PRESERVE ANALYSIS: CAPE LOOKOUT

Prepared by
Glenn Patrick Juday

OREGON NATURAL AREA PRESERVES ADVISORY COMMITTEE
to the State Land Board
Salem, Oregon

April 28, 1975

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NATURAL AREA PRESERVES ADVISORY COMMITTEE

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Oregon Natural Area Preserves Advisory Committee
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PREFACE

The purpose of this preserve analysis is to aid the Natural Area Preserves Advisory Committee in deciding whether a preserve dedication proposal should be forwarded to the State Land Board for its consideration. The analysis should contain enough detailed information to adequately assess the desirability of dedicating a given parcel of land as a natural area preserve. As such it represents a research document permitting a rational decision by the Committee and Board.

A number of individuals have been helpful in the production of this report. I particularly wish to thank D. Zobel for his quick and thorough review, K. Chambers, T. Oxley and State Park staff for much helpful material, T. Fies and Wildlife Commission Staff for comments, W. Cox for information, and B. Nolf for a rewrite of the Geology section. ERSAL kindly provided facilities and imagery which initially led to the identification of this area as a candidate preserve.

I am responsible for all statements or data not otherwise attributed.

Glenn Patrick Juday
April 28, 1975
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Name of Natural Area Preserve

Proposed Name

Cape Lookout Natural Area Preserve is proposed as the name for this natural area. The preserve candidate, in Tillamook County, encompasses the headland cape which extends the furthest oceanward of any Oregon promontory of the major topographic features.

Reasons for Preservation

The preserve is proposed in order (1) to protect sea bird nesting habitat on the steep cliffs from undue human disturbance, (2) to protect the old-growth Sitka spruce stands from further recreational development that might disturb them directly or indirectly (as in the case of windthrow from new recreational-associated openings or debris deposition and root suffocation); (3) to protect headland ecosystems from the adverse impacts of recreational overuse (e.g., trampling and understory soil compaction, neither a serious problem to date); and, (4) to highlight this area to scientists and educators as an area in which to conduct research, as an undisturbed standard against which to monitor environmental quality, and an area from which to accumulate baseline data on coastal headland terrestrial, marine and aquatic ecosystems.

Description of Area

Legal Description

The proposed natural area preserve occupies portions of Sections 1, 2, and 3 of Township 3 South, Range 11 West and Section 36 of Township 2 South, Range 11 West of the Willamette Meridian (see
Figure 1. Tillamook region showing Cape Lookout State Park and other geographic features with number referring to hikes and drives described in Mangum (1967).
Figures 1 and 2). Sections 36, 1, 2, and 3 are fractional because of irregularities in the outline of the coast, and do not contain a full 640 acres each. The proposed preserve boundaries would start at the mouth of the unnamed creek in the center of Section 36 of Township 2 South, Range 11 West, and proceed up the middle of that stream to a point 50 meters (164 feet) from the center of the Netarts-Sandlake Road bridge, then continue parallel to the center line of the road 50 meters away in a generally southerly direction, until intersecting a line due north of the intersection of the southern boundary of Cape Lookout State Park and the center of the Netarts-Sandlake Road, and then proceed due south along that line until again intersecting a line 50 meters away from and parallel to the Netarts-Sandlake Road, and then proceed generally South along that parallel line until coming within 50 meters of the Cape Lookout Trailhead Parking lot and access road, and from there continue parallel to the center of the access road and to the outer edge of the parking lot, until reaching a point south of the parking lot 50 meters from the center of the Netarts-Sandlake Road, and from there continue generally south to the southern boundary of Cape Lookout State Park, and proceed west along the southern boundary of the park until reaching the level of mean lower low water of the Pacific Ocean, and from there proceed 200 meters (656 feet) off shore and parallel to Cape Lookout generally west then north then east until intersecting the starting point (see Figure 3).

The proposed preserve would encompass about 433 hectares (1067 acres).

Ownership

The proposed preserve above mean high tide level is owned by the State Parks Branch of the State Highway Division of the Department of Transportation. However, 975 acres comprising Cape Lookout Lighthouse Reservation was acquired from the U.S. Commerce Department Lighthouse Service by a deed which includes a provision that allows the Federal government to resume ownership at any time without the consent of the state (see Appendix 1). The ocean bottom below mean high tide is public trust land of the State Land Board managed by the Division of State lands.
Figure 2. Cape Lookout State Park and vicinity. Source: Oregon State Highway Department.
Biological and Physical Description

Ecosystems and Cells

The proposed natural area preserve would fill, in part, the following cells (ecosystem type needs) as outlined in Dyrness et al. (1974) Research Natural Area Needs in the Pacific Northwest:

Marine and Estuarine Research Natural Area Needs

Open Coast - Northern Oregon
* Typical Basaltic Headlands

Terrestrial Research Natural Area Needs Oregon Coast Ranges

*(1) Sitka Spruce/Salal Community on the ocean front
(3) Sitka Spruce - Western Hemlock/Sword Fern Community (partially filled)

An asterisk (*) in the above tabulation indicates principal cells being protected.

General Environment

The above mentioned cells, although helpful in outlining certain major features needed for a complete Oregon natural area system, do not encompass the full diversity or the special context of natural features found at Cape Lookout.

The vegetation can be grouped into three major community-type units, which often intergrade, form complex mosaics, or vary with successional stages. Moisture is not a limiting factor on any site that is either level or has accumulated about one-half meter of soil. Rainfall is extremely high throughout fall, winter and spring, and the "condensed" summer fog in tree crowns assures adequate summer moisture. Temperatures are very seldom (if at all in most years) below the minimum necessary for photosynthesis. Nutrient supply is not deficient, in spite of the leaching from excess precipitation, because of the alkali basalt parent material and the high ion content of precipitation.
Shrub/herb headland
Sitka spruce-western hemlock/licorice fern forest
Pure Sitka spruce forest
Beach
Cut-over land
Shingle

Figure 3: Cape Lookout
Natural area preserve candidate, shown with tentative vegetation units.

Proposed Preserve Boundary

Cartography by Thomas W. Hodler
However, some environmental factors are less equable. Strong winds topple large trees in spectacular storms and "prune" smaller branches. Winds also carry salt particles which come directly into contact with vegetation. This local halitic condition induces "physiological drought" or death of plant tissues in areas most exposed to spray, but it has a general effect upon less exposed vegetation, as well. On some very steep slopes which can not accumulate enough soil before slumping or rock fall occurs, summer drought is an adverse factor for tree growth, although not severe. In the rain forests on the cape, diminished light and the thick accumulation of organic matter on the forest floor are important limiting factors. Sitka spruce trees crowd toward light; crowns denied access to it die. Ferns, mosses and lichens grow in profusion on the floor, on downed logs, on living trees. Only trees that can reproduce on "nurse logs" rather than mineral soil can maintain a place in the forest here. In response to this situation and perhaps the high salt spray too, Douglas-fir is completely absent.

**Botanical**

In response to these environmental factors, the three major vegetation groups are (1) shrub-herb headland, (2) pure Sitka spruce forest, often with a salal understory, and (3) Sitka spruce - western hemlock/licorice fern forest (salmonberry - alder in early succession).

The shrub-herb headland is characterized by thin soils, high incidence of salt spray, high winds and the absence of trees or overstory shade. The most common and abundant species encountered are:

- **Pteridium aquilinum**  
- **Blechnum spicant**  
- **Anaphalis margaritacea**  
- **Lonicera involucrata**  
- **Rubus parviflorus**  
- **Rubus ursinus**  
- **Bracken fern**  
- **Deer fern**  
- **Pearly everlasting**  
- **Honeysuckle**  
- **Thimbleberry**  
- **Blackberry**

In addition there are several grasses, mostly species of **Poa** and **Bromus**, and several other herbs as well. No quantitative data have been taken in this type which occurs in a narrow fringe around the south rim of the cape, on the most oceanward tip of the cape, and in irregular patches, often quite wide, along the north shore (see Figure 3).
In areas where soil is deeper but often unstable, salt spray heavy, and winds strong, pure Sitka spruce forests occur with either salal, sword fern, or pure organic litter in the understory. This type occurs particularly along the steep south slope below the day-use parking lot. Pure Sitka spruce forest is also distributed along the cape crest and the gently north-facing slope where the type forms the matrix within which scattered old-growth forests are found.

