


BALDFACE CREEK

Siskiyou National Forest

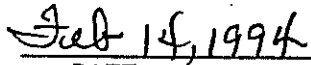
ELIGIBILITY STUDY

I have completed a careful analysis and review of the information presented in the Resource Assessment prepared by the Interdisciplinary Planning Team for Baldface Creek and its tributaries as the principal component of the Eligibility Study for those streams. I have conferred with the team, other specialists and my immediate staff and reviewed comments submitted by the public in analyzing this information. This analysis leads me to find that the following streams/stream segments are free-flowing and possess at least one Outstandingly Remarkable Value (ORV):

BALDFACE CREEK and all its perennial tributaries above the confluence with the North Fork Smith River. This is a total distance of approximately 28 miles. The identified ORV's are fisheries and water quality and the highest classification is Wild except for the lower 1/4 mile of the mainstem of Baldface Creek which is Scenic.



J. MICHAEL LUNN
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Siskiyou National Forest



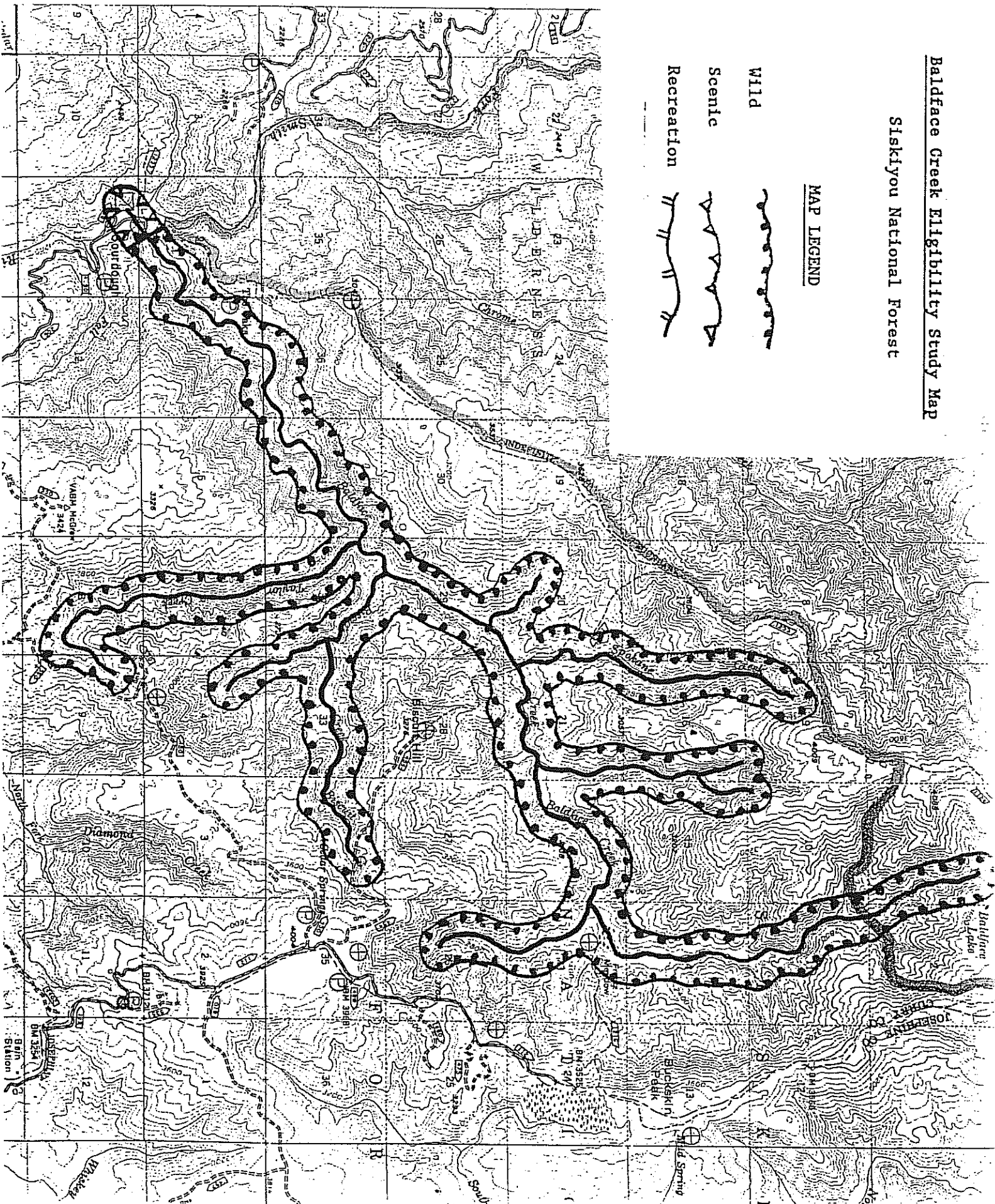
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Sliskiyou National Forest

Wild

Scenic

Recreation



541

415

ELIGIBILITY STUDY

Baldface Creek And Its Tributaries

USDA - Forest Service
Siskiyou National Forest

Prepared by the:
Baldface Interdisciplinary Team

November 1993

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1 BALDFACE CREEK AND ITS TRIBUTARIES
ELIGIBILITY STUDY

I. INTRODUCTION

In 1968, Congress enacted the National Wild and Scenic Rivers Act, establishing a system for preserving outstanding free-flowing rivers. The Siskiyou National Forest Land and Resource Management Plan (Forest Plan) was released in March, 1989. American Rivers, Inc. and the Oregon Rivers Council appealed the Forest Plan in June 1989. The appeal was based, in part, that the Forest Plan and accompanying FEIS did not adequately assess potential Wild and Scenic rivers on the Forest.

To settle the appeal, the Siskiyou National Forest agreed to evaluate the eligibility of tributaries to various rivers, including the North Fork Smith River. Eligible streams are those determined to be free-flowing that possess at least one stream-related value that is "Outstandingly Remarkable". Potentially eligible streams will be managed to protect those values, along with their potential classifications (wild, scenic, or recreational) until their final suitability for inclusion into the Wild and Scenic River system is determined.

After an initial eligibility screening, four streams on the Illinois Valley Ranger District were determined to have segments which are free-flowing and might possess "Outstandingly Remarkable Values (ORV)". An Eligibility Study has or will be prepared for each of these streams to determine whether indeed the stream contains one or more ORVs. Baldface Creek, which flows into the North Fork Smith River, is one of the four streams.

