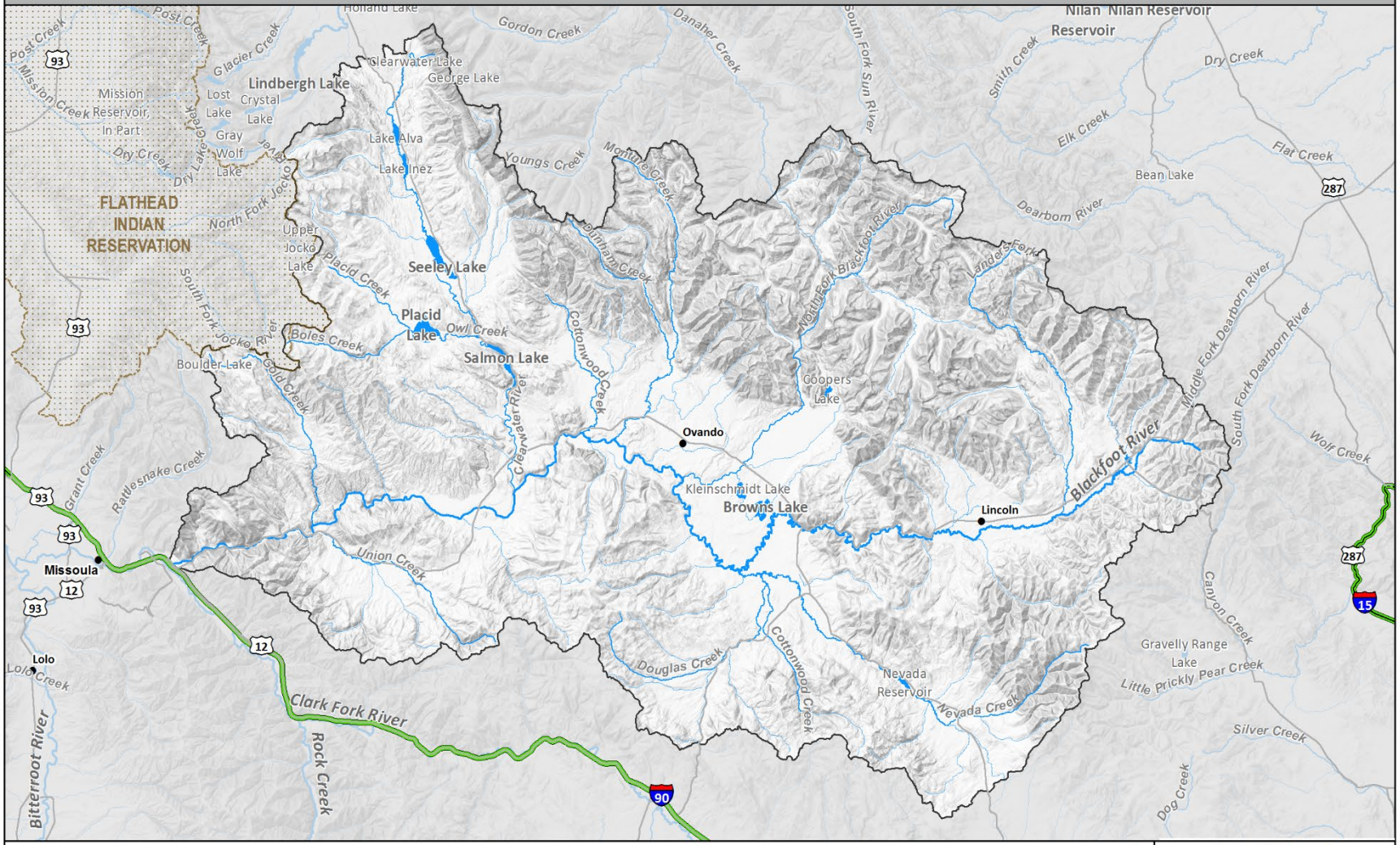
Blackfoot River Drainage

MONTANA FWP



Tribal Lands

Drainage Boundary

N

Area of Interest

Map Produced by:
ASP - Geographic Data Services
ISR 43965 - Nov 23, 2018

Administrative boundaries and FWP Lands data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI

0 10 20
Miles

Blackfoot River Drainage

Physical Description

The Blackfoot River begins at the junction of Beartrap and Anaconda creeks, near the Continental Divide between Rogers Pass and Flesher Pass. From its headwaters, the river flows westward for 132 miles through Lewis and Clark, Powell, and Missoula counties before joining the Clark Fork River near Bonner. The 2,320 square mile watershed is a topographically, geologically, and geographically diverse basin with elevations ranging from 9,411 feet at Red Mountain to 3,280 feet near Bonner. Streams in the drainage flow through heavily forested slopes and montane foothills, before entering rangelands and prairie pothole topography on the valley floor. Major tributary drainages include the North Fork of the Blackfoot River and Clearwater River. The North Fork begins in the Scapegoat Wilderness, flowing much of its length through a glaciated mountain valley and a steep confined canyon within the U.S. Forest Service (USFS) boundary. As it enters the floor of the Blackfoot Valley, the North Fork flows through a more agricultural setting, bordered by private land, before entering the Blackfoot River at river mile 54. The Clearwater watershed is comprised of a peripheral network of forested freestone, coldwater streams which lie primarily on public lands and enter an interconnected chain of glacial lakes on the valley floor. Land ownership is mixed along the valley floor, with private lands concentrated near the town of Seeley Lake.