The third type, Sitka spruce-western hemlock/licorice fern forest, occurs in the most sheltered areas with the deepest soil. Cape Lookout exhibits an outstanding example of the mature and early successional phases of this type. The following tables are based upon four plots taken within old growth forests representative of this type:

Table 1. Basal area in square meters per hectare based upon averages of four prism counts on the perimeters of four plots in old growth forests of Cape Lookout State Park.

<table>
<thead>
<tr>
<th>Average of plot</th>
<th>#1</th>
<th>#2</th>
<th>#3</th>
<th>#4</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picea sitchensis</td>
<td>55</td>
<td>47.5</td>
<td>22.5</td>
<td>15.0</td>
<td>35.0</td>
</tr>
<tr>
<td>Tsuga heterophylla</td>
<td>30</td>
<td>17.5</td>
<td>30.0</td>
<td>37.5</td>
<td>28.8</td>
</tr>
<tr>
<td>Alnus rubra</td>
<td>--</td>
<td>--</td>
<td>2.5</td>
<td>--</td>
<td>0.6</td>
</tr>
<tr>
<td>All species</td>
<td>85</td>
<td>65.0</td>
<td>55.0</td>
<td>52.5</td>
<td>64.4</td>
</tr>
</tbody>
</table>

Table 2. Number of shrub stems per square meter based upon ten subsamples within each plot of old growth forests in Cape Lookout State Park.

<table>
<thead>
<tr>
<th>Plot number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polystichum munitum</td>
<td>4.4</td>
<td>5.4</td>
<td>7.2</td>
<td>15.5</td>
<td>8.13</td>
</tr>
<tr>
<td>Rubus spectabilis</td>
<td>0.8</td>
<td>0.3</td>
<td>0.5</td>
<td>1.4</td>
<td>0.75</td>
</tr>
<tr>
<td>Sambucus racemosa</td>
<td></td>
<td></td>
<td>0.2</td>
<td>0.2</td>
<td>0.05</td>
</tr>
<tr>
<td>Athyrium filix-femina</td>
<td></td>
<td></td>
<td>0.6</td>
<td></td>
<td>0.15</td>
</tr>
<tr>
<td>Menziesia ferruginea</td>
<td>0.2</td>
<td>0.3</td>
<td></td>
<td></td>
<td>0.13</td>
</tr>
<tr>
<td>Gaultheria shallon</td>
<td></td>
<td></td>
<td>0.2</td>
<td></td>
<td>0.05</td>
</tr>
<tr>
<td>Vaccinium parviflorum</td>
<td>0.2</td>
<td></td>
<td></td>
<td></td>
<td>0.05</td>
</tr>
<tr>
<td>Total shrubs</td>
<td>5.6</td>
<td>6.2</td>
<td>8.3</td>
<td>17.1</td>
<td>9.3</td>
</tr>
</tbody>
</table>
A large old Sitka spruce "gathering" fog drip in the summer. Note the suppressed western hemlock at either side and the salmonberry thicket in the foreground.
A buttressed root formed by the decomposition of the "nurse log" of this western hemlock.

Licorice fern (*Polypodium scouleri*) in the fork of this Sitka spruce. Wind damage to the terminal shoot of this exposed tree has caused a ragged forking crown.
Table 3. Understory plants other than shrub stratum encountered in plots in old-growth forest in Cape Lookout State Park, (listed in relative order of importance within groups).

<table>
<thead>
<tr>
<th>Category</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lichens</td>
<td>Peltigera canina</td>
</tr>
<tr>
<td>Bryophytes</td>
<td>Plagiothecium undulatum</td>
</tr>
<tr>
<td></td>
<td>Eurhynchium oreganum</td>
</tr>
<tr>
<td></td>
<td>Anthoceros spp.</td>
</tr>
<tr>
<td>Ferns</td>
<td>Polystichum munitum</td>
</tr>
<tr>
<td></td>
<td>Blechnum spicant</td>
</tr>
<tr>
<td></td>
<td>Athyrium filix-femina</td>
</tr>
<tr>
<td></td>
<td>Polypodium scouleri (on trees)</td>
</tr>
<tr>
<td>Conifers</td>
<td>Tsuga heterophylla</td>
</tr>
<tr>
<td></td>
<td>Picea sitchensis</td>
</tr>
<tr>
<td>Flowering plants</td>
<td>Oxalis oregana</td>
</tr>
<tr>
<td></td>
<td>Montia sibirica</td>
</tr>
<tr>
<td></td>
<td>Maianthemum dilatatum</td>
</tr>
<tr>
<td></td>
<td>Galium boreale</td>
</tr>
<tr>
<td></td>
<td>Trillium ovatum</td>
</tr>
<tr>
<td></td>
<td>Clintonia uniflora</td>
</tr>
<tr>
<td></td>
<td>Hydrophyllum tenuipes</td>
</tr>
<tr>
<td></td>
<td>Lysichitum americum (seep areas only) Skunk cabbage</td>
</tr>
<tr>
<td></td>
<td>Gaultheria shallon (logs and stumps only) Salal</td>
</tr>
<tr>
<td></td>
<td>Melissa officinalis (along trail only)</td>
</tr>
<tr>
<td></td>
<td>Cardamine angulata</td>
</tr>
</tbody>
</table>

Certain shade intolerant species, red alder and salmonberry in particular, occur with some frequency as patches within old-growth forests. Within the fabric of the old-growth forest, Sitka spruce, which is not shade tolerant, can maintain a presence in these successional patches. There are usually fewer Sitka spruce than western hemlock seedlings; however as hemlocks mature they are more afflicted with rots and disease. In this author's opinion, then, the
relative proportion of mature hemlock and Sitka spruce may vary somewhat from present amounts, but in the absence of interference by man the forest will not go to a pure western hemlock climax forest as is most commonly hypothesized by other researchers. The confirmation or rejection of this hypothesis can be an important value of natural area preserve designation, since it has significant implication for the management of this coastal forest mosaic elsewhere.

The early successional phase of the spruce-hemlock-forest type is a dense tangle of the nitrogen-fixing red alder, and salmonberry, elderberry and huckleberry. Often a dense carpet of mosses forms on the forest floor; Sitka spruce and some hemlock seedlings germinate only on fallen logs and stumps. The trees gradually mature and their shade weakens the salmonberry, elderberry and alder, until an individual mature tree dies, starting the micro successional pattern again.

A completely different and specialized group of plants is the benthic (attached) algal (kelp) component on the headland. Between mean high tide and a depth of about 8 meters below mean sea level are found several communities arranged in zones of increasing depth. Eelgrass beds give way to Fucus, Allaria, Ulva (sea lettuce), Postelsia (sea palm), Laminaria, Iridaea, and finally Nereocystis, the bull whip kelp. Attached to the rock are also several coralline red algae and sea anemone, sea urchin, several species of starfish, sponges, acorn barnacles, mussels and many other animal components of the intertidal and subtidal headland ecosystems. These are considered taxonomically extremely ancient and are also diverse communities; yet these marine organisms have not been well described, much less the subject of research, at Cape Lookout. Figure 4 presents an idealized zonation of several kinds of large marine algae for the Oregon coast.

Zoological

Cape Lookout has an assemblage of animal life typically found in the early successional and old-growth Sitka spruce forests, on marine ledges and cliffs, and in coastal headland waters. The Cape is notable for the quality of habitat and completeness of representation of the various faunal groups. However, this author has directly observed only a fraction of the fauna present, and must rely upon reports, and in certain cases, habitat inferences.

