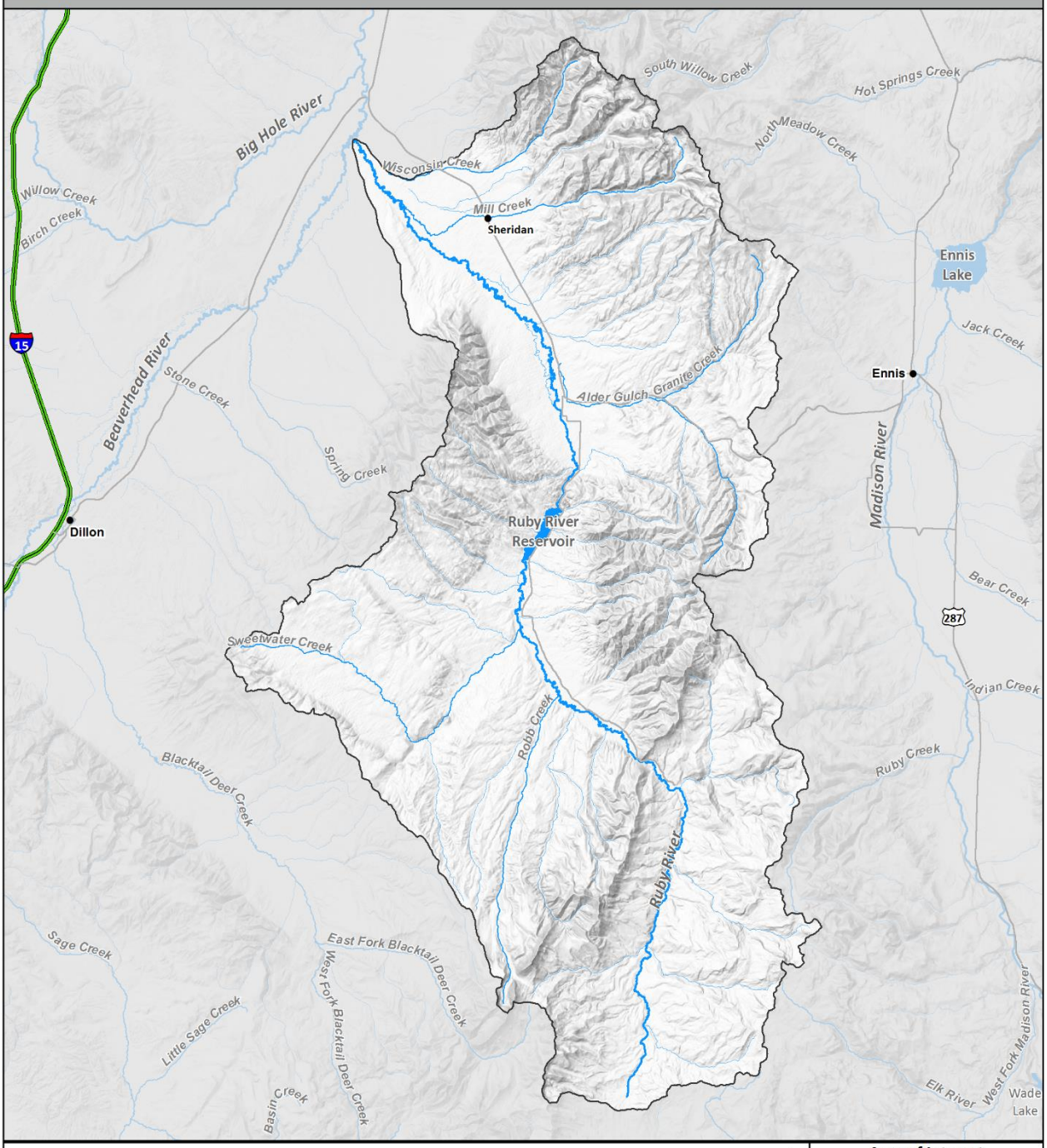
Ruby River Drainage

MONTANA **FWP**



Tribal Lands

Drainage Boundary

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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 5 10
Miles

Ruby River Drainage

Physical Description

The Ruby River arises from tributaries (East, West and Middle forks) located in the Gravelly and Snowcrest mountains of southwest Montana and flows in a northwesterly direction for 41 miles through a narrow valley to the Ruby Reservoir. Ruby Reservoir, built in 1939, is used for the storage of irrigation water. Downstream from Ruby Dam, the river meanders for about 48 miles through an agricultural valley to its confluence with the Beaverhead River. The river drains an area of about 935 square miles.

