Mountain Lake Management Units

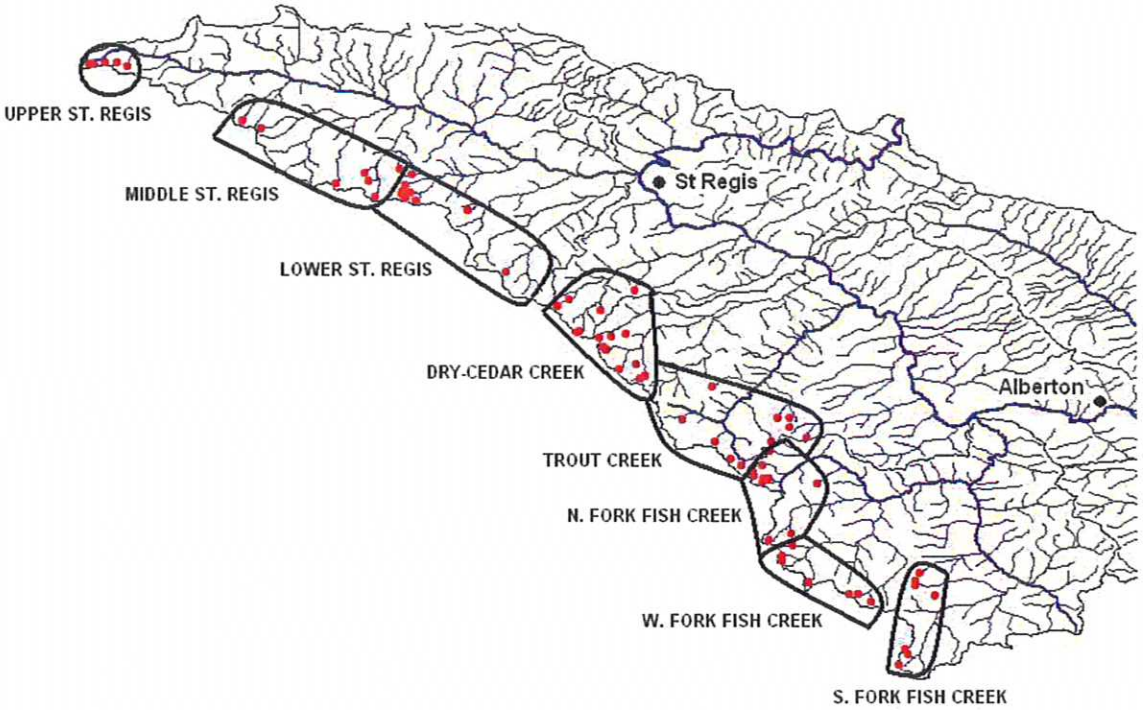


Figure 5. Lake management units in the middle Clark Fork region of west-central Montana.

Mountain lakes in the middle Clark Fork project area were divided into eight management units based on their geographic and hydrologic location. The descriptions and management approaches for these units (summarized below) combine information from fishless lakes (Appendix A, Table 1) with historical data, recent survey information, and management strategies for individual fish-bearing lakes (Appendix A, Tables 2-5; Appendices B & C) and associated stream networks. This framework is intended to provide a broader, sub-basin scale approach that incorporates unique water bodies within the context of interconnected watersheds, proximal ecosystems, and diversified angling opportunities.

A sub-basin scale approach is preferable for a number of reasons. Fish stocking, non-native fish introductions, and other management actions affect waters and species outside the vicinity of an individual lake. Similarly, many terrestrial, insect and amphibian species utilize a network of water bodies or require different aquatic environments at various life stages. Management actions also impact the distribution and intensity of human recreational use. Alpine lakes are a focal point for back-country recreation and the status of lake fisheries directly influences how these resources are utilized.

Resource managers strive to sustain diversity within and among lake management units that balances a range of angling opportunities and recreational experiences with conservation of natural aquatic systems. Responsible resource management also necessitates a conservative approach with respect to maintaining a diversity of lake environments (including fishless lakes). This is currently the best method of incorporating the many unique biological communities (e.g.,

benthic, zooplankton, etc.) and processes that are certainly affected by fish stocking and fishery management, but are not specifically described or considered in management decisions.

I. Upper St. Regis Management Unit

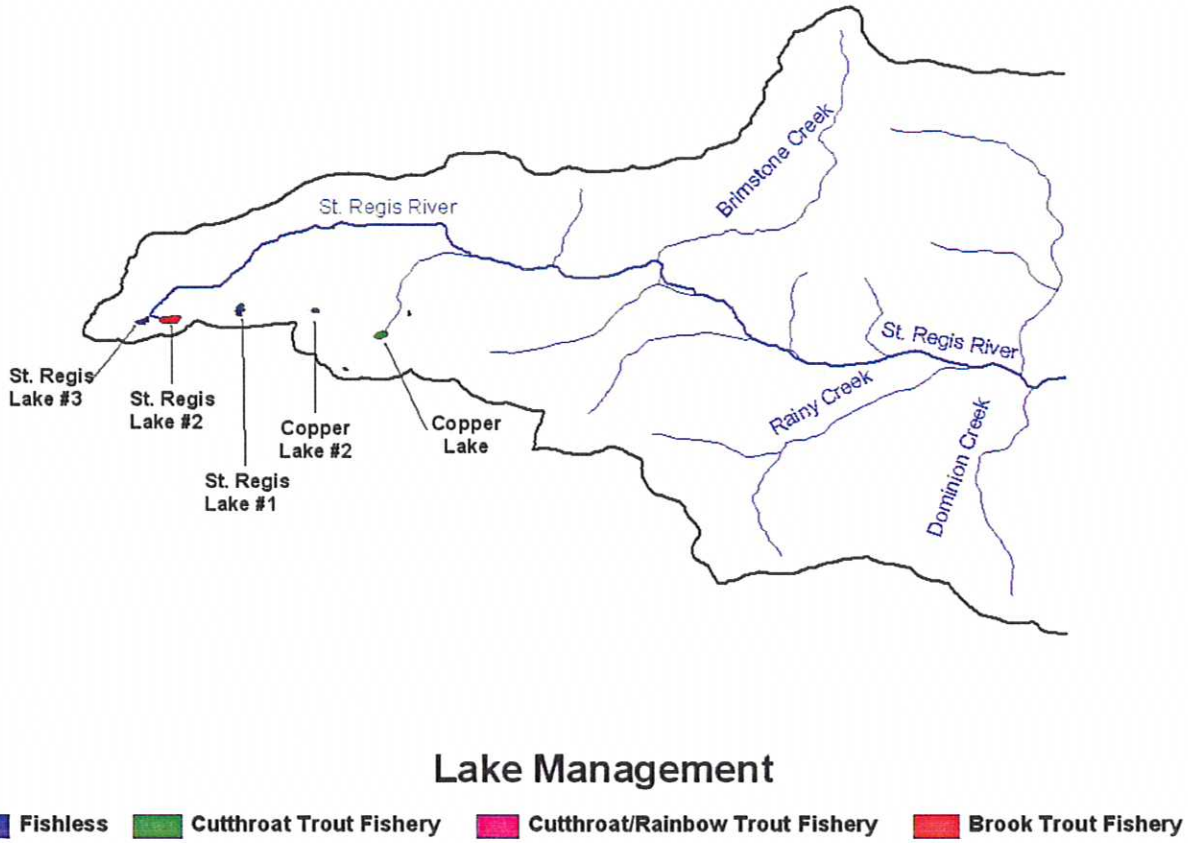


Figure 6. Map of mountain lake and fishery status in the Upper St. Regis Management Unit.

Description

The Upper St. Regis Management Unit includes five lakes > 1 acre in the headwaters of the St. Regis River Drainage, including Copper Gulch (Figure 6). This area contains two marginal fisheries and several fishless lakes. Lower St. Regis Lake (#2) supports a self-sustaining brook trout population that is now supplemented with stocked westslope cutthroat trout. Copper (Silvex) Lake is also stocked to provide a westslope cutthroat trout fishery. Both of these trout populations are 'stunted' (max length 8.3-9.2 inches), with low body condition (mean Wr 86-89). Fishless lakes include St. Regis Lakes #1 and #2, and Copper Lake #2. An additional small fishless lake (< 1 acre), Copper Creek Lake # 1, lies above Copper Lake.

Lakes in this unit are generally small, shallow, unproductive water bodies that are relatively accessible from established road systems (see individual lake descriptions in Appendix C). Shoreline surveys on Copper Lake and St. Regis Lake #2 did not indicate that amphibians and reptiles are particularly abundant in this area. Low numbers of Columbia spotted frogs and

terrestrial garter snakes were observed during lake surveys. However, shoreline surveys were not completed on the three fishless lakes and smaller (un-named) ponds. Idaho giant salamanders may also be present in this management unit (Bryce Maxell, Montana Natural Heritage Program, personal communication), but are typically found in small stream environments. Stream and river reaches immediately downstream of the unit support primarily westslope cutthroat trout, brook trout, and sculpin. Further downstream in the St. Regis River watershed, westslope cutthroat trout x rainbow trout hybrids, bull trout, brown trout, mountain whitefish and longnose suckers become more abundant.

Recreational use appeared frequent at Copper and Lower St. Regis (#2) Lakes. Established trails provided easy access to both lakes. Human refuse, dilapidated infrastructure, and multiple campsites were also evident. There was much less evidence of human use at upper St. Regis Lake (#3), despite easy trail access from lower St. Regis Lake. Other fishless lakes within the unit are less accessible and likely receive very infrequent recreational use.

Lake Management

Lakes in the Upper St. Regis unit are generally fishless or provide marginal fisheries. Future lake management will likely be similar to existing practices (Table 8). The performance of westslope cutthroat trout stocked in Lower St. Regis Lake and Copper Lake will be evaluated. High use and accessibility may warrant more frequent stocking of Copper Lake to provide a more harvest-oriented fishery. If monitoring indicates that the quality of these fisheries may be improved through adjustments in frequency or quantity of stocking, changes will be considered.

Table 8. Recommended management strategies for Upper St. Regis Management Unit lakes.

Water Body	Current Fishery	Recommended Future Actions
Copper Lake	Stocked WCT*	Evaluate performance and survival of stocked WCT – consider managing as a *harvest-oriented fishery* (currently managed as a *quality* WCT fishery)
Copper Lake #2	Fishless	None; Identify any unauthorized fish introductions
St. Regis Lake #1	Fishless	None; Identify any unauthorized fish introductions
St. Regis Lake #2	Wild EBT	Consider tools to improve fishery or eliminate brook trout; Currently managed as a *diversified fishery* (EBT &WCT)
St. Regis Lake #3	Fishless	None; Identify any unauthorized fish introductions

* Species abbreviations: WCT = westslope cutthroat trout, EBT = brook trout, RBT = rainbow trout

It is unlikely that additional lakes or different fish species will be stocked in this management unit. Currently fishless lakes are likely incapable of supporting sustainable fisheries because of physical constraints (primarily depth). These water bodies also provide habitat for a number of native aquatic and terrestrial species that may be impacted by fish introductions. In particular, more comprehensive amphibian surveys at fishless lakes within the unit are needed.

