

MANAGING THE FIRST AREAS OF CRITICAL ENVIRONMENTAL
CONCERN IN WESTERN OREGON DESIGNATED UNDER
THE FEDERAL LAND POLICY AND
MANAGEMENT ACT OF 1976

by

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A THESIS

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Alvin W. Urquhart, Chair

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This thesis examines the implementation in western Oregon of a special provision of the Federal Land Policy and Management Act (FLPMA) of 1976. By authority of FLPMA, the Bureau of Land Management (BLM) designates areas of critical environmental concern (ACEC) to protect threatened natural areas. FLPMA provides criteria for designation called relevance and importance. This study describes eighteen natural areas designated in western Oregon, discussing BLM's use of the terms relevance and importance to define each area and develop management directives. The conclusion of the study assesses how well the language of the ACEC provision has been used to manage and preserve the natural diversity of

each area, and makes recommendations for improving the ACEC program.

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CHAPTER I

INTRODUCTION AND METHODOLOGY

The Federal Land Policy and Management Act (FLPMA), enacted in 1976, provides the Bureau of Land Management (BLM) with a coherent set of policy and planning objectives for managing 270 million acres of public land, including the public domain lands. FLPMA contains a provision giving BLM the authority to designate areas of critical environmental concern (ACEC). FLPMA defines ACECs as lands where the scenery, cultural artifacts, or natural systems present can be considered more than locally significant.

BLM has designated 25 ACECs in western Oregon, where the agency manages approximately 2.5 million acres of land. Oregon's total of 66 ACECs has been designated within a land base of 15.7 million acres. Out of 12 states, only California BLM has designated more: 77 ACECs set aside within a 12 million acre land base (Campbell, 1989).

The purpose of this study is first to examine the natural and historical settings of the initial ACECs designated by BLM in western Oregon. The second purpose is to assess how BLM has used the language of the law to define

and manage those ACECs. Finally, the study offers some recommendations for improving the ACEC program.

FLPMA provides a set of terms, relevance and importance, which are used to define and provide guidance in managing natural areas. Using these criteria, BLM's five district managers in western Oregon have designated ACECs to protect plants, animals, ecological systems, historical and recreational areas, and even inanimate geological formations that can be described as relevant and important. The law requires that BLM arrange for special management of designated ACECs, which includes the writing of individual management plans.

For this study, I visited each of the district offices and interviewed the coordinator of the ACEC program. The coordinator and/or myself searched for the original, written relevance and importance criteria. We found the criteria for 16 out of 18 areas; one set of criteria was never written, and one was unable to be located. We then obtained management plans for each ACEC. All but one of the 18 areas had a management plan developed and approved.

This thesis examines areas without other previous special designations. This excludes areas of critical environmental concern classified under the National Wilderness Preservation System and concurrent Research Natural Area or Outstanding Natural Area designations. This reduces the

number of ACECs in the study from 25 to 18 (see Figures 1 and 2 for maps; see Appendix A for sizes of ACECs.) The exclusions focus the analysis on how BLM has decided to interpret the relevance and importance provision under FLPMA. And the resulting linkage (or lack thereof) between criteria and management directives reveals to what extent BLM uses the FLPMA nominating criteria (relevance and importance) as a management tool.

Specifically, FLPMA defines areas of critical environmental concern as:

. . . areas within the public lands where special management attention is required . . . to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards. (43 USC 1702 (a), 1988)

BLM's regulations require that an area of critical environmental concern meet two conditions. Each ACEC must be relevant:

Relevance: There shall be present a significant historic, cultural, or scenic value; a fish or wildlife resource or other natural system or process; or natural hazard. (43 CFR 1610.7-2, 1989)

And each ACEC must exhibit importance:

Importance: The above-described value, resource, system, process or hazard shall have substantial significance and values. This generally requires qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern. A natural hazard can be important if it is a significant threat to human life or property. (43 CFR 1610.7-2, 1989)

