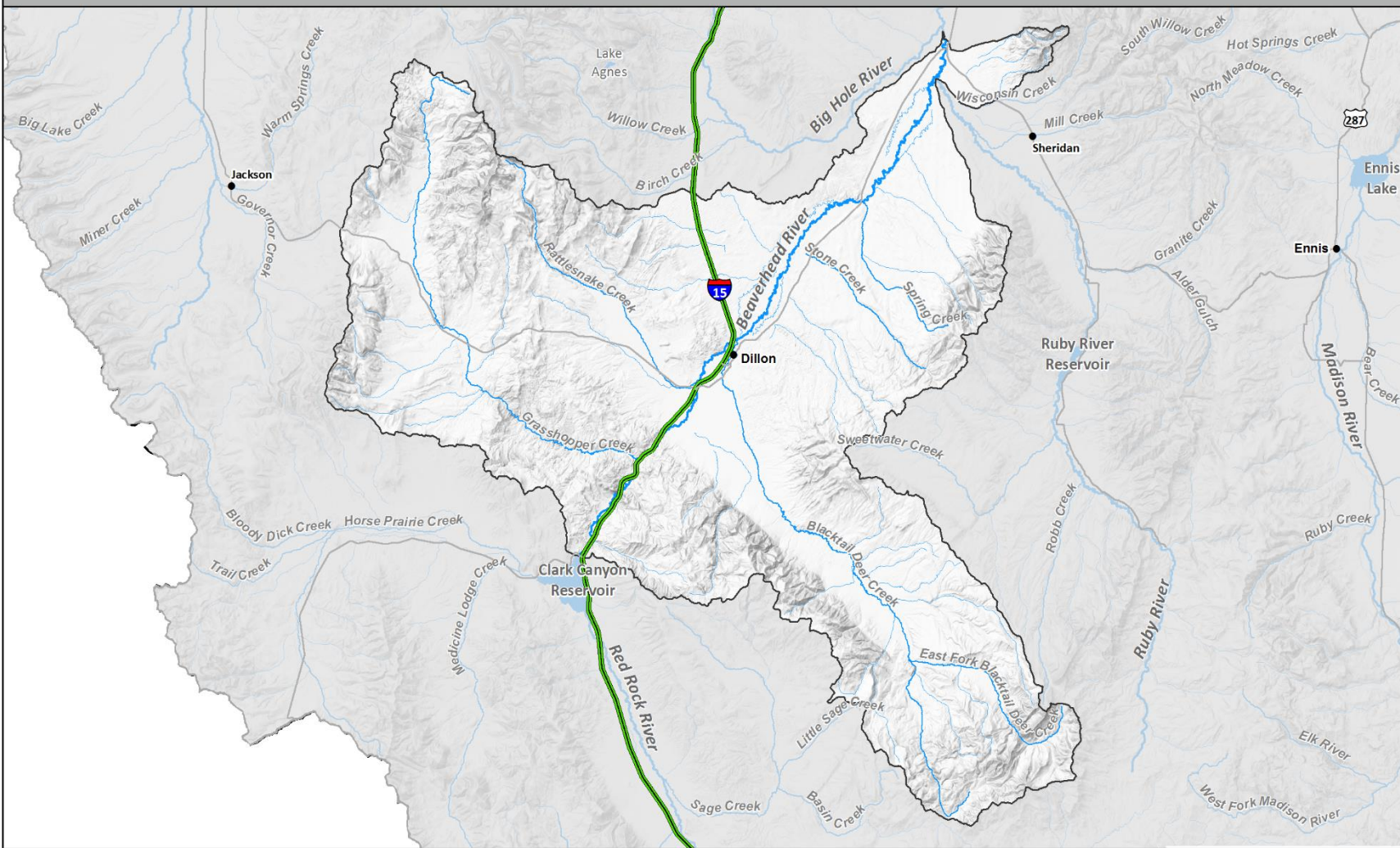


Beaverhead River Drainage

MONTANA FWP



 Drainage Boundary



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

Beaverhead River Drainage

Physical Description

The Beaverhead River originates at the outlet of Clark Canyon Reservoir, an irrigation storage facility constructed by the U.S. Bureau of Reclamation (BOR) in 1964 and flows 80 miles before joining the Big Hole River to form the Jefferson River. Directly downstream from Clark Canyon Dam, the Beaverhead River tailwater extends 16 miles through a canyon, before meeting its largest irrigation diversion, the East Bench Irrigation Project, at Barretts Diversion Dam. Downstream the lower Beaverhead River is heavily used for irrigation as it flows through the broad, open Beaverhead Valley. The river drains an area of about 5,000 square miles. A large portion of the drainage consists of rugged mountains ranging from 9,000 to 11,000 feet in elevation. The river elevation at the dam outlet is 5,450 feet, and at the mouth is 4,600 feet. Major tributaries in downstream progression are Grasshopper Creek, Rattlesnake Creek, Poindexter Slough, Blacktail Deer Creek, and the Ruby River. Most streams and reservoirs in the Beaverhead River watershed are intensively managed for irrigated agriculture.

