



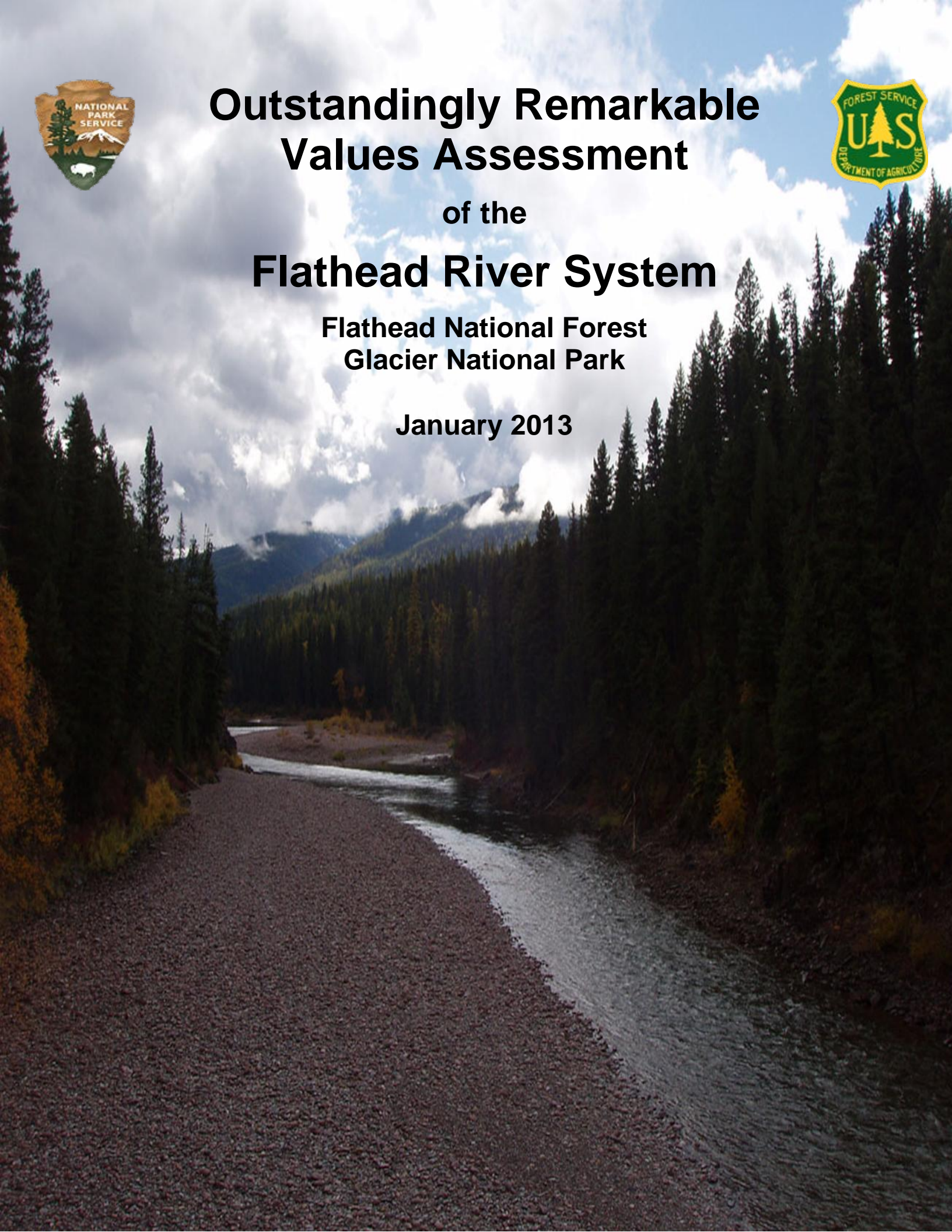
# **Outstandingly Remarkable Values Assessment**

of the

## **Flathead River System**

**Flathead National Forest  
Glacier National Park**

**January 2013**



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# Introduction



The Flathead Wild and Scenic River is 219 miles of free flowing water in northwest Montana that spans an area from the Canadian Border to the heart of the Bob Marshall Wilderness. The three forks of the Flathead travel through some of the most wild, rugged country in the United States. The designated reach of the Flathead includes the North, Middle, and South Forks of the river. Together, these three forks flow through Glacier National Park, the Great Bear Wilderness, and the Bob Marshall Wilderness before joining near Hungry Horse to create the mainstem Flathead River, a major tributary to the Columbia River.

In 1976, Congress designated the three forks of the Flathead River as part of the National Wild and Scenic Rivers System. Wild and Scenic Rivers are designated for their free flowing character and outstanding natural, cultural, or recreational values. The Flathead River is located within the Crown of the Continent ecosystem and specifically located in northwest Montana in Flathead and Powell counties. The headwaters are located just west of the Continental Divide. The three forks include segments that have been classified as Wild, Recreational, and Scenic. As described in Section 2 (b) of the Wild and Scenic Rivers Act, a Wild, Scenic or Recreational River is defined as follows:

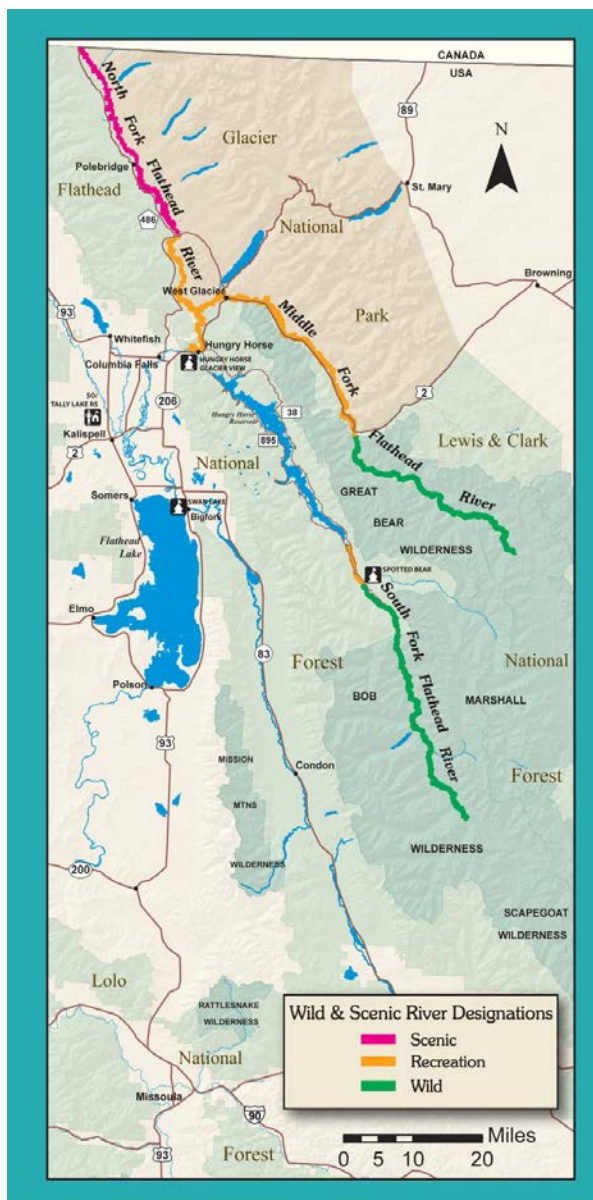
The National Wild and Scenic River System encompasses only 11,434 river miles—just over one quarter of 1% of U.S. rivers are protected through this classification.

1. Wild River – A river or segment of a river that is free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
2. Scenic River – A river or segment of a river that is free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
3. Recreational River – A river or segment of a river that is readily accessible by road or railroad, that may have some development along its shorelines, and that may have undergone some impoundment or diversion in the past.

The North Fork of the Flathead River is classified as a Scenic River from the Canadian border to the Camas Creek Bridge. This Scenic River extends 36.9 miles. From this point to the confluence with the Middle Fork at the Blankenship Bridge, it is a

Recreational River for 21.4 miles. The Middle Fork of the Flathead River is classified Wild from its headwaters at the junction of Strawberry and Bowl Creeks to Bear Creek. Of this 46.6 mile stretch, 13.5 miles are within the Bob Marshall Wilderness and 33.1 miles are located in the Great Bear Wilderness. From Bear Creek to its confluence with the South Fork, a 54 mile segment, the Middle Fork is a Recreational River. The South Fork of the Flathead River is classified Wild for 51.3 miles from its headwaters at the confluence of Youngs and Danaher Creeks in the Bob Marshall Wilderness to the Spotted Bear Ranger Station (46.6 miles in the Bob Marshall). From the ranger station to the upper end of the Hungry Horse Reservoir, 8.8 miles, the South Fork is a Recreational River.

The boundary between the Flathead National Forest (referred to in this document as “the forest”) and Glacier National Park (referred to in this document as “the park” or Glacier) is defined by the centerline of the North Fork, and by the mean high water line of the Middle Fork.



**Figure 1. Designated river segments and their classifications.**

- **Upper North Fork – Scenic**  
*Border to Camas Bridge*
- **Lower North Fork – Recreational**  
*Camas Bridge to Confluence with Middle Fork at Blankenship*
- **Upper Middle Fork – Wild**  
*Junction of Strawberry and Bowl Creeks to Bear Creek*
- **Lower Middle Fork – Recreational**  
*Bear Creek to Confluence with South Fork*
- **Upper South Fork – Wild**  
*Junction of Youngs and Danaher Creeks to Bob Marshall Wilderness Boundary (near Meadow Creek Gorge)*
- **Central South Fork – Wild**  
*Wilderness Boundary to Spotted Bear Ranger Station*
- **Lower South Fork – Recreational**  
*Spotted Bear Ranger Station to start of Hungry Horse Reservoir*



## Determination of Outstandingly Remarkable Values on the Flathead River



The Wild and Scenic Rivers Act states that to be included in the system, a river must “possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values.” The Interagency Wild and Scenic Rivers Coordinating Council provided guidance for determining ORVs. The criteria for an Outstandingly Remarkable Value is as follows:

- An ORV must be river related or dependent. This means that a value must be located in the river or on its immediate shorelands (generally within ¼ mile on either side of the river, also referred to as the river corridor); contribute substantially to the functioning of the river ecosystem; and/or owe its location or existence to the presence of the river.
- An ORV must be rare, unique, or exemplary at a comparative regional or national scale. Such a value would be one that is a conspicuous example from among a number of similar values that are themselves uncommon or extraordinary.

Determining Outstandingly Remarkable Values is a matter of informed professional judgment. To make these determinations, comparative regions are delineated for each resource value to allow the meaningful comparison against similar rivers. Resources are comparatively evaluated using defined criteria or standards. Given the proximity to the international boundary, Canadian landscapes and resources undoubtedly contribute to the values found along the Flathead in the United States. However, while certain resources may in fact be internationally significant, we are evaluating rivers under the National Wild and Scenic Rivers Act. Therefore, the Flathead need only be outstanding in comparison with other similar American rivers.

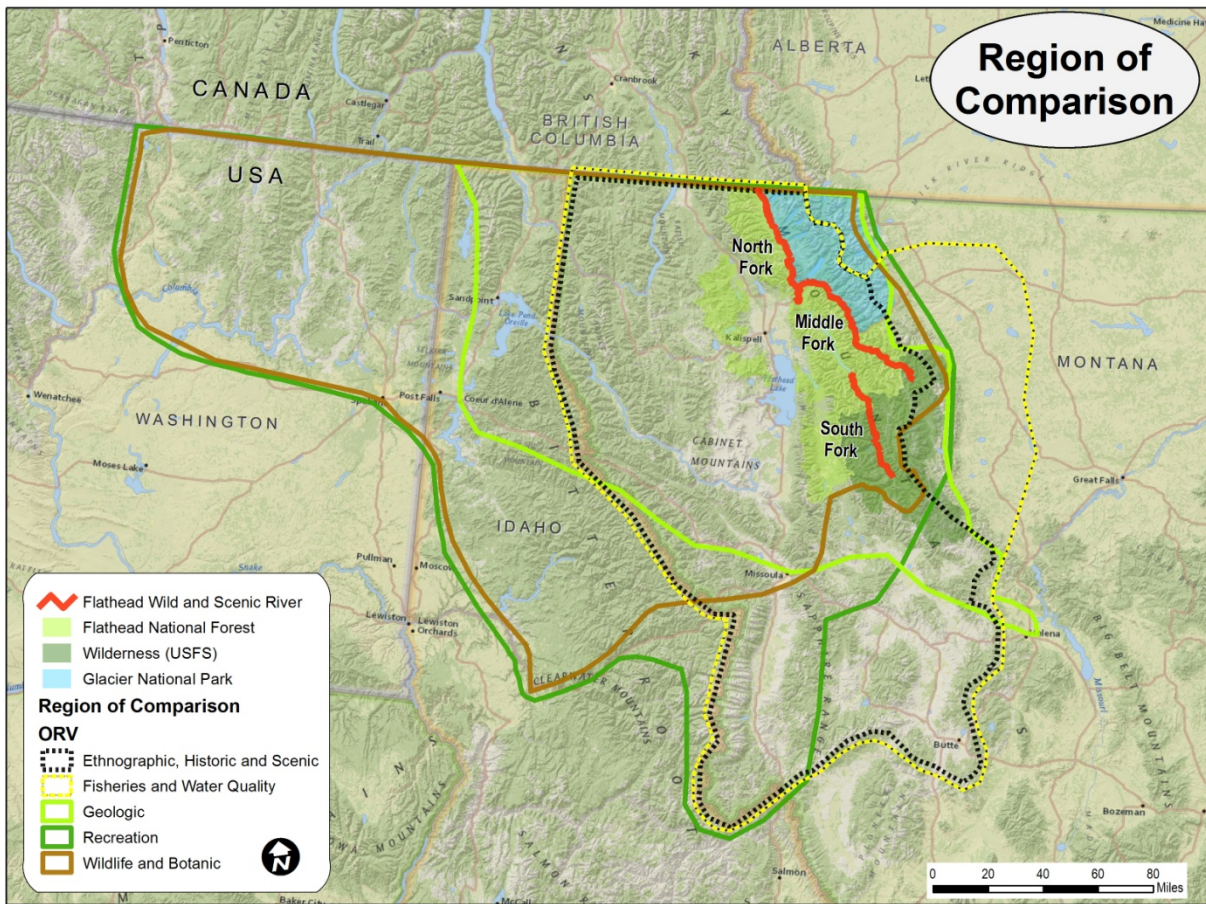
There are nine river resource values that were considered in this assessment. The six segments of the Flathead River have remarkable fisheries, geologic, water quality, and wildlife, botanic, recreational, scenic, historic, and ethnographic values. See Figure 2 for segment-specific determinations.

