Swan River Drainage

MONTANA FWP



Swan River Drainage

Physical Description

The Swan River drainage includes the Swan River and its tributaries, and major lakes such as Swan Lake, Holland Lake, and Lindbergh Lake and numerous smaller lakes. The Swan River originates from the Mission Mountains Wilderness, flowing out of Gray Wolf Lake, then continuing through Lindbergh Lake. From its headwaters, the river flows north for 52 miles through Missoula and Lake counties before entering Swan Lake. The Swan River then continues north and west into Flathead County and through Bigfork Dam, a 4.1-megawatt hydroelectric facility constructed in 1902, before entering Flathead Lake. The lowest mile of the Swan River flows through a high gradient canyon (Wild Mile) that is popular among whitewater enthusiasts. The Swan watershed includes dramatic mountain peaks in the headwaters and heavily forested slopes and wetlands on the valley floor. Much of the land in the Swan drainage is publicly owned, with large parcels being managed by both the Flathead National Forest and the Swan River State Forest.

There are 72 natural lakes in the drainage totaling 7,125 acres. The Swan drainage is bordered by the Mission Mountains and Mission Mountains Wilderness to the west and the Swan Mountains to the east. Most natural lakes are mountain lakes in the headwaters of many Swan drainage tributaries on both the east and west sides of the watershed. The largest lake is Swan Lake (3,269 acres). Lindbergh Lake (815 acres) and Holland Lake (414 acres) are the other two large, valley bottom lakes and are located at the upstream end of the drainage. Several other valley bottom lakes exist (Van, Peck, Shay, Russ, and Fran lakes) and are popular for recreation and angling opportunities.

Fisheries Management

The Swan River drainage provides diverse fisheries opportunities typical of the northwest portion of Montana. While many opportunities exist for anglers to fish outstanding multi-species waterbodies, the Swan is also home to one of Montana's last strongholds for bull trout, a species listed as threatened under the Endangered Species Act (ESA). The Swan drainage is a perfect example of FWP's dual mission of providing recreational fishing opportunity while conserving our valuable native fish resources.

The Swan River is managed as a wild trout fishery, emphasizing natural reproduction. The basin is also the focus of native fish conservation efforts. The Swan River drainage is home to many native fish species including bull trout, westslope cutthroat trout, mountain whitefish, pygmy whitefish, northern pikeminnow, peamouth, longnose and largescale sucker, and sculpin. Several introduced fish species also inhabit the Swan drainage including brook trout, rainbow trout, lake trout, northern pike, smallmouth bass, kokanee salmon, brook stickleback, central mudminnow, and yellow perch. The fishery of the Swan River itself is largely focused on rainbow trout and westslope cutthroat trout. Regulations for these species protect against overharvest and maintain a viable recreational angling experience. Brook trout are also present in the upper Swan River and make up a portion of the catch when fishing the river. Guided float trips exist on the Swan River, though outfitting is regulated through a permit system administered by the Department of Natural Resources and Conservation (DNRC) and the U.S. Forest Service (USFS). Though the Swan River was once a stronghold for bull trout, intentional angling is not allowed in the river upstream of Swan Lake.

The fishery downstream of Swan Lake is considerably different from the upper river. Warm outflows from Swan Lake limit trout production, though a quality rainbow trout fishery exists during spring months. Prior to entering Flathead Lake, the Swan River is impounded by Bigfork Dam. Trout habitat in the portion of river influenced by this impoundment is minimal, and the fishery is dominated by northern pike. Smallmouth bass were detected in the Bigfork Dam power canal in 2020, and a reproducing population likely exists in this portion of the Swan River. Below Bigfork Dam, the Swan River's gradient increases dramatically and provides recreational opportunity for whitewater enthusiasts. A limited fishery for rainbow and lake trout exists in this reach, though access and wading conditions are difficult.

