



## **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 Mountain 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 base 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 Mountain 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 in 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 water bodies, 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. 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 recovery 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, kokanee salmon, brook stickleback, central mudminnow, and yellow perch. The fishery of the Swan River itself is largely focused on rainbow and westslope cutthroat trout. Regulations for these two trout 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 DNRC and the 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. 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 is 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 has historically been so strong that when the species was listed as threatened under the Endangered Species Act in 1998, it remained the only water body in Montana where anglers could fish for, and keep, bull trout. Angling for bull trout is still permissible, however beginning in 2012, anglers are required to release all bull trout caught in Swan Lake. Intentionally targeting bull trout in Lindbergh Lake, Holland Lake, and the Swan River and its tributaries is 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-and-grow 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 largemouth bass, smallmouth bass, lake whitefish, and kokanee.

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 located in high elevation, alpine settings within the Mission Mountain Wilderness or Swan Mountains. Because of the remote nature of these lakes, many are not stocked currently, and some have never been stocked historically. Stocking records for the lakes previously planted with fish reveal that undesigned cutthroat were planted prior to the development of a pure westslope cutthroat brood. Therefore, some lakes may still contain hybridized populations of cutthroat trout, regardless of modern stocking plans.

## **HABITAT**

The Swan River valley was historically and continues to be very much a working forest. Much of the land ownership is a combination of private timber land, national forest, and Montana school trust lands. 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 Native Fish Habitat Conservation Plan (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 habitat conservation plan providing for many of the same conservation measures included in the effort done 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 recent years, land acquisitions in the Swan drainage have been designed to protect both terrestrial and aquatic species. Important bull and westslope cutthroat trout habitat are on these lands. Land parcels that were previously checker-boarded with national forest lands have been purchased by the USFS. Similarly, former Plum Creek lands in the Swan State Forest are currently held by The Nature Conservancy, with plans to transfer ownership 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.

## **FISHING ACCESS**

Although there are abundant recreational fishing opportunities in the Swan valley, FWP has very few official fishing access points. Access points provided by FWP include one on the lower Swan River, downstream of Swan Lake, and one on Bigfork Bay where the Swan River enters Flathead Lake. All of the other public access points in the Swan are provided by either the DNRC or the USFS. These sites include a combination of primitive boat launches and dispersed camping as well as developed campgrounds and boat ramps designed to handle considerable traffic.

The USFS provides the only public access point on Swan Lake. The site contains a day-use area, boat ramp, campground, and public swimming area. Because the site is the only public access point, it has been used by FWP for several angler surveys. Additionally, FWP maintains an InfoMax recording system at the site which broadcasts information regarding native species management, angling opportunities, and way to minimize the risk of spreading Aquatic Invasive Species (AIS).

## **SPECIAL MANAGEMENT ISSUES**

### *Experimental removal of lake trout in Swan Lake*

The Swan Valley has historically been home to a stable bull trout population. However, in 1998 anglers began to occasionally catch adult-sized (20-30 inch) lake trout from Swan Lake and the Swan River. This caused alarm because lake trout are not native and are notorious for rapidly expanding and dominating fish communities in lakes with *Mysis* shrimp such as Swan Lake, at the expense of bull trout and kokanee salmon. In 2003, the level of concern was compounded when biologists gillnetted juvenile lake trout from Swan Lake during standard low-intensity sampling efforts, indicating that wild reproduction was occurring. Since 2003, lake trout catch by anglers as well as during FWP's biological sampling has continued to increase, indicating that the population is likely expanding. In June of 2009, FWP approved plans for a three-year experimental removal of lake trout in Swan Lake. The project was initiated as a feasibility study to determine if targeted gillnetting can be an effective way to reduce lake trout numbers while minimizing bycatch of other fish species. From 2009-2011 over 21,000 lake trout were removed from Swan Lake. Lake trout mortality rates appear to be high relative to other lake trout suppression projects. Additionally, lake trout catch per unit effort during netting activities decreased from 2010 to 2011, indicating that netting efforts were effective at reducing year-to-

year cohort strength. Inadvertent bycatch of other fish species was relatively low, although concerns regarding bycatch of bull trout still exist. While much has been learned with regard to our ability to affect lake trout cohort strength from one year to the next, the overall effect this level of removal has on the lake trout population and subsequent benefits to other fish species remain unknown. Therefore, in May 2012 FWP released another Environmental Assessment for a five-year continuation of this removal experiment. This period of time was chosen because it represents the shortest amount of time necessary to fully assess and realize the effects of previous removal efforts. Information obtained from the proposed action will help to determine feasibility and effectiveness of alternatives for managing the lake trout population (e.g., suppression of the population).

