NATIONAL NATURAL LANDMARK EVALUATION

Rocky Comfort Flat Proposed Research Natural Area (Idaho)

Columbia Plateau Natural Region

Stiff Sagebrush Theme

Stiff Sagebrush Parkland Subtheme

November 1989

prepared for

U.S. Department of the Interior
National Park Service

by

The Nature Conservancy
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Susan Bernatas Date

INTRODUCTION

The Stiff Sagebrush Theme is distributed across the northern Columbia Plateau from the basalt scablands of the Columbia Basin into the Douglas-fir zone of the eastern slope of the Cascade Range and throughout the Blue Mountains. Outlying populations occur in west-central Idaho and western Montana. Daubenmire (1975) proposed subthemes for stiff sagebrush communities under three zones: 1) the steppe zone; 2) the Artemisia scrub of Douglas-fir zone; and 3) the Artemisia scrub of ponderosa pine zone. In Phase I of the current study, two subthemes were thought to capture the range of biological diversity (The Nature Conservancy et al 1989): the Columbia Basin Stiff Sagebrush Scabland and Stiff Sagebrush Parkland. The latter includes Daubenmire's Artemisia scrub of the Douglas-fir and ponderosa pine zones. This report evaluates a potential NNL site to represent the Stiff Sagebrush Parkland Subtheme.

In the 1989 Phase II study, six Stiff Sagebrush Parkland Subtheme sites were evaluated on the basis of illustrative character, condition, diversity, rarity, and value for science and education (Crawford et al. 1989). The following sites were evaluated: Rocky Comfort Flat proposed Research Natural Area (PRNA) (ID); Sheep Peak PRNA (ID); Beach Creek - Long Creek Grassland (OR); Cleveland Shrub-Steppe Natural Area Preserve (WA); Government Draw PRNA (OR); Thompson Clover RNA (WA). On the basis of this evaluation, Rocky Comfort Flat PRNA was chosen to be the best example of this subtheme.

SITE CHARACTERISTICS

Location

Rocky Comfort Flat is located on a plateau above the confluence of the Crooked River and Bear Creek of Adams County, Idaho (Figure 1). These two creeks are tributaries of the Wildhorse River which drains into the Snake River below Brownlee Dam. The approximate center lies at a latitude of 44°58'00" N and a longitude of 116°44'00" W. Lands within the proposed NNL boundary lie within Township 19 North, and Range 3 West. The U.S. Geological Survey topographic map coverage is available on the Rocky Comfort Flat 7.5' quadrangle Provisional Edition (1986). The McCall Quadrangle Surface Management Status map, 1:100,000-scale series, published by the Bureau of Land Management (BLM) also provides coverage.

The site lies 34.6 km (21.5 miles) northwest of Council, Idaho. Access to the

general vicinity of Rocky Comfort Flat is via the Hornet Creek Road, which is a maintained, all-weather road that runs between Council and Bear, Idaho. The approach is from a county road (gravel) that leaves the Hornet Creek Road and follows Crooked Creek west. Although rough, this road is passable by sedan during dry weather. Park at the confluence of Bear Creek and Crooked River and walk up a rather steep southwest-facing ridge to the plateau. A second and easier route into the proposed NNL is via a private road that takes off from the Hornet Creek Road approximately 1.6 km (1 mile) north of the junction to the previously mentioned Crooked River road. Follow this private road until it dead-ends approximately 1.6 km (1 mile) from the proposed NNL boundary. Permission is necessary to cross private lands.

Figure 1. Location of Rocky Comfort Flat PRNA National Natural Landmark in Adams County, Idaho.

R 3 W R 2 W T 19 N

Rocky Comfort Flat NNL

Boundary

A boundary was chosen to encompass the range in diversity of stiff sagebrush communities on Rocky Comfort Flat. The boundary is the minimum required to include an adequate representation of features needed in the Stiff Sagebrush Parkland Subtheme. The boundary is the obvious canyon rim on the south, west, and north side of the plateau. A land survey (section) line was chosen for the eastern boundary since no adequate topographic features exist.

