# National Natural Landmarks Program

# Columbia Cascades Cluster

Steptoe Butte (8)

## History

The National Natural Landmarks Program (NNL) was established on May 18, 1962 by Secretary of the Interior, Stewart Udall, under the authority of the Historic Sites Act of 1935 (16 U.S.C. 361-467). Regulations for the NNL Program were initially published in 1980 with revisions released on May 12, 1999.

## Background

Since 1962, the Secretary of the Interior has designated thirty-four national natural landmarks throughout Idaho, Oregon, and Washington. Administratively, the three states comprise the Columbia Cascades Cluster of the National Park Service. Collectively, however, the NNL program recognizes outstanding regional examples of our nation's natural heritage forged by a partnership ethic, involving in some instances multiple types of ownership.

Fort Rock State Monument (30)

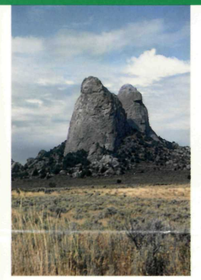
Nisqually Delta National Natural Landmark (WA) for example is comprised of state, federal, and private ownership. The site is nationally significant for its unique salt marsh habitat and provides a major flyway for migratory waterfowl. Niagara Springs (ID) NNL on the other hand is comprised solely of private ownership, which illustrates a large spring set emanating from the Snake River Plain aquifer. The volcanic crater at Newberry Crater (OR) too is a national natural landmark under federal ownership. These three landmark sites, and the other thirty-one remaining ones throughout the Columbia Cascades Cluster, represent a diverse array of ecological and geologic resources knitted together by a diverse public.

## Definition and Purpose

A National Natural Landmark is a nationally significant natural area that has been designated by the Secretary of the Interior. To be nationally significant, a site must be one of the best examples of a type of biotic community or geologic feature in its natural region. Examples of this natural diversity include terrestrial and aquatic ecosystems, features, exposures, and landforms that record active geologic processes as well as fossil evidence of biological evolution. The objectives of the National Natural Landmarks Program are fourfold: to encourage the preservation of sites illustrating the geological and ecological character of the United States; to enhance the scientific and educational value of the sites thus preserved; to strengthen public appreciation of natural history; to foster a greater concern for the conservation of the nation's natural heritage.

## Selection Criteria

The determination, that a site is one of the best examples of a particular feature in a natural region, is typically decided using criteria of illustrativeness and condition of the specific feature. Also, in situations that require it, the secondary criteria of rarity, diversity, and values for science and education can be applied.



Cassia Silent City of Rocks (20)

Hell's Half Acre Lava Field (24)

The states of Idaho, Oregon, and Washington, which comprise the Columbia Cascades Cluster of the National Park Service, incorporate all or a portion of six of the thirty-three natural regions of the United States and its territories. Studies of the thirty-three natural regions have produced a list of sites for further consideration. Other agencies, organizations, and private citizens can also recommend sites.

## Designation Process

The National Park Service contracts with scientists to conduct on-site evaluations of those sites, which have been ranked as high priority by natural region inventories. The evaluations gather additional information and comparatively evaluate the site against other similar sites, relying on national significance criteria. Completed on-site evaluations are peer-reviewed by other scientists and then by the National Park Service. If a site is deemed qualified and landowners have not objected in writing, the Director of the National Park Service then nominates the site to the National Park System Advisory Board, who in turn can recommend it to the Secretary of the Interior for designation. Once designated, the area is listed on the National Registry of Natural Landmarks. During the designation process, the National Park Service solicits comments from landowners, local, state, and federal government officials, and other interested groups and individuals.

As of January 2001, 587 sites have been designated as National Natural Landmarks. Thirty-four of these sites are located within the Columbia Cascades Cluster: eleven in Idaho, six in Oregon and seventeen in Washington. For the most current information on the National Natural Landmarks Program please log on the internet at http://www.nps.gov/ccso/nnl.htm.

## Program Management

The National Natural Landmarks Program does not place land use restrictions on property as a direct result of federal designation. The NNL Program simply recognizes and encourages the voluntary, long-term commitment of public and private owners to protect an area's outstanding values. In fact, designated sites do not even have to be open to the public. Conversely, national natural landmarks can be commercial ventures, if the integrity of the natural feature is maintained.

