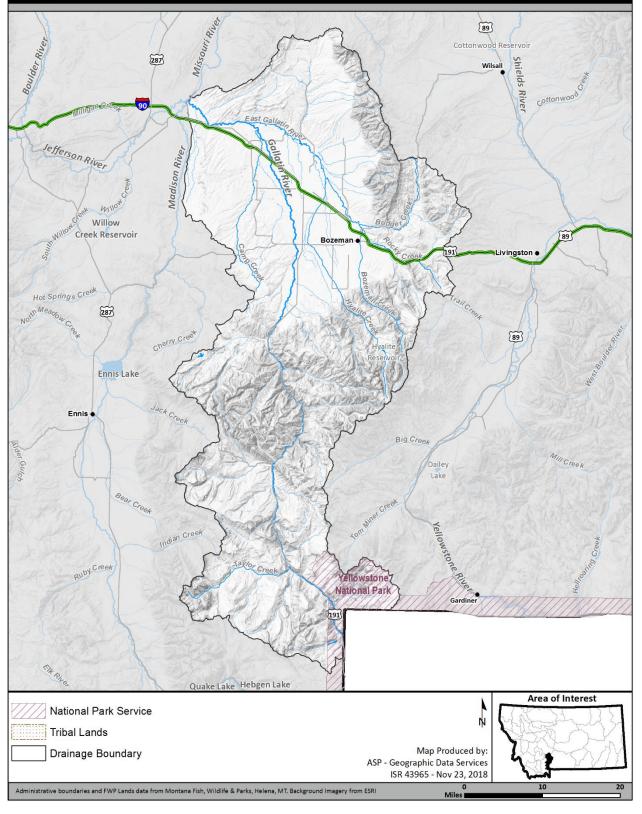
# Gallatin River Drainage

# MONTANA FWP



# **Gallatin River Drainage**

### **Physical Description**

The free-flowing Gallatin River originates at Gallatin Lake in Yellowstone National Park at an elevation of 8,834 feet. From the Park boundary, the river flows about 44 miles through the narrow Gallatin Canyon before entering the broad Gallatin Valley, where it flows 45 miles to its confluence with the Madison and Jefferson rivers to form the Missouri River. Much of the 115-mile Gallatin River is classified as a blue-ribbon trout stream because of its high recreational fishery and aesthetic values. Many factors contribute to the popularity of the Gallatin River with anglers and other recreationists. Much of the river is surrounded by public lands, making it readily accessible to recreationists pursuing the abundant rainbow and brown trout that reside in the Gallatin River.

#### **Fisheries Management**

Flowing waters in the Gallatin River drainage that support trout populations are managed as wild trout fisheries, emphasizing habitat protection and natural reproduction. Tributaries and their connectivity to the Gallatin River are critical for supporting natural reproduction, providing rearing habitats for juvenile trout, and delivering cool summer streamflow. Management of tributary connectivity for non-native rainbow and brown trout recruitment is balanced with occasional tributary isolation from the mainstem river to promote native fish conservation efforts. The current wild trout management strategy replaced previous hatchery-based management of trout nearly 50 years ago. Maintenance of high-quality habitats for all life stages is needed for the strategy to succeed.

The Gallatin drainage is home to a variety of native fish species including westslope cutthroat trout, mountain whitefish, longnose dace, Rocky Mountain sculpin, longnose sucker, mountain sucker, and white sucker. Non-native trout such as rainbow trout, brown trout, brook trout, and Yellowstone cutthroat trout are common throughout the drainage. Warmwater species such as largemouth bass, smallmouth bass, yellow perch, and bluegill have also been illegally introduced to many of the ponds surrounding Bozeman.

The Gallatin River is managed to maximize densities of wild rainbow and brown trout that will support harvest under Central District standard limits and seasons for all anglers. Fishing from boats will continue to be prohibited from Yellowstone National Park to the East Gallatin River. To support wintering wildlife on the surrounding Gallatin Wildlife Management Area (WMA), the Gallatin River will be closed to angling from December 1 to the third Saturday in May from the Porcupine Creek Road to the confluence with the West Fork of the Gallatin River. Angling use on the Gallatin River has increased from 69,254 angler-days in 2001 to 93,365 angler-days in 2009, and about 125,000 angler-days in 2019. During the same period, angler use of the East Gallatin River has ranged from 5,512 angler-days in 2007 to 11,679 angler-days in 2005, and about 16,000 angler-days in 2019. Angler use of Hyalite Reservoir has increased from 8,517 angler-days in 2001 to almost 12,000 angler-days in 2019. Specific management goals for trout abundances and size structures will be established for the long-term sampling sections in the Gallatin rivers once at least three consecutive years of data have been collected.