Conservation of downstream aquatic communities also requires that the compatibility of stocked fish species be considered. Fish stocked in headwater lakes frequently exit the lake and inhabit outlet streams where native fish and amphibian species persist. In this management unit, some

reaches of the upper St. Regis River drainage support native westslope cutthroat trout that appear to be non-introgressed (not hybridized with introduced rainbow trout or Yellowstone cutthroat trout) based on recent genetic testing (MFWP, unpublished data). As a result, MFWP plants only the M012 westslope cutthroat trout strain and no longer considers the stocking of (reproductively viable) non-native *Oncorhynchus* species to be appropriate in these situations.

Future funding and advances in fisheries management tools may also provide the opportunity to improve the fishery in Lower St. Regis Lake. This could involve enhanced size structure or a change in species composition. Brook trout provide angling diversity and can support high catch rates, but are generally considered undesirable in mountain lakes because they rarely provide a quality fishery and present a risk to native trout populations. Brook trout are capable of reproducing in marginal habitats. Once introduced, they typically over-populate a lake and "stunt" as seen in nearly every middle Clark Fork lake where they exist. In addition, just as introduced Yellowstone cutthroat trout and rainbow trout present a hybridization risk to native westslope cutthroat trout populations, non-native brook trout present a threat to native bull trout. Brook trout also directly compete with and displace westslope cutthroat trout and other native fish species (Peterson and Fausch 2003; Peterson et al. 2004; Shepard 2004). Although brook trout will likely always be widely distributed in the middle Clark Fork region, MFWP will strive to balance species diversity with fishery quality and risk to native stream populations.

II. Middle St. Regis Management Unit

Description

The Middle St. Regis Management Unit includes nine named lakes (> 1 acre) and several un-named ponds or wetlands (<1 acre) along the Montana-Idaho boarder in the headwaters of three tributaries of the St. Regis River: Silver Creek, Big Creek and Deer Creek (Figure 7). These water bodies exhibit a range of morphological and ecological conditions, fish species, and accessibility (see individual lake reports in Appendix C). Lake environments range from deep, relatively sterile (oligotrophic) glacial cirque lakes (e.g., Crystal Lake) to small, shallow, more productive mesotrophic waters (e.g., Rudie Lake & Gold Lake). Fishless waters include Big Sunday Creek Lake and the Deer Creek Lakes.

Lake fisheries include brook trout, westslope cutthroat trout and rainbow trout in various combinations (see Figure 7). In general, westslope cutthroat and rainbow trout populations have moderate or high body condition (mean Wr 87-95) and can provide quality fisheries. Brook trout populations are generally stunted (max length 9.1-12.7 inches), with low or moderate body condition (mean Wr 87-89). Stream and river reaches immediately downstream of the unit support primarily westslope cutthroat trout, brook trout, and sculpin. Further downstream in the St. Regis River watershed, westslope cutthroat trout x rainbow trout hybrids, bull trout, brown trout, mountain whitefish and longnose suckers become more abundant.

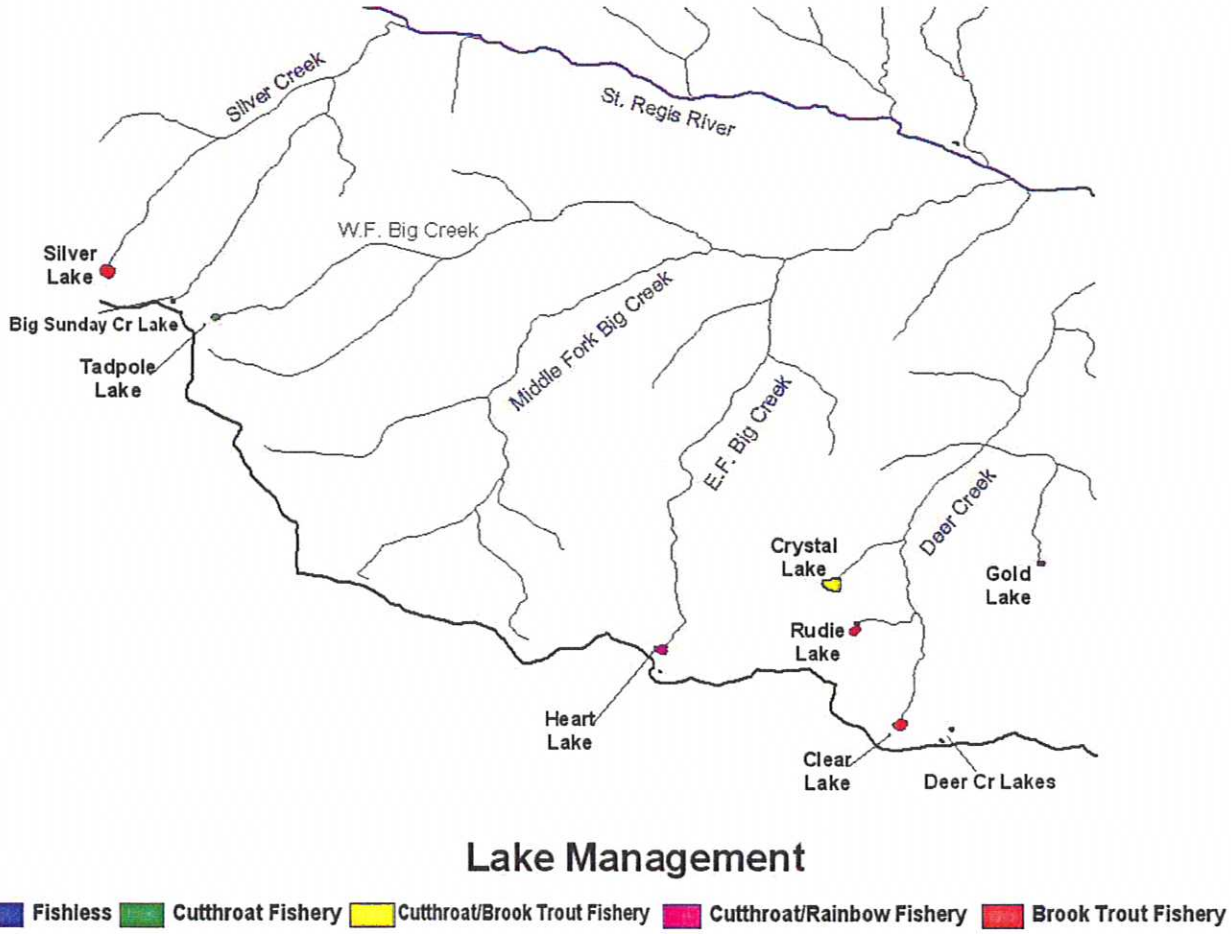


Figure 7. Map of mountain lakes and fishery status in the Middle St. Regis Management Unit.

Shoreline amphibian surveys were completed only on the seven fish-bearing lakes in 2004-2006. Columbia spotted frogs were common or abundant along the perimeter of most lakes and densities appeared correlated with the amount of emergent aquatic vegetation. Long-toed salamanders were only observed at Heart Lake. Idaho giant salamanders have also been found in this management unit (Bryce Maxell, Montana Natural Heritage Program, pers. comm.), but are typically found in headwater stream environments (not lakes). Amphibian surveys at fishless lakes within the unit are needed.

Recreational use and accessibility are variable within the unit. Most lakes are accessible via non-motorized travel (1-3 miles) on the USFS trail system. Silver Lake can be reached by road and appears to support frequent use, while Gold Lake and the various fishless waters are relatively remote with no developed travel routes.

Lake Management

The Middle St. Regis Management Unit provides a diversity of fish-bearing lakes. All of these waters, except Tadpole Lake, appear to support self-sustaining trout populations. Tadpole,

Crystal and Heart Lakes are currently in the MFWP stocking program. Infrequent stocking is considered necessary to maintain the Tadpole Lake westslope cutthroat trout fishery, but cutthroat trout are stocked to diversify wild brook trout (Crystal Lake) and rainbow trout (Heart Lake) fisheries in other cases. Gold Lake was recently removed from the stocking program as size structure and juvenile abundance indicated that the westslope cutthroat trout population was reproducing consistently. Clear, Rudie and Silver lakes support abundant, self-sustaining brook trout populations. Management strategies are summarized in Table 9.

Table 9. Recommended management strategies for Middle St. Regis Management Unit lakes.

Water Body	Current Fishery	Recommended Future Actions
Big Sunday Cr. Lake	Fishless	None; Identify any unauthorized fish introductions
Clear Lake	Wild EBT*	Consider tools to improve fishery or eliminate brook trout.
Crystal Lake	Wild EBT with stocked WCT	Evaluate performance and survival of stocked cutthroat trout and consider tools to eliminate brook trout or increase size structure - currently managed as a *diversified, quality* trout fishery. Investigate stability and management of dam at outlet.
Deer Cr Lake #2	Fishless	None; Identify any unauthorized fish introductions
Gold Lake	Wild WCT	Confirm that cutthroat trout population is self-sustaining
Heart Lake	Wild RBT with stocked WCT	Evaluate performance and survival of stocked cutthroat trout and consider "genetic swamping" to reduce rainbow trout component - currently managed as a *diversified, quality* trout fishery
Rudie Lake	Wild EBT	Consider tools to eliminate brook trout and convert to fishless lake
Silver Lake	Wild EBT	Consider tools to improve fishery or eliminate brook trout.
Tadpole Lake	Stocked WCT	Evaluate performance and survival of stocked cutthroat trout – manage as a *quality* cutthroat trout fishery

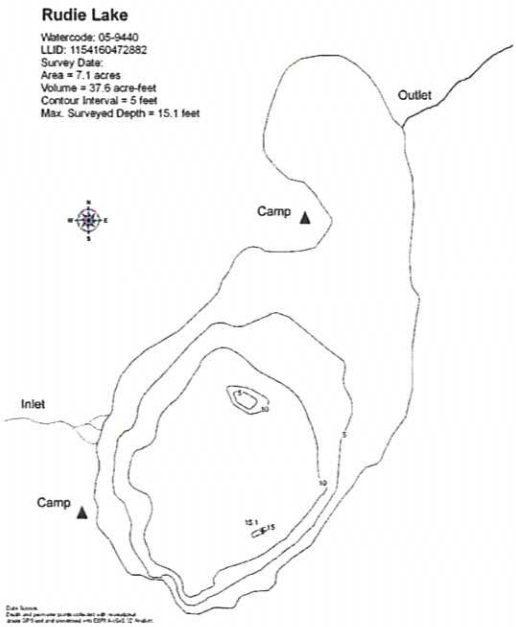
* Species abbreviations: WCT = westslope cutthroat trout, EBT = brook trout, RBT = rainbow trout

The performance of westslope cutthroat trout stocked in Tadpole, Crystal and Heart Lakes will be evaluated over time. MFWP will also seek to confirm that the Gold Lake fishery is self-sustaining. If monitoring indicates that the quality of these fisheries may be improved through adjustments in frequency or quantity of stocking, changes will be considered. The greatest potential improvements in fishery quality would likely be through manipulation of existing wild brook trout populations. However, an increased size structure and higher quality fishery for stunted populations (e.g., Clear Lake and Silver Lake) would likely require consistent size-selective harvest or predation, reduced natural reproduction rates, or complete brook trout removal and restocking. Tools to affect these changes will be evaluated (see Management Tools section). MFWP is also experimenting with low density, infrequent stocking (e.g., Crystal Lake) which supplement existing wild populations to provide diversity of species and potentially the opportunity for larger fish. Lake surveys offered some evidence of resource partitioning among sympatric trout species and suggested that westslope cutthroat trout may grow faster than brook trout, even when introduced into an existing over-populated, stunted brook trout fishery. Crystal lake also experiences major annual fluctuations in pool elevation due to management or improper function of an outlet dam and sluiceway. The stability and operation of this infrastructure needs to be evaluated.