**Figure 2. River segments and Outstandingly Remarkable Value (ORV) determinations**

River Segment	ORV Category								
	Fisheries	Geologic	Water Quality	Wildlife	Botanic	Recreation	Scenic	Historic	Ethnographic
North Fork Flathead Scenic	X	X	X	X	X	X	X	X	X
North Fork Flathead Recreational	X	X	X	X		X		X	X
Middle Fork Flathead Wild	X	X	X	X	X	X	X	X	
Middle Fork Flathead Recreational	X	X	X	X		X	X	X	
South Fork Flathead Wilderness	X	X	X	X	X	X	X	X	X
South Fork Flathead Wild, non-Wilderness	X	X	X	X		X	X	X	X
South Fork Flathead Recreational	X	X	X	X		X	X	X	X

The resource-specific regions of comparison used in this assessment are shown in Figure 3. For placement, the map shows the locations of the North, Middle, and South Forks of the Flathead in red, and the areas encompassed by Glacier National Park and the Flathead National Forest are shaded appropriately. The wilderness areas are shaded also, to show the correspondence of the land management to the river segment.





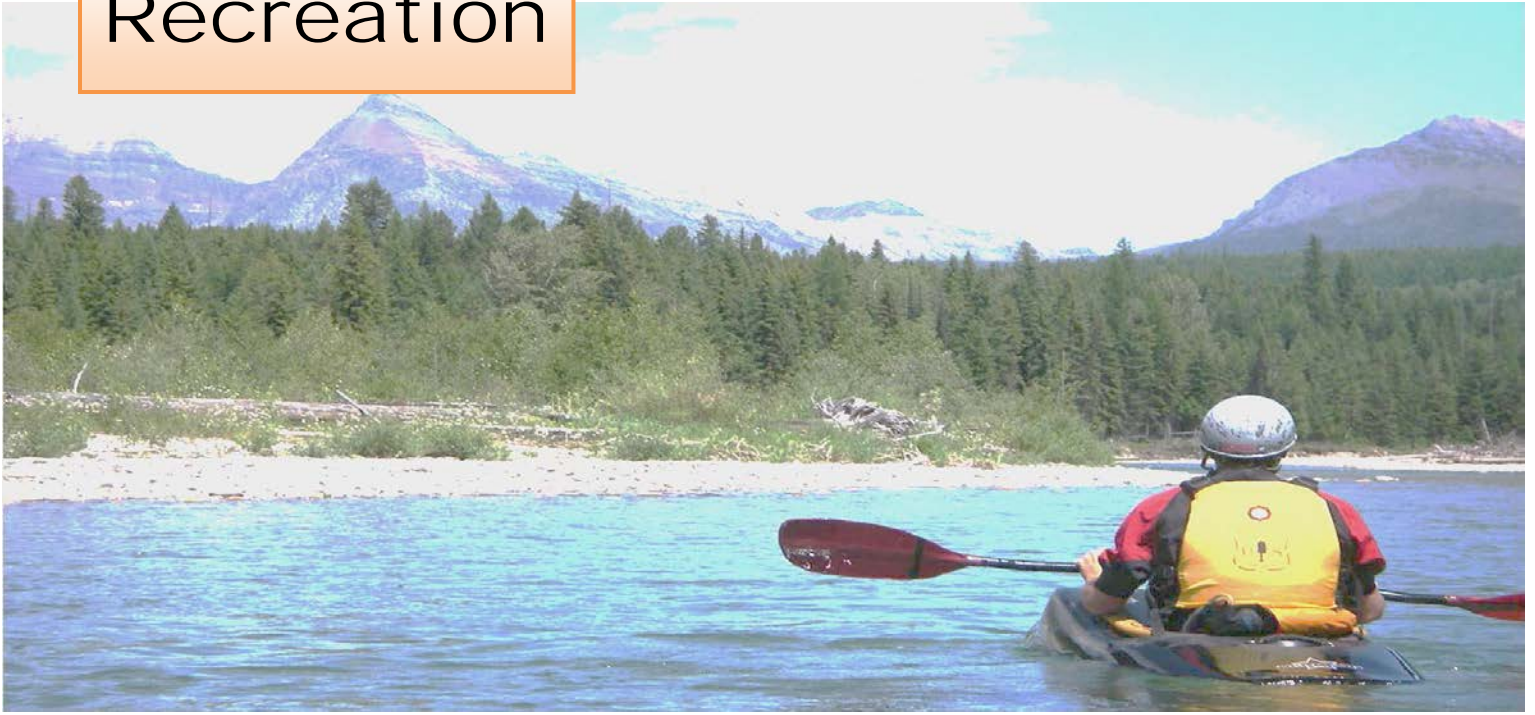
**Figure 3. Resource-specific regions of comparison used in this assessment**

Each Outstandingly Remarkable Value was determined to be unique, rare or exemplary in an appropriate region of comparison by professionals in the field from the Flathead National Forest and Glacier National Park. The two agencies collaborated to procure and evaluate the information in all nine categories and to make ORV determinations.

From the snow capped, stunning peaks of Glacier Park that line the North Fork to the wild, trout filled waters of the South Fork in the Bob Marshall Wilderness, the Flathead River is one of exceptional value in all categories. With an intriguing history, unique plants and wildlife, and nationally acclaimed recreational opportunities, the Flathead River System is a Wild and Scenic River that will be preserved to benefit many generations to come.



# Recreation



The Flathead River system is at the heart of the Flathead National Forest's recreation opportunities, which feature water, wilderness, and wildlife. The river attracts visitors from all over the United States and the world. In previous river surveys, over 44% of river users were from outside of the western region, including a large component from foreign countries (McLaughlin et al. 1984, 56). A mix of users from local, state, national, and international locations continues today.

85% of the shoreline miles of the Flathead River are managed by the Forest Service or the Park Service.

The Flathead provides a combination of wild, scenic, and recreational segments. Users experience varied levels of challenges accessing the river, ranging from multiple days to hike and pack in, or a 14- mile hike/ all-day pack-stock trip, or air delivery, to a paved vehicular river access site. The river ranges from fast-moving white water to more placid stretches as the river widens in broad, timbered valleys. The Great Bear Wilderness and Bob Marshall Wilderness offer floaters excellent opportunities for solitude and a primitive recreation experience during multi-

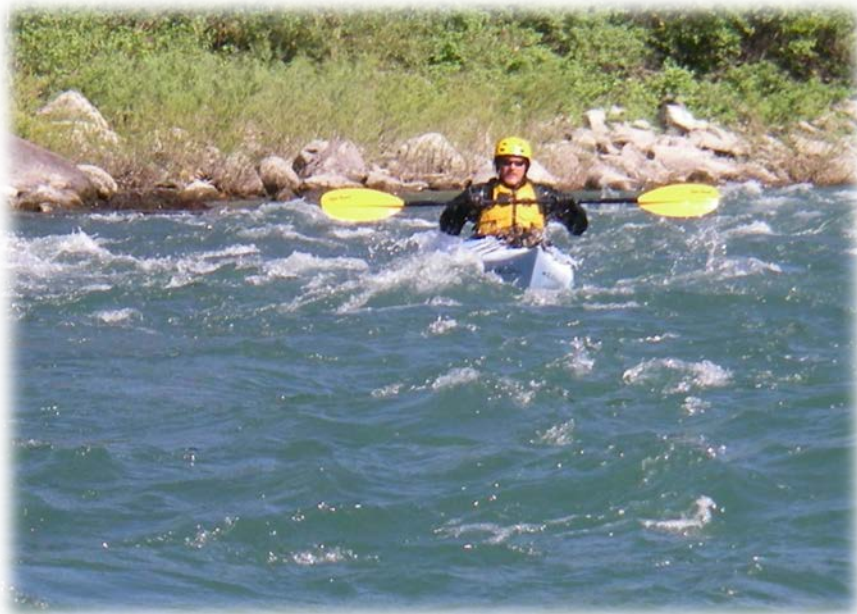
day trips. On the Middle Fork, the John Steven's canyon along US Highway 2 provides the white water experience kayakers and rafters seek. Many of the white water trips are provided by the permitted outfitters, which over a season can accommodate over 30,000 river visitors on white water, scenic or angling trips. Adequate in-stream water levels must be sustained to support these boating opportunities. Peak season of use varies by segment and is dependent on water flows; the length of season for river trips is relatively long due to this variation. Because of the rich diversity of fish and wildlife species, the river

## Evaluation Criteria

**The Flathead River was evaluated for its recreation opportunities in relation to other rivers in western Montana. Recreation opportunities include fishing, boating, swimming, walking, hunting, camping and backpacking.**



system is also a destination for camping, hunting, fishing and wildlife viewing. Wildlife viewing is an extremely popular visitor activity, and the diversity of species along the



river is one of the main attractions. The river system has 85% of its shoreline miles managed either by the Forest Service or the National Park Service, resulting in high levels of public access. Ultimately, it is the wide range of recreation opportunities that are available on the three forks of the Flathead that creates an outstandingly remarkable value that is rare to find elsewhere.

**Region of Comparison:** For this report, the greater Northern Rocky Mountain area, including Bailey's ecoregion and the Bitterroot

region is a useful area of comparison because it contains many similar rivers in terms of regional and geographic settings, therefore providing comparative recreational opportunities.

**Outstandingly Remarkable Values Determination:** As discussed in detail below, all segments of the Flathead River are determined to have Outstandingly Remarkable Values in Recreation.

### **Upper North Fork – Scenic Segment**

This segment is 36.9 miles long and has the highest percentage of use by canoes of any portion of the Flathead River. A large percentage of recreationists on this segment are non-outfitted. This unit contains the entire designated scenic river segment for the North Fork. Adequate access for shore-based recreation exists throughout the segment. The park side of the river corridor is uninhabited except for the Kishenehn Ranger Station, a ranger station complex at Polebridge, a primitive campsite at Round Prairie, and two structures owned by private parties. Hikers, boaters, hunters, photographers and horseback riders all enjoy travelling along this corridor. The fishing in the river is good and attracts anglers from the region and beyond. Whitewater recreation is limited with only a few class III rapids. Dispersed camping within this segment is available on the east side of the corridor on national forest lands. There is limited road-based recreation access. The views of the Livingston Range along this segment are expansive and bring recreationists to this area from around the world. Opportunities for multiple night river trips are abundant with many camping options. Vehicle touring to river access sites and historical sites for day use activities is popular. Multiple Forest Service rental cabins facilitate river recreational opportunities.

### **Lower North Fork – Recreational Segment**

Three class III rapids below Great Northern Flats create more whitewater opportunities in this 21.4 mile section. Access to all sections is available on the Forest Service side and very limited on the park side due to terrain. This section sees more recreational use due to proximity to population base. Day floaters and evening recreationists make up a large portion of this user group. The land on the Glacier National Park side of the corridor is recommended wilderness and by policy is managed as wilderness. There is a main access road (on the east side) close to the river in many areas and a developed campground is available at Big Creek. Fishing opportunities continue to be good in the lower North Fork.

### **Upper Middle Fork – Wild Segment**

The Upper Middle Fork Wild Segment is 46.6 miles long, with 13.5 miles within the Bob Marshall Wilderness and 33.1 miles within the Great Bear Wilderness. Numerous class III and IV rapids create much more challenging whitewater opportunities in this section. Some of the most remote whitewater recreation in the lower forty eight is found along this designated wilderness section. Access to Schafer Meadows Ranger Station with watercraft is via foot, stock or air delivery (plane/helicopter); there is limited watercraft use above Schafer Meadows. Hunting, fishing, camping, horse-packing, and backpacking are prominent shore-based forms of recreation. Fishing is very good in most sections. The Big River trail parallels the river corridor. There is a limited floating



season due to the water level drop in mid to late summer. Both sides of the river are National Forest Lands. The experience users have from Schafer to Bear Creek is very remote and solitary and requires a high level of preparedness. River-based users favor this wild stretch for the extreme adrenaline rush that the combination of the rapids and the remoteness creates. Most users (river- and land-based) have the opportunity for a multiple day experience. The historic Schafer Meadows Ranger Station and open airstrip are very special attributes for the recreating public. This is the only open wilderness airstrip in Montana, which makes this river segment more accessible for



local and international visitors. Both land-based and river-based parties enjoy day long side trips from the corridor to adjacent peaks and lakes that allow for more scenery and wildlife enjoyment and contribute to the vastness of the wilderness river experience.