Tributaries and small streams are managed as recreational, wild non-native trout fisheries, or to sustain wild conservation populations of westslope cutthroat trout. Many of the tributaries to the upper

Gallatin River provide valued angling opportunities for a variety of trout including rainbow trout, cutthroat trout hybrids, and brook trout. Eleven 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 distributions will eventually require some additional streams be designated for native fish management. 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 are managed to provide diverse recreational opportunities. Thirty-nine mountain lakes exist within the Gallatin River drainage that provide exceptional opportunities for a variety of trout. Management of these lakes varies from periodic hatchery stocking to wild self-sustaining fisheries that generally fall under standard Central District fishing regulations.

#### Habitat

The Gallatin River drains an area of 11,000 square miles, all above 4,000 feet. Most of the drainage basin above 5,000 feet is covered with coniferous forest, while the basin below 5,000 feet consists primarily of the Gallatin Valley, one of the richest agricultural regions in Montana. Much of the upper 70 miles of the Gallatin River are surrounded by public lands within Yellowstone National Park and the Gallatin National Forest. This section, except for the uppermost 12 miles, is closely paralleled by US 191, which provides easy access to the river. The increased recreation and development around Big Sky is expected to degrade water quality and quantity in the Gallatin River and the West Fork of the Gallatin River, which could negatively affect the downstream trout fisheries.

The lower 45 miles of river flow primarily through private lands within the Gallatin Valley. Water withdrawal is the primary limiting factor for trout downstream of Gallatin Canyon. Development throughout the valley has also increased sedimentation and water temperatures in many tributaries of the lower Gallatin River. Such conditions are also found in the East Gallatin River Drainage.

## **Special Management Issues**

#### Native Species Conservation

Westslope cutthroat trout conservation will occur as prescribed by the <u>Westslope Cutthroat Trout</u> <u>Conservation Strategy for the Missouri River Headwaters of Southwest Montana</u>. The Gallatin River Drainage supports 11 conservation populations of westslope cutthroat trout providing opportunities to conserve this native species in the drainage. Populations exist in Beehive Basin, Dudley, East Fork Fan, East Fork Specimen, Elkhorn, Leverich, Lightning, North Fork Fan, North Fork Spanish, and Wild Horse creeks as well as the South Fork of the West Fork of the Gallatin River. 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 Gallatin River Drainage is to restore westslope cutthroat trout to about 20% of historically occupied habitats (see Part 1, 1.6.8(1) Westslope Cutthroat Trout). To attain the long-term goal, additional populations of westslope cutthroat trout will need to be reestablished in tributaries of the Gallatin River, which might entail constructed barriers and non-native species removal. Additional sampling and scoping with the public are needed before finalizing future conservation efforts, but Wapiti, Buck, Moose, Swan, and Cache creeks have viable barrier locations that could be used for reintroduction efforts.

The management goal for Arctic grayling in the Gallatin River is to establish two new viable lake populations, including Chiquita Lake, and one new viable stream population of grayling, including Yellowstone National Park.

#### **Rey Creek Habitat Restoration**

Rey Creek, a tributary of the lower Gallatin River near Headwaters State Park, presents one of the best opportunities to improve spawning and rearing habitats in the lower Gallatin River drainage. Reaches with poor habitat quality have low trout abundances and provide limited spawning habitats for fish that reside much of the year in downstream mainstem habitats. The lands surrounding Rey Creek have historically been overgrazed and channelized, which have created unnaturally wide channels, increased fine sediments, and high-water temperatures. FWP will partner with Trout Unlimited, the Montana Department of Natural Resources & Conservation (DNRC), and other local conservation organizations to improve riparian integrity and instream habitats in over 12 miles of Rey Creek and its tributaries. Restoration efforts will focus on working with surrounding landowners and lessees on improving grazing practices, managing livestock access to instream habitats (e.g., fencing, water breaks), and reducing channel widths to improve water quality as well as riparian and instream habitats. Partners will explore the potential to construct a wetland at the confluence of Warm Springs Ditch and Rey Creek on DNRC property to reduce fine sediments and high-water temperatures that are conveyed by the ditch to downstream habitats.

