

**Wild and Scenic Rivers
Eligibility Assessment**

**Kettle River
Colville National Forest**

**APPENDIX J
ASSESSMENT OF ELIGIBILITY OF THE KETTLE RIVER
FOR
SEPARATE STUDY UNDER
THE WILD AND SCENIC RIVERS ACT**

INTRODUCTION

As part of the planning process, the Forest Service looked at the Kettle River on the Colville National Forest to see if it meets the eligibility criteria for inclusion in the National Wild and Scenic Rivers System. These criteria are set forth under sections 1(b) and 2(b) of the Wild and Scenic River Act of October 2, 1968, as supplemented by U.S. Department of Agriculture and U.S. Department of Interior guidelines.

The criteria for the rivers and their immediate environments are.

1. They are free-flowing, and
2. They possess one or more outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or ecological values.
 - a. Wild river areas -- Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
 - b. Scenic river areas -- Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
 - c. Recreational river areas -- Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

GENERAL SETTING

The following is a general description of the Kettle River and its immediate environment

The total free-flowing length of the Kettle River within the United States is 54 miles. An additional seven miles becomes slack water during periods when Lake Roosevelt, into which the Kettle River flows, is at full pool behind the Grand Coulee Dam. Lake Roosevelt, created in 1941, is the impoundment of the Columbia River behind Grand Coulee Dam. The free flowing length of the river in the United States is made up of two segments. The upper segment flows into the United States from British Columbia, near the port of entry named Ferry, Washington, and flows southeast to the small town of Curlew where it turns to the northeast and flows out of the United States again into British Columbia near the Danville, Washington, Port of Entry. This upper segment, Ferry to Danville, is approximately 28 miles long. After reentering British Columbia, the Kettle flows northeast, east and then turns south to reenter the United States at Laurier, Washington, Port of Entry. The segment, Danville to Laurier in British Columbia, is approximately 26 miles long. After reentering United States at Laurier, the Kettle flows 26 miles to slack water at Lake Roosevelt. Unless specifically referenced to British Columbia, the following discussions relate to the United States portion of the Kettle River.

The length of the Kettle River flowing within the proclaimed Colville National Forest boundary is approximately three miles. The actual frontage of National Forest land on the river is one and three-quarters miles, and this frontage is confined to the west side of the river only between Orient and Laurier. Frontage in other government ownership is also minor. Bureau of Land Management frontage is about three and one-half miles, and State of Washington frontage is one-half mile. The remaining frontage (approximately 48 miles) is private ownership.

The following areas are within a one-quarter mile corridor on either side of the Kettle River in public ownership: National Forest, 680 acres; Bureau of Land Management, 800 acres; and State of Washington, 520 acres. For comparison, private ownership within this corridor is approximately 15,300 acres.

The Kettle River watershed lies mostly in British Columbia, Canada. The river rises in the Monashee Mountain Range, approximately 25 miles east of Kelowna, B.C., and flows southward. Its major tributaries are in British Columbia and the West Kettle and Grandby Rivers. The total watershed covers 4,054 square miles, of which 3,059 square miles are in British Columbia and 995 square miles are in Northeast Washington.

The entire watershed has been extensively modified by repeated advances and retreats of continental glaciers. Some of the higher peaks protruded above the ice sheets. Mountain ranges within the watershed are somewhat less steep and rugged than neighboring ranges. Areas of bare rock alternating with areas of thick glacial deposits show how the glaciers removed the soil layers down to bed rock in some areas and then transported and deposited the material elsewhere.

Elevations within the watershed range from 7,900 feet on the high peaks of the Monashee Mountains in British Columbia to 1,290 feet where the river meets Lake Roosevelt at full pool level. Throughout the watershed, the larger stands of merchantable timber have been accessed by roads in all of the major drainages. Many pockets of rugged, high elevation terrain have not been developed, but these make up a minor portion of the watershed

Topography has been considerably modified by repeated ice advances. Glacial deposits are common and remnants of lake bed terraces can be readily found. Many steep, rocky faces can be seen from the river, particularly south of Laurier. Some of these rise to considerable heights and add much to the visual quality of the watershed.