Fisheries Management

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

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 that strategy to succeed, and the predicted changes in streamflow and water temperatures are high priorities for fisheries management in this drainage. The [BOR's Drought Management Plan and Winter Release Guidelines](#) dictate instream flows in the Beaverhead River. FWP partners with BOR and irrigators to release periodic flushing flows to maintain and improve habitats in the Beaverhead River and Poindexter Slough. Over 50 stream permits (310 and 124) are issued annually by the Beaverhead and Ruby Valley conservation districts or FWP to minimize impacts of proposed manipulations to the bed or banks of streams. The [Beaverhead Watershed Committee's Drought Resiliency Plan](#) and [Watershed Restoration Plan](#) focus on alleviating habitat degradation or pollution issues through on the ground projects and improved land use practices are critical in managing fish habitat.

The Beaverhead River basin contains fish species common to southwestern Montana, including rainbow trout, brown trout, brook trout, westslope cutthroat trout (primarily in isolated tributaries), hybrid cutthroat trout, mountain whitefish, burbot, common carp, longnose dace, longnose sucker, Rocky Mountain sculpin, and white sucker. All rivers and streams and most lakes or reservoirs support wild fisheries, although several lakes and reservoirs are dependent on stocked trout to maintain fisheries.

The Beaverhead River will be managed to maximize densities of wild trophy rainbow and brown trout in the tailwater and as a recreational wild brown trout and mountain whitefish fishery in lower reaches. Beaverhead River tailwater (Clark Canyon Dam to Barrett's diversion) brown trout densities average

about 1,500 fish per mile and typically range between 550 and 2,500 fish per mile, with about 20% being over 18 inches. Rainbow trout densities average about 600 fish per mile and typically range from 300 to 1,000 fish per mile with about 35% being over 18 inches. Primary drivers of the trout population and size structure in the tailwater include overwinter flows, stochastic sediment input from Clark Canyon Creek, and trout density. Limnological issues, such as summertime destabilization of Clark Canyon Reservoir also influences the fishery. In the lower Beaverhead River, brown trout densities average about 900 fish per mile and typically range from 450 to 1,400 fish per mile. Primary population drivers in the lower river are summertime instream flows and temperatures, with sediment and nutrient inputs likely serving as secondary drivers. Beaverhead River angling regulations will be adaptively managed in both reaches in response to population densities. Partnering with BOR and water users to deliver varied flow regimes for channel maintenance and fish habitat needs is a primary management strategy. Seasonal closures to reduce angling-related mortality during low flows and high temperatures are common on the lower Beaverhead River and will be implemented as described by FWP policy (see Priority Drought Waters below). Angling pressure is high on the Beaverhead River, with most use occurring in the tailwater. Angling effort has varied from 14,574 angler days in 2001 to 48,601 angler days in 2013 but has generally increased through time; average angler use between 1982 and 2001 was about 24,000 angler days and between 2001 and 2020 was about 33,000 angler days. Over half of the angler days on the Beaverhead River are from nonresident anglers. Angler use of the Beaverhead River results in over \$21,000,000 of direct expenditures. Given the popularity of the Beaverhead River, angling is managed with social rules (regulations) to minimize crowding issues by prohibiting angling by nonresident anglers and outfitters during particular times of the year and in specific sections. The relative role of angler harvest, catch-and-release morality, and natural morality on trout populations in the upper and lower Beaverhead 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 Beaverhead River are Poindexter Slough, Grasshopper Creek, and Blacktail Creek. Poindexter Slough is a unique, valley bottom publicly accessible distributary channel of the Beaverhead River that is influenced by spring-like groundwater inputs. Brown trout abundances average about 1,300 fish per mile. To improve abundances of trout over 18 inches, large-scale restoration occurred in 2016 and pulsed maintenance flows are delivered during high water years to maintain instream habitats. Blacktail and Grasshopper creeks support brown trout fisheries in their lower reaches and primarily brook trout and rainbow trout fisheries in upper reaches, although public access is limited. Most other tributaries and small streams in the Beaverhead drainage support brook trout and cutthroat trout. Sixteen streams with westslope cutthroat trout populations that are less than 10% hybridized will be managed to reduce non-native trout. The long-term westslope cutthroat trout conservation goal of restoring 20% of historical tributary distribution will eventually require some additional streams be designated for native fish management. This 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. Fourteen mountain lakes exist in the [Beaverhead Drainage's East Pioneer Mountains](#). Most of these 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 or Arctic grayling 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 Beaverhead River is confined to a single channel throughout much of its length. Mean channel widths range from about 83 feet near the dam to about 93 feet near the mouth. The gradient is gentle, averaging 12 feet per mile. Willow is the dominant riparian vegetation. In the tailwater, the streambed consists primarily of cobble, gravel and sand with silt also being a common component of the streambed in the lower river. Fish cover primarily consists of submerged and overhanging bank vegetation, undercut banks, and long, deep pools.

