36.5	8/30/2022	12/22, 12/24