Crystal (left) and Heart (right) Lakes support wild brook trout and rainbow trout populations (respectively) that are supplemented with stocked cutthroat trout to improve fishery diversity

There are currently two small fishless lakes (~ 1 acre) in this management unit. Stocking smaller, fishless water bodies (< 1 acre) is not prudent and MFWP recommends that removal of fish from at least one lake would promote overall ecological diversity. Rudie Lake (see photo and map below) is considered a good candidate for complete removal of fish and conversion to historic ecological processes for a number of reasons: (1) It has supported only a marginal brook trout fishery for more than 5 decades, (2) Shallow, littoral areas comprise a high proportion of the lake, (3) Emergent vegetation is abundant on shorelines and in associated wetlands, and (4) The lake has adequate size and depth to provide a winter environment that is not completely frozen and anoxic.

Conservation of downstream aquatic communities also requires that the compatibility of formerly introduced and currently stocked fish species be considered. In this lake management unit, emigration of brook trout and rainbow trout is the biggest concern for downstream populations. Although westslope cutthroat trout in the Big Creek drainage have already been hybridized with rainbow trout, populations in Silver Creek and Deer Creek still appear to be genetically non-introgressed (MFWP, unpublished data). The westslope cutthroat trout M012 strain is currently the only species stocked in these drainages and attempts will be made to reduce the rainbow trout component in Heart Lake. Brook trout emigration from lakes poses a continual threat of hybridization with bull trout and increased competition with westslope cutthroat trout and other aquatic species. Therefore, reducing or removing brook trout populations is considered an important conservation measure for native stream communities.



Rudie Lake photo and bathymetry

III. Lower St. Regis Management Unit

Description

The Lower St. Regis Management Unit includes nine lakes > 1 acre along the Montana-Idaho boarder in the headwaters of Ward, Twomile, and Little Joe Creeks (Figure 8). Although lake size and bathymetry varies, the majority of these waters lie within rocky, glacial cirque basins near the state-line divide. Lenore Lake, which is better described as a productive, mid-elevation "pond", is a notable exception.

Only five of the nine lakes in this management unit support fish populations, and all but one (Moore Lake) contain westslope cutthroat trout. Cutthroat trout body condition in Hazel Lake, Hub Lake, Square Lake and Lenore Lake is moderate to high (mean Wr 94-108) and several of these waters provide quality fisheries. Hazel Lake, Square Lake and Lenore Lake are currently in the MFWP fish stocking program. Moore Lake lies in the headwaters of Little Joe Creek and supports a self-sustaining, stunted (max length 10.5 inches) brook trout population. This is problematic for native fish management in Little Joe Creek as this stream is a regional stronghold for wild bull trout and westslope cutthroat trout. Ward and Twomile Creeks also contain abundant westslope cutthroat trout populations and sculpin. The lower main stem St. Regis River and Clark Fork River confluence lie just downstream of the tributary mouths. These rivers support a more diverse community of native and introduced fish species.

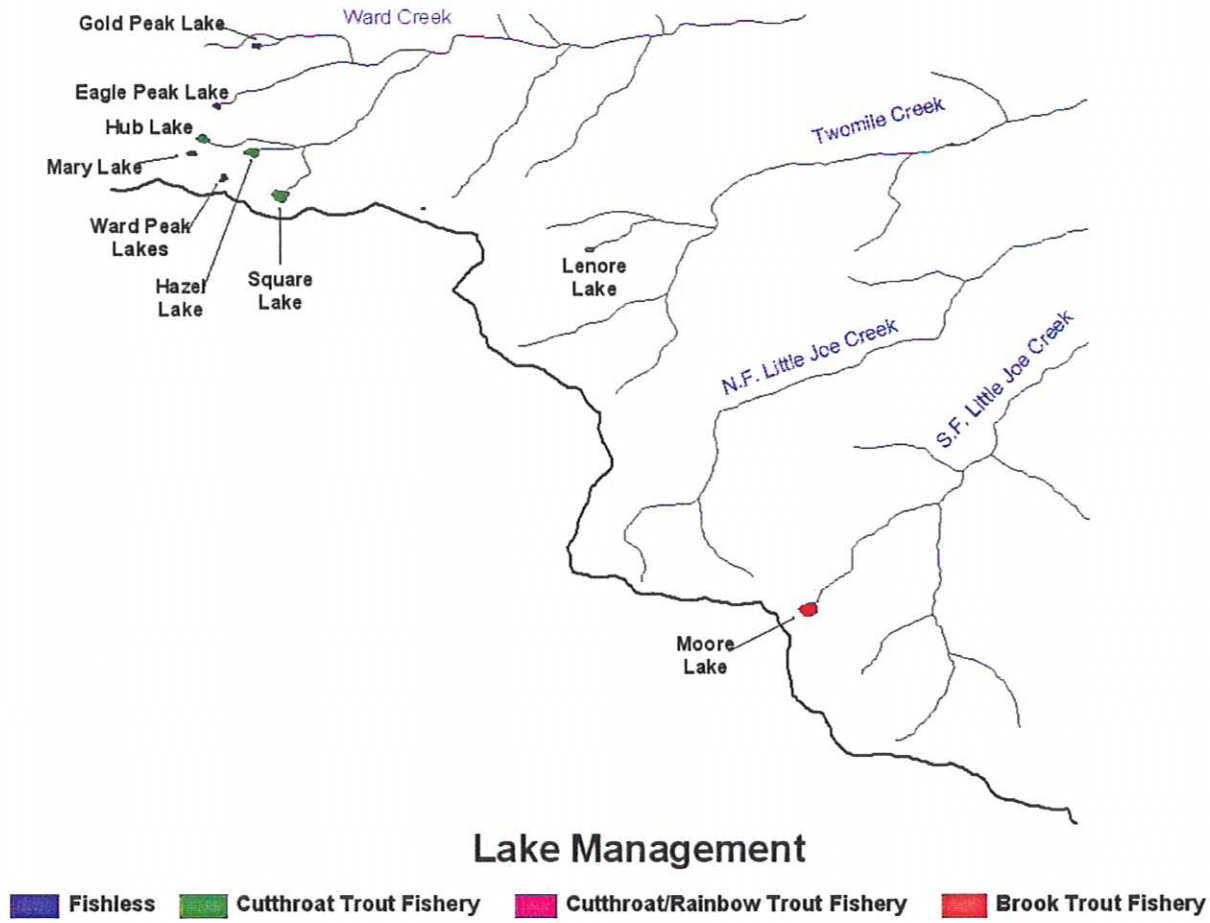


Figure 8. Map of mountain lakes and fishery status in the Lower St. Regis Management Unit.

Shoreline amphibian surveys were completed on the five fish-bearing lakes in 2004-2006. Columbia spotted frog adults and tadpoles were common or abundant along the perimeter of most lakes and densities appeared correlated with the amount of emergent aquatic vegetation. Low densities of larval long-toed salamanders were also observed at Hazel and Moore Lakes. Idaho giant salamanders have been documented near this management unit in the St. Regis watershed (Bryce Maxell, Montana Natural Heritage Program, pers. comm.), but are typically found in headwater stream environments (not lakes).

Recreational use and accessibility are variable within the unit. Most lakes are accessible via non-motorized travel (0.5-3 miles) on the USFS trail system from designated trailheads. Moore Lake can be reached by road and appears to support frequent use. Lenore Lake and most of the fishless waters are relatively remote with no developed travel routes.

Lake Management

The lower St. Regis unit includes several excellent westslope cutthroat trout fisheries and one marginal brook trout fishery (Table 10). Cutthroat trout populations (Hazel, Square and Lenore Lakes) are generally sustained through periodic stocking. However, Hub Lake was recently

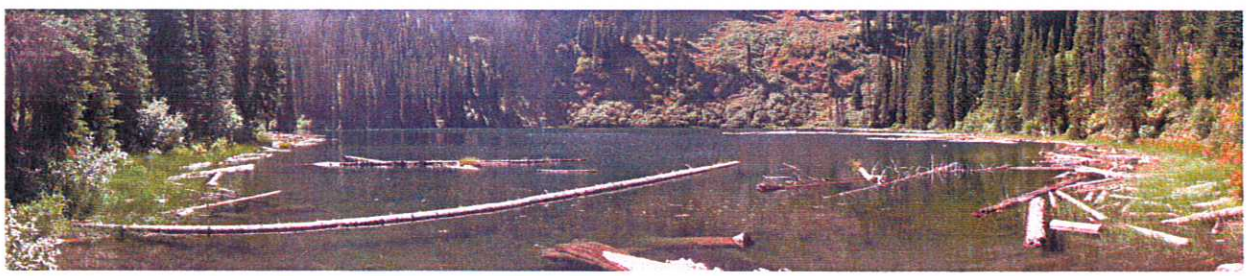
removed from the stocking program as size structure, fish density and juvenile abundance indicated that the westslope cutthroat trout population was reproducing consistently. The performance of stocked westslope cutthroat trout will be evaluated over time. MFWP will also seek to confirm that the Hub Lake fishery is self-sustaining. If monitoring indicates that the quality of these fisheries may be improved through adjustments in frequency or quantity of stocking, changes will be considered.

Table 10. Recommended management strategies for Lower St. Regis Management Unit lakes.

Water Body	Current Fishery	Recommended Future Actions
Eagle Peak L.	Fishless	None; Identify any unauthorized fish introductions
Gold Peak L.	Fishless	None; Identify any unauthorized fish introductions
Hazel Lake	Stocked WCT	Evaluate performance and size structure of cutthroat trout population – manage as a *quality* cutthroat trout fishery
Hub Lake	Wild WCT	Confirm that cutthroat trout population is self-sustaining
Lenore Lake	Stocked WCT	Evaluate performance and survival of stocked cutthroat trout - manage as a *quality* cutthroat trout fishery
Mary Lake	Fishless	None; Identify any unauthorized fish introductions
Moore Lake	Wild EBT	Consider tools to eliminate brook trout; convert to cutthroat fishery
Square lake	Stocked WCT	Evaluate performance and survival of stocked cutthroat trout - manage as a *quality* cutthroat trout fishery
Ward Peak L.	Fishless	None; Identify any unauthorized fish introductions

* Species abbreviations: WCT = westslope cutthroat trout, EBT = brook trout

Removal or suppression of brook trout in Moore Lake is a recommended management priority within the middle Clark Fork region (see photo below). Brook trout emigration poses a continual threat of hybridization with bull trout and increased competition with westslope cutthroat trout and other aquatic species in Little Joe Creek. Both forks of this stream provide spawning and rearing habitat for migratory westslope cutthroat trout and one of the few remaining fluvial bull trout populations in the middle Clark Fork region. Little Joe Creek also supports stream-resident bull trout, westslope cutthroat trout and sculpin. It is not known if the existing brook trout population in Little Joe Creek originated in Moore Lake, but continued emigration from the lake threatens to exacerbate hybridization and competition risks for native stream populations.