Clark Canyon Reservoir and irrigation diversions drive the flow pattern of the Beaverhead River. In general, reservoir management has resulted in higher flows in the lower river during the historically low flow months of September to December; however, much of the lower 64 miles suffer from summertime dewatering and withdrawals of irrigation water have virtually eliminated high flows. During drought, the upper river is severely affected by low flow releases during the winter non-irrigation season when water is being stored for the following year. BOR's [Drought Management Plan and Winter Release Guidelines](#) are the primary planning documents that dictate Beaverhead River flows.

Sediment input is the primary factor limiting the quality of physical fish habitat in Beaverhead River and its tributaries. The Beaverhead River and many of its tributaries are total maximum daily load (TMDL)-listed by Montana Department of Environmental Quality (DEQ) because of un-naturally high sediment loads. High sediment loads on the Beaverhead River and Poindexter Slough are managed by working with irrigators and BOR to release flushing flows out of Clark Canyon Dam. In some instances, active restoration will be pursued to reduce sediment inputs by revegetating streambanks or resizing channel dimensions to effectively transport fine sediments. Work with conservation districts, watershed groups, state and federal land management agencies, and private landowners to implement best management practices to reduce drainage-wide non-point sources of sediment input are ongoing.

Special Management Issues

Beaverhead River Adaptive Trout Management

Beaverhead River angling regulations will be adaptively managed in the tailwater and lower reaches in response to the biology and trout abundances. The objective of this strategy is to maintain healthy, well-balanced trout populations comprised of sustainable abundances 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 mortality caused by unsustainably high abundances of age-2 and -3 fish. Catch-and-release regulations will be recommended for rainbow trout because of their limited distribution near Clark Canyon Dam, near historically low abundances the past five years, and a population skewed towards old, large fish that has lower than normal recruitment. Recommended brown trout regulations 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). High densities of pre-spawn age brown trout have a statistically significant negative effect on the survival of post-spawn brown trout and rainbow

trout. When brown trout abundances are within their optimal range between the 25th and 75th percentiles at the start of a biennial cycle, the department will recommend a standard Central District limit of five trout daily and in possession (Table 2.13-1). 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 trout (Table 2.13-1). If abundances fall below the 5th percentile, recommended brown trout regulations would be catch-and-release only and an angling closure from October 1 to April 1 to protect spawning trout and embryos in redds from trampling (Table 2.13-1). 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 to its 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 2.13-1). If brown trout abundances are above the 95th percentile, recommended daily and possession limits would be increased to 10 fish (Table 2.13-1).

Table 2.13-1: Recommended harvest limits based on population trends for the Beaverhead 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 Oct 1 to Apr 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, and communicated through press releases.