Fisheries Management

All flowing waters in this drainage that support trout are managed as wild trout fisheries, emphasizing habitat protection and natural reproduction. Tributaries and their connectivity with the Ruby River are critical for supporting natural reproduction, providing rearing habitats for juvenile trout, and delivering cool summer streamflows. Management of tributary connectivity for non-native brown trout and rainbow trout recruitment is balanced with occasional tributary isolation from the mainstem river to promote westslope cutthroat trout conservation. Conservation of wild Arctic grayling in the upper Ruby River is a primary management emphasis.

The current wild trout management strategy replaced hatchery-based management of trout over 50 years ago. Maintenance of healthy fish habitats for all life stages is needed for this strategy to succeed, and the predicted changes in streamflow and water temperatures are high priorities for fisheries management in this drainage. The Ruby Valley Water Users voluntary drought management plan dictates instream flows in the Ruby River. FWP partners with water users, the Ruby Valley Conservation District, and other stakeholders to maintain and improve instream flow, habitat, and connectivity. Over 50 stream permits (310 and 124s) are issued annually by the Ruby Valley Conservation Districts or FWP to minimize impacts of proposed manipulations to the bed or banks of streams. The Ruby Valley Conservation District's Watershed Restoration Plan and focus on alleviating habitat degradation or pollution issues through on-the-ground projects and improved land use practices are critical in managing fish habitats.

The Ruby River basin contains fish species common to southwestern Montana. These species include rainbow trout, brown trout, brook trout, westslope cutthroat trout (primarily in isolated tributaries), mountain whitefish, Arctic grayling, hybrid cutthroat trout, longnose dace, longnose sucker, Rocky Mountain sculpin, and white sucker. Arctic graying are historically native to the drainage, but were extirpated prior to being successfully restored to headwater reaches of the Ruby River basin in the early 2000s. Although the Ruby River basin was historically stocked with hatchery fish, stocking in rivers and streams was discontinued by the early 1970s when wild trout management philosophies were initiated. The Ruby River Reservoir has been stocked annually with rainbow trout since 1940. Yellowstone cutthroat trout were stocked in 1980 through 1983.

The Ruby River, upstream of the Ruby River Reservoir, will be managed in the upper reaches for Arctic grayling conservation and as a non-native sport fishery and to protect spawning fish from the reservoir in the lower reaches. Arctic grayling are distributed at low density over at least 37 miles of the Ruby River, from Three Forks Cow Camp to four miles from the reservoir. Upstream of Warm Springs Creek

the fishery is primarily composed of hybrid cutthroat trout and brook trout. Downstream of Warm Springs Creek, the Ruby River supports about 100 brown trout and 100 rainbow trout per mile. Ruby River Reservoir rainbow trout and brown trout seasonally use the upper Ruby River for spawning and rearing in the spring and fall, respectively. Seasonal closures will be used to protect spawning trout and incubating embryos. Standard Central District regulations will be recommended to manage the sport fishery. Improving habitat and riparian health, restoring floodplain connectivity, and reducing sedimentation are the primary management needs to improve and maintain this fishery. Public access is excellent upstream of Warm Springs Creek but limited downstream near the reservoir; annual use of over 1,000 angler-days is typical.

The Ruby River Reservoir will be managed to maximize densities of rainbow trout to provide a recreational fishery with good catch rates and maintain a wild brown trout fishery. Over the past decade, angling pressure on Ruby River Reservoir has varied between 6,826 and 11,662 angler-days between 2001 and 2019. Use by nonresident anglers average about 20% of the total use. Monitoring data show the Ruby River Reservoir supports a robust rainbow trout fishery with average catch rates of about 12 fish per net. The rainbow trout management goal is to maintain a fishery that supports netting catch rates of 15 fish per net. The goal of 15 fish per net was selected because these densities typically support good year-round catch rates. Stocking rates for Ruby River Reservoir vary from 55,000 to 65,000 fish annually; however, recent otolith microchemistry studies indicated that about 75% of rainbow trout in the reservoir are of wild, not hatchery, origin. Therefore, a management strategy that emphasizes improving spawning habitat and protecting spawning fish and critically evaluating the most effective stocking approaches will be employed. That management direction will also benefit wild brown trout.

