

Oregon's Natural Area Preserves Program



Third biennial report
to the
STATE LAND BOARD
on the activities in 1977-78
of the
NATURAL AREA PRESERVES ADVISORY COMMITTEE

Salem, January, 1979

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to the

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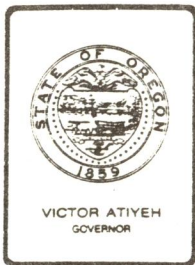
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Natural Area Preserves Advisory Committee

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January 8, 1979

To: Honorable Members of the State Land Board

From: Robert E. Frenkel, Chairman
Natural Area Preserves Advisory Committee

I am pleased to submit this report which covers the activities of the Natural Area Preserves Advisory Committee for the years 1977-1978.

The Committee has completed the first stage of its inventory on all state ownership and has begun the time consuming effort of verifying inventory leads. Inventory procedures form the feature of this report.

Recently, the Committee has come to an agreement with the State Parks and Recreation Branch of the Highway Division (DOT) in establishing within the jurisdiction of Parks, a "research natural preserve" classification. This is significant since this arrangement achieves the goal of the Natural Area Preserves Advisory Committee of protecting significant natural areas but avoids the difficulties of interagency agreements such as would be necessary if the Board were to dedicate a Natural Area Preserve under ORS 273.562 et seq. One of our goals over the next biennium will be to develop comparable structures in other land-holding state agencies.

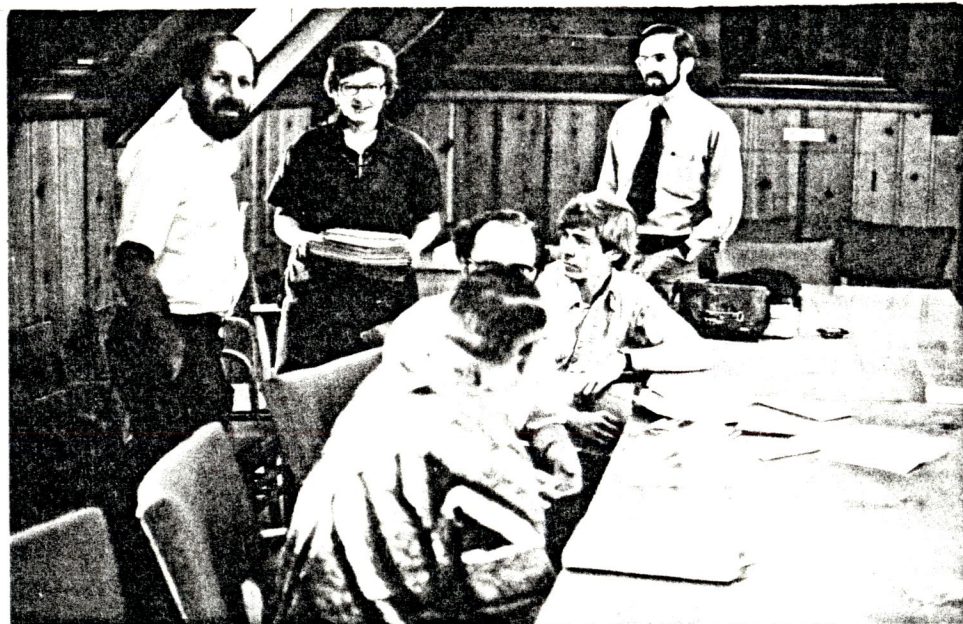
An impediment to the establishment of natural areas on Common School Fund lands arose due to the Attorney General's Opinion (No. 7450, May 17, 1977); namely, that the Oregon Admissions Act prohibits income-producing Common School Grant Land from being dedicated as Natural Area Preserves when such dedication would adversely affect the financial contribution of such land to the Common School Trust Fund.

Despite the problems created by this opinion, the Committee has continued a positive program with strong liason with federal and private groups involved in protecting significant natural areas in Oregon.

Robert E. Frenkel

CONTENTS

Introduction	1
Inventory: An Essential Element of a Natural Area Program	3
Natural Area Preserves Advisory Committee Meetings & Programs	9
Natural Area Protection Procedures	11
Steps in <u>Dedicating</u> Natural Areas	12
Steps in <u>Designating</u> Natural Areas	15
Oregon Registry of Natural Areas	17
Natural Area Preserve Status	19
Established State Preserves	19
Recommended State Preserves	20
Candidate State Preserves	23
Cooperative Activities	27
Appendices:	
Appendix A Natural Area Preserves Statute	29
Appendix B Vegetation Inventory of Certain State-Owned Lands in Selected Oregon Counties	33
Appendix C Meetings, Resolutions and Elections 1977-78	37
Appendix D Rules for Natural Area Registration	43
Appendix E Guidelines for Establishing Research Natural Preserves in Oregon State Parks	45



Natural Area Preserves Advisory Committee Regular Monthly Meeting, July 14, 1977

INTRODUCTION

The Oregon Natural Area Preserves Program was created in 1973 by the Oregon Legislature (ORS 273.562-273.597, see Appendix A). This legislation establishes an eleven-member Natural Area Preserves Advisory Committee to the State Land Board composed of seven appointed voting members and four ex-officio representatives of the principal land-holding agencies: Department of Transportation (State Parks), Forestry Department, State System of Higher Education, and Department of Fish and Wildlife.

The overall goal of the Committee is to provide the state with a scientifically valid natural area program based on the principles of: (1) defining a finite set of representative and unique ecosystem types and natural area needs, (2) searching systematically to find the best natural area candidates to fill these predetermined type-needs, and (3) building a non-duplicative natural area system in full coordination with federal and private sector efforts.

Committee members are unpaid but are reimbursed for expenses. The Committee has no staff and most Committee work is developed by volunteer effort of Committee members. A portion of the Committee's budget is allocated to contracting for particular services. The Division of State Lands, on behalf of the State Land Board, provides budgetary service, coordinates the establishment of preserves and acts a liason with other state agencies.

The main focus of the Committee activities is to investigate natural areas on public land, inventory, study and report on natural area values. The Committee also provides planners with information on natural area locations and works for natural area protection throughout the state on all lands. The State Land Board may, upon the advice of the Committee, set aside areas of public land as natural area preserves and maintain a registry of natural areas.

Report written by:
Robert E. Frenkel

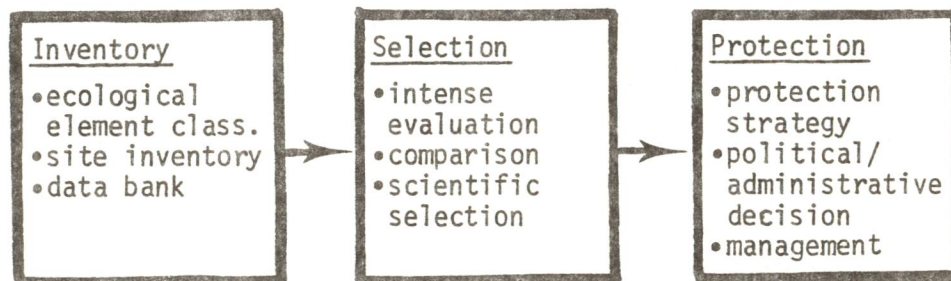
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INVENTORY: AN ESSENTIAL ELEMENT OF A NATURAL AREA PROGRAM

Robert E. Frenkel

Introduction

The object of Oregon's natural area program is to develop an organized system of preserves which are chosen by clear scientific criteria and which retains the maximum scientific, educational and ecological utility now and into the future. Inventory and protection are two indispensable components of this program. Natural area inventory refers to the general process of identification of potential natural areas regardless of whether the sites are protected. Inventory implies that a systematic and comprehensive approach has been taken in identifying sites, usually involving a classification of natural area types, qualifying criteria, field survey, and data banking. Protection refers to the steps taken in securing against destruction a selected natural area and involves the political process, resource decisions, and ultimately management considerations. Linking these two essential components is the natural area selection process which involves the detailed study of inventoried sites, the selection of the best candidate based on scientific and land resource management considerations and comparisons. Selection feeds on inventory. These essential components can be schematically related as follows:



While these components might be viewed as distinct from each other, they are very interdependent. A natural area inventory and data banking program has little meaning and use without an associated protection program. A protection program without a comprehensive inventory is likely to be politically, scientifically, and economically indefensible, with much duplication of natural area types and the inadvertent inclusion of poor quality natural areas.

From its inception, in 1973, the Natural Area Preserves Advisory Committee has linked these two components. Oregon's natural area inventory program is now a well developed but, continuing responsibility of the Committee.

Classification

To most efficiently select sites for natural area protection, the first step in the inventory process is to develop a classification of natural area types. This is a list of specific elements of the natural world. Elements include plant communities, special plant and animal species, aquatic types, and geological types, i.e., a ponderosa pine/bitterbrush plant community, Aster curtus (a proposed endangered plant species), or a vernal pool in Willamette Valley. The end product on this classification is an itemization of scientifically defined types. The ultimate objective of a natural area program would be to represent, and therefore protect, each element at least once. In this way, undue duplication of the same type would be avoided and an effective and complete representation of the natural world in the natural area system achieved.

Natural area classification is largely completed in Oregon with a few notable gaps. In December of 1973 a group of scientists and land resource specialists was convened at Wemme, Oregon by the Director of the U.S. Forest Service Forest and Range Experiment Station to develop a list of natural area "cells" (the equivalent of elements, above) which would constitute the natural area needs for the Pacific Northwest. The efforts of this workshop appeared as "Research Natural Area Needs in the Pacific Northwest: A Contribution to Land-Use Planning"^{1/}. This publication, generally referred to as "the yellow book", has served as the blue print for the natural area programs in Oregon and Washington at the federal, state and private sector. For Oregon, about 450 "cells" or elements needing protection were listed. Since most natural areas include several elements, an initial system of about 170 preserves in all ownerships is implied. Of this roster, about 50 preserves have already been dedicated representing about 125 "cells", most of these natural areas are on federal lands.

The Nature Conservancy's Oregon Natural Heritage Program has been elaborating "the yellow book" classification and has further computerized their classification as an "element file" in which is stored all general information on a given element relating to ecology, references, etc. The Heritage Program, in fact, has organized their basic inventory around elements of natural diversity in Oregon.

Both the aquatic system classification for Oregon and the coastal ecosystem classification are in need of improvement. Presently a classification of marine types is not available and the development of such a classification is one of the priority items of the Natural Area Preserves Advisory Committee during 1979.

^{1/}Dyrness, C.T., et al. Research Natural Area Needs in the Pacific Northwest: A Contribution to Land-Use Planning. USDA, Forest Service, Gen. Tech. Report PNW 38, Pacific Northwest Forest and Range Experiment Stan., Portland, 1975, 231 pp.