The tailwater reach of the Beaverhead River will be adaptively managed for about 1,600 brown trout per mile and 600 rainbow trout per mile with a significant trophy component for both species and include a section with a standard spawning season closure. The Beaverhead River tailwater is the 16 miles between Clark Canyon Dam and Barretts Diversion. Optimal brown trout densities range from 950 to 1,950 fish per mile (Figure 2.13-1); population assessments indicate a trophy component with 20% of fish over 18 inches can be maintained under most flow regimes within this range of abundances. If brown trout are maintained within these ranges, then rainbow trout populations of about 600 fish per mile with 35% being over 18 inches can also be maintained under most flow regimes; however, higher

abundances of brown trout less than 18 inches negatively affect rainbow trout abundance. Angling regulations will be recommended as described above based on annual assessment of brown trout abundances in FWP's Hildreth trend section near High Bridge Fishing Access Site (FAS) and corroborated by biennial monitoring in a trend section near Pipe Organ Bridge. The tailwater section between Clark Canyon Dam and Pipe Organ Bridge is recommended to be closed to angling from October 1 until the third Saturday in May regardless of trout abundances to protect spawning brown trout and rainbow trout and their embryos from angler trampling during this vulnerable period. Overwinter releases typically decrease from 600 to 800 cfs during the irrigation season to as low as 25 cfs on about October 1, making highly concentrated brown and rainbow trout vulnerable to stress-induced mortality. Brown trout in the Beaverhead River begin spawning in late October and rainbow trout in late March, with eggs in the gravel and susceptible to trampling until the third Saturday in May. The 8-mile reach directly below the dam supports between 200 and 500 trout redds per mile while the remaining eight miles of the Beaverhead River tailwater has between 0 and 100 redds per mile.

Hildreth Brown Trout

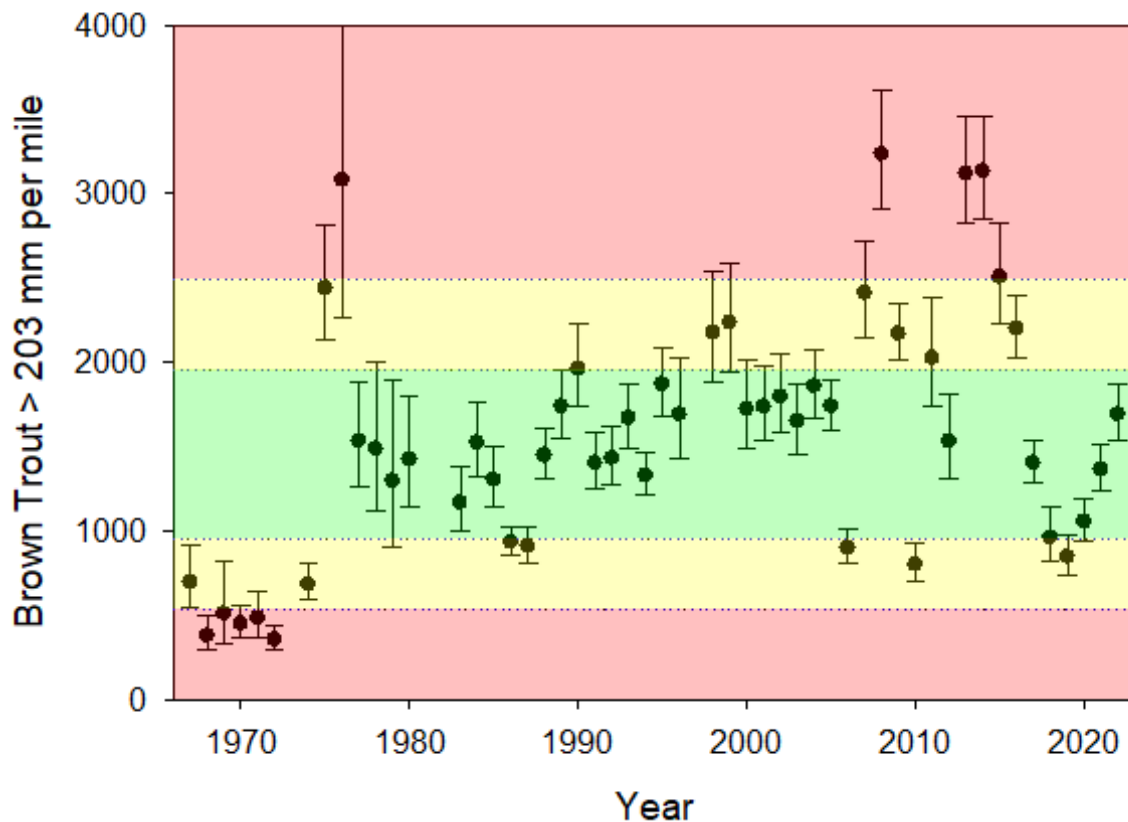


Figure 2.13-1. Brown trout management triggers for the Beaverhead River tailwater in the Hildreth study section. Black dots are point estimates of number of brown trout per mile and whiskers are 95% confidence intervals. Optimal densities (25th to 75th percentiles) are shown in green, the 5th to 25th and

75th to 95th percentiles are shown in yellow, and below the 5th and above the 95th percentile shown in red.