The Ruby River from the reservoir to the mouth will be managed to maximize densities of wild brown trout in the tailwater and as a recreational wild brown trout and mountain whitefish fishery in lower reaches. Ruby River tailwater (Ruby Dam to Alder) brown trout densities average about 1,350 fish per mile and typically range between 750 and 2,000 fish per mile, with about 6% being over 18 inches. Rainbow trout are rare below the reservoir. Primary drivers of the trout population and size structure in the tailwater are flows and trout density. Limnological issues, such as summertime turbidity in Ruby River Reservoir, also influences the fishery. In the lower Ruby River, brown trout densities average about 650 fish per mile and typically range from 200 to 1,350 fish per mile. Primary population drivers in the lower river are summertime instream flows and temperatures, with riparian health, floodplain connectivity, and sediment and nutrient input likely serving as secondary drivers. Recommended Ruby River angling regulations will be adaptively managed in both reaches in response to population densities. Partnering with water users to deliver varied flow regimes for channel maintenance and fish habitat needs and to avoid chronic dewatering is a primary management strategy. Seasonal closures to reduce angling-related mortality during low flows and high temperatures are common on the lower Ruby River and will be implemented as described by FWP policy. Angling pressure is relatively high on the Ruby River downstream of the reservoir, with most use occurring in the tailwater. Angling effort has varied from 3,828 angler-days in 1993 to 16,030 angler-days in 2009 but has generally increased through time; average angler use between 1982 and 2001 was about 7,500 angler-days and between 2001 and 2020 was about 13,000 angler-days. About half of the angler-days logged on the Ruby River are from nonresident anglers. Angler use of the Ruby River results in over $10,000,000 of direct expenditures. The relative role of angler harvest, catch-and-release morality, and natural morality on trout populations in the upper and lower Ruby River is unknown and a research priority over the next four years.

Tributaries and small streams will be managed as either recreational, wild non-native trout fisheries or to sustain wild conservation populations of westslope cutthroat trout. The largest and most heavily fished tributaries in the Ruby River flow out of the southern Tobacco Root and Greenhorn mountains. Fifteen streams with westslope cutthroat trout populations that are less than 10% hybridized will be managed to reduce or eliminate non-native trout. The long-term westslope cutthroat trout conservation goal of restoring 20% of historical tributary distribution will eventually require additional streams be designated for native fish management (see Part I, 1.6.8(1) Westslope Cutthroat Trout). That will occur as part of a public planning process and be described in future iterations of this plan. Most streams (80%) will be managed as non-native trout fisheries under standard Central District fishing regulations.

Mountain Lakes will be managed to provide diverse recreational opportunities. Nineteen mountain lakes exist in the Ruby Drainage's Tobacco Root, Gravelly, and Snowcrest mountains. Most of those lakes have self-sustaining populations of small (6 to 12-inch) brook trout, rainbow trout, and hybridized cutthroat trout. Where natural reproduction is limited, westslope cutthroat trout will be stocked to manage for a balance of opportunity and large fish. Over the next four years, experimental stocking of predatory fish species will occur in at least one stunted, self-sustaining brook trout lake to attempt to improve average fish size. Mountain lakes are managed under standard Central District fishing regulations.

Habitat

The upper Ruby River valley has a broad floodplain bounded on the west by the steep, mountainous Snowcrest Range and on the east by the gentler, rolling Gravelly Range. Elevations in the upper valley range from 5,900 to 10,500 feet. Lands within the 538 square mile upper drainage are primarily controlled by the U.S. Forest Service (USFS) and Bureau of Land Management (BLM). Average gradient of the 50-foot-wide river channel is fairly constant at 7 feet/1,000 feet. The upper drainage is comprised of 61% grassland, 12% forest, and 13% subalpine grassland, 12% noncommercial timber, and 2% wet meadow and willow bottom. Riparian plants are primarily willow, alder, birch, grasses, and sedges. The soils of the upper Ruby River valley are susceptible to erosion and mass wasting. Parts of the upper river have been simplified, extensively armored, and disconnected from its floodplain, which has degraded aquatic habitat. The deposition of fine sediments in the main river as well as the major tributaries in the upper drainage has the potential to affect macroinvertebrate production and trout eggs. Due to severe sediment deposition, the water permeability in most stream gravels where trout could spawn is below the level needed for good survival of trout eggs.

Downstream from Ruby River Reservoir, the Ruby River meanders for 48 miles through private grazing and irrigated hay lands within the wide, open Ruby Valley. Channel and bank alterations are common within this stretch. Dewatering of the Ruby River downstream from Ruby Reservoir is a major habitat issue. When water is stored in Ruby Reservoir during the winter months, flows downstream from the dam are greatly reduced. Portions of the river are also subject to severe dewatering during the summer irrigation season. During the droughts of 1985 and 1987, stretches of the Ruby River downstream from the reservoir were totally dewatered, causing major fish kills. Loss of connectivity to major tributaries that may provide cool water refugia exacerbates that issue. However, voluntary maintenance of instream flows by water users has prevented dewatering and fish kills in recent years. Excessive sedimentation and incision are also habitat concerns. Land use of the upper drainage, coupled with the fragile soil types of the area have resulted in erosion problems and the accumulations of vast sediment deposits in Ruby Reservoir. During periods of extreme drawdown, the discharge from Ruby Reservoir is

excessively turbid. That is attributed to bottom sediments being drawn into suspension by currents generated on the reservoir floor. Stream incision has further aggravated the sediment problem downstream from Ruby Reservoir, where loss of floodplain connectivity and resultantly declining riparian health and negatively affected aquatic habitats.