There are 59 natural lakes totaling 5,720 acres and one large reservoir of 350 acres within the Blackfoot drainage. Most natural lakes are mid- and high elevation mountain lakes that lie in remnant glacial cirques and troughs within public land holdings in backcountry settings. Many of the larger natural lakes make up the Clearwater River chain and glacial potholes in the Seeley Lake and Ovando areas. Large natural lakes include Salmon, Placid, Seeley, Alva, Inez, Rainy, Browns, Coopers, and Upsata lakes. All the larger valley floor lakes receive considerable angling pressure as well as other forms of recreational activities. The only major reservoir is Nevada Reservoir near Helmville, which is managed primarily for irrigation purposes. Nevada Reservoir experiences large seasonal fluctuations and considerable drawdown during dry years.

Fisheries Management

Located in the west-central part of the state, the Blackfoot River is one of twelve renowned premiere fishing rivers in Montana with an instream flow (Murphy) water right and is one of Montana's most popular rivers for recreation. The river's outstanding natural resources and diversity of recreational opportunities, combined with its proximity to Missoula, contribute to its popularity. The Clearwater River watershed is the largest tributary to the Blackfoot River in terms of drainage area and is often treated as a separate system with its own unique hydrologic characteristics, angling opportunities, and natural resource values.

The Blackfoot River basin is home to eleven native fish species including bull trout, westslope cutthroat trout, mountain whitefish, pygmy whitefish, peamouth, northern pikeminnow, longnose dace, redside shiner, longnose sucker, largescale sucker, and two species of sculpin. Fourteen non-native fish species inhabit the Blackfoot basin including brown trout, brook trout, rainbow trout, Yellowstone cutthroat trout, Arctic grayling, kokanee salmon, northern pike, fathead minnow, brook stickleback, central

mudminnow, pumpkinseed, largemouth bass, yellow perch, and white sucker. Dominant fish species and species composition vary greatly among headwater reaches, lakes, and mainstem river sections. Over the last 30 years, westslope cutthroat trout have increased from less than 3% of the trout community to over one-third of the mainstem river trout community. Much of this increase has occurred since 1990, when basin-wide restrictive fishing regulations were instituted, and major aquatic restoration activities began. Information is lacking on the abundance and life histories of nongame native fish. Efforts are needed to describe these and monitor trends.

Bull trout are found throughout the drainage, and particularly within the larger, coldest stream systems. Migratory bull trout move freely throughout the entire Blackfoot River and rely on the cold tributaries, including the North Fork Blackfoot, Monture Creek, and Copper Creek for reproduction and rearing. Similarly, adfluvial (lake-dwelling) bull trout occupy the chain of lakes in the Clearwater system and spawn in tributaries such as Morrell Creek and East and West forks of the Clearwater River. Juvenile bull trout also occupy many of the smaller, colder tributaries throughout the Blackfoot drainage, using these systems for rearing and seasonal refugia. Westslope cutthroat trout and bull trout have been the focus of basin-wide protection and restoration activities for over 30 years. Protection activities include special fishing regulations (e.g., stream mouth closures, spawning area closures, gear restrictions), as well as public land acquisitions and conservation easements in native trout habitat. Restoration projects, such as instream habitat improvements, fish passage enhancements, fish screening, and water leases have been undertaken throughout the basin to help recover bull trout, westslope cutthroat trout, and other species. This work has occurred on both private and public land.

The Blackfoot River and tributaries are managed as wild trout fisheries, relying on natural reproduction of native and non-native trout. The basin is also a focus for native trout recovery efforts. Angling occurs year-round on the Blackfoot River, but is most popular in the early spring, summer and fall. Opportunities exist for both wade and float angling, and while fly fishing is particularly popular, angling with artificial lures and bait also occurs. Angling restrictions and habitat improvement have significantly improved native trout abundance and distribution in the Blackfoot basin. Long-term studies show native trout recovery has been most pronounced in the mid- to upper Blackfoot basin where the primary spawning tributaries for westslope cutthroat trout and bull trout are located. Because of this, habitat improvements in the Blackfoot River drainage below the Clearwater River should emphasize ecosystem function for all salmonids and focus on improving spawning and rearing habitat in areas that will increase production of all trout species. Native salmonids in the lower Blackfoot basin should be protected or enhanced where possible.

Natural lakes and the mainstem river in the Clearwater Valley offer diverse fishing opportunities and strongholds for native fish. Upper drainage lakes, including Clearwater, Rainy, Alva, Marshall, and Inez, support coldwater fisheries for westslope cutthroat trout, kokanee, and whitefish. Although brown trout, brook trout, and small populations of warmwater fish are also present in these waters, management emphasizes native trout and kokanee. Lakes lower in the Clearwater chain (Seeley, Placid and Salmon lakes) provide mixed fisheries. Illegally introduced northern pike are abundant in Seeley and Salmon lakes, however, these lakes still provide viable salmonid fisheries and important habitat for migratory bull trout populations. Recent unauthorized introduction and expansion of smallmouth bass in Seeley and Salmon lakes warrants additional monitoring and evaluation to inform management strategies. Initial suppression efforts were unsuccessful in Seeley Lake and documented the establishment of the smallmouth bass population. Much of the mainstem Clearwater River and lake

system is suitable habitat for smallmouth bass, so continued expansion is likely. Monitoring colonization of the Blackfoot and Clark Fork river systems would be important for understanding potential impacts to these important trout fisheries. Placid Lake, the warmest and most productive lake in the area, supports non-native salmonids, largemouth bass, and yellow perch fisheries. Bull trout in Placid Lake are still present with low abundance.