Moore Lake

Conservation of aquatic communities in Twomile and Ward Creeks also requires that the compatibility of lake fish species be considered. These stream communities are also predominantly comprised of native fish. Although westslope cutthroat trout in the Twomile Creek drainage have already been hybridized with rainbow trout, populations in Ward Creek still appear to be genetically non-introgressed (MFWP, unpublished data). Therefore, westslope cutthroat trout (M012) are the only strain of *Oncorhynchus* spp. currently considered appropriate for stocking in headwater lakes.

The Lower St. Regis Unit contains three fishless lakes > 1 acre and others that are smaller. No change in future management is proposed for these waters. Gold Peak and Mary Lakes are very shallow and would not likely allow over-winter fish survival. Eagle Peak Lake is believed to be capable of supporting fish (>30 ft deep), but is very small (~ 3 acres) and remote. Management of these lakes as fishless waters is also considered significant in providing overall ecological diversity within the management unit. Amphibian surveys and updated lake information for fishless lakes within the unit are needed.

IV. Dry-Cedar Creeks Management Unit

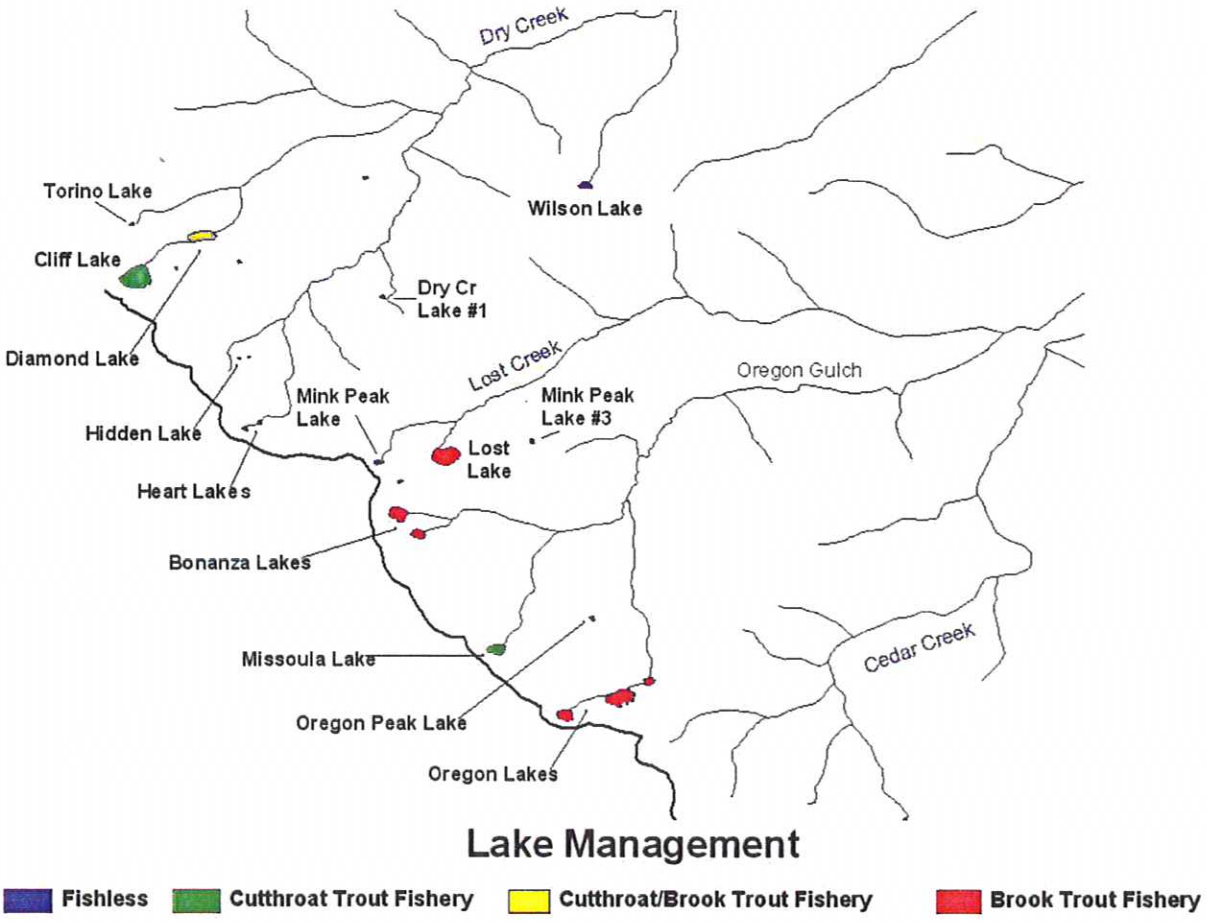
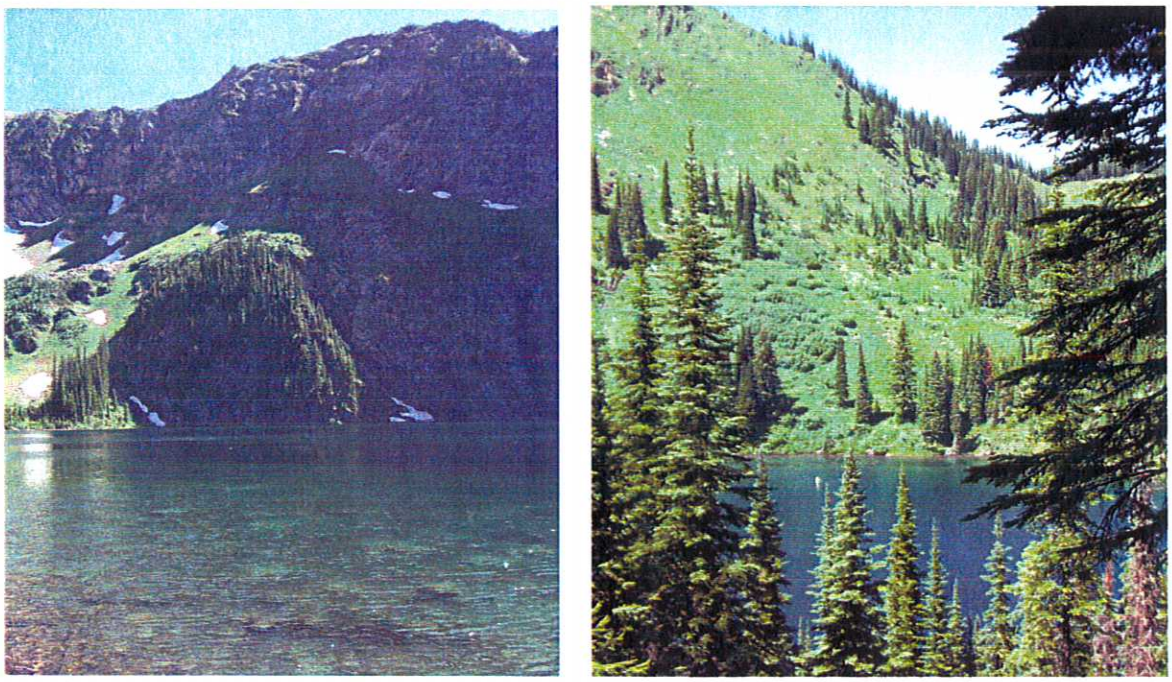


Figure 9. Map of mountain lakes and fishery status in the Dry-Cedar Creeks Management Unit.

Description

This lake management unit contains a complex of 17 fish-bearing and fishless lakes (> 1 acre) in the headwaters of two major coldwater tributaries of the Clark Fork River (Cedar Creek and Dry Creek). This unit has the highest density of alpine and sub-alpine lakes in the middle Clark Fork project area. Although most of these waters lie in high glacial cirques along the Montana-Idaho border, lake size, bathymetry, productivity, and accessibility varies. Larger (5-34 acres), deeper (21-180 ft max depth), relatively accessible lakes are primarily fish-bearing, while fishless waters are generally smaller (1-3 acres), shallower (<5 ft – 18 ft max depth) and more remote (see Appendices A and C).

There are nine fish-bearing lakes in this management unit, including two westslope cutthroat trout populations that are supplemented with stocking, six self-sustaining brook trout populations, and one water body (Diamond Lake) that supports both species. Cliff Lake and Missoula Lake are popular, easily accessible westslope cutthroat trout fisheries. Missoula Lake lies directly adjacent to a heavily used, USFS campground that is accessible by road. Therefore, it is stocked frequently (2 year cycle), with higher numbers of trout (~ 90/acre) relative to other lakes in this region. Cliff Lake is stocked less frequently (7 year cycle) with lower densities of trout (40/acre) because it requires a short hike to access and supports some natural reproduction. Both lakes contain high densities of trout with moderate to high body condition (mean Wr 101-128). Brook trout populations are typical for lakes in the project area: high density, stunted (max length 8.1-10.5 inches), with low body condition (mean Wr 82-93). Diamond Lake is unique in that it supports stunted, self-sustaining brook trout, and also stunted westslope cutthroat trout (mean Wr 78, max lengths 13 inches) that are likely emigrants from Cliff Lake (lies just upstream).



Cliff Lake (left) and Missoula Lake (right) are popular, harvest-oriented, westslope cutthroat trout fisheries

Dry Creek and Cedar Creek are inhabited by native fish populations and are considered important watersheds for westslope cutthroat trout and bull trout conservation. In perennial reaches, Dry Creek supports westslope cutthroat trout, brook trout and sculpins. Westslope cutthroat trout are slightly hybridized (~2%) with rainbow trout throughout the drainage (MFWP, unpublished data). Brook trout populations are likely continuously supplemented by emigrants from Diamond Lake. Cedar Creek is unique in that it supports a predominantly native fish community. This stream supports one of the four remaining viable, fluvial bull trout populations in the middle Clark fork region. Westslope cutthroat trout are also abundant and exhibit slight hybridization (~ 1%) with rainbow trout in the main stem (MFWP, unpublished data). Despite numerous headwater lake populations in the Oregon Gulch drainage, brook trout were not detected in recent stream sampling throughout the watershed. However, it is likely that brook trout are present near lake outlets and immediately downstream.

Amphibian population information is incomplete for this lake management unit. Juvenile and/or adult Columbia spotted frogs were observed in six of the nine fish-bearing lakes surveyed in 2004-2006. However, long-toed salamanders were not observed at any lakes. None of the fishless waters were investigated.

Fish-bearing lakes in this management unit are all readily accessible. Most can be reached via non-motorized travel (< 2.5 miles) from established trailheads on the USFS trail network (see descriptions in Appendix C). Diamond Lake lies at the end of an open USFS road. Fishless lakes are much more remote and are generally not on the established trail system.