The Swan drainage was previously home to some of the most robust populations of bull trout in Montana. Adfluvial bull trout populations exist in Swan Lake, Lindbergh Lake, and Holland Lake. The bull trout population in Swan Lake was historically robust enough that when the species was listed as threatened under ESA in 1998, it remained the only waterbody in Montana where anglers could fish for, and keep, bull trout. Angling for bull trout has been limited to catch-and-release in Swan Lake since 2012, and in 2022 the regulation was changed to the western district standard which prohibited anglers from targeting bull trout. Intentionally targeting bull trout in Lindbergh Lake, Holland Lake, and the Swan River and its tributaries is also not allowed. Spawning tributaries Elk, Goat, Lion, and Squeezer creeks are closed on a year-round basis to prevent disturbance of bull trout and unintentional harvest of juvenile bull trout by anglers who mistake them for brook trout.

The Swan drainage contains several valley bottom lakes that provide quality recreational fishing opportunities. Van, Shay, Fran, and Peck lakes are all stocked with rainbow trout and provide anglers with put-grow-and-take fisheries with scenic value and relative solitude, as defined boat ramps do not exist. Although not directly connected to the Swan River, Loon, Horseshoe, and Echo Lakes also contain recreational fisheries for species such as rainbow trout, largemouth bass, smallmouth bass, lake whitefish, and kokanee salmon.

High mountain lakes are predominantly stocked with westslope cutthroat trout, except Heart Lake and Island Lake which are periodically stocked with golden trout. Many of the mountain lakes in the Swan drainage are in high elevation, alpine settings within the Mission Mountains Wilderness or Swan Mountains. Because of the remote nature of these lakes, many are intentionally left fishless, many are not stocked currently, and some were never stocked officially but may have been stocked by sportsmen. Stocking records for the lakes previously planted with fish reveal that undesignated cutthroat trout, which may have been hybridized with rainbow trout or Yellowstone cutthroat trout. Therefore, some lakes may still contain hybridized populations of cutthroat trout, regardless of modern stocking plans. Lakes are stocked at a basic rate of 100 westslope cutthroat trout per acre every 3 years. Stocking density and frequency are adjusted relative to natural reproduction, if any, and fishing pressure. Management is coordinated with wilderness management if needed. A pamphlet titled "Fishing Waters of the Swan Valley" was produced in 2011 and contains all the high mountain and valley bottom lakes that FWP actively manages.

Habitat

The Swan River valley was historically and continues to be a working forest. Much of the land ownership is a combination of national forest and Montana school trust lands, with private lands occurring mostly in the valley bottoms. As is the case with many managed forests, years of timber harvest have left a legacy of roads upon the landscape. However, while historic logging practices may have negatively impacted streams and their associated fisheries, the Swan Valley is fortunate to be at the forefront of progressive land management approaches. In 2000, Plum Creek Timber Company released its <u>Native Fish Habitat Conservation Plan</u> (HCP). This plan allowed for an adaptive management approach to continue to actively manage forest lands, while providing protective measures for threatened fish species such as bull trout. Since then, the DNRC has released its own <u>habitat conservation plan</u> providing for many of the same conservation measures included in the effort by Plum Creek. In addition to these plans, FWP has purchased conservation easements in many bull trout spawning streams. These easements protect the riparian vegetation necessary for bull trout spawning and rearing habitat.

In 2007 The Nature Conservancy and The Trust for Public Land purchased all the Plum Creek Timber Company property in the Swan Valley. This large conservation act became known as the Montana Legacy Project. The purchased timberlands were subsequently transferred to the DNRC and USFS. Important bull and westslope cutthroat trout habitat are included in these lands. Land parcels that were previously checkerboarded with national forest lands were purchased by the USFS. Similarly, former Plum Creek lands in the Swan River State Forest were transferred to the State of Montana. Additionally, FWP has purchased several large conservation easements in bull trout core areas and has placed restrictions on land management to benefit bull and westslope cutthroat trout.