Lowland lakes such as Harpers, Upsata, Coopers, and Browns Lake also provide valuable recreational fisheries. Harpers and Browns lakes are stocked annually with rainbow trout and both have heavily used put-grow-and-take fisheries. Rainbow trout in Browns Lake exhibit outstanding growth and this lake supports one of the few trophy rainbow trout fisheries in the region. Upsata Lake is prone to periodic fish kills and is managed as a warmwater bass fishery partially supported by the stocking of largemouth bass. Coopers Lake is a low elevation sterile lake managed as a put-grow-and-take cutthroat trout fishery.

Mountain lakes largely support self-sustaining trout populations or are stocked with westslope cutthroat trout (Knotek et al., 2020). An exception is Heart Lake, which is stocked with both Arctic grayling and westslope cutthroat trout. Several lakes in the front country and backcountry support self-sustaining, naturalized rainbow trout, including Dinah, Trail, Parker, Twin, Otatsy, Cottonwood, and Camp lakes. Clearwater Lake and Lake Marshall support self-sustaining brook trout populations. Bighorn Lake in the Landers Fork drainage supports a self-sustaining, naturalized population of Yellowstone cutthroat trout. Canyon Lake, located in the upper North Fork drainage, supports genetically pure adfluvial native westslope cutthroat trout. Several high elevation lakes, as well as glacial potholes on the Blackfoot Valley floor are also managed as fishless and thereby emphasize the conservation of other native species, such as amphibians.

Fish monitoring to determine population status and trends occurs throughout the year. Standardized and contemporary sampling techniques are used to assess fish populations (see Part I, 1.4.3). Tributary surveys are conducted as needed from spring through autumn. However, the most common timeframe is July through October. These efforts are often used to monitor the effectives of restoration projects, assess native trout genetics, and track the expansion of non-native fish introductions. The mainstem Blackfoot River electrofishing surveys typically occur in late spring while flows are elevated before or after peak runoff. Other electrofishing surveys on the mainstem river occur throughout the summer and autumn depending on sampling needs.

The lake sampling program includes monitoring of fisheries at a range of elevations from high mountain lakes to larger waterbodies on the valley floor. Lake fisheries are sampled using standardized and contemporary sampling techniques (see Part I, 1.4.3). Collectively, lake surveys are conducted as needed from the spring through autumn seasons and are implemented routinely at lakes with high angler use, harvest availability, and higher stocking frequency (e.g., Clearwater, Rainy, Alva, Inez, Seeley, Salmon, Placid, Browns, Upsata, Nevada, and Coopers lakes). Several ongoing research projects are also underway on lakes with high angler use and high value fisheries to evaluate and assess the effectiveness of kokanee, westslope cutthroat trout, and rainbow trout stocking programs.

The Blackfoot River is the primary recreational fishery in the watershed and angler use has increased from 16,000 angler days/year in 1989 to over 90,000 angler day/year in 2020 (Uthe, 2022). Creel surveys have demonstrated a pronounced shift in the recreational fishery from harvest-oriented bait fishing towards artificial lures with little or no harvest component. The use of spinning tackle has significantly

decreased as well, creating a recreational fishery comprised primarily of fly anglers or anglers using both fly and spin tackle.

Total trout abundance in the Blackfoot River has been relatively stable over the last few decades, although some periodic trends and variability exist among species (Uthe, 2022). Rainbow trout abundance declined through the 1990s, likely due to the cessation of stocking in Seeley Lake in the 1980s (Peters, 1990), and a high prevalence of whirling disease during the 1990s and early 2000s in many spawning and rearing tributaries used by rainbow trout (Pierce et al., 2002). Following the initial decline, rainbow trout abundance has remained relatively stable with harvest restricted up to three fish, in combination with brown trout, and only one over 14-inches. There has been a positive trend in westslope cutthroat trout abundance from 1988 to 2021 (Uthe, 2022). This increase is due to a combination of harvest restrictions enacted in the early 1990s and comprehensive restoration actions over the last three decades. Cutthroat trout regulations are now catch-and-release. Brown trout abundance has generally been stable, except for a decline from 2011 until 2014. However, abundance has been stable or slightly increasing since then with the harvest allowance of up to three brown trout of any size.

Westslope cutthroat trout provide a useful index to the overall health of the fishery because they are the most likely to be impacted by angling due to their susceptibility to angling compared to other trout species. There are no indications in the long-term population monitoring to suggest increased pressure has resulted in excessive trout mortality. Given the gear used by anglers in the Blackfoot River (Uthe, 2022), and the mortality rates associated with that type of terminal tackle ([5]Schill, 1996; [6]Schill & Scarpella, 1997; [7]Dubois & Dubielzig, 2004; [8]Dubois & Kuklinkski, 2004), post release mortalities are not causing population-level effects.

Overall, the size structure and abundance of trout in the Blackfoot River indicate that the current management paradigm of allowing unrestricted angling pressure in this popular fishery is compatible with maintaining diverse fishing opportunities for those anglers wishing to harvest fish or use bait in non-bull trout conflict areas. The current level of harvest is so low that it went undetected during the most recent creel survey in 2019. Therefore, harvest is expected to be negligible from a population-level standpoint. The small amount of post-release, single capture mortality from artificial lures (<5%; [6]Schill & Scarpella, 1997) combined with the limited amount of harvest, is not expected to elicit population-level impacts. The small amount of bait angling is expected to result in negligible mortality given bait fishing is slightly higher than artificial lures, but very few anglers are participating in this type of angling experience. Natural annual mortality rates of wild trout in streams of the interior northwest range from 30% to 70% ([9]Schill, 1991; [10]Budy et al., 2007; [11]Uthe et al., 2016; Uthe et al., 2021). Therefore, the current level of harvest and post-release mortality is expected to be compensatory (i.e., mortality is not in addition to what would occur naturally) and not result in reduced abundance of trout in the Blackfoot River. Stable or increasing numbers of trout coincident with increasing fishing pressure supports this notion.