As far as potential benefits to landowners, the National Park Service can provide technical assistance by advising owners on conservation practices, if so requested. In addition owners, who voluntarily agree to help protect their landmark property, are eligible to receive a certificate and wooden plaque for appropriate indoor presentation or a bronze plaque for outdoor display at the site. In the case of federal ownership, agencies should consider the unique properties of natural landmarks in assessing the effects of their actions on the environment as required by the National Environmental Policy Act (NEPA). Depending on land ownership, national natural landmark designation can in fact enhance potential funding opportunities in some instances.

# Landmark Descriptions

### WASHINGTON

### Sims Corner Eskers and Kames (1)

This site contains the best examples of Pleistocene ice stagnation landforms in the Columbia Plateau and western United States. Although the Great Lakes region and New England contain similar features, those at Sims Corner are well preserved thanks to the arid climate.

### Umtanum Ridge Water Gap (2)

Water gaps have been cut through several anticlinal ridges between Ellensburg and Yakima by the antecedent Yakima River. State Route 821 passes through the gap, where folded rocks illustrate results of tectonic stress and stream cutting.

Willamette Floodplain (33)

### Wallula Gap (3)

Glacial-outburst waters that crossed the Channeled Scablands during the Spokane floods were channeled through Wallula Gap. For several weeks, as much as 200 cubic miles of water per day were delivered to a gap that could discharge less than forty cubic miles per day. Ponded water filled the Pasco Basin and the Yakima and Touchet valleys to form temporary Lake Lewis.

### Boulder Park and McNeil Canyon Haystack Rocks (4)

These two adjacent sites contain the greatest concentration and best examples of glacial erratics on the Columbia Plateau, possibly in the entire United States. The boulders provide important evidence for glacial erosion and transport, as well as the direction of movement and distribution of glaciers on the Columbia Plateau during the last glaciation.

### Rose Creek Preserve (5)

The preserve constitutes the best remaining example of the aspen (*Populus tremuloides*) phase of the hawthorn (*Crataegus douglasii*)/cow parsnip (*Heracleum lanatum*) habitat type.

### Ginkgo Petrified Forest (6)

Two features make this petrified forest distinctive: the large number of genera and species represented, and the unusual preservation of fossils in lava flows.

Niagara Springs (27)

### Nisqually Delta (7)

The delta supports one of the five best known examples of the Washington-Oregon Salt Marsh Subtheme of the Temperate Coastal Salt Marsh Theme in the North Pacific Border Region. It is a major resting area for migratory waterfowl in the southern Puget Sound region.

### Steptoe and Kamiak Buttes (8)

Steptoe Butte is the type example of a steptoe, an isolated hill or mountain surrounded by lava flows. Kamiak Butte is an excellent place from which to view the Palouse country and loess substrate.

Drumheller Channels (15)

### Grande Ronde Goosenecks (9)

The lower course of the Grande Ronde River has many excellent examples of entrenched meanders or goosenecks. These features record regional uplift and forced entrenchment of a stream in its pre-uplift meandering pattern. Two localities along the Grande Ronde make up the landmark.

### Davis Canyon (10)

The site is one of the least disturbed and most extensive examples of antelope bitterbrush (*Purshia tridentata*)/Idaho fescue (*Festuca idahoensis*) shrub steppe remaining on the Columbia Plateau.