Special Management Issues

Experimental Removal of Lake Trout in Swan Lake

Non-native lake trout represent a significant threat to the Swan Lake bull trout population. From 2009 to 2016 the Swan Valley Bull Trout Working Group, FWP, U.S. Fish & Wildlife Service (USFWS), USFS, Montana State University (MSU), Confederated Salish and Kootenai Tribes (CSKT), DNRC, and Trout Unlimited (TU) initiated an eight-year experimental lake trout removal project. This project was a feasibility study to examine if limited gillnetting effort could reduce lake trout numbers and improve conditions for bull trout and kokanee. The project was monitored annually using predetermined evaluation criteria to examine the efficacy of removal efforts. The methods used in this project were designed to provide consistent data for statistical analyses while maximizing lake trout removal and minimizing bycatch of other fish species.

After eight years of targeted gillnetting, 59,752 lake trout were removed from Swan Lake. Incidental bycatch of other fish species was relatively low. Modeled lake trout exploitation rates suggest that this level of gillnetting effort can create mortality rates near 50% for age 3 and age 4 lake trout, as well as adult lake trout on known spawning areas. However, some age-classes were less vulnerable to the netting and unknown spawning areas likely exist. Indices examining how this level of effort affects the lake trout population showed no significant trend regarding lake trout abundance or relative weight but netting on known spawning areas did appear effective in removing the larger, older individuals. During this same period, bull trout and kokanee experienced initial declines but have since stabilized. However,

data suggest that further declines in bull trout may be possible. A summary of this data and an evaluation of the project can be found <u>here</u>.

A report documenting the history of the lake trout issue in Swan Lake can be found <u>here</u>. The report documents the formation of the Swan Valley Bull Trout Working Group and all lake trout research leading up to the initiation of the suppression project. This project provided information critical to making informed decisions about the future management of the Swan Lake fisheries. Since 2017, improved monitoring of the lake trout population in Swan Lake fish has been implemented to further assist biologists with evaluating any future lake trout harvest scenarios. Additionally, collaborative solutions will continue to be explored with partnering agencies (USFWS, DNRC, and USFS) for ways to protect the bull trout population of the Swan Valley.

Bull Trout Translocation Opportunities

Efforts have increased in recent years to expand the range of habitat occupied by bull trout, including within Montana. These opportunities have been aided by frameworks developed to inform recipient habitat and donor population suitability. Building on the momentum and intent to conserve this federally Threatened species, FWP began investigating the habitat suitability of lakes within the headwaters of the Swan River drainage beginning in summer 2022. Focal lakes include Gray Wolf, Crystal, High Park, and Lost.

Cooney Creek Native Fish Conservation

Cooney Creek is a third order tributary of the Swan River. It contains native populations of westslope cuthroat trout and bull trout. Cooney Creek also contains brook trout and has recently seen rainbow trout migrating upstream from the Swan River. In 2019, FWP partnered with MPG Ranch, a private landowner dedicated to conservation, to embark on a project aimed at protection of the native fish populations. An Environmental Assessment (EA) was prepared, and MPG lead efforts to mechanically remove brook trout and rainbow trout from the stream. Concurrent with the electrofishing removal efforts, MPG is contracting an engineer to design a fish barrier that will exclude non-native fish, while allowing for selective passage of native migratory fish species.

Mission Mountain Lake Surveys

The Mission Mountains contain many high elevation lakes, with most already containing fish populations. High elevation lakes were either stocked in the past (1950s and '60s) and are now self-sustaining, or still receive periodic stocking. The origin of some cutthroat trout populations is unknown and FWP crews have begun investigating the genetic history of the lakes. Additionally, crews have initiated surveys to determine if any of the larger mountain lakes would be suitable for future bull trout translocation. This technique has been used in Glacier National Park to preserve unique genetics of bull trout populations compromised by non-native lake trout. Swan drainage lakes like Lindbergh and Holland are very susceptible to impacts from lake trout, and future options like translocation may be necessary. All survey work is currently informational, and FWP currently has no plans to move bull trout.