### **Lower Middle Fork – Recreational Segment**

Class III and IV rapids offer great whitewater opportunities with Highway 2 access on this 49.4 mile long segment. Most of the access sites are on the Flathead National Forest side

with some limited access on the Glacier National Park side around Walton Ranger Station and the Goat Lick area. The Glacier National Park side is mostly recommended for wilderness designation. Glacier Park's Boundary Trail parallels most of this section along with several intersecting trails, making hiking popular on certain stretches. Fishing

opportunities remain good. The park boundary is the mean high water mark on the park side which results in the majority of recreation occurring on the Flathead National Forest. US Highway 2 is a designated Scenic Highway by the State of Montana. The Burlington Northern Santa Fe Railroad Company and Amtrack passenger service runs parallel through the corridor. The river section above Essex has a limited recreation season due to river flows. Quality wildlife viewing opportunities are common in the Goat Lick area and on winter ranges on the park side. This segment hosts the most recreational users and includes high volume guiding operations serving 30,000 guided users in 2011.

Photography is a popular activity to visitors traveling along the river corridor. Hunting is popular in the spring and fall on forest land, but is not permitted in the park. Near Nyack

Flats inside the park, interpretative opportunities exist such

as viewing the ruins of old homesteads and abandoned ranger stations. Also, in Glacier National Park, mountain biking, snow shoeing, and cross country skiing are popular activities for visitors along the lower part of this segment.

### **Upper South Fork – Wild Segment**

This section extends from the headwaters of the South Fork at the confluence of Youngs and Danaher Creeks within the Bob Marshall Wilderness, to the Bob Marshall



**Of the 219 miles of  
Wild and Scenic  
River designation on  
the Flathead River,  
80.4 miles are  
classified as  
Recreational River.**

Wilderness boundary in the Meadow Creek Gorge, about 40.6 miles. Class I and II rapids exist throughout this stretch, ending with the class VI Meadow Creek Gorge. The gorge is not recommended for floating. This stretch of the river is unique because the entire watershed lies within the Bob Marshall Wilderness. Access to the headwaters is by trail only, requiring a minimum of a day trip with pack stock to a multi-day hike or pack in. The unique remoteness is a value that can be appreciated by all parties, river- and land-based.



The wide valley of the South Fork allows excellent viewing for scenery, wildlife, and flora/fauna. The classic riffle/pool waters allows for a longer seasonal float that can be easily adjusted as water levels drop. River users encounter short portages in the upper reaches which, with the dynamic spring flows, are always changing. Most of the segment is accessed by trails on both sides of the corridor and is popular among stock users as well as float and hiking parties. The fishing is a world renowned resource and attracts users whose main attraction to the area is the exceptional fishing. In addition, the wildlife in the area creates the hunting interest and the watchable wildlife value. This stretch reaches out and embraces the Flathead Forest recreation niche of "Water, Wilderness and Wildlife". This Wild River segment requires extensive preparation but allows users to have less technical qualifications and skills to be successful on the river and enjoy the river experience, thus providing a quality family recreational opportunity.



All users enjoy the rich history of the Bob Marshall from the indigenous inhabitants to



early day rangers and the historic way of life in the backcountry. The Big Prairie Ranger Station is a unique stop for information, history, directions, and to see the backcountry way of life. Also within the corridor is a 40 mile long historic number nine phone line, which is still operational. Historic phones are available within the corridor for all visitors for emergency use and to understand the traditional means of communication. Outfitter services are available for visitors, which include river, hike, or pack trips. Also within the corridor are other historic ranger station cabins, still in use today as they have been since the early 1900's.

There is no mechanized access for this segment. Users experience a level of solitude that is unmatched, yet may also expect to encounter other river and shore/land -based parties. The experience allows the ability to be independent and self-sustained for multiple days. Lastly, the river corridor is a prime example of the compatibility of the user groups from modern river floating parties and hiker/backpackers to traditional stock parties. All parties enjoy the unlimited opportunities that exist for short day trips such as Mud Lake Lookout, Big Salmon Lake, and Bartlett Mountain which provides a wonderful view into the wide river bottom and corridor.

### **Central South Fork – Wild Segment**

This is the only Wild River segment in the Flathead system that is located outside of designated Wilderness. It starts within the very rugged Meadow Creek Gorge which is not recommended to float through, though it is acknowledged that some with very high





technical skills and the right water conditions are successful. This segment encompasses the area to the Spotted Bear Ranger Station, a total of 10.7 miles. Most parties enjoy viewing the gorge from nearby trails or fishing at low water levels. River users are able to put on the water following a strenuous  $\frac{1}{4}$  mile, steep access trail required to carry all gear and equipment to the river. Those that fly to the open airstrip located in this river corridor also encounter a very steep access route. There is no mechanized delivery directly to the river

corridor. Hike and stock parties have access on the eastern edge of the corridor though the trail has very limited views of the river and corridor. Most users in the segment are river -based except for the very hardy that would bushwhack along the river's edge. Fishing opportunities are outstanding. The segment is also unique in that the west side of the corridor has an open road  $\frac{1}{4}$  to  $\frac{1}{2}$  mile away and road traffic is not heard. This provides for a great getaway day trip. Access from this segment is normally in the recreation segment below the Spotted Bear Ranger Station at multiple take-outs. Given the travel time to Spotted Bear, users have to plan for a very long day or camping trip to experience the river segment. A unique feature that draws parties to this stretch is the calcium deposits along the river's edge making one feel as if they were in a cave, without climbing into an actual cave. The Spotted Bear Ranger Station and compound is to the east of the northern boundary of this segment.

**The rapids in Meadow Creek Gorge are classified as Class VI. As stated by the American Whitewater Organization, Class VI is defined as *Extreme and Exploratory*. These rapids have rarely been attempted and exemplify the extremes of difficulty, unpredictability, and danger. The consequences of errors are very severe and rescue may be impossible. These rapids are for teams of experts at favorable water levels.**





### **Lower South Fork – Recreational Segment**

Starting at the foot suspension bridge at the Spotted Bear Ranger Station, this section is 8.8 miles long. Many parties are day users fishing, swimming, picnicking and enjoying the river at the confluence of the South Fork of the Flathead River and Spotted Bear River. This recreational segment offers the river users a slower paced float, with just a few Class I and II rapids. There are multiple vehicle access points for reaching the river for put-in or take-out floating, camping, fishing, and hunting. There are many opportunities all season to watch wildlife from bald eagles to elk. Most land parties go cross country or are based at vehicle access points. There is an open airstrip that allows recreationists to fly in and camp on the edge of the river and then to be joined by a party that drove to the area. Late season, the whitefish run adds a new dimension to the fishing interest. The segment is known for its accessibility allowing for multiple experiences such as river floating, day hikes etc.

“Ultimately, the wide range of recreation opportunities present on the three forks of the Flathead create an outstandingly remarkable value that is rare to find elsewhere.”

# Scenery



The Crown of the Continent region is internationally recognized for its biodiversity and diversity of landscape form. In short distances, the landscapes vary dramatically from grasslands to soaring mountain peaks, sheer rock and icy crags to lush carpets of forest, from virtually untouched wilderness to inhabited communities. The three tributaries of the Flathead River, the North Fork, Middle Fork and South Fork, all offer beautiful vistas of protected lands. Distant, middle ground and streamside trees and shrubs provide contrast to forest openings and rock outcrops. Recent large fires in 2001 and 2003 affected large portions of the North, Middle, and South Fork valleys. The addition of fire to the landscape creates a mosaic of colors and clearly reveals the topography and landform. The fire mosaic textures and colors will change over time, but allow for a stark contrast to the colorful wilderness around them.

In late fall, the yellow larch are striking against the greens of fir and pine. Small scale scenery consisting of stream bank vegetation, converging streams and waterfalls of varying size, changing colors of plants and a variety of flora and fauna are also common. Due to the diverse geology of the area, stream bank cobbles and outcrops provide diversity of color and texture. The clarity of the water allows this vibrant streambed to be visible. Due to this clarity, along with the unique presence of glacial silt, the water has a brilliant bluish-green hue, especially when contrasted with the white foam of rapids. These stream corridors, viewed from foot, horseback, watercraft, train or vehicle, also offer unique opportunities for wildlife viewing. Deer, elk, bear, mountain goat, moose, bald eagle, osprey, harlequin duck, and even otter are not uncommonly seen. Under the water's surface, fish can be seen hovering above the streambed or migrating in mass.

## Evaluation Criteria

Criteria considered include the scenic value of the landscape, the lack of development in the river corridor, the lack of human presence, and the dramatic landscapes of the river corridors.





Cultural landscapes dominated by historic buildings are present on both National Forest and National Park administered lands and convey a sense of the past. These structures are picturesque especially because of their background and setting. These combined aspects of scenery on the Flathead River provide Outstandingly Remarkable Values for most segments.

**Region of Comparison:** Western Montana was used comparatively in this evaluation.

**Outstandingly Remarkable Values Determination:** All segments of the Flathead River, except the North Fork Recreational Segment, are determined to have Outstandingly Remarkable Scenic Values.

### **Upper North Fork – Scenic Segment**

Diversity of rich colors from dark greens to the seasonal yellow covers the river's edge and mountain slopes. The river corridor's views offer a variety of topographical variety along the hillsides and riparian areas. A few historic homesteads in the park are framed by the breathtaking background views of the white capped mountains of Glacier National Park. These dramatic and rugged peaks, appearing as "looming" up from the valley floor, are a unique feature and are relatively consistent visual elements along this segment of the North Fork. A few bridges span the river contrasting against the natural environment. A spectrum of wildlife including bears, wolves and eagles are habitants of the river corridor. This segment, unlike others, is predominately open country with meadows and even sagebrush can be found. Contrasting with the typically wide stretches of most of this portion of the waterway, at the Devil's Elbow, the stream narrows considerably. Roughly midway along this segment, the historic settlement and seasonably vibrant town of Polebridge is encountered. This area showcases other historic buildings such as the Walsh, Schoenberger and McCarthy Cabins, reminding the viewer of a bygone era of settlement in the area.



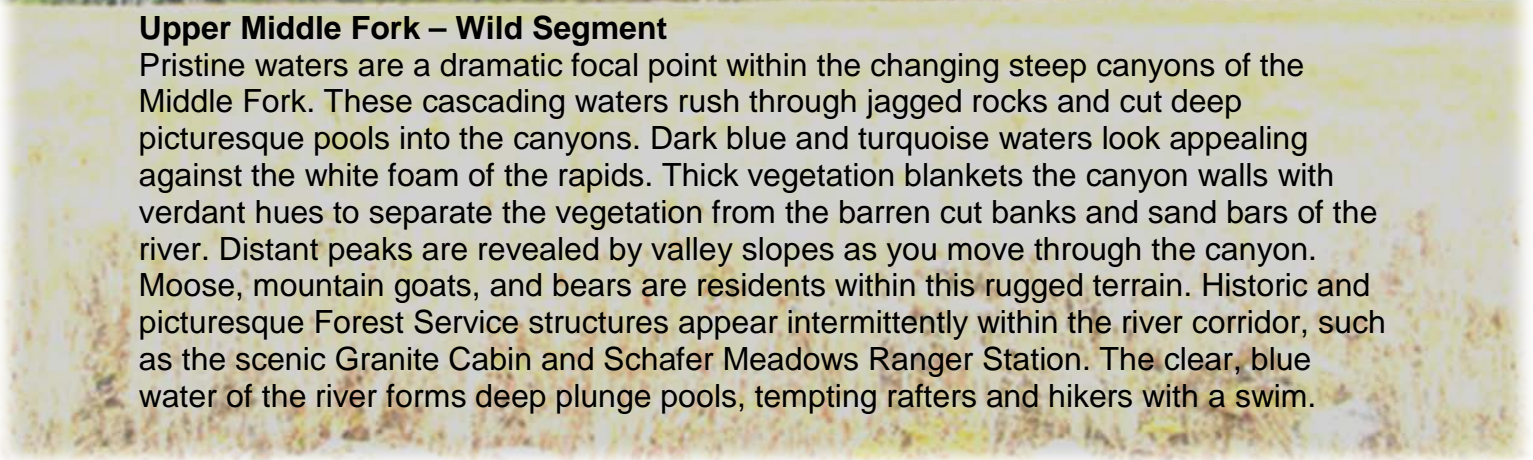
### **Lower North Fork – Recreational Segment**

A variety of hillside plant colors and textures contrast against the consistent riparian river bottom in this river section. Evidence of blackened slopes from wildfire burned areas also offer a variation of background scenery. The mountain valleys define the river corridor and focus views towards the river. An occasional trout pulled from the river can be seen or other wildlife spotted. Historic farm structures provide pastoral views. The scenic values of this segment revolve around features such as the predominately wide stream and the Rocky Mountain peak views. Unique to this segment is the narrow rocky gorge-like canyon north of Hungry Horse. Within this constricted section, views and the overall experience are intimate. The water is slow moving and consists of deep pools ringed with rocky outcrops and ledges of red and green argillite. Due to the confinement of the area and slow moving water, one can hear small waterfalls and trickles.