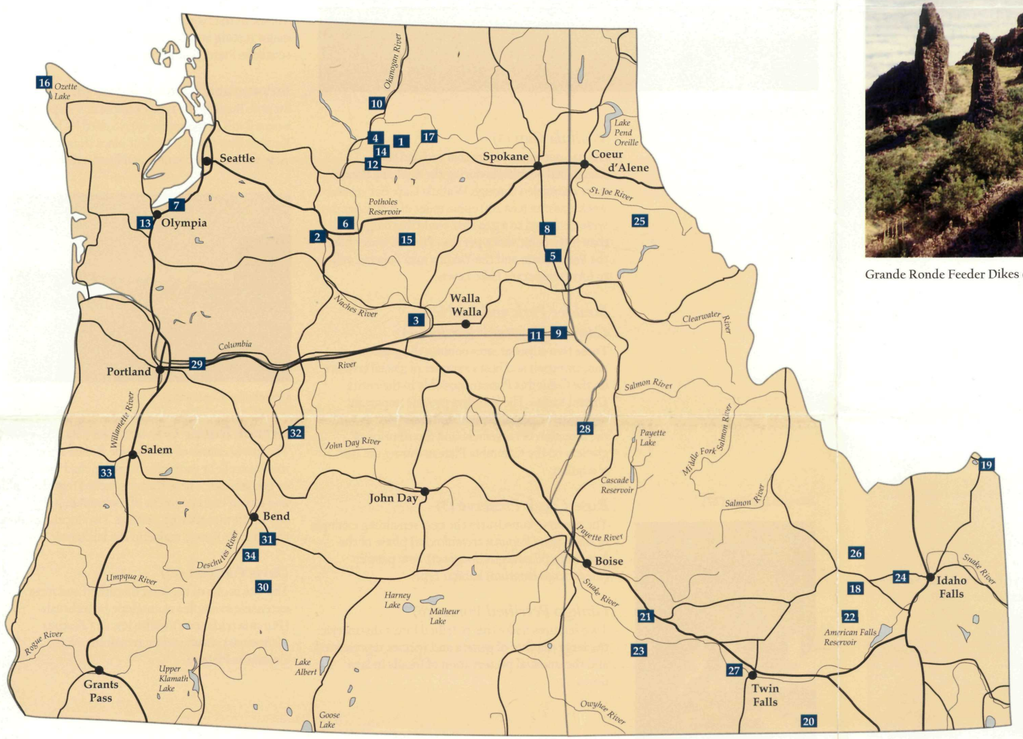
Lawrence Memorial Grassland Preserve (32)

### *Grande Ronde Feeder Dikes (11)*

The feeder dikes are known at only a few places. The best exposures are in this area along the north side of the Grande Ronde River. The dikes fed the voluminous Miocene Lava flows of the Columbia Plateau of southeastern Washington and northeastern Oregon.

### *The Great Gravel Bar of Moses Coulee (12)*

This is perhaps the largest example of bars created by outburst floods on the channeled scabland. The bars are well preserved and have only sparse vegetative cover.



Grande Ronde Feeder Dikes (11)

### *Mima Mounds (13)*

This landmark contains superb examples of mound topography in the North Pacific Border natural region.

### *Withrow Moraine and Jameson Lake Drumlin Field (14)*

Withrow Moraine is the only Ice Age terminal moraine in the Columbia Plateau natural region. The drumlin field is the best example of this type of feature within the natural region. Together they provide dramatic evidence of depositional and erosional processes that accompany continental glaciation.

### *Drumheller Channels (15)*

The site is a spectacular tract of butte-and-basin scabland and provides excellent geomorphic evidence for late Pleistocene catastrophic floods on the Columbia Plateau.

### *Point of Arches (16)*

The landmark contains spectacular examples of shoreline erosion. It also has a nearly pristine environmental spectrum ranging from rocky tideland to climax upland vegetation.

### *Grand Coulee (17)*

Grand Coulee is the largest coulee in the Columbia Plateau and is probably the world's finest example of a recessional cataract gorge.

## *IDAHO*

### *Big Southern Butte (18)*

The butte is composed of light-colored silicic volcanic rocks and stands nearly 760 meters above the low relief surface of the Eastern Snake River Plain. The site is an ecological "island" supporting vegetation such as lodgepole pine (*Pinus contorta*), aspen (*Populus sp.*), Douglas fir (*Pseudotsuga menziesii*), and manzanita (*Arctostaphylos sp.*) not common to this region.

Grand Coulee (17)

### *Big Springs (19)*

The springs emanate from rhyolite lava flows of the Madison Plateau, which comprise one of the largest rhyolite lava fields in the United States. Big Springs is the only first magnitude spring in the United States that issues forth from rhyolitic lava flows.

### *Cassia Silent City of Rocks (20)*

Located in the Cotterrel Range of south central Idaho, the site contains monolithic landforms created by exfoliation processes on exposed massive granitic plutons. The site contains the best example of bornhardts in this region.