II. ELIGIBILITY STUDY PROCESS

This Eligibility Study provides data on the existing condition of each resource and serves as the foundation of the river management planning process. It provides a standardized approach to evaluation of values of the tributaries and rivers. Interim management, management direction, and potential boundaries will be determined based on information provided in this assessment. Although the determination of value significance is a matter of informed professional judgement and interpretation, this process includes the following steps or verification techniques:

- An interdisciplinary team approach (see Appendix C, List of Preparers).
- Consideration of uniqueness and rarity at the regional and national level.
- Consideration of whether or not values are river-related (owe their existence to or contribute to the functioning of the river system and its immediate environment).
- The use of qualitative guidelines to help determine significance.

* Regional boundaries are based partially on the eight geographic regions described in the 1989 Statewide Comprehensive Outdoor Recreation Plan for Oregon. The East Fork of the Illinois River and its tributaries are in SCORP Region 9, which includes Josephine, Jackson, Klamath, and Douglas Counties (see Appendix B). Regional boundaries are also evaluated according to physiographic regions.

III. EXECUTIVE SUMMARY

Baldface Creek provides some of the best water quality and fisheries habitat known on the Siskiyou National Forest. The world-class fishery on the Smith River depends on the water and fish produced in the Baldface drainage. More numbers of fish were counted on this creek than any other on the Illinois Valley Ranger District. The combination of key fishery attributes and limited access contribute to the high quality environment. This watershed could be used as a model of the desired conditions for restoration projects in other watersheds.

Plant communities within the Baldface drainage are distinctive and variable. Habitat for sensitive and rare plants occurs throughout the area. The limited human disturbance increase the value of the plants and plant communities. Intact riparian areas with large, old conifer trees are relatively unique for the west side of the Illinois Valley Ranger District.

Some portions of the study area also have a high potential for prehistoric cultural resources. Prehistory of Southern Oregon is poorly understood; these sites may provide important information about prehistoric societies.

Baldface Creek is free-flowing throughout its length.

IV. PUBLIC INVOLVEMENT

Public involvement and input was sought for this study. Individuals and groups were contacted through public meetings, phone conversations, and the mail. The mailing list, and all correspondence concerning this study are on file at the Illinois Valley Ranger District office.

V. STREAMS INCLUDED IN THIS STUDY

Baldface Creek and its tributaries is located in the Siskiyou Mountains, in the northern part of the Klamath Geologic Province along the California/Oregon border. Baldface Creek is a major tributary to the North Fork Smith River. The perennial tributaries that are included in the study area are shown on Figure 1.

The following chart shows lengths of each stream and corresponding acreage:

Figure 1. Streams Considered in this Study

Stream Name	Miles	Acreage - Stream Miles X 1/4 Mile on each side of Creek
Mainstem Baldface Creek (from near Baldface Lake to mouth)	12	3,840
Non-named Tributaries to Baldface	7.3	2,336
Spokane Creek	2.6	832
Biscuit Creek	2.3	736
Taylor Creek	3.3	1,056
TOTAL STREAMS INCLUDED IN THIS STUDY	27.5	8,800*

*All of the streams combined including some overlap for stream junctions.

HISTORIC USES

Little obvious human activity has occurred along Baldface Creek or its tributaries. The few roads were probably constructed for mining access (mainly chrome mining on a limited scale). Sourdough Camp had a homestead and an old Ranger Station. The Oaks and Spokane Creek had historic mining. Frantz Meadow shows evidence of cabin remains.

VI. DISCUSSION OF STREAM-RELATED VALUES

SUMMARY

Several resource areas will be discussed in this section, including physical, biological, social, and cultural resources. Each resource is discussed separately. The criteria for the "Outstanding Remarkable" rating is provided, followed by a detailed description of the resource, and a "finding" which summarizes the resource description.

GEOLOGICAL/HYDROLOGICAL

CRITERIA FOR OUTSTANDINGLY REMARKABLE RATING

The stream, the area within the stream corridor, or the drainage basin contains example(s) of a geologic or hydrologic feature, process, or phenomenon that is rare, unusual, one-of-a-kind, or unique to the geographic region. The feature(s) may be in an unusually active stage of development, represent a textbook example, and/or represent a unique or rare combination of geologic features (alluvial, erosional, landslide, soils, volcanic, glacial, and other geologic features) or hydrologic phenomena (large aquifers, springs, fens, or other features).

EXISTING CONDITION

Geology

Baldface Creek and its tributaries flow through the Josephine ultramafic sheet, ~~the rock mass that is thought to be the largest exposure of peridotite/serpentinite on any continent.~~ The Baldface drainage lies in the wide central part of the ultramafic body. The approximately 30 square miles of the Baldface drainage is only a fraction of the ~~400 square miles of ultramafic~~ terrain, which extends some 40 miles north of Baldface Creek and about 50 miles south into California. Thus, the bedrock geology is similar to that of the southern end of the Kalmiopsis Wilderness and to that of Rough and Ready Creek drainage.

Eighty percent, 25 square miles, of the Baldface drainage is underlain by serpentine and peridotite. Peridotite is a major rock component of the earth's lower crust and mantle. Serpentine is an altered form made by addition of water at moderate temperatures in the earth's crust.

Almost ~~twenty~~ percent, 5 square miles, of the drainage is underlain by granitic rocks, mostly diorite with lesser gabbro and amphibolite. These occur as scattered plutons throughout the drainage. Most of them are smaller than one-half square mile; many are not mapped.

Two percent, one half square mile, of the drainage is underlain by shale and sandstone of the Dothan Formation, a rock unit widespread across the western part of the Forest and in northwestern California. This rock type occurs along one mile of Baldface Creek just above its confluence with Smith River.

Geologic Influence on Vegetation

The ultramafic bedrock has a dramatic influence on the vegetation. Soils derived from ultramafic rocks are high in iron and magnesium, and also have minerals containing toxic metals such as chromium, nickel, and cobalt. The sparse vegetation of grass, brush, and scattered pines contrasts with the typically dense vegetation on other types of bedrock.

Minerals and Mining

Historic mining within Baldface Creek is less extensive than other areas within the Illinois Valley Ranger District. Few effects to the stream from the mining are evident. The most prevalent mineral extracted has been chrome. Chrome deposits occur in ultramafic rocks and tend to be small and easily depleted. The two largest workings are near the mouth of the creek. Others are comparatively small (less than two acres). Recent claims have been filed for iron-nickel laterites, which also contain cobalt. No chrome or nickel laterite claims are being worked at this time.