### **Upper Middle Fork – Wild Segment**

Pristine waters are a dramatic focal point within the changing steep canyons of the Middle Fork. These cascading waters rush through jagged rocks and cut deep picturesque pools into the canyons. Dark blue and turquoise waters look appealing against the white foam of the rapids. Thick vegetation blankets the canyon walls with verdant hues to separate the vegetation from the barren cut banks and sand bars of the river. Distant peaks are revealed by valley slopes as you move through the canyon. Moose, mountain goats, and bears are residents within this rugged terrain. Historic and picturesque Forest Service structures appear intermittently within the river corridor, such as the scenic Granite Cabin and Schafer Meadows Ranger Station. The clear, blue water of the river forms deep plunge pools, tempting rafters and hikers with a swim.



### **Lower Middle Fork – Recreational Segment**

In this segment, flowing waters change from blue to brown as they pour through steep canyon walls and slopes. Rock outcroppings increase in variety and distinctness as the landscape becomes more dramatic. Evidence of wild fire is present, as is the brilliant green of the re-growth and other vegetation, which alters brightly with the season. Fall views are dominated for a few weeks with flashes of yellow Larch. Historic bridges spanned by fast moving trains are set against a spectacular mountainous background.



This segment of the river flows along a highway and rail corridor. It features diverse streamside topography such as tight, deep canyons and broad, open flats. The upper section is known as a regional whitewater stream in the early part of the season. The fast flow of water and the rapids are a visual and recreational attraction. Above the river, the Great Northern Peak is a stunning mountain view.



There are several historic structures and manmade features along the river that only contribute to the scenic value, such as the Burlington Northern Railroad and trestle. Other buildings include the National Park Service Walton Complex, and the West Glacier home sites of the park rangers.

### **Upper/Central South Fork – Wild Segments**

These segments are unique for the pristine conditions of the river and its surroundings both in and out of the Bob Marshall Wilderness, and for the open, wild South Fork country. The wilderness provides for exquisite scenic viewing opportunities including expansive vistas free from development, large open meadows, and steep cliffs. The Upper South Fork segment includes the historic Big Prairie Work Station, which is still operating today as a base for Forest Service trail crews. Other historic Forest Service cabins can be viewed along the river corridor.

On the north end of these segments, clear rushing water is the focal point of a dramatic, conifer covered canyon. Rugged rock outcrops frame deep blue pools of water in the deep canyon. Seasonal color changes are dramatic in the South Fork. Barren rocky river banks and sand bars line the water's edge throughout this section. Distant peaks rise high into the sky providing a spectacular backdrop to the river below. Moose, mountain goats, and other wildlife may be seen along the river slopes and valley bottom openings.

### **Lower South Fork – Recreational Segment**

Wider stream beds provide open views of steep slopes that give way to a variety of vegetation. The Meadow Creek Gorge is a surprising feature of a fascinatingly deep and narrow channel. A historic suspension bridge spans the river near the Spotted Bear Ranger Station. Steep mountain slopes provide a breathtaking backdrop to the river. Historic structures are visible in a few locations. Just above the confluence of the South Fork, at the head of Hungry Horse Reservoir is an especially scenic view.

# Wildlife



The three forks of the Flathead River occur within one of the largest intact ecosystems in the lower 48 states, where natural processes such as fire, flooding, plant succession, wildlife migration, and predator-prey dynamics shape the landscape and its wildlife. A full complement of native plant and wildlife species is present in the river corridor, which is a significant value at both a regional and national scale. River corridors provide travel ways for wide-ranging species. The three forks of the Flathead River lie at the heart of the 5.7 million acre Northern Continental Divide Ecosystem (NCDE), an area with the largest population of grizzly bears in the lower 48 states (Mace et al. 2011). The Flathead River corridor plays a key role in promoting connectivity of grizzly habitat across the international boundary within the Crown of the Continent Ecosystem and allowing for genetic interchange between sub-populations of grizzly bears (Kendall et al. 2009).

The Flathead River system provides high quality habitat for the threatened grizzly bear. Three recently delisted species (the rocky mountain gray wolf, peregrine falcon, and bald eagle) have den or nest sites located in the river corridor. The area also provides habitat connectivity for one listed species, the lynx, and one candidate species, the wolverine. The variety of habitats found in the Flathead River corridor provides for a diversity of indigenous animal species and a naturally functioning predator-prey system unparalleled in the contiguous states (Nature Conservancy 1994, 2). Several carnivores have high population densities inside the boundaries of Glacier National Park, providing core populations for surrounding areas (Weaver 2001).

## Evaluation Criteria

**The complexity and completeness of habitat along with the density, uniqueness, and presence of rare or recently delisted species was evaluated in this assessment.**



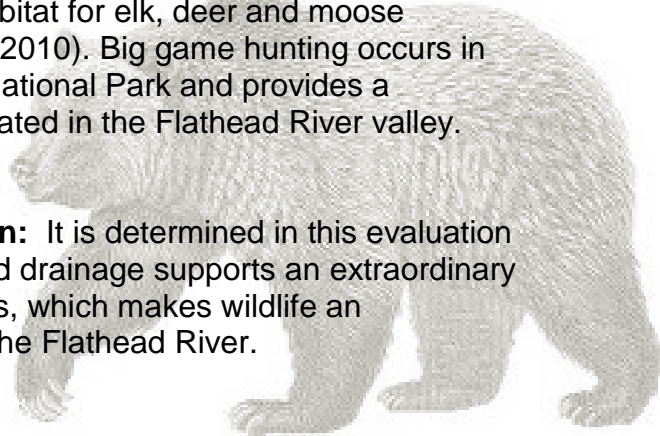
Seeing grizzly bears or hearing the call of a wolf while floating the river provides a unique opportunity for park and forest visitors. According to the Montana Department of

Fish, Wildlife and Parks, visitors to Montana often cite wildlife watching as an important aspect of their trips to the state. The presence of wildlife, and the opportunity to view them in their natural habitat, has been identified as a major element of the visitor experience in Glacier National Park. Several studies in Glacier National Park found that viewing grizzly bears in their natural environment provided a unique and memorable experience (Haet 1973, Mihalic 1974, McCool 1988 in Miller and Freimund, 1996).

Regionally designated sensitive species are also observed along the river corridor and are dependant on the exceptionally high quality habitat. The black-backed woodpecker is dependent upon natural ecosystem processes such as wildfire and can be observed picking insects out of the fire-charred bark for the first few years after a wildfire (Hutto and Young 1999). Another woodpecker, the pileated woodpecker, nests in cavities in large western larch and cottonwood snags, creating habitat for many other cavity-dependent species. A variety of bat species use these large trees for maternity or day roosts and capture insects over the water, in riparian meadows, or within the tree canopy. The harlequin duck breeds in tributaries of the North Fork, Middle Fork, and South Fork of the Flathead River and rears broods on these larger rivers (Hendricks 2005).

Numerous big game species are also abundant in the area. Mountain goats reside yearlong in the Flathead River corridor. Wooded river bottoms as well as adjacent open grass and shrubby hillsides are important winter habitat for elk, deer and moose (Weaver 2001, Vore et al. 2007, Vore pers. comm. 2010). Big game hunting occurs in all sections of the river corridor outside of Glacier National Park and provides a recreational opportunity that has long been appreciated in the Flathead River valley.

**Outstandingly Remarkable Values Determination:** It is determined in this evaluation that the variety and quality of habitat in the Flathead drainage supports an extraordinary diversity of wildlife, including federally listed species, which makes wildlife an Outstandingly Remarkable Value of all segments of the Flathead River.



**Region of Comparison:** The area of comparison for this assessment is Bailey's Ecoregion, which includes the northern Rocky Mountain forest, coniferous forest, and alpine meadow province areas in northern Idaho, western Montana, and eastern Washington.



### **Upper North Fork – Scenic Segment**

This reach provides key spring/summer/fall habitat for grizzly bears and is important for connectivity between Glacier National Park, Canada, and the Flathead National Forest area and surroundings. Grizzly bears concentrate in the floodplain during spring and fall, feeding in wet meadows and recently flooded alluvial stands where a rich complex of key forbs, grasses, roots and tubers are present (Singer, 1978). It also provides connectivity of key lynx and wolverine habitat found in adjacent areas of Glacier National Park, Canada, and the Whitefish Mountain Range. In the past, this reach provided the type of riparian habitat essential for fisher (Jones 1991, Jones and Garton 1994), with numerous historic sightings of fisher in Glacier National Park. Extensive wildfires in recent decades have affected availability of fisher habitat. Active wolf denning and rendezvous sites are present and tied to river-bottom habitat. The North Fork wolf packs are the source of dispersers that recolonized other parts of the west in Montana and Idaho. Historic and current transient sightings of woodland caribou have occurred in the North Fork as well.

This reach of the river corridor provides for bald eagle nesting as well as feeding and has traditionally had two active bald eagle nest territories with high productivity and longevity. Large diameter cottonwood forests and riparian zones along the length of the segment are used by denning black bears and numerous other wildlife species. Much of this old cottonwood forest burned in recent wildfires and has little to no regeneration. The North Fork of the Flathead River provides harlequin duck brood rearing habitat, with nesting habitat in tributary streams such as Trail Creek. The relatively low level of



development in this segment allows grizzly bears to use the habitat with little disturbance.

### **Lower North Fork – Recreational Segment**

Outside Glacier National Park, development is moderate compared with other segments of the Flathead River. This reach provides necessary spring, summer, and fall habitat for grizzly bears and black bears. Active wolf denning and rendezvous sites are also present. This segment has unburned forests of large cottonwoods used by many wildlife species. Bald eagle nesting and feeding sites are present in addition to numerous big game species in the area. River bottoms and adjacent hillsides are important winter/spring habitat for large numbers of elk, deer, and moose.



### **Upper Middle Fork – Wild Segment**

This Wild River has virtually no development and provides connectivity between Glacier National Park, Canada, the Great Bear Wilderness, and the Bob Marshall Wilderness for an array of large, wide-ranging predators including the threatened grizzly bear and Canada lynx as well as the wolverine (a candidate species). It provides spring/summer/fall habitat for several big game species, grizzly bears and a wide variety of other forest carnivores. This reach provides riparian habitat known to be key for fisher (Jones 1991, Jones and Garton 1994), with reported sightings in recent decades. Active wolf denning and rendezvous sites are present and tied to river-bottom habitat. Bald eagle feeding also occurs along this reach.

### **Lower Middle Fork – Recreational Segment**

This segment provides key habitat for grizzly bears. In 2009, a grizzly bear study identified a concern about habitat connectivity and genetic interchange in a portion of this reach, where there is a higher level of development outside Glacier National Park than in some other segments (2009 Kendall et al.). Active wolf denning and rendezvous sites are present in this segment. The Lower Middle Fork has unburned forests of large cottonwoods used by many wildlife species. Bald eagle nesting and feeding sites are present.

A unique community of carnivore species resides in the transboundary Flathead region that appears unmatched in North America for its variety, completeness, use of valley bottomlands, and density of species which are rare elsewhere. Due to these unique characteristics and its strategic position as a link between National Parks in both countries [the U.S. and Canada], the transboundary Flathead region may be the single most important basin for carnivores in the Rocky Mountains (Weaver 2001).

This segment has very unique mineral deposits where recreationists are able to observe mountain goats at a natural salt lick. Numerous big game species are abundant in the area. River bottoms and adjacent hillsides are important winter/spring habitat for large numbers of elk, deer, and moose. Elk winter habitat is more abundant in Glacier National Park than on the Flathead National Forest due to slope aspect. These south-facing slopes experience early greening and are ideal for elk migrating out of the Great Bear Wilderness and Glacier National Park. The Nyack Flats area (on both the park and the forest sides of the river) is believed to be important for a variety of wildlife species.

Habitat connectivity for a variety of wildlife species is important in portions of this reach, but it is paralleled by the Great Northern Railway and Highway 2, a major paved transportation corridor. Wild animals, including grizzly bears, have frequently collided with vehicles or trains (Servheen pers. comm. 2012, GNESEA 2008). In recent years, efforts to rapidly clean up railroad grain spills and other spilled attractants have reduced the number of animal/train collisions.