North and west facing slopes are heavily timbered with western larch, Douglas-fir, and associated species. South and west facing slopes are droughty. At lower elevations these dry slopes support only native grasses, and in areas of more moisture, open stands of ponderosa pine. On south and west slopes the ravines and stream bottoms support ponderosa pine, Douglas-fir, and larch. At higher elevations these species are joined by spruce and subalpine fir.

As viewed from the Kettle River, the nearby vistas present a pleasant mosaic of benches, moderate terrain, occasional rock outcrop faces, and grassy slopes with open stands of pine alternating with dense stands composed of many tree species.

The entire length of the Kettle River within the United States is paralleled by paved highways. The river is also paralleled for 37 miles by the Burlington Northern Railway. Between Ferry Port of Entry and Curlew, the Kettle is followed by Ferry County Route #501, a paved highway. On the opposite side, a gravelled county road follows this river segment. One highway bridge crossing exists on this segment.

Between Curlew and Danville Port of Entry, Ferry County Route #645 follows the west bank, and the Burlington Northern right-of-way is on the east side. Route #645 is a paved highway. The rail branch line serves a sawmill near Republic where it terminates. A reloading facility near Curlew transfers forest products hauled by truck from British Columbia mills to the railway. Three county bridges are located across this river segment.

Between Laurier Port of Entry and Lake Roosevelt, U.S. Highway #395 parallels the Kettle River on the west side. The Burlington Northern rail line also follows the west side of the river, alternately above the highway and between the highway and the river (there are two rail/highway crossings). Three county bridges cross this river segment.

Approximately 12 miles of the river between Laurier and Lake Roosevelt is not accessed by public roads on the east side and as a result, presents the most primitive conditions to be found along the river. Four road bridges are located across this river segment.

Many places exist where a relatively undisturbed buffer, up to one-quarter mile wide, exists between the river and the transportation routes.

The Kettle River is readily accessible to the public at numerous places where transportation routes come close to it. Occasional problems arise when recreationists trespass on private land to reach desirable places on the river, but these are minimal. The farthest that one would be required to travel cross-country from a public road to the river is three-eighths mile. Table J-1 displays the proximity of United States population centers to the Kettle River.

**TABLE J-1
PROXIMITY TO POPULATION CENTERS**

Washington State	1980 Estimated Population	Approximate Distance to Kettle River
Spokane & adjacent towns	341,000	100 miles
Colville	4,500	20 miles
Kettle Falls	1,100	10 miles
Orient	150	0 miles
Republic	1,000	20 miles
Curlew	250	0 miles

The city of Grand Forks, British Columbia, is located on both sides of the Kettle River, approximately four miles downstream from Danville. Grand Forks has a population of approximately 4,000 people. The small British Columbia communities of Midway, Kettle River, and Rock Creek are located on or near the Kettle River and have a combined population of approximately 1,500 people.

Recreation use of the Kettle River includes a variety of activities. The Colville National Forest has no responsibility for managing the recreation use areas along the river. The most desirable recreation use areas are under other ownerships. Therefore, estimates of uses on National Forest lands are subjective. Present recreation use on the river averages 1,500 to 2,000 recreation visitor days per year. Assuming that the average duration of a visit to the river is three hours, this calculates to be 6,000 to 8,000 recreation visits per year.

Types of recreation activities occurring include floating (with both rafts and innertubes), canoeing, fishing (year around), swimming, and day hiking.

Two land management plans have been approved for areas close to the Kettle River. They are the East Deer Creek Final Environmental Impact Statement, approved in 1976, and the Canadian Face Final Environmental Impact Statement approved, March 1974. The East Deer Creek Planning Unit does not extend to the Kettle River and the planning area cannot be seen from the river. No allocations which concern the Kettle River are listed in the plan.