The proposed Rocky Comfort Flat PRNA NNL lies in Township 19 North, Range 3 West. This part of Idaho has not been surveyed yet, but the 1984 Payette National Forest Map shows the NNL to be in protracted Sections 16, 21, and 28.

The east side follows the section line between sections 27 and 28, T19N, R3W. The following describes the boundary in detail using information from the topographic map.

Beginning at the 1341 m (4400 ft) contour interval on the section line between section 27 and 28, T19S, R3W follow the contour line west. At the southwest corner

of the plateau continue following the 1341 m (4400 ft) contour line north. After approximately 800 m (1/2 mi) drop down to the 1329 m (4360 ft) then 1317 m (4320 ft) interval continuing to the northwest corner of the plateau and then east. Move up to the 1341 m (4400 ft) interval as the contour intervals turn north along the top of the plateau. Following the 1341 m (4400 ft) interval to the section line between sections 15 and 16. Following this section line south 2 km (1 1/4 mi) to the beginning.

Size

The total area contained within the proposed NNL is estimated to be 180.5 ha (446 acres). Area was computed using a Tamay Planix 5000 digitizing planimeter.

Description

The recommended Rocky Comfort Flat PRNA NNL is a plateau-like peninsula surrounded on all but the eastern side by the canyons of Bear Creek and Crooked River, upstream of their confluence. The plateau is gently undulating and breaks abruptly to steep-sided canyon walls that drop approximately 304.8 m (1000 feet) to the valley bottoms. There is a mosaic of associations on the plateau whose distribution appears to correspond to soil depth and, to a lesser extent, topographic position and aspect.

The dominant vegetation within the NNL is stiff sagebrush which grows strictly on stony soils over basalt bedrock (Daubenmire 1975). The stiff sagebrush/Sandberg's bluegrass (Poa sandbergii) (Hironaka et al 1983, Tisdale 1986, Johnson & Simon 1987) association is the only described community in this subtheme (Plate 1). Stiff sagebrush usually is the only shrub present although species of shrubby buckwheat are frequently present. Sandberg's bluegrass is the principal understory; overall, this habitat type has little vegetative cover (Plate 2). Soils are shallow to moderately deep, extremely stony or rocky over basalt bedrock. Any subsoil development is montmorillonitic clay with low permeability. Frost heaving and excess water during the spring characterize the scablands in this subtheme (Hironaka et al. 1983).

Mountain big sagebrush (Artemisia tridentata ssp. vaseyana) is climax on the deepest soil, rigid sagebrush (Artemisia rigida) on shallow soils while, bicolor

biscuit-root (Lomatium leptocarpum) dominates sites where bedrock is very close to the surface. Areas influenced by ephemeral seeps are dominated by Tolmie's onion (Allium tolmiei) and blue camas (Camassia quamash). The shallow draw draining the north side of the plateau contain stands climax to Psuedotsuga menziesii.

The NNL is located on the Weiser Embayment of the Columbia River Basalt Group. Grande Ronde Basalt underlies the proposed NNL (Fitzgerald 1982).

The following characterization of the climate of west-central Idaho is adapted largely from Ross and Savage (1967).

During the winter and early spring, the climate is influenced primarily by Pacific Maritime air resulting in winters that are warmer and milder than might be expected. Periodically, the westerly flow of air is interrupted by outbreaks of cold, clear, continental air from Canada.

During summer months, the westerly winds weaken, and continental climatic conditions prevail. Rainfall, cloud cover, and relative humidity are at their minimum in summer; daily temperature variation is 22^{o} to 28^{o} C (40^{o} to 50^{o} F) or more.

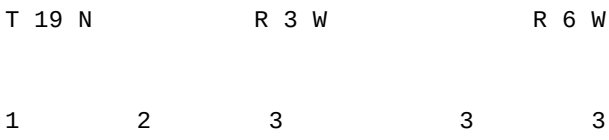
These generalizations are borne out by precipitation and temperature records from Council, Idaho, 34.6 km (21.5 miles) southeast of the proposed NNL and 152.4 m (500 ft.) below its lower boundary (Table 1). Precipitation in the NNL is greater and temperatures lower than at Council.

Table 1. Average mean monthly and mean annual precipitation and temperature for the period 1949-1981 at Council, Idaho (NOAA records summarized by Johnson 1981).