#### East Gallatin River Habitat Improvements

FWP will partner with private landowners, Trout Unlimited, the Gallatin Watershed Council, the Gallatin Conservation District, and other local organizations to improve riparian integrity, floodplain connectivity, and instream habitats in the East Gallatin River. Development in Bozeman and along the river as well as past agricultural practices have degraded riparian and instream habitats of the East Gallatin River. The East Gallatin River supports a sinuous channel with high migration rates that have led to extensive streambank armoring, which has degraded instream and floodplain habitats. FWP will partner with local conservation organizations to implement traditional and process-based restoration techniques to maintain and improve fish and wildlife populations.

#### Hyalite Reservoir Wild Yellowstone Cutthroat Trout Management

Hyalite Reservoir provides Bozeman residents and visitors with a popular recreational fishery for Yellowstone cutthroat trout, which has been supplemented with 5,000 to 30,000 hatchery-reared cutthroat trout a year. However, analyses of gill netting data indicates that stocking efforts have little effect on the cutthroat trout fishery, meaning data shows no correlation between the number of fish stocked and gill net abundances. Mean lengths of Yellowstone cutthroat trout captured in gill nets might actually be negatively affected by stocking efforts. Moreover, a recent otolith microchemistry study revealed that almost 90% of the Yellowstone cutthroat trout analyzed were of wild origins. Therefore, FWP will cease stocking efforts and transition to a wild trout fishery in Hyalite Reservoir. Cost-effective suppression of brook trout may also be explored if angler interviews indicate that Yellowstone cutthroat trout are the preferred species of interest. Recent gill netting efforts indicate rainbow trout and white suckers have been introduced to the reservoir, which might warrant species regulations (e.g., liberal bag limits or mandatory kill and report) or introducing predatory species (e.g., burbot, tiger muskie) to reduce abundances.

#### Bozeman Municipal Water Supply

Hyalite Reservoir and other Gallatin River tributaries south of Bozeman provide municipal water for the City of Bozeman. Expansion of the human population in Bozeman and the surrounding area has caused concern over the ability of existing sources (primarily Hyalite Reservoir) to satisfy municipal demand of water. Possible effects include the development of additional water storage (a new reservoir; potentially in Sourdough Creek) for municipal use. FWP will work with the City of Bozeman and local conservation organizations to improve municipal water use practices and minimize the potential effects of future water development in the Gallatin Valley.

## **Priority Drought Waters**

The Gallatin River drainage and tributary stream reaches that have traditionally been affected by drought restrictions are identified below (Table 2.18-1). Native and non-native trout populations have been affected by high water temperatures and low flow levels during summer drought periods 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 2.18-1: 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
Gallatin River	Mouth to Hwy 84 crossing (River mile (RM) 0 to 32.7)	Non-native salmonid sport fishery	<ul> <li>Daily maximum river temperature reaches or exceeds 73°F for three consecutive days or stream flows fall below the 5<sup>th</sup> percentile of daily mean values for the date.</li> <li>Measurements relevant for criteria will occur at USGS gage 06052500 at Logan. Temperature measurements will also depend on portable temperature recorders throughout the basin.</li> <li>Lifting of restrictions may be delayed until adequate flows are present to provide fish cover.</li> </ul>

East Gallatin River	Confluence with the Gallatin River to the confluence of Bear Creek and Rocky Creek (RM 0 to 42.1)	Non-native salmonid sport fishery	<ul> <li>Daily maximum river temperature reaches or exceeds 73°F for three consecutive days or stream flows fall below the 5<sup>th</sup> percentile of daily mean values for the date.</li> <li>Measurements relevant for criteria will occur at DNRC gage 41H 08900 near Manhattan and from portable temperature recorders throughout the basin.</li> <li>Lifting of angling restrictions may be delayed until adequate flows are present</li> </ul>
			to provide fish cover.