Site Inventory

A list of natural area elements or types is the basic skeleton of a natural area system. Each element will be represented at one or more sites. The second step in the inventory process is to survey the state for sites or tracts of land which contain the natural area elements. Survey, necessarily is expensive and three levels of survey have been undertaken by the Natural Area Preserves Advisory Committee.

The Committee has initially employed remote sensing technology (high-flight, color infra-red imagery) to cull-out those areas of state ownership that are too disturbed or otherwise obviously not potential natural areas. The entire state has now been surveyed using this methodology (Appendix B). A summary of the remote sensing inventory appears in Table 1. As can be seen only 7.1% of state-owned lands appear to have natural area potential. The average parcel size of state-owned land with natural area potential is 340 acres or roughly a half a section. It must be emphasized that this is but the first stage in the inventory process. Field checking at this level of inventory is brief and preliminary and possibly 60% complete. Besides sites identified by remote sensing techniques, the Committee has compiled a list of potential sites gleaned from the literature, from discussions with scientists, naturalists, and resource managers. The Nature Conservancy has been particularly helpful in providing the Committee with such unverified leads.

The second step in site inventory is to verify the raw leads derived from remote sensing and other sources. This is done by field survey involving site inspection and site report preparation by a trained specialist who spends from an hour or two to a day investigating the site. A total of 155 of state-owned sites have been field checked, many of these under contract. Among the site characteristics which are field checked are the natural area elements present at the site, the quality of the elements, degree of disturbance and general potential of the site to serve as a natural area. Our experience to date suggests that about 25 percent of the unverified leads qualify as natural areas after field checking. This amounts to about 1.8 percent of the state-owned land.

Part of the inventory process requires a qualitative evaluation of the natural area characteristics of a site. Two, overall distinct evaluations are ultimately made: (a) whether an area qualifies based on scientific criteria and (b) whether an area qualifies based on resource management, economic and political criteria. The latter evaluation is part of the protection component. The application of scientific criteria is part of the inventory process. The following criteria are commonly used to determine whether an area qualifies to be included in the site inventory.

Table 1. Summary of Remote Sensing Inventory of State-Owned Lands for Natural Area Potential¹

County	Number of Parcels Having Natural Area Potential	Total Acres ² of State Land Surveyed	Total Acres Having Natural Area Potential
Baker	11	19,900	320
Benton	7	18,800	870
Clackamas	6	10,900	3,100
Clatsop	38	156,800	17,100
Columbia	5	16,200	2,800
Coos	4	66,524	1,000
Crook	21	28,300	6,760
Curry	9	11,100	3,434
Deschutes	26	35,200	1,920
Douglas	10	50,000	2,360
Gilliam	6	7,000	80
Grant	36	12,000	2,760
Harney	52	216,835	30,439
Hood River	7	5,800	1,880
Jackson	4	4,833	680
Jefferson	4	6,400	4,315
Josephine	3	9,083	1,120
Klamath	10	35,100	6,700
Lake	25	877,811	12,747
Lane	14	37,200	4,145
Lincoln	11	24,000	1,210
Linn	5	23,200	18,488
Malheur	20	276,200	13,120
Marion	17	37,200	7,100
Morrow	3	23,900	40
Multnomah	5	13,000	1,940
Polk	7	8,700	1,493
Sherman	3	3,900	120
Tillamook	13	316,100	8,480
Umatilla	19	27,300	10,593
Union	7	11,000	400
Wallowa	8	13,200	1,040
Wasco	21	17,300	1,841
Washington	8	53,400	1,080
Wheeler	9	6,600	3,360
Yamhill	2	1,800	1,020
TOTAL	519	2,482,486	175,855

¹Based on surveys prepared for the Natural Area Preserves Advisory Committee under contract with the Environmental Remote Sensing Applications Laboratory (ERSAL) at Oregon State University, 1974 through 1977

²Approximate acreage of state-owned land in counties regardless of natural area potential which were surveyed

1. The area must substantially retain its natural character (c.f. ORS 273.562 (3)).
2. The area must be defensible in terms of retaining that character.
3. The area must be viable in having the ability to perpetuate itself or its natural sequence of development.
4. The area should have either: (a) natural area elements which are representative of their class in Oregon, (b) natural area elements that are unique or scarce in Oregon, or (c) both of the above.

Particular attention is paid during the site inventory stage to criteria 1 and 4.

The third step in site inventory is to study the best and most promising tracts in detail prior to a full scale establishment report or preserve analysis. Relatively few sites have received this preliminary study. Of the 155 verified state-owned leads, about 20 tracts have received this more thorough evaluation.

Data Management

To select the most promising candidates for natural areas, comparison among sites supporting specific natural area elements must be made. This involves data management. Ultimately the Natural Area Preserves Advisory Committee would hope to have a cross file of natural area elements and verified sites. Presently the data management system involves a file of verified sites by county with elements listed for each site. This arrangement is cumbersome but satisfactory given the present level of Committee activity and budget.

The Nature Conservancy's Oregon Natural Heritage Program has developed a sophisticated data management system based on the element file in which natural areas on private lands are most thoroughly inventoried. It is hoped that given time and funds, state lands could be brought under this more thorough data management system.

From this brief overview one can see the logical steps in the natural area inventory process which follows a carefully developed procedure. Inventory provides the grist for the more difficult decision making process, but it is absolutely essential if responsible decisions are to be made when dedicating natural areas.

NATURAL AREA PRESERVES ADVISORY COMMITTEE MEETINGS AND PROGRAMS

During the period covered by the report, January 1977 through December 1978, the Committee held 21 meetings and one telephone conference call. Forty-one resolutions were adopted (see Appendix C). Meeting attendance by seven voting members averaged 76 percent and by four ex-officio agency members 35 percent. Average meeting attendance has been nine. A staff member of the Division of State Lands is almost always present and occasionally liason individuals representing DLCD and the U.S. Forest Service attend. During a good part of the biennium the Committee was short two members due to unfilled resignations.

Inventory of natural areas was one of the major programs of the Committee during the 1977 biennium. The Committee completed its remote sensing inventory of all state-owned lands in all counties by contract. By this means an additional 178 state-owned sites were inventoried and 30 sites were field surveyed. Committee members continued to investigate natural area candidates; two preserve analyses were completed (Blacklock Point and Saddle Mountain); four are in preparation; and three new candidate preserves were proposed (Saddle Mountain, Washburne Wayside, and Santiam Bar). Status of dedicated and candidate preserves follows in the section NATURAL AREA PRESERVE STATUS.

A considerable amount of time has been expended by one Committee member, Jean Siddall, on threatened and endangered plant species. Mrs. Siddall has been retained by the U.S. Fish and Wildlife Service, under contract, to write status reports on threatened and endangered plants in Oregon listed in the Smithsonian Institution report ^{1/}.

The Committee has continued it's active cooperation with the federal and private sectors in natural area efforts, playing a crucial role in the imminent establishment of the Boardman Grassland RNA on the U.S. Navy Bombing and Gunnery Range and in the protection of a western red cedar stand by The Nature Conservancy in Rockaway, Tillamook County.

The Committee entered into six contracts as listed:

1. Environmental Remote Sensing Applications Laboratory (ERSAL-OSU) for the inventory of 11 counties .
2. The Nature Conservancy for field survey of 20 sites.
3. Paul Alaback for a preserve analysis of Saddle Mountain, Clatsop County.
4. William Copeland for floristic survey of Eight Dollar Mtn., Josephine County.

^{1/} Report on the Endangered and Threatened Species of the United States. Washington, D. C. : The Smithsonian Institution, January, 1975. (also in the Federal Register, July 1, 1975).

5. The Nature Conservancy for preserve analysis of Onion Peak, Clatsop County and Ladd Marsh, Union County.
6. David McCorkle for a site survey of Dutchman's Peak Ridge, Jackson County.

Additionally, the Committee was fortunate to have the able assistance of paid student interns: Laurie Hazen (secretary), Steve Meyers (field assistant), Bob Martin (resource assistant), and Richard Leman (inventory assistant).

In 1977, Harney County filed an appeal before the Land Conservation and Development Commission (LCDC) of the State Land Board's Order which dedicated Steens Mountain Summit as a natural area preserve. The basis for this appeal was alleged to be failure of the Division of State Lands (State Land Board) to comply with LCDC Goals 1 and 2. The Commission held a hearing on November 18, 1977 and on January 6, 1978 entered an Order vacating the Board's dedication Order. With detailed technical assistance from the Natural Area Preserves Advisory Committee, the Committee, the Division and the Board were able to gain a rehearing of this appeal on May 5, 1978. The Commission dismissed Harney County's appeal on August 1, 1978. Subsequently, the County has filed a Petition for Judicial Review of the LCDC dismissal to the Oregon Court of Appeals. This complex quasi-judicial proceeding involved much time and effort of the Committee as well as substantial Committee funds for legal assistance.

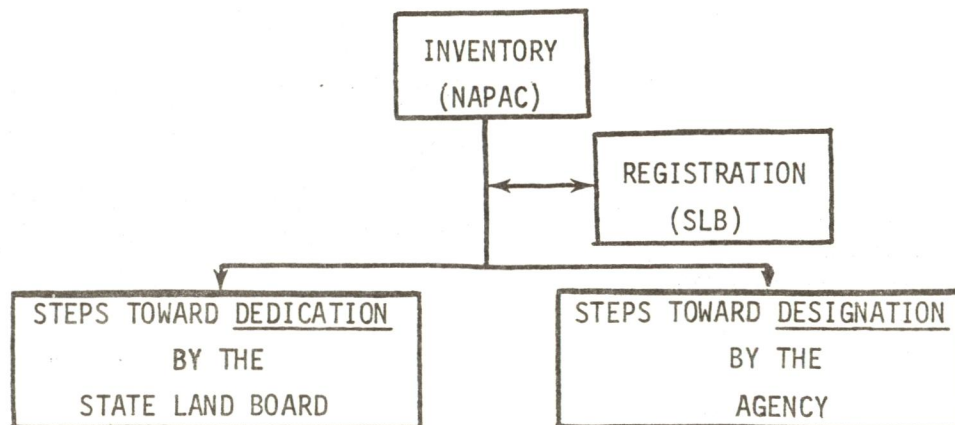
NATURAL AREA PROTECTION PROCEDURES

Three routes are possible in protecting natural areas for scientific and educational purposes on state lands. First "natural area preserves" may be dedicated by the State Land Board under ORS 273.562 et seq. Second, a protective category might be established by a Land agency within its jurisdiction and an area may be designated by that agency as a natural area. The State Parks and Recreation Branch has developed this procedure and can now classify sections of state park lands as "research natural preserves". Third, an agency may take an ad hoc management approach and protect significant areas in a defacto manner.