Perhaps the most notable zoological feature is the collection of marine and shore birds. Presented in Appendix 2 is a list of 154 birds observed through a period of years by Stanley Jewett of the then U.S.
Figure 4. Marine Algal Habitats on Rocky Headlands

*After McConnaughey 1970
Biological Survey. The census period was some time in the 1940's and early 50's. The list includes birds observed over the entire park area and in Netart's Bay to the north of the park. Many of the listed birds would then, be absent or very rare within the boundaries of the proposed preserve. However, the puffins, auklets, Murre's gulls and guillemot's would be either most common or restricted to the proposed preserve. An especially noteworthy feature is the mainland rookery of California Murres.

The following birds have been listed in Jewett's report and appear as peripheral, rare or endangered birds of Oregon in Dyrness et al. (1974)

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Podiceps grisengena holbollii</td>
<td>Holboell's Red-Necked Grebe</td>
<td>P</td>
</tr>
<tr>
<td>Podiceps auritus</td>
<td>Horned Grebe</td>
<td>P</td>
</tr>
<tr>
<td>Oceanodroma furcata plumbea</td>
<td>Southern Fork-Tailed Petrel</td>
<td>R</td>
</tr>
<tr>
<td>Pelecanus occidentalis californicus</td>
<td>California Brown Pelican</td>
<td>P</td>
</tr>
<tr>
<td>Aythya affinis</td>
<td>Lesser scaup</td>
<td>P</td>
</tr>
<tr>
<td>Bucephala albeola</td>
<td>Bufflehead</td>
<td>P</td>
</tr>
<tr>
<td>Histrionicus histrionicus</td>
<td>Harlequin Duck</td>
<td>R</td>
</tr>
<tr>
<td>Haliaeetus leucocephalus alascanus</td>
<td>Northern Bald Eagle</td>
<td>E</td>
</tr>
<tr>
<td>Falco columbarius bendirei</td>
<td>Western Pigeon Hawk</td>
<td>E</td>
</tr>
<tr>
<td>Charadrius alexandrinus nivosus</td>
<td>Western Snowy Plover</td>
<td>R</td>
</tr>
<tr>
<td>Cerorhinca monocerata</td>
<td>Rhinoceros Auklet</td>
<td>SU</td>
</tr>
<tr>
<td>Strix occidentalis caurina</td>
<td>Northern Spotted Owl</td>
<td>E</td>
</tr>
<tr>
<td>Vireo huttoni</td>
<td>California Hutton's Vireo</td>
<td>SU</td>
</tr>
</tbody>
</table>

R = Rare in Oregon -- at one time common
E = Small population, in danger of extinction
SU = Status undetermined
P = Peripheral -- common in adjacent areas -- not in Oregon; birds that cross our borders

The above list must be looked at with some caution, since it was based upon observations many years ago, it includes some birds (e.g., spotted owl) whose habitat requirements are not present within the proposed preserve, and it includes subspecies which Jewett did not specify. Nonetheless, a list of so many uncommon birds from one place is noteworthy.

It is possible, though not likely, that more complete floristic and faunistic studies will yield additional organisms recognized as endangered, threatened or rare. These would most likely be marine organisms.
Figure 5. Cape Lookout from the Pacific Ocean looking east (redrawn from an oblique air photo in Mangum, 1967).
The formally adopted List of Threatened or Endangered Wildlife of the Oregon Wildlife Commission includes the following: (both are classified as endangered by Oregon and the national list of the Department of Interior).

- **Pelecanus occidentalis californicus** California Brown Pelican
- **Haliaeetus leucocephalus alascanus** Northern Bald Eagle

The Dyrness et al. (1974) list for Cape Lookout is more inclusive because of the long list of birds by Jewett (open to some question) and the attempt to consider all uncommon animals of scientific or educational interest.

Appendix 3 lists the common marine intertidal animals found at Boiler Bay, 60 km (36 mi.) south (Dirks-Edmunds 1974). Included are sponges, sea anemone, flat worms, polychaets, barnacles, isopods, several species of crabs, chitons, limpets, snails, sea slugs, mussels, clams, sea stars, starfish, sea cucumbers, sea urchins, blenny and sculpin. Nearly all should be present at Cape Lookout.

Appendix 4 contains a list of all other terrestrial vertebrate animals known or likely to inhabit the proposed preserve. The marine mammals are migratory or wide-ranging, but important habitat is present. The cave in the face of the westernmost tip of the cape and the shelf-like terrace next to it (see Figure 5) are particularly important. The gray whales pass by within tens of meters of the tip of the cape. This is probably the best point along the Oregon Coast to observe them. The harbor seals and sea lions would use the cave and shelf as "hauling out" areas.

Ledges on cliff faces are important for colonial nesting sea birds.

**Geological**

An excellent descriptive guide to the geology of Cape Lookout State Park is presented by Mangum (1967). Figure 6 of this report is taken from her paper. The headland is underlain by resistant basalts of the Columbia River Group, extruded over and intruded into the less resistant fine-grained clastic sediments of the Astoria Formation. Both units are Miocene in age. In some areas the Columbia River lavas extruded beneath the sea, forming pillow basalts; in other areas subaerial cooling formed columnar jointing. Pillows are conspicuously exposed in the road cut just east of the boundary of the proposed preserve near the day-use area parking lot, and elsewhere within the
Figure 6. Generalized geology of the Tillamook region, Oregon. Source: Mangum 1967.
preserve. Columnar jointing is well exposed within the preserve on the steep cliffs south of the same parking lot.

Deformation during Pliocene time elevated the Coast Ranges to near present heights, and produced a small east-west trending syncline with axis north of Cape Lookout. The rocks of Cape Lookout, on the south limb of this fold, dip generally north to northwestward (see Fig. 5).

Erosion of these tilted flows produced the steep south cliff face and a gentle northward slope. During the Pleistocene Epoch, downcutting by rivers tributary to the ocean continued, with alternate incision and alluviation of valley mouths due to glacially controlled fluctuations in sea level. Coastal erosion during these fluctuations of sea level produced marine terraces. Erosion by waves is still quite significant, forming stacks and islands. It will eventually bisect the cape by enlarging the cove in the north mid-section of the headland, leaving an island which will be eroded into a sea stack, and eventually below sea level.

Climate

No climatic stations exist within the proposed preserve or the state park. The nearest stations are somewhat unrepresentative because there are many oceanic effects that diminish dramatically inland where the stations are. However, some interpolation can be made.

Tillamook (18 km due NE, 10 m. elev.) receives about 2300 mm (90 inches) of rain per year. The rain is highly seasonal with a winter maximum. The months of November through March average greater than 250 mm (10 inches) each. However July and August receive only 50 mm each (2 inches). A better description of the climate, though still not completely transferable, can be found in Ruth's 1954 Climatic Summary of the Cascade Head Experimental Forest (31 km SSE, 50 m elev.). Interestingly he found a 26 percent increase in precipitation at ground level because of drip from "condensation" of fog in tree crowns. Summary data from the Experimental Forest headquarters (listed as Otis NE in U.S. Weather Bureau reports) is as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Value (°C)</th>
<th>Value (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean annual temperature</td>
<td>13.3</td>
<td>50.6</td>
</tr>
<tr>
<td>Mean January temperature</td>
<td>5.3</td>
<td>41.5</td>
</tr>
<tr>
<td>Mean July temperature</td>
<td>15.3</td>
<td>59.6</td>
</tr>
<tr>
<td>Mean January minimum temperature</td>
<td>2.2</td>
<td>35.9</td>
</tr>
</tbody>
</table>
Mean July maximum temperature 20.9°C (69.7°F)
Average annual precipitation 2496 mm (98.26 in.)
June through August precipitation 163 mm (6.42 in.)

Summers are usually quite cool due to onshore winds bringing air cooled by oceanic upwelling. On occasion, an east wind pattern will allow warm sunny days in the summer; mostly summers are cool, often windy, and foggy. Summer winds are from the northwest and drive salt particles onto plant surfaces killing tissues to prune them back. Winter winds are from strong southwest storms and snap off foliage or uproot trees in winter rain soaked ground. The distribution of the leathery leafed licorice fern growing in the trees is correlated with significant salt content in the fog.