Lake Management

The Dry-Cedar Creeks Management Unit provides a diversity of alpine and sub-alpine lakes (Table 11). All of the fish-bearing waters, except Cliff Lake and Missoula Lake, support self-sustaining brook trout populations. Management emphasis for brook trout fisheries is trout removal, both to improve fishery quality and to reduce the risk of impacts to downstream native fish communities. Brook trout emigration poses a continual threat of hybridization with bull trout and increased competition with westslope cutthroat trout and other native aquatic species. Cliff and Missoula Lakes are currently in the MFWP stocking program. Infrequent stocking is considered necessary to maintain these popular, harvest-oriented westslope cutthroat trout fisheries.

The performance of westslope cutthroat trout stocked in Missoula and Cliff Lakes will be evaluated over time. If monitoring indicates that the quality of these fisheries may be improved through adjustments in frequency or quantity of stocking, changes will be considered. The greatest potential improvements in fishery quality would likely be through manipulation of existing wild brook trout populations. However, an increased size structure and higher quality fishery for stunted populations (e.g., Oregon Lakes, Bonanza Lakes, Lost Lake) would likely require consistent size-selective harvest or predation, reduced natural reproduction rates, or complete brook trout removal and restocking. Tools to affect these changes will be evaluated (see Management Tools section). Because of current and potential impacts to native bull trout and westslope cutthroat trout populations in Dry Creek and Cedar Creek, removal of brook trout from headwater lakes and replacement with westslope cutthroat trout or other compatible species is considered a conservation priority.

The Dry-Cedar Creeks Management Unit contains eight fishless lakes > 1 acre and several others that are smaller. No change in future management is proposed for these waters. Torino Lake, Mink Peak Lake, Dry Creek #1 and others are very shallow and would not likely allow over-winter fish survival. Several other waters, including Hidden Lake, Oregon Peak Lake and Wilson Lake, are likely capable of supporting fish populations (> 12 ft max depth). However, these small, remote lakes would offer minimal angling opportunity and continued management of these lakes as fishless waters is considered significant in providing overall ecological diversity within the management unit. Amphibian surveys and updated lake information for fishless lakes within the unit are needed.

Table 11. Recommended management strategies for Dry-Cedar Creeks Management Unit lakes.

Water Body	Current Fishery	Recommended Future Actions
Bonanza Lake - Upper	Wild EBT	Consider tools to improve fishery or eliminate brook trout.
Bonanza Lake - Lower	Wild EBT	Consider tools to improve fishery or eliminate brook trout.
Cliff Lake	Stocked WCT	Evaluate performance and size structure of cutthroat trout population – manage as *harvest-oriented* fishery
Diamond Lake	Wild EBT & WCT	Consider tools to eliminate brook trout or convert to a cutthroat trout fishery
Dry Cr Lake #1	Fishless	None; Identify any unauthorized fish introductions
Heart Lakes - upper & lower	Fishless	None; Identify any unauthorized fish introductions
Hidden L. – upper & lower	Fishless	None; Identify any unauthorized fish introductions
Lost Lake	Wild EBT	Consider tools to improve fishery or eliminate brook trout.
Mink Peak Lake	Fishless	None; Identify any unauthorized fish introductions
Mink Peak Lake #3	Fishless	None; Identify any unauthorized fish introductions
Missoula Lake	Stocked WCT	Evaluate performance and size structure of cutthroat trout population – manage as *harvest-oriented* fishery
Oregon Lake - Upper	Wild EBT	Consider tools to improve fishery or eliminate brook trout.
Oregon Lake - Middle	Wild EBT	Consider tools to improve fishery or eliminate brook trout.
Oregon Lake - Lower	Wild EBT	Consider tools to improve fishery or eliminate brook trout.
Oregon Peak Lake	Fishless	None; Identify any unauthorized fish introductions
Torino Lake	Fishless	None; Identify any unauthorized fish introductions
Wilson Lake	Fishless	None; Identify any unauthorized fish introductions

* Species abbreviations: WCT = westslope cutthroat trout, EBT = brook trout

V. Trout Creek Management Unit

Description

The Trout Creek Management Unit contains 12 fishless and fish-bearing lakes (> 1 acre) in the headwaters of Trout Creek and Quartz Creek (Figure 10). Fish-bearing waters lie at the head of Trout Creek along the Montana-Idaho border, while most fishless lakes are scattered in upper Cement Creek, Deep Creek and Windfall Creek (tributaries of Trout Creek), and in upper Quartz Creek. Larger (> 11 acres), deeper (> 20 ft max depth), relatively accessible lakes are primarily fish-bearing, while fishless waters are generally smaller (< 5 acres), shallower (< 16 ft max depth) and more remote.

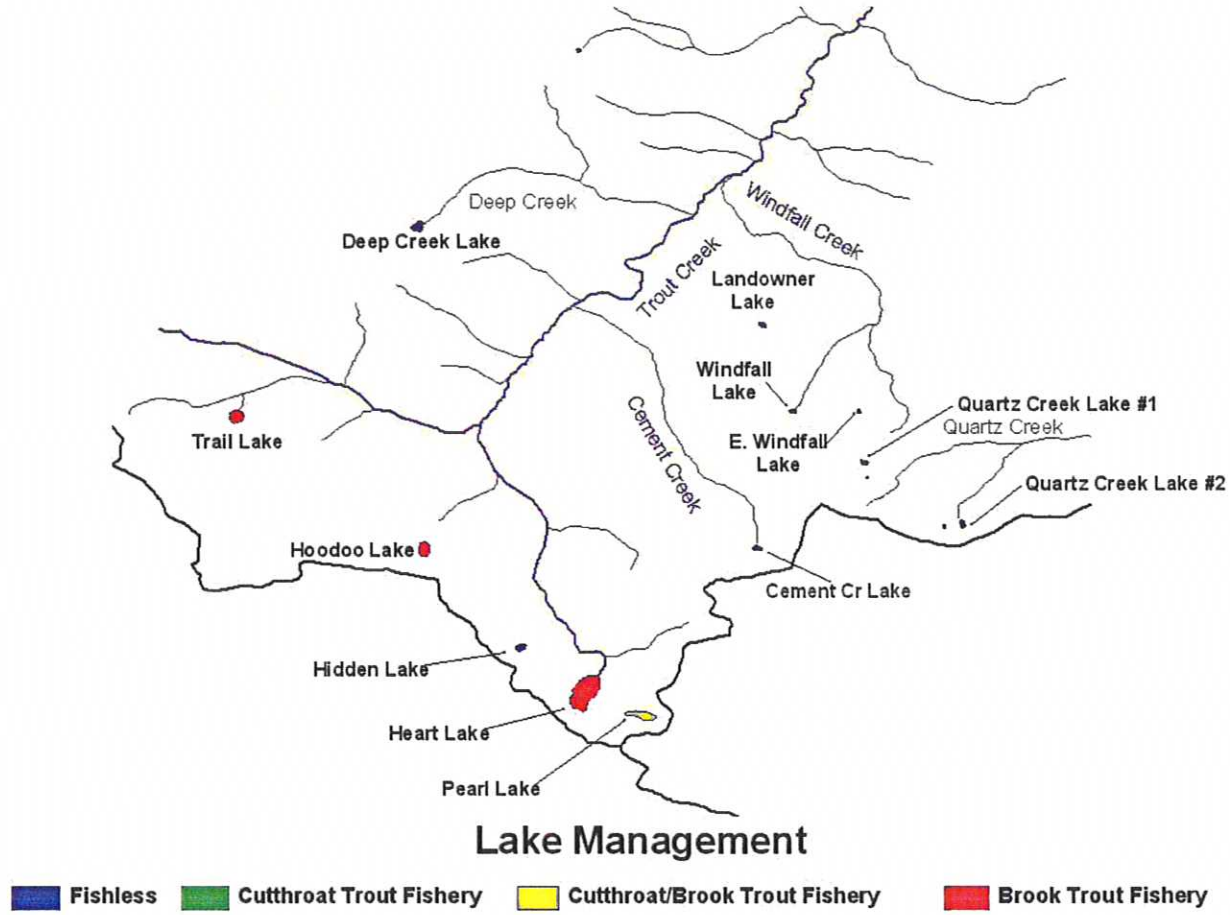


Figure 10. Map of mountain lakes and fishery status in the Trout Creek Management Unit.

There are four fish-bearing lakes in this management unit. All support self-sustaining brook trout populations, but one (Pearl Lake) is now supplemented with westslope cutthroat trout to provide fishery diversity. Trout populations in Heart Lake and Hoodoo Lake are typical of brook trout fisheries in the project area: high density, stunted (max length 10-11 inches), with low body condition (mean Wr 87-89). However, Heart Lake is somewhat unique in that it also supports an abundant longnose sucker population in addition to trout. Trail Lake and Pearl Lake

are also distinctive among brook trout fisheries because of unusually large size structure (max length 13-14 inches) and high body condition (mean Wr 101-141) relative to other populations in the project area. Neither lake had obvious physical or ecological characteristics that explained this deviation. However, brook trout population density appeared to be very low in Pearl Lake, which indicates poor reproductive success (unknown), unusually high harvest rates (unlikely) or recent introduction of brook trout (unknown). Pearl Lake is currently the only lake in the management unit that is included in the MFWP fish stocking program.

Trail Lake (left) and Pearl Lake (right) currently support quality brook trout fisheries

Trout Creek and Quartz Creek are moderately important for conservation of native fish populations. Quartz Creek is a smaller watershed that has been heavily impacted by historic mining activities. However, the stream does support westslope cutthroat trout in middle and upper reaches that appear to be non-introgressed (MFWP, unpublished data). This populations is isolated from the Clark Fork River by a series of natural and anthropogenic upstream migration barriers near the mouth. Trout Creek is a larger, more complex tributary system with variable species composition and abundance among stream reaches. Although brook trout are common in upper reaches and other non-native fish (e.g., rainbow trout and brown trout) are dominant near the mouth, Trout Creek still supports a remnant bull trout population and localized westslope cutthroat populations that may still be non-introgressed (MFWP, unpublished data). Headwater lakes likely act a continual source of brook trout immigrants and lower reaches are directly connected (year-round) with the Clark Fork River, which supports a mixed community of introduced salmonids, hybrids, and native aquatic populations.

Amphibian surveys were completed at all four fish-bearing lakes in the management unit. Columbia spotted from adults and larvae were common or abundant in all lakes, particularly in areas where emergent aquatic vegetation was present. No long-toed salamanders were documented at any of the lakes. None of the fishless waters were investigated.

Fish-bearing lakes in this management unit are all readily accessible via non-motorized travel (< 2.5 miles) from established trailheads on the USFS trail network (see descriptions in Appendix C). Fishless lakes are much more remote and are generally not on the established trail system.