The Canadian Face Planning Unit contains many areas that are visible from the Kettle River, Grand Forks, British Columbia, and major highways in both British Columbia and the

United States Direction provided by the selected alternative lists three management areas containing a total of 4,100 acres (16.7 percent of the total planning area) in which a key value is the scenic resource. The scenic values in this planning unit have been well protected since the plan was implemented.

Of the approximate 17,300 acres within a one-quarter mile corridor on either side of the Kettle River, only 2,000 acres (11.6 percent) are in any type of public ownership. Most of the privately owned land is held by small ranchers who use the land for woodlots, pasture, and hay production. Small ranches are the typical use of the land.

A small amount of private land has been subdivided. Generally the subdivision lots are much larger than is usual in order to make them attractive to investors. Summer homes are found in small numbers. Remoteness from large population centers and the availability of more desirable summer home areas closer to the population centers has caused the Kettle River to be overlooked. The number of subdivisions and summer homes is expected to increase as the more accessible and desirable areas become saturated

The vast majority of dwellings are principal residences, occupied year round.

Public land administered by all Agencies is in an undeveloped condition and is managed primarily for timber production. There are no developed campgrounds along the river. The State of Washington Department of Natural Resources has proposed a campground about two miles downstream from Orient, near the mouth of Boulder Creek, but the project has not been initiated.

RESOURCE DESCRIPTIONS

WATER RESOURCE

Water Yield

The U S. Geological Survey has monitored flows in the Kettle River at two points: near Ferry, Washington, where the river first enters the United States; and near Laurier, Washington, where the river enters the United States. Table J-2 displays water yields for the Kettle River at these two points.

**TABLE J-2
KETTLE RIVER WATER YIELD**

	Ferry, WA	Laurier, WA
Drainage area (square miles)	2,220	3,800
Period of record (years)	53	52
Average discharge 1 Cubic ft/second 2 Acre feet	1,502 1,088,000	2,870 1,079,000
1981 Min discharge, c f/s May 26	14,700	23,400
1981 Min. discharge, c f/s Dec 7	63	250
1981 Mean discharge, c f/s	1,921	3,470

Uses

Users of the Kettle River have found many applications for its water. As already noted, the lower seven miles is a slack water when Lake Roosevelt is at full pool. A power site withdrawal, dated December 8, 1944, by the U.S. Geological Survey affects 486 acres of National Forest land between Orient and Laurier. There are two National Park Service campgrounds on the banks of the slackwater area.

Above Ferry, Washington, in British Columbia, are several small diversions for irrigation. Above Laurier are diversions for irrigation of 720 acres in the United States and 2,090 acres in British Columbia. Numerous water rights on the Kettle River have been filed and are on record. Water is pumped from the river in the summer for use in irrigating hay fields. There is no evidence that river water is used for domestic purposes. The established flood plain has not been significantly encroached upon by developments and the floodplain has historically handled peak runoff without damage.

Hydroelectric Potential

The river segment from Laurier to Barstow has been recognized for many years as having potential for hydroelectric development. A power withdrawal was recorded in 1944, as noted previously.

In 1978, the Lincoln Electric Cooperative, Inc. applied to the Federal Energy Regulatory Commission (FERC) for a permit to study the feasibility of constructing a hydroelectric facility to be located about six miles downriver from Orient. The proposal was to construct a 70-foot high by 400-foot long concrete dam with a gated spillway. A powerhouse containing two 7,500 kilowatt generators was to be constructed integrally with the dam. The dam was to develop 59 feet of head and create 13,000 acre-feet of gross storage capacity. Also a 14 mile long 115 kilovolt transmission line was to be constructed to tie the generating units into the existing power grid.

The FERC issued a preliminary permit to study project feasibility in December, 1979, after considering protests filed by state wildlife and ecology agencies, city governments,

environmental and outdoor groups, the Colville Confederated Tribes, and a local group specifically organized to combat the proposal. In addition, seventy-five individuals registered protests. There is no record of anyone in support of the project.