Special Management Issues

Ruby River Adaptive Trout Management

Recommended Ruby River angling regulations will be adaptively managed in the tailwater and lower reach in response to the biology and abundance of trout populations. This management strategy is intended to maintain healthy, well-balanced trout populations comprised of sustainable numbers of large, older spawning fish and newly recruiting juvenile fish. It seeks to avoid large fluctuations in abundance, stunted or unbalanced size structure, or direct morality caused by unsustainably high abundances of age-2 and -3 fish. Catch-and-release will be recommended for rainbow trout only because of their limited distribution near Ruby Dam, low abundances, and a population skewed towards old fish, which leads to lower-than-normal recruitment. The recommended brown trout harvest will only include fish less than 18-inches to protect age-4 and older fish in the spawning population and focus harvest on pre-spawning age classes (age-2 and -3) that can negatively impact survival of post-spawn brown trout at high densities.

When brown trout abundances are within their optimal range between the 25th and 75th percentiles at the start of a biennial cycle, recommended regulations will allow a standard Central District limit of five fish daily and in possession (Table 2.12-1). When brown trout abundances drop below their optimal range, increasingly conservative regulations will be recommended to return the population to its management objective. If brown trout abundances are between the 25th and 5th percentiles, then recommended daily and possession limits would be reduced to one fish (Table 2.12-1). If abundances fall below the 5th percentile, recommended brown trout regulations would be catch-and-release only with an angling closure from October 1 to April 1 to protect spawning fish and embryos in redds (Table 2.12-1). Angling closures during spawning periods are recommended when abundances are below the 5th percentile in tailwaters because it is expected those populations can respond more quickly than in freestone streams. When brown trout abundances increase above their optimal range, recommended daily limits will be progressively liberalized to encourage anglers to harvest fish and bring the population back within the management objective to avoid large density-related morality events and a population crash. If brown trout abundances are between the 75th and 95th percentiles, recommended daily and possession limits would be increased to seven fish (Table 12-1). If brown trout abundances are above the 95th percentile, then recommended daily and possession limits would be increased to 10 fish (Table 2.12-1).

Table 2.12-1: Recommended harvest limits based on population trends for the Ruby River.

	0 to 5th Percentile	**5th to 25th Percentile**	**25th to 75th Percentile**	**75th to 95th Percentile**	**95th Percentile and above**
Brown Trout	Catch-and-release, angling closure October 1 to April 1	1 fish daily and in possession, none over 18-inches	5 fish daily and in possession, none over 18-inches	7 fish daily and in possession, none over 18-inches	10 fish daily and in possession, none over 18-inches

Daily brown trout harvest limits and angling seasons will be biennially recommended based on the most recent abundance estimates relative to long-term datasets in standard monitoring reaches. Monitoring will occur each April and abundance estimates obtained by May. If abundances fall into a new category between the 5th and 95th percentiles at the start of a biennial cycle, regulation changes will be implemented as described above following standard regulations process. If trout populations fall below the 5th or exceed the 95th percentile for a single year, regulation changes will immediately be sought. Regulation changes not printed in the fishing regulations would be updated on the FWP website, posted at fishing access sites (FAS), and communicated through press releases.

The tailwater reach of the Ruby River will be adaptively managed for about 1,350 brown trout per mile. The Ruby River tailwater is the eight miles between Ruby Dam and the Alder bridge. Optimal brown trout densities range from 1,150 to 1,700 fish per mile (Figure 2.12-1); population assessments indicate a balanced population can be maintained under most flow regimes within this range of abundances. This section will be managed for high densities of brown trout with good quality average fish size in a wade-accessible river with good public access. Angling regulations will be recommended as described above based on annual assessment of brown trout abundance in the Vigilante trend section near Vigilante FAS and corroborated by biennial monitoring in a trend section near Alder.