The current strategy of catch-and-release of bull trout and westslope cutthroat trout and bait fishing restrictions in bull trout conflict areas, provide protective measures to achieve native species conservation goals while still providing diverse opportunities for anglers. These measures have contributed to the long-term increase in bull trout and westslope cutthroat trout since the late 1980s (Uthe et al., 2021). Additional knowledge regarding encounter rates and cumulative catch-and-release

mortality of westslope cutthroat trout would be beneficial to inform management strategies as the Blackfoot River experiences unprecedented levels of angling pressure. Ongoing monitoring is essential to assessing population status and trends, especially as angler pressure is expected to continue increasing.

Habitat

The Blackfoot River basin has a long history of habitat protection, river restoration and riparian habitat conservation emphasizing native fish and wild trout fisheries. These activities occur basin-wide and typically focus on degraded tributary streams. To date, riparian and instream habitat improvements have occurred on more than 50 tributaries. Projects typically involve livestock management changes, fish passage enhancement, instream flow augmentation, screening irrigation ditches to reduce fish entrainment losses, and planting riparian vegetation. These types of activities usually involve cooperating private landowners, conservation groups, and other natural resource agencies.

The Blackfoot River basin contains about 165 miles of dewatered stream length on 46 tributaries. Most of the dewatering is from irrigation withdrawals, but naturally intermittent sections are common throughout portions of the drainage. A drought plan was developed for the Blackfoot River in 2000 to help offset low flow impacts to fisheries. The Blackfoot Drought Response Plan calls for potential angling restrictions in the summer when flows drop below 700 cfs at Bonner, which corresponds with FWP's 1973 Murphy water right. If junior water users have a cooperative and effective water conservation plan, their junior water right is not subject to call until discharge in the Blackfoot River falls below 500 cfs. Angling restrictions are considered when river temperatures measured at U.S. Geological Survey (USGS) gage near Bonner reach or exceed 71 F for 3 consecutive days. Ratification of the Confederated Salish and Kootenai Tribes – Montana Compact instituted the Milltown Water Right as an instream flow right with a 1904 priority date. The Confederated Salish and Kootenai Tribes (CSKT) are co-owners of this water right, but the enforcement of the new priority date is deferred until April of 2025. The implementation of the Milltown Water Right will be incorporated into the Blackfoot Drought Response Plan.

Land conservation, including fee title acquisitions held in public trust and conservation easements on private land, have been valuable tools used frequently throughout the Blackfoot Valley. Large tracts of former private industrial timberland have been transferred to private, conservation oriented landowners and public natural resource agencies, including FWP. The Nature Conservancy purchased the remaining 117,152 acres of Plum Creek Timber Company holdings in 2014. Much of this land has been transferred to the USFS and Bureau of Land Management (BLM). As of 2020, land ownership in the basin was approximately 30% private, 54% federal, 10% state, and 6% Nature Conservancy. Two examples with FWP ownership or conservation easement holdings include the North Chamberlain Project and the Marshall Creek Wildlife Management Area (WMA), both of which are specifically designed to protect fish and wildlife species. Easements have facilitated positive management changes to riparian and upland areas, as well as protect the investment of stream restoration projects after degradation issues have been addressed. A total of 184,581 acres are enrolled in conservation easements. Several conservation easements have been placed on private lands in areas that support critical bull trout and westslope cutthroat trout habitat. Where possible, FWP will continue to promote landscape protections in native fish habitat.

Low flows and large wood debris can limit floating opportunities above the confluence of the North Fork during certain times of the year. Below this confluence, opportunities for float recreation are available most of the year during normal flows. In the Clearwater Basin, dewatering issues are most severe on the mainstem between Seeley and Salmon lakes.

Montana Department of Environmental Quality (DEQ) classifies the Blackfoot as a B-1 stream, meaning the river should be maintained for activities such as drinking and municipal uses, swimming and recreation, growth and propagation of trout and associated aquatic life, and as an agricultural and industrial water supply.

Water quality in the Blackfoot watershed is generally high with only slight or no impairment, but some issues persist in discrete river sections and tributaries. The Nevada Creek drainage has water quality issues and several streams have dewatering and water quality problems due to intensive agricultural activities. Water quality issues are also pronounced in Nevada Reservoir, which has frequent occurrence of algal blooms. The Upper Blackfoot Mining Complex area (located in the headwaters of the Blackfoot River) is contaminated by elevated metal concentrations due to the 1975 failure of the Mike Horse tailing dam, which released 100,000 tons of toxic mine waste and tailings that were deposited in the river channel and floodplain. Water quality degradation is also a concern in the Clearwater Chain-of-Lakes area due to human development and intensive land use. Elevated nutrient levels and eutrophication are most evident at Seeley, Salmon and Placid lakes at the lower end of the system where impacts of human use are magnified and most intensive.