Fire has seldom been a factor in the old-growth forests at Cape Lookout. There is a huge accumulation of organic matter and no evidence of charcoal in it.

Educational and Scientific Values

Outstanding opportunities exist at Cape Lookout for the following research:

1. Studies of succession in old growth Sitka spruce forests (e.g. confirm or reject hypothesis that succession will develop a nearly pure old growth western hemlock forest).

2. Study sea bird nesting behavior in rookeries.

3. Census gray whales.

4. Study the phytosociology of old-growth Sitka spruce forests (in progress).

5. Study the autecology of different plant species in regard to their responses to wind, salt, and organic matter.

Educational values are also great. A nearly unsurpassed collection of marine birds and mammals, huge old growth forests, and a vivid display of wind and salt as extreme environmental factors are of great value to the amateur naturalist or educator.

Some question was raised as to whether the proposed preserve would duplicate the existing Neskowin Crest Research Natural Area.
Since I have done research in both I feel qualified to comment. First, Dyrness, et al. (1974) point out the need to encompass more diversity in the Sitka spruce western hemlock type represented at Neskowin Crest RNA. Second, two other major types, Sitka spruce/salal and shrub-herb headland are indicated as unfilled cell needs and are present at Cape Lookout. Third, the following specific comparisons can be made:

1. Sitka spruce old-growth forests at Cape Lookout are older, by a century or more, than at Neskowin.

2. Cape Lookout is oriented east-to west thus absorbing the impact of both summer and winter winds and associated salt spray in a significantly different manner than at Neskowin which is oriented north-to-south.

3. Cape Lookout, as an ecological unit, is more diverse than Neskowin; plant communities exist in a complex mosaic pattern with more edge effect.

4. Cape Lookout has marine bird colonies far surpassing the few at Neskowin.

5. Cape Lookout does not have a headland prairie; it is evidently north (20 miles) of the transition between forest and prairie headlands. This is reflected in the absence of some animals (e.g., Sorex yaquinae) at Cape Lookout.

6. The geologic parent material is completely different. Cape Lookout is basalt, Neskowin is a marine tuff.

7. The oceanic effect is evidently less in Neskowin since some Douglas-fir does occur (none at Cape Lookout within the proposed preserve).

8. Some understory plant species are different. For example, Cape Lookout has little Tiarella trifoliata (Neskowin has a great deal), but has Cardamine angulata (Neskowin has little).
Resource Base

Historical and Contemporary Resource Use

Extractive resource use within the proposed preserve has been slight to non-existent depending upon the particular area. Most of it is truly pristine, where man has had no major or measurable impact. However, interesting evidence of Indian use of the Cape tip exists in the form of several unexcavated shell middens. The history of the park is given in Appendix 5. As is indicated there, a B-17 bomber crashed in 1943 cutting a swath through one area of forest. There is one old clearcut within the boundaries of the proposed preserve between upper Cape Creek and the road.

The timber in Cape Lookout State Park as well as wildlife and mineral resources are presently protected from commercial exploitation, insofar as the state parks system can do so. The Federal government could nullify this, of course (see Appendix 1).

However, the Fish Commission has exclusive jurisdiction over food fish, shellfish, and all other animals living intertidally on the bottom. (see Commercial Fishing Laws and Administrative Rules, Fish Commission of Oregon, pp. 70-71)

Under ORS 496.138, the Wildlife Commission has the authority to formulate and implement the policies and programs of the state for the management of wildlife. Wildlife as defined in ORS 496.004 means game fish, wild birds, amphibians, reptiles and wild mammals except whales and porpoises. The Marine Mammal Protection Act of 1972 removed the State's jurisdiction over marine mammals and put the administration of the new federal program under the Department of Commerce. Under the Act "marine mammal" means any mammal morphologically adapted to the marine environment (including sea otters and members of the Orders Sirenia, Pinnipedia and Cetacea) or which primarily inhabits the marine environment (such as polar bears). The Federal Government also regulates, through the Department of Interior, the taking of migratory waterfowl which includes ducks, geese, brant, coots, jacksnipe, pigeons and doves. The Wildlife Commission also has authority over such animals, but regulates seasons and bag limits within the federal framework. There are many other birds besides migratory waterfowl protected by federal law. (See WL 486, U.S. Fish and Wildlife Service, May 1969, Birds Protected by Federal Law)
The State Land Board has the responsibility for the management of the subtidal land as public trust lands. There is a provision for the leasing of kelp (see appendix 6) in its statutes.

The situation to date is that Cape Lookout State Park does not allow hunting and no kelp or mineral leases have been granted by the State Land Board for the ocean bed. However, the taking of marine plants and bottom animals, food fish and shellfish (in conformity with Fish Commission seasons and limits) is not currently prohibited.

The existing resource use of the State Park is dispersed recreation, especially recreational hiking along the trail, wildlife viewing (gray whales and marine birds in particular) and nature study. Some research has been conducted.

A few individual specimens of non-native plant species have been introduced in disturbances associated with the construction of the trail and the wreckage of the bomber, and persist in local foot-trampled areas. Sidecast from the construction of the trailhead parking lot has killed one three hundred year-old Sitka spruce tree.

Access

Access is excellent and only slight improvements may be needed. A trail runs the length of the peninsula and connects with the campground and trailhead parking lot. Sheer cliffs block access from the beaches to the north and south.

Leases, Easements

Appendix 5, the history of Cape Lookout State Park, includes a short listing of leases affecting the park. They involve either the road corridor or water rights, and so, do not affect the proposed preserve.

However, the federal conveyance under which 975 acres of the peninsula were obtained does affect the proposed preserve. A copy of the deed is presented in Appendix 1. These 975 acres can be taken by the Federal government at any time for any use, and any facilities desired may be placed upon the property, objections of the State Parks System notwithstanding.

In light of newer technologies for lighting and other ship control measures, and the change in strategic needs, perhaps the Federal
government could be persuaded to give up or limit these rights.

Existing Management

A master plan for Cape Lookout State Park is in process. A preliminary Resource Analysis done in 1971 is presented in Appendix 7.

The existing management for the area is "dispersed low-impact recreational use" (i.e., hiking, sightseeing, and nature study) (McCosh, 1974, personal communication).

Economic Analysis

Discussion

Most considerations of the economics of the proposed preserve are problematical, since the area is already a state park and thus protected from the commercial extraction of its resources.

The geographic location evidently has or had some value to the federal government since they retained rights to the area, but not enough value that they have exercised them. The major economic impact of the proposed preserve would be its effects upon recreational, scientific and educational use. As a major feature, the headland portion had some role in attracting visitors to the park. Park attendance for the last several years is as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969-70</td>
<td>171,713</td>
</tr>
<tr>
<td>1970-71</td>
<td>85,216</td>
</tr>
<tr>
<td>1971-72</td>
<td>82,548</td>
</tr>
<tr>
<td>1972-73</td>
<td>163,814</td>
</tr>
<tr>
<td>1973-74</td>
<td>169,062</td>
</tr>
</tbody>
</table>

According to the 1964 State Park Travel and Use Survey 67% of day visitors and 76% of campers make a trip to the area because of the state park.