Lake Management

The Trout Creek Management Unit provides a diversity of alpine and sub-alpine lakes (Table 12). All of the fish-bearing waters support self-sustaining brook trout populations. Normally, this would suggest few management options. However, Trail Lake supports the finest brook trout fishery in the middle Clark Fork region. Selective harvest and controlled natural reproductive success may further enhance this fishery as fish densities are currently very high (truncates potential growth and body condition). Pearl Lake currently supports lower densities of large brook trout, but could likely support quality brook trout and westslope cutthroat fisheries if fish density can be controlled. The performance of brook trout and stocked westslope cutthroat trout in Pearl lake will be evaluated over time. If monitoring indicates that the quality of this fishery may be improved through adjustments in frequency or quantity of stocking, changes will be considered. Fisheries in Heart and Hoodoo lakes could also be improved through manipulation of existing wild brook trout populations. However, an increased size structure and higher quality fishery for stunted populations would likely require consistent size-selective harvest or predation, reduced natural reproduction rates, or complete brook trout removal and restocking. Tools to affect these changes will be evaluated (see Management Tools section). Downstream benefits of brook trout removal are likely negligible as stream-resident populations are well established in upper Trout Creek.

Table 12. Recommended management strategies for Trout Creek Management Unit lakes.

Water Body	Current Fishery	Recommended Future Actions
Cement Cr. L.	Fishless	None; Identify any unauthorized fish introductions
Deep Cr. Lake	Fishless	None; Identify any unauthorized fish introductions
E. Windfall L.	Fishless	None; Identify any unauthorized fish introductions
Heart Lake	Wild EBT	Consider tools to improve fishery or eliminate brook trout.
Hidden Lake	Fishless	None; Identify any unauthorized fish introductions
Hoodoo Lake	Wild EBT	Consider tools to improve fishery or eliminate brook trout.
Landowner L.	Fishless	None; Identify any unauthorized fish introductions
Pearl Lake	Wild EBT & stocked WCT	Evaluate performance and size structure of cutthroat trout population - currently managed as *diversified quality* fishery
Quartz Creek Lake #1	Fishless	None; Identify any unauthorized fish introductions
Quartz Creek Lake #2	Fishless	None; Identify any unauthorized fish introductions
Trail Lake	Wild EBT	Manage as a quality brook trout fishery
Windfall Lake	Fishless	None; Identify any unauthorized fish introductions

* Species abbreviations: WCT = westslope cutthroat trout, EBT = brook trout

The Trout Creek Management Unit also contains eight fishless lakes > 1 acre and several others that are smaller. No change in future management is proposed for these waters. Cement Creek Lake, Landowner Lake, Windfall Lake and others are very shallow (< 10 ft max depth) and would not likely allow over-winter fish survival. Other waters, including Deep Creek Lake, East Windfall Lake, Hidden Lake, and the Quartz Creek lakes are likely capable of supporting fish populations (> 12 ft max depth). However, these small, remote lakes would offer minimal angling opportunity and continued management of these lakes as fishless waters is considered

significant in providing overall ecological diversity within the management unit. Amphibian surveys and updated lake information for fishless lakes within the unit are needed.

VI. North Fork Fish Creek Management Unit

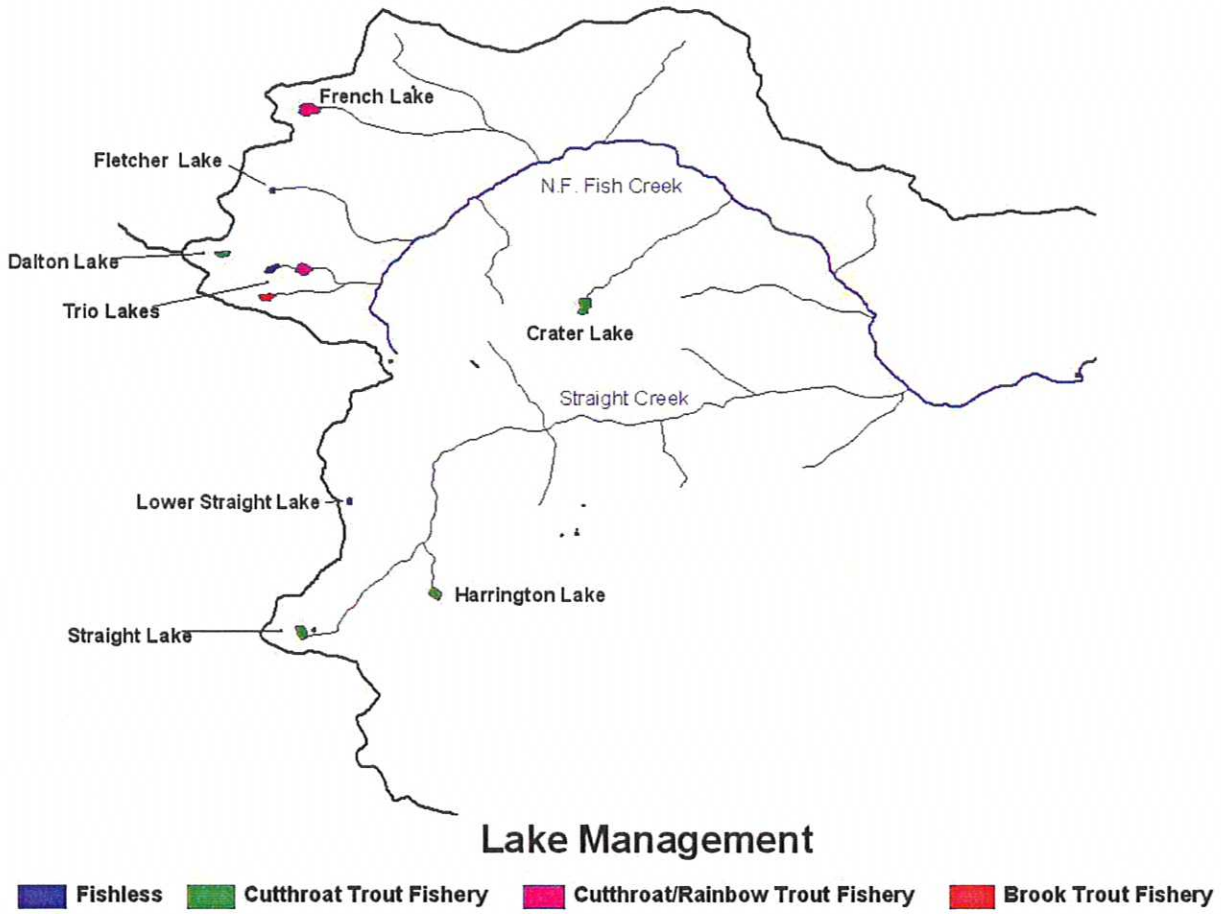


Figure 11. Map of mountain lakes and fishery status in the North Fork Fish Creek Management Unit.

Description

The North Fork Fish Creek Management Unit contains 10 remote, back-country lakes (> 1 acre) that lie in the headwaters of Straight Creek and other smaller tributaries to the North Fork of Fish Creek (Figure 11). These water bodies exhibit a range of morphological and ecological conditions, but most are small (< 18 acres), moderately productive waters that lie in glacial cirque basin or glacial trough landforms near the tree line.

Seven of the lakes are fish-bearing, with variable species composition and levels of natural reproduction. Several fisheries are sustained through periodic westslope cutthroat trout stocking

(Crater Lake, Dalton Lake, and Harrington Lake). Straight Lake is considered a self-sustaining westslope cutthroat trout fishery. Fish body condition in the various westslope cutthroat trout fisheries ranges from moderate to high (mean Wr 86-110), depending on lake productivity (positively correlated) and fish density (negatively correlated).

French Lake and the Trio Lakes support a combination of species. French Lake and Lower Trio Lake are inhabited by self-sustaining rainbow trout populations, with westslope cutthroat trout supplementation. Upper Trio Lake supports the only brook trout population in this management unit. Fish body condition is generally low in these wild fish populations as high fish densities exhaust food resources and lead to truncated growth (stunting). The North Fork of Fish Creek is a regional stronghold for native salmonids. Fluvial bull trout and non-introgressed westslope cutthroat trout are common throughout the stream. Introduced fish species in headwater lakes constitute a threat to the long-term viability of these populations. Further downstream, the West Fork and main stem of Fish Creek support a mixed community of introduced salmonids, hybrids, and native aquatic populations, but native salmonids are the dominant species.

The three fishless lakes (> 1 acre) in this unit range from small productive 'ponds' (e.g., Fletcher Lake; 1.7 acres, < 5 ft deep) to larger, relatively deep waters (e.g., Middle Trio Lake; 7 acres, > 24 ft deep). Characteristics of smaller (< 1 acre), un-named water bodies scattered throughout the unit have not been quantified, but many have been anecdotally described as wetlands or ephemeral ponds.

Amphibian surveys were completed on all lakes > 1 acre except Fletcher Lake and Lower Straight Lake. Columbia spotted frog adults were common on most lake perimeters and densities appeared most closely correlated with the availability of emergent aquatic vegetation along the shore. No other amphibians were observed.

Because the entire management unit lies in the proposed Great Burn Wilderness Area, lake access is difficult. Lakes can be reached via 5-10 miles of non-motorized travel on established USFS trails, typically from the Clearwater Crossing trailhead (see Appendix C). Alternative routes include access from Idaho by crossing the state-line divide or by traveling the state-line trail system from Trout Creek or Schley Mountain (Cache Creek) trailheads.

Lake Management

The North Fork Fish Creek Management Unit provides a diversity of fish-bearing and fishless lakes (Table 13). Several of the fish-bearing lakes support stocked westslope cutthroat trout that are managed as quality fisheries (Crater, Harrington, and Dalton Lakes). Straight Lake was recently removed from the stocking program as size structure and fish density indicated that the westslope cutthroat trout population was reproducing consistently. The performance of stocked westslope cutthroat trout will be evaluated over time and MFWP will also seek to confirm that the Straight Lake fishery is self-sustaining. If monitoring indicates that the quality of these fisheries may be improved through adjustments in frequency or quantity of stocking, changes will be considered.

French and Lower Trio Lakes are supplemented with westslope cutthroat trout to diversify wild rainbow trout fisheries and to help reduce the rainbow trout genetic component (downstream hybridization risk). Management priorities include removal or suppression of non-native

rainbow trout populations, as well as elimination of introduced brook trout in Upper Trio Lake (see below). Emigrants from these populations pose a substantial hybridization and competition risk to native fish populations in the North Fork of Fish Creek.

Table 13. Recommended management strategies for North Fork Fish Creek Management Unit lakes.