Current Management Issues

Nevada Reservoir Stocking Evaluation

Westslope cutthroat trout have been stocked in Nevada Reservoir since 2002, but gillnet surveys have revealed consistently low abundance since then. In 2020, stocking rates were increased from 2,000/year to 20,000/year. The increased stocking rate was scheduled to occur for three consecutive years, with initial post-stocking evaluation occurring in 2022. Gillnet surveys will be used to monitor the reservoir to determine if stocking changes elicit a detectable increase in the abundance of westslope cutthroat trout. Depending on the monitoring results, stocking rates may be adjusted to achieve management goals for the fishery.

Browns Lake Stocking Evaluation

Inconsistent stocking effectiveness and angler success led to an intensive evaluation of the rainbow trout fishery in 2009 to 2013 and subsequent management recommendations (Knotek & Schreck, 2014). These recommendations, including revised stocking rates, timing, locations, fish size, and strain composition have been implemented and monitored since 2014. Marking of stocked fish and continued sampling since 2014 have led to further stocking changes and incremental fishery improvements. The ongoing survey and evaluation program, with subsequent appropriate management changes, are integral to continued success of the fishery.

Coopers Lake Stocking Evaluation

Gillnet surveys and angler reports suggest that westslope cutthroat trout abundance is low and angling quality is not satisfactory compared to other waterbodies in the area. High densities of northern pikeminnow may limit the abundance of stocked cutthroat trout through excessive predation. Stocking plans will be adjusted in 2022 to increase the size of planted fish, which are expected to exceed the predation threshold of a significant portion of the pikeminnow population based on size structure data. Gillnet surveys will be used to assess the status of the fishery using a before-after evaluation.

Kokanee and Westslope Cutthroat Trout Stocking Evaluations at Clearwater Basin Lakes

Many lake populations in the Clearwater basin are sustained or supplemented through stocking of hatchery fish. Stocking numbers, species, timing, and other methods were developed over decades through research, experimentation, and monitoring (Knotek et al., 2021; Knotek et al., 2018). With the unauthorized introduction of non-native predator species (e.g., northern pike and smallmouth bass), the ongoing survey and evaluation program, including gillnet sampling and spawning surveys, with subsequent adaptive management and stocking changes, are integral to continued success of these fisheries.

North Fork Blackfoot River Native Fish Conservation Project

This project would remove (or significantly reduce) hybrid trout in the portion of the drainage above North Fork Falls using the piscicide, rotenone. Following chemical removal of hybrid trout, westslope cutthroat trout would be stocked in the project area to establish a self-sustaining population. Following establishment of a viable cutthroat trout population, opportunities would be explored to establish a native fish assemblage, including bull trout and sculpin.

The piscicide application and initial stocking of westslope cutthroat trout was scheduled for implementation in 2021, but litigation prevented the project from proceeding. Further public involvement and additional permitting will be required before any action is completed. Although the timeline remains uncertain, this project is still a high priority for the department.

Bull Trout Conservation and Monitoring in the Blackfoot River System

Bull trout conservation remains an ongoing priority in the Blackfoot watershed. Migratory bull trout currently inhabit three stronghold drainages: Monture Creek, Copper Creek (Landers Fork), and North Fork Blackfoot River. Bull trout are also consistently observed in Belmont Creek, Cottonwood Creek, Arrastra Creek, and Poorman Creek, although the presence of a migratory life history form is unconfirmed. Recent surveys in Gold Creek suggest that bull trout have been extirpated from this stream. In migratory bull trout strongholds, conservative management strategies will be maintained (e.g., terminal tackle restrictions). Major components of bull trout status and assessment monitoring include: redd counts in spawning areas to measure the level of spawning activity and adult escapement; juvenile estimates in tributaries using electrofishing to determine the level of recruitment, relative species abundance, and genetic composition; and genetic assignment of adults and subadults to

tributaries of origin to monitor their relative contribution to the overall population. Most monitoring activities occur in the spawning and rearing habitats (primarily tributaries), but a knowledge gap exists for bull trout using feeding, migration, and overwinter habitat (such as mainstem river sections and lower reaches of tributaries). Additional information regarding movement patterns, fine-scale habitat use, and life stage-specific survival rates in feeding, migration, and overwinter habitat would help identify limiting factors and subsequent conservation strategies.

Bull Trout Conservation and Monitoring in the Clearwater Basin

Core adfluvial (lake-migrant) tributary populations include Morrell Creek, Marshall Creek, and East and West forks of the Clearwater River. Deer Creek and Boles Creek support small remnant populations. All major mainstem lakes still support bull trout. Major components of the annual evaluation and monitoring program currently include: redd counts in spawning areas to measure level of spawning activity and adult escapement; juvenile estimates in tributaries using electrofishing to determine level of recruitment and relative species abundance and genetic composition; gillnet surveys in lakes to monitor species composition, size distributions, and growth rates; and genetic assignment of adults and subadults to tributaries of origin to monitor their relative contribution to the overall population and evaluate scale of movements.

High and Mid-elevation Mountain Lake Fishery Monitoring

Monitoring of mountain lakes occurs periodically to assess the status of stocked and self-sustaining fisheries, determine if stocking rates and frequencies are adequate to achieve specific waterbody management goals, and evaluate angler use and preferences. Lakes reliant on natural reproduction are monitored to determine if supplemental stocking is needed. Stocked lakes are monitored to determine if stocking prescriptions are meeting management goals and if any program adjustments are warranted. Fishless lakes are also monitored to ensure maintenance of natural aquatic communities and to evaluate the suitability of some lakes for establishment of new recreational fisheries.