A few gold placer claims are currently filed. Even fewer lode deposits are known; Spokane Creek may have had historical gold lode activity as well as placer mining. Gold is generally associated with granitic rocks; granitic rocks in the nearby Josephine Creek drainage were mined for lode gold. Thus, the potential for gold mining may be greater than is indicated by literature and the small number of current claims.

Hydrology/Channel Morphology

The flow within Baldface Creek is unrestricted. Valley bottom widths range from 30 feet to 600 feet, with the stream flowing mainly between alluvial terraces and bedrock banks. There are no blockages, such as waterfalls, to anadromous fish passage.

Typically, streams that flow through ultramafic terrain, on the east side of the coast range, support low summer flows. Precipitation tends to run off quickly. Baldface is a little different from other streams in this regard: higher summer flows may be related to higher percentages of granitic geology.

Numerous springs are fed by groundwater from the highly fractured ultramafic bedrock. The cold water from the seeps and fens, although not great in quantity, contribute to cool summer stream temperatures.

Stream Reaches

Baldface Creek is divided into three major reaches, based on geology and valley morphology. The first reach is comprised of a broad, sinuous valley with steep, well-vegetated, stable slopes. The stream channel ranges in width from 50 to 100 feet. Dense strips of alder and willow are common along the stream, although little shade is provided by this vegetation. Gradients are less than two percent. The stream bed is made up of boulders up to 3 feet in diameter, which form riffle and pocket pool habitat for fish. The bed load is dominantly gravel and small boulders from landslides along the next reach upstream. Sparsely vegetated terraces 25 to 100 feet wide occur 10 to 20 feet above the stream. There are no major tributaries.

Second Reach

The second reach includes three miles of a rocky, rugged serpentine canyon with landslides. It extends upstream to the mouth of Taylor Creek. The canyon bottom is fairly straight and confined by the valley slopes. Stream gradients are low. The stream-adjacent slopes are higher and steeper in this area than in other parts of the drainage.

Several small draws with minor flows feed this reach. There are rock bluffs, springs, and bogs along the banks. There are a half-dozen vegetated terraces about 50 feet above the stream. They range in size from one to five acres, and have large trees.

The boulder-strewn stream bed varies from 50 to 150 feet in width and occupies the entire canyon bottom, except for the few terraces. During low water, streamflow is spread out over the wide bouldery streambed, and the intermittent gravel bars are exposed. Some sections of these reaches are braided. Willows and cedar grow along the edges of the channel, but the stream is not well shaded.

This reach has the only concentration of large landslides in the drainage. They are ravel slides up to 1000 feet wide and 10 to 30 feet deep. Most were present in 1939 and appear to have changed little since then. Some extend a thousand feet vertically. The landslides are still contributing considerable sediment to deposits along the stream banks. These deposits will enter the stream during future high-water events. The wide gravel bars in this area are composed of debris from the landslides.

The 1964 storm event reactivated one slide that existed previous. It also washed loose soil and rock into the stream and removed some of the stream bottom vegetation. No new slides appeared to be caused by the 1964 storm.

Some time between 1973 and 1987, enough debris came down to partially block the channel near the upper end of this reach. In 1991, stream surveyors found that half the channel was blocked and that there was a 400-foot-long temporary pool. Green non-aquatic vegetation under water indicated intermittent landslide activity.

Third Reach

The third reach is seven miles long. Areas of dense vegetation contrast with an open ultramafic landscape, reflecting the mixture of granitic and ultramafic rocks. Granitic draws offer shade and cool water. Approximately six landslides have occurred since 1939, likely triggered by the 1964 storm event.

The valley bottom ranges from straight to broadly sinuous, with numerous terraces. Wider terraces typically exist at the mouths of tributaries. The stream is confined to bedrock or deep gravel terraces, and is narrower than the lower reaches. This reach is not aggraded like the reach below Taylor Creek, although heavy bed loads are found in most places, mostly cobble and small boulder in size. The pool/riffle/glide ratio is similar to the lower reaches. Riffles are largely composed of cobble and small boulder bed material and pocket pool habitat. Stream gradient is steeper throughout, and there is more riparian vegetation and shading than in the lower four miles.

Larger tributaries are Taylor Creek, Biscuit Creek, Spokane Creek, and an unnamed tributary one mile upstream from Spokane Creek. Baldface Creek has two major forks in the upper reaches. There are at least a half dozen smaller perennial tributaries and numerous intermittent ones. The headwaters of all these streams tend to be have a steep gradient, becoming flatter as they make their way down the hill.

From Taylor Creek to Biscuit Creek the channel is one long braided riffle with willow shrubs. Large woody material is scarce. The ultramafic slopes are sparsely vegetated, as are stream banks, where bedrock is exposed.

Biscuit Creek, an ultramafic drainage, was three degrees warmer than Baldface Creek when the stream surveyors were there. At the confluence of the three upper forks of Biscuit Creek, a large alluvial soil deposit covers 25 acres. This landform is old and accumulated from stream and surface erosion rather than landslide activity.

Above Biscuit Creek is one mile of straight ultramafic valley with long riffles and deep pools entrenched into bedrock. The streambed is 40 feet wide with a substrate of cobbles and small boulders. Several pools are over 100 feet long. Near Spokane Creek, where the bedrock changes to granitic rocks, there is sand in pools. The riparian vegetation of hardwoods is dense but does not shade the stream. Large conifers grow on terraces 20 feet above the stream. Springs and bogs are numerous.

In the vicinity of Spokane Creek, the influence of the granitic bedrock becomes apparent as the open ultramafic terrain changes to dense forest (80% canopy) and the stream gradient increases slightly. Much of the channel in this area is bedrock. There are numerous pocket pools but only a few larger ones. There are nearly continuous terraces 20 feet to 40 feet above the stream. Large woody material is relatively plentiful. White granite sand in some pools contrasts with the dark boulders. Parts of Spokane Creek and some of its tributaries were hydraulically mined, but this had no lasting effect on Baldface Creek.

From Spokane Creek to one mile above Frantz Meadow, the stream flows alternately through forest and open terrain, depending on bedrock type. Terraces up to 500 feet wide and stream-adjacent slopes as low as 30 percent contrast with downstream reaches. The unnamed tributary or fork that enters from the south just downstream from Frantz Meadow is granitic terrain with good stream shade and cool water.

The largest granitic "oasis" in the drainage is centered at Frantz Meadow, a lush grassy area encompassing about an acre. Its stream terraces are well-vegetated with conifers and large hardwoods. In section 11, one mile above Frantz Meadow, the streambed narrows to 30 feet wide with cooler water temperatures. Stream gradients increase, volume decreases, and there are fewer springs and fish.