Water Body	Current Fishery	Recommended Future Actions
Crater Lake	Stocked WCT*	Evaluate performance and size structure of cutthroat trout population – manage as *quality* cutthroat trout fishery
Dalton Lake	Stocked WCT	Evaluate performance and size structure of cutthroat trout population – manage as a *quality* cutthroat trout fishery
Fletcher Lake	Fishless	None; Identify any unauthorized fish introductions
French Lake	Wild RBT with stocked WCT	Evaluate performance and survival of stocked cutthroat trout and consider "genetic swamping" to reduce rainbow trout component – currently managed as a *diversified, quality* trout fishery
Harrington L.	Stocked WCT	Evaluate performance and size structure of cutthroat trout population - manage as a *quality* cutthroat trout fishery
Straight Lake	Wild WCT	Confirm that cutthroat trout population is self-sustaining
Straight Lake - Lower	Fishless	None; Identify any unauthorized fish introductions
Trio L.-Upper	Wild EBT	Consider tools to eliminate brook trout; convert to WCT fishery
Trio L.-Middle	Fishless	None; Identify any unauthorized fish introductions
Trio L.-Lower	Wild RBT with stocked WCT	Evaluate performance and survival of stocked cutthroat trout and consider "genetic swamping" to reduce rainbow trout component - currently managed as a *diversified, quality* trout fishery

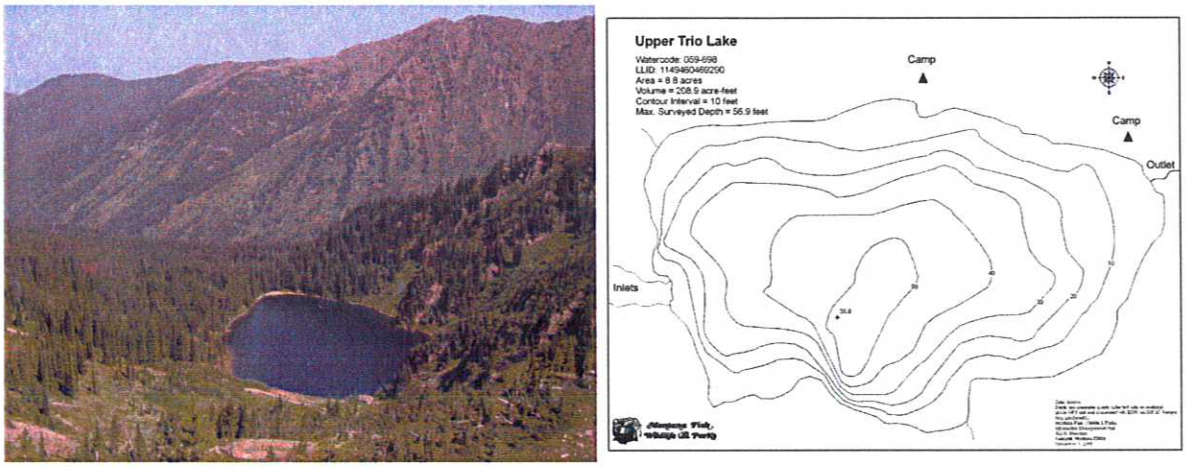
* Species abbreviations: WCT = westslope cutthroat trout, EBT = brook trout, RBT = rainbow trout

Removal or suppression of non-indigenous trout species in North Fork Fish Creek headwater lakes is a recommended management priority within the middle Clark Fork region. The North Fork represents a large, interconnected stronghold for westslope cutthroat trout and a major spawning and rearing habitat for bull trout.

Self-sustaining trout populations in Lower Trio and French Lakes contribute rainbow trout and rainbow trout x cutthroat trout hybrid individuals to outlet streams and threaten the integrity of non-introgressed westslope cutthroat trout populations immediately downstream (MFWP, unpublished data). Genetic samples from French Creek (below French Lake) were the most heavily hybridized *Oncorhynchus* samples in the entire unit. Alternatives for removing or reducing rainbow trout in Lower Trio and French Lakes will be evaluated (see Management Tools section). Typically, alternatives include removal through chemical rehabilitation or genetic "swamping" of rainbow trout through frequent, high density stocking of westslope cutthroat trout.

Similarly, brook trout emigration from Upper Trio Lake poses a continual threat of hybridization with bull trout and increased competition with westslope cutthroat trout and other aquatic species in the North Fork of Fish Creek. Currently, brook trout have only been detected in lower portions of the North Fork. The headwater source population in Upper Trio Lake should be

eliminated to reduce risk of expansion in the stream. Management tools to eliminate brook trout are limited, but all reasonable alternatives will be evaluated.



Upper Trio Lake photo and bathymetry

No changes in the management of fishless lakes in this management unit are anticipated. Middle Trio Lake is likely the only fishless water body that could support fish. No stocking is recommended at this lake, as it contributes to overall ecological diversity in the management unit. Upper and Lower Trio Lake could be managed as fishless waters if non-native fish species were eradicated. However, establishment of westslope cutthroat fisheries is recommended since Middle Trio Lake lies in close proximity and already provides a similar aquatic environment.

VII. West Fork Fish Creek Management Unit

Description

This management unit contains eight remote, back-country lakes (> 1 acre) that lie in the headwaters of Cedar Log Creek and other smaller tributaries to the West Fork of Fish Creek (Figure 12). These water bodies exhibit a range of morphological and ecological conditions, but most are relatively unproductive waters that lie in glacial cirque basin or glacial trough landforms near the tree line. Several of the lakes in this management unit are particularly large (26-41 acres) and deep (55-148 ft max depth) for water bodies in the middle Clark Fork region (e.g., Upper and Lower Siamese Lakes, South Cedar Log Lake).

Five of the lakes in this management unit are fish-bearing, with varying levels of natural reproduction and combinations of westslope cutthroat trout and Yellowstone cutthroat trout. Two fisheries are supplemented or sustained through periodic westslope cutthroat trout plants (Lower Siamese and Vann Lakes). Self-sustaining trout populations were found in the Cedar Log Lakes and Upper Siamese Lake, which support Yellowstone and westslope cutthroat trout, respectively. Fish body condition in the various cutthroat trout fisheries was generally low or moderate (mean Wr 76-93), as these water bodies are generally oligotrophic and many have high rates of natural reproduction (see Appendix A).

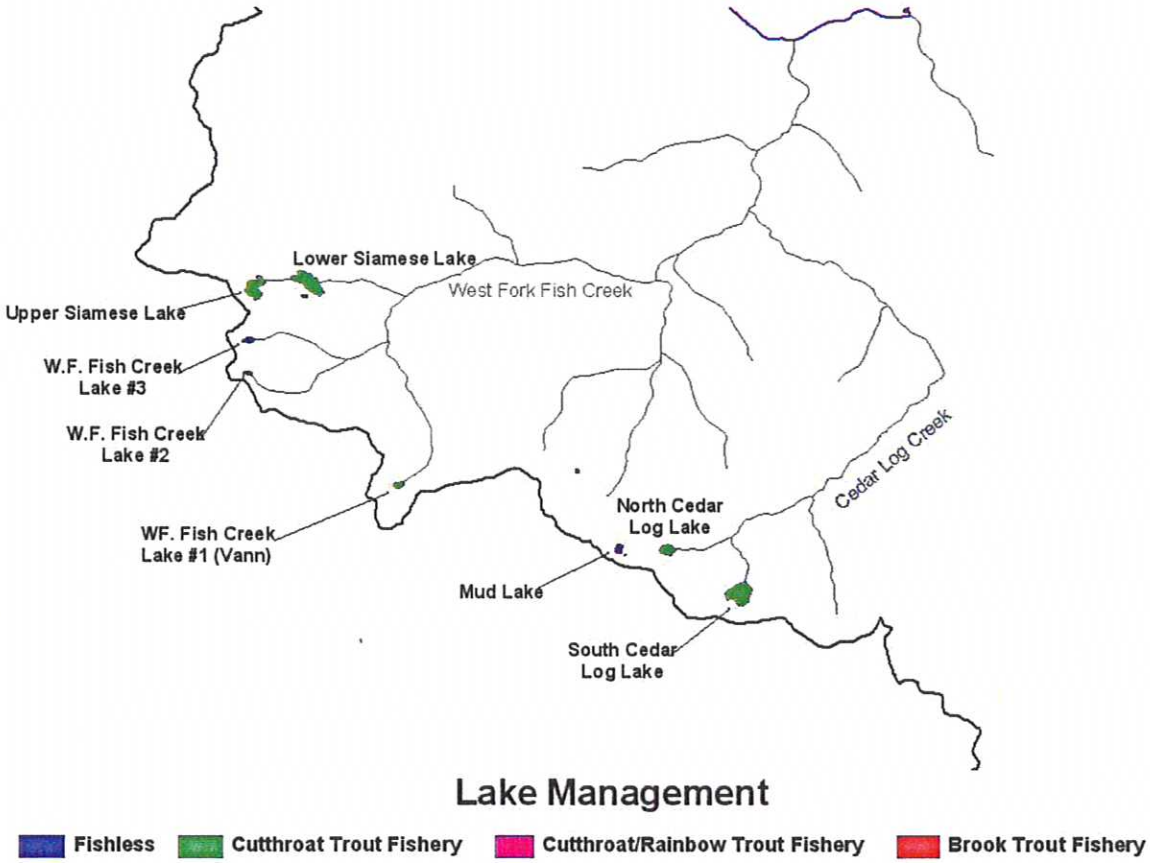


Figure 12. Map of mountain lakes and fishery status in the West Fork Fish Creek Management Unit.

The West Fork of Fish Creek is a regional stronghold for native salmonids. Fluvial bull trout and westslope cutthroat trout are abundant throughout the stream. Introduced fish species (Yellowstone cutthroat trout in this case) in headwater lakes constitute a threat to the long-term viability of these populations. Further downstream, the West Fork and main stem of Fish Creek support a mixed community of introduced salmonids, hybrids, and native aquatic populations, but native salmonids are the dominant fish species.

The three fishless lakes (> 1 acre) in this unit range from productive, wetland ponds (e.g., Mud Lake; ~ 5 acres, < 5 ft deep) to relatively sterile (oligotrophic), deeper waters (e.g., West Fork Fish Creek Lake #3; ~6 acres, > 15 ft deep). Characteristics of smaller (< 1 acre), un-named water bodies scattered throughout the unit have not been quantified, but many have been anecdotally described as wetlands or ephemeral ponds.

Amphibian surveys were completed on all lakes > 1 acre except West Fork Fish Creek Lakes #2 and #3. Columbia spotted frog adults and tadpoles were common or abundant at all lakes and densities appeared most closely correlated with the availability of emergent aquatic vegetation

along the shore. Juvenile long-toed salamanders were also observed at West Fork Fish Creek Lake #1 (Vann Lake) and Mud Lake.

Because the entire management unit lies in the proposed Great Burn Wilderness Area, lake access is difficult. Lakes can be reached via 5-10 miles of non-motorized travel on established USFS trails, typically from the Clearwater Crossing trailhead. Alternative routes include access from Idaho by crossing the state-line divide or by traveling the state-line trail system from Trout Creek or Schley Mountain (Cache Creek) trailheads (see Appendix C).

Lake Management

The West Fork Fish Creek Management Unit provides a combination of stocked and self-sustaining cutthroat trout fisheries, as well as several fishless lakes (Table 14). Lakes in the MFWP stocking program include Vann Lake and Lower Siamese Lake. These lakes are managed as quality and harvest-oriented westslope cutthroat trout fisheries. Other waters support self-sustaining trout populations with low fish body condition (mean Wr 76-83) and marginal growth (Upper Siamese Lake and Cedar Log Lakes). Upper Siamese Lake was recently removed from the stocking program as trout size structure, fish density and juvenile abundance indicated that the westslope cutthroat trout population was reproducing consistently. The performance of stocked westslope cutthroat trout will be evaluated over time and MFWP will also seek to confirm that the Upper Siamese Lake fishery is self-sustaining. If monitoring indicates that the quality of these fisheries may be improved through adjustments in frequency or quantity of stocking, changes will be considered.