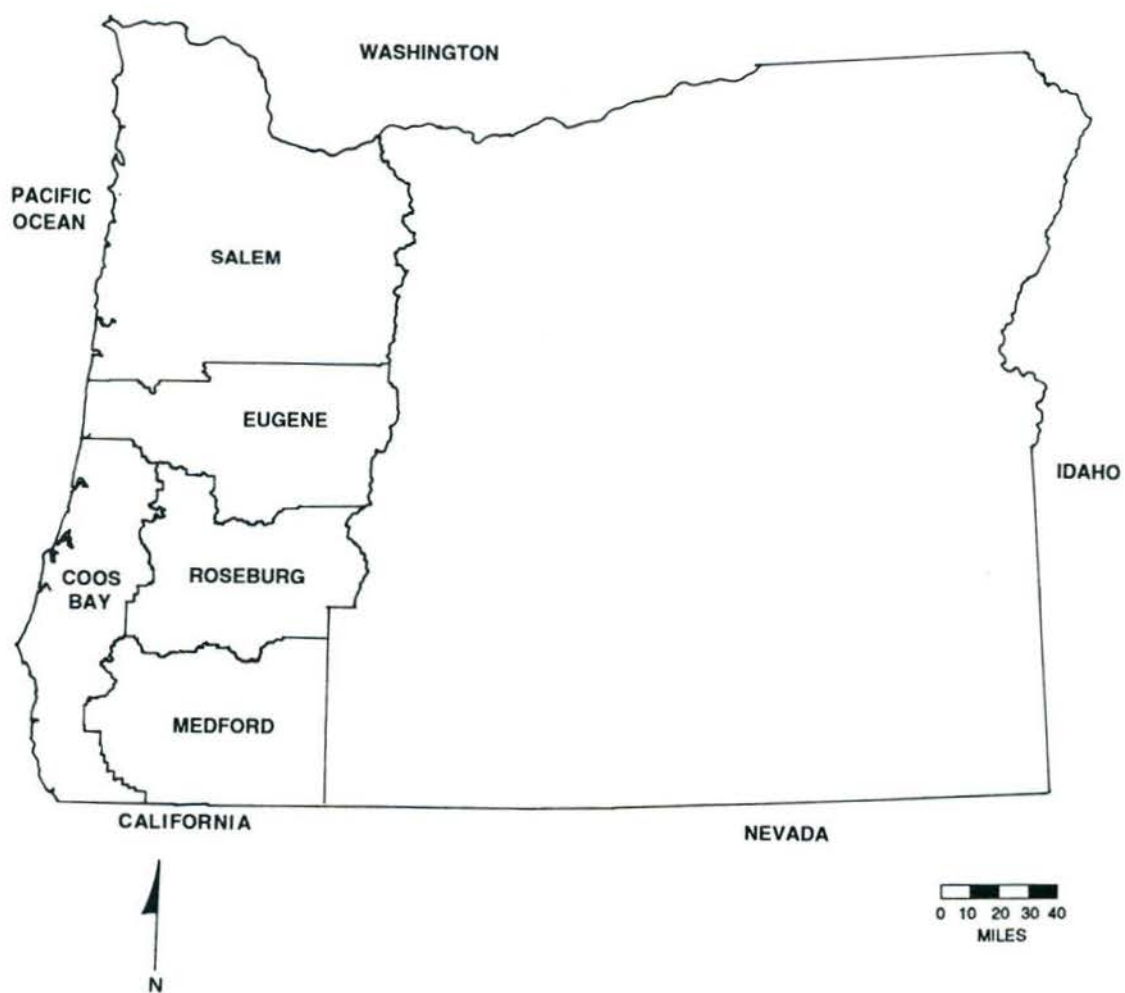


Figure 1. Oregon, Including BLM's Five Western Districts. Source: Carrie Coyle.