	Temperature		Precipitation	
Month	^{o}F	^{o}C	mm	inches
January	25.2	-3.8	3.96	100.6
February	31.2	-0.4	2.63	66.8
March	38.5	3.6	2.10	53.2
April	47.5	8.6	1.78	45.2
May	56.3	13.5	1.61	41.0
June	64.3	17.9	1.69	43.0
July	73.3	22.9	0.49	12.5
August	71.5	22.0	0.76	19.3
September	61.9	16.6	1.19	30.2
October	49.6	9.8	1.82	46.2
November	37.7	3.2	3.47	88.1
December	28.8	-1.8	4.04	102.6
Mean Annual	60.4	9.3	25.54	648.7

Two state monitor species occur within the proposed NNL: Allium tolmiei var. persimile and Eatonella nivea. Castilleja oresbia a state sensitive species and Primula cusickiana, a widespread regional endemic, also are found in the area.

Figure 2. Location of biotic communities in the Rocky Comfort Flat PRNA proposed NNL.



Key to associations:
1. Mosaic of stiff sagebrush/Sandberg's bluegrass and bicolor biscuit-root associations (43%).
2. Mosaic of stiff sagebrush/Sandberg's bluegrass and mountain big sagebrush/bluebunch wheatgrass associations (48%).
3. Douglas-fir/snowberry and Douglas-fir/ninebark associations (9%).

Plate 1. The stiff sagebrush/Sandberg's bluegrass association in the proposed NNL.

Plate 2. A closeup of the stiff sagebrush/Sandberg's bluegrass association showing the high percentage of bareground.

Plate 3. Stiff sagebrush/Sandberg's bluegrass association in the foreground, with the Wallowa Mountains of Oregon in the background.

Plate 4. Lomatium leptocarpum community that borders the stiff sagebrush/Sandberg's bluegrass association. Stiff sagebrush is the shrub in the foreground.

Plate 5. Castilleja oresbia plants are the light colored clumps scattered throughout the stiff sagebrush/Sandberg's bluegrass stand.

Plate 6. Patterned ground at Rocky Comfort Flat PRNA proposed NNL with mountain big sagebrush/bluebunch wheatgrass on the mounds and stiff sagebrush/Sandberg's bluegrass in the swales.

Land Use and Present Condition

In general, the present condition of the recommended area is good to excellent. Natural values of the proposed NNL are currently being protected due to its inclusion within the larger Rocky Comfort Flat PRNA.

Cattle grazing is the principal present land use and local areas have been lightly to moderately grazed by cattle, although the lack of water limits use. Little recreational activity takes place within the recommended NNL, with most use probably occurring during hunting season in the autumn.

Anticipated Damage

The current, localized cattle grazing within the recommended boundary is expected to continue, if the area is not fenced.

No roads exist within the proposed NNL, and no roads are currently being planned. No off-road-vehicle usage has occurred on the site, and such usage is unlikely to occur because of impassible terrain and private ownership.

No mining claims have been established within the proposed NNL. The geology of the area makes it unlikely that any such claims will be established in the future.

Effects of Publicity

The recommended Rocky Comfort Flat NNL is not expected to be sensitive to increased publicity. The only foreseen effect of publicity is that more of the public will learn of the area's nationally significant ecological values. Any increase in visitor use to the NNL is not expected to be great enough to impact the ecology of the area.

Ownership

All lands within the proposed NNL are Federally owned. The U.S. Department of Agriculture, Forest Service, Payette National Forest administers the surface occupancy. The U.S. Department of the Interior, Bureau of Land Management, Boise District, Cascade Resource Area administers mineral rights of the area. The addresses are as follows:

Payette National Forest	Boise District Office
Box 1026	Bureau of Land Management
106 W. Park	3948 Development Ave.
McCall, Idaho 83638	Boise, ID 83705
208/634-8151	208/334-1582

ANALYSIS

Significance

The stiff sagebrush/Sandberg's bluegrass association at Rocky Comfort Flat PRNA is an outstanding example of the Stiff Sagebrush Parkland Subtheme as defined by Phase I of the 1989 study (The Nature Conservancy et al. 1989), and is the best example of the subtheme, as evaluated in the 1989 Phase II study (Crawford et al 1989). In addition, Rocky Comfort Flat is the largest, least disturbed stiff

sagebrush site known in Idaho.