Upper Blackfoot Mining Complex Remediation and Restoration

This has been a top priority in the watershed since the tailings dam failed in 1975. The fish population was severely impacted throughout the upper Blackfoot River, and the most heavily impacted tributaries and upper river sections were completely devoid of aquatic life. In 2009, DEQ, Montana Natural Resource Damages Program (NRDP) and the USFS initiated cleanup and completed a water treatment plant. Since that time, over one million cubic yards of contaminated material have been removed and hauled to the repository. More information about project background, upcoming plans, and project updates can be found here. Annual electrofishing surveys are conducted to monitor the fishery response to restoration efforts. Rapid recolonization by brook trout and westslope cutthroat trout have been documented since 2019.

Watershed Restoration on the Marshall Creek WMA

FWP purchased properties comprising the Marshall Creek WMA in 2008 to 2010. Although these properties include several important native trout spawning tributaries, they were all part of former intensively managed, industrial timber lands. Since FWP acquisition, FWP fisheries and maintenance staff have planned and implemented a series of projects (12 Phases through 2021) to address and mitigate impacts of extensive road systems and former land use practices. This ongoing series of projects will likely continue as funding is available as described in Attachment A of the Marshall Creek Wildlife Management Area Interim Management Plan.

Priority Drought Waters

The Blackfoot Drought Response Plan includes angling-related restrictions based on a 71 F temperature trigger at the USGS stream gage (12340000) near Bonner. The plan also includes a bull trout-specific restriction for migratory bull trout spawning streams when the North Fork Blackfoot River and Monture Creek both reach or exceed 65 F for 3 consecutive days near their mouths. In addition to these two tributaries, other bull trout spawning streams protected through special angling restrictions may include Morrell Creek, Belmont Creek, Cottonwood Creek, Copper Creek and Landers Fork. The 71 F threshold in the lower Blackfoot River generally coincides with a lower threshold near 68 F in the middle Blackfoot River, which is the primary reach occupied by westslope cutthroat trout. Therefore, the existing temperature criteria are considered a conservative approach for protecting native trout with lower thermal tolerances throughout areas of high fishing pressure.

Monitoring and Evaluation of Invasive Warmwater Fish Species

Illegally introduced northern pike and smallmouth bass have both become established in the interconnected Clearwater Lake and River chain. Both species are top predators that influence the abundance and distribution of other fish species. The impact of northern pike and smallmouth bass on native and existing sport fish populations should be monitored and evaluated, particularly as smallmouth bass distribution expands and abundance increases.

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FISHERIES MANAGEMENT DIRECTION FOR BLACKFOOT RIVER DRAINAGE

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Blackfoot River and tributaries (headwaters downstream to confluence with Clearwater River)	100 miles of mainstem and connected tributaries	Bull trout (N), Westslope cutthroat trout (N)	Wild	Conservation	Continue closure for intentional angling of bull trout. Enhance migratory populations for conservation. Enhance westslope cutthroat trout fishery. Consider isolation of westslope cutthroat populations only if hybridization or competitive displacement clearly threatens the persistence of local populations. Seek opportunities to expand bull trout and cutthroat trout distribution above natural barriers in tributaries (i.e., waterfalls).
		Rainbow trout, Brown trout	Wild	Liberal Regulations	Allow liberal harvest. Consider management that reduces numbers and distribution if it would improve native trout numbers and westslope cutthroat angling opportunities.
		Other introduced game fish (e.g., yellow perch, northern pike, brook trout)	Wild	General	Manage for liberal harvest and contain distribution where possible.
Habitat needs and activities: Support clean-up of Mike Horse Mine area in headwaters and monitor fishery impacts. Restore habitat to favor native salmonids based on established native trout priority streams. Improve trout recruitment (both native and non-native) to the mainstem river through connectivity improvements in tributaries (e.g., passage improvements, flow enhancement, fish screens) and increased trout production from restoration of spawning and rearing habitat. Conduct effectiveness monitoring of restoration projects in tributaries using electrofishing surveys. Conduct population status and trend monitoring in mainstem river and tributaries using electrofishing surveys, redd counts, weir traps, genetic analyses, and other standard fisheries survey methods.					
High and mid - elevation natural lakes	More than 100 lakes over 4,000 feet elevation	Westslope cutthroat trout, Yellowstone cutthroat trout, Rainbow trout, Brook trout, Arctic grayling	Wild / Hatchery	General	Lakes cumulatively managed for diversity of fish species, population abundance, and size structure.

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Habitat needs and activities: Monitor water quality and status of unauthorized aquatic introductions in cooperation with Aquatic Invasive Species (AIS) Program and community watershed groups. Monitor fisheries and stocking programs through gillnet and spawner surveys, creel surveys, and other standard fisheries survey methods. Evaluate fishless lakes to determine suitability for establishing recreational fisheries.					
Nevada Reservoir	350 acres	Westslope cutthroat trout	Hatchery	Put-Grow-and-Take	Manage for high catch rates and quality-sized fish. Monitor with gillnet surveys to adaptively manage stocking rates.
		Rainbow trout	Wild	General	Rely on rainbow trout to provide secondary trout angling opportunity.
		Yellow perch	Wild	General	Liberalize harvest and contain distribution. Provide opportunity for high catch rates.
Habitat needs and activities: Monitor water quality and status of unauthorized aquatic introductions in cooperation with AIS program and community watershed groups. Monitor fisheries and stocking programs through gillnet surveys, strategic marking and stocking of hatchery fish, creel surveys, redd counts, and other standard survey methods.					
Coopers Lake	200 acres	Westslope cutthroat trout	Hatchery	Put-Grow-and-Take	Manage for high catch rates and quality sized fish. Monitor with gillnet surveys to adaptively manage stocking rates to improve cutthroat trout abundance and fishery quality.
		Brook trout	Wild	General	Rely on brook trout to provide secondary trout angling opportunity.
Habitat needs and activities: Monitor water quality and status of unauthorized aquatic introductions in cooperation with AIS program and community watershed groups. Monitor fisheries and stocking programs through gillnet surveys, strategic marking and stocking of hatchery fish, creel surveys, redd counts, and other standard survey methods.					
Browns Lake	530 acres	Rainbow trout	Hatchery	Put-Grow-and-Take	Manage for quality rainbow trout with high catch rates and harvest opportunities. Monitor with gill-net surveys to adaptively manage and evaluate stocking rates, stocking methods, and hatchery products.