Activity participation at Cape Lookout State Park is as follows:
<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage of Day Visitors</th>
<th>Campers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camping</td>
<td>11</td>
<td>94</td>
</tr>
<tr>
<td>Picnicking</td>
<td>60</td>
<td>24</td>
</tr>
<tr>
<td>Sightseeing</td>
<td>45</td>
<td>72</td>
</tr>
<tr>
<td>Fishing</td>
<td>10</td>
<td>31</td>
</tr>
<tr>
<td>Swimming</td>
<td>46</td>
<td>64</td>
</tr>
<tr>
<td>Boating</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Hiking</td>
<td>17</td>
<td>44</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>24</td>
</tr>
</tbody>
</table>

Average expenditures per car per day in 1964 are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Day Visitors</th>
<th>Campers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lodging</td>
<td>$1.94</td>
<td>$1.24</td>
</tr>
<tr>
<td>Food</td>
<td>3.10</td>
<td>5.09</td>
</tr>
<tr>
<td>Auto</td>
<td>1.71</td>
<td>2.39</td>
</tr>
<tr>
<td>Recreation</td>
<td>0.73</td>
<td>1.27</td>
</tr>
<tr>
<td>Other</td>
<td>0.68</td>
<td>0.80</td>
</tr>
<tr>
<td>Total</td>
<td>$8.17</td>
<td>$10.80</td>
</tr>
</tbody>
</table>

Adverse economic impact would occur if recreation pressure was considered heavy enough to restrict or limit access to the preserve and thus discouraged visitors from coming to the park. A favorable effect would be increased park attendance, not beyond carrying capacity, based upon knowledge of the preserve.
Bibliography


Maser, Chris. 1974. List of Mammals Known or Inferred to Occur in Cape Lookout State Park. Division of State Lands, NAPAC. Salem, Oregon.


Staff. 1964. The State Park Visitor in Oregon, State Parks Section. Salem, Oregon.
KNOW ALL MEN BY THESE PRESENTS, that whereas that certain piece or parcel of land pertaining to the lighthouse service of the United States, situate and lying in T. 3 S., R. 11 W., W.M., County of Tillamook, State of Oregon, as hereinafter more fully described, can not be profitably used in the work of the lighthouse service; and,

WHEREAS, pursuant to the provisions of the Act of Congress, approved May 28, 1935, (Public Law No. 81-74th Congress), the Secretary of Commerce was authorized to convey the said tract or parcel of land to the State Highway Commission, State of Oregon, for park purposes,

NOW, THEREFORE, THIS INDENTURE WINESSETH: That the Secretary of Commerce, acting in that capacity herein for and on behalf of the United States, and by virtue and authority of the aforesaid act of May 28, 1935, party of the first part, doth hereby convey unto said party of the second part that certain lot, piece or parcel of land situate, lying, and being in T. 3 S., R. 11 W., W.M., in the County of Tillamook, in the State of Oregon, and bounded and described as follows: Viz.:

All unsurveyed lands in fractional sections 1, 2 and 5, T. 3 S., N. 11 W., W.M. reserved for lighthouse purposes by Executive order of November 1, 1921, including 20 acres reserved by Executive order of June 8, 1855, and totalling approximately 975 acres, comprising Cape Lookout Lighthouse Reservation.

The grantor hereby reserves to the Commerce Department of the United States the right of ingress and egress over the land so conveyed, and to maintain thereon such facilities as that Department may at any time require.

TO HAVE AND TO HOLD all and singular the foregoing described land and premises, together with the appurtenances, unto the said party of the second part, the State Highway Commission of the State of Oregon subject, however, to the following conditions:

The grantee assumes the obligation of carrying out the purposes of the grant, and the Secretary of Commerce may at any time, by letter addressed to the Oregon State Highway Commission, notify the grantee, in the event it has not begun to perform or has ceased to perform any such obligations,
that the property so conveyed will revert to the United States, and if the grantee does not begin or resume the performance of such obligations, within a period of six months from date of such notice such property shall, upon the expiration of such period, revert to the United States without further notice or demand or any suite or proceeding. The United States reserves the right to resume ownership, possession, and control, for Government purposes, or any of the property so conveyed, at any time and without the consent of the grantee.

IN WITNESS WHEREOF, the said Secretary of Commerce, as aforesaid, hath, for and on behalf of the United States of America, set his hand and affixed the seal of the Department of Commerce this third day of September, in the year One Thousand Nine Hundred and Thirty-Five.

(affix seal) UNITED STATES OF AMERICA

By J. M. Johnson
Assistant Secretary of Commerce

In the presence of:

(Name) _____________________________ (Residence) _____________________________

(Name) _____________________________ (Residence) _____________________________
DISTRICT OF COLUMBIA
(CITY OF WASHINGTON D.C.)

I, E. W. Libbey, a Notary Public in and for the district aforesaid, do hereby certify that J. M. Johnson, Assistant Secretary of Commerce, who executed, and whose name is signed to, the deed hereto bearing date of third day of September, A.D., 1935, personally appeared before me in the district aforesaid, he being personally well known to me to be the Assistant Secretary of Commerce and the person who executed the same and acknowledged the foregoing instrument to be his act and deed in said capacity, and that he executed the same for and on behalf of the United States of America.

Given under my hand and Official Seal this third day of September, A.D. 1935.

E. W. Libbey
Notary Public

(Seal)

My commission expires July 10, 1935.
APPENDIX 2

Tentative List of Birds Known or Inferred to be Present in the Proposed Cape Lookout Natural Area Preserve*

"To those who are interested in the retention and preservation of the bird life of the Cape and bay, there follows a listing of this bird life made by Stanley Jewett through a period of years while he was with the U. S. Biological Survey." From a State Park report by Samuel H. Boardman, October 1952.

<table>
<thead>
<tr>
<th>No.</th>
<th>Bird Name</th>
<th>No.</th>
<th>Bird Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Western Grebe</td>
<td>41.</td>
<td>Baldpate</td>
</tr>
<tr>
<td>2.</td>
<td>Holboell's Grebe</td>
<td>42.</td>
<td>Green-winged Teal</td>
</tr>
<tr>
<td>3.</td>
<td>Horned Grebe</td>
<td>43.</td>
<td>Pintail</td>
</tr>
<tr>
<td>4.</td>
<td>Pied-billed Grebe</td>
<td>44.</td>
<td>Canvas-back</td>
</tr>
<tr>
<td>5.</td>
<td>Common Loon</td>
<td>45.</td>
<td>Leaser Scaup Duck</td>
</tr>
<tr>
<td>7.</td>
<td>Red-throated Loon</td>
<td>47.</td>
<td>Buffle-head</td>
</tr>
<tr>
<td>8.</td>
<td>Tufted Puffin</td>
<td>48.</td>
<td>Western Harlequin Duck</td>
</tr>
<tr>
<td>9.</td>
<td>Tufted Puffin</td>
<td>49.</td>
<td>American Scoter</td>
</tr>
<tr>
<td>11.</td>
<td>Rhinoceros Auklet</td>
<td>51.</td>
<td>Surf Scoter</td>
</tr>
<tr>
<td>12.</td>
<td>Cassin's Auklet</td>
<td>52.</td>
<td>Puddy Duck</td>
</tr>
<tr>
<td>15.</td>
<td>Pigeon Guillemot</td>
<td>55.</td>
<td>Great Blue Heron</td>
</tr>
<tr>
<td>16.</td>
<td>California Murre</td>
<td>56.</td>
<td>Virginia Rail</td>
</tr>
<tr>
<td>17.</td>
<td>Pacific Kittiwake</td>
<td>57.</td>
<td>Red Phalarope</td>
</tr>
<tr>
<td>18.</td>
<td>Glaucous-winged Gull</td>
<td>58.</td>
<td>Northern Phalarope</td>
</tr>
<tr>
<td>19.</td>
<td>Western Gull</td>
<td>59.</td>
<td>Wilson's Snipe</td>
</tr>
<tr>
<td>20.</td>
<td>California Gull</td>
<td>60.</td>
<td>Long-billed Dowitcher</td>
</tr>
<tr>
<td>21.</td>
<td>Ring-billed Gull</td>
<td>61.</td>
<td>Aleutian Sandpiper</td>
</tr>
<tr>
<td>22.</td>
<td>Short-billed Gull</td>
<td>62.</td>
<td>Baird's Sandpiper</td>
</tr>
<tr>
<td>23.</td>
<td>Heermann's Gull</td>
<td>63.</td>
<td>Toast Sandpiper</td>
</tr>
<tr>
<td>24.</td>
<td>Bonaparte's Gull</td>
<td>64.</td>
<td>Red-backed Sandpiper</td>
</tr>
<tr>
<td>25.</td>
<td>Sabahe's Gull</td>
<td>65.</td>
<td>Western Sandpiper</td>
</tr>
<tr>
<td>26.</td>
<td>Arctic Tern</td>
<td>66.</td>
<td>Sanderling</td>
</tr>
<tr>
<td>27.</td>
<td>Short-tailed Albatross</td>
<td>67.</td>
<td>Wandering Tattler</td>
</tr>
<tr>
<td>28.</td>
<td>Pacific Fulmar</td>
<td>68.</td>
<td>Spotted Sandpiper</td>
</tr>
<tr>
<td>29.</td>
<td>Sooty Shearwater</td>
<td>69.</td>
<td>Hudsonian Curlew</td>
</tr>
<tr>
<td>30.</td>
<td>Forked-tail Petrel</td>
<td>70.</td>
<td>Black-bellied Plover</td>
</tr>
<tr>
<td>31.</td>
<td>Beal's Petrel</td>
<td>71.</td>
<td>Killdeer</td>
</tr>
<tr>
<td>32.</td>
<td>Jaeger</td>
<td>72.</td>
<td>Seripalmed Plover</td>
</tr>
<tr>
<td>33.</td>
<td>Double-crested Cormorant</td>
<td>73.</td>
<td>Snowy Plover</td>
</tr>
<tr>
<td>34.</td>
<td>Farallon Cormorant</td>
<td>74.</td>
<td>Surf-Bird</td>
</tr>
<tr>
<td>35.</td>
<td>Brandt's Cormorant</td>
<td>75.</td>
<td>Black Turnstone</td>
</tr>
<tr>
<td>36.</td>
<td>Baird's Cormorant</td>
<td>76.</td>
<td>Black Oyster-catcher</td>
</tr>
<tr>
<td>37.</td>
<td>California Brown Pelican</td>
<td>77.</td>
<td>Mountain Quail</td>
</tr>
<tr>
<td>38.</td>
<td>American Merganser</td>
<td>78.</td>
<td>Sooty Grouse</td>
</tr>
<tr>
<td>40.</td>
<td>Gadwall</td>
<td>80.</td>
<td>Band-tailed Pigeon</td>
</tr>
</tbody>
</table>