The lower Beaverhead River from Barretts Diversion to the confluence with the Big Hole River, about 66 river miles, will be adaptively managed for about 900 brown trout per mile in the Fish & Game trend section. That section will be managed for opportunity in a unique, relatively low-pressure brown trout fishery. Optimal brown trout densities range from 650 to 1,300 fish per mile (Figure 2.13-2). Angling regulations will be recommended as described above based on annual assessment of brown trout abundances in the Fish & Game trend section near Poindexter Slough FAS and corroborated by biennial monitoring in a trend section near Anderson Lane.

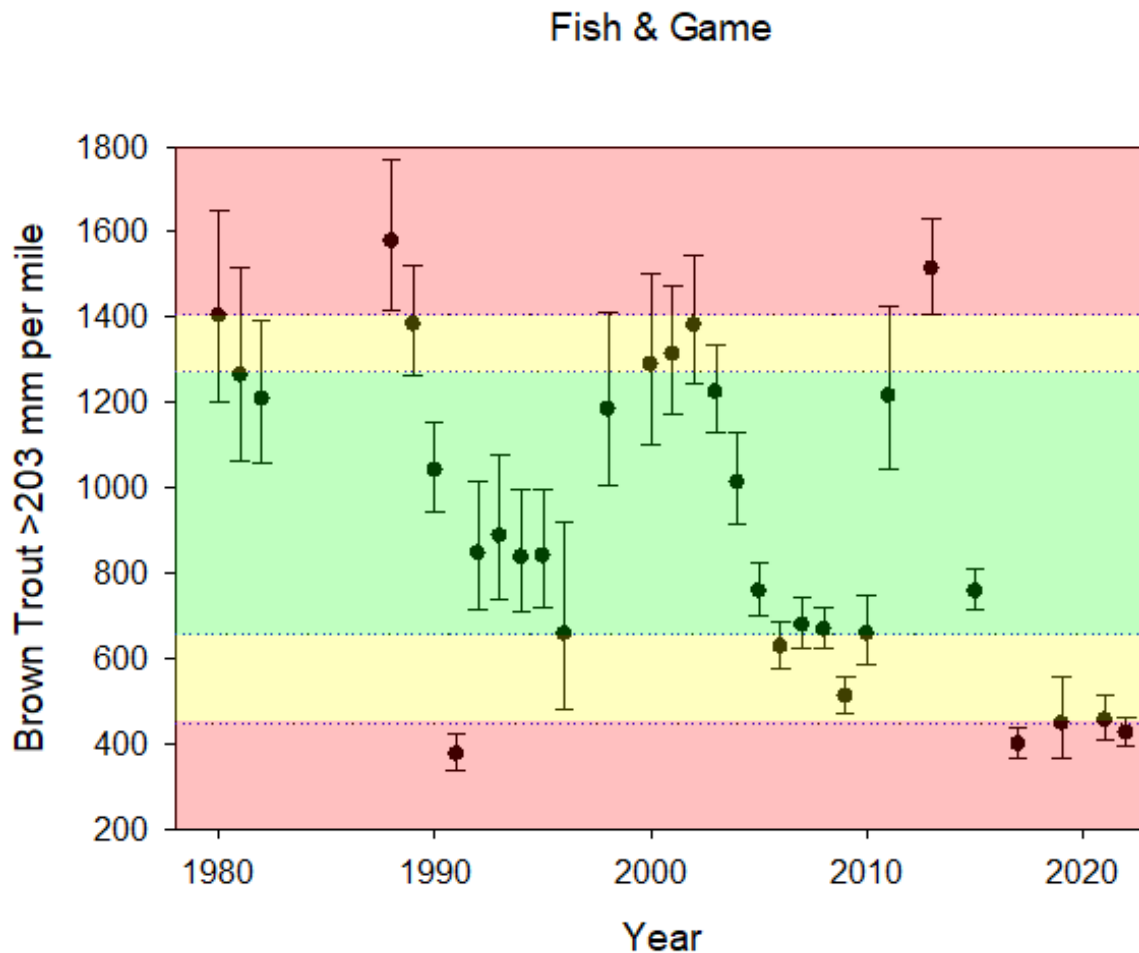


Figure 2.13-2. Brown trout management triggers for the lower Beaverhead River in the Fish & Game study section. Black dots are point estimates of number of brown trout per mile and whiskers are 95% confidence intervals. Optimal densities (25th to 75th percentiles) are shown in green, the 5th to 25th 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 the fish

population. Management strategies proposed here 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 Beaverhead River.