### *Crater Rings (21)*

Crater Rings are two closely adjacent pit craters that provide one of the few examples of this type in the continental United States. The crater rings are larger than, but similar to, pit craters along Chain of Craters Road on the southeast flank of Kilauea Volcano, Hawaii.

### *Great Rift System (22)*

The Great Rift System of the eastern Snake River Plain is a dramatic and outstanding example of tensional tectonic forces in the earth's crust. The site also has biological interest as an example of primary vegetation succession on very young lava flows.

### *Hagerman Fauna Sites (23)*

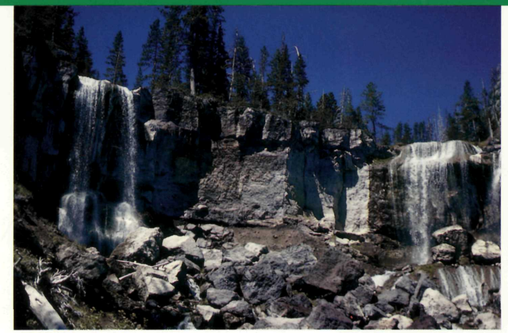
The site contains the world's richest known deposits of Upper Pliocene age terrestrial fossils.

### *Hell's Half Acre Lava Field (24)*

The lava field is an outstanding example of a single event, single process geologic feature that is fully preserved and fully exposed. Fractures, depressions, and small lava caves are common features on the flow, which otherwise has a fairly smooth surface.

### *Hobo Cedar Grove Botanical Area (25)*

This landmark contains a grove of old growth western red cedar in near natural condition. Two communities are represented: mainly western red cedar (*Thuja plicata*)/Oregon boxwood (*Pachistima myrsinites*) on the uplands and western red cedar/ladyfern (*Athyrium filix-femina*) on the lowland portions of the site.



Newberry Crater (34)

### *Menan Buttes (26)*

The site is an outstanding example of a glassy tuff cone, found in only a few places in the world. The buttes are composed of small fragments of basaltic glass formed by sudden chilling of magma.

### *Niagara Springs (27)*

The site is one of a number of large spring sets where the Snake River Plain aquifer drains into the Snake River from the northern cliffs of its canyon. It is illustrative of the enormous volume of water transmitted through this aquifer.

### *Sheep Rock (28)*

The site provides perhaps the best view of the horizontally layered lavas that represent successive flows of the Columbia River Basalt. The Columbia River Basalt covers an area of some 518,000 square kilometers in Idaho, Washington, and Oregon. It represents one of the great lava extrusions of geologic time.

Sheep Rock (28)

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## *OREGON*

### *Crown Point (29)*

The Crown Point section of the Columbia Gorge illustrates more gradual stream valley formation as downcutting kept pace with the rise of the Cascade Range. The Columbia River Gorge at Crown Point passes from the steeper, more rugged terrain of the western slopes of the Cascade Range to rolling cultivated plains. The promontory provides a strategic vantage point for observing this classic illustration of riverine processes.

### *Fort Rock State Monument (30)*

The site is a striking example of a circular, fort-like volcanic outcrop. Although other volcanic outcrops may exhibit many of the same features, few are as well-shaped and distinct.

### *Horse Ridge Natural Area (31)*

The site is of national significance in providing a characteristic and high quality example of Sandy Western Juniper (*Juniperus occidentalis*) Steppe. Its biota represent a distinctive climax community. It is an ecological community that typifies, geographically, the fringe of the Great Basin Desert and, biologically, the transitional area between the ponderosa pine (*Pinus ponderosa*) forest and the sagebrush (*Artemisia tridentata*) desert.

### *Lawrence Memorial Grassland Preserve (32)*

The site constitutes an excellent example of biscuit and scabland topography. Moreover, it is the patterned landscape superimposed upon the basaltic bedrock that is especially illustrative, as well as an associated matrix of minimally disturbed grassland and shrub-steppe ecosystems.

### *Willamette Floodplain (33)*

The site represents the largest remaining native and unplowed example of bottomland interior valley grasslands in the North Pacific Border natural region.

### *Newberry Crater (34)*

The crater is a young volcano formed within the last million years during the Pleistocene and is the largest Pleistocene volcano east of the Cascade Range. It stands isolated and conspicuous on a broad plateau of lava.