Recommendations

In my opinion, the site appears to be nationally significant and I recommend that it be designated as a National Natural Landmark.

Management Guidelines

The present level of cattle grazing within the recommended area is light, however the area should be fenced to prevent grazing, and hence increased erosion. The area should be designated as a Research Natural Area to assure adequate protection for the site.

If it is established, the NNL designation would further enhance Rocky Comfort Flat by highlighting its ecological significance.

General Background

Evaluator:

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Data Manager, Idaho Natural Heritage Program (1987-1988)

Botanist, U.S. Forest Service, Wallowa-Whitman National Forest (1988)

Natural Areas Ecologist, The Nature Conservancy, Idaho Field Office (1988-present)

Information contained in this report is based on literature cited, interviews with Idaho Natural Heritage Program staff, and members of the Idaho Natural Areas Coordinating Committee, and reconnaissance level field investigations during the spring of 1988.

Considerable information was provided by Bob Moseley, who inventoried the area while employed by The Nature Conservancy. I spent four days in the Wildhorse and

Crooked River and Bear Creek drainages in May, 1988. A total of approximately seven days was spent researching and writing this NNL site evaluation for Rocky Comfort Flat PRNA.

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Ross, S.H., and C.N. Savage. 1967. Idaho Earth Science. Idaho Bur. Mines and Geol. Earth Sci. Ser. No. 1. 217 pp.

The Nature Conservancy, Idaho Natural Heritage Program, Oregon Natural Heritage Data Base, Washington Natural Heritage Program. 1989. Final Report, Phase I, 1989. National Natural Landmark Project, Columbia Plateau National Natural Landmark Ecological Themes. Report submitted to the U.S. Department of the Interior, National Park Service, Pacific Northwest Region, Seattle, WA. 91 pp.

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APPENDIX I

Common and scientific names of the vascular plant, mammal, amphibian, reptile and bird species of known or probable occurrence within the recommended NNL boundaries.

Flora of Rocky Comfort Flat PRNA NNL has not been thoroughly described or studied. Observations and collections by R. K. Moseley and C. A. Wellner resulted in the following list:

Scientific name	Common name
TREES	
Pinus ponderosa	ponderosa pine
Pseudotsuga menziesii	Douglas-fir
SHRUBS AND SUBSHRUBS	
Amalanchier alnifolia	serviceberry
Artemisia rigida	stiff sagebrush
Artemisia tridentata ssp. vaseyana	mountain big sagebrush
Cercocarpus ledifolius	mountain mahogany
Clematis ligusticifolia	western clematis
Crataegus douglasii	black hawthorn
Eriogonum heracleoides	Wyeth buckwheat
Eriogonum thymoides	thyme-leaved buckwheat
Eriogonum sphaerocephalum	rock buckwheat
Philadelphus lewisii	syringa
Physocarpus malvaceus	ninebark
Prunus virginiana	chokecherry
Purshia tridentata	bitterbrush
Ribes cereum	wax currant
Salix scouleriana	Scouler's willow
Sambucus cerulea	elderberry
Symphoricarpos albus	common snowberry
Symphoricarpos oreophilus	mountain snowberry
FORBS	
Achillea millefolium	yarrow
Allium accuminatum	Hooker onion
Allium brandegei	Brandegee's onion
Allium tolmiei	Tolmie's onion
Antennaria flagellaris	stolonous everlasting
Arabis microphylla	littleleaf rockcress
Balsamorhiza hookeri	Hooker's balsamroot
Balsamorhiza sagittata	arrowleaf balsamroot
Besseya rubra	red besseya
Camassia quamash	camas
Castilleja oresbia	pale paintbrush
Clarkia pulchella	pink fairies
Claytonia lanceolata	springbeauty
Collinsia parviflora	blue-eyed Mary
Collomia linearis	collomia
Crepis modocensis	low hawksbeard
Crepis occidentalis	western hawksbeard
Cystopteris fragilis	bladder-fern
Delphinium bicolor	little larkspur
Delphinium nuttallianum	upland larkspur
Dodecatheon pulchellum	shooting star
Draba verna	whitlow-grass
Eatonella nivea	eatonella
Erigeron bloomeri	scabland fleabane
Erigeron corymbosus	foothill daisy
Erigeron pumilus	shaggy fleabane
Fritillaria pudica	yellow bell
Geum triflorum	prairie smoke avens
Glaux maritima	saltwort
Hesperochiron pumilus	dwarf hesperochiron
Heuchera grossulariifolia	alumroot
Hydrophyllum capitatum	ballhead waterleaf
Lewisia rediviva	bitterroot
Lithophragma parviflora	prairie star
Lomatium cous	cous