Beaverhead River Overwinter Flows and Drought Management

FWP will identify and pursue alternatives to reduce chronic dewatering. The primary driver of the Beaverhead River tailwater trout population, particularly during discrete periods of drought, is overwinter releases from Clark Canyon Reservoir. Although FWP has a year-round instream flow reservation of 200 cfs, BOR's [Drought Management Plan and Winter Release Guidelines](#) dictate instream flows in the Beaverhead River. In years when combined storage and inflow triggers are below 160,000 acre-feet, overwinter flows are incrementally reduced based on trigger level to a minimum of 25 cfs. In the past 20 years, overwinter releases have been 200 cfs or higher in 2 years and were 50 cfs or less in 15 years. Irrigation allotments are similarly reduced during periods of drought; however, summertime irrigation season releases are commonly between 300 and 800 cfs and generally provide sufficient flows and habitat in the Beaverhead River tailwater. FWP research indicates that overwinter flows of 100 cfs will result in attainment of the tailwater fisheries goals if the brown trout population is within its management objective. Resultantly, FWP will actively pursue opportunities to provide as many consecutive years of overwinter releases of at least 100 cfs as possible. Options may include reducing overwinter releases during good water years to provide better flows in future drought years or storing water in Clark Canyon Reservoir's regulatory flood pool within or among years. In the lower Beaverhead River, dewatering during irrigation season is common and angling closures are regularly implemented to protect the trout population. FWP will pursue opportunities to improve summertime flows in the lower river such as developing drought management plan with section-specific minimum instream flows that are biologically meaningful and provide better trout habitat and survival. 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.

Beaverhead River Pulsed Flows

FWP will work with reservoir operators and water users to provide varied flow regimes for channel maintenance and fish habitat needs. Clark Canyon Dam and its management result in altered flows and sediment regimes, asynchrony with the natural runoff period in the watershed, and degraded habitat in the Beaverhead River. When tributary runoff carries large sediment loads into the Beaverhead River at times when outflows are reduced to provide reservoir storage, the capacity of the river to transport and store sediment is exceeded resulting in deposition in main channel riffles and pools, which can disconnect or fill side channels. These sediment events can also result in extensive deposition of fine sediments over several miles of the Beaverhead River and cause immediate and severe declines in trout abundances; reductions of about 800 fish per mile and up to 50% of trout greater than 18 inches have been statistically linked to acute sediment events. The magnitude and duration of the flow regime required to effectively mobilize sediment and maintain Beaverhead River habitats was quantified and

integrated into a Flushing Flow Plan that would cumulatively consume 2,100 to 4,200 acre-feet of water from Clark Canyon Reservoir. During or immediately following sediment events, dam releases would rapidly increase to 600 cfs for 8 to 24 hours, reduced to 500 cfs for 7 hours, reduced to 400 cfs for 8 hours, and reduced as needed over at least 9 hours to return to baseflow conditions. Beginning in 2014, FWP, BOR, and water users have entered into agreements to discount overwinter releases by 5 to 10 cfs to provide the 2,100 to 4,200 acre-feet of water that could be used for sediment flushing and maintenance flows. Those flushing flows have successfully mobilized and prevented additional sediment deposition during acute sediment events and induced scour, mobilized and sorted gravels, and reduced embeddedness in the upper 22 miles of the Beaverhead River. Because flushing flows are a viable management strategy to improve the environmental health of the Beaverhead River tailwater, future flushing flows will be pursued, when possible, for general channel maintenance, with emphasis placed on storage of water to mitigate acute sediment events.