Lakes

At least six small lakes or ponds are scattered throughout the drainage. They were formed by ancient large landslides. Three appear to have some water even in the dry season, the others may have water intermittently.

FINDINGS

Baldface Creek drainage clearly displays how differences in bedrock geology can influence the other components of the ecosystem, such as vegetation, channel morphology, and water temperature. It is characterized by boulder beds, straight channels with some braided reaches, and valley confinement. It is similar to Rough and Ready in hydrology and channel morphology, except for more extensive boulder dominated riffle sections and less braided sections, higher granitic geology influence, higher precipitation, and greater diversity. The geological/hydrological values associated with Baldface Creek are not unique within the region or nation.

WATER QUALITY

CRITERIA FOR "OUTSTANDINGLY REMARKABLE" RATING

The river has exceptionally pure, clear, and/or clean water. The river is known for its water quality nationally or regionally. The river provides or has potential to provide exceptionally high water quality for a variety of beneficial uses including, but not limited to, fish and wildlife, recreationists, and communities.

EXISTING CONDITION

Baldface Creek contributes one-quarter of the flow of the North Fork of Smith River at their confluence. Although Baldface Creek was two degrees warmer (66 degrees Fahrenheit versus 64 degrees Fahrenheit) than the North Fork, when measured by stream surveyors in August, 1991, it contributes good quality water to the downstream system. In November, 1991, the flow at the mouth was 19.6 cfs. There are no stream gages, habitations, or diversions.

Annual precipitation is up to 20 percent higher than comparable drainages within the Illinois River system (such as Josephine Creek and Rough and Ready Creek). As a result, water quality is better.

Turbidity is very low except during storms or landslide activity, which occur during rare major storm events. This is partly because of the geology and soils, which contain a low percentage of suspendable fines. The system has power to wash away sand and fines; turbidity episodes are short-lived. Sandy and gravelly streambeds suitable for fish spawning occur in the upper granitic reaches.

The main stem does not have good canopy closure along 70 percent of its length, due to the ultramafic influence. Shady granitic tributaries contribute cool water, as do numerous springs.

Temperature data was collected in Baldface Creek from June to September in 1991. Temperatures along Baldface Creek ranged from the high 60's to high 50's (degrees Fahrenheit). Temperatures of tributaries varied from mid-50's to high 60's.

Relationship to Beneficial Uses

Fisheries

The clear water and cool temperatures contribute to year-round fisheries values in both Baldface Creek and in the North Fork of Smith River. See the fisheries section of this report for more information. Baldface Creek supports tremendous numbers of fish.

Scenic

The unaltered natural setting, riparian diversity, and clear, cool water contribute to the scenic values of the watershed. See the scenic section of this report for more information.

Recreation

Although limited by lack of access, Baldface Creek is used for fishing, swimming, recreational mining, hiking, picnicking, and camping. See the recreation section of this report for more information.

FINDINGS

Water quality is good to excellent. Water quality (chemical, biological, productivity) could be of highest value for streams in the region, although the data is not sufficient data to make this distinction. Riparian zones are intact, though naturally somewhat deficient in stream shade, except for the upper reaches and sections in granitic terrain, where the streams are well-shaded. The drainage is locally known to be of exceptional quality for fisheries. The water quality is a major factor in the excellent functioning of this watershed.

FISHERIES

CRITERIA FOR "OUTSTANDINGLY REMARKABLE" RATING

Fish values may be judged on the relative merits of either fish populations, habitat, Native American cultural use, or a combination of these river-related conditions. Consideration shall be given for potential as well as existing values.

Habitat

The river provides or has the potential to provide exceptionally high quality habitat for fish species indigenous to the region. Of particular significance is habitat for wild stocks and/or federal or state listed or candidate threatened, endangered and sensitive species. Diversity of habitat is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

Populations

The river is internationally, nationally or regionally an important producer of resident and/or anadromous fish species. Of particular significance is the presence of wild stocks and/or federal or state listed threatened, endangered and sensitive species. Diversity of species is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

EXISTING CONDITION

Habitat

Baldface Creek flows into the Smith River and contributes to the Smith River's extremely productive fishery. The combination of forested side drainages, old-growth pockets of forest, and dense riparian vegetation maintains essential fishery elements: cool water temperatures, woody debris supply for fish cover, spawning gravels, vegetation and thermal cover. The riparian habitat is a prime source of large woody material. It also supplies nutrients to the Smith River system.

High numbers of salmonids counted in Baldface Creek attest to the quality of the ecosystem; this basin could be used as a model for desired future conditions for similar watersheds. Baldface Creek provides an opportunity to observe the evolution of a pristine watershed.

The valley bottom ranges from moderate to narrow V-shaped slopes (38-80%). Flood plain widths (where a flood plain occurs) range from 5 to 600 feet. Areas where extensive flood plains occur often coincide with slide areas. Riparian vegetation includes shrubs of willow, alder, azalea, and ninebark, ^{and} small pole to large-tree cedar, fir, pine, yew, maple and alder.

Riparian habitat is unaltered by human activity. Shade cover along the main fork ranges from 0-90%. There are numerous small wetland seeps, Darlingtonia bogs and springs that aid in maintaining lower temperatures.

Populations

Chinook Salmon Onchorhynchus tshawytscha, Coho Salmon Onchorhynchus kisutch, Steelhead trout Onchorhynchus mykiss and cutthroat trout, Onchorhynchus clarki are present within the Baldface system. Two recent stream surveys have occurred in Baldface Creek. ~~Exceptional numbers of anadromous and resident salmonids were found during both surveys (USDA 1991a and USDA 1993b).~~ Pools and riffles had greater than 1000 fish per unit, the majority being juvenile steelhead (0+ and 1+ size class).

The pool, riffle, glide ratio was calculated as: p(109):r(114):g(10). Substrate, turbulence and depth were estimated to be the primary cover factors and are thought to be very effective within this watershed. Excellent riffle and pool habitat conditions likely contribute to the high numbers of fish. Pools are 5 to 9 feet deep and average 3.8 feet deep.

At least seven log jams were found during the 1991 stream survey. Concentrations of woody debris are highest in the headwaters where there are pockets of dense forest growing adjacent to the creek. High quality spawning gravels are abundant throughout the stream.