Each of these routes has advantages and disadvantages. "natural area preserves" receive the greatest degree of protection but require considerable documentation and frequently involves inter-agency agreements which may be politically difficult to achieve. Agency designation may also require careful study and recommendation but avoids interagency agreements and provides the agency with somewhat greater management flexibility. Security of protection may be great or slight depending on how the designation is viewed by the agency. Ad hoc protection usually occurs in an unsystematic manner and protection is liable to be very weak and subject to change. The agency, however, achieves maximum management flexibility.

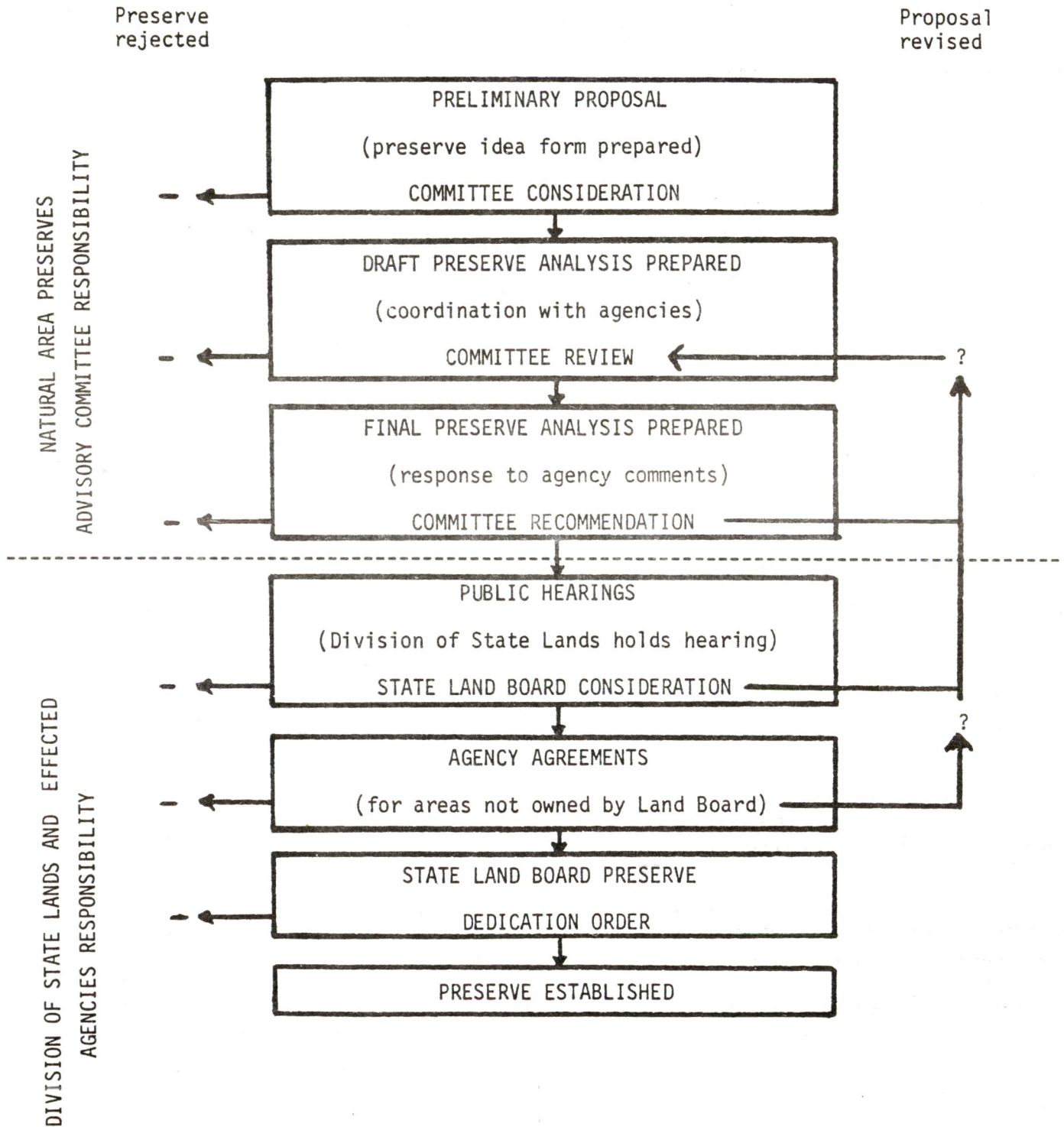
The Natural Area Preserves Advisory Committee has been working along the first two routes in protecting natural areas on state lands. Both of these routes depend on a systematic inventory of state lands, selection of natural areas based on scientific and carefully thought-out criteria, and thorough study and documentation of natural area values. These two routes are outlined below.

Prior to either dedication or designation of Natural Areas, the Committee inventories state-owned lands (inventory procedures have been discussed on pages 3 to 7 of this report). The Committee may also recommend registration of areas which is merely an accepted list of qualifying natural areas.



Steps in Dedicating Natural Area Preserves

(revised July 1975)



Preliminary Proposal

The idea for a natural area preserve may originate with the committee, various agencies, research groups, or individuals, but must be submitted through the committee for consideration. Initial information includes the precise location of the candidate area, a statement of why the area deserves protection, general biological values, and a brief consideration of management issues. The committee evaluates the natural area preserve proposal and determines whether a preserve analysis is warranted. If the committee agrees to move forward with a study, the owning and/or managing agency and State Land Board members are informed. The county is also informed at this stage.

Preserve Analysis

This basic report contains detailed information on the candidate area including an analysis of purpose; ecological, geological, and other biotic and physical values; a discussion of the history of the area; its present and projected management; details of ownership, leases, agreements, rights-of-way, etc.; and an economic evaluation of resource. The preserve analysis should contain enough detailed information so the committee may adequately assess the desirability of dedicating a given parcel of land as a natural area preserve. The draft analysis is reviewed by agency personnel and others. Their comments and suggested revisions (including boundaries) are included in the final preserve analysis.

Public Hearings

After the Committee's recommendation, the initiative for completing the preserve dedication process lies with the Division of State Lands, acting on behalf of the Land Board. A public hearing is conducted by the Division. Changes in the preserve proposal can come about from the resulting public input. The Land Board also considers the public hearing record in determining whether to proceed with establishment. Coordination with the counties also takes place at this step.

Agency Agreements

If the Land Board does not own the candidate preserve, then an agreement between the owning agency and the Land Board must be signed to allow it to be dedicated. Another important part of this process is the development of a preserve master plan. The master plan specifies

the managing agency's responsibilities, specific management practices allowed, access arrangements, and any physical facilities allowed.

State Land Board Preserve Dedication Order

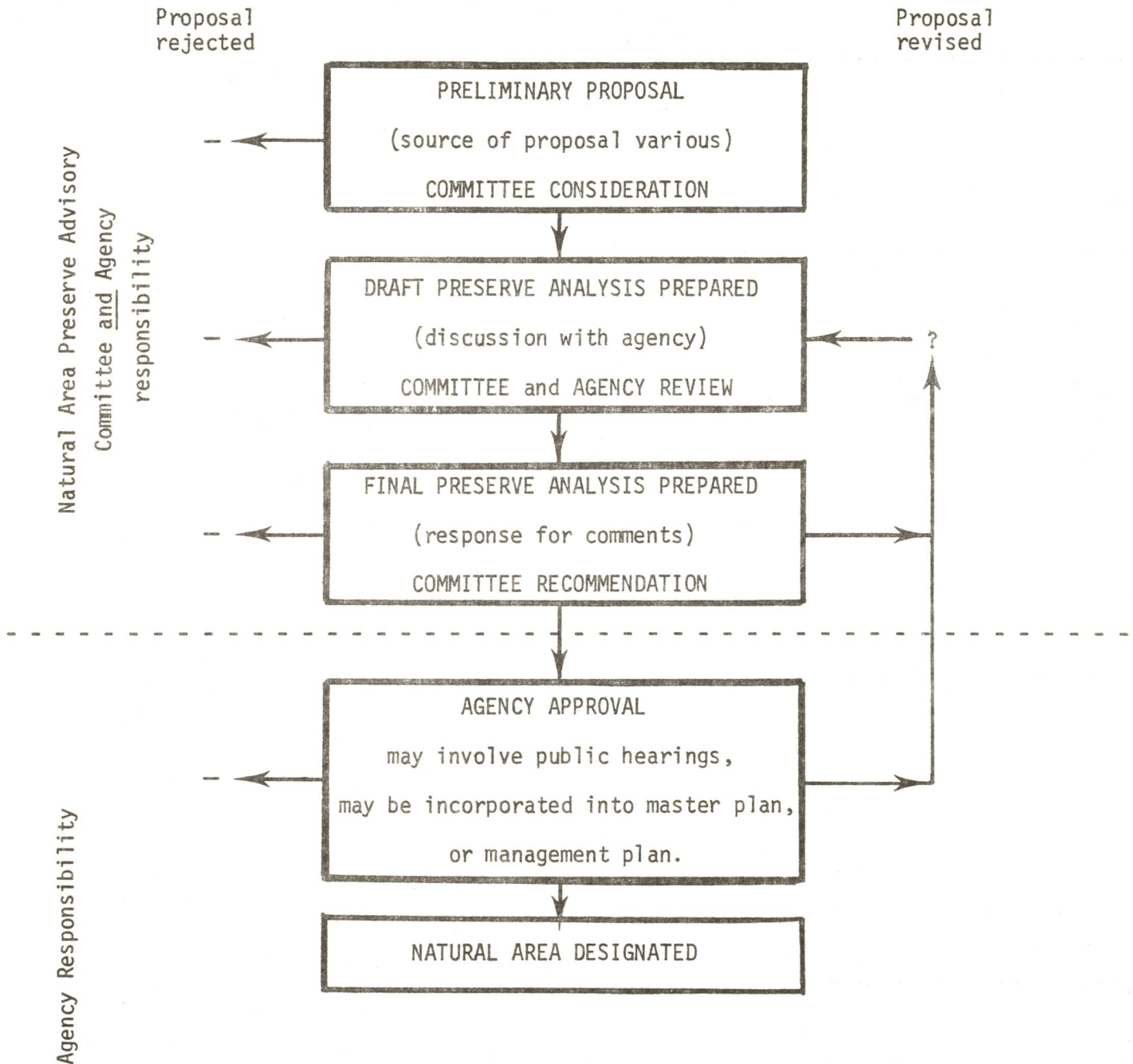
The basic set of documents necessary for natural area preserve establishment consists of (1) A preserve analysis (2) A master plan and (3) Agreements between the State Land Board and any agency necessary to establish a preserve. These documents constitute the Articles of Dedication, the basis upon which the Land Board issues an order establishing a preserve. This order includes a legal description of the lands, the reasons for establishment, and conditions upon the use of the area.