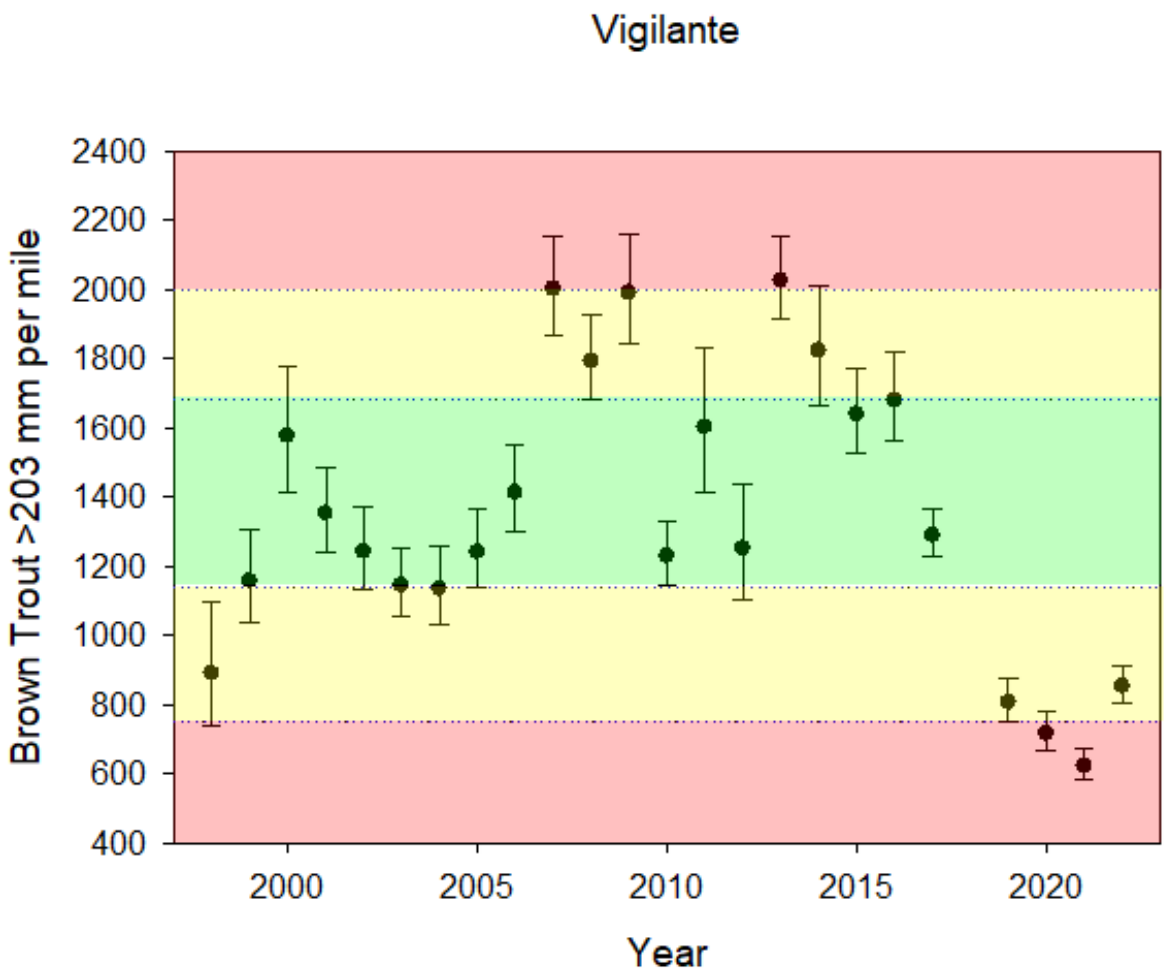

Figure 2.12-1. Brown trout management triggers for the Ruby River tailwater in the Vigilante study section. Black dots are point estimates of numbers of brown trout per mile and whiskers are 95% confidence intervals. Optimal densities (25th to 75th percentiles) are shown in green, the 5th to 25th and 75th to 95th percentiles are shown in yellow, and below the 5th and above the 95th percentile shown in red.

The lower Ruby River will be adaptively managed for about 650 brown trout per mile in the Silver Springs trend section. That section will be managed for opportunity in a unique, relatively low-pressure brown trout fishery. Optimal brown trout densities range from 400 to 1,000 fish per mile (Figure 2.12-2). Angling regulations will be set as described above based on annual assessment of brown trout abundances in the Silver Springs trend section near Silver Springs FAS and corroborated by biennial monitoring in a trend section near Seyler Lane.