There has been no activity on the proposed site since the FERC permit was issued to Lincoln County Electric, Inc. Significant reductions in the use of electricity because of increasing rates to consumers, completion of Washington Water Power Company's wood waste fired generating plant near Kettle Falls, and the intense opposition to an impoundment on the Kettle River are thought to have contributed to the lack of activity.

In 1981, Public Utility District No. 1 of Ferry County filed an application with the FERC for a preliminary permit to determine feasibility of a hydroelectric installation of the same approximate size and output capacity, and at the same approximate location as the 1978 proposal by Lincoln Electric Cooperative. There is no record that the FERC has acted on this application, or that Ferry county P.U.D. has pursued the matter.

Kettle River hydroelectric proposals are presently inactive. However, as future demands for electricity increase, this issue is expected to arise again, and is likely to face intense local opposition.

Water Quality

U.S. Geological Survey water quality data for 1964 and 1965 show that the Kettle River meets the Washington State Water Quality Standards for Surface Waters - Chapter 173 - 201 WAC for Class A waters.

The Kettle River flows through grazing and agricultural lands for many miles. Many residences are located within one-quarter mile of the river. In the vicinity of Grand Forks, the fertile flats along the river are intensively cultivated. All of these activities contribute a certain amount of pollutants to the river. Methods used to dispose of sewage in the many small communities along the river both in British Columbia and the United States is not known, but septic tank/drain field systems are common.

FISH AND WILDLIFE

Fish Production

The Kettle River is open to angling year round. Rocky Mountain Whitefish are the primary species taken, most of which are caught during the winter. Rainbow trout are also caught, and are the primary species taken during the summer.

Threatened and Endangered Species

Bald eagles winter along the Kettle and other major rivers in the area. The nearest known nesting activity is at Twin Lakes on the Colville Indian Reservation, approximately 30 miles south of the mouth of the Kettle. The eagles move into the area during the winter and feed on fish, waterfowl and road-killed or winter-killed deer.

Riparian Habitat

Other species which commonly use riparian areas are also present. Roads along both sides of the river for most of its length in Washington have degraded the value of the riparian habitat. Even so, waterfowl and great blue herons still use the river in fair numbers where habitat remains suitable, and deer winter on the breaks above the river. Except for the influence of roads, the riverbanks are generally in a natural-appearing condition

RECREATION

Much of the river is immediately adjacent to highways and railways, and many residences are located near the river. These two items restrict the opportunity for finding solitude as part of the recreation experience. Some isolated sections are found where the canyon walls are steep enough to allow some degree of solitude.

One or two segments of the River offer a high degree of risk to the floater. The remainder of the river presents minimal risk. At least half of the river contains white-water, although not particularly spectacular.

What makes the Kettle River attractive to floaters is the diversity of water conditions, including all ranges of rapids. There are a number of sandy beaches along the river that are particularly attractive for swimmers and sun-bathers.

The scenery along the Kettle River, although not spectacular, contains several unique and attractive rock formations and vegetative conditions.

Future Use

Large increases in water-based recreation use are anticipated over the next 30 years. An indexed projection of stream-based recreation participation (from Projections of Future Forest Recreation Use, USDA Research Bulletin WO-2, 1983) indicates a three percent increase per year in canoeing. This is compared to a 1.1 percent increase in picnicking, a 1.9 percent increase in dispersed camping, and a 1.1 percent increase in hiking.

MINERALS AND ENERGY

Within the Kettle River watershed are many old mines and prospects. Some of the mines produced much wealth during the period following exploration and settlement. Examples of these are the old diggings around Greenwood, British Columbia, and the First Thought Mine near Orient, Washington. These mines have been closed for many years. At present,

mineral activity is at a very low level throughout the watershed, although exploration continues by large energy companies and individual prospectors. The Kettle River receives very little attention from prospectors using small hydraulic dredge equipment. There is no evidence that dredging or sluicing was ever done along the Kettle River.

Within the river corridor there exists minimal potential for mineral, gas, oil or geothermal development. Within the river influence zone, low potential for these developments exists.