### **Upper/Central South Fork – Wild Segments**

These Wild River Segments have virtually no development and therefore provide connectivity between the Great Bear Wilderness, Bob Marshall Wilderness and the Swan Range for a whole complex of large, wide-ranging predators. The threatened grizzly bear and Canada lynx inhabit portions of the Upper South Fork, although the lynx habitat in the South Fork may not be as abundant as some nearby areas due to drier conditions (Squires pers. comm. 2011). The wolverine traverses the highest peaks to the lowest valleys as it moves within its large home range in the wilderness. Numerous big game species are abundant in the area. River bottoms, adjacent hillsides, open bunchgrass meadows, and grass/shrub hillsides found in this reach are important

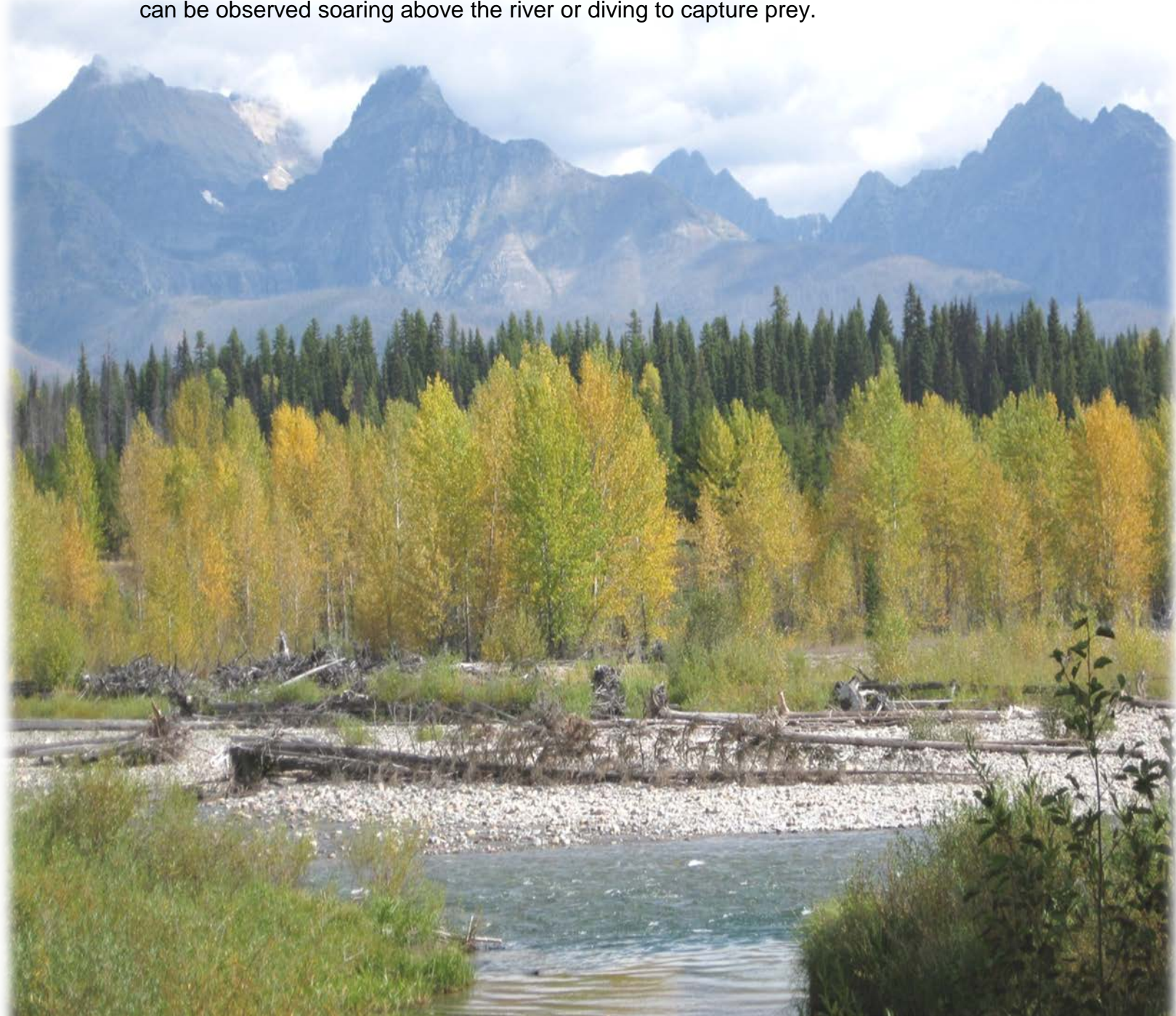




winter/spring habitat for large numbers of elk, deer, and moose. Portions of this reach not burned by wildfires provide the type of riparian habitat known for fisher (Jones 1991, Jones and Garton 1994), and historic sightings, as well as recent track reports, occur here. Active wolf denning and rendezvous sites are present and tied to river-bottom habitat. Harlequin duck brood rearing occurs in this reach, with nesting habitat in tributary streams.

### **Lower South Fork – Recreational Segment**

The Lower South Fork provides habitat for grizzly bears and big game species. River bottoms and adjacent hillsides in the Dry Park and Horse Ridge areas are important winter/spring habitat for large numbers of elk and deer as well as moose. The construction of Hungry Horse Dam in 1953 flooded much of the big game winter habitat along this section of the South Fork of the Flathead River, and elk now concentrate on grassy areas exposed by reservoir drawdown in the spring. Ospreys and bald eagles can be observed soaring above the river or diving to capture prey.





# Botany



The Flathead River system supports many complex and diverse native plant communities which include sagebrush, old growth spruce and fir trees, river bottom disturbance species, mature cottonwood groves, and rough fescue grasslands. Although these native communities may not be remarkable on their own, the combination of them in a restricted river corridor is unique.

A natural vegetative condition dominates the Flathead River system. The river bottoms are lush with conifers, primarily lodgepole pine, Douglas fir, larch, ponderosa pine, and Engelmann spruce. Associated hardwood tree species include paper birch, cottonwood, and aspen, with willow, alder, and other shrubs along most of the river sections. Grassy meadows are most common along the South Fork but are present along other forks as well. Plant species diversity is high with distinct plant communities, including species assemblages that are unique to the region. For example, sagebrush communities occurring adjacent to Douglas fir/ Engelmann spruce forest as found on the Upper North Fork section of the river is a unique combination. Recent wildfire activity over the past decade contributes to plant diversity along all sections of the river. The notable composition of native vegetation provides unparalleled habitat for wildlife, an interesting system of pollinators, and soil stability.

There are several plant species that are determined to be sensitive by the Regional Forester, in addition to Montana state listed rare plant species along all sections of this river system. These species occur along the river's edge, as well as in the uplands adjacent to the river. There are several rare plant communities, commonly concentrated in wetlands, which are in the river corridor or drain into it. Some of these species are extremely limited on the forest and in the park and are completely dependent on the river system. There are

## Evaluation Criteria

***Populations of rare plant species.*** Of particular significance are species that are regionally listed as sensitive or rare species.

***Native plant communities.*** Diversity of species, numbers of plant communities, and cultural importance of plants were considered.



other rare plant species that occur in the river corridor, but are not dependent on the river system for survival.

**Outstandingly Remarkable Values Determination:** The variety and complexity of the vegetation communities that occur along several sections of the Flathead River make botanical resources an Outstandingly Remarkable Value in the Upper North Fork Scenic Segment, the Upper Middle Fork Wild Segment, and the Upper South Fork Wild Segment.

**Region of Comparison:** The area considered in this assessment is Bailey's Ecoregion.

### **Upper North Fork – Scenic Segment**

A few rare plant populations exist in the river corridor on either side of the river, yet only a couple species are river dependent in this segment. The majority of populations occur away from the river bank. Populations of arctic coltsfoot (*Petasites frigidus*) occur along the river in adjacent wetlands. It is rare in Montana, where it is at the southern edge of its range (MNHP 2011). There are only ten populations known in the state, two of which occur along the North Fork Flathead Scenic section on the Flathead National Forest.

There is a population of meadow larkspur (*Delphinium burkei*) along Camas Creek in Glacier National Park. It occurs in seasonally wet meadows, to which both the creek and the river contribute. There are only two populations known in Montana.

The Upper North Fork, along with the other river segments, supports a varied composition of moist site forbs, grasses and shrubs which are dependent upon natural fluctuations in river flow. The native vegetation surrounding Ford Cabin and Saunderson Meadows on Forest Service land and in nearby areas of Glacier National Park, such as

Round Prairie and Big Prairie, includes sagebrush habitat, rough fescue habitat, and older spruce and fir stands. The close proximity of these habitats is unique to the river corridor. These areas, as well as the mature cottonwood stands in the floodplains, provide valuable wildlife habitat and are easily accessible for research groups studying natural river systems without mining or dams upriver. The diverse vegetation provides important habitat for many species of birds and animals. This stretch of river also provides an educational resource and a research opportunity for those interested in natural area regeneration after wildland fire disturbance.

### **Lower North Fork – Recreational Segment**

There are several more rare plant populations along this section of the river on either side; however, they are



not dependent on the river specifically for their suitable habitats.

As with the Upper North Fork, this part of the river has mature cottonwood stands and some easily accessible native plant communities that would be ideal for research.

### **Upper Middle Fork – Wild Segment**

The forest has had native plant seed collection sites along this section of river for many years. These sites represent intact native plant communities that are required for good seed collection. They occur in wet meadows dependent on natural water fluctuations from the river system. This area is currently unaffected by non-native plant invasions.

### **Lower Middle Fork – Recreational Segment**

This section of river boasts some amazing mature cottonwood stands that have not yet been affected by fire or disease. The exposed south facing slopes exhibit open meadows on the park side of the river which provide important winter range for ungulates.

### **Upper South Fork – Wild Segment**

One population of sparrow's-egg lady's slipper (*Cypripedium passerinum*) occurs along this segment of river, directly on the southern bank of the river. There are 49 known occurrences in the state of Montana, nine of which are on the Flathead National Forest and three are in Glacier National Park. It is considered rare in Montana due to low numbers and the threat of hydrological changes. This species grows in mossy, moist, coniferous areas, often on calcareous substrates (MNHP 2011).

There is an old growth ponderosa pine and native bunch grass stand in the river flood terraces from Big Prairie to the confluence of the White River and the South Fork of the Flathead. Many of these large diameter trees are culturally scarred trees. Although fire had been removed from the landscape for almost a century, wildland fire has been reintroduced to the area, providing opportunity for many studies in this grove.

### **Central South Fork – Wild Segment & Lower South Fork – Recreation Segment**

Although these sections have quality features like healthy native vegetation, unfettered water flow and natural processes, there are no outstanding botanical values for these segments.





# Geology



The Flathead Wild and Scenic River system includes some rare and exemplary geologic features which contribute to the unique beauty and value of the river corridor. Features such as the Goat Lick, the Meadow Creek Gorge, and the colored riverbed rocks are awe-inspiring geologic features that add to the character and interest of the Flathead River. These features are Outstandingly Remarkable Values in all river segments.

The Flathead River is located within the Northern Rocky Mountain physiographic province which is characterized by north-northwest trending mountain ranges. Rocks range in age from Precambrian to Quaternary (recent), but not all ages are represented. The Precambrian rocks in this province are known collectively as the Proterozoic Belt Supergroup.

## Evaluation Criteria

### ***Processes in an unusually active stage of development:***

Features undergoing dynamic development that are active in the sense that changes in the development of the geologic feature and process can be readily observed and measured. In other words, these changes are actively developing within a very short time-frame geologically.

***Outstanding hydrologic or geologic feature:*** An exceptional or superior hydrological or geologic feature relative to what is commonly or typically found in the region or what might be considered the typical of the geologic sciences or found in similar geologic environments.

***Diversity of feature:*** The range and uniqueness of a special or unusual geologic feature as compared to a typical similar feature found in the region. It considers the inherently distinguishing geologic attributes and special characteristics of the feature.

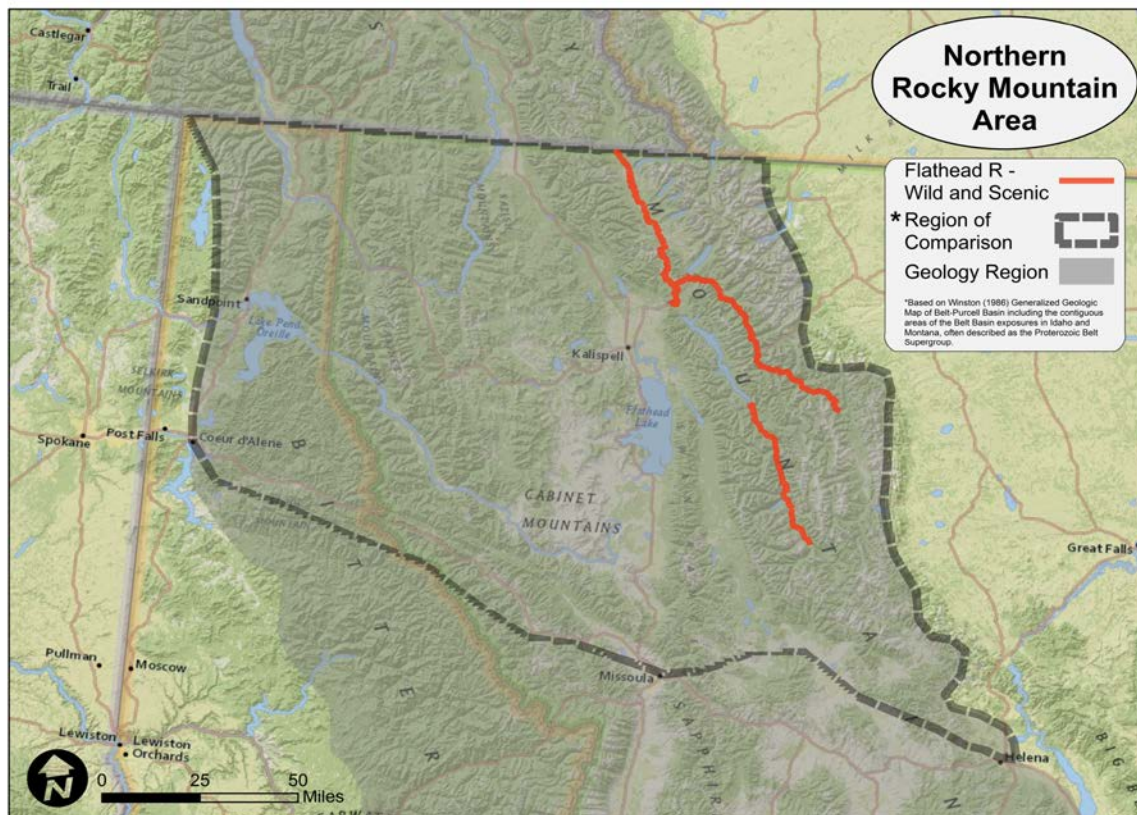
The Belt units were deposited in a shallow fluvial and marine basin environment located along the western edge of the North American continent from approximately 900-1.5 million years ago (mya). The Belt Supergroup units dominate the geological exposures in western Montana, including all three segments of the Flathead River system. The Proterozoic Belt Supergroup units in Glacier National Park and the Flathead Region have been estimated to be 25,000 to 30,000 feet thick (Ross, 1959). Exposures of younger Paleozoic limestone, limy shale, sandstone and dolomite (600-345 mya) can be viewed in the vicinity of the South and Middle Forks of the Flathead River.