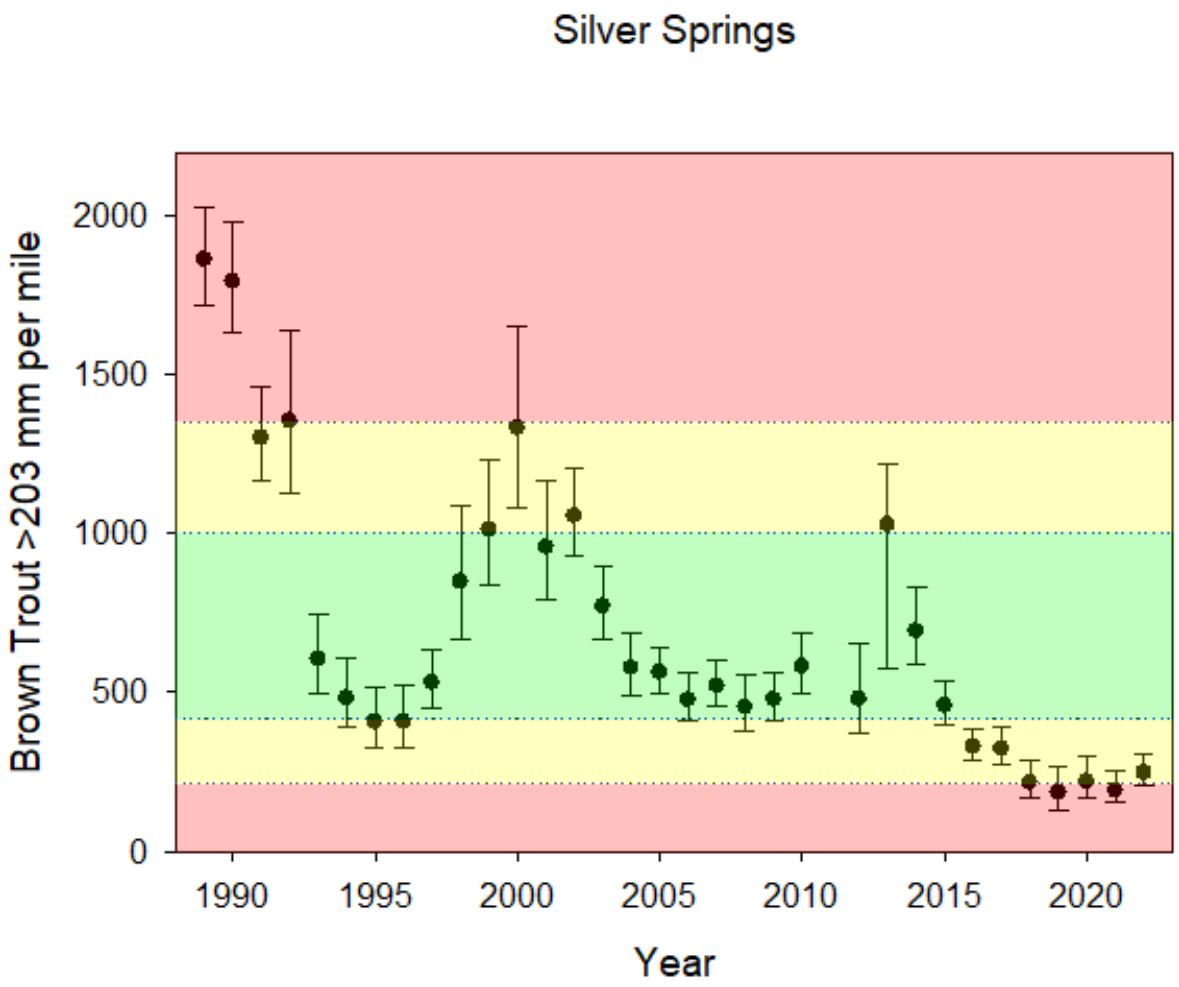

Figure 2.12-2. Brown trout management triggers for the lower Ruby River in the Silver Springs study section. Black dots are point estimates of number of brown trout per mile and whiskers are 95% confidence intervals. Optimal densities (25th to 75th percentiles) are shown in green, the 5th to 25th and 75th to 95th percentiles are shown in yellow, and below the 5th and above the 95th percentile shown in red.

Continued monitoring and research is needed to optimize these management strategies. Assessing angler harvest, catch-and-release mortality, natural mortality, and movements among sections would inform effectiveness of proposed management strategies and identify limiting factors to trout populations. Proposed management strategies will allow some evaluation of fishing regulations, but more information is needed to quantify the factors that influence fish mortality. An integrated mortality study is expected to occur in southwest Montana in the next four years and may include the Ruby River.

Ruby River Drought Management

FWP will partner with water users and other stakeholders to identify and pursue alternatives to reduce chronic dewatering. The primary drivers of the Ruby River trout populations are instream flows and releases from Ruby Reservoir. The Ruby River Water Users voluntary drought management plan seeks to maintain at least 20 cfs in all sections of the Ruby River at all times. By comparison, FWP has a year-

round instream flow reservation of 40 cfs. To maintain minimum instream flows, water users voluntarily reduce individual and collective diversions of water for irrigation. The plan is executed by close communication among irrigators and the dam manager during drought and is supported by strategically placed real-time stream flow monitoring stations. The effects of low flows increase in a downstream direction, are amplified by the duration flows are near the minimum and are exacerbated by high temperatures. FWP research indicates that extended periods of low flows prevent attainment of fisheries goals and effects are magnified if brown trout abundance is outside its management objective. Resultantly, FWP will actively pursue opportunities to provide as many consecutive years of minimum releases of at least 40 cfs as possible. Options may include reducing overwinter releases during good water years to provide better flows in future drought years, increasing the storage volume in Ruby River Reservoir, or working with water users to strategically time water use to alleviate critical low flow periods. FWP will also opportunistically develop projects that improve or maintain connectivity to tributaries that provide cool water refugia during periods of seasonally low, warm water. Projects may include instream flow leases, habitat restoration, riparian health improvements, increasing efficiency of irrigation infrastructure, and improving fish passage and connectivity.