* Note. This list is presented here exactly as it appeared in Boardman's 1952 report including a duplication (8 & 9), and the use of bird names not currently accepted in the Checklist of North American Birds of the American Ornithologist's Union.
81. Turkey Vulture
82. Sharp-shinned Hawk
83. Cooper’s Hawk
84. Western Red-tailed Hawk
85. Bald Eagle
86. Beale’s Falcon
87. Black Pigeon Hawk
88. Desert Sparrow Hawk
89. Kennicott’s Screech Owl
90. Northern Spotted Owl
91. Dusky Horned Owl
92. Snowy Owl
93. Pygmy Owl
94. Western Belted Kingfisher
95. Hairy Woodpecker
96. Gairdner’s Woodpecker
97. Red-breasted Sapsucker
98. Northern Pileated Woodpecker
99. Northwestern Flicker
100. Pacific Nighthawk
101. Vaux’s Swift
102. Rufous Hummingbird
103. Olive-sided Flycatcher
104. Western Flycatcher
105. San Lucas Flycatcher
106. Western Wood Pewee
107. Horned Lark
108. Coast Jay
109. Oregon Jay
110. Raven
111. Northwestern Crow
112. Red-wing
113. Western Meadowlark
114. Brewer’s Blackbird
115. California Purple Finch
116. Crossbill
117. Willow Goldfinch
118. Pine Siskin
119. Snowflake
120. Western Savannah Sparrow
121. Nuttall’s Sparrow
122. Golden-crowned Sparrow
123. Shafeldt’s Junco
124. Rusty Song Sparrow
125. Yakutat Song Sparrow
126. Fox Sparrow
127. Oregon Towhee
128. Cliff Swallow
129. Barn Swallow
130. Tree Swallow
131. Violet-green Swallow
132. Cedar Waxwing
133. Western Warbling Vireo
134. Hutton’s Vireo
135. Lutescent Warbler
136. Audubon’s Warbler
137. Townsend’s Warbler
138. Golden Pileolated Warbler
139. Pipit
140. Rock Wren
141. Seattle Wren
142. Western Winter Wren
143. Tule Wren
144. Red-breasted Nuthatch
145. Mountain Chickadee
146. Chestnut-backed Chickadee
147. Coast Wren-Tit
148. Western Golden-crowned Kinglet
149. Sitka Kinglet
150. Hermit Thrush
151. Russet-backed Thrush
152. Western Robin
153. Varied Thrush
154. Western Bluebird
A Partial List of Marine Intertidal Animals Found at Boiler Bay

(Biology class list, Jane Dirks-Edmunds, Linfield College, McMinnville, Oregon)

Phylum Porifera
   *Lissodendoryx sp.*
   *Ophlitospongia sp.*

Phylum Coelenterata
   Class Anthozoa
   *Anthopleura elegantissima*
   *Anthopleura xanthogrammica*
   *Epiactis prolifera*
   *Tealia crassicornis*

Phylum Platyhelminthes
   Class Turbellaria
   *Leptoplana sp.*

Phylum Nemertea
   *Tubulanus sp.*

Phylum Annelida
   Class Polychaeta
   *Serpula sp.*
   *Nereis sp.*
   *Arctonoe sp.*

Phylum Sipunculoidea
   *Sipunculus sp.*

Phylum Arthropoda
   Class Crustacea
   *Pollicipes polymerus*
   *Balanus sp.*
   *Orchestoidea sp.*
   *Idothes sp.*
   *Ligia sp.*
   *Petrolithes sp.*
   *Pachycheles sp.*
   *Pugettia productus*
   *Pugettia gracilis*
   *Pinnixa faba*
   *Hemigrapsus nudus*
   *Hemigrapsus oregonensis*
   *Cancer productus*
   *Cancer magister*
   *Cancer oregonensis*
   *Pagurus sp.*

Yellow encrusting sponge
Red encrusting sponge
Aggregated green sea anemone
Green sea anemone
Small striped anemone
Large red and green anemone
Flatworm
Red rubbery ribbon worm
Calcareous tube worm
Eel grass sand worm
Scale worm
Peanut worm
Goose barnacle
Acorn barnacle
Amphipods
Isopods
Sea slater
Porcelain crab
Big-clawed porcelain crab
Northern kelp crab
Decorator crab
Pea crab
Purple shore crab
Medcrab
Large red crab
Commercial crab
Hairy cancer crab
Hermit crab
Phylum Mollusca
Class Amphineura

- Mopalia ciliata
- Mopalia muscosa
- Mopalia lignosa
- Katharina tunicata
- Tonicella lineata
- Cryptochiton stelleri

Class Gastropoda

- Acmaea mitra
- Acmaea spp.
- Diadroma aspera
- Littorina sp.
- Tegula funebralis
- Calliostoma spp.
- Thais lamellosa
- Ceratostoma foliatum
- Searlesia dira
- Anisidoris nobilis
- Archidoris montereyensis
- Rostanga pulchra
- Dialula sandiegensis
- Cadlina pacifica
- Cadlina marginata
- Hermisenda sp.
- Aeolidia sp.

Class Pelecypoda

- Mytilus californianus
- Penitella sp.
- Zirfaea sp.
- Protothaca staminea
- Botula sp.

Class Cephalopoda

- Octopus sp.

Phylum Echinodermata
Class Asteroidea

- Solaster dawsoni
- Dermasterias imbricata
- Henricia leviscula
- Pycnopodia helianthoides
- Eviasterias troschelli
- Leptasterias sp.
- Pleiasterias ochraceus

Class Ophiuroidea

- Ophiophilus sp.
Class Holothuroidea

Eupentacta quinquesemita
Cucumaria miniata
Cucumaria lubrica

Class Echinoidea

Strongylocentrotus purpuratus
Strongylocentrotus franciscanus

Phylum Chordata

Styela montereyensis

Class Pisces

Xiphister mucosa
Apodichthys flavidus
Oligocottus maculosus
Oligocottus snyderi
Liparis sp.