Compression tectonic forces resulted in thrust and normal faulting throughout the Northern Rocky Mountains from approximately 200 to 60 mya, with younger normal and block faulting (Harrison, 1998). Being relatively hard and more resistant, the Belt formations were more susceptible to thrust faulting. Thick slabs of rocks moved from west to east, with slabs shearing off and stacking on top of one another (i.e., thrusting), with the process then repeating itself. The largest and most famous of the thrust faults is the Lewis overthrust, which is exposed for over 300 miles (Ross, 1959). The Lewis thrust fault is recognized worldwide as a classic geologic structure because of excellent exposure in the cliff faces on the south and east sides of Glacier National Park (Whipple, 1992).



**Region of Comparison:** The region of comparison depicted in Figure 4 is the Northern Rocky Mountain Area map, from Winston (1986) Generalized Geologic Map of the Belt-Purcell Basin. It includes the contiguous areas of the Belt Basin exposures in Idaho and Montana, as defined by Winston and others and often described as the Proterozoic Belt Supergroup. It does not include the Canadian portion of the Proterozoic Belt Basin, nor does it include the smaller noncontiguous outlier exposures of Proterozoic Belt rocks in Idaho or Montana.

**Figure 4. Region of comparison—the Northern Rocky Mountain Area map**







**Outstandingly Remarkable Values Determination:** As discussed in detail below, all segments of the Flathead River are determined to have Outstandingly Remarkable Values in Geology.

The following is a description of the rare, unique, and exemplary geologic features of the Flathead River.

### **Lower Middle Fork – Recreational Segment**

#### Fossil

This section contains a new scientific discovery; and thus, the fossil type locality (first recognized and described in the literature cited) for two new genera of Mymaridae fossils (parasitic wasps) found in the Kishenehn Formation (Huber, 2011). Three new species of Gonatocerus were also identified and described in the document (Huber, 2011). Identification of this new Tertiary (46 mya) genera and species of fossils is a nationally significant discovery which provides an understanding of the Cenozoic history of insects and plant-insect association in North America (Labandeira, 2011). After three years of collecting, the Smithsonian Institution has determined that the fossil entomofauna of the Kishenehn Formation is both unique and of significant scientific interest (Labandeira, 2011). This location of Tertiary age lithologies and associated fossils could be considered of significant importance scientifically, because it is geographically further north than others and provides ecological information unobtainable elsewhere (Ross, 1959). This location on the Middle Fork of the Flathead River will likely be identified as the primary fossil type location for these genera and species in the world.

#### Goat Lick

This geologic feature is an exposure along the riverbank of the Roosevelt Fault containing salts, including gypsum, kieserite and sulfates, which are frequently utilized by mountain goats. Goats travel four miles to the lick, and typically spend 4-6 hours within a 24-hour time period at the lick during the first seasonal visit (GNP, no date). According to the NPS, 95-120 mountain goats from GNP and 20-45 from the Flathead National Forest use the lick. No other lick in the Park receives as much use. This remarkable feature and the associated wildlife have been studied since 1930. Because of the size, location (easy viewing from the river and adjacent U.S. Highway 2) and high concentration of wildlife, the lick is one of the most commonly visited and studied licks of this magnitude in the region.

## **Upper and Central South Fork – Wild Segments**

### Meadow Creek Gorge

The gorge is a unique and dramatic feature of exposed limestone bedrock eroded by the South Fork River. The gorge is named because of the vertical limestone walls rising 100 to 300 feet from the riverbed, which in some areas, is less than 10 feet to 30 feet wide. The gorge extends for approximately four miles and contains numerous steep drops and stunning green deep pools of water. Meadow Creek gorge contains class VI rapids and is not recommended for floating.



### Karst Features

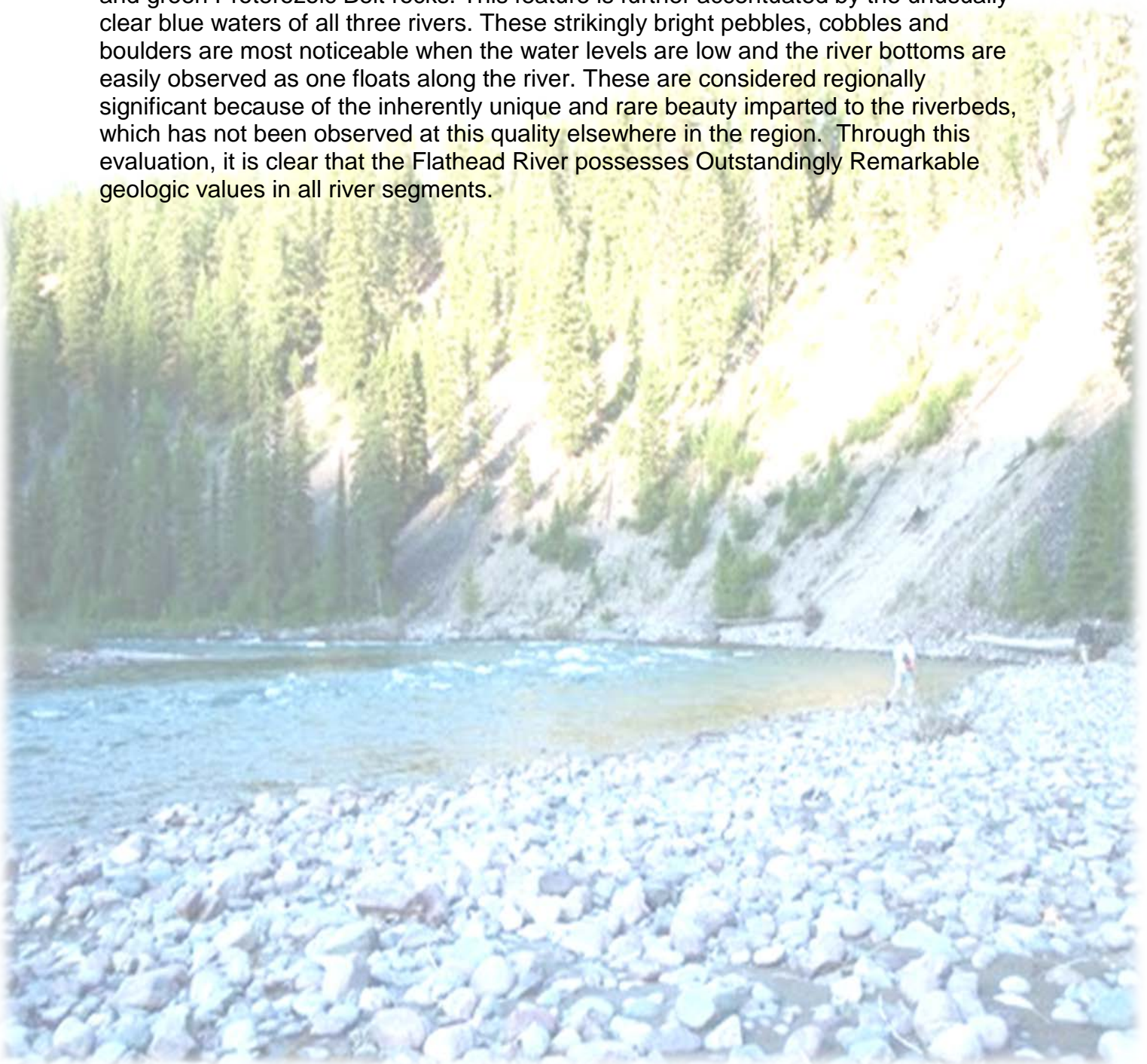
Immediately adjacent to the South Fork River are karst deposits of fluted travertine and an associated karst spring emerging from karstified limestone at the river's edge. The travertine deposit is approximately 50-100 feet tall, several hundred feet wide, and includes waterfalls to the river's edge. Although karst features are not uncommon, it is unusual in this region to find one of this magnitude above ground.



## All River Segments

### Colored Riverbed Pebbles, Cobbles and Boulders

The river bottoms of the North, Middle and South Forks of the Flathead River contain brightly colored pebbles, cobbles and boulders derived from the local red, bluish gray and green Proterozoic Belt rocks. This feature is further accentuated by the unusually clear blue waters of all three rivers. These strikingly bright pebbles, cobbles and boulders are most noticeable when the water levels are low and the river bottoms are easily observed as one floats along the river. These are considered regionally significant because of the inherently unique and rare beauty imparted to the riverbeds, which has not been observed at this quality elsewhere in the region. Through this evaluation, it is clear that the Flathead River possesses Outstandingly Remarkable geologic values in all river segments.



# Fisheries



The Flathead River is nationally and regionally an important producer of resident and/or migratory fish species. Of particular significance is the presence of wild stocks and/or federal or state listed (or candidate) threatened, endangered or sensitive species such as bull and westslope cutthroat trout. Diversity of species is an important consideration and is, in itself, outstandingly remarkable.

The river provides exceptionally high quality habitat for fish species indigenous to the region. Also of particular significance is habitat for wild stocks and/or federal or state listed (or candidate) threatened, endangered or sensitive species. This diversity of habitats is a very important component of the river that is also outstandingly remarkable.

The Flathead River system native fish populations, including the North, Middle and South Forks are extremely rare and unique across the Western United States. Native fish, such as bull trout (listed as threatened under the Endangered Species Act) and westslope cutthroat trout (a State of Montana Species of Special Concern) are present throughout the system. In addition, all life-histories are present in the system. The fisheries of the Flathead River are a nationally valued resource, have high local economic and social values, and provide unique opportunities to fish for native fish in a wilderness, or minimally impacted river system setting. Particularly unique are the westslope cutthroat and bull trout populations of the South Fork Flathead River drainage, which exist without the presence of any non-native fish species. The importance of the South Fork of the Flathead River to native westslope cutthroat and bull trout conservation cannot be overstated. It is a treasured fishery resource.

## Evaluation Criteria

Fisheries values were assessed based on life history, habitat quality, abundance, lack of aquatic invasive species, angling opportunity and presence of native fish.

**Region of Comparison:** Rivers used for comparison in this report are those in the northern continental divide ecosystem and the Clark Fork River Basin. This includes, but is not limited to, the Lower Flathead, Blackfoot, Upper Clark Fork, Bitterroot and Swan. Headwaters of east slope rivers: Sun, Teton, and Marias are also included.



**Outstandingly Remarkable Values Determination:** The following evaluation shows that all segments of the Flathead River are determined to have Outstandingly Remarkable Values in Fisheries.

### **All River Segments**

Many factors contribute to the Outstandingly Remarkable Values present in all river segments on the Flathead River. Life history is an important value in fisheries and the three life history forms are present in all segments of the river. This includes adfluvial, fluvial, and resident forms.

Habitat quality for spawning and rearing is high. Most headwater areas are within protected areas such as designated wilderness and/or Glacier National Park. In all river sections, native fish are abundant and common. Numerous tributary streams support intact native populations.

In the Flathead River system, non-native species such as rainbow trout, brook trout, and lake trout are present in low numbers within certain designated reaches of the Middle and North Forks. Zebra and quagga mussels as well as whirling disease and invasive aquatic plants are absent from the designated river sections.