Ruby River Reservoir Rainbow Trout Management

The rainbow trout fishery in Ruby River Reservoir will be optimized by protecting wild spawning fish and improving their habitats and improving survival of stocked fish. Otolith microchemistry research determined hatchery or wild origin of Ruby River Reservoir rainbow trout indicated between 44% and 100% were wild fish spawned in tributaries; the average wild contribution by sampling year was 75% and by cohort was 78% (Table 12-2). FWP annually stocks between 55,000 and 65,000 rainbow trout in the Ruby River Reservoir.

Table 2.12-2. Percentages of wild rainbow trout by cohort in Ruby Reservoir gill netting surveys. Numbers in parentheses are total sample size of otoliths analyzed and includes both wild and hatchery-reared fish.

Cohort or year sampled	Ruby Reservoir by year sampled	Ruby Reservoir by cohort
2010	NA	100% (2)
2011	NA	100% (3)
2012	NA	64% (11)
2013	74% (19)	72% (29)
2014	81% (16)	70% (10)
2015	65% (20)	44% (9)
2016	NA	54% (28)
2017	50% (20)	88% (24)
2018	58% (19)	93% (15)
2019	87% (15)	80% (5)
2020	88% (16)	NA
2021	100% (3)	100% (4)

Recruitment of rainbow trout to Ruby River Reservoir is uneven among years and there has been increased angler effort targeting spawning fish in tributaries to the reservoir. Seasonal closures (December 1 to the third Saturday in May) are recommended in the Ruby River between the reservoir and Sweetwater Creek and tributaries to the reservoir (Garden, Peterson, Barton Gulch, and Davey creeks). Seasonally closing areas where rainbow trout spawn is intended to improve recruitment of wild fish to the reservoir fishery by reducing harvest and catch-and-release mortality of adult fish and angler redd trampling mortality of embryos. That approach is also intended to improve wild brown trout abundances in the reservoir. Relative performance and contribution of different rainbow strains, hatchery practices, and stocking timings and methods will be evaluated to increase survival of stocked fish and improve overall abundance of rainbow trout. Stocking approaches will be assessed by comparing proportion of wild versus hatchery fish within a year and overall abundance among years. Emphasis will be placed on strains and techniques that support high densities of rainbow trout (15 fish per net) and maintain good angler catch rates under standard Central District regulations.

Upper Ruby River Habitat Restoration

FWP will partner with private landowners, the Ruby Valley Conservation District, and other organizations to improve riparian health, floodplain connectivity, and instream habitat in the upper reaches of the Ruby River. A combination of physiographic setting and past land use have resulted in degraded aquatic habitat. The upper Ruby River valley is susceptible to erosion and mass wasting and eradication of beaver, past agricultural practices, and extensive streambank armoring have resulted in channel simplification and incision, floodplain disconnection, erosion and high sediment input, and degraded riparian and aquatic health. Reaches with poor habitat quality have low trout abundances; thus, improving aquatic habitat and riparian health, restoring floodplain connectivity, expanding beaver occupancy, and reducing sedimentation are the primary management needs to improve and maintain this fishery. FWP will partner with local conservation organizations to implement traditional and process-based restoration techniques to improve fish and wildlife populations.

Upper Ruby River Arctic Grayling Conservation

FWP will achieve the Ruby River Arctic Grayling Conservation goal of maintaining or improving genetic and demographic status by supplementing with other grayling populations via RSI introductions if necessary. Grayling were reintroduced to the Ruby River between 1997 and 2008 to re-establish a stable, naturally reproducing population above Ruby Reservoir. The grayling population will be monitored every five years to determine whether loss of genetic diversity necessitates genetic infusion. If genetic or demographic status declines, potential projects to improve population resiliency will also be considered. The overarching approach to grayling conservation follows and is described in more detail in the Upper Missouri River Arctic Grayling Conservation Strategy.

Westslope Cutthroat Trout Conservation

Westslope cutthroat trout conservation will occur as prescribed by the Westslope Cutthroat Trout Conservation Strategy for the Missouri River Headwaters of Southwest Montana. The Ruby River drainage is home to several conservation populations of westslope cutthroat trout, providing

opportunities to conserve this native species in the drainage. Populations exist in Basin, California, Coal, Corral, Cottonwood, Greenhorn, Harris, Idaho, Jack, Mill, Nugget, Peterson, Ramshorn, Robb, and Sweetwater creeks. The short-term goal is to conserve all remaining nonhybridized populations of westslope cutthroat trout. The long-term goal of cutthroat trout conservation in the Ruby drainage is to restore westslope cutthroat trout to 20% of the historically occupied habitats (see Part 1, 1.6.8(1) Westslope Cutthroat Trout and Westslope Cutthroat Trout Conservation Strategy for the Missouri River Headwaters of Southwest Montana).