Agency Designation

A procedure or guidelines should be developed by the land-owning agency reflecting their own mission and management concerns. An example of such guidelines appears in Appendix E. To be compatible with the concerns and objectives of the Natural Area Preserves Advisory Committee, the guidelines should reflect the following principles:

1. Areas should be selected based on scientific criteria.
2. Areas may protect ecosystems (representative or unique) needed as part of the state system of natural areas.
3. Areas may protect a population (or several populations) of plants or animals together with their associated habitat.
4. Defensibility of the area should be assured.
5. Integrity of the area should be assured, i.e., the area should be protected from destruction.
6. Viability of the ecosystem(s) and/or population(s) should be assured, i.e., perpetuation of the biotic complex is assured.
7. An organized review process should be established.

An example of the steps that might be taken in designating a natural area within the jurisdiction of the agency is shown on the facing page.



OREGON REGISTRY OF NATURAL AREAS

Procedures and rules for implementing the Oregon registry of natural areas were adopted by the State Land Board and Division of State Lands on August 5, 1975 (c.f., Rules 141-50-890 through 141-50-930, see Appendix D). The purpose of the registry is to provide a central and continuing listing and documentation of natural areas in Oregon which are suitable for inclusion within a natural area preserve as provided under ORS 273.577 (1) (c), regardless of ownership.

With the formalization of the registry procedure the Natural Area Preserves Advisory Committee has developed a link between the inventory of potential natural areas and the actual protection by dedication or designation. An area may be registered by the State Land Board, if it fulfills the definition of a natural area, is of statewide ecological significance, is defensible, and is viable. Registered natural areas may be on federal, state, or private land. When on private land, permission to register a parcel must be obtained from the landowner. Registered natural areas are evaluated for their representativeness of ecological elements (the idea of having typical areas), uniqueness, and ecological diversity. The registry is maintained by the Committee and the Division of State Lands. It consists of: a card file; a summary sheet giving particulars for the parcel; a detailed 13-page data form describing the area and the availability of information concerning the tract; and other material such as maps, articles of dedication, consent form, etc. The registry, therefore, represents a list of parcels qualifying as natural areas for which documentation has been accumulated. Although the registry confers recognition to an area, it does not provide protection. However, an area which is already protected may be registered.

The Committee has prepared a set of guidelines for completing the registry form. Currently about 60 areas are in preparation for registration. Eight areas below have been proposed to the Land Board for registration but no action has been taken by the Board on these recommendations.

- McDonald Forest candidate NAP (SBHE)
- Steens Mountain Summit NAP (SLB)
- Cape Lookout candidate Research Natural Preserve (SPRB)
- Pigeon Butte RNA (U.S. Fish & Wildlife Service)
- Willamette Prairie RNA (U.S. Fish & Wildlife Service)
- Neskowin Crest RNA (U.S. Forest Service)
- Blacklock Point candidate Research Natural Preserve (SPRB)
- Saddle Mountain candidate Research Natural Preserve (SPRB)

NATURAL AREA PRESERVE STATUS

Established State Preserves

The following two areas totaling 267 hectares (659 acres) have been dedicated as Oregon natural area preserves:

STEENS MOUNTAIN SUMMIT NATURAL AREA PRESERVE, HARNEY COUNTY

Location: T.33S., R.33E., Section 36

Size: 190 hectares (471 acres)

Date dedicated: November 30, 1976

Owner and Manager: State Land Board--Division of State Lands

Natural features: Representative of bunchgrass and rare alpine tundra-like communities of high fault block mountains, Basin and Range Physiographic Province. The area includes a community of low-growing cushion plants and tufted grasses in windswept summit areas of extended snow-free growing season with rocky and relatively rock-free phases. At the base of the glacial cirque forming upper Wildhorse Gorge are wet meadows (Draba sphaeroides v. cusickii), the Steens Mountain paintbrush (Castilleja steenensis), and Peck's thistle (Cirsium peckii). The rare Malheur shrew (Sorex preblei) is believed to occur within the area also.

A grazing lease for eight animal unit months every other year, which affects only the lower wet meadow (about 20 hectares), will continue.

During the biennium Harney County appealed to the LCDC to invalidate the Land Board's dedication order on the basis of non-compliance to LCDC Goal 1 (Public Involvement) and Goal (County Coordination). The LCDC denied the appeal (LCDC Appeal No. 72, August 1, 1978). Subsequently Harney County has appealed this decision to the Court.

WINCHUCK SLOPE NATURAL AREA PRESERVE, CURRY COUNTY

Location: T.41S., R.12W., Section 16

Size: 76.7 hectares (189.4 acres)

Date dedicated: November 30, 1976

Owner and manager: State Land Board--State Forestry Dept., Coos Bay district.

Natural features: Representative of mixed evergreen forest and chaparral of the westernmost Siskiyou Mountain Physiographic Province. The preserve is at the extreme northern limit of the range of the coast redwood (Sequoia sempervirens), which can be found in isolated patches. Mesic Douglas-fir (Pseudotsuga menziesii)--western hemlock (Tsuga heterophylla) forest, including some old-growth, occupies ravines along the upper arm of the west fork of Salmon Creek. Douglas-fir--tan oak (Lithocarpus densiflora) forests of both the old-growth and second growth (post wildfire) condition are present. The most exposed, gravelly south-facing slopes support a thicket of manzanita- (Arctostaphylos columbiana) type chaparral. The area is underlain by a Jurassic massive sandstone of the Dothan formation.

Recommended State Preserves

The following four areas totaling 1,429 hectares (3,530 acres) have been formally recommended by the Natural Area Preserves Advisory Committee for protective status:

McDONALD FOREST, BENTON COUNTY

Location: T.11S., R.5W., portions of Sections 8,9,16, and 17

Size: 125.5 hectares (310 acres)

Date recommended: October 24, 1976

Owner and Manager: State System of Higher Education--
Oregon State University, School of Forestry.

Natural Features: Old-growth and intermediate-aged forest, former oak savanna, and hill prairie of the valley-margin vegetation zone, Coast Range Physiographic Province. The area is an erosion-resistant northeast-southwest trending intrusive ridge of Siletz River Volcanics (basalts) of Eocene age. On exposed south-facing slopes are found remnants of red fescue (Festuca rubra) hill prairie. A perennial stream flows down from a cool, moist north-facing cove; its entire upper watershed is an old-growth Douglas-fir--bigleaf maple (Acer macrophyllum) forest. Intermediate aspects support a former Oregon white oak (Quercus garryana) savanna, now being enroached upon by Douglas-fir; grand fir (Abies grandis) occurs in the forest understory generally but forms a dominant canopy only in groves of a few trees. The old-growth forest is an important area of habitat for the threatened northern spotted owl.

Most of the hill prairies were planted with ponderosa pines (Pinus ponderosa) several decades ago. The shade cast by stunted survivors and the continued enroachment of oak and Douglas-fir onto these areas may require mechanical removal in addition to a prescribed fire plan in order to recreate natural conditions.

Action taken: A preliminary preserve analysis has been issued. A detailed management plan is being developed in cooperation with Oregon State University.

CAPE LOOKOUT, TILLAMOOK COUNTY

Location: T.3S., R.11W., portions of Sections 1,2, and 3
T.2S., R.11W., portions of Section 36

Size: 433 hectares (1067 acres--including a 200 meter ocean buffer)

Date recommended: May 8, 1975

Owner and Manager: Upland--State Parks and Recreation Branch,
Department of Transportation; Submerged Land--
State Land Board.

Natural features: Old-growth and young Sitka spruce (*Picea sitchensis*)/salal (*Gaultheria shallon*) and Sitka spruce--western hemlock (*Tsuga heterophylla*)/sword fern (*Polystichum munitum*) forests and coastal shrub, on a Miocene-age Columbia River Basalt (submarine and subaerial flows) headland of the open northern Oregon coast. The steep cliffs and sea caves of Cape Lookout are one of the best areas of concentration for marine birds, especially colonial-nesting birds, along the Oregon coast.

Tufted puffins, auklets, California murres, and murre gulls can be found. Harbor seals, and Steller's sea lions utilize the near shore waters and terrace ledges of the cape, while California gray whales pass through on their migrations. The cape is often covered with fog, the droplets of which collect on tree needles and fall to the ground during the dry summer months. A lush forest with luxuriant ferns and mosses and huge Sitka spruce over two meters in diameter are present. Rich tidepool communities and one isolated sand beach are also present.

California brown pelicans and bald eagles have been reported from the area.

Action taken: A preserve analysis has been issued. Establishment is awaiting a decision by State Parks and Recreation Branch.

BLACKLOCK POINT, CURRY COUNTY

Location: T.31S., R.15W., portions of Sections 17,18,19,30 & 31.
T.31S., R.16W., portions of Sections 24 and 25 in
Floras Lake State Park.

Size: 202 hectares (500 acres)

Date recommended: September 16, 1978 as a State Parks Research
Natural Preserve

Owner and Manager: Upland--State Parks and Recreation Branch
Department of Transportation; Submerged lands--
State Land Board.

Natural features: Most important are the highly acid, infertile podsollic soils (Blacklock Soil Series) which support extensive stands of dwarfed shore pine (*Pinus contorta*) and Sitka spruce (*Picea sitchensis*) growing in slight depressions intermingled with taller pine and spruce on low ridges and shore front terraces. Narrow strips of ephemeral bog are found in areas with poor drainage and support bog huckleberry (*Vaccinium uliginosum*) and *Sphagnum* spp. Facing the Pacific Ocean are: herb-rich, wind pruned headland communities on eroding sand stone terraces; a prairie headland on Blacklock Point, historically heavily grazed; rock outcrop; and beach sand. The area also will protect several plant species listed as rare, threatened or endangered and will represent the only formally protected ocean front assemblage along the Oregon south coast.

Action taken: A preserve analysis was issued, July 1978, and the area recommended to the State Parks and Recreation Branch as a Research Natural Preserve and to the State Land Board as a Registered Natural Area on September 16, 1978. On October 13, 1978, State Parks implemented an Interim Management Plan pending completion of the Floras Lake State Park Master Plan.

SADDLE MOUNTAIN, CLATSOP COUNTY

Location: T.6N., R.8W., portions of Sections 28,29,33 & 34 in Saddle Mountain State Park.

Size: 668 hectares (1,653 acres)

Date Recommended: December 15, 1978 as a State Parks Research Natural Preserve.

Owner and Manager: State Parks and Recreation Branch
Highway Division, Department of Transportation.