FINDINGS

Habitat

Fisheries habitat within the Baldface Creek watershed is high quality. In addition to key habitat attributes (such as low water temperature, presence of woody debris, and other factors), ~~limited access reduces the overall potential for harvest and provides seasonal refugia for adult fish (USDA 1993g).~~ These refugia are believed to be of great value to the resident fish within the upper reaches. In addition, hyporheic zones may be supply cool ground water during summer months. ~~Baldface Creek can serve as an model for other watershed studies.~~

Baldface Creek contributes substantially to the world-class fishery of the North Fork Smith River. It provides near-pristine spawning and rearing habitat and is a source of the high quality water on which the anadromous fishery of the Smith River depends (USDA 1991c).

Populations

The relative abundance of salmonids in Baldface Creek is phenomenal in comparison to all other creeks on the Ranger District (USDA 1991a). Baldface Creek is considered by many fisheries biologists as one of the top anadromous fish production sites on the Siskiyou Forest (USDA 1993g). No other tributary streams (refugia) have greater quantities of juvenile fish or higher quality anadromus fish habitats on the Illinois Valley Ranger District (USDA 1993g).

CRITERIA FOR "OUTSTANDINGLY REMARKABLE" RATING

The river corridor contains nationally or regionally important populations of indigenous plant species. Especially important are species considered to be unique, or significant populations of federal or state listed or candidate threatened, endangered, or sensitive species. Diversity of plant communities is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

EXISTING CONDITION

The Baldface Creek drainage provides habitat for many plant communities due to the blend of moist, shady riparian areas, dry, open serpentine savannahs, and "islands" of denser, more productive forest. It is similar to Rough and Ready Creek (see Rough and Ready Creek Eligibility Study) because the creeks share a common headwaters boundary, both are primarily serpentine, and both are relatively inaccessible and unaltered by human activity. Rough and Ready Creek was found eligible for inclusion into the Wild and Scenic River system, partly due to its botanical significance (high numbers of species of rare plants associated with serpentine). Baldface Creek has similar habitat for rare plants as Rough and Ready, although few studies have been conducted to confirm their presence or absence.

A greater percentage of the Baldface drainage is underlain by granitic rocks than Rough and Ready Creek (and other serpentine areas on the Illinois Valley District). The soils derived from these rocks support denser vegetation. Therefore, Baldface has denser, more productive forests than other similar drainages.

An isolated relic hemlock plant series exists in the headwaters of Baldface Creek (as well as on the Rough and Ready side of the ridge). The presence of western hemlock this far from the coast is unique for the Siskiyou Mountains. The conditions which support this plant series are complex and not entirely understood.

Access to Baldface Creek is limited, which contributes to the ecological value of the area. The habitat is less disturbed by human activity than better-known riparian areas. Rare plants and plant communities in an undisturbed condition may provide baseline data for research.

Some very large Port-Orford-cedar, douglas-fir, and sugar pines (upwards of eight feet diameter at breast height) grow near streams in the Baldface watershed. These large trees are unusual for the west side of the Illinois Valley Ranger District. The large trees tend to be associated with riparian areas from Frantz Meadow to the headwaters of Baldface Creek.

Besides having a greater proportion of granitic-derived soils, and larger trees, Baldface Creek also differs from Rough and Ready Creek climatically. The trend of the watershed is westerly, making it susceptible to more atmospheric moisture. It has more precipitation and fog, higher summer humidity and lower summer temperatures. It is at the beginning of the coastal crest rain shadow (Tom Atzet, personal communication).

Rainfall on the Baldface side of the ridge that separates Baldface from Rough and Ready Creek is recorded as 90 to 100 inches a year. Frantz Meadow, 110 inches at Biscuit Hill, and 110 to 120 inches from above the mouth of Spokane Creek to Sourdough Camp. In comparison, rainfall ranges from 110 to 60 inches a year on the Rough and Ready side (Meyer, Amaranthus 1979).

The Baldface Creek corridor encompasses both wet and dry serpentine at elevations between about 1600 feet at The Oaks and 2200 feet near Frantz Meadow. A small narrow intrusion of gneissic amphibolite, about two miles long north to south and 0.2 miles wide east to west, occurs along the Spokane Creek tributary. Talus slopes show up clearly on aerial photographs at different elevations.

Many rare plants occupy wet or dry serpentine soils. Some rare plants occupy talus slopes, such as Fritillaria glauca and Cardamine gemmata, especially in serpentine or peridotite soils (see Figures 2 and 3).

Two rare plants have been seen in the upper reaches of Baldface. Frantz Meadow is a documented location of Calochortus howellii, a C-2 Candidate for federal listing (1990 sighting by Spotted owl monitoring crew member, Romaine Cooper). The trail to Frantz Meadow is a documented location of Lupinus tracyi (1993 sighting by Anita Seda to survey Baldface drainage), a sensitive species which also occurs above the headwaters of Rough and Ready Creek.

Habitats with high occurrences of rare plants have been documented along Baldface Creek by the IVRD Stream Survey crew in 1991. They noted "several Darlingtonia bogs" in each stretch between the mouth of the creek up till where the serpentine changes to diorite. They also noted the presence of Epilobium rigidum, a sensitive plant species.

Hastingsia bracteosa, a C-1 candidate for federal listing as Endangered or Threatened might be found in wet serpentine areas associated with Darlingtonia.

Included in the list of documented species (Figure 2) are eight watch list plants, eight sensitive plants and five C-2 candidates. The list of species with habitat at Baldface Creek (Figure 3) contains four watch list plants, fourteen sensitive plants, two C-2 candidates and one C-1 candidate.

Rare Plant Definition

Watch List

Plants on the Watch List are rare but currently secure or are declining in numbers or habitat but are still too common to be considered threatened or endangered by Oregon Natural Heritage Program or Regional Forester.

Sensitive

Sensitive plants are endangered or threatened in Oregon or presumed extirpated, but which are more common or stable elsewhere. They are divided into the following categories:

- C-2: Candidates for listing under the Federal Endangered Species Act for which more information is needed before a final U.S. Fish and Wildlife Service status can be determined.
- C-1 Candidates for listing under the Federal Endangered Species Act for which enough information is available to support a proposal to list the species as Endangered or Threatened.