## FISHERIES MANAGEMENT DIRECTION FOR GALLATIN RIVER DRAINAGE

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction	
Gallatin River	41 miles	Rainbow trout,	Wild	General	Maintain abundances and size structures while	
and select		Brown trout,			providing harvest opportunities.	
tributaries –		Mountain whitefish (N)				
Yellowstone						
National Park to						
mouth of						
Gallatin Canyon						
Habitat needs and	activities: Initiat	e localized and watershed-scale	restoration proj	ects to improve habitat or	achieve TMDL compliance on 303d listed	
	eed. Continue m	onitoring efforts in long-term sa		•	tat, and connectivity improvement projects and e used to establish management goals for	
Gallatin River –	45 miles	Rainbow trout,	Wild	General	Maintain abundances and size structures while	
Mouth of	45 miles	Brown trout,	vviiu	General	providing harvest opportunities.	
Gallatin Canyon		Mountain whitefish (N)			providing harvest opportunities.	
to Missouri River		Wouldan whitehsh (N)				
	activities: Devel	on instream flow habitat and co	L onnectivity impr	ovement projects and play	ns focusing attention downstream of Norris Road.	
		•			nagement goals for abundances and size structure	
of trout population	-					
East Gallatin	42 miles	Rainbow trout,	Wild	General	Maintain abundances and size structures while	
<b>River and Spring</b>		Brown trout,			providing harvest opportunities.	
Creek Tributaries		Mountain whitefish (N)				
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. Continue monitoring efforts in long-term						
sampling sections to provide data that can be used to establish management goals for abundances and size structure of trout populations.						
Gallatin River	1,000 miles	Hybridized cutthroat trout,	Wild	General	Maintain abundances and size structures while	
Drainage		Rainbow trout,			providing harvest opportunities. Modify as	
Tributaries		Brown trout,			necessary to ensure non-native species are not	
		Brook trout,			limiting the viability of westslope cutthroat	
		Mountain whitefish (N)			trout populations.	

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Rey Creek	9.2 miles	Rainbow trout, Brown trout	Wild	General	Explore potential for constructed wetlands at ditch returns as method to improve water quality in Rey Creek.
streams. Develop i	instream flow, h I lower Gallatin F	abitat, and connectivity improve	ment projects a	nd plans with emphasis or	r achieve TMDL compliance on 303d listed a tributaries in the Gallatin Valley. Focus attention ions as well as provide improved angling
Mountain Lakes	39 lakes	Westslope cutthroat trout (N), Hybridized cutthroat trout, Yellowstone cutthroat trout, Rainbow trout, Brook trout, Golden trout,	Wild/ Hatchery	Put and Take/General	Manage stocking efforts and harvest to maintain abundances and size structures.
		Arctic grayling (N)	Wild	Conservation	Maintain abundances and genetic variation of existing populations. Establish new population in Chiquita Lake and one additional fishless mountain lake within the Gallatin Drainage.
Albino Lake (aka Meadow Lake)	22 acres	Yellowstone cutthroat trout	Wild	General	Work with the U.S. Forest Service (USFS) and other partners to improve overwinter habitat to help reestablish a viable fishery.
Heather Lake	12 acres	Yellowstone cutthroat trout	Hatchery	General	Increase frequency of stocking to every three years to improve consistency of fishery.
Rat Lake	13 acres	Hybridized cutthroat trout, Yellowstone cutthroat trout	Wild	General	Work with USFS and other partners to improve overwinter habitat in shallow lake to help improve consistency of fishery that experiences

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction	
					periodic winter kills because of low dissolved oxygen.	
Hyalite Reservoir	158 acres	Yellowstone cutthroat trout (N)	Hatchery/ Wild	General	Cease stocking of hatchery-reared fish to begin transition to wild Yellowstone cutthroat trout population.	
		Arctic grayling (N)	Wild	Conservation	Maintain abundance and size structure.	
		Brook trout	Wild	Liberal	Transition to liberal harvest regulations of brook trout to reduce competition with Yellowstone cutthroat trout and Arctic grayling.	
Habitat needs and	activities: Initia	te creel survey to better understa	and angler satisf	action and preferences.		
Westslope Cutthroat Trout Conservation Tributaries	80 miles	Westslope cutthroat trout (N)	Wild	Conservation	Secure at-risk populations of westslope cutthroat trout in tributaries 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 Gallatin River watershed (1,048 miles). Use existing populations of unaltered fish to repopulate future projects. See <i>Native Species</i> <i>Conservation</i> subsection for details about existing populations and potential future reintroductions.	
Habitat needs and activities: Work with USFS and private landowners on grazing regimes to minimize livestock effects on stream habitat. Secure and replicate extant genetically unaltered westslope cutthroat trout population in Wild Horse Creek and create meta-populations of westslope cutthroat trout in accordance with existing conservation plan. Such efforts will involve barrier construction in some streams and removal of non-native species in most circumstances.						
Private/Public Gallatin Valley		Rainbow trout Warmwater species	Hatchery/ Wild	General	Improve existing pond fisheries available to the public. Experimentally introduce predatory fish (e.g., burbot, tiger trout, tiger muskie, brown	

Water	Miles/acres	Species	Recruitment	Management Type	Management Direction
			Source		
ponds with					trout) to help suppress sucker populations and
public access					improve size structures of stunted populations.
Habitat needs and activities: Enhance structure in ponds (e.g., Christmas trees) when possible and as needed. Seek additional opportunities for public access.					