Natural features: Most important are the extensive areas of open vegetation on meadows and rock outcrops near the three summits of Saddle Mountain. Saddle Mountain is a refugium for various plant species from previous periods of both cooler and warmer climate giving it an unusually rich flora. Nineteen plants listed as rare, threatened or endangered in Oregon are found in this area. Besides the habitats rich in species, there are old-growth forests, some of which contain among the largest western hemlock in the Oregon Coast Range, Sitka spruce communities, and patches of true fir (Abies procera) on the north side of the ridges. Several deeply incised perennial streams with natural debris dams, and little disturbed, provide important headwater habitat for anadromous fish. Extensive areas of well-developed second-growth forest and riparian alder (Alnus rubra) stands are found on the lower south slope of the proposed preserve.

Action taken: A preserve analysis was issued October 1978, and the area recommended to the State Parks and Recreation Branch as a Research Natural Preserve and to the State Land Board as a Registered Natural Area on December 15, 1978.



Old-growth Sitka spruce in the northwest part of the proposed Research Natural Preserve in Saddle Mountain State Park.

Candidate State Preserves

Ladd Marsh, Union County--Owned by Department of Fish and Wildlife

Final field data has been collected for this area. The draft preserve analysis being prepared under contract will be issued soon, proposing a 60 to 70 acre preserve. It will be located in a transect from high ground to open water in the non-shooting, or refuge, portion of the Wildlife Management Area. Included will be the best remaining examples of wet meadow and tule marsh vegetation available in north-east Oregon.

Wappato Marsh, Columbia County--Owned by Department of Fish and Wildlife

This area is awaiting recovery from very heavy grazing in 1975. A fence to keep cattle from the area has been built. The Committee is monitoring the area to judge the rate of recovery.

Yaquina Bay Tide Flats, Lincoln County--Owned by Oregon State University

This 258 acre parcel is located next to the Marine Science Center at Newport. The Committee collected data on the biology of the area and evaluated the amount of public use, the potential impact of a condominium and boat basin proposed near by, and the availability of alternative sites. On April 14, 1977 the Committee dropped Yaquina Bay Tide Flats from active consideration as a natural area preserve.



Rock outcrops and grass balds on Saddle Mountain in the proposed Research Natural Preserve in Saddle Mountain State Park.

Footlog Bench, Douglas County--Owned by the State Land Board (Elliott State Forest)

This tract of about 60 hectares (150 acres) is heavily covered with a mixture of 400 year old Douglas-fir old-growth and second growth originating from the Coos Fire of 1868. The western hemlock (Tsuga heterophylla)/sword fern and western hemlock/rhododendron (Rhododendron macrophyllum)/Oregon grape (Berberis nervosa) habitat types are present. The area occurs in a steep region of landslide topography. The level central "bench" within the area is an ancient debris pile. Minor cracks and slippages are still evident within the area. Footlog Creek bisects the northern portion of the area. The area is excellent habitat for older forest birds and mammals as well as cavity nesting and feeding animals.

Preliminary field data, including a census of all trees within a full hectare (2.47 acres) of old-growth, have been collected for this parcel. The dollar value of the timber here is very high. The Committee has been considering this versus the natural area values of the tract before taking further action.

Scholfield Ridge, Douglas County--Owned by the State Land Board (Elliot State Forest)

A 28 hectare (68 acres) area in the coastward portion of the Elliot State Forest has been identified, with the help of state forestry officials. The area contains mixed Sitka spruce, hemlock, Douglas-fir and red cedar (Thuja plicata) forest type. The area also includes the headwall and upper portion of a small stream drainage. Very large old-growth Douglas-fir are present. Old-growth stands containing Sitka spruce are practically nonexistent for many miles along the coast north and south of the parcel.

Preliminary field data, including a full hectare tree census have been obtained for the parcel. More field data are being collected and a careful assesment of the impacts on the timber resource base is being made before final Committee recommendation.

Netarts Sand Spit, Tillamook County--Owned by State Parks and Recreation Branch, DOT, Cape Lookout State Park.

This undeveloped portion of Cape Lookout State Park contains the best estuarine salt marsh along the Oregon coast which is fronted by a sand spit. Active and partially stabilized dunes face the ocean. Behind the spit are low sand and immature high salt marsh vegetation types. The area is excellent habitat for shore birds. The entire Netarts Bay region was the subject of a special National Science Foundation student study of the estuary as a system; the report from that project will aid the Committee in issuing a draft preserve analysis soon. The preserve analysis will be issued during early 1979.

Eight Dollar Mountain, Josephine County--Owned by the State Land Board

The Committee approved the investigation of this area because of its apparent potential to fill several natural area type needs including many rare plants associated with serpentine bogs. Another site, Woodcock Creek, which could potentially represent the same type needs, has been brought to the attention of the Committee. The Committee is currently conducting a careful comparison of the two areas.

Inter American Nickel Company applied for a minerals exploration permit for Eight Dollar Mountain in late winter 1978. At the request of the Committee, the Division of State Lands delayed granting the permit to allow for a floristic survey of state-owned land on this mountain. A report was issued August 15, 1978 which led to the Committee's recommendation that the permit be denied because of the potential damage to an exceptional group of rare plant species. In October, the Division denied the exploration permit. The Committee will be developing a preserve analysis on this parcel during the forthcoming biennium.

Onion Peak, Clatsop County--Owned by State Forestry Department, State Land Board, and a private land owner.

This isolated high peak near the coast supports a subalpine-type "grass bald" and "rock garden" vegetation in basalt talus slopes. The small summit area with its fringe of Pacific silver fir (Abies amabilis) trees that remain after logging in the mid 1960's is recognized as one of the finest "rock gardens" in the coast range. Eleven rare or endangered plant species are known from the peak. The Committee is collecting further data on the area and has preparation of a preserve analysis under contract.

Tyron Creek State Park--Owned by State Parks and Recreation Branch, DOT

One ecosystem type need which is very difficult to fill through the dedication of a pristine area is western red cedar forest in the northern Willamette Valley. However, this large state park in the heart of the Portland metropolitan area contains a fine second growth forest along most of a small watershed drainage. The cedar forest grows in moist sites associated with poor drainage, the result of active unstable soils. Without such favorable microsites this interesting forest type would ordinarily not be able to survive in the Willamette Valley.

The Committee is currently developing the exact boundaries for a preserve proposal; most field data has been collected.

Washburne Wayside--Owned by State Parks and Recreation Branch, DOT

A small stand of old-growth Douglas-fir (Pseudotsuga menziesii), one of the best representatives of coniferous forests in the Willamette Valley, is situated along Highway 99N near the Benton-Lane County line. A dense tangle of snowbrush (Symphoricarpos albus) and poison oak (Rhus diversiloba) make the forested area seldom visited. Long term

management of the stand with regard to fire protection poses a difficult problem. Preliminary forest structure data has been collected.

West Island, Tillamook County--Owned by Tillamook County and a private landowner

One of the most intact salt marshes in Oregon, this 73 hectare (173 acre) island was intensively studied in 1970-72, and 1977. Thus the parcel has probably the finest documentation of any salt marsh in Oregon, base line data which will greatly enhance the tract's natural area values. Because of the mixed ownership, the Committee has been unwilling to develop a preserve analysis and formalize a recommendation.

Santiam Bar, Polk County--Owned by State Parks and Recreation Branch, DOT

Within the Willamette Greenway, this tract was studied in 1975 by an Oregon State University student. The area supports a typical stand of Willamette River riparian vegetation, a type which has not received protection and is a critical natural area need to be filled. The Committee has been working with the Willamette Greenway program in developing an interim management plan.

COOPERATIVE ACTIVITIES

The Oregon Natural Area Preserves program is fully coordinated with the federal Research Natural Area Committee (RNA) program and the private sector program of The Nature Conservancy (TNC). Representatives associated with these two programs regularly attend Committee meetings.

In 1975, the Committee surveyed the U.S. Navy Boardman Bombing and Gunnery Range for potential natural area tracts. The central bombing octagon, being protected from grazing for more than 40 years and subject to periodic fires, supports an outstanding example of the pristine bunchgrass communities of north-central Oregon. In cooperation with The Nature Conservancy and the Pacific Northwest Research Natural Area Committee (USFS), the state Committee proposed to the U.S. Navy that a 3,000 acre section of the 38,000 acre fenced target area be established as a research natural area. This proposal followed an intense week of study during April 1978. The U.S. Navy has been favorable to the proposal and an additional protective fence is about to be built.

The Committee has been instrumental in recommending research natural area status for Limpy Rock RNA, Umpqua N.F. and Saddleback Mtn RNA, Salem District BLM. The Committee initially identified the Rockaway, Tillamook County, western red cedar swamp and proposed protection for this site which was purchased by The Nature Conservancy in 1978. Likewise, the Committee has encouraged acquisition by Siuslaw N.F. of the Lily Lake area north of Florence, Lane County and the St. Marys Woods area in Washington County. In these cases, field examination preceded recommendation.

Throughout the biennium, the Natural Area Preserves Advisory Committee has received requests from County planners concerning significant natural areas. In December 1977, upon the recommendation of DLCD staff, the Committee contacted each county for a second time informing planning departments of the Committee's function and specifically identifying proposed natural area preserve candidates within the counties' jurisdiction.

One of the most important cooperative activities of the Committee during the last biennium has been the development of a "Research Natural Preserve" (RNP) classification within the State Parks and Recreation Branch (DOT) jurisdiction. Working closely with Park's master planning staff, the Committee developed guidelines for park's RNP's and subsequently recommended three areas for this classification. The RNP guidelines appear in Appendix E.

APPENDIX A

NATURAL AREA PRESERVES STATUTE

§ 273.562

PUBLIC LANDS

NATURAL AREA PRESERVES

273.562 Definitions for ORS 273.562 to 273.597. As used in ORS 273.562 to 273.597, unless the context requires otherwise:

(1) "Board" means the State Land Board.

(2) "Committee" means the Natural Area Preserves Advisory Committee created in ORS 273.572.

(3) "Natural area" includes land and water that has substantially retained its natural character and land and water that, although altered in character, is important as habitats for plant, animal or marine life, for the study of its natural historical, scientific or paleontological features, or for the appreciation of its natural features.

[1973 c.532 §2]

273.565 [Formerly 273.220; 1967 c.421 §17; renumbered 273.091]

273.567 Legislative findings; policy. (1) The Legislative Assembly finds that all public lands and waters within the state that constitute natural areas are subject to alteration by human activities unless such public lands and waters are preserved and protected for the use and benefit of the people of this state. The Legislative Assembly further finds that natural areas are valuable to the people of this state for educational and scientific uses, for habitats for plant, animal and marine species, for the preservation of the paleontological resources and the natural historic features of such public lands and waters, for public benefits from the features of such public lands and waters and for the purpose of preserving such public lands and waters as living museums of the natural heritage of this state.