<u>Scientific Name</u>	<u>Common Name</u>	<u>Listing</u>
<i>Arabis macdonaldiana</i>	McDonald's rock cress	C-2
<i>Calochortus howellii</i>	Howell's Mariposa Lily	C-2
<i>Cardamine gemmata</i>	Purple toothwort	C-2
<i>Cypripedium californicum</i>	California ladyslipper	watch
<i>Darlingtonia californica</i>	California pitcher plant	watch
<i>Dicentra formosa</i> ssp <i>oregana</i>	Oregon bleeding heart	watch
<i>Epilobium rigidum</i>	Rigid willow-herb	sensitive
<i>Eriogonum ternatum</i>	Waldo eriogonum	watch
<i>Gentiana setigera</i> (<i>bisetata</i>)	Waldo gentian	C-2
<i>Hieracium bolanderi</i>	Bolander's hawkweed	sensitive
<i>Lilium bolanderi</i>	Bolander's lily	watch
<i>Lilium vollmeri</i>	Vollmer's lily	watch
<i>Lupinus tracyi</i>	Tracy's Lupine	sensitive
<i>Microseris howellii</i>	Howell's microseris	C-2
<i>Monardella purpurea</i>	Siskiyou monardella	sensitive
<i>Poa piperi</i>	Piper's bluegrass	sensitive
<i>Streptanthus howellii</i>	Howell's streptanthus	sensitive
<i>Thlaspi montanum</i> var. <i>siskiyouense</i>	Siskiyou candytuft	watch
<i>Triteleia laxa</i>	triplet lily	sensitive
<i>Vancouveria chrysantha</i>	yellow vancouveria	watch
<i>Viola lanceolata</i>	western bog violet	sensitive

Figure 2. Documented Rare Plants Near or Along Baldface Creek. Highlighted plants are known to occur within the Baldface watershed; the others were found in the North Fork Smith watershed, close to the Baldface area.

<u>Scientific Name</u>	<u>Common Name</u>	<u>Listing</u>
Balsamorhiza sericea	silky balsamroot	watch
Castilleja brevilobata	short leaved paintbrush	sensitive
Cypripedium fasciculatum	clustered lady slipper	sensitive
Cypripedium montanum	mountain lady slipper	watch
Epilobium oreganum	Oregon willow herb	C-2
Erigeron cervinus	Siskiyou daisy	sensitive
Erythronium howellii	Howell's fawn lily	sensitive
Fritillaria glauca	Siskyou fritillaria	sensitive
Haplopappus whitneyi	Whitney's haplopappus	sensitive
Hastingsia bracteosa	large flowered rush lily	C-1
Kalmiopsis leachiana	kalmiopsis	watch
Lewisia leana	Lee's lewisia	sensitive
Lewisia oppositifolia	opposite leaved lewisia	watch
Mimulus douglasii	Douglas' Monkeyflower	sensitive
Polystichum californicum	California shield fern	sensitive
Salix delnortensis	Del Norte willow	sensitive
Sanicula peckiana	Peck's snakeroot	sensitive
Senecio hesperius	Siskiyou butterweed	C-2
Silene hookeri ssp. bolanderi	Bolander's catchfly	sensitive
Smilax californica	California greenbrier	sensitive
Triteleia hendersonii var. leachiae	Leach's brodiaea	sensitive

Figure 3. Rare Plants That Have Habitat Along or Near Baldface Creek.

FINDINGS

The distinctive and variable plant communities and potential for sensitive plant species within the creek corridor contribute to the botanical and ecological value of the creek. The limited human disturbance makes these plants and communities even more valuable from a research point of view. Baldface Creek is similar ecologically to Rough and Ready Creek, except that it has a greater proportion of dense forest, larger trees, and more of a coastal climatic influence. The full botanical significance of this area has not been determined because the area has not been adequately inventoried.

ROC
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WILDLIFE

CRITERIA FOR "OUTSTANDINGLY REMARKABLE" RATING

Wildlife values shall be judged on the relative merits of either wildlife populations or habitat, or a combination of these conditions.

Habitat

The stream or area within the stream corridor provides exceptionally high quality habitat for wildlife of national or regional significance, or may provide unique habitat or a critical link in habitat conditions for federal or state listed or candidate threatened, endangered and sensitive species. Contiguous habitat conditions are such that the biological needs of the species are met. Diversity of habitats is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

Populations

The stream or area within the stream corridor contains nationally or regionally important populations of indigenous wildlife species. Of particular significance are species considered to be unique or populations of federal or state listed or candidate threatened, endangered and sensitive species. Diversity of species is an important consideration and could in itself lead to a determination of outstandingly remarkable.

EXISTING CONDITION

General Comments

Little is known about the wildlife populations in the Baldface Creek study area. Few formal surveys for threatened, endangered, or sensitive species have been conducted. The area is thought to provide habitat for many avian, mammalian, reptilian, and amphibian species that inhabit or use the stream corridor for cover, food, and water. The geology of the area and naturally recurring wildfire visibly influence the present distribution of wildlife habitats and their seral stage development.

The Port-Orford-cedar, western hemlock, and tanoak plant series' are found within the study area. Songbirds tend to favor the tanoak associations.

Riparian wildlife species are likely to be those commonly associated with spring, small stream, mid-size stream, large stream, riparian, and lentic areas including common merganser, American dipper (water ouzel), great blue heron, killdeer, belted kingfisher, tailed frog, red-legged frog, Western toad, Western pond turtle, ringneck snake, Western skink, yellow-legged frog, and spotted sandpiper.

Other habitats (microsites) within the study corridor include rock sites (small cliffs, caves, talus), wet areas, and bog sites. These microsites provide habitat diversity.

No endemic species or subspecies are known to exist solely within the study area. However, no specific studies related to wildlife subspecies taxonomy are known to have occurred within this type locality. Previously undescribed species or subspecies could be present, most likely to occur within the invertebrate taxa.

Proposed, Endangered, Threatened, And Sensitive Species

Site-specific surveys have not been conducted within the Baldface watershed for Proposed, Threatened, Endangered, or Sensitive (PETS) wildlife species, except for the Northern spotted owl. The Forest Wildlife Observation Database was reviewed for recent and historic PETS wildlife sightings within and/or adjacent to the study area (the database is used to store wildlife sightings documented by a wide variety of field-going Forest Service personnel).

Federally Listed Threatened and Endangered Fauna

Individual northern spotted owls have been documented within the Baldface study corridor, however no current activity centers (nests or nesting birds) are known to exist. Suitable habitat for the marbled murrelet may exist within the Baldface watershed in association with the western hemlock stands near the headwaters. No marbled murrelets are known to use the creek corridor, although they were sighted within four air miles of Baldface Creek, on Fourth of July Creek.

Bald eagles and peregrine falcons are not believed to be resident within the study corridor or adjacent habitats. Some wolverine and pine marten have been reported relatively close to Baldface Creek, but these sightings have not been followed up with documentation within the study corridor.