TIMBER

Following Table J-3 are estimates of the timber resource within the corridor, one-quarter mile on either side of the river.

**TABLE J-3
TIMBER RESOURCE ESTIMATES**

	Acres	Percent In Timber	Vo /Acre/MBF Merchantable	Vol MMBF	1/Yield/Year/MBF
National Forest	680	30	6	12	41
Bureau of Land Management	800	40	6	19	64
State of Washington	520	60	8	25	62
Private Ownership	15,300	25	5	191	765
TOTALS	17,300			247	932

1/ Using 200 board feet/acre/year as an average increment

Most of the better timber-producing sites in private ownership have been converted to other uses. The lands still supporting timber are too rugged for other types of use, and are not highly productive. Proposed timber harvest rates are not known for these lands.

Timber harvest from privately-owned land reaches high levels when log prices offered by local mills become attractive to the owners. Occasional harvests occur on public lands, but the schedules are not known.

Insect and disease activity is at a low level. Considering the low level of activity in surrounding forests with similar species compositions, the risk of loss to insect and disease is low.

HISTORICAL AND CULTURAL

Native Americans have lived in the area since shortly after the most recent continental glacier retreated about 12,000 years ago. Many house pits have been found near the Kettle River. Many Native American artifacts are believed to have been destroyed by the activities introduced into the area in the last 150 years.

A historic salmon fishery at Kettle Falls on the Columbia River was located about four miles downstream from the mouth of the Kettle River before Lake Roosevelt was formed. This fishery provided enormous amounts of fish to the many tribes who came each season to the Kettle Falls to catch and prepare the fish for winter use. Archeological studies have determined that the fishery at the Kettle Falls dates back approximately 9,000 years, and ended when Grand Coulee Dam was built.

Fort Colville, an outpost of the Hudson Bay Company, was established about one mile upriver on the east bank of the Columbia River from the falls. Fort Colville was built in 1825 and was an active trading post for about 50 years. The valley of the Kettle River served as an access route for tribes going to and from the falls and for traders, trappers, prospectors and miners travelling to Fort Colville. More recent activities have obliterated these old travel ways

TRANSPORTATION

The transportation routes along the Kettle River have been discussed already. Except for the low standard county roads which serve local residents, the Ferry County highways are of regional importance. U.S. Highway #395 is a major north-south arterial between population centers in British Columbia and Washington State. Potential for future development appears to be limited. All categories of roads are expected to be improved in the future to handle increased traffic volumes associated with anticipated population growth

GRAZING

Grazing occurs along most of the Kettle River. Exceptions are where cattle are fenced away from the transportation systems. Cattle have access to the river in many places. Livestock use does not enhance the recreational values, but neither does the use detract from the overall scenic values of the river. Grazing has been a part of the established use pattern for approximately 100 years, and is completely accepted by the local population. Some water pollution does occur because of this use.

ELIGIBILITY

Following is a brief assessment in table form of the Kettle River as to its eligibility for study under the Wild and Scenic Rivers Act (see Table J-4).

**TABLE J-4
KETTLE RIVER ELIGIBILITY RATING
BY CLASSIFICATION CRITERIA**

Classification and Criteria	Kettle River
Wild River Free of Impoundments Generally Inaccessible Except by Trail Watershed or Shoreline Essentially Primitive Waters Essentially Unpolluted	Yes No No Yes
Summary of Eligibility	No
Scenic River Free of Impoundments Accessible by Road in Places Watershed or Shoreline Still Largely Primitive Shorelines Largely Undeveloped	Yes Yes No No
Summary of Eligibility	No
Recreation River Some Diversion or Impoundments in Past Some Development Along Shoreline Readily Accessible by Road	No Yes Yes
Summary of Eligibility	Yes
Outstanding Remarkable Value(s) Associated with this River	Scenery, Recreation
Overall Eligibility	Recreation

Based on the above information, the Forest supports the Kettle River as eligible for study as a recreational river to be included in the Wild and Scenic River System