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Lake Upsata	91 acres	Largemouth bass	Hatchery	Quality	Provide for high quality largemouth bass angling though stocking and restrictive regulations.
		Yellow perch, Northern pike	Wild	General	Provide liberal harvest opportunity.
Habitat needs and activities: Monitor water quality and status of unauthorized aquatic introductions in cooperation with AIS program and community watershed groups. Monitor fisheries and stocking programs through gillnet surveys, strategic marking and stocking of hatchery fish, creel surveys, redd counts, and other standard survey methods.					
North Fork Blackfoot River, Monture and Copper/Landers Fork drainages	70 miles	Bull trout (N), Westslope cutthroat trout (N)	Wild	Conservation	Continue closure for intentional angling of bull trout. Enhance migratory populations for conservation. Enhance catch-and-release westslope cutthroat fishery. Consider introductions of westslope cutthroat trout and bull trout in the streams and lakes upstream of North Fork Falls. Consider introduction of bull trout above Silver King Falls in the Landers Fork. Consider introduction of westslope cutthroat trout and bull trout above the waterfall barrier in Lodgepole Creek.
		Brown trout	Wild	Liberal Regulations	Maintain liberal harvest opportunity to reduce expansion and impacts on other trout. Consider management that reduces numbers and distribution if it would improve native trout numbers and angling opportunities.
		Rainbow trout	Wild	Quality	Maintain numbers at present levels.

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Habitat needs and activities: Monitor and maintain previous habitat restoration projects, including fish screens, riparian fencing, and grazing management infrastructure. Continue efforts to improve instream habitat conditions, conserve or enhance streamflow in critical stream sections, and improve water quality. Monitor species distributions and population status and trends through electrofishing surveys, weir traps, annual bull trout redd surveys, genetic analyses, and other standard fisheries survey methods. Continue support and planning for the North Fork native fish conservation project to remove hybrid cutthroat and plant native fish species above North Fork Falls (see Special Management Issues above).					
Clearwater River and Tributaries	50 miles	Bull trout (N), Westslope cutthroat trout (N)	Wild	Conservation	Conserve and enhance migratory and stream-resident populations. Continue protective regulations, including year-round closure to angling for bull trout and restrictive westslope cutthroat harvest.
		Brown trout, Brook trout	Wild	Liberal Regulations	Provide liberal harvest opportunities. Consider management that reduces abundance and distribution if it would improve native trout abundance and westslope cutthroat trout angling opportunities.
		Kokanee salmon	Wild/ Hatchery	General	Manage for quality harvest opportunities with high catch rates; evaluate relative contribution of wild and stocked fish for various lake populations that spawn in river system.
		Yellow perch, Largemouth bass, Smallmouth bass, Northern pike, Pumpkinseed	Wild	General	Provide liberal harvest opportunity and reduce numbers where possible to reduce competition with and predation on trout and salmon populations. Emphasize smallmouth bass suppression in areas of population expansion.
Critical habitat needs and activities: Improve native trout recruitment to the mainstem lake and river system through connectivity improvements in tributaries (e.g., fish passage improvements, flow enhancement, fish screens) and increased trout production through restoration of spawning and rearing habitat and protection of tributary watersheds (includes Morrell Creek, Deer Creek, Marshall Creek, East and West forks of Clearwater River, Placid Creek, and other smaller Clearwater basin tributaries). Continue to provide and enhance connectivity among lakes, mainstem river sections and tributaries to benefit native fish					

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
and salmonid sport fish. Monitor native trout genetics and fish population status in Clearwater River and tributaries using electrofishing, weir/hoop traps, redd counts, and other standard survey methods.					
Clearwater Lake, Rainy Lake, Alva Lake, Marshall Lake, Inez Lake	103 acres, 81 acres, 314 acres, 85 acres, 298 acres	Bull trout (N)	Wild	Conservation	Conserve and enhance migratory populations. Continue year-round closure to angling for bull trout.
		Westslope cutthroat trout (N)	Wild/ Hatchery	Put-Grow-and-Take	Manage for quality sized fish and high catch rates. Evaluate relative contributions of wild and stocked fish.
		Kokanee salmon	Wild/ Hatchery	General/Put-Grow-and-Take	Evaluate stocking to optimize number stocked, size of fish, and angler catch rates; evaluate relative contribution of wild and stocked fish in each waterbody.
		Brook trout, Brown trout	Wild	General	Provide liberal harvest opportunity and reduce numbers where possible to reduce predation on and competition and hybridization with native trout.
		Yellow perch, Largemouth bass, Smallmouth bass, Pumpkinseed	Wild	General	Provide liberal harvest opportunity and reduce numbers where possible to reduce competition with and predation on trout and salmon.
		Northern pike	Wild	Suppression	Emphasize angler harvest to reduce predation on trout and salmon; derby participants are required to harvest fish.
Habitat needs and activities: Maintain and improve fish passage at structures associated with lake inlets and outlets; monitor population status and distribution of northern pike, smallmouth bass, and other introduced predator species; monitor kokanee populations to advise stocking program; monitor bull trout population status. Monitor water quality and status of illegal aquatic introductions in cooperation with AIS program and community watershed groups.					