Lomatium dissectum	desert-parsley
Lomatium leptocarpum	bicolor biscuit-root
Lomatium macrocarpum	large-fruit lomatium
Lomatium nudicaule	pestle parsnip
Lupinus laxiflorus	spurred lupine
Mertensia oblongifolia	leafy bluebells
Microseris troximoides	false-agoseris
Orogenia linearifolia	orogenia
Paeonia brownii	peony
Penstemon deustus	hot-rock penstemon
Penstemon gairdneri	Gairdner's penstemon
Penstemon payettensis	Payette penstemon
Phacelia heterophylla	virgate phacelia
Phlox viscida	sticky phlox
Polygonum majus	Palouse knotweed
Potentilla glandulosa	sticky cinquefoil
Potentilla gracilis	five-finger
Primula cusickiana	Cusick's primula
Ranunculus glaberrimus	sagebrush buttercup
Ranunculus oresterus	Blue Mountain buttercup
Saxifraga occidentalis	redwool saxifrage
Sedum stenopetalum	wormleaf stonecrop
Senecio integerrimus	western groundsel
Sisyrinchium inflatum	grass-widow
Trifolium macrocephalum	big-head clover
Veratrum californicum	false hellebore
Viola nuttallii	Nuttall's violet
Wyethia amplexicaulis	mule's-ear

GRAMINOIDS

Agropyron spicatum	bluebunch wheatgrass
Bromus japonicus	Japanese brome
Bromus tectorum	cheatgrass
Calamagrostis rubescens	pinegrass
Elymus cinereus	giant wildrye
Festuca idahoensis	Idaho fescue
Koeleria cristata	Junegrass
Poa sandbergii	Sandberg's bluegrass

Fauna

Faunal species have not been systematically studied or inventoried in Rocky Comfort Flat PRNA NNL. A large population of Idaho's only endemic mammal and a state sensitive species, the Idaho ground squirrel (Spermophilus brunneus), is located adjacent to the RNA but has not yet been found within it. The following animal species are among those most likely to be found in the RNA area.

Scientific Name	Common Name
FALCONIFORMES (Hawks and Falcons)	
Cathartes aura	Turkey Vulture
Buteo jamaicensis	Red-tailed Hawk
Buteo lagopus	Rough-legged Hawk
Buteo swainsoni	Swainson's Hawk
Aquila chrysaetos	Golden Eagle
Falco mexicanus	Prairie Falcon
Falco sparverium	Kestrel
GALLIFORMES (Grouse)	
Dendragapus obscurus	Blue Grouse
Alectoris graeca	Chukar
COLUMBIFORMES (Pigeons and Doves)	
Zenaidura macroura	Mourning Dove
STRIGIFORMES (Owls)	
Asio otus	Long-eared Owl
Asio flammeus	Short-eared Owl
CAPRIMULGIFORMES (Goatsuckers)	
Chordeiles minor	Common Nighthawk
APODIFORMES (Swifts)	
Cypseloides niger	Vaux's Swift
Selasphorus rufus	Rufous Hummingbird
Stellula calliope	Calliope Hummingbird
PICIFORMES (Woodpeckers)	
Colaptes cafer	Red-shafted Flicker
Asyndesmus lewisi	Lewis' Woodpecker
PASSERIFORMES (Perching Birds)	
Tyrannus tyrannus	Western Kingbird
Sayornis saya	Say's Phoebe
Eremophila alpestris	Horned Lark
Cyanocitta stelleri	Steller's Jay
Pica pica	Black-billed Magpie
Corvus corax	Common Raven
Catherpes mexicanus	Canyon Wren
Turdus migratorius	Robin
Myadestes townsendi	Townsend's Solitare
Lanius excubitor	Northern Shrike
Dendrocia audubonii	Audubon's Warbler
Dendrocia townsendi	Townsend's Warbler
Oporornis tolmiei	MacGillivary's Warbler
Sturnella neglecta	Western Meadowlark
Passerina amoena	Lazuli Bunting
Pipilo erythrophthalmus	Rufus-sided Towhee
Junco oreganus	Oregon Junco
Zonotrichia albicollis	White-throated Sparrow
Melospiza melodia	Song Sparrow
CARNIVORA (Flesh-eaters)	
Ursus americanus	Black Bear

