

WASHINGTON STATE

Contrast in Nature



**CATHERINE MONTGOMERY
INTERPRETIVE CENTER**

FEDERATION FOREST STATE PARK



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CONTRAST IN NATURE

Introduction

Federation Forest State Park is located on U. S. Highway 410 approximately seventeen miles east of Enumclaw, Washington.

The lands and virgin timber were acquired largely through the efforts and donations of the Washington State Federation of Women's Clubs.

The Interpretive Center was constructed with funds willed to the Washington State Federation of Women's Clubs by the late Miss Catherine Montgomery, an outstanding citizen and a native color of our State.

CATHERINE MONTGOMERY

Interpretive Center

The purpose of the Center is primarily to present the forest itself as an aging natural preserve of outstanding beauty in the midst of man's advance on nature. In the park, an exhibit illustrates the widely diverse beauty and character of the native flora of Washington State.

Federation Forest State Park

While all attempts have been made of scientific accuracy for the benefit of the scholar of nature, a primary objective is to develop a sense of enjoyment and an appreciation of the vibrant, teeming outdoors.

Washington State Parks and Recreation Commission

WASHINGTON STATE PARKS AND RECREATION COMMISSION

Text by Richard Clifton, Parks Forester

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Richard Clifton, Parks
Exhibit Designer



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Washington State Parks and Recreation Commission
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Text by John B. Pinkerton, Parks Forester

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Exhibit Designer

THE WAYS OF NATURE AND MAN

As in our human population centers where all of us are dependent upon others so is each species of plant mutually dependent and responsive to every other organism in its area. Each plant lives, develops and changes constantly during its lifetime in relation to an endless succession of happenings.

The Forest Disasters

The forest and any other natural area is shaped through eons of time by chance occurrences from which it cannot flee. Major and minor catastrophes caused by wind, water, temperature change, ice, fire, animals, insects and diseases sometimes take a dramatic toll of plants in an area. Often only certain species or individuals appear susceptible, however, entire complex communities may sometimes be destroyed or altered drastically.

The Slow Changes

In contrast, a more subtle, silent struggle is unceasingly in progress. It is the constant reaching by the plants, upward for the sun and down and outward for soil, moisture and food, the patient efforts to reproduce and to better adapt the species to slowly changing conditions, the ever present insect explorations in bark, wood, and leaves, the stealthy inevitable progress of a host of fungi through both living and dead plant tissues. All of this occurs in a vast, pulsating community of living things, each deeply and intimately entwined into the life of its neighbor.

The Mature Climax Forest

These subtle changes result in a surprisingly delicate balance between growth and decay. When a radical caprice of nature upsets this balance, the scene drastically changes. Certain plant species respond immediately and thrive for a period of time, often in very dominant positions only to again relinquish this role as time heals the scars.

Surprising as it may seem, the continuous, closed canopy forests of Douglas fir which have made our state famous for timber production often are formed because of raging, wild fires of ages past. Its resistance to decay, strength and great size often allow the Douglas fir to dominate an area completely for several hundred years. A truly climax forest, however, evolves over long periods of slow change. The patient, shade tolerant species—western hemlock, western red cedar, grand fir and others—may wait for many years to inevitably replace many of the Douglas fir giants as they crash to earth from "subtle" causes.

This sun loving species cannot again conquer and fully dominate the forest lands until fire or other disaster strikes.

Man and Change

In modern times man has been important in bringing about catastrophic change. He has found it necessary to his way of life to harvest the once vast stores of mature timber and turn them into a wide variety of useful products. Man has determined that trees should be felled at a time sooner than their natural life span to gain the most production from the land. In this manner successive timber crops are grown on

"tree farms." Trees thus reach the best development rate for volume of wood fiber produced but never maximum age or size. This practice is followed in different ways throughout various commercially forested areas.

Starting Again

In the great Douglas fir belt of Western Washington logging practice is geared to grow the desired species by duplicating the natural catastrophe of fire. Large areas are clearcut of all standing timber, the valuable logs are removed and the area is burned, consuming limbs, tops, brush and "weed" trees. If properly accomplished, this results in an ideal seedbed for a new even-aged generation of Douglas fir, which may occur naturally from adjacent standing tree seed sources or by means of artificial seeding or planting.

FEDERATION FOREST

Surrounded by Farms

Federation Forest stands as a contrasting example in the midst of a great industrial tree farm area where "production" and "progress" are everyday bywords. The park itself has been cleft in two throughout its length by a concrete ribbon of highway to allow the passage of travelers, to and from their artificial world.

New Trees for Old

The slopes adjacent to the park have been cleared of timber in recent years and presently support a new carpet of young trees, brush and flowers amidst the decaying, half-burned materials left in the wake of logging.

FEDERATION FOREST CHANGES SLOWLY

This standing park has been permanently preserved as a living portrayal of a typical Douglas fir forest, undulating and changing as it has been for centuries. The present maturing stand of Douglas fir (*Pseudotsuga taxifolia*) was spawned approximately in the year 1685 and has since been growing at a relatively even pace on a generally deep, rich, sandy soil in which there is considerable moisture.

Effects of Environmental Differences in the Park

The area includes a few exceptional variances such as the exact Interpretive Center site which appears to be unusually dry and thinly soiled with sand overlying a thick deposit of gravel and boulders into which plants must reach deeply for water to support their needs. The type of ground cover on this site which consists primarily of salal (*Gaultheria shallon*) and Oregon grape, (*Mahonia nervosa*) indicates exceptional surface dryness or rapid drainage.

Rate of Growth

Near the Interpretive Center site, trees grow much more slowly than elsewhere in the park. One veteran Douglas fir felled during construction of the Center was found to be approximately 440 years of age in 1964 or about 160 years older than the average age of the dominant stand,

yet it had a stump diameter of only 44 inches, much less than the 67 inch diameter of a more typical 280 year old "veteran" growing on better soil nearby.

Water Supply

At other sites earth benches stand at varying levels as a result of ancient changes in the bed of the river. Some of these benches are overly supplied with "ground" water. Too much water is not the best condition for the Douglas fir. As a result, these benches often favor certain other major trees. Sitka spruce (*Picea sitchensis*), western hemlock (*Tsuga heterophylla*), western red cedar (*Thuja plicata*), grand fir (*Abies grandis*) and northern black cottonwood (*Populus trichocarpa*) all have reached gigantic proportions on these limited sites where the Douglas fir does not dominate them. In these areas the twisted, moss draped vine maple (*Acer circinatum*) reaches full growth and the troublesome but not dangerous devils club (*Oplapanax horridus*) and stinging nettle (*Urtica lyallii*) also abound.

The River Bank

On the open, gravelly river banks where floods and fast moving water make quick changes in the earth, the smaller specimens of black cottonwood (*Populus trichocarpa*), willow (*Salix spp.*) and red alder (*Alnus rubra*) are most prominent, along with dense thickets of salmon berry (*Rubus spectabilis*) and red elderberry (*Sambucus callicarpa*).

The Deep Forest

The major portion of the forest, however, is dark, shaded, quiet—ruled by the towering Douglas fir—many of which stand between 200 and 300 feet high. The forest floor in these dark regions is carpeted in a calm but luxuriant splendor by mosses, lichens, ferns and flowers. The trilliums, bleeding hearts, sweet-after-death, bunch berry and a host of others add their soft colors and delicate fragrances. The tranquilizing effect of such areas to human emotions are well known to woodsmen and nature lovers alike.

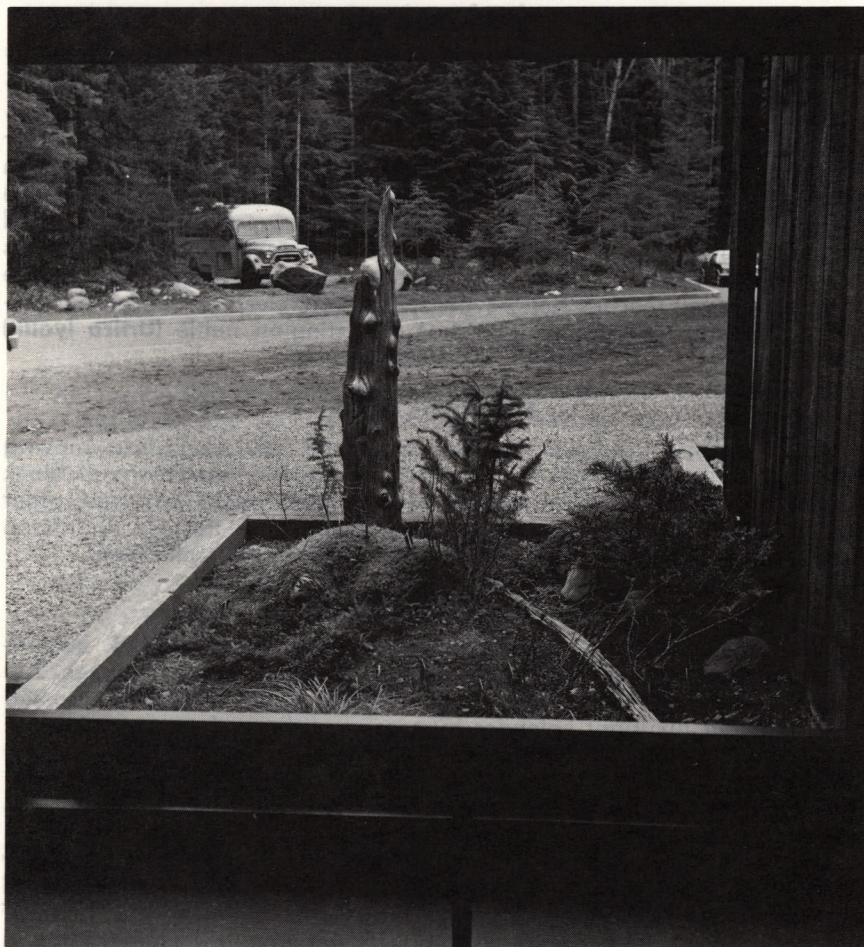
Here one encounters an occasional small, slow growing Pacific yew (*Taxus brevifolia*) and soft thickets of sprouting western hemlock and western red cedar. Here also stand "snags," the silent, rotting relics of the past, often studded with conks (fungus fruiting bodies) while crumbling slowly back to the earth from which they sprang centuries ago as tiny, eager sprouts.

In the Ground

Within the upper layers of the earth and in the moss of the forest floor lies yet another world—unseen and silent but constantly active; the burrowing, earth tilling animals and insects, the soil inhabiting fungi and a vast host of micro-organisms all busily converting "waste" organic materials and minerals into usable food for the giants above.

Very briefly this is Federation Forest, rich in natural history, rich in abundance of life.

THE FLORAL EXHIBITS, LIVING PICTURES OF WASHINGTON



Climate

Wide climatic variances occur in different areas of Washington primarily due to the position of two major mountain ranges which intercept and modify the effects of the gigantic air masses which move across the state to and from the Pacific Ocean.

Because of these climatic differences, the flora of the state is distinctly different in certain areas.

Forest Life Zones

For the purposes of telling this story we assume seven general zones called biotic or life zones, the Coast Forest Zone, the Mountain Forest Zone, the Sub-Alpine Zone, the Alpine Zone, the Yellow Pine Forest Zone, the Bunchgrass Zone and the Sagebrush Zone. Within each zone are

local variations, due mainly to differences in rainfall, mean temperatures and basic soil structure. Between zones there may be either a relatively sharp line of change or the zones may gently melt together.

The Living Displays

The living displays at the Center contain representative samples of plant life in five of the seven zones. Many individual plant species exist in more than one life zone. We have not attempted to describe every locally unique area within each zone; however, we have included certain varying characteristics.

I. THE COAST FOREST ZONE

This zone includes all of the lowland areas west of the Cascade Mountain Range which splits the state from north to south. The altitudinal limits of this zone vary from site to site but may be considered as extending from sea level to between 3,000 and 5,000 feet elevation. The climate is relatively mild and damp. Soil moisture is nearly always present. One unique variance within this general zone is the saltwater ocean beach with its struggling shore pine, windswept sitka spruce, dense thickets of head-high salal brush and in the open sites, moving sand dunes, salt grasses, wild strawberries, western wax myrtle and others.

Another variance is the relatively dry, thin soiled San Juan Island area with open, grass topped rocks and hills partially covered by dense stands of Douglas fir, madrone, lodgepole pine and others.

Another local difference is found in the rich and deeply soiled river valleys and adjacent low hills where the largest of all Douglas fir, western red cedar and certain other trees grew in fantastic abundance in years past. The flat valley sites have largely been converted by man to support his food crops, industrial development and housing.

II. THE MOUNTAIN FOREST ZONE

This includes in general a vast and varied system of hills and lower mountain slopes which are generally too steep, remote or rocky for the growing of food crops or for industrial sprawl. The climate is relatively damp and winter temperatures are low. Snowfall is heavy and ground moisture is maintained for a considerable period of the year.

This zone also has uniquely differing sections. The high eastern slopes of the Cascade Mountains, the higher points of Northeastern Washington and the Blue Mountains of the Southeastern part of the state host a complex of major species such as "dryland" Douglas fir, grand fir, western larch and lodgepole pine. The trees here are deep rooted and drought resistant. Wind damage is usually slight.

The Mountain Zone west of the Cascade Mountains supports vast closed-canopy stands of giant Douglas fir with occasional hemlock, western red cedar and other minor species. These have relatively shallow, wide spreading root systems and often depend largely upon the protective influence of the surrounding stand of timber for support during wind storms.

In this zone and portions of the Coast Forest Zone the Douglas fir is being harvested and reharvested by the billions of board feet. Here is where the timber industry, one of the mainstays of the State's economy is striving for a perpetually growing supply of raw material through the application of scientific forest management.

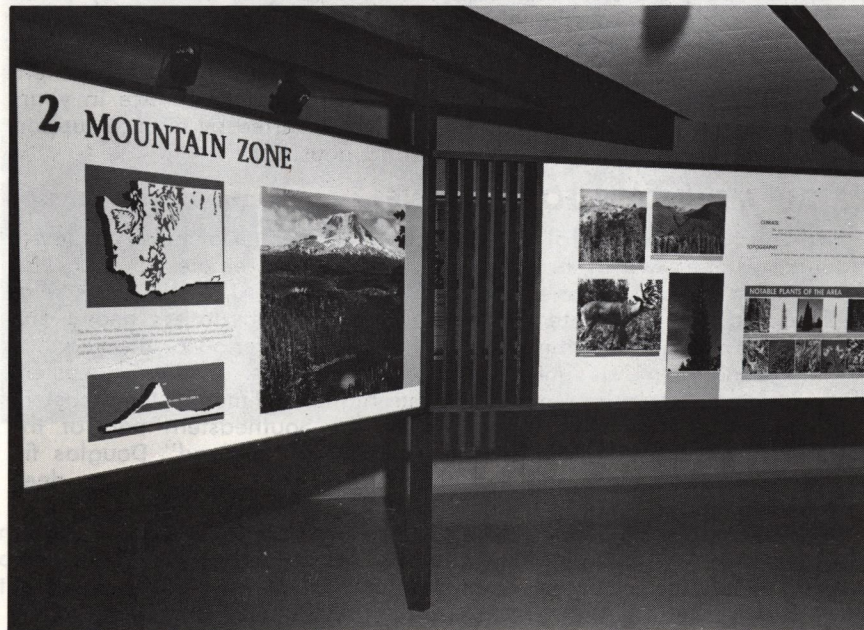
III. and IV. THE SUB-ALPINE AND THE ALPINE ZONES

These two zones have been combined for display purposes. The beauty and color of this area springs immediately to life as the deep snows recede for a brief summer season each year. The alpine fir, noble fir, alpine larch and a few other trees often assume grotesque shapes in their struggle for survival. High winds, low temperatures, land slides and snow slides are constantly twisting the trunks, tops and root systems of these persistent species. The riotous color combinations of avalanche lilies, lupine, Indian paintbrush, bear-grass and others are well known and admired by exploring hikers and mountain climbers.

V. THE YELLOW PINE ZONE

This zone is named for the great ponderosa pine (*Pinus ponderosa*) which dominates the area. A valuable timber species the ponderosa or "yellow" pine may occur in relatively dense stands when very young but as it approaches old age it exists singly or in open "parklike" stands in which grasses constitute the major ground cover. Competition for moisture is very keen in this area of Eastern Washington except immediately adjacent to streams and lakes where the cottonwood (*Populus trichocarpa*) and trembling aspen (*Populus tremuloides*) thrive.

Rainfall here is light, summers are hot and dry and winters are cold and dry.



THE INTERIOR EXHIBITS

The self-explanatory panels within the Center building are designed to augment the theme of the exterior living displays. Knowledge and understanding of life and beauty are the aims of this exhibit.

For physiological reasons the two dry, inland biotic zones (VI and

VII) the Bunchgrass and the Sagebrush areas, are not maintained as living displays but are shown pictorially to complete the continuity of contrast in nature.

VI. THE BUNCHGRASS ZONE

In general the Bunchgrass Zone has less rainfall than the Yellow Pine Zone and lies at slightly lower elevations—averaging about 2,000 feet above sea level.

Occurring only in Eastern Washington, this is a region of prairie flowers and perennial grasses. Trees are featured only on streambanks and in draws sheltered from the hot summer sun.

The bluebunch wheatgrass, (*Agropyron spicatum*) is the most valuable natural plant here. Giving the land a "tufted" appearance, this nutritious grass is much sought after by grazing wild animals and its habitat is widely used by man for agricultural range land supporting cattle, horses and sheep.

VII. THE SAGEBRUSH ZONE

The driest of all is the Sagebrush Zone which occurs in the vast Columbia River Basin of Central Washington. It includes areas of scab-rock desert, bleak valley bottoms in dry coulees and barren, rock-strewn plateaus.

Some scrubby trees exist adjacent to springs and occasional water courses. Brilliant desert flowers bloom by the grace of transient, infrequent rain showers. The sagebrush which abounds here fills the clean air with a distinctive pungent fragrance. Its gray, twisted stems and foliage provide browse and shade for a surprising number of animals and birds.

NACHES PASS

Far up in the Cascade Range, at an elevation of 4,923 feet, lies historic Naches Pass. From Pyramid Peak, on the north side, may be seen Mount Rainier to the southwest, rising in all its grandeur above the surrounding country, while off toward the southeast the canyon of the Naches River extends on to the great Yakima Valley. Four counties of the State of Washington join at the pass. Kittitas on the northeast, Yakima on the southeast, Pierce on the southwest and King on the northwest.

According to an Indian source, the name "Naches" is made up of two Indian words—"augh," meaning rough or turbulent, and "chez" meaning water or waters. Hence, the very descriptive "Naches" meaning "rough waters."

It is possible that the trail first came into being by animals traveling up the Yakima and Naches Rivers. Indians hunting the animals in time found the trail and used it. It is problematical that, after 1820, Hudson's Bay Company servants traveled the trail to trade with the coast tribes.

Possibly the first white men in the Naches Pass area were representatives of the Hudson's Bay Company at Fort Walla Walla and the Whitman Mission as early as 1840. Pierre C. Pambrun of the Hudson's Bay Company and Cornelius Rogers of the Whitman Mission may have been the first white men to see Naches Pass.