Sea cucumber
Red sea cucumber
Black sea cucumber
Purple sea urchin
Giant sea urchin
Tunicate
Blenny
Pen-point blenny
Sculpin
Fluffy sculpin
Shore liparid
APPENDIX 4

Tentative List of Terrestrial Vertebrates Other Than Birds Known of Inferred to Occur Within the Proposed Cape Lookout Natural Area Preserve

(Prepared by Chris Maser under contract to NAPAC, 1974)

Amphibians

- Ambystoma gracile
- Dicamptodon ensatus
- Rhyacotriton olympicus
- Taricha granulosa
- Plethodon dunni
- Plethodon vehiculum
- Ensatina eschscholtzii oreganus
- Aspaphus truei
- Hyla regilla
- Rana aurora

Reptiles

- Gerrhonotus coeruleus
- Thamnophis sirtalis

Mammals

Order Marsupialia

- Didelphis marsupialis

Insectivora

- Neurotrichus gibbsi
- Scapanus orarius
- Sorex bendirii
- Sorex trowbridgii
- Sorex vagrans
- Sorex obscurus

Chiroptera

- Eptesicus fuscus
- Lasionycteris noctivagans
- Lasius cinereus
- Myotis californicus
- Myotis evotis
- Myotis lucifugus
- Myotis thysanodes
- Myotis volans
- Myotis yumanensis
- Plecotus townsendii

Lagomorpha

- Lepus americanus
- Sylvilagus bachmani

* = presence questioned by Wildlife Commission
Rodentia

- Aplodontia rufa
- Arborimus albitis
- Aborimus longicaudus
- Clethrionomys californicus
- Erethizon dorsatum
- Eutamias townsendii
- Claoucomys sabrinus
- Microtus longicaudus
- Microtus oregoni
- Neotoma cinerea
- Peromyscus maniculatus
- Tamiasciurus douglasi
- Thomomys mazama
- Zapus trinotatus

Pinnepedia

- Eumetopias jubata
- Phoca citulina

Cetacea

- Rhachianectes glaucus
- Orcinus rectiplies

Carnivora

- Canis latrans
- Lynx rufus
- Martes americana
- Mephitis mephitis
- Mustela erminea
- Mustela frenata
- Mustela vison
- Procyon lotor
- Spilogale putorius
- Urocyon cinereoargenteus
- Ursus americanus
- Vulpes fulva

Artiodactyla

- Odocoileus hemionus columbianus

Mountain beaver
White-footed vole
Red tree vole
California red-backed vole
Porcupine *
Townsend chipmunk
Northern flying squirrel
Long tailed vole
Oregon or creeping vole
Busy-tailed wood rat
Deer mouse
Chickaree
Mazama pocket gopher
Pacific jumping mouse
Steller's sea lion
Harbor seal
Gray whale
Pacific killer whale
Coyote
Bobcat
Marten *
Striped skunk
Short tailed weasel or ermine
Long tailed weasel
Mink
Raccoon
Spotted skunk or civet cat
Gray fox *
Black bear
Red fox *
Black-tailed deer
Cape Lookout State Park

Information taken from Chester Armstrong's 1965 Edition of the History of Oregon State Parks, includes the following:

Cape Lookout State Park has a special attraction to birdwatchers, trail trampers, and beach relaxers because there are trails, birds, and beaches aplenty in this 1,946.34-acre park. It is located off U.S. Highway 101, about 12 miles southwest of Tillamook, via Netarts and Whiskey Creek Road, along the northern part of the Oregon coast in Tillamook County.

The Wildlife Service has counted 154 species of birds in the park. A long trail leads to the summit of an 800-foot ridge and on down to the point of the cape. From this cape trail, birds can be seen flying to and from nesting and resting places. Each side of the west part of the cape falls abruptly to the sea, but is suitable for nesting by shore and sea birds. The northern part of the park is moderately level.

The beach is long and gently slopes into the water. This makes a fine stretch of beach for general use. The sand is hard and suitable for hiking, and the ocean here is suitable for bathing, fishing and clamming.

Main cover of the park consists of spruce and hemlock timber, with lesser species indigenous to the coast. Approximately 30 acres at the south end of the bay is flooded during winter at periods of high tides; hence tree growth is eliminated in that area.

First acquisition of land for Cape Lookout Park was a gift from the U.S. Lighthouse Service on September 3, 1935, of 975 acres. Six additional tracts were purchased, amounting to 381.63 acres, from 1938 to 1958, one of which was obtained from Crown Zellerbach Corporation in 1939 on which the company retained the timber for 25 years.

Another gift toward this park was 175 acres from the Hill Foundation of St. Paul, Minnesota, on August 9, 1951. The Foundation retained the mineral rights. That part donated by the Hill Foundation was named Louis W. Hill State Park as a subsection of the park.
An exchange of land with Crown Zellerbach Corporation was made in 1959 by giving to the Corporation an isolated 138.64-acre tract of stump land and $3,066 in exchange for 58.15 acres of heavily timbered land adjoining the park. The 138-acre tract had been purchased in 1958 from Tillamook County. Another exchange of lands on February 18, 1963, with Timber Services, Inc., increased the park by 495.20 acres in exchange for 63.60 acres from Cascadia State Park. This transaction resulted in a net park acreage of 1,946.34 acres at the close of 1963.

Cape Lookout Park takes its name from that of the cape. Historians claim that the name Lookout was applied by John Meares, a sea captain, in 1788 to an area approximately 10 miles to the north, now known as Cape Meares. The U.S. Coast Survey charts of 1850 and 1853 show this area to be Cape Lookout and that name still stands.

Park improvements started early in 1952 by constructing a road into the area, a caretaker's cottage, a large car parking area, a day-use camp with water and sanitary facilities, bathhouse and a large overnight camp with all the necessary facilities. Overnight campsites total 196, with trailer sites numbering 53, together with picnic tables, water supply, stoves, fireplaces and comfort stations. There is also a group camp which will accommodate 100 people.

The road was surfaced with rock by Tillamook County after the state completed the grading. The Mountain States Power Company constructed a line into the park in 1952 with the understanding the state would pay a minimum yearly bill of $335.76 for five years. Sand dune stabilization by planting of dune grass started in November, 1951, extending over a period of several years. Some dunes are as high as 50 feet. All bare, sandy areas have been planted. The planting was done by the boys from MacLaren School for Boys under an agreement whereby the state paid each boy $1 for each day worked. The U.S. Coast Guard was granted a permit on July 28, 1943, to construct a telephone line parallel to and about 400 feet from the shore.

A B-17 bomber on coastal patrol October 12, 1943, struck the top of the cape, leaving only one survivor. Later a plaque was placed on the cape to honor those who lost their lives on that patrol.

In late 1949, Jackson Creek was diverted from flowing directly into the ocean by changing the channel into Netarts Bay. The cost was borne by Tillamook County and the Netarts Bay Oyster Growers. The purpose of the creek diversion was to freshen the water in the bay and possibly start a run of salmon and trout in Jackson Creek.
Dedication of the Louis W. Hill State Park took place on September 23, 1954, with several notable guests. Louis W. Hill, Jr., made the presentation and Marshall Dana, personal representative of Governor Paul Patterson, accepted. Main speakers were Otto E. Effenberger, Tillamook County Judge, and C. H. Armstrong, then Oregon State Parks Superintendent.

Since the dedication, many persons have visited the park to see the coastal forest and enjoy the sandy beaches. The use of the Louis Hill Park for recreation makes possible a permanent wildlife sanctuary on Cape Lookout. The cape itself, a finger-like projection about two miles long, is being kept in its primitive state with only a single trail leading to its northern tip.

A timber trespass by E. W. Homstad occurred in 1955 on the northeasterly part of the park for which he paid $376.

Attendance at Cape Lookout Park during 1963 was 147,964 day visitors, 74,682 overnight campers and 1,168 in the group camp.