Canis latrans	Coyote
Felis concolor	Mountain Lion
Lynx rufus	Bobcat
RODENTIA (Gnawing Animals)	
Eutamias minimus	Least Chipmunk
Neotoma cinerea	Bushytail Woodrat
ARTIODACTYLA (Even-toed Hoofed Mammals)	
Odocoileus hemionus	Mule Deer

Rocky Comfort Flat PRNA

National Natural Landmark Brief

Location: 34.6 km (21.5 mi) northwest of Council, Adams County, Idaho

Natural Region: Columbia Plateau Natural Region

Size: 180.5 ha (446 acres)

Owner: Federal; Administered by the U.S. Forest Service, Payette National Forest.

Description: The site is located on a plateau above the confluence of Crooked River and Bear Creek. The term "flat" in this case is used to describe a plateau above very steep canyons that surround the area on three sides. The plateau is gently undulating and breaks abruptly to steep-sided canyon walls that drop 304.8 m (1000 ft.) to the valley bottoms.

Rocky Comfort Flat PRNA NNL was chosen to represent the Stiff Sagebrush Parkland Subtheme of the Stiff Sagebrush Theme. The stiff sagebrush/Sandberg's bluegrass (*Artemisia rigida*/*Poa sandbergii*) association is the only described type in the Stiff Sagebrush Parkland Subtheme, and it is the predominant vegetation type within the NNL. Stiff sagebrush usually is the only shrub present in this association, although shrubby species of buckwheat (*Eriogonum*) are frequently present. Frost heaving and excess water during the spring characterize the scablands in this subtheme.

The plateau is comprised of a mosaic of associations, whose distribution appears to correspond to soil depth and, to a lesser extent, topographic position and aspect. Mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) is climax on the deepest soil, rigid sagebrush (*Artemisia rigida*) on shallow soils, while bicolor biscuit-root (*Lomatium leptocarpum*) dominates sites where bedrock is very close to the surface. Areas influenced by ephemeral seeps are dominated by Tolmie's onion (*Allium tolmiei*) and blue camas (*Camassia quamash*). The shallow draw draining the north side of the plateau contain stands climax to *Psuedotsuga menziesii*.

The NNL is located on the Weiser Embayment of the Columbia River Basalt Group. The Grande Ronde Basalt flow underlies the NNL.

Significance: The stiff sagebrush association occurring at Rocky Comfort Flat PRNA is an outstanding example of the Stiff Sagebrush Parkland Subtheme of the Stiff Sagebrush Theme. In addition, it is the largest, least disturbed stiff sagebrush site known in Idaho. The NNL is considered the best known example of this subtheme in the Columbia Plateau Natural Region.

Land use: Light livestock grazing and limited recreational use take place within the NNL.

Special conditions: The proposed NNL is within the Rocky Comfort Flat PRNA.

Proposed by: Rexford C. Crawford, Washington Natural Heritage Program, Jimmy S. Kagan, Oregon Natural Heritage Data Base, and Robert K. Moseley, Idaho Natural Heritage Program. 1989. Phase I and II. Reports, 1989. National Natural Landmark Project, Columbia Natural Region Ecological Theme, National Park Service.

Evaluated by: Susan Bernatas, Natural Areas Ecologist, The Nature Conservancy, Sun Valley, Idaho. November, 1989

Designated:

Owner agreement: