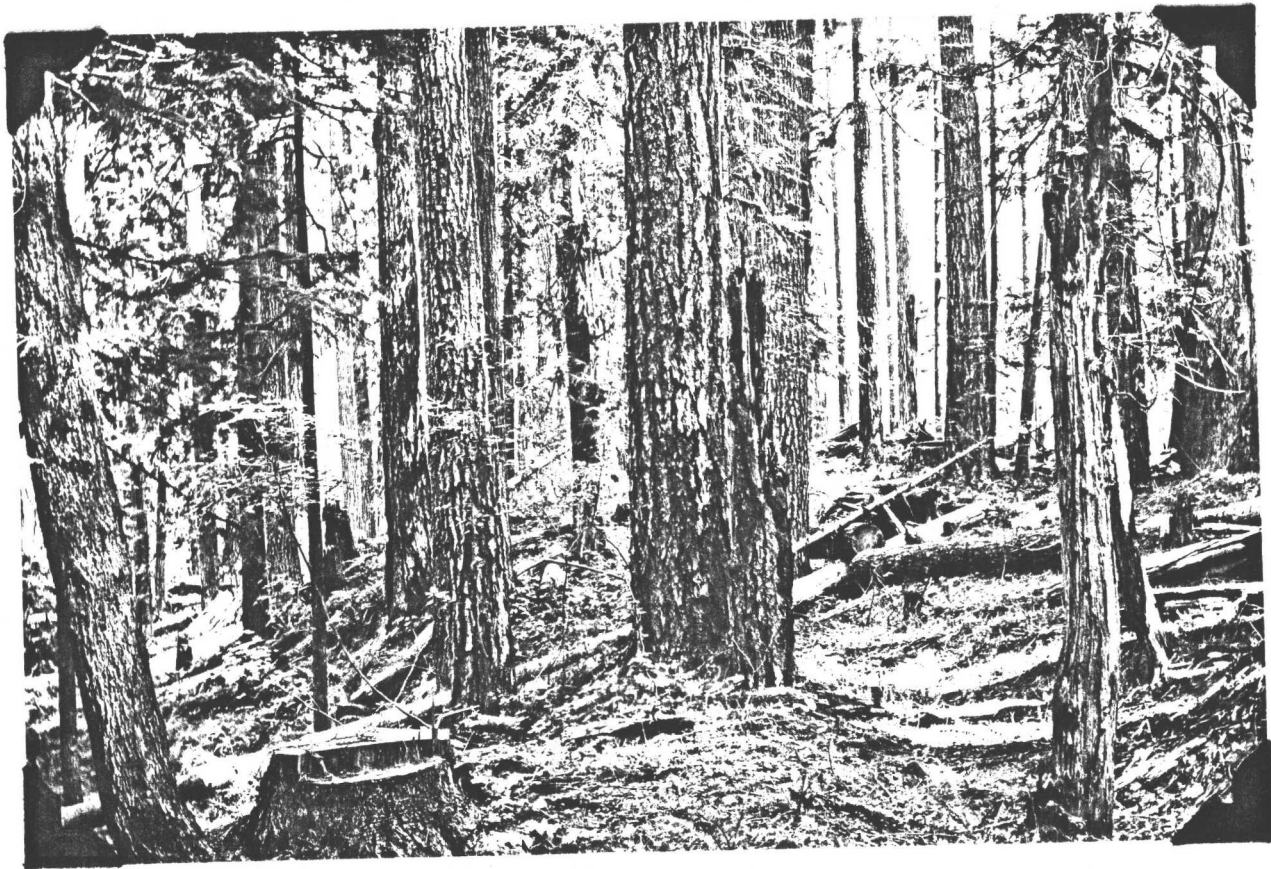
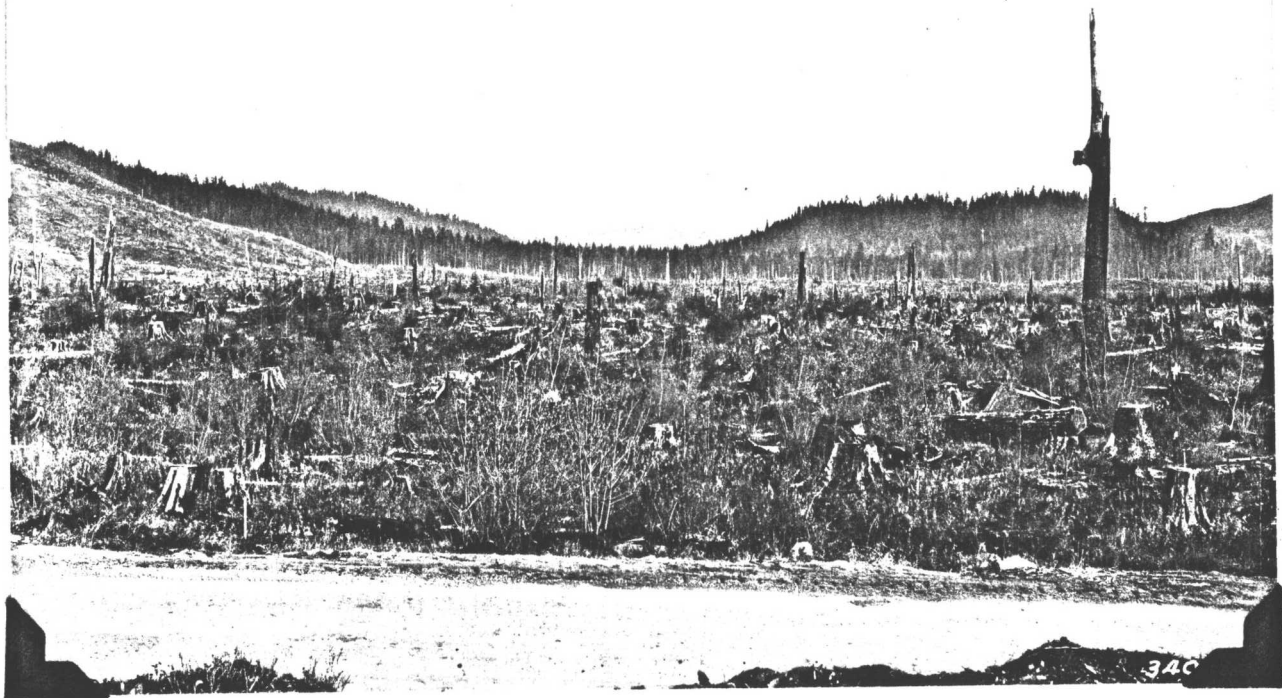


74" Sitka spruce in center, with giant dead Douglas fir at right.

Decadence of forest types on Olympic Peninsula is important factor bearing on use and management. Because of advanced age, much of the forest is in a deteriorating condition.



View showing reserve stand after selective cutting on the Olympic National Forest.



Cut-over area on private land near Olympic Highway, with uncut National Forest timber in background. Practically all of the cut-over areas along the Olympic Highway were created under private ownership.

TIMBER RESERVATIONS

In the interest of future recreational needs for extensive unspoiled wilderness areas, several large areas of forest lands in the State of Washington have been reserved from exploitation of timber. On National Forest lands alone nearly 1,200,000 acres have been definitely set aside as Primitive and Natural areas, withdrawing from logging over 7 billion board feet of Washington's forest wealth. Still greater areas in the high Cascade country are being considered for retention in a primitive condition.

The following tabulation lists the major areas which have definitely been withdrawn by the Forest Service:

| <u>Primitive Areas</u> | <u>Acres</u> | <u>M Bd. Ft.</u> |
|------------------------------|------------------|------------------|
| Goat Rocks Primitive Area | 72,440 | 632,070 |
| North Cascade Primitive Area | 801,000 | 2,347,165 |
| Olympic Primitive Area | 238,930 | 2,748,008 |
| | <u>1,112,370</u> | <u>5,727,243</u> |

Natural Areas

| | | |
|----------------------------------|--------------|----------------|
| Wind River Natural Area | 1,180 | 52,910 |
| Quinault Natural Area | 1,435 | 83,321 |
| North Fork Nooksack Natural Area | 1,787 | 54,018 |
| | <u>4,402</u> | <u>190,249</u> |

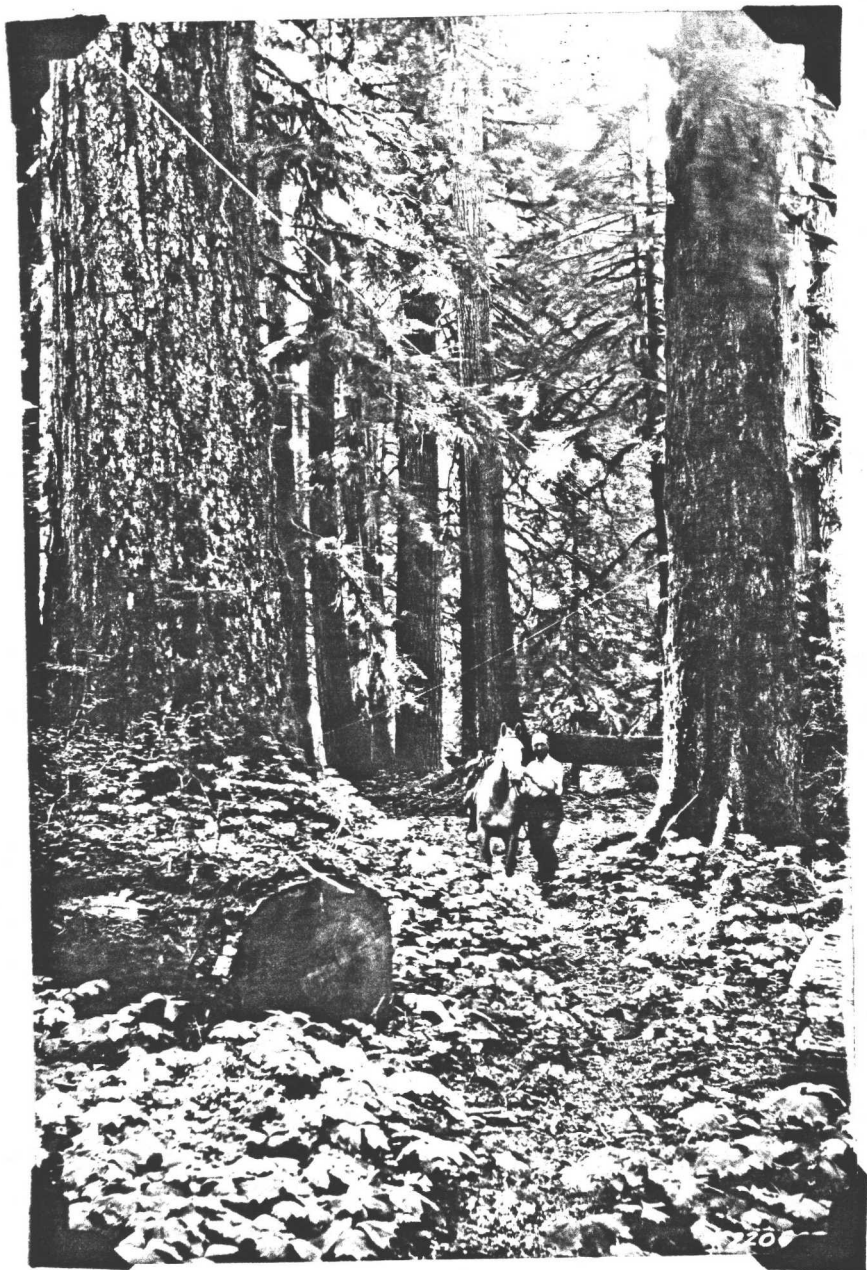
Aside from the areas listed, considerable National Forest timber is reserved for such other recreational uses as roadside strips, homesites, recreational areas, etc. It is estimated that there are about 120 miles of major highways on National Forest land in the State of Washington. No cutting will be allowed on National Forest land along these highways for a strip from one quarter to one half mile wide on each side of the road. This reservation will amount to at least 30,000 acres and carry at least 1,200 million board feet of timber.

In addition to the Forest Service timber reservations, the State of Washington has established a system of 52 State Parks, with a total area of over 29,000 acres. Six of these parks are from 1,000 to 6,500 acres each in area. Many of these parks carry good stands of virgin or large second growth timber and are, in effect, timber reservations of considerable importance. It is estimated that close to 800 million board feet of timber is reserved in these State Parks.

The Olympic Monument of 322,280 acres in the heart of the Olympic Peninsula carries an estimated stand of 3,155 million board feet of timber which is permanently withdrawn from all forms of cutting.

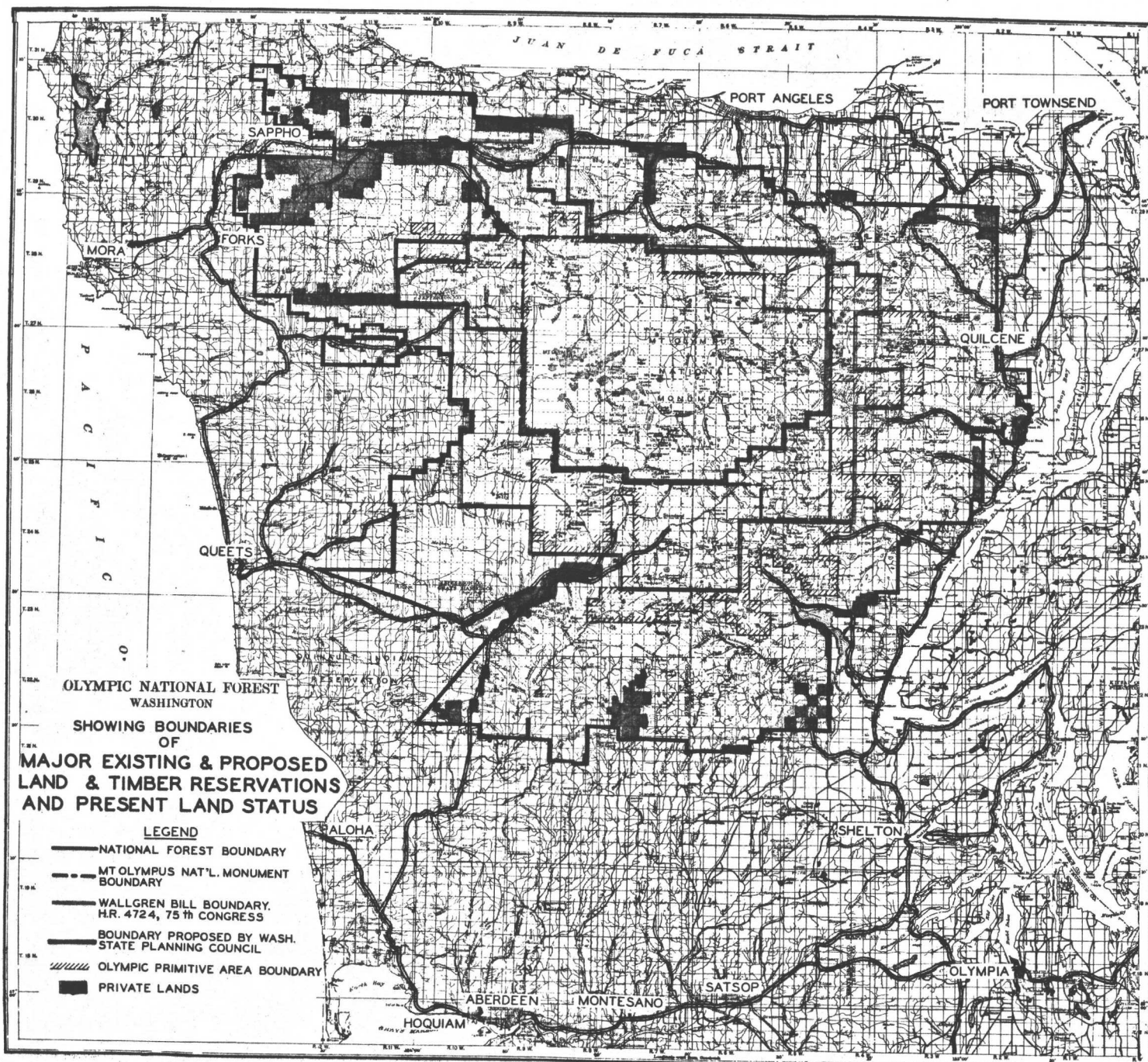
The Mount Rainier National Park also forms a timber reservation of importance. The 241,636 acres included in the Park carries a stand of 3,177,548 M feet B.M. This timber is, of course, permanently reserved from cutting or other commercial use.

Thus the major park, recreational and scenic areas in the Puget Sound-Grays Harbor region contain over 12 billion board feet of commercial timber permanently reserved from cutting. In addition to this there is a volume of at least 15 billion board feet of timber of commercial character which is considered to be permanently inaccessible, making a total of 27 billion board feet or over 13% of the total commercial stand of the area unavailable to industrial use.



Within the Primitive Area along the Quinault Trail, excellent specimens of Douglas fir and western hemlock. The Douglas fir tree at the left is over 500 years old and would produce sufficient plywood and lumber for a modern 5 to 6 home.

Thousands of acres of trees comparable to this are within the Monument and Primitive Area, as well as on other parts of the National Forest.



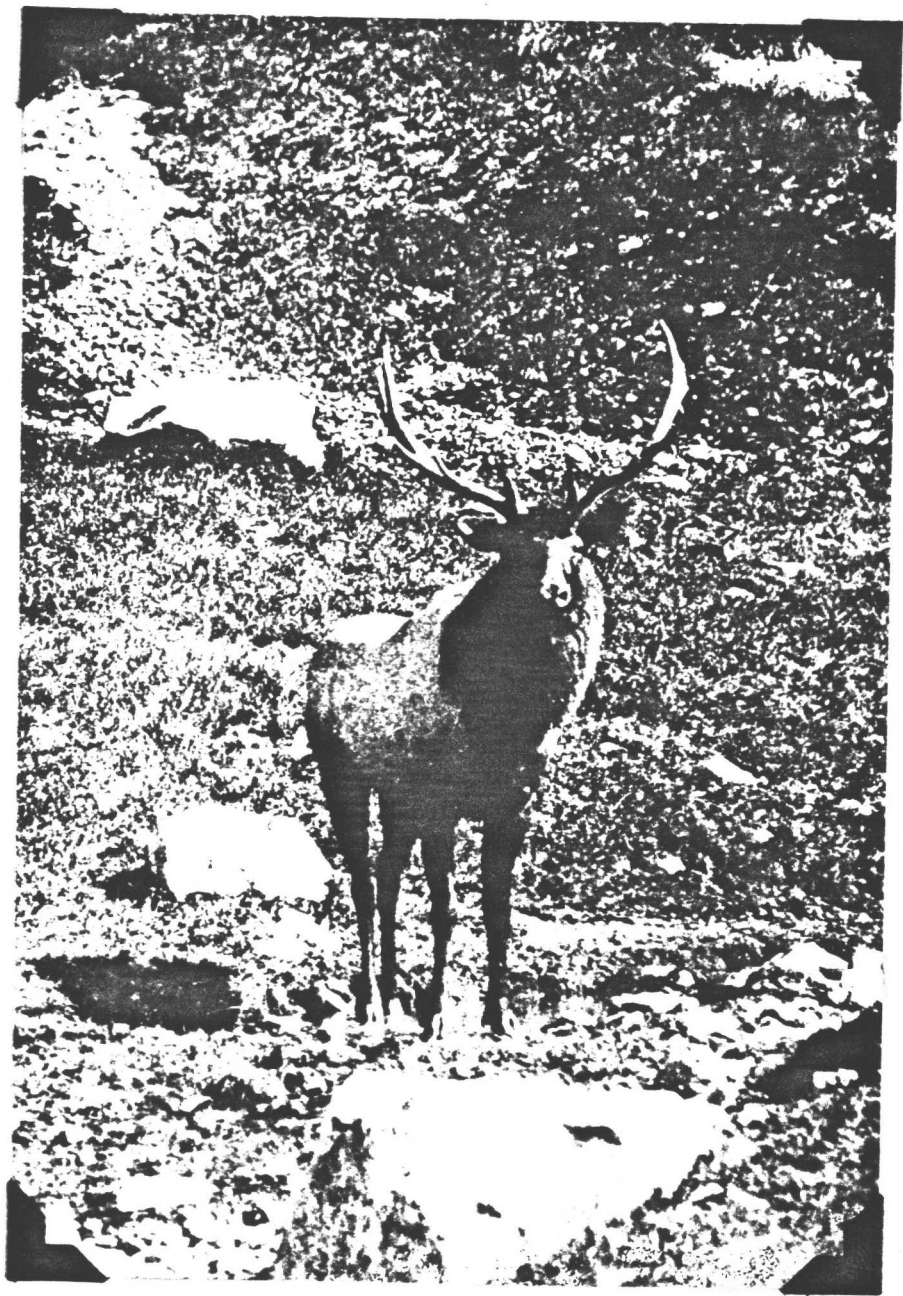


Looking down the Elwha River from Low Divide.

This expansive wilderness, all within the Monument, contains a very large quantity of fine timber and a wide variety of species. At the lower elevations are splendid commercial stands of Douglas fir.



Douglas fir type forest along the Olympic Highway west of Lake Crescent. Acquired by the Forest Service from private owners through land exchange in order that scenic values along the highway might be preserved.



Roosevelt Elk

THE ROOSEVELT ELK ON THE OLYMPIC PENINSULA

In primitive times the Roosevelt elk occurred in abundance over most of the forested area lying between the summit of the Cascade Mountains and the Pacific Ocean. Its retreat before civilization was rather rapid until the initiation of conservation measures about three decades ago stemmed the tide of destruction and afforded the elk a new foothold in their native forests. Today the Olympic Peninsula is the home of the largest and most famous herd of Roosevelt elk, but contrary to popular belief, the Olympic herd is not the last remnant of this magnificent denizen of the forest. A number of small but thriving bands of Roosevelt elk, totalling over two thousand head, occupy their hereditary ranges in the Cascade and coast ranges in Oregon. A rather large herd of these animals live on Vancouver Island, and small remnants exist in southwestern Washington and northern California. Most of these elk herds are increasing under the protection of the State laws, and the outlook for their perpetuation and increase is, on the whole, very favorable.

The Olympic elk herd consists of about eight thousand elk, most of which range on the Olympic National Forest. Each of the dozen or more drainages radiating out from the central mass of the rugged Olympic Mountains is occupied by one or more bands of elk. Most of the drainages on the north and east sides of the Peninsula are lightly or conservatively stocked with elk and produce sufficient food to support an increase in the game population. On certain parts of several west-side drainages, namely, the Hoh, Queets, and Quinault Rivers, the elk have become so numerous that they have seriously over-grazed the forage plants upon which they are dependent for their very existence. In these over-populated areas much of the palatable understory vegetation has been killed out by over-browsing. Extensive areas which were once brushy jungles now present a park-like appearance. The vine maple and huckleberry shrubs have been trimmed as high as elk can reach, and such plants as willows and salmonberry and elderberry bushes have been seriously reduced or killed out completely. These over-grazed conditions are confined mostly to the canyon bottoms which constitute the principal winter grazing grounds of the elk.

Experience on the Olympic Forest and other big game ranges throughout the West has shown that game animals, if left to multiply and increase without restrictions, are their own worst enemies, because continued over-grazing leads to self-destruction. Severe losses of elk have been occurring on the winter ranges in the Hoh, Queets and Quinault drainages for a number of years. Studies conducted by the Forest Service reveal that hundreds of elk die each winter from starvation or malnutrition, diseases, and parasite infestations.

The epidemics of diseases and parasite infestations are induced by congestion and malnutrition. Recent studies have revealed that a disease known as necrotic stomatitis, or calf diphtheria, is responsible for heavy losses of elk on the over-grazed areas. This disease consists of an infection of the tissues and bones of the animal's jaws. The organism which causes this deadly malady enters the tissues through injuries caused by eating harsh food, such as coarse brush and sticks which the elk are forced to consume on the over-grazed winter ranges. Another major cause of death is the lung worm which clogs the air passages in the animal's lungs. The eggs of this parasite are picked up on the forage plants. The chances for animals to become infected are, of course, much greater when animals are congested on a closely-utilized range. Animals weakened by starvation are not able to withstand the ravages of disease and parasite infestations. When disease strikes a weakened elk, it contaminates the ground, others get infected and an epidemic soon sweeps the herd like "flu" in an over-crowded tenement district.

In most instances there is ample winter range lying down stream from over-stocked areas. However, it seems to be a characteristic of the elk to cling tenaciously to their home range and, like several other species of the deer family, they will stay on over-grazed ranges and die of starvation rather than seek out new feeding areas even when these are close at hand. Summer ranges offer no problems at present because there is ample forage available in the high peaks and ridges during the period that these areas are occupied by elk. Most of the summer ranges could support much greater numbers of elk than are now using them.

The winter ranges are the key to the whole situation. The elk population must be kept within the available winter food supply. This condition can be obtained and maintained only through careful control of the elk herds by the application of the principles of game management. The Forest Service regards game as a renewable resource, just as timber and forage are, and believes that the annual game crops should be harvested when necessary. The plan of management advanced by the Forest Service provides for the controlled reduction of the elk in the congested areas down to the sustained carrying capacity of the range and the upbuilding of the herds in the under-populated areas through continued protection. Such a plan provides for the maintenance of the maximum number of game animals that the range can support without being overstocked.

There is conclusive evidence that the complete protection of Roosevelt elk on the over-populated ranges on the Olympic Peninsula, which is sometimes advocated, would only tend to accentuate the serious problems which now exist. The crying need is not for the continuation and enlargement of the present closures and restrictions, but for planned management which will provide for a sustained yield of game animals for the hunter and recreationist.



The destruction of the forage plants is accompanied by death. This yearling elk is in a dying condition. Its death was caused by malnutrition and a heavy infestation of lung worms. Occurrences of this kind are common on the over-grazed winter range areas on the Olympic Peninsula.



The over-populated winter elk ranges in the Hoh, Quets, and Quinault drainages, which were once brushy jungles, have been over-browsed until they now present a park-like appearance. The elk are literally eating themselves out of "house and home".

CONDENSED FOREST FACTS

Olympic National Forest

Forest created February 22, 1897.

Area

| | <u>Acres</u> |
|--|--------------|
| Gross area inside National Forest boundaries as of June 30, 1937 . . . | 1,559,721 |
| Mt. Olympus National Monument . . . | 322,280 |
| Alienated lands inside boundary . . . | 114,705 |
| Net National Forest land | 1,122,736 |

When created in 1897, the Forest contained 2,218,000 acres. The reduction to the present gross area of 1,559,721 acres came largely through elimination of lands alleged to be agricultural in character and subsequently taken up by private individuals as timber claims.

Prior to transfer of the Forest to the Forest Service, an area of 744,000 acres, containing over 17,000,000,000 board feet of timber was eliminated by presidential proclamations.

Timber Stand

Board Feet

| | |
|--|----------------|
| Commercial volume on net National Forest lands . . | 33,895,000,000 |
| " " " alienated lands inside boundary | 3,024,000,000 |
| " " " Mt. Olympus National Monument | 3,155,000,000 |

Timber Reservations

| | <u>Acres</u> | <u>Board Feet</u> |
|---|--------------|-------------------|
| Forest Service Primitive Area | 238,930 | 2,544,000,000 |
| " " Natural Area | 1,435 | 83,000,000 |
| " " Recreation Withdrawals | 7,029 | 1,235,000,000 |
| Mt. Olympus National Monument | 322,280 | 3,155,000 |
| Wallgren proposal for National Park - additional from National Forest by H.R. 4724, 75th Congress | 306,613 | 8,381,000,000 |
| Washington State Planning Council recommendation for National Park | 61,440* | 2,880,000,000 |

*Net figures. Planning Council proposed addition of 94,700 acres to the present Mt. Olympus National Monument and return of 33,360 acres now included in Monument to the Forest Service.

(Olympic Nat. Forest, Cont'd)

Areas and Volumes Cut Over to Date

National Forest area cut to date is approximately 24,000 acres
or approximately 2% of the total National Forest area.
Volume of timber cut from National Forest land
approximately 1,261,000,000 bd.ft.
Value of timber cut from National Forest lands
as shown by timber sale receipts is over \$2,614,000.
Area of privately owned lands inside National Forest
boundary which have been cut over amounts to over. 97,200 acres

Quinault Natural Area

A tract of 1435 acres, old growth Sitka spruce type. Located about 1 mile south of Lake Quinault along the Olympic Highway entirely inside Olympic National Forest. Intended to preserve the present virgin forest conditions of the spruce type for future research and study of the natural climax types of the region.

No cutting, grazing, or development will be permitted, with the exception of constructing and maintaining the minimum of foot trails necessary to fire protection and study.

Selective Logging

Special emphasis is being given by the Olympic Forest to the development of selective logging in the Douglas fir and spruce-hemlock forests of the Peninsula. Olympic Forest sales on Salmon Creek and Cook Creek are forming practical demonstrations of what may be accomplished by selective logging in the heavy forest types of this area.

Planted Areas

To date 9,178 acres have been successfully restocked by planting in the Olympic National Forest.

Road Mileage

390 miles of roads inside Olympic National Forest.

Trails

925 miles of trails have been constructed.

(Olympic Nat. Forest, Cont'd)

Recreation

Estimated number of persons visiting Olympic
Primitive Area, year 1937, (to September 15) 5,880
Actual registrations at campgrounds on Forest,
year 1937, (to September 15). 34,130
Special use summer homes, including guests,
number of people, year 1937, (to September 15). 1,200
Permits for summer homes issued, 1937 108
Hotel and resort guests in and near National
Forest, year 1936 140,000

Wild Life

Estimates of the numbers of various kinds of wild life on the
Olympic National Forest are as follows:

| | | | |
|--------------------------|------|---------|------|
| Roosevelt elk | 7000 | Marten | 1500 |
| Columbian blacktail deer | 6000 | Mink | 3000 |
| Mountain goat | 20 | Fisher | 100 |
| Black bear | 1200 | Otter | 300 |
| Coyote | 300 | Weasel | 4800 |
| Cougar | 200 | Coon | 1500 |
| Fildcat | 1400 | Skunk | 6600 |
| Beaver | 300 | Muskrat | 1000 |

Fire Facts

Protection force in 1937. On the five ranger districts in the
Forest there are:

- 5 primary lookouts - do not leave the lookout during fire
season.
- 5 lookout-firemen - serve as lookouts and also go to fires
within their territory.
- 17 patrolman-firemen
- 6 fireman truck drivers
- 5 protective assistants
- 4 telephone operators
- 42 men in regular protective force

Radio

In order to avoid excessive telephone line construction, with
its attendant depreciation of recreational values, and yet allow firemen
to maintain contact with their headquarters, the Olympic National Forest
is equipped for emergency communication with special portable short wave
radio sets developed by the Forest Service.

(Olympic Nat. Forest, Cont'd)

The list of sets on the Forest is as follows:

- 65 PF sets - send and receive voice - weight 16 lbs.
with battery and antenna.
- 6 SP sets - send and receive voice or code for semi-
portable use.
- 2 H sets - send and receive voice and code for per-
manent installation as headquarters sets
on which to base the network.

These sets are indispensable to the proper protection of the Forest from fire in this extremely rough country.

Annual burned acreage, average for last 5 years - only 61 1/4 acres
per year.

Average value destroyed in annual burned acreage, last 5 year
average - \$16 3/4.

Number of fires, average for last 5 years - 16.4 fires per year.
Of these, 16.2 were man-caused.

Olympic Peninsula

Dependency

- 27,097 people (directly employed and dependents) supported by
the timber industry.
- 41,728 workers and dependents in the allied service industries
in addition to those directly employed in forest industries.
- 68,825 total number of people dependent on the forest industries
of the Olympic Peninsula. This is about 70% of the total
population of the 4 Olympic Peninsula counties.
- 90,000 persons would be more nearly the figure for a total of
those whose economic security depends on the forests of
the Olympic Peninsula, if the interdependence of agriculture,
lumbering, and other businesses is considered. This would
be nearly 99% of the total population.

Mineral and Oil

The mineral and oil resources of the Olympic Peninsula are but little explored. Large deposits of relatively high grade manganese ore, one of the metals essential to the iron alloy industry and vital to national defense, are known to exist throughout the north, east and south portions of the Olympic National Forest. A large mineralized area bearing gold and copper ores lies in the central southern portion of the Forest, and numerous permits for explorations for oil have been granted for the area in and adjacent to the state sustained yield unit on the western side of the Peninsula.

Olympic Highway

Entire loop - 343 miles. 45 miles inside National Forest boundary. 18 miles on National Forest lands.

Most scenic portions of the loop -

Approximately 50 miles bordering on Hoods Canal along east side of Peninsula.

Approximately 30 miles from Port Angeles west to western end of Lake Crescent.

Privately owned lands around Lake Crescent and elsewhere are being acquired by the Forest Service through exchange. Any of those lands, if not supporting timber or satisfactory reproduction, will be planted. A total of 4,927 acres of land has been acquired through exchange and added to the Forest. This area supports a stand of 78,989,000 board feet of timber with a value of \$130,236. An additional 9,000 acres of exchange land is pending, which has 15,665,000 board feet of timber valued at \$27,590. 480 acres of mature timber at the west end of Lake Crescent has been acquired.

Climate

Rainfall on the Olympic Peninsula is more easily measured in feet than in inches. Annual averages of 10 to 12½ feet are not unusual. Officially the figures show annual averages from 16 to 150 inches. The precipitation during the summer dry months from the middle of June to the early part of September averages from 1½ inches in July to 6 inches in September. During the remainder of the year the monthly average is from 6 inches to 20 inches, with a high level of 18 inches to 20 inches, mostly of rain, reached in November, December, and January.

This excessively high level of rainfall, distributed well throughout the year, accounts for the extreme density of vegetation and the rapid growth of forests in this region.

Water Power

508,590 horsepower is the estimated potential water power development for the Peninsula.

168,180 horsepower is the limit of present development.

(Olympic Peninsula, Cont'd)

Pulp Mills

6 large mills on Olympic Peninsula.

~~1722~~¹⁵⁴⁷ tons pulp per 24-hour day capacity.

About 650 tons per day of sulphite pulp supplied to the rayon industry.

Cut-over and Uncut Areas

In the 4 Olympic Peninsula counties - all ownerships - the Forest Service estimates give the following figures:

3,425,358 acres of potentially commercial forest land.

1,099,709 acres cut-over - mostly restocking.

364,184 acres burned-over (not cut) mostly restocking.

1,961,465 acres yet uncut and unburned - 57% of total potential commercial forest land; of this remaining commercial forest land, over 600 thousand acres are National Forest land.

State Ownership

On the Olympic Peninsula the State of Washington holds title to approximately 335,000 acres with a stand of about 9,000,000,000 board feet of timber in addition to a considerable acreage of recently acquired cut-over lands.

Indian Ownership

There are about 209,000 acres of Indian land in the 4 Peninsula counties. These Indian lands carry about 4,000,000,000 board feet of timber.

Olympic Blowdown

In February, 1921, a tornado approached the Peninsula from the southwest and blew down a strip of timber up to 30 miles wide, extending from Grays Harbor to Puget Sound on the west side of the Peninsula. Over 4,500,000,000 board feet of timber blown down, mostly on lands outside National Forest boundaries. Greatest damage in vicinity of Forks, Washington.