(2) The Legislative Assembly, therefore, declares that it is the public policy of the State of Oregon to secure for the people of this state the benefits of an enduring resource of natural areas by establishing a system of natural area preserves and by providing for the management and protection of such natural area preserves.

[1973 c.532 §1]

273.570 [Amended by 1953 c.122 §2; renumbered 273.310 and then 273.525]

273.572 Natural Area Preserves Advisory Committee; members; appointment; term; vacancies. (1) There hereby is created a Natural Area Preserves Advisory Committee as an advisory committee to the State Land Board. The committee shall assist the board in carrying out ORS 273.562 to 273.597.

(2) The committee shall consist of seven members appointed by the Governor. Of the seven members appointed by the Governor to the committee, one member shall be an individual with an advanced degree in botany, one member shall be an individual with an advanced degree in zoology, one member shall be an individual with an advanced degree in aquatic biology, one member shall be an individual with an advanced degree in geology and three members shall be individuals interested in the preservation of natural areas in this state.

(3) In addition to the seven members appointed by the Governor, the State Wildlife Director, the State Forester, the Administrator of Highways and the Chancellor of the State Board of Higher Education or an authorized representative of each such offi-

cer, shall serve as ex officio, nonvoting members of the committee.

(4) The term of office of a member, appointed under subsection (2) of this section, is three years, but each such member serves at the pleasure of the Governor. Before the expiration of the term of each such member, the Governor shall appoint a successor whose term of office begins on July 1 next following. A member, appointed under subsection (2) of this section, is eligible for reappointment. If there is a vacancy for any cause, the Governor shall make an appointment to become immediately effective for the unexpired term.

[1973 c.532 §3]

273.575 [Formerly 273.230; 1967 c.421 §18; renumbered 273.095]

273.577 Duties and powers of board. (1) In carrying out ORS 273.562 to 273.597, the board, with the advice of the committee, and within available funds, may:

(a) Adopt, in accordance with the applicable provisions of ORS chapter 183, rules that it considers necessary in carrying out ORS 273.562 to 273.597;

(b) Adopt policy guidelines for its use in the selection, acquisition, management, protection and use of public lands included within the boundaries of natural area preserves established under ORS 273.582; and

(c) Conduct a survey of lands in this state to locate lands that it considers suitable for inclusion, within a natural area preserve established under ORS 273.562 to 273.597 and maintain a registry of such lands.

(2) In carrying out ORS 273.562 to 273.597, the board may:

(a) Cooperate and contract with any federal, state or local governmental agency or private organization;

(b) Acquire by gift, devise, grant, dedication or other method, other than by the exercise of the power of eminent domain, any private or public land or interest therein for inclusion in a natural area preserve established under ORS 273.562 to 273.597;

(c) Acquire by gift, devise, grant, dedication or other method, other than by the exercise of the power of eminent domain,

any personal property that the board considers necessary;

(d) Apply for and accept grants, contributions and assistance from any federal, state or local governmental agency and any private foundation; and

(e) Perform other duties considered by it to be necessary in carrying out ORS 273.562 to 273.597.

[1973 c.532 §4]

273.580 [Renumbered 273.315 and then 273.531]

273.582 Establishing preserves; orders; boundary and use changes; restrictions on preserve land use and disposition. (1) With the advice of the committee, the board, in compliance with ORS chapter 183, may:

(a) Establish, by order, natural area preserves on lands in public ownership composed of contiguous lands; and

(b) Change the boundaries of natural area preserves and alter the uses and conditions for use of such preserves upon a finding by it that such change or alteration is necessary in carrying out the purposes of ORS 273.562 to 273.597.

(2) Each order of the board establishing a natural area preserve shall contain a legal description of the lands within the preserve, the reasons for the establishment of the preserve, any conditions upon the use of the lands in the preserve and other matters that the board considers necessary. Each such order shall be in compliance with the policy guidelines adopted by the board under paragraph (b) of subsection (1) of ORS 273.577.

(3) The lands within a natural area preserve established under subsection (1) of this section shall be held for public use as may be specified by the board. Such lands may not be leased, sold, exchanged or otherwise transferred by the board except for another purpose upon a finding by the board, after consultation with the committee, of imperative and unavoidable necessity.

[1973 c.532 §5]

273.585 [1963 c.612 §2; 1967 c.421 §27; renumbered 273.135]

273.587 Conditions upon inclusion of lands within preserves. No land shall be included within a natural area unless it is either:

(1) In public ownership on October 5, 1973; or

(2) Is acquired after October 5, 1973, by gift, devise, grant, dedication or other method requiring no expenditure of public funds for the acquisition.

[1973 c.532 §9]

273.590 [Renumbered 273.320 and then 273.535]

273.592 Interagency agreements; inclusion of state-owned lands; state agencies to cooperate with board; use of state-owned lands constitutes public purpose. (1) The board may enter into agreements with any public agency, having public lands suitable for inclusion within a natural area preserve under its jurisdiction, for the inclusion of such lands within a natural area preserve.

(2) Each such agreement shall specify the term of the agreement, the uses and conditions for the use of the public land as a part of a natural area preserve and a finding by the board and the public agency that the use of the public land subject to the agreement as a part of a natural area preserve is in the best interests of the people of this state. Each such agreement shall establish the respective responsibilities of the board and the public agency in the management and protection of such land.

(3) The board may include within the boundaries of a natural area preserve any state-owned lands under its jurisdiction.

(4) All agencies, departments, boards and commissions of this state shall cooperate with and assist the State Land Board in carrying out ORS 273.562 to 273.597.

(5) The Legislative Assembly declares that the inclusion of suitable state-owned lands within natural area preserves constitutes a valid public purpose for the use of such lands.

[1973 c.532 §§6, 7]

273.595 [1963 c.612 §3; 1967 c.421 §28; renumbered 273.141]

273.597 Natural Area Preserves Account; sources; uses. The Natural Area Preserves Account is established within the General Fund of the State Treasury. All moneys received by the board for the purposes of ORS 273.562 to 273.597 shall be paid into the State Treasury and credited to the account. All moneys in the account are continuously appropriated for the use of the board in carrying out ORS 273.562 to 273.597.

[1973 c.532 §8]

273.600 [Renumbered 273.325 and then 273.541]

APPENDIX B

VEGETATION INVENTORY OF CERTAIN STATE-OWNED LANDS
IN SELECTED OREGON COUNTIES

INTRODUCTION^{1/}

On 19 May, 1 July, 1975, 1 July 1976, 1 May and 1 July, 1977, the Environmental Remote Sensing Applications Laboratory (ERSAL) at Oregon State University entered into agreements with the Natural Area Preserves Advisory Committee (NAPAC) to the Oregon State Land Board for the purpose of conducting a vegetation resource inventory of all state-owned land in selected counties using remote sensing techniques and accepted vegetation resource inventory procedures. Information gathered during the project was to meet the need of NAPAC to locate and identify potential natural area preserves. This report presents the results of that project under the current agreement. ERSAL has previously located and identified potential natural area preserves for NAPAC in Benton, Clatsop, Crook, Curry, Jefferson, Linn, and Malheur Counties (Mairs, 1975); Coos, Douglas, Harney, Jackson, Josephine, Klamath, and Lake Counties (Walsh and Miller, 1975); Lane, Lincoln, and Polk Counties (Walsh, 1976); Clackamas, Columbia, Hood River, Marion, Multnomah, Tillamook, Washington and Yamhill Counties (Walsh, Mairs and Alexander, 1976).

Within the scope of this inventory, ERSAL recognized the following objectives:

- 1) to provide through remote sensing techniques a description of vegetation in potential natural areas on state-owned lands in Baker, Deschutes, Gilliam, Grant, Morrow, Sherman, Umatilla, Union, Wasco, Wallowa and Wheller Counties;

^{1/} Adapted from John W. Mairs, Vegetation Inventory of Certain State-Owned Lands in Selected Oregon Counties, Environmental Remote Sensing Applications Laboratory, March, 1975.

2) to identify from National Aeronautics and Space Administration (NASA) high altitude photography state land which may not be appropriate for natural area preservation at an early stage of the project; 3) to interpret and to describe primarily from aerial photography the plant communities on potentially suitable sites at the "cell" level as set forth in the review copy of Research Natural Area Needs in the Pacific Northwest: A Contribution to Land Use Planning, C. T. Dyrness, et al., 1974; 4) to field check interpretations from high altitude photography to insure correct identification of plant communities; and 5) to present to NAPAC, in a mutually agreeable format, the results of the inventory on the specified state-owned lands by 30 September 1977. (Figures 1 and 2).

Working toward these objectives, ERSAL personnel located parcels of state land, including state parks and waysides, in the project counties on 15' and 7½' USGS topographic maps, Bureau of Land Management (BLM) maps (½"/1 mile) and where necessary, on Oregon State Highway Division road maps (1"/1 mile). Each parcel, or contiguous land unit, was systematically located on available color infrared (CIR) high altitude photography with the aid of these maps. Interpretations of the composition and character of the vegetation were made and inappropriate units or areas within units were omitted from further analysis. Brief notes on all units were made. These working maps and inventory descriptions have been preserved in an organized manner and are to be eventually stored by ERSAL.

Land units considered as having some to high potential for natural area preserves are described in catalogue form by county in the main body of the report. The decision to include a unit in the catalogue was based on: 1) the lack of excessive vegetation disturbance; 2) the unusual, as well as the typical attributes of the vegetation, e.g., regionally

uncommon plant species present or a quality community of regionally common species present; 3) the natural character of the immediate environmental setting; and 4) the presence of other values such as unique scenery, unusual landform, natural water source, important wildlife habitat, or special soil type. On the basis of the degree to which the catalogued sites met the above criteria they were classified in term of the following natural area potentials: high (good), medium (suitable), low (marginal), some, or none. Systematic photo interpretation provided the bulk of the information for carrying out the evaluation on the 177,265 acres of state land involved in the study. Where 'ground truth' data or the positive identification of extraordinary vegetation photo signature was needed, an attempt was made to field check the areas and sites in question.

The format of the following catalog is alphabetical by county. For each county there is a small scale reference map indicating the location of state land in that county. Each unit selected for cataloguing has its field code*, legal description, acreage estimate, its approximate landmark location, the title of the map on which it may be found, and the flight and frame number of the NASA photography on which it may be listed und "A". Under "B" are given the physiographic province and vegetation zone (after Franklin and Dyrness, 1973). A brief statement concerning the vegetation composition and other pertinent features in the unit is in part "C". A comment on the potential or suitability of the unit for preserve status is given as either High Potential,

* In which the first number after the county name refers to the number of the parcel in the photo interpretation notes and the numbers or letters after the hyphen refer to the map parcel number on the maps stored at ERSAL.