Priority Drought Waters

Swan River and tributary drought restrictions are identified below (Table 2.03-1), 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 because there are times when and locations that bull trout congregate within the fishery when they are seeking cold water refuge in springs or at tributary mouths during warmer months. In these instances, bull trout criteria may be applied to these areas.

Table 2.03-1: 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 waterbodies not listed here.

Waterbody	Reach	Classification	Criteria
Swan River	Outlet of Cygnet Lake to the Inlet of Swan Lake (RM 79.4 to 23.8)	Bull trout fishery	 Daily maximum water temperature reaches or exceeds 60°F for three consecutive days. Temperature measurements relevant for criteria will be taken using portable temperature recorders upstream of the inlet to Swan Lake. Temperatures at this location are representative of temperatures throughout the upper Swan River, and not the portion influenced by warm water outflow from Swan Lake. Angling restrictions would likely include, but are not limited to closures around the creek mouths on bull trout spawning tributaries (Goat Creek, Lion Creek, Elk Creek, Woodward Creek, Jim Creek, Cold Creek, Piper Creek, Lost Creek, and Soup Creek).

FISHERIES MANAGEMENT DIRECTION FOR SWAN RIVER DRAINAGE

Water	Miles/acres	Species	Recruitment	Management Type	Management Direction
			Source		
All Swan River drainage (see listed waterbodies for exceptions)		Bull trout (N)	Wild	Conservation	Continue yearlong closure on angling for bull trout and minimize incidental catch of bull trout. Maintain spawning tributary mouth closures as needed. Continue to work with partners including USFS, DNRC and corporate timber to improve spawning habitat in bull trout tributaries.
		Westslope cutthroat trout (N)	Wild	Conservation	Maintain current harvest and provide angling opportunity for westslope cutthroat trout. Enhance fluvial populations where possible. Consider isolation of populations if hybridization is a threat and habitat is sufficient to allow persistence.
		Rainbow trout	Wild	General	Maintain recreational angling and harvest opportunity.
		Lake trout	Wild	Suppression	Explore options to reduce lake trout populations to benefit native fish.
		Kokanee salmon	Wild/ Hatchery	General	Maintain recreational angling and harvest opportunity.
		Mountain whitefish (N)	Wild	General	Maintain numbers and provide angling opportunity. Begin to understand population size and trend.
		Brook trout	Wild	Suppression	Provide liberal harvest opportunities to meet native species and other recreational fishery

Water	Miles/acres	Species	Recruitment	Management Type	Management Direction
			Source		goals. Maintain current angling opportunity and harvest level. Explore options for removal to benefit native species.
		Largemouth bass	Wild	General	Maintain current angling opportunity and harvest level.
		Smallmouth bass	Wild	Suppression	Reduce/eliminate illegally introduced populations by liberalizing regulations to meet native species and recreational fishery goals.
		Northern pike	Wild	General	Provide liberal harvest opportunities to decrease predation on native and recreational fisheries. Maintain current angling opportunity and harvest level.
		Yellow perch	Wild	General/Suppression	Maintain current angling opportunity and harvest level. Removals may be necessary in case of unauthorized introductions.
		Black crappie	Wild	Suppression	Provide liberal harvest and if feasible, eliminate populations to help protect other recreational fisheries.
		Walleye	Wild	Suppression	As per Unauthorized Introduction ARM, provide liberal harvest and if feasible, eliminate populations to help protect other recreational fisheries.
Lindbergh Lake	815 acres	Bull trout (N)	Wild	Conservation	Continue yearlong closure on angling for bull trout and minimize incidental catch of bull