Lieutenant Johnson of the Wilkes Expedition, a U. S. Naval exploration, was the first white man recorded to have crossed over the trail. The expedition had come into Puget Sound in May 1841.

The great American westward migration was to have an effect on the trail.

Increasing immigration on the Oregon Trail resulted in a request to Congress in 1851 for \$100,000 for a road through Naches Pass from Steilacoom to Walla Walla. The Naches Pass route was thought desirable because the route down the Columbia River was rough, dangerous and slow. The building of the road across the Naches Pass became associated in the minds of community boosters in the Puget Sound area with progress, prosperity and a golden future.

Congress appropriated \$20,000. More than \$6,000 in money, supplies and labor was given by Puget Sound settlers toward building of the road.

In early June of 1853, work was started on the Naches Pass.

The first wagon train to reach Steilacoom was the famous Longmire party, arriving in October. Families in the wagon train which had struggled across the plains from their homes in Kentucky, Missouri, Indiana and Illinois were on their way to new homes on Puget Sound.

In August of 1853, Captain John McClellan, who was later General McClellan of Civil War fame, was on the Naches Pass Trail under orders to survey this pass as a possible railroad route. Secretary of War Jefferson Davis' orders to the Army officer to select a pass were not carried out because of McClellan's late arrival in the Territory of Washington. He found work so far underway by the settlers that he could no more than give his approval to the wagon road. McClellan approached the Pass from the east and explored only one mile westward from the summit.

In late August of 1854, the famous Ezra Meeker went over the Pass on horseback to bring back his father and brothers who had travelled with a train that consisted of seven wagons, fifty head of stock and seventeen people.

Two years after the opening of the road, the Hudson's Bay Company sent a train of three-hundred horses loaded with furs, from the interior country to Fort Nisqually with a return of merchandise through the same pass, but never repeated the experiment.

The Pass was the scene of skirmishing and fighting during the Indian War of 1855 to 1858. On March 10, 1856, the decisive battle between Chief Leschi's Indians and the combined regulars and volunteers was fought at Connell's Prairie on the road between Sumner and Buckley. Leschi got away with some of his men and escaped eastward through the Pass to the Yakima side.

The Nisqually Indians under recalcitrant Chief Leschi attacked three families of settlers near the western end of the Naches Trail in 1855 (Auburn, Washington). Nine persons were killed. Before the first two weeks of the outbreak were completed, 13 settlers had been killed and six wounded.

Casualties were small by modern standards but Army contingents and Indian forces also were at company strength or a little more. How-

ever, before the end of this struggle, all of which was on or near the Naches Trail, Chief Leschi was dead and 60 or more Indian warriors had died. In 1855, 30 braves were killed. A military report of the Battle of Connell's Prairie (March 10, 1856) gives an estimate that "25 to 30 Indians were killed and many wounded."

Lt. W. A. Slaughter, U. S. Army was killed and Lt. James McAllister of the Washington Territorial Volunteers died in ambush with Michael Connell, a settler who cooperated with the U. S. Army and the Volunteers.

After the close of hostilities, further work was done on the Naches Pass road. In 1866, in preparation for the coming of more immigrants from the East and for better communications between the eastern part of Washington Territory and the capital at Olympia, the road was improved.

James Longmire drove cattle to and from the Yakima country during the years of 1860 to 1884.

After 1884, the Naches Trail fell into disuse with the opening of other lower easier passes from eastern Washington Territory to Puget Sound points. The death knell of Naches Pass was rung by Governor J. H. McGraw in 1895. The Washington State Legislature had, that year, passed a bill appropriating funds for the Naches Pass Wagon Road. Governor McGraw vetoed the measure because direct state appropriation for state roads without the contribution from the counties was a "radical departure from policy."

In 1953, one hundred years after the first crossing of Naches Pass, jeeps were again struggling over an almost impossible trail re-enacting the century-old drama.