Medium Potential, or Some Potential, and is given after "D". It would be helpful, but not absolutely necessary, to refer to the folder of field notes and working maps submitted to NAPAC as part of this report when using the catalog.

The 1976-77 precipitation season was one of severe drought. The poor condition of many plants, particularly herbaceous species, is partially attributable to the lack of moisture needed for growth. Growth was very limited to nonexistent in many species of perennial range grasses; although May rainfall in a few localized areas did permit a brief "green up" by the grasses. This lack of growth undoubtedly served to cause some plants to be overlooked completely while others were recorded to be in poor shape. Limited production of herbaceous forage may have resulted in overutilization of those species by domestic and wild animals, and may also have caused some domestic and wild animals to browse the brush species, thus causing an unusually heavy grazing pressure on those species.

APPENDIX C

MEETINGS, RESOLUTIONS AND ELECTIONS 1977-1978^{1/}

1977

<u>Number</u>	<u>Resolutions</u>	<u>Meeting Date</u>
80.	Accepted preliminary proposal for Saddle Mtn. State Park and approved preparation of a pre-serve analysis.	Jan. 13
81.	Supported the intent of the proposed natural area legislation (H.B. 2154) to broaden the ability of the state to establish and protect natural areas on all ownerships.	Jan. 13
82.	Contingent to approval from the State Land Board, the Natural Area Preserves Advisory Committee will prepare testimony on H.B. 2153 addressing the scientific, educational, and research values of Slouth Slough Estuarine Sanctuary.	Feb. 10
83.	Approved the following areas for registration and recommended that these areas be registered by the State Land Board: Steens Mountain Summit NAP, Winchuck Slope NAP, Cape Lookout candidate NAP, McDonald Forest candidate NAP, Willamette Prairie RNA, and Pigeon Butte RNA.	Feb. 10
84.	Allocated funds for the remainder of the biennium as follows: \$1500 to ERSAL for inventory, \$2000 to TNC for field checking promising state lands identified by ERSAL, and \$500 for South Slough inventory.	Feb. 10
85.	Recognized that there may be substantial natural area values in the Hells Canyon National Recreation Area and urged that in the U.S. Forest Service planning process a research natural area inventory be made with contributions to the inventory by the Pacific Northwest Research Natural Area Committee and the Oregon Rare and Endangered Plant Species Task Force.	Mar. 10

^{1/} Formal Committee resolutions have been abstracted and edited for the purposes of this compilation. The full text of the resolutions can be obtained from the Minutes of the Natural Area Preserves Advisory Committee on file in the Division of State Lands.

<u>Number</u>	<u>Resolutions</u>	<u>Meeting Date</u>
86.	Recognized the natural area values of the Rockaway Sitka spruce-western red cedar swamp forest and urged that in the development of the Rockaway municipal sewage lagoon system that the alignment of Heitmueller Creek not contribute to the deterioration of the cedar stand. Urged that measures be taken for the protection of the upper watershed.	Mar. 10
87.	Rescinded consideration of the Yaquina Bay tide flats area as a candidate preserve and changed the area's status to candidate registered natural area.	April 14
88.	Approved the NAPAC-ERSAL memorandum of understanding as revised to require no less than 50 percent air photo interpretation and the receipt of notes on disqualified parcels.	May 2
89.	Recommended to the state legislature that Section 8 of the B-Engrossed H.B. 2154 be deleted; that Section 9 be changed to permit open space assessments for areas which have been under protection but become dedicated as natural area preserves; and that careful consideration be given to potential duplication of rare and endangered species authority as specified in Section 2. If these important changes are not made the Committee recommended that H.B. 2154 B-Engrossed be tabled.	May 12
90.	Directed a letter to be sent to the Siuslaw National Forest reaffirming the Committee's recognition of the important aquatic features of Lily Lake and the significance of these features in an Oregon Natural Area system.	May 12
91.	Reaffirmed the importance of the Boardman central target area as the last prime representation of the eastern Oregon grassland and requested that it be designated of state-wide importance as a natural area.	May 12
92.	Approved the expenditure of \$500 for inventory purposed by the South Slough Estuarine Sanctuary Manager as specified in Dr. Delane Munson's letter of April 28, 1977.	May 12
93.	Approved the appropriation of \$2000 for the TNC contract as amended with the understanding that four or five of the listed sites will be changed and TNC be informed of the changes by Friday, May 20, 1977.	May 12

<u>Number</u>	<u>Resolutions</u>	<u>Meeting Date</u>
94.	Urged the State Land Board to recommend to the Secretary of Interior that in the development of his National Heritage Program recommendations to Congress, he address the problem of protecting natural areas on school grant lands in view of Oregon Attorney General's Opinion #7450.	June 16
95.	Advised the Governor that H.B. 3243 not be enacted until its impacts on natural areas in the Columbia River Gorge and the original legislation withdrawing the water of these streams be fully assessed.	June 16
96.	Urged that Umpqua National Forest conduct a review of the size and location of a Limpy Rock Research Natural Area using the expertise of the PNW Experiment Station who work with RNA's in cooperation with the Limpy Rock Botanical Committee and choose a RNA in the land use plan that best protects the rare plant, natural area, and archeological features of the Limpy Rock region.	June 16
97.	Informed DLCD that TNC natural heritage program provides NAPAC with an extremely valuable service by maintaining a data base on the full range of the state's elements of natural diversity. This information makes it possible to accurately evaluate alternative sites to proposed preserves in order to determine the best candidates among all ownerships. It is important for the operations of NAPAC that the data-base be kept current and available for use in planning and resource allocation.	June 16
98.	Urged the Bureau of Land Management to consider some kind of protective status, such as "outstanding natural area," for the western white pine stand in the Mill Creek Ridge area, Polk County .	July 14
99.	Accepted the contract between NAPAC and the Environmental Remote Sensing Applications Laboratory (ERSAL) as prepared to complete the inventory of state lands for natural areas at the cost of \$4,800.	July 14
100.	Authorized Chairman, Glenn Juday to sign The Nature Conservancy Contract for the inventory of 10 sites in Eastern Oregon at a cost not to exceed \$1,500 during a period ending Sept. 30 after the Committee has an opportunity to review the contract.	July 14

<u>Number</u>	<u>Resolutions</u>	<u>Meeting Date</u>
101.	Recommended to the Governor and Superintendent of State Parks (with copies to the Columbia River Gorge Commission) that Rooster Rock State Park be managed for recreation and the protection of natural values and therefore further recommended that the cattle grazing lease issued to Mr. Don Gibbons be terminated immediately as the grazing will cause irreparable harm to these values when the area becomes wet.	Aug. 11
102.	Recommended proceeding with a preserve analysis for Washburn State Wayside.	Aug. 11
103.	Accepted the initial proposal for Santiam Bar and directed that a preserve analysis be prepared.	Sept. 15
	Meeting but no resolutions.	Oct. 13
	Meeting but no resolutions.	Nov. 10
104.	Accepted the report of TNC on the inventory of 10 state-owned parcels completed during the summer of 1977.	Dec. 8
105.	In recognition of the dedicated and consistent contribution of David McCorkle to the concerns of natural area protection and to the activities of the Natural Area Preserves Advisory Committee, the NAPAC commends David McCorkle for his contribution to the Committee over the past four years.	Dec. 8
	Election of Robert Frenkel as Chairman and Bill Burley as Vice Chairman/Secretary for 1978.	Dec. 8
1978		
106.	Directed Chairman Frenkel to appeal to the LCDC to uphold the DSL petition for a rehearing in the matter of the creation of the Steens Mountain NAP, and to enter the Natural Area Preserves Advisory Committee as an intervenor if necessary and if possible.	Jan. 12
107.	Called on the federal, state, and private sectors involved in natural area identification and protection efforts in Oregon to analyze their existing programs and to develop a coordinated response to the Department of Interior's National Heritage Program. Directed the Chairman to call such a meeting.	Feb. 9

<u>Number</u>	<u>Resolutions</u>	<u>Meeting Date</u>
108.	Recommended that the State Parks and Recreation Branch proceed immediately with the acquisition of a combined 310-acre St. Mary's Forest Park site (220 acres west of the Bonneville Power Administration right-of-way plus 90 acres known as Jenkins Woods) to be designated a Regional Park and to be used for conservation and resource protection purposes; and that development be limited to those facilities appropriate to educational use of the site, such development being located entirely in the 220 acre western portion of the combined site.	Feb. 9
109.	Requested the Division of State Lands to delay the issuance of any mineral exploration permits on Eight Dollar Mountain, Josephine County in Section 16, T28S, R8E, until August 15, 1978; if such a delay be not feasible at this time, then NAPAC strongly urges that any permit have specific restrictions attached to it, proscribing the use of any motorized vehicles and power exploration equipment, and that any other protection measures be taken to avoid disturbance of the fragile vegetation and soils.	Mar. 9
110.	Approved a contract with William Copeland, acting as a private individual, for a floristic report on the state-owned land on Eight Dollar Mountain based on at least three days of fieldwork, with the contract amount being \$225.00.	May 11
111.	Approved the proposed 1979-1981 budget for \$47,700 base and \$42,489 program improvement and directed the Chairman to forward the budget proposal to the State Land Board.	June 8
112.	Authorized Chairman Frenkel be given the authority to evaluate the floristic report on Eight Dollar Mountain contract with William Copeland and approve payment under the contract.	June 8
113.	Authorized Chairman Frenkel to solicit three estimates for contracts on Onion Peak and Ladd Marsh and to accept the lowest bid for each provided that the contracts each did not substantially exceed \$1,000.	June 8
114.	Authorized Chairman Frenkel to draw-up a personal services contract and solicit a contractor for a 3-day site inventory at Dutchman's Peak Ridge.	June 8

<u>Number</u>	<u>Resolutions</u>	<u>Meeting Date</u>
115.	Recommended to the State Land Board that the area delineated in the report <u>Preserve Analysis: Blacklock Point</u> as "primary resource protection" be registered by the Land Board, and recommended to State Parks and Recreation Branch of the Highway Division that this area be <u>designated</u> a State Park Research Natural Preserve.	Sept. 13
116.	Adopted the earlier consensus of August 10, 1978, to recommend that the Division of State Lands decline to issue mineral exploration permits for Section 16, T 38 S, R 8 W, on Eight Dollar Mountain in Josephine County.	Sept. 13
117.	Concurred with the Classification as drafted August 29, 1978 by the State Parks Branch of the Highway Division and commended Pete Bond and the Parks Planning Staff for their innovative work in designing a Research Natural Preserve Classification for use within the State Park System.	Sept. 13
	Meeting but no resolutions	Oct. 12
118.	Approved the <u>Preserve Analysis: Saddle Mountain</u> as prepared.	Dec. 15
119.	Recommended to the State Parks and Recreation Branch that a 1,650 acre tract in Saddle Mountain State Park be designated a Research Natural Preserve and that the State Land Board register this tract as an Oregon Registered Natural Area.	Dec. 15
120.	Accepted the site report prepared by David McCorkle for the north end of Dutchmans Peak Ridge.	Dec. 15
	Election of Robert E. Frenkel as Chairman and election of Vice Chairman/Secretary deferred.	Dec. 15

APPENDIX D

RULES FOR NATURAL AREA REGISTRATION

STATE LAND BOARD

CH. 141

OREGON REGISTRY OF NATURAL
AREAS RULES

[ED. NOTE: Unless otherwise specified, sections 50-890 through 50-930 of this chapter of the Oregon Administrative Rules Compilation, were adopted by the Director, Division of State Lands, August 5, 1975, and filed with the Secretary of State August 5, 1975, as LB 26. Effective 8-25-75.]