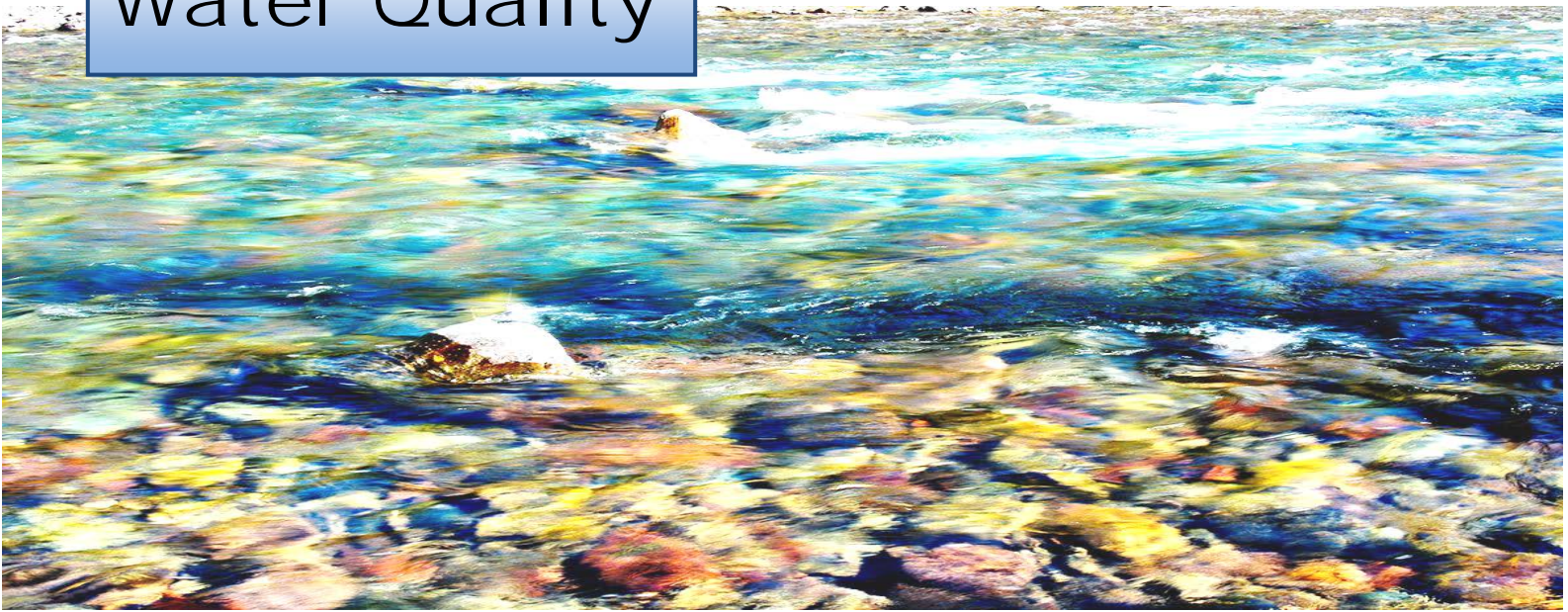
Fishing opportunities and catch rates for westslope cutthroat trout remain high throughout the system. In particular, the South Fork of the Flathead River offers unparalleled fishing opportunities for native westslope cutthroat trout. However, angling opportunities for bull trout, except in the South Fork, do not exist.

Native fish are present throughout the system, but some reaches (recreational reaches of the Middle Fork, as well as the entire North Fork) are threatened by the expanding presence of non-native rainbow trout. In addition, the migratory life-history of both native westslope trout and bull trout are present in all reaches, but abundance has been reduced in the North and Middle Fork reaches due to non-native lake trout in Flathead Lake.





# Water Quality



The Flathead River has exceptionally pure, clear, and clean water. The river is known for its water quality internationally, nationally and regionally. The exceptionally high water quality benefits fish, wildlife, recreationists, and nearby communities.

Overall ranking of the North Fork Flathead River, as measured near Columbia Falls, is the best among all sites according to the Water Quality and Biological Characteristics of Montana Streams evaluation (MDEQ, 2007). Water quality in the Flathead River system is of national and international interest, shown most clearly by the recent memorandum of understanding between British Columbia and the State of Montana to protect the water quality and wildlife habitat within the river system. Water in the three forks of the Flathead River is exceptionally pure, especially compared to other rivers of its size. Water quality samples show that the water quality, sediment yield, and nutrient yields reflect natural, unaltered river conditions, which confirms that water quality is an Outstandingly Remarkable Value in all six river segments.

**Region of Comparison:** The rivers used for comparison are those in the northern continental divide ecosystem and the Clark Fork River Basin. This includes, but is not limited to, the Lower Flathead, Blackfoot, Upper Clark Fork, Bitterroot and Swan. Headwaters of east slope rivers: Sun, Teton, and Marias are also included.

**Outstandingly Remarkable Values Determination:** As the following descriptions show, all segments of the Flathead River are determined to have Outstandingly Remarkable Values in Water Quality.

**Upper North Fork – Scenic Segment & Lower North Fork – Recreational Segment**  
The North Fork of the Flathead River is an international watershed that originates in southeast British Columbia and drains south across the Canadian border, where it forms the western boundary of Glacier National Park. Approximately 40% of the watershed lies in British Columbia, where it is known as the Flathead River, with the remaining 60% of the watershed in northwest Montana, where it is known as the North



## Evaluation Criteria

**Turbidity:** Turbidity refers to the clarity of water. The greater the amount of total suspended solids (TSS) in the water, the murkier it appears and the higher the measured turbidity. The majority of turbidity in this system is due to spring melt and associated sediment usually occurring from mid May to late June.

**Temperature:** Daily, monthly, and yearly averages from USGS monitoring stations.

**Dissolved Oxygen:** Dissolved oxygen analysis measures the amount of gaseous oxygen (O<sub>2</sub>) dissolved in an aqueous solution. Oxygen gets into water by diffusion from the surrounding air, by aeration (rapid movement), and as a waste product of photosynthesis.

**Presence of Pollution:** Habitat alteration, flow alteration, and bank erosion are considered “pollution,” while siltation, suspended solids, and nutrients are considered “pollutants.”

Fork of the Flathead River. In Montana, the North Fork of the Flathead is designated as a Wild and Scenic River and is also included within Waterton- Glacier International Peace Park World Heritage Site and International Biosphere Reserve. The British Columbian Flathead River and Montana North Fork Flathead River are together known as the Transboundary Flathead.

In an effort to maintain and protect water quality, Governor Schweitzer of Montana and Premier Campbell of British Columbia signed the Memorandum of Understanding (MOU) which declared the Canadian portion of the Flathead River Valley off limits to mining and energy extraction. The MOU permanently prohibits coal mining, hardrock mining, coalbed methane, and oil and gas development, thereby protecting the Flathead River.

### Upper Middle Fork – Wild Segment

Due to the remoteness of this segment, access constraints, and lack of potential

anthropogenic sources of pollutants, the Upper Middle Fork Wild Segment of the river has exceptionally high water quality. It is also a free-flowing river with no anthropogenic alterations.

### Lower Middle Fork – Recreational Segment

This segment of the river contains a number of minor channel modifications (such as boat ramps, stream bank stabilizations, bridges, and culverts). The BNSF railroad runs along the recreational segment of the Middle Fork of the Flathead River, and railroad fill encroaches on the channel and impinges on the river's floodplain access in some areas of this section. These man-made features generally do not impede the free-flowing character of the river system. This segment has a USGS stream gauge located near West Glacier which provides flow data for monitoring its free-flowing condition. Despite the fact that this segment of the river has a higher potential for anthropogenic pollutants, it also has excellent water quality exemplified by its clarity.

**Upper South Fork – Wild Segment**

Due to the remoteness of the Upper South Fork Wild Segment, access constraints, and lack of potential anthropogenic sources of pollutants, this segment of the river has exceptionally high water quality. It is also a free-flowing river with minimal anthropogenic alterations.

**Central South Fork – Wild Segment**

This 4.7 mile segment of river between the Bob Marshall Wilderness boundary and the Spotted Bear Ranger Station has one primitive river access site. Due to the remoteness of its location, access constraints, and lack of potential anthropogenic sources of pollutants, this segment of the river has exceptionally high water quality. It is also a free-flowing river with minimal anthropogenic alterations.

**Lower South Fork – Recreational Segment**

This segment has one bridge which crosses the river, but this man-made structure does not impede the free-flowing character of the river system. This segment also has a USGS stream gauge located near Twin Creek which provides flow data for monitoring its free-flowing condition.





# Ethnographic



Ethnographic values in the Flathead River System are present in various cultural sites that exhibit use by Native Americans. All three forks of the Flathead River were used by native peoples to move north and south and east and west; to and from the plains. Traditional travel routes followed the North, Middle, and South Forks with major travel routes crossing both the North and South Forks from east to west. Possible sites along the Middle Fork and North Fork may have been destroyed by a flood in 1964 and by other recent events. Most of the sites represent campsites of small transient groups moving into or through the mountains and were located in areas accessible to high country and ample game sources. There is at least one known chert quarry in the area for procurement of raw material for the manufacture of stone tools.

The ethnographic evaluation of the river considers the pre-history and cultural uses of the Flathead River corridor. Some evidence of Salish or Kootenai late pre-historic or early historic movements was identified during a 1971 archeological survey (Fredlund and Fredlund 1971, cited in USFS 1994). Diagnostic materials from some sites demonstrate continuous use going back to at least middle Paleolithic times (8,000 -10,000 years BC). Cooperative projects with the Confederated Salish and Kootenai Tribes (CSKT) have demonstrated a continuum of use for the North Fork and South Fork drainages from prehistoric times to the historic period.

## Evaluation Criteria:

**Sites must have rare or unusual characteristics or exceptional human interest value(s). Sites may have national or regional importance for interpreting Ethnography; may be rare and represent an area where a culture or cultural period was first identified and described; may have been used concurrently by two or more cultural groups; or may have been used by cultural groups for rare or sacred purposes.**



Early Native Americans lived in the Flathead River Valleys for thousands of years and used all three as major travel routes to the plains to hunt buffalo. All three river corridors are in the aboriginal territory of the Salish and Kootenai Tribes and they have reserved treaty rights to hunt, fish, and collect on the lands managed by the Forest Service. They continue to use the North, Middle and South Forks for religious/spiritual practices and subsistence purposes and they continue to maintain close connections with these historically important places.

**Region of Comparison:** Western Montana was used as the region of comparison for this section.

**Outstandingly Remarkable Values Determination:** This report describes the Outstandingly Remarkable

Ethnographic Values that are present in all segments of the Flathead River except the Upper and Lower Middle Fork segments.

#### **Upper North Fork – Scenic Segment & Lower North Fork – Recreational Segment**

Some evidence of Salish or Kootenai presence was identified in the 1971 archeological survey (Fredlund and Fredlund 1971, cited in USFS 1994). Since that time, additional research and inventories in the North Fork have identified other archaeological sites (Reeves, 2003-); SKCTPD, 2004-05. The Trail Creek/Graves Creek/Kishenehn Creek trail was a significant travel route for the Kootenai Indians in historic times and is considered to be eligible for listing on the National Register of Historic Places. At least two large, multi-component camp sites lie within the valley. Artifacts suggest an intensive Late Middle Period occupation dating to the Pelican Lake Phase (ca. 3500-1600 years ago). The North Fork also contains a significant source of quarry chert, used to make projectile points and other tools. The quarry is the only preserved complex of its kind known in this region of the Rocky Mountains. Culturally scarred trees are evident along the North Fork River within the park, where Indians stripped ponderosa pine bark to harvest the edible inner cambium layer. Within Glacier National Park, 34 culturally scarred tree sites containing 74 individual trees have been determined eligible for listing in the National Register of Historic Places. Except for the quarry, the prehistoric resources along the North fork are not unique, however, their concentration and integrity along the long stretch of river is unique. The prehistoric resources in the North Fork suffer only from natural decay or alteration (fire, flood, age) and from the casual removal of artifacts.

#### **Upper Middle Fork – Wild Segment**

There are no known prehistoric resources identified in the Middle Fork of the Flathead above Bear Creek. Ethnographic resources are not an outstandingly remarkable value in this segment, based on current research and information. Ongoing consultation with the Salish and Kootenai tribes may provide additional information as more study and research is completed.



### **Lower Middle Fork – Recreational Segment**

There are three known, prehistoric sites identified in the Middle Fork of the Flathead below Bear Creek on the National Park side, which consist of lithic scatters.

Archeologist Dr. Brian O.K. Reeves stated that the “extremely low site density, both on the Middle Fork and its principal tributaries, indicates that the Middle Fork, in contrast to the North Fork and its tributaries, was very infrequently visited by Native peoples in precontact times for the purposes of seasonal settlement and resource harvesting.”

[Mistakis, 236]. The lack of archeological evidence suggests that many sites have either gone unidentified or been destroyed, since ethnographic evidence supports extensive Indian use of Cut Bank/Dawson Pass and Red Eagle Pass, along with Marias Pass. Ethnographic resources are not an outstandingly remarkable value for this segment, based on current research and known information at this time. Ongoing consultation with the Salish and Kootenai tribes may provide additional information as more study and research is complete.