USFS Sensitive Fauna

The study corridor likely contains habitat of the following sensitive vertebrate species: Pacific western big-eared bat, California mountain kingsnake, common kingsnake, red-legged frog, and Northwestern pond turtle.

Pacific western big-eared bats inhabit buildings, deep rock crevices and abandoned mine tunnels; areas that are seldom disturbed by humans.

The California mountain kingsnake inhabits forest edges, especially where western fence lizards and sagebrush lizards are found.

FINDINGS

Baldface Creek is not known to support populations of wildlife not found elsewhere. Although the wildlife habitats within the study area corridor may be unusual from a regional/national point of view, comparable areas exist along other sections of the Smith and Illinois Rivers (including portions already designated Wild and Scenic). The study area likely contains a number of riparian (spring, small stream, mid-sized stream, large stream, and lentic) dependent wildlife species and may contain some sensitive wildlife species.

Riparian and other forested areas are important to wildlife within the Baldface watershed. The surrounding area is serpentine and supports stands with a very sparse canopy. Wildlife probably rely heavily on the canopy cover along the stream and surrounding draws.

The limited access and lack of human activity make the habitat even more useful to animals that need solitude to survive. The Baldface Creek watershed may be important for some wildlife species as connecting habitat to facilitate movement between California and Oregon.

SCENIC

CRITERIA FOR "OUTSTANDINGLY REMARKABLE VALUE" RATING

The landscape elements of landform, vegetation, water, color, and related factors result in a notable or exemplary visual features and/or attractions within the geographic region. When analyzing scenic values, additional factors such as seasonal variations in vegetation, scale of cultural modifications, and the length of time negative intrusions are viewed may be considered. Scenery and visual attractions may be highly diverse over the majority of the river or river segment length and not common to other rivers in the physiographic region.

EXISTING CONDITION

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A combination of landforms, rock formations, water forms, and vegetative features contribute to the scenic quality of the Baldface stream corridor. Baldface originates near Baldface Lake in the Kalmiopsis Wilderness. Access is limited; two trails, a system gravel road, and an historic wagon trail provide access to the perimeter of the drainage. One four-wheel drive road provides access to the mouth of the stream at Sourdough Camp.

Views from the ridge r and trails are expansive. Br flattish ridges with sparse vegetation command the viewer's attention. Views into the drainage itself are limited by the steep midslopes. Densely forested areas provide diversity. The Biscuit Hill area provides scenic interest due to convoluted rock outcrops. The feel on the ridgetop is of a moonscape with strewn boulders and stunted lodgepole, knobcone, and Jeffrey pine.

Views from the drainage itself are limited by the steep, narrow shape of the drainage, and the dense riparian vegetation, except for the extreme lower reaches that are broader and more expansive.

The setting throughout much of the drainage is park-like. The open Jeffrey pine savannahs on the broad ridges and terraces provide contrast to steeper, densely vegetated riparian areas. In spring, a riot of wildflowers grow throughout the serpentine terrain.

The serpentine rock type and lack of soil in the watershed contributes to the water color, and clarity (see Geology/Hydrology). The creek flows with clear to blue water through most of its course and clears quickly after storms. Additionally, the water course creates interesting patterns of occasional braiding, deep pools interspersed with boulder rapids; and steep whitewater cascades that have larger boulders with some waterfalls and plunge pools. In winter, water cascades from steep tributaries and slopes along the drainage.

Feldspar-rich granitic gravels within the creek are light colored, and provide contrast to the darker peridotite boulders also visible within the creek. Visual diversity is also created by the variety of the vegetation types in the watershed. Large, old-growth douglas-fir, hemlock, sugar pine, and Port-Orford-cedar are present in the headwaters, along with alders and other deciduous trees and shrubs. Some of the largest trees known on the west side of the Illinois Valley Ranger District grow along Baldface. The majority of the drainage consist of Jeffrey pine, Port-Orford-cedar, douglas-fir, alders and other deciduous trees, with shrubs, grasses, and wildflowers that provide variety to the setting in relation to color, texture and structure.

Few human impacts are visible throughout the study corridor, with the exception of old bridge remnants, a disbursed camping site, and historic mining areas near the mouth of Baldface Creek and at Spokane Creek. Cabin remains can be seen at these mining areas, and Frantz Meadow. Old mining equipment can be seen at Spokane Creek. Otherwise, the scenery is pristine.

FINDINGS

The scenic features within the corridors of Baldface Creek and its tributaries (clear water, seasonal variations in vegetation, canyon walls, waterfalls,³ large boulders, serpentine outcrops and minimal visual intrusions) contribute substantially to the setting. The Baldface drainage provides an excellent example of a serpentine-dominated landscape that has not been visibly altered by human activity, except in a few locations. The notable features within the viewshed can be seen elsewhere in the physiographic region within the Rough and Ready, Josephine, Canyon, Diamond, and Whiskey Creek watersheds, although Baldface has somewhat more variety due to a greater proportion of dense, older forests interspersed with the serpentine.

RECREATIONAL

CRITERIA FOR "OUTSTANDINGLY REMARKABLE" RATING

Recreational opportunities are, or have the potential to be, unique enough to attract visitors from outside of the geographic region. Visitors would be willing to travel long distances to use the river resources for recreational purposes. River-related opportunities could include, but are not limited to, sightseeing, wildlife observation, photography, hiking, fishing, hunting and boating.

Interpretive opportunities may be exceptional or have the potential to attract visitors from outside the geographic region.

The river may provide or have the potential to provide settings for national or regional use or competitive events.

EXISTING CONDITION

The study area supports a low level of recreational use. Local residents enjoy hiking, fishing, hunting, viewing scenery, botanizing, horseback riding, and swimming.

Two trails, a system gravel road, and an historic wagon trail provide limited access to the perimeter of this drainage. The South Fork Smith River Trail borders the drainage to the Southwest, following the Kalmiopsis Wilderness boundary. To the Southeast is the McGrew Trail, (a wagon trail used in the late 1800's as a transport route from Crescent City to Josephine County). The Northeastern rim of the drainage is accessed by the Buckskin Peak Road (#4402-112), and the Kalmiopsis Rim Trail. The McGrew Trail is popular with four-wheel drive and local all-terrain vehicle users.