Table 14. Recommended management strategies for West Fork Fish Creek Management Unit lakes.

Water Body	Current Fishery	Recommended Future Actions
Cedar Log Lake -North	Wild YCT *	Evaluate opportunities to convert to westslope cutthroat trout fishery; consider "genetic swamping" to reduce YCT component
Cedar Log Lake - South	Wild YCT	Evaluate opportunities to convert to westslope cutthroat trout fishery; consider "genetic swamping" to reduce YCT component
Mud Lake	Fishless	None; Identify any unauthorized fish introductions
Siamese Lake - Upper	Wild WCT	Confirm that cutthroat trout population is self-sustaining
Siamese Lake - Lower	Stocked WCT	Evaluate performance and size structure of cutthroat trout population – manage as *harvest-oriented* cutthroat trout fishery
W. F. Fish Cr L. # 1 (Vann)	Stocked WCT	Evaluate performance and size structure of cutthroat trout population – manage as *quality* cutthroat trout fishery
W. Fork Fish Cr Lake #2	Fishless	None; Identify any unauthorized fish introductions
W. Fork Fish Cr Lake #3	Fishless	None; Identify any unauthorized fish introductions

* Species abbreviations: WCT = westslope cutthroat trout, YCT = Yellowstone cutthroat trout

North and South Cedar Log Lakes contained wild trout populations with obvious Yellowstone cutthroat trout morphological characteristics (no genetic testing completed). Emigrants from

these populations pose a substantial hybridization risk to native westslope cutthroat trout populations in the West Fork of Fish Creek. Recent genetic testing in the West Fork (1993 and 2004; MFWP, unpublished data) has confirmed low level hybridization of native (westslope) stream populations. Management priorities include suppression of non-native Yellowstone cutthroat trout populations in these waters to reduce future risk. Given the logistical constraints and large size of South Cedar Log Lake, genetic 'swamping' with genetically compatible westslope cutthroat trout will likely be one tool used to help effect this change.

No changes in the management of fishless lakes in this management unit are anticipated. Middle West Fork Fish Creek Lake #3 is likely the only fishless water body that would allow consistent over-winter fish survival. No stocking is recommended at this lake, as it contributes to overall ecological diversity in the management unit.

VIII. South Fork Fish Creek Management Unit

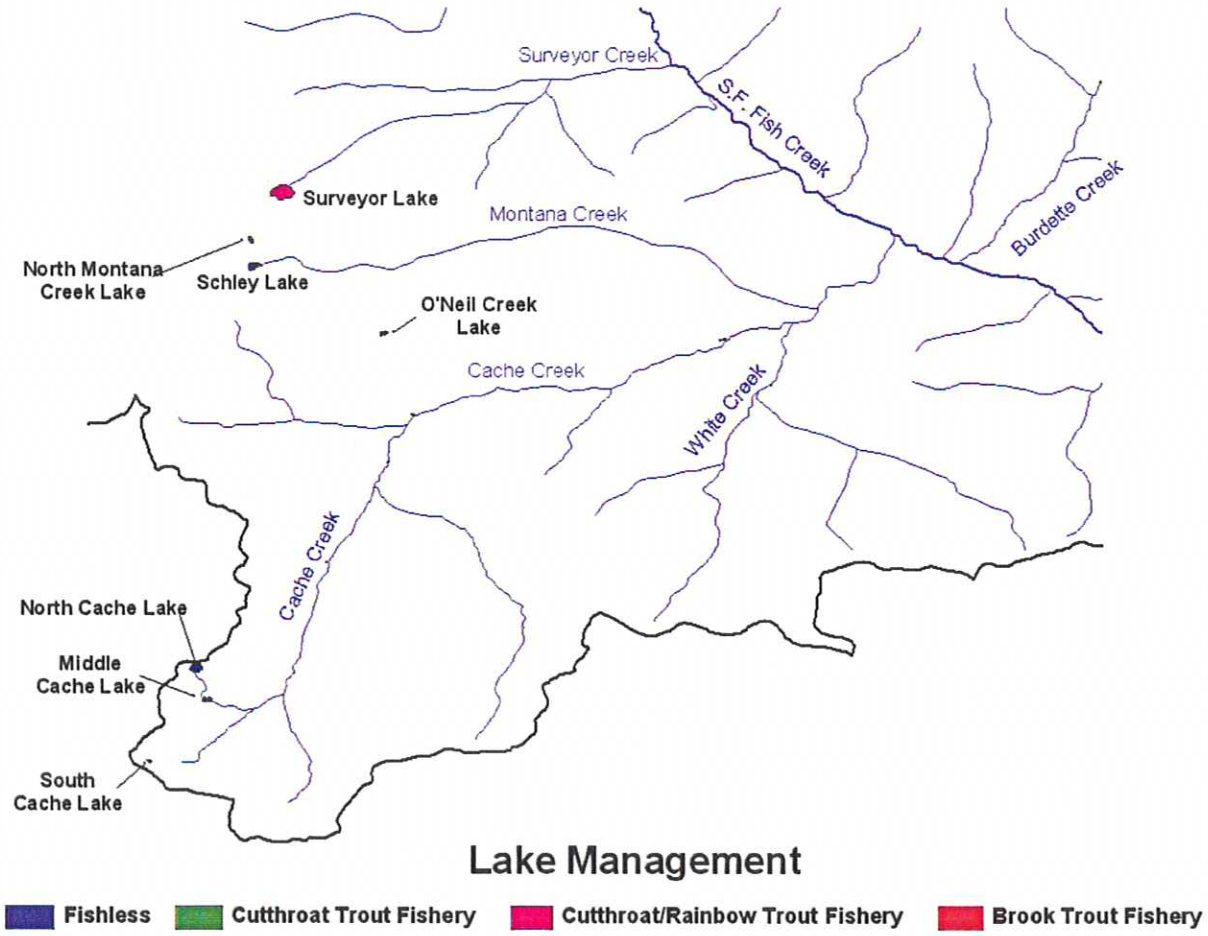


Figure 13. Map of mountain lakes and fishery status in the South Fork Fish Creek Management Unit.

Description

The South Fork Fish Creek Management Unit is comprised of six fishless lakes and one lake fishery in the headwaters of Cache, Montana, and Surveyor Creeks (tributaries of South Fork Fish Creek). Like most middle Clark Fork region alpine lakes, these oligotrophic waters lie in glacial cirque basins located near or above the tree line (5,800-6,850 ft msl). The preponderance of fishless lakes, clustered in upper Montana Creek and upper Cache Creek, makes this management unit unique (Figure 13). Most are small (< 6.5 acres), secluded waters that have not recently been surveyed or have never been surveyed (e.g., North Montana Creek Lake, Schley lake, O'Neil Creek Lake). Tabular information for these lakes in Appendix A is anecdotal or was inferred from maps.

The lone fishery, Surveyor Lake, is comprised of self-sustaining rainbow trout that are supplemented with stocked westslope cutthroat trout to provide diversity. Fish densities are high in Surveyor Lake and trout body condition (mean Wr) is low to moderate (79-91). This water is managed as a high density, harvest-oriented fishery that receives considerable angler use.

The Surveyor Creek and greater Cache Creek drainages support important native populations that have been compromised by past brook trout and rainbow trout introductions in Fish Creek and Surveyor Lake. Surveyor Creek supports predominantly westslope cutthroat trout, with low densities of brook trout and rainbow trout x westslope cutthroat trout hybrids (MFWP, unpublished data). Cache Creek has a similar species composition, with a remnant bull trout population in the main stem and non-introgressed westslope cutthroat trout in some tributaries. Further downstream, the South Fork and main stem of Fish Creek support a mixed community of introduced salmonids, hybrids, and native aquatic populations, but native salmonids are the dominant fish species.

Because shoreline surveys have not been conducted at most the lakes, the status of amphibian populations is unknown. Adult Columbia spotted frogs were observed at Surveyor Lake, but no amphibians were detected at North Cache Lake.

Access to lakes in this unit is variable. Surveyor Lake lies just 0.5 miles by trail from an open USFS road. Not surprisingly, Surveyor Lake is a popular fishery and supports frequent recreational use. Schley Lake and North Montana Creek Lake also lie close to the road network, but there are no developed trails to the lakes. Other fishless lakes lie in Cache Creek roadless areas (proposed Great Burn Wilderness) and are not accessible via the U.S. Forest Service trail network. None of the fishless waters surveyed had evidence of recent recreational use (see Appendix C).

Lake Management

Surveyor Lake supports the only trout fishery in the South Fork Fish Creek Management Unit (Table 15). Easy access and high fish densities make this lake a popular destination for anglers. Similar to other headwater lakes that support wild rainbow trout, conversion to westslope cutthroat trout that are genetically compatible with downstream populations is the preferred management direction. This would likely involve "swamping" the existing population with higher densities of M012 strain westslope cutthroat trout.

Table 15. Recommended management strategies for South Fork Fish Creek Management Unit lakes.

Water Body	Current Fishery	Recommended Future Actions
Cache Lake - North	Fishless	None; Confirm extirpation of WCT & Identify any unauthorized fish introductions
Cache Lake - Middle	Fishless	None; Identify any unauthorized fish introductions
Cache lake - South	Fishless	None; Identify any unauthorized fish introductions
N. Montana Creek Lake	Fishless	Complete lake survey; Identify any unauthorized fish introductions
O'Neil Creek Lake	Fishless	Complete lake survey; Identify any unauthorized fish introductions
Schley Lake	Fishless	Complete lake survey and determine suitability for trout introduction; Identify any unauthorized fish introductions
Surveyor Lake	Wild RBT and stocked WCT	Evaluate performance and survival of stocked cutthroat trout and consider "genetic swamping" to reduce rainbow trout component – currently managed as a *diversified, harvest-oriented* trout fishery

* Species abbreviations: WCT = westslope cutthroat trout, RBT = rainbow trout

No change in management is anticipated for fishless waters in upper Cache Creek: North Cache Lake, Middle Cache Lake, and South Cache Lake. These are all relatively pristine, high elevation (6,000-6,850 ft msl) waters that lie in the proposed Great Burn Wilderness area. Only North Cache Lake is considered to be capable of supporting fish, but no stocking is recommended as this lake is very remote and represents a unique alpine environment that has no obvious evidence of human disturbance. MFWP surveys in 2006 indicated that the lake contained extremely low densities of large westslope cutthroat trout that are likely remnants from past stocking. Discontinued stocking is expected to eliminate this trout population as spawning habitat is limited. Currently, there are no plans to develop other fisheries in this management unit without completing thorough field surveys at North Montana Creek Lake, O'Neil Creek Lake, and Schley Lake. Schley Lake is a possible candidate for fish introduction, but stocking would only be considered if other nearby fishless waters provided comparable habitat.

North Cache Lake (left) and South Cache Lake (right) – fishless waters in the South Fork Fish Creek Management Unit

As mentioned above, lake assessments (including amphibian surveys) are needed at several of the fishless lakes in this management unit. This work will help to direct and justify any future actions.