Water	Miles/acres	Species	Recruitment	Management Type	Management Direction
			Source		trout. Enhance migratory populations for conservation.
		Westslope cutthroat trout (N)	Hatchery	Put-Grow-and-Take	Evaluate stocking to determine success to creel. Provide recreational angling opportunity.
		Kokanee salmon	Hatchery	Put-Grow-and-Take	Provide for harvest and recreational opportunity.
		Lake trout	Wild	Suppression	Increase monitoring and evaluate potential tools to reduce lake trout abundance to benefit native and recreationally important fish species.
Holland Lake	414 acres	Bull trout (N)	Wild	Conservation	Continue yearlong closure on angling for bull trout and minimize incidental catch of bull trout. Enhance migratory populations for conservation.
		Westslope cutthroat trout (N)	Hatchery	Put-Grow-and-Take	Evaluate stocking to determine return to creel. Provide recreational angling opportunity.
		Kokanee salmon	Hatchery	Put-Grow-and-Take	Provide for harvest and recreational opportunity.
		Yellow perch	Wild	General	Provide for harvest and recreational opportunity.
		Lake trout	Wild	Suppression	Increase monitoring and evaluate potential tools to reduce lake trout abundance to

Water	Miles/acres	Species	Recruitment	Management Type	Management Direction
			Source		
					benefit native and recreationally important
					fish species.
Habitat needs and	activities: Main	tain open channel at inlet to allov	v access for spaw	ning bull trout.	
Swan Lake	3,269 acres	Bull trout (N)	Wild	Conservation	Continue yearlong closure on angling for bull trout and minimize incidental catch of bull trout. Enhance migratory populations for conservation.
		Rainbow trout, Westslope cutthroat trout (N), Kokanee salmon	Wild	General	Provide for harvest and recreational opportunity.
		Northern pike	Wild	Suppression	Provide liberal harvest opportunities to decrease predation on native and recreational fisheries.
		Yellow perch	Wild	General	Provide for harvest and recreational opportunity.
		Lake trout	Wild	Suppression	Continue to evaluate tools to effectively reduce numbers to benefit native fish and recreationally important kokanee. See Special Management Issues.
		Walleye	Wild	Suppression	Continue monitoring to determine if illegally stocked walleye create a viable population. Suppress if needed.
Swan River and tributaries	64 miles	Bull trout (N)	Wild	Conservation	Continue yearlong closure on angling for bull trout and minimize incidental catch of bull trout.
		Westslope cutthroat trout (N)	Wild	Conservation	

Water	Miles/acres	Species	Recruitment	Management Type	Management Direction		
			Source				
					Eliminate harvest and enhance fluvial populations for conservation and westslope cutthroat angling. Consider isolation of populations if hybridization is a threat and habitat is sufficient to allow persistence.		
		Rainbow trout	Wild	General	Maintain recreational angling and harvest opportunity.		
		Brook trout	Wild	Suppression	Provide liberal harvest opportunities to meet native species and other recreational fishery goals. Maintain current angling opportunity and harvest level. Explore options for removal to benefit native species. See Special Management Issues for Cooney Creek.		
		Mountain whitefish (N)	Wild	General	Maintain numbers. Begin to understand population size and trend.		
		Northern pike	Wild	General	Provide opportunity for harvest and recreational angling.		
Habitat needs and activities: Stream crossing upgrades and road best management practices for most forest lands. Enhance habitat to favor native trout and whitefish. Improve habitat to support ecosystem function and production of trout and whitefish. Salvage/rescue fish entrained in Bigfork Dam canal during canal maintenance dewatering							
Echo Lake	695 acres	Largemouth bass	Wild/	Put-Grow-and-Take/	Provide for a quality recreational fishery.		
			Hatchery	Quality/	Maintain 1 >12-inch limit to produce larger		
				Restrictive Regulations	bass and protect spawners. Assess contribution of hatchery plants.		
				General			
		Smallmouth bass	Wild		Provide liberal harvest regulations to benefit other sport fish populations in the lake.		
				Put-Grow-and-Take			