Clark Canyon Reservoir Limnology

Turbid water flowing out of Clark Canyon Dam affects angler use of the Beaverhead River and the condition of its trout population. During mid to late summer of 2016 to 2018, tailwater releases exhibited high turbidity. Research indicated development and movement of turbidity plumes was related to the severity of wind events, but reservoir stratification and water level determined whether they impact downstream water clarity. When the reservoir has strong stratification, turbidity plumes may exist above the thermocline and never be entrained in the outflow. However, when the reservoir is mixed deeply, turbidity plumes can occur along the bottom and be exported through the outlet of the reservoir. Those events result in the loss of angling opportunity and several million dollars each year due to decreased recreation use. Although immediate, acute effects to trout mortality or abundance were not documented, declines in body condition, which can affect survival, were observed. Infrastructural changes, such as creating outlets that can draw water from multiple elevations, may allow for clear water above turbid plumes to be withdrawn when the reservoir is mixed. Operational changes, such as increased storage in the reservoir, may also prevent mid-summer destratification and turbid plumes. FWP will actively engage with BOR, water users, and working groups to pursue management options that reduce the likelihood of future turbidity events in the Beaverhead River, which may include balancing the effects of low overwinter releases and storing water to reduce the potential of reservoir destratification.

Poindexter Slough Habitat and Fish Management

Poindexter Slough will be managed as a high quality, inclusive family fishery by maximizing opportunity with standard Central District angling regulations and flushing flows to maintain habitat. Poindexter Slough is a 5-mile valley bottom channel of the Beaverhead River fed by a combination of groundwater and flows from the Beaverhead River. The lower 3 miles are on an FWP fishing access site and provide one of the few publicly accessible spring creek angling experiences in southwest Montana. Beginning in 2016, the Beaverhead Watershed Committee, in partnership with FWP, local landowners, and businesses completed extensive restoration to benefit the Dillon community. Channel dimensions were improved over most of the slough to better convey fine sediments and create deeper pools to maintain high proportions of large fish over 18 inches. Headgates and other infrastructure were replaced at the

Poindexter Slough inlet on the Beaverhead River and at the Dillon Canal to facilitate habitat maintenance flows and maintain or improve irrigation efficiency. The project resulted in brown trout abundances of over 1,000 fish per mile with the highest proportion of fish over 18 inches (14%) in the past 55 years. To maintain high quality habitats, 150 to 200 cfs will be opportunistically routed through Poindexter Slough for 7 to 10 days when adequate flows are available outside of the irrigation season. A formal plan and agreement are in place that describe habitat management flows and roles in their delivery. Because this project was completed by local groups and business specifically to create a high-quality family fishery for the Dillon community it will be managed under standard Central District regulations to maximize opportunity and use.

Grasshopper Creek Sediment Reduction

FWP will partner with the Beaverhead Conservation District and other groups to reduce sediment inputs from Grasshopper Creek to the Beaverhead River. Grasshopper Creek is one of the largest tributaries to the Beaverhead River and is TMDL listed by DEQ for sediments and metals. During intense storm events, Grasshopper Creek contributes considerable sediments to the Beaverhead River, which degrades habitat and reduces trout abundances. Sediment assessments indicate that a combination of mining reclamation, riparian improvement, streambank revegetation and restoration, upland treatments, and changes to land use practices are required over a relatively large area to reduce sediment inputs. The Beaverhead Conservation District's Watershed Committee has prioritized sediment reduction in Grasshopper Creek and FWP will partner with them to develop and implement projects that reduce fine sediments and improve the Beaverhead River fishery.

Blacktail Deer Creek Habitat Restoration

FWP will partner with other organizations to improve riparian health and instream habitats in the upper reaches of Blacktail Deer Creek. Blacktail Deer Creek and its tributaries support robust populations of brook trout, rainbow trout, and hybrid cutthroat trout in its upper reaches. Blacktail Deer Creek has the most high-elevation, north-facing acres of any Beaverhead drainage tributary, which provide relatively good instream flows, cool temperatures, and resiliency to climate change. Landownership is primarily the FWP Blacktail Wildlife Management Area. Although high quality riparian and instream habitats exist in some reaches, others are limited by past land use, channelization, and introduction of non-native pasture grasses. Reaches with poor habitat quality have low trout abundances. FWP will partner with local conservation organizations to improve riparian health, floodplain connectivity, beaver occupancy, and instream habitat with process-based restoration techniques to improve fish and wildlife populations.

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 Beaverhead 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 Alkali, Brays Canyon, Buffalo, Cat, Cottonwood, Dyce, Farlin, French, Jake Canyon, Pole, Reservoir, Rock, Stone, Taylor, Teddy,

and White 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 Beaverhead drainage is to restore westslope cutthroat trout to 20% of their historically occupied tributary habitats (see Part 1, 1.6.8(1) Westslope Cutthroat Trout for details).