### **Upper/Central South Fork – Wild Segments & Lower South Fork – Recreational Segment**

The South Fork has outstanding, intact human prehistoric resources including a significant trail network that both parallels the river itself and crosses the trail from east to west. This trail network has been documented by archaeological research, research conducted by the University of Montana and the Flathead National Forest, and oral history research conducted by the CSKT and extends back in time 10,000 to 12,000 years. It has been determined eligible for listing on the National Register of Historic Places by the Flathead National Forest, Confederated Salish Kootenai Tribes, and the Montana State Historic Preservation Office (SHPO). Prehistoric use of the area is well documented by archaeological sites including lithic scatters dating from early prehistoric to contact times, at least two large groupings of culturally scarred trees, one documented battle site, and the trail network itself. Such an extensive collection of resources, with a high level of integrity, is rare elsewhere as compared to the Clark Fork, Kootenai and Bitterroot River Systems. Although these resources are not unique individually, the concentrations and integrity along the long stretch of river and river corridor is unique. The prehistoric resources in the South Fork are largely intact now and were certainly intact when the Flathead was first designated a Wild and Scenic River. They suffer only from natural decay or alteration (fire, flood, age) and from the casual removal of artifacts.



# History



In 1897, the Flathead River area was included in the Blackfeet and Lewis and Clarke Forest Reserves. The three forks of the Flathead provide outstanding resources to interpret the early history of the Forest Service and National Park Service, including ranger stations and work centers still serving their original purposes. These historic sites were centers of activity in the early 20<sup>th</sup> Century, and continue to operate as Forest Service or Park Service ranger stations, work centers and/or public facilities.

The combination of historic uses of the Flathead River corridor such as trapping, oil and coal exploration, homesteading, and early public lands administration, and the degree of historic integrity of these resources, as evident by the number of properties already listed in the National Register of Historic Places and those eligible to be listed, is not typical of river settings in the region.

**Region of Comparison:** Western Montana was used as the area for comparison in this section.

## **Outstandingly Remarkable Values**

**Determination:** As discussed in detail below, all segments of the Flathead River are determined to have Outstandingly Remarkable Historic Values.

### **Upper North Fork – Scenic Segment & Lower North Fork – Recreational Segment**

The North Fork has several outstanding historic resources which testify to the rich history of ore exploration, homesteading and federal land conservation policies. Glacier National Park's Inside North Fork Road (listed in the National Register of Historic Places), is visible from the river in some spots. The road was built by the Butte Oil Company in 1901 in order to facilitate the development of mineral resources in the North Fork. Evidence of the arrival and residency of homesteaders on

## **Evaluation Criteria**

The river or area within the river corridor contains sites or features associated with a significant event, an important person, or a cultural activity of the past that was rare, unusual or one-of-a-kind in the region. Many such sites are listed on the National Register of Historic Places, which is administered by the National Park Service. A historic site or feature, in most cases, is 50 years old or older.



both sides of the river still exist both in structures such as the Margaret McCarthy Homestead Cabin (GNP), the Wurtz Homestead (FNF), Schoenberger Homesteads (GNP), Walsh House (GNP), Funk School House (FNF), Kintla Ranch (FNF), and the Adair (Polebridge) Mercantile (private), as well as in scattered ruins and remnants of former homesteads that sit along the Inside Road. The era of progressive land conservation policies and the creation of Glacier National Park in 1910 are evidenced by the lack of modern development along the east bank of the North Fork. Kishenehn, Polebridge, Big Creek, Logging Creek Ranger Stations, and the Ford Creek Patrol Cabin, along with the Hornet Peak and Huckleberry fire lookouts (all National Register properties) served as outposts for both the forest reserve and the park. Camas Creek Bridge has recently been determined eligible for listing in the National Register of Historic Places. Also in the North Fork, numerous claims and exploration work for coal and oil occurred around the turn of the last century along or near the Canadian Border.

### **Upper Middle Fork – Wild Segment**

The Middle Fork above Bear Creek has outstanding, intact historic resources including a significant trail network that both parallels the river itself and crosses the rivers from east to west. The network includes associated Forest Service administrative sites and historic ranger stations such as Schafer Meadows Ranger Station, Spruce Park Cabin, Granite Cabin, and Gooseberry Cabin. The entire network of trails and cabins is unique and is eligible for the National Register of Historic Places. It is being nominated to the National Register of Historic Places by the Forest Service for significance on the state and national levels. The airstrip at Schafer Meadows is an open airstrip constructed prior to the 1940's and remains in use by the public and administration today.

### **Lower Middle Fork – Recreational Segment**

The Middle Fork possesses a series of outstanding historic resources that attest to the river's history as a transportation corridor serving both public and private concerns. Mostly extant, the original 1892 route of the Great Northern Railway through John Stevens Canyon and along the river attests to the significance of the arrival of this railroad in opening the area up to settlement, tourism, and more active attention by federal land management agencies. This is exemplified by the designation of the Flathead and Lewis and Clark Forest Reserves in 1897 and Glacier National Park in 1910. Additionally, the route followed by present-day Highway 2 is mostly that of the original segment of the Theodore Roosevelt Memorial Highway completed in 1930. Glacier's Boundary Trail that runs from West Glacier to Coal Creek provides access to a network of trails into the interior of the park up the Lincoln, Harrison, Nyack, and Coal Creek drainages. The National Register properties along the river's route such as the Isaak Walton Inn, the Walton Ranger Station, and the Glacier National Park Headquarters, and the remnants of a few unevaluated sites such as the Doody Homestead are evidence of the area's homesteading, transportation, and land management history. The Belton Bridge is eligible for historic significance. Scalplock and Loneman lookouts are also observable from the river corridor, adding historic interest for river visitors.

The South and Middle Forks were surveyed as a possible railroad route and the route was eventually built over Marias Pass, following Bear Creek to the lower Middle Fork. The communities of Essex, Pinnacle, Nyack, and Belton/West Glacier came into being because of the railroad.

### **Upper/Central South Fork – Wild Segments & Lower South Fork – Recreational Segment**

The South Fork has outstanding, intact historic resources including a significant trail network that both parallels the river itself and crosses the rivers from east to west. The network includes associated Forest Service administrative sites and historic ranger stations such as Big Prairie Ranger Station, Black Bear Cabin, Salmon Forks Cabin, Basin Cabin, and Spotted Bear Ranger Station, among others. There is also 45 miles of ground return, number nine phone line. The phone line is the last and longest of its kind in the lower 48 states and the entire network of trails, cabins, and the phone line is unique and is eligible for the National Register of Historic Places. It is being nominated to the National Register of Historic Places by the Forest Service for significance on the state and national levels.

Meadow Creek and Spotted Bear airstrips are open within the designated corridor and there are several historic airstrips constructed within the Bob Marshall Wilderness for administrative access. The administrative airstrips were closed to all uses following the designation of the Bob Marshall Wilderness in compliance with the Wilderness Act in 1964. The historic resources in the South Fork are largely intact now and suffer only from natural decay or alteration (fire, flood, age). History is decidedly an outstandingly remarkable value in the South Fork of the Flathead River.





# Conclusion



The Wild and Scenic Rivers Act was created to protect the Outstandingly Remarkable Values, free flowing condition, and water quality of rivers such as the Flathead. Through collaboration, study, research, experience, and understanding of the river, specialists in each field have brought forward the information to establish the ORVs of the Flathead River system, and to document the rivers' free flowing condition and outstanding water quality. This report documents the results of this bi-agency collaborative effort. The array of river resources found to be outstandingly remarkable clearly demonstrates the exemplary attributes of the Flathead River.

The Flathead River possesses Outstandingly Remarkable Values in every river segment and almost every field of study included in this report. The Flathead River has many rare, unique, and exemplary values that are dependent on the river and its protection as a Wild and Scenic River.

This Outstandingly Remarkable Values Assessment provides crucial information for development of a Comprehensive River Management Plan (CRMP) for the Flathead River. An accurate and in-depth description of the river resources to be protected is a pre-requisite to develop the Comprehensive Plan. The Comprehensive River Management Plan will develop strategies to ensure protection of the Flathead Wild and Scenic River in the future.

# Appendix: Preparation of Outstandingly Remarkable Values Report

The information included in this report is a result of the Outstandingly Remarkable Values Interagency Workshop held January 31 - February 1, 2012 at the Hungry Horse/Glacier View/Spotted Bear Ranger District Headquarters in Hungry Horse, MT. The workshop was attended by resource specialists from Glacier National Park and Flathead National Forest. The purpose of the workshop was to clearly evaluate and describe the Flathead River ORVs by river segment, and to describe the river's free-flowing condition.



## **Workshop Preparation**

Development of the ORV statement for the Flathead River began well before the workshop started. Prior to the workshop, participants were asked to complete a written report requiring them to gather, review, and summarize existing information about the river's resource values, free-flowing condition, and water quality. Participants were asked to pay particular attention to any differences in the resource values between segments and between the forest and park. Completing these reports ahead of time gave specialists an opportunity to review existing documentation and articulate their own understanding of the river's resources. This allowed for more in-depth and productive discussions during the workshop. In the end, these reports provided the basis for the Flathead River ORV statements.



## Guiding Principles for Outstandingly Remarkable Values

### ORVs must be river-related.

- Is it located in the river or on its shorelands (generally within ¼ mile on either side of the river)?
- Does it contribute substantially to the function of the river ecosystem?
- Does it owe its location or existence to the presence of the river?

### ORVs must be rare, unique, or exemplary in a regional or national context.

- Is it one of only a few occurrences, or the singular expression of a resource type in the region?
- Is it an outstanding example of a common but important resource in the region?
- A region of comparison should be defined for each ORV as appropriate. Regions should not be so large as to unreasonably restrict ORVs to those that are truly nationally significant, nor so small that most river resources would qualify as exemplary in some way.

### ORVs must be defined for individually designated river segments.

- Are there tangible resources associated with the ORV within the river segment?
- How does the ORV vary by river segment?
- Is the ORV located within a portion of a segment or span across multiple segments?

### ORV must be accurate, specific, and descriptive.

- Does the ORV definition clearly articulate an aspect of the river's national significance and importance to the public.

### ORVs must be defensible.

- Is the ORV definition based on existing documentation or professional observations by subject matter experts?

## Workshop Process

The workshop began with a series of presentations on the history of the Flathead River's designation and management, the 2010 resource assessment, recent regional wild and scenic river efforts by the Forest Service and National Park Service, an overview of the Wild and Scenic Rivers Act, and a tutorial on Outstandingly Remarkable Values definition guidelines and models. Participants were divided into four groups, with each group assigned a set of resource values based on their subject matter expertise. For each resource value, the groups reviewed available information, established an appropriate region of comparison, and decided upon a method for evaluating and/or rating resources to determine ORVs. The groups then wrote an overview statement for each resource value for the entire Flathead River designation, sub-statements for each river segment, and made ORV determinations. The breakout groups then reported their findings to the full group for review, discussion, and revision as necessary.

## Workshop Facilitators

Rob Carlin, *Planning and Resources Staff Officer, Flathead National Forest*

Jimmy DeHerrera, *Hungry Horse-Glacier View District Ranger, Flathead National Forest*

Michele Draggoo, *District Planning Team Leader, Hungry Horse, Glacier View, and Spotted Bear Ranger Districts*

Kyle Johnson, *Park Ranger/Backcountry Coordinator, Glacier National Park*

Deb Mucklow, *Spotted Bear District Ranger, Flathead National Forest*


Colter Pence, *Hungry Horse-Glacier View Wild and Scenic River Manager, Flathead National Forest*

Chris Prew, *Hungry Horse-Glacier View Resource Assistant, Flathead National Forest*

Mary Riddle, *Chief of Planning and Compliance, Glacier National Park*

Chris Ryan, *Regional Program Manager for Wilderness/Wild and Scenic Rivers/Outfitter and Guides, US Forest Service Region One*

Gary Weiner, *Intermountain Region Wild and Scenic River Coordinator, National Park Service, Bozeman, MT*



Compiled, edited and designed by:  
Allison Linville  
Spotted Bear Ranger District  
Flathead National Forest

## **Participants**

### ***Glacier National Park***

Chas Cartwright, *Superintendent*  
Scott Emmerich, *North Fork District Ranger*  
Brad Blickhan, *Park Ranger*  
Dawn LaFleur, *Vegetation Specialist*  
Lon Johnson, *Cultural Resource Specialist*  
Deirdre Shaw, *Curator*  
Chris Downs, *Fisheries Biologist*  
Jack Gordon, *Landscape Architect*  
John Waller, *Wildlife Biologist*  
Mark Biel, *Resource Program Manager*  
Richard Menicke, *GIS Specialist*

### ***Flathead National Forest***

Gary Danczyk, *Recreation Staff Officer*  
Andy Nelson, *Backcountry Facilities Manager, Spotted Bear Ranger District*  
Jim Flint, *Assistant Fire Management Officer, Spotted Bear Ranger District*  
Becky Smith Powell, *Recreation Program Manager*  
Chantelle DeLay, *Botanist*  
Hans Castren, *Resource Assistant, Tally Lake Ranger District*  
John Littlefield, *Hydrologist, Hungry Horse, Glacier View, and Spotted Bear Ranger Districts*  
Judy Reese, *Geologist*  
Tim Light, *Cultural Resource Specialist*  
Pat VanEimeran, *Fisheries Biologist, Hungry Horse, Glacier View, and Spotted Bear Ranger Districts*  
Byron Stringham, *Landscape Architect*  
Reed Kuennen, *Wildlife Biologist, Hungry Horse, Glacier View, and Spotted Bear Ranger Districts*



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