General Provisions

50-890 PURPOSE. To provide a central and continuing registry of natural areas in Oregon which are suitable for inclusion within a natural area preserve (Ref. ORS 273.577(1)(c)).

50-895 DEFINITIONS. As used in these rules, unless the context provides otherwise:

(1) "Dedicated Natural Area" means a natural area which has been formally recognized and protected for natural area purposes including, but not limited to, state Natural Areas Preserves, federal Research Natural Areas, and private preserves which are dedicated and managed in a manner consistent with state natural area preserves, such as The Nature Conservancy preserves.

(2) "Ecological Element" means a unit or "cell" which identifies an individual terrestrial, fresh water, or marine habitat type, or a species of plant or animal.

(3) "Natural Area" means land and water that has substantially retained its natural character and land and water that, although altered in character, is important as habitats for plant, animal, or marine life, for the study of its natural historical, scientific, or paleontological features, or for the appreciation of its natural features (Ref. ORS 273.562).

(4) "Natural Area Preserve" means a natural area on public lands established by order of the State Land Board.

(5) "Registered Natural Area" means

dedicated and non-dedicated natural areas which have been registered by the State Land Board.

(6) "Research Natural Area" is a land classification category used by federal land management agencies to designate lands on which natural features are preserved solely for research and educational purposes, as baseline areas against which to measure management of similar areas or as genetic reservoirs of native species of plants and animals.

50-900 CRITERIA FOR INCLUSION IN REGISTRY. (1) To be included within the Oregon Registry of Natural Areas an area must fulfill the definition of a natural area and have been determined by the Natural Area Preserves Advisory Committee to be of statewide ecological significance. Each area must:

(a) have substantially retained its natural character,

(b) be defensible in terms of retaining that character, and

(c) be viable in having the ability to perpetuate itself or its natural sequence of development.

(2) The following criteria will be used in evaluating candidate areas for the registry:

(a) Representativeness - the degree to which the ecological elements are typical of their class in Oregon,

(b) Uniqueness - the scarcity of the ecological element(s) in a natural condition in the present landscape of Oregon, included is the habitat for endangered or threatened species, and

(c) Diversity - the number of ecological elements represented in a natural area.

Procedure for Registering
Natural Areas

50-905 PROPOSAL OF AREAS. Proposals will be submitted to the Natural Area Preserves Advisory Committee together with field evaluation, maps, and sufficient data to complete the registry

CH. 141

OREGON ADMINISTRATIVE RULES

file. After review by the Natural Area Preserves Advisory Committee, areas recommended for registration will be submitted, together with registry file documentation, to the State Land Board for approval.

Registry Format

50-910 REGISTRY CATEGORIES. The Registry includes two categories of registered natural areas:

(1) Dedicated Natural Areas - areas which meet Registry criteria, have been registered by the State Land Board, and are either dedicated state Natural Area Preserves, federal Research Natural Areas, The Nature Conservancy natural areas, or other recognized private preserves which are dedicated and managed in a manner consistent with state natural area preserves.

(2) Non-Dedicated Natural Areas - areas which meet Registry criteria, and have been registered by the State Land Board, but have not been dedicated. Private lands will only be registered with the written consent of the landowner.

50-915 REGISTRY FILE. The Registry will include a card file of registered natural areas and data file for each area.

(1) Card File - will include name of natural area, location, size, ownership, registry category, and principal ecological element(s). The card file will be cross referenced by county and principal ecological element.

(2) Data File - includes the following:

(a) Data Form - comprehensive information compiled for each natural area.

(b) Articles of Dedication - or other documents certifying official dedication.

(c) Consent Form - written consent for natural areas on private land.

(d) Supportive Data - includes additional maps, photographs, remote sensing imagery, species lists, field notes, reports, research papers, and references to other information available.

(e) Summary Sheet - a map and one page summary of information about each area which can be duplicated and circulated to appropriate authorities.

50-920 LOCATION AND MAINTENANCE OF REGISTRY. The card file and data files of the Oregon Registry of Natural Areas will be located in the Division of State Lands Office in Salem, Oregon, and will be maintained by the Natural Area Preserves Advisory Committee.

Registry Review and
Declassification

50-925 REGISTRY REVIEW. The Registry shall be reviewed and updated every three years by the Natural Area Preserves Advisory Committee.

50-930 REGISTRY WITHDRAWAL. Registered natural areas may be withdrawn from the Registry by the State Land Board with the advice of the Natural Area Preserves Advisory Committee. Specific reasons must be given for withdrawal.

APPENDIX E

GUIDELINES FOR ESTABLISHING RESEARCH NATURAL PRESERVES IN
OREGON STATE PARKS ^{1/}

Classification

"Research Natural Preserves" are designated protection areas in Oregon State Parks containing outstanding examples of native Oregon ecosystem types, both aquatic and terrestrial, or rare and/or endangered plant and animal species and their supporting ecosystems located within the boundaries of state park systems units.

Purpose

The primary purpose of the "Research Natural Preserves" classification is to preserve natural features which:

- 1) Contribute to a systematic protection of Oregon's ecosystem types as defined by the federal Research Natural Area Committee, the Natural Area Preserves Advisory Committee, the Nature Conservancy or other groups dedicated to preserving sites for research study.
- 2) Contribute to a statewide system of scientific natural areas or preserves as defined by the State Natural Heritage Program.

Practical reasons for protecting "Research Natural Preserve" sites are to:

- 1) Provide baseline areas against which the effects of human activities in similar environments can be measured.
- 2) Provide sites for the study of natural processes in undisturbed ecosystems.
- 3) Provide gene pool reservoirs for plant and animal species, particularly of rare and endangered types.

Steps Required in Establishing a Research Natural Preserve

- 1) Preserve analysis proposal.
- 2) Evaluation and recommendation by State Parks planning staff.

^{1/} Approved by the Parks and Recreation Advisory Committee, November 17, 1978.

- 3) State Parks and Recreation Branch approval.
- 4) Preserve Management Plan.
- 5) Official designation.

A more detailed description of these requirements is as follows:

1) Preserve Analysis Proposal

A Research Natural Preserve analysis or equivalent report must be prepared for the Parks and Recreation Branch which contains the following:

- a. A need for the preserve based on specific scientific research natural area needs (such as "cell" or individual organisms, habitats, or ecosystem needs as inventoried in U.S.F.S. Research Natural Area Needs in the Pacific Northwest, "Yellowbook.")
- b. A need to locate the preserve on state park land and the location of alternative sites not on state park lands, if any.
- c. A map of the park divided into sensitivity or fragility areas.
The purpose of this requirement is to identify and separate the natural values which are most sensitive to visitor impact and the areas that would be able to withstand moderate to heavy levels of visitor use.
- d. A recommended Research Natural Preserve boundary.

2) State Parks Planning Staff Evaluation and Recommendation

The Parks Planning staff will review the proposal and make a recommendation to the State Parks Administration. The following considerations will be

- addressed:
- a. Fiscal impact of the proposal.
 - b. Impact on park management.
 - c. Impact on park visitor.
 - d. Compatibility with highly significant park and recreation uses or park development proposals.

3) Administrative Approval

Official adoption of a designated "Research Natural Preserve" will require approval by the State Parks Superintendent and the State Parks Advisory Committee.

4) Preserve Management Plan

A plan would then be developed to define boundaries of the Research Natural Preserve, establish periodic review dates, and coordinate the needs for protection of Research Natural Preserve resources and public recreation interests of the park. The plan would require participation from the following parties:

- a. Representatives of agency or organization nominating the Research Natural Preserve.
- b. State Parks planning staff.
- c. State Parks Field Operations Supervisor or Representative.
- d. Region Parks Supervisor or Representative.
- e. District Park Manager

5) Official Designation

State Park lands which are officially designated as Research Natural Preserves will be managed in accordance with the preserve boundaries and management plan approved by the Parks and Recreation Branch.

Copies of Research Natural Preserve reports and the management plan will be distributed to park management personnel for implementation, and also be available to interested conservation groups, scientists, and the general public.

Responsibility for effective Preserve management will be with the State Parks staff. The Parks staff shall utilize the services and expertise of Oregon's interested conservation groups and the scientific community to assure the protection of these significant natural values for the future.

Periodic Review

The organization initiating establishment of the Research Natural Preserve (or other qualified natural science authority) and the State Parks planning staff shall conduct a periodic review of the Research Natural Preserve. The

purpose of the review shall be to determine the continued importance of the site for research purposes. Frequency of review shall be set forth in the Preserve Management Plan.

Removal of Designation

The Research Natural Preserve designation may only be removed from the site based on the following findings:

- 1) If better, more representative communities of the same type are later located and designated.
- 2) If the value of the area is destroyed or changed.
- 3) If there is a critical public interest need of greater importance than the preserve function.

Diversion of Use

The Parks and Recreation Branch will not authorize any use or diversion of Research Natural Preserves which is incompatible with the objective of natural preserve preservation unless there is a critical need for which there is no alternative. Critical need is defined as a situation in which state park lands may be taken or used for National defense or security purposes.

GOALS OF THE OREGON NATURAL AREA SYSTEM^{1/}

1. All public lands and waters within the state that constitute natural areas are subject to alteration by human activities unless such public lands and waters are preserved and protected for the use and benefit of the people of this state.
2. Natural areas are valuable to the people of this state for educational and scientific uses, for habitats for plant, animal and marine species, for the preservation of the paleontological resources and the natural historic features of such public lands and waters, for public benefits from the features of such public lands and waters and for the purpose of preserving such public lands and waters as living museums of the natural heritage of this state.
3. It is the public policy of the State of Oregon to secure for the people of this state the benefits of an enduring resource of natural areas by establishing a system of natural area preserves and by providing for the management and protection of such natural area preserves.

GOALS OF NATURAL AREA PRESERVES ADVISORY COMMITTEE

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.

^{1/}Goals taken from Natural Area Statute, ORS 273.567.