Sawtooth Lake Brook Trout Management:

Introduction of sterile predatory fish will attempt to improve the brook trout fishery. Sawtooth Lake is a 20-acre mountain lake that sits at 8,594 feet in the Grasshopper Creek Drainage. It was managed as a golden trout fishery until the early 2000s when they were replaced by stunted (6- to 9-inch) brook trout. Tiger muskie will be experimentally stocked at low densities (40 to 80 fish every 3 to 5 years), in an attempt to improve the size and condition of brook trout. Tiger muskie will be catch-and-release for fish under 40-inches. Brook trout size structure and condition will be assessed prior to stocking tiger muskie and at 3-year intervals thereafter. That approach improved brook trout size and condition and created a unique angling opportunity for tiger muskie in a 9-acre mountain lake at similar elevation in Idaho.

Priority Drought Waters

The Beaverhead River drainage and tributary stream reaches that have traditionally been affected by drought restrictions are identified below (Table 2.13-2). 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 2.13-2: 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
Beaverhead River	Confluence with the Big Hole River to Hwy 91 S (RM 0 to 53.7)	Non-native salmonid sport fishery	<ul style="list-style-type: none"> • Daily maximum river temperature reaches or exceeds 73°F for 3 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 06023100 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 THE BEAVERHEAD RIVER DRAINAGE

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Beaverhead River	82 miles	Brown trout, Rainbow trout	Wild	Quality	Actively manage harvest, flows, and habitat to attain brown trout populations of 1,600 fish per mile with 20% over 18-inches and rainbow trout populations of 600 fish per mile with 35% of fish over 18-inches in the tailwater section (Clark Canyon Dam to Barretts Diversion) and between 650 and 1,300 brown trout per mile in lower reaches (Barretts Diversion to mouth).
		Mountain whitefish (N)	Wild	General	Manage harvest to support viable populations.
Habitat needs and activities: Implement adaptive management regulations. Develop an instream flow plan that optimizes fisheries benefits and irrigation needs to secure, 1) improved winter flows upstream of Barretts Diversion and, 2) improved summer flows downstream of Barretts Diversion. Release flushing flows to convey fine sediments and reduce or eliminate the effects of sediment delivery from tributaries. Alleviate limnological issues in Clark Canyon Reservoir that affect river turbidity. Provide connectivity and high-quality tributary habitat and reduce Grasshopper Creek sediment input.					
Beaverhead River drainage tributaries	410 miles	Hybridized cutthroat trout, Rainbow trout, Brown trout, Brook trout, Mountain whitefish (N)	Wild	General	Maintain abundances and sizes. Modify as necessary to ensure they are not limiting the viability of westslope cutthroat trout populations.
Habitat needs and activities: Initiate localized and watershed-scale restoration projects to improve habitat or achieve TMDL compliance on 303d listed streams. Develop instream flow, habitat, and connectivity improvement projects and plans in areas of need.					
Poindexter Slough	5 miles	Brown trout, Rainbow trout, Mountain whitefish (N)	Wild	General	Maintain abundances and sizes. Manage under standard regulations to maximize opportunity.
Habitat needs and activities: Execute flow management plan that optimizes fisheries benefits and irrigation needs to, 1) maintain minimum instream flows during summer, 2) release periodic flushing flows to convey fine sediment through the system and, 3) maximize reliance on accreted flows to enhance the spring creek character of Poindexter Slough to the extent possible.					
Mountain Lakes	12 lakes, 135 acres	Westslope cutthroat trout, Hybridized cutthroat trout,	Wild/ Hatchery	Put-and-Take/ General	Manage stocking and harvest to maintain fish sizes and abundances. Experimentally introduce predatory fish to improve wild trout fisheries.

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
		Yellowstone cutthroat trout, Rainbow trout, Brook trout			
<p>Westslope Cutthroat Trout Conservation tributaries</p> <p>Alkali, Brays Canyon, Buffalo, Cat, Cottonwood, Dyce, Farlin, French, Jake Canyon, Pole, Reservoir, Rock, Stone, Taylor, Teddy, and White creeks.</p>	83 miles	Westslope cutthroat trout	Wild	Conservation	<p>Secure at-risk populations of westslope cutthroat trout in tributary streams through isolation from non-native fish. That may include barrier construction and fish removal. Protect or secure conservation populations in 20% of their historically occupied tributaries within the Beaverhead River watershed (151 miles). Utilize existing populations of unaltered fish to repopulate future projects. See Westslope Cutthroat Trout Conservation Strategy for the Missouri River Headwaters of Southwest Montana.</p>