## FISHERIES MANAGEMENT DIRECTION FOR SWAN RIVER DRAINAGE

Water	Miles/acres	Species	Origin	Management Type	Management Direction
Swan River and Tributaries (Headwaters Downstream to Swan Lake)	52 Miles	Bull trout	Wild	Conservation	Continue yearlong closure on angling for bull trout and minimize incidental catch of bull trout. Maintain spawning tributary mouth closures as needed.
		Westslope cutthroat trout	Wild	Conservation/ Special Regulations/General	Eliminate harvest and enhance fluvial populations for conservation and WCT angling. Consider isolation of WCT populations if hybridization is a threat and habitat is sufficient to allow persistence.
		Rainbow trout	Wild	General/Special Regulations	Minimize harvest to provide for a quality fishery in one section. Maintain numbers to allow harvest in some sections.
		Mountain whitefish	Wild	General	Maintain numbers. Begin to understand population size and trend.
		Brook trout	Wild	General	Allow for harvest in tributaries that do not contain bull trout.
Habitat needs and activities: Stream crossing upgrades and road BMP's for most forest lands.					Enhance habitat to favor native trout and whitefish.
Lindbergh Lake	815 Acres	Bull trout	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	Hatchery	Put- Take	Evaluate stocking to determine success to creel. Provide recreational angling opportunity.
		Kokanee	Hatchery	Put-Grow-Take	Provide for harvest and recreational opportunity
		Lake trout	Wild	Suppression	Reduce numbers to benefit native fish and recreationally important kokanee. Increase monitoring and evaluate potential tools to reduce lake trout abundance to benefit native and recreationally important fish species.

Water	Miles/acres	Species	Origin	Management Type	Management Direction
Holland Lake	414 Acres	Bull trout	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	Hatchery	Put- Take	Evaluate stocking to determine return to creel. Provide recreational angling opportunity.
		Kokanee	Hatchery	Put-Grow-Take	Provide for harvest and recreational opportunity.
		Yellow perch	Wild	General	Provide for harvest and recreational opportunity.
		Lake trout	Wild	Suppression	Assess status to determine need for management and potential impacts on fishery
Habitat needs and activities: Maintain open channel at inlet to allow access for spawning bull trout.					
Swan Lake	3,269 Acres	Bull trout	Wild	Conservation/ Special Regulations	Catch and release fishing allowed but not harvest. Enhance migratory populations for conservation.
		Rainbow trout, Westslope cutthroat trout	Wild	General	Provide recreational angling opportunity for occasional fish.
		Kokanee, Northern pike, 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.
Swan River and Tributaries (Swan Lake to Flathead Lake)	12 Miles	Bull trout	Wild	Conservation	Continue yearlong closure on angling for bull trout and minimize incidental catch of bull trout.
		Westslope cutthroat trout	Wild	Conservation/Special Regulations	Eliminate harvest and enhance fluvial populations for conservation and WCT angling. Consider isolation of WCT populations if hybridization is a threat and habitat is sufficient to allow persistence.
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Water	Miles/acres	Species	Origin	Management Type	Management Direction
		Rainbow trout	Wild	General	<p>Manage trout harvest to support recreational fishing and minimize impacts on native fish.</p> <p>Maintain numbers. Begin to understand population size and trend.</p> <p>Provide opportunity for harvest and recreational angling.</p>
		Mountain whitefish	Wild	General	
		Northern pike	Wild	General	
<p>Habitat needs and activities: Improve habitat to support ecosystem function and production of trout and whitefish. Salvage/rescue fish entrained in Bigfork Dam canal during canal maintenance dewatering.</p>					
Echo Lake	695 Acres	Largemouth bass	Wild/Hatchery	Put-Grow-Take/ Quality/ Special Regulations	Provide for a quality recreational fishery. Maintain 1> 12" limit to maintain larger bass and protect spawners. Assess contribution of hatchery plants.
		Rainbow trout	Hatchery	Put-Grow-Take	Provide recreational angling opportunity. Assess return of stocked trout.
		Kokanee	Hatchery	Put-Grow-Take	Provide for harvest and recreational opportunity.
		Northern pike,	Wild	General	Provide recreational angling opportunity.
		Lake whitefish, Yellow perch	Wild	General	Provide recreational angling opportunity.
<p>Habitat needs and activities: Lakeshore flooding in 2011 prompted the closing of Echo Lake to wake producing boat speeds. The lake again flooded in 2012. Weekly lake elevation surveys now occur during summer to better inform managers of potential future flood events.</p>					
Loon Lake	45 Acres	Largemouth bass	Wild/Hatchery	General	Provide for a recreational fishery. Assess contribution of hatchery plants. Continue to monitor largemouth bass nest counts.
		Rainbow trout	Hatchery	Put- Take/ Quality	Provide for a large (>18") rainbow trout fishery and recreational angling opportunity
		Yellow perch	Wild	General	Provide recreational angling opportunity

<b>Water</b>	<b>Miles/acres</b>	<b>Species</b>	<b>Origin</b>	<b>Management Type</b>	<b>Management Direction</b>
Horseshoe Lake	41 Acres	Smallmouth bass	Wild/Hatchery	Special Regulations	Provide recreational angling opportunity. Assess contribution of hatchery fish. Install habitat structures to improve spawning and survival.
		Pumpkinseed	Wild	General	
		Yellow perch	Transfer	Suppression	Yellow perch were first observed in Horseshoe Lake in 2011 as the result of an illegal plant. FWP monitoring confirmed presence and reproduction in May 2012. Eliminate harvest and suppress as possible to remove incentive to move to other waters.