Camp Lookout Park is affected by the following permits:

<table>
<thead>
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<th>Number</th>
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<th>Name</th>
<th>Expiration</th>
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<tbody>
<tr>
<td>450</td>
<td>7-11-56</td>
<td>Crown Zellerbach Corp-use park road</td>
<td>7-11-64</td>
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<td>1372</td>
<td>3-26-52</td>
<td>Tillamook County-agreement for use of road</td>
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<tr>
<td>1413</td>
<td>9-12-52</td>
<td>Mountain States Power Co. (now P.P. &amp; L.)</td>
<td>Indefinite</td>
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<tr>
<td>1814</td>
<td>1-7-57</td>
<td>Pacific Tel &amp; Tel Co--two pay phones</td>
<td>30-day notice</td>
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<tr>
<td></td>
<td>11-1-62</td>
<td>Tillamook County-easement road</td>
<td>Perpetual</td>
</tr>
<tr>
<td>21681</td>
<td></td>
<td>State Engineer--water right 0.2 c.f.s.</td>
<td></td>
</tr>
<tr>
<td>18861</td>
<td></td>
<td>State Engineer--water right 0.5 c.f.s.</td>
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</table>
274.885 Lease of kelp fields. (1) The division may lease submerged lands owned by the State of Oregon for the purpose of harvesting kelp and other seaweed after consultation with the fish commission and the game commission.

(2) The lease may be for a term of not to exceed 50 years and shall provide for the payment to the State of Oregon of a sum to be fixed by the division for all kelp or other seaweed harvested under the lease, to be paid at the end of each year. The lease shall also be conditioned that for the failure to harvest at least 1,000 tons of kelp or other seaweed, within any one year, from the territory described in the lease, the lease shall be forfeited, at the division's option. Not more than 40 miles of coast line shall be leased to one person.

274.890 Time allowed lessee for survey and erection of plant; filing copy of survey with division. The first lease issued to an applicant under ORS 274.885 to 274.895 with respect to any submerged lands may allow the applicant six months in which to make a practical survey of the field which he has leased, and another 12 months in which to erect a plant and commence operation. The lessee shall, within six months of the time of obtaining the lease, make or cause to be made a practical survey showing the amount and condition of kelp within the territory described in his lease, and shall file a copy of the survey with the director within six months. Upon his failure so to do, the lease shall be canceled by the division.

274.895 Removing kelp without lease. Except in the case of a person harvesting or removing less than 2,000 pounds of kelp each year for the purposes of human consumption, no person shall harvest or remove any kelp or other seaweed from any submerged lands owned by the State of Oregon unless he has first obtained a lease from the division.
APPENDIX 7

Resource Analysis for Master Plan
Cape Lookout State Park

The following resource values and recreation factors have been considered in preparing a master plan.

Location and Development Status

The 1,946-acre park is located on the Oregon Coast 12 miles southwest of Tillamook along the Sand Lake-Tillamook County Highway. It serves as the major park and recreational center for the 28-mile section of the Northern Coast between Nestucca Bay and Tillamook Bay. In this location it lies within two hours driving time of both the Portland and Salem population centers, and 20 minutes from Tillamook and U.S. Highway 101.

Land for the park was initially acquired in 1935 and the area developed for both day use and overnight camping in 1954. The State has an existing investment of over $700,000 in the area, and the facilities now include a 140-unit picnic area with parking for 335 cars, overnight camp of 246 sites, a group camp for 100 people, water and utility systems, 2-1/2 miles of hiking trail, and a service area with a residence.

Significance of the Park

Resources. Cape Lookout State Park contains a wealth of natural resources, scenic interests, and recreational attractions combined within one coastal site which makes this park of special significance. These features include:

(1) The massive timbered Cape which projects 1-1/2 miles into the ocean, the farthest of any Oregon Coast headland, (2) a broad and scenic sandy beach 5 miles in length which is completely contained within the park area, and (3) a unique 4-mile-long sandspit with frontage on Netarts Bay which provides Oregon's only unaltered natural sandspit environment in conjunction with a primitive estuary.
Within these outstanding natural areas are extensive wildlife, marine, and botanical habitats; geological and archaeological interests; and other resource values which are equally important to retain for the future recreational, educational, and scientific research needs of the public since they are not replaceable. These vital resources are also the attractions which complement and give balance to the recreational choice of activities for the large numbers of people who are being accommodated at this park.

Recreation Use. Recreation use of the park is well oriented to family type activities with varied interests and conveniences for all age groups. Present uses are primarily coastal sightseeing, beach play and bathing, beachcombing, picnicking, camping, hiking. The park is also visited by school and youth groups for nature study and scientific research. Netarts Bay provides clamming and fishing opportunities nearby. The camp area serves as an excellent base camp for this portion of the coast.

The average annual attendance for the past 5 years has been 180,000 day use visitors and 105,000 camper nights. About 85 percent of this use occurs in the 5-month period of May through September and more than half of both day and camping use occurs in the two months of July and August. About one-half of the 1969-70 camping facility use was from the Portland-Vancouver metropolitan area. Another one-third of the camping use was from tourists of other states.

Resources to Protect

Unique Areas.

(1) CAPE LOOKOUT (that portion of the Cape which lies south and west of the ocean beach and Cape Creek).

The scenic natural 2-mile-long basaltic rock headland extends 1-1/2 miles into the ocean at elevations of from 400 to 600 feet above the sea. It supports a virgin stand of old growth Sitka Spruce (within the rain forest protected from winter storm winds) well out onto the north slope of the Cape. Vantage points of the coastline include views of Cascade Head, Cape Kiwanda, Sand Lake, Three Arch Rocks, Netarts Bay and Cape Meares. Migrating grey whales swim below the cliffs.
Unique values are:

- Outstanding scenic and wilderness aspects
- Longest cape on the Oregon coast
- Coastal rain forest extending so far seaward
- Mainland bird rookery for California Murres
- Lava-flow geology and sea caves

(2) NETARTS SANDSPIT AND BAY FRONTAGE (that portion of the sandspit northerly of the center of Section 19, T. 2S R. 10W., W. M. and all of the tidelands of Netarts Bay).

The four-mile-long sandspit retains a natural ecology with front-age on Netarts Bay, Oregon's most pristine estuary. Archaeologists have identified Indian village sites there dating back to the year 1400. The scenic stunted pine and spruce groves together with the adjoining meadows, tidal swamps, and sand flats form a natural habitat for wildlife and future nature study, which cannot be duplicated elsewhere. The primitive Netarts Bay tideflats are highly significant for shellfish and scientific research on marine life.

Unique Values are:

- Natural sandspit ecology and scenic relation to bay
- Indian village archaeological sites
- Estuarine environment highly significant to shellfish, seabirds, and scientific research
- Unique wildlife habitat and nature study area

(3) OCEAN BEACH (Cape Lookout to mouth of Netarts Bay)

The scenic 5-mile-long, broad, sandy beach is completely contained within the park area. Views to the south of Cape Lookout are spectacular. Views to the north include the Three Arch Rocks National Wildlife Refuge and Cape Meares.

Unique Values are:

- Most extensive scenic beach on the coast where all the upland frontage use is controlled within the State Park
- Connections of a scenic cape and a natural sandspit within the same coastal park
- Variable recreation experience from intensive used to passive areas on same beach.
NATURAL AREA PRESERVES ADVISORY COMMITTEE

GOALS

1. Cooperate in developing a coordinated program of preserving representative samples of Oregon's typical and unique ecosystem types or natural features by dedicating natural area preserves on public lands.

2. Provide educational and research opportunities in Oregon through access to natural area preserves as basic resources.

3. Compile and periodically update a comprehensive list of natural area locations in Oregon, and maintain a list of natural area preserves needs.

4. Assure perpetual protection to dedicated natural area preserves and maintain preserves in as nearly a natural condition as possible.

5. Encourage the establishment of natural area preserves on qualified areas that appropriate local governments, resource agencies or citizens recommend to the State Land Board and advisory committee.

6. Recommend natural area preserves in suitable locations throughout the state, including those within and near Oregon's population centers.

7. Publish and disseminate appropriate information about natural area preserves.