Two trails and one system road access the mainstem Baldface Creek. The Frantz Meadow Trail accesses a meadow area in the Northern half of the drainage. This trail receives an estimated 10 to 20 hikers per season. The Biscuit Hill Trail leads from the Buckskin Peak road, across Baldface Creek, and up to the North Fork Smith River Trail. Use is also estimated at 10 to 20 hikers, along with a few horseback riders per season.

The mouth of the creek receives the majority of recreational use. A dispersed campground known as Sourdough Campground lies at the end of road #4402-206. An estimated 200 to 300 campers and swimmers use this area annually for summer recreation. The North Fork Smith River, directly above and below the mouth of Baldface Creek, offers deep, clear holes, with small sandy beaches used for swimming and fishing.

FINDINGS

Recreation use in the study corridor is low, and opportunities to enhance the recreational values are limited by remoteness, steepness, and poor access. Sourdough Camp at the mouth of Baldface receives the highest amount of use; this area is already within the North Fork Smith Wild and Scenic River corridor. The study area is not considered unique in comparison to recreational opportunities provided on other rivers within the SCORP Region.

CULTURAL-PREHISTORIC

CRITERIA FOR "OUTSTANDINGLY REMARKABLE" RATING

The river or area within the river corridor contains a site(s) where there is evidence of occupation or use by native Americans. Sites must be rare, one-of-a-kind, have unusual characteristics or exceptional human interest values. Sites may have national or regional importance for interpreting prehistory, 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. Of particular significance are sites or features listed in, or eligible for, inclusion in the National Register of Historic Places.

EXISTING CONDITION

Cultural resources have not been formally surveyed within the Baldface study area. However, a survey titled "Orphan Prehistoric Sites" was conducted in 1988. This survey documented widely scattered prehistoric sites across the district. One site, SK-441, is located within the study area. This site consist of a lithic scatter and four possible housepits. A projectile point recovered at the site suggests Late Archaic occupation. The site has a high potential for vandalism and disturbance. District site probability maps indicate a "moderate to high" potential for additional prehistoric sites in some portions of the study area. Such sites would probably be procurement areas associated with short-term task-specific activities.

FINDINGS

The prehistory of southwestern Oregon is poorly understood in relation to the rest of the state (Aitken, 1986). Basic research focuses on conducting site inventories, building chronologies, and constructing models of cultural change. Little is known of upland adaptation. In this context, SK-441 is very valuable (and possibly unique) in providing additional information on upland subsistence settlement systems. The ecological orientation of the site may have provided access to a variety of resources, both terrestrial and riverine. The presence of housepits would provide important insight into past social organization.

Vandalism and disturbance are possible. Given increased activity in the general area of the site, a data recovery project may be necessary. Monitoring is recommended to ensure the integrity of the site. Otherwise, cultural resource sites are protected under existing laws, regulations, and policy.

CULTURAL, HISTORIC

CRITERIA FOR "OUTSTANDINGLY REMARKABLE" RATING

The river or area within the river corridor contains a site or feature associated with a significant event, an important person, or regionally unique location(s) of importance to Indian tribes (religious activities, fishing, hunting, and gathering). A historic site(s) and/or features(s) in most cases is 50 years old or older. Of particular significance are sites or features listed in, or eligible for inclusion in, the National Register of Historic Places.

EXISTING CONDITION

Baldface Creek has not been formally surveyed for historic cultural resource sites. However, a varied mining history is discussed in existing literature. Settlement of the Illinois River country began in the early 1850's. The discovery of gold in 1851 led to an extension of the California Gold Rush into southern Oregon. Some exploration of Baldface Creek likely occurred during this time. A gold placer site is reported at the mouth of Spokane Creek.

Mining activity increased after the turn of the century. During World War I, the Federal Government began offering incentives for mining strategic minerals such as chrome. The Sourdough (Baldface) Mine located in The Oaks area was first worked in 1918 for chrome deposits. The mine was in operation again from 1941-1943 by the Rustless Mining Company. A mill for this mine was located at the mouth of Baldface Creek.

Historic Siskiyou National Forest maps indicate mining activity at the junction of Spokane and Baldface Creeks. The 1911 map shows no mining placenames. A 1915 forest map locates a McKee Mine on Spokane Creek, although no reference to this mine was found in the literature. However, there is a reference to a McKee Cabin in the "1936 Road and Trail Guide". The Baldface Nickel (sic) Mine is mentioned in the literature, within the same section as the McKee Mine.

The 1915 Forest Map also shows a Forest Service Ranger Station located at Sourdough. Additionally, this map shows the trail from Bisquit Hill to Spokane Creek.

A 1922 map located the previously mentioned Sourdough Mine. By 1937 the name of the Ranger Station located at Sourdough was changed to "Sourdough Forest Camp".

The existing trail system first appears on a 1937 map. Originally, the trail system served dispersed mining claims. A 1942 map located a cabin on Spokane Creek. This is probably the McKee cabin.

Cabin remains and other historic features have been reported for the Baldface/Spokane Creek areas (Empey, personal communication). The remains of three buildings are reported to be at The Oaks (May, personal communication). Evidence of hydraulic mining has been reported in the vicinity of Spokane Creek and cabin remains in the Frantz Meadow area (May, personal communication).

FINDINGS

At the national level, the chrome mine sites may be significant in the investigation of strategic mineral exploration associated with both World Wars. However, this mining activity is not directly associated with Baldface Creek. In addition, the early mining history associated with Baldface Creek is not the best, or most extensive example found in the region. For instance, Josephine Creek, also located on the Illinois Valley Ranger District, was the site of the first discovery of gold in Oregon, in 1851.

The Sourdough area is associated with early Forest Service history. While not nationally significant, this area is very important locally in defining early Siskiyou National Forest history.

None of the areas discussed above have not been formally documented or evaluated for their historic significance. Existing laws, regulations and policy governing cultural resources remain in effect.

CULTURAL, TRADITIONAL USE

CRITERIA FOR "OUTSTANDINGLY REMARKABLE" RATING

The river or area within the river corridor contains regionally unique locations of importance to Indian tribes (religious activities, fishing, hunting, and/or gathering). Locations may have unusual characteristics or exceptional cultural value being integral to continued pursuit of such activities. Locations may have been associated with treated rights on ceded lands or activities unprotected by treaty on ceded lands or in traditional territories outside ceded lands.

EXISTING CONDITION

No known traditional use areas exist with the Baldface Creek study area.

FINDINGS

No evidence suggests that the Baldface Creek study area is presently used for traditional activities by local Indian groups. The three Indian tribes (Tolowa, Karuk, Takelma-Siletz) consulted did not provide additional information.

APPENDIX C
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