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Monitor fish communities and stocking programs using gillnet surveys, trap nets, strategic marking and stocking of hatchery fish, creel surveys, redd counts, and other standard survey methods.					
Seeley Lake and Salmon Lake	1,047 acres 660 acres	Bull trout (N)	Wild	Conservation	Conserve and enhance migratory populations. Continue year-round closure to angling for bull trout.
		Westslope cutthroat trout (N)	Wild	General / Conservation	Conserve and enhance migratory populations.
		Kokanee salmon	Wild/ Hatchery	Put-Grow-and-Take	Evaluate stocking to optimize number stocked, size of fish and angler catch rate; evaluate relative contribution of wild and stocked fish.
		Brown trout, Brook trout	Wild	General	Provide liberal harvest opportunity to reduce competition and hybridization with and predation on native trout. Consider measures to reduce number if native trout numbers and angling opportunity would increase.
		Largemouth bass, Smallmouth bass	Wild	General	Provide liberal harvest opportunity, suppress, and monitor expansion of smallmouth bass populations.
		Yellow perch, Pumpkinseed	Wild	General	Provide liberal harvest opportunity and reduce numbers where possible to reduce competition with trout and salmon.
		Northern pike	Wild	Suppression	Emphasize harvest to reduce predation on trout and salmon; mandatory harvest for permitted fishing contests.
Habitat needs and activities: Evaluate and mitigate dewatering at outlet of Seeley Lake; monitor population status and distribution of northern pike, smallmouth bass, and other introduced predator species; monitor kokanee populations to advise stocking program; monitor bull trout population status.					

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Monitor water quality and status of illegal aquatic introductions in cooperation with AIS program and community watershed groups. Monitor fish communities and stocking programs using gillnet surveys, trap nets, strategic marking and stocking of hatchery fish, creel surveys, redd counts, and other standard survey methods.					
Placid Lake	1,300 acres	Bull trout (N)	Wild	Conservation	Continue year-round closure to angling for bull trout. Protect and enhance remnant population.
		Westslope cutthroat trout (N)	Wild/ Hatchery	Put-Grow-and-Take	Evaluate stocking to optimize number stocked, size of fish, and catch rates; evaluate relative contribution of wild and stocked fish.
		Kokanee salmon	Hatchery/ Wild	Put-Grow-and-Take	Evaluate stocking to optimize number stocked, size of fish, and catch rates; evaluate relative contribution of wild and stocked fish.
		Brook trout, Brown trout	Wild	General	Provide harvest opportunity for anglers with liberal regulations.
		Yellow perch, Pumpkinseed	Wild	General	Provide quality harvest opportunity.
		Largemouth bass	Wild	Quality	Maintain and enhance quality of fishery through restrictive regulations. Consider stocking to enhance quality of fishery.
		Northern pike	Wild	Suppression	Monitor northern pike persistence and possible expansion. Suppress if necessary and feasible
Habitat needs and activities: Monitor kokanee populations to advise stocking program; monitor bull trout population status. Monitor water quality and status of illegal aquatic introductions in cooperation with AIS program and community watershed groups. Monitor fish communities and stocking programs using gillnet surveys, trap nets, strategic marking and stocking of hatchery fish, creel surveys, redd counts, and other standard survey methods.					
Harpers Lake	15 acres	Rainbow trout, Westslope cutthroat trout	Hatchery	Put-Grow-and-Take	Manage as a quality trout harvest opportunity with high angler catch rates.

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
		Yellow perch	Wild	General	Maintain liberal harvest limits and reduce numbers, if possible, to reduce competition with trout.
Habitat needs and activities: Monitor water quality and status of unauthorized fish and aquatic introductions. Monitor fish community and stocking program using gillnet surveys, trap nets, strategic marking and stocking of hatchery fish, creel surveys, and other standard survey methods.					
Blackfoot River and tributaries (Clearwater River to confluence with Clark Fork River)	32 miles	Bull trout (N), Westslope cutthroat trout (N)	Wild	Conservation	Continue closure for intentional angling of bull trout. Enhance migratory populations for conservation. Enhance westslope cutthroat trout fishery. Consider isolation of westslope cutthroat populations only if hybridization or competitive displacement clearly threatens the persistence of local populations.
		Rainbow trout, Brown trout	Wild	Quality	Maintain current abundance and size structure.
		Other introduced game fish (e.g., yellow perch, northern pike, brook trout)	Wild	General	Manage for liberal harvest and contain distribution where possible.
Habitat needs and activities: Improve habitat to support ecosystem function and production of wild trout and whitefish. Improve trout recruitment (both native and non-native) to the mainstem river through connectivity improvements in tributaries (e.g., passage improvements, flow enhancement, fish screens) and increased production from restoration of spawning and rearing habitats. Conduct effectiveness monitoring of restoration projects in tributaries using electrofishing surveys. Conduct population status and trend monitoring in mainstem river and tributaries using electrofishing surveys, redd counts, weir traps, genetic analyses, and other standard fisheries survey methods.					