Water	Miles/acres	Species	Recruitment	Management Type	Management Direction
			Source		
		Rainbow trout	Hatchery		Provide recreational angling opportunity.
					Assess return of stocked trout.
				Put-Grow-and-Take	
		Kokanee salmon	Hatchery		Provide for harvest and recreational
					opportunity for 12-inch salmon.
				General	
		Northern pike	Wild		Provide liberal harvest regulations to benefit
					other sport fish populations in the lake.
				General	
		Lake whitefish,	Wild		Provide recreational angling opportunity.
		Yellow perch			
				Suppression	
		Black crappie	Wild		Provide liberal harvest and if feasible,
					eliminate populations to protect other
	<u> </u>	L		<u> </u>	recreational fisheries.
Habitat needs and	activities: Lakes	hore flooding in 2011 prompted	the closing of Ech	o Lake to wake producing	boat speeds. The lake has flooded in other high-
snowpack years sin	nce 2011. Week	ly lake elevation surveys now occ	ur during summe	r to better inform manage	rs of potential future flood events.
Loon Lake	45 acres	Largemouth bass	Wild/	General	Provide for a recreational fishery. Assess
			Hatchery		contribution of hatchery plants. Continue to
					monitor largemouth bass nest counts.
		Rainbow trout	Hatchery	Put-Grow-and-Take	Provide for harvest and recreational
					opportunity.
		Yellow perch	Wild	General	Provide recreational angling opportunity.
Horseshoe Lake	41 acres	Smallmouth bass	Wild	Restrictive Regulations	Provide recreational angling opportunity.
					Install habitat structures to improve spawning
					and survival.
				General	
		Pumpkinseed	Wild		Provide recreational angling opportunity.
				Suppression	
		Yellow perch	Wild		

Water	Miles/acres	Species	Recruitment	Management Type	Management Direction
			Source		
					Consider action to suppress population if
					needed.
Mission		Westslope cutthroat trout (N)	Wild/	General	Maintain current angling opportunity and
Mountain Lakes:			Hatchery		harvest level. Where practical, enhance
					populations to meet native species goals.
Beaver Lake	25 acres				Where feasible, protect nonhybridized
Cedar Lake	46 acres				populations and restore genetic integrity to
Cold Lake	50 acres				hybridized populations. Adjust or eliminate
(upper)					stocking in lakes with natural reproduction.
Cold Lake (lower)	56 acres				
Crescent Lake	24 acres	Golden trout	Hatchery	General	Provide recreational angling opportunity.
Crystal Lake	186 acres				
Ducharme Lakes	3-17 acres				
(3)					
Fatty Lake	21 acres				
Glacier Lake	105 acres				
Gray Wolf Lake	334 acres				
Hemlock Lake	30 acres				
High Park Lake	220 acres				
Jim Lakes (10+)	2-29 acres				
Lace Lake	18 acres				
Lost Lake	109 acres				
Mollman Lakes	17-29 acres				
(2)					
N. Hemlock Lake	8 acres				
Piper Lake	83 acres				
Rainbow Lake	8 acres				
S. Woodward	4-5 acres				
Lakes (2)					
SF Cold Lakes (5)	2-15 acres				
Heart Lake	23 acres				
Island Lake	22 acres				

Water	Miles/acres	Species	Recruitment	Management Type	Management Direction
			Source		
Gray Wolf Lake Crystal Lake High Park Lake Lost Lake	342 acres 187 acres 222 acres 112 acres	Bull trout Westslope cutthroat trout	Wild	Conservation	Evaluate the habitat suitability of sites as candidates for bull trout translocation. Survey any existing cutthroat populations for genetic status.
Swan Mountain		Westslope cutthroat trout (N)	Wild/	General	Maintain current angling opportunity and
Lakes:			Hatchery		harvest level. Where practical enhance
Bond Lake	5 acres				populations to meet native species goals. Where feasible protect pophybridized
Cat Lake	13 acres				populations and restore genetic integrity to
Hall Lake	12 acres				hybridized populations. Adjust/eliminate
Pony Lake	17 acres				stocking in lakes with natural reproduction.
Rumble Lakes (2)	27-28 acres				
Sapphire Lake	6 acres				
Trinkus Lake	12 acres				
Upper Holland	35 acres				
Lake					