Priority Drought Waters

The Ruby River drainage and tributary stream reaches that have traditionally been affected by drought restrictions are identified below (Table 2.12-3). Native and non-native trout populations have been affected by high water temperatures and low flows during summer drought historically and will likely continue to be impacted. Classification, criteria, and measurement apply to the entire reach; however, implementation of restrictions may occur in all or parts of individual reaches depending on temperature, flow, and angling pressure at that time.

Table 2.12-3: Designated "hoot owl" reaches where drought related fishing restrictions and closures due to fishing pressure, high water temperatures, and/or low flows are expected to be implemented. Drought related restrictions and closures may also be placed on waters not listed here or in shorter reaches within the boundaries listed below.

Waterbody	Reach	Classification	Criteria
Ruby River	Confluence with the Beaverhead River to Duncan District Road crossing (River Mile (RM) 0 to 13.9)	Non-native salmonid sport fishery	• Daily maximum river temperature reaches or exceeds 73°F for three consecutive days or stream flows fall below the 5th percentile of daily mean values for the date. • Measurements relevant for criteria will occur at USGS gage 0602300 Ruby River near Twin Bridges. Temperature measurements will also depend on portable temperature recorders throughout the basin. • Lifting of restrictions may be delayed until adequate flows are present to provide fish cover.

FISHERIES MANAGEMENT DIRECTION FOR RUBY RIVER DRAINAGE

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Ruby River Upstream of Ruby Reservoir	48.2 miles	Arctic grayling (N)	Wild	Conservation	Continue native species conservation to maintain viable, self-sustaining populations.
		Hybridized cutthroat trout, Rainbow trout, Brown trout, Brook trout, Mountain whitefish (N)	Wild	General	Maintain abundances and sizes.
Habitat needs and activities: Improve aquatic habitat and riparian health, restore floodplain connectivity, expand beaver occupancy, and reduce sedimentation with traditional and process-based restoration. Protect and improve spawning habitat for Ruby Reservoir trout.					
Ruby Reservoir	943 acres	Rainbow trout	Hatchery	Put, Grow and Take	Continue to manage stocking and harvest to minimize density dependent reductions in fish growth.
		Brown trout	Wild	General	Maintain abundances and sizes.
Habitat needs and activities: Protect and improve spawning habitat for Ruby Reservoir trout.					
Ruby River Downstream of Ruby Reservoir	45.5 miles	Rainbow trout, Brown trout, Mountain whitefish (N)	Wild	General	Maintain abundances and sizes. Work with water users to optimize flows and temperatures to meet population goals.
Habitat needs and activities: Maintain instream flows in accordance with existing flow management plans. Determine whether changes in reservoir management will improve the quality of the downstream fishery. Implement options to improve instream flows, temperatures, and connectivity. Initiate localized and watershed-scale restoration projects to achieve TMDL compliance on 303d listed streams.					
Ruby River Tributaries	230 miles	Hybridized cutthroat trout, Rainbow trout, Brown trout, Brook trout, Mountain whitefish (N)	Wild	General	Maintain present abundances and sizes. Consider increasing harvest to reduce abundances if necessary to maintain fish growth and in some instances, ensure non-native species are not limiting the viability of westslope cutthroat trout populations.
Habitat needs and activities: Initiate localized and watershed-scale restoration projects to achieve TMDL compliance on 303d listed streams. Develop and implement options to improve instream flows, temperatures, and connectivity to the mainstem Ruby River.					

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Mountain Lakes	19 lakes and 65 acres	Westslope cutthroat trout, Hybridized cutthroat trout, Yellowstone cutthroat trout, Rainbow trout, Brook trout	Wild/ Hatchery	Put and Take/Wild	Maintain abundances and sizes. Consider increasing harvest or modifying stocking to reduce abundances if necessary to maintain fish growth. See Dillon Area Mountain Lakes Guide.
Westslope Cutthroat Trout Conservation Tributaries Basin, California, Coal, Corral, Cottonwood, Greenhorn, Harris, Idaho, Jack, Mill Gulch, Nugget, Petersen, Ramshorn, Robb, Sweetwater creeks	110 miles (currently)	Westslope cutthroat trout	Wild	Conservation	Secure at-risk populations of westslope cutthroat trout in tributary streams through isolation from non-native fish, which may include barrier construction and fish removal. Protect or secure conservation populations in 20% of their historically occupied tributaries within the Ruby River watershed (161 miles). Utilize existing populations of nonhybridized fish to repopulate future projects. See Westslope Cutthroat Trout Conservation Strategy for the Missouri River Headwaters of Southwest Montana.
Habitat needs and activities: Repopulation of Ramshorn Creek using indigenous Ruby River westslope cutthroat trout. Protection of 12 at-risk populations.					