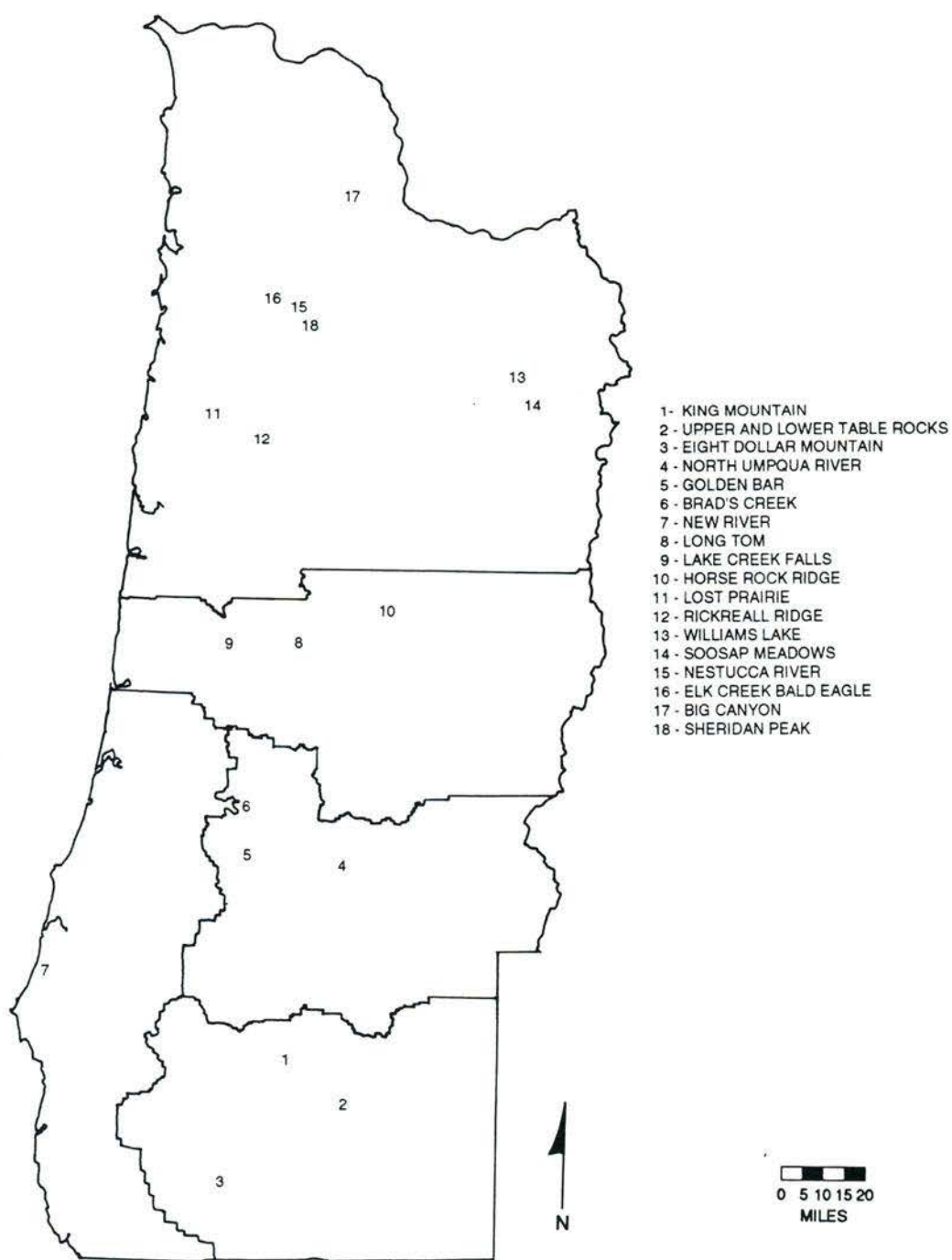


Figure 2. ACECs Within the Five Western Oregon Districts. Source: Carrie Coyle.

These same regulations require that a management plan be written for each ACEC (43 CFR 1610.7-2, 1989).

This study examines the management plans for evidence of directives that provide protection for the plants, animals, and other natural systems described as relevant and important. The actual nominating criteria (the relevance and importance of descriptions written for each ACEC) are found in Appendix B of this study. The criteria range in length from several sentences to several paragraphs. Management plans range in length from 2 to 56 pages.

The ACEC program is supposed to be more than a recognition process. Individual plans for each ACEC differentiate the process for managing ACECs from BLM's overall logging and reforestation programs.

Each ACEC is, in effect, to be handcrafted area by area, and an individual special management prescription designed to protect the particular important and critical environmental resources that have been identified within the area. (Federal Register, 1980, p. 57321)

FLPMA also requires BLM to act immediately to protect its ACECs. The process for doing that is built into the law. The law mandates that:

. . . regulations and plans for the protection of public land areas of critical environmental concern be promptly developed. (43 USC 1701 (a)(11), 1988)

One major focus of this study is the identification of directives that protect natural resources while development occurs. The challenge of managing simultaneously for

protection and development is a unique and difficult goal under FLPMA. The Department of the Interior has made this goal a policy objective for BLM.

Thus, a particular ACEC designation may provide for a range of multiple-use activities, including specified kinds and degrees of development and commodity-production activities, provided that the important environmental resources within that area, or human property or lives, are not damaged or endangered. (USDI, 1980, p.3)

The challenge to BLM in western Oregon is formidable. The region is full of diverse habitats in which tree cutting is the primary development activity. Western Oregon includes coastal beaches and sand dunes, estuaries, the fertile Willamette Valley, riparian zones and wetlands, the Coast Range mountains, and parts of the basaltic Cascade Mountain range. Most areas except the valley are heavily forested, with the forest constituting 70 percent of the region.

The phrase area of critical environmental concern was common in environmental legislation written during the 1970s. The next chapter provides an overview of the legislative background from which ACECs have evolved.

CHAPTER II

THE LEGISLATIVE CONTEXT OF AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Before the Federal Land Policy and Management Act was enacted in 1976, BLM was the only major federal land agency without a modern statutory mandate. The Federal Land Policy and Management Act replaced approximately three thousand conflicting and contradictory public land use laws which had been accruing for 170 years. Most of these laws were written when the disposal of land was the primary government policy (Haskell, 1975).

For over 150 years, until the creation of the Department of the Interior in 1849, the General Land Office controlled the disposition of the public domain lands. The General Land Office, under the Treasury Department, primarily surveyed the land and transferred ownership into other hands. Over one billion acres were transferred from Federal ownership via grants to States and railroads, sales to private owners, and homesteaders (Haskell, 1975). The remaining land was not consistently managed, and the result was that a large percentage of the land suffered extensive damage from settlement, overgrazing of livestock, and poor

farming practices. When the Federal Land Policy and Management Act was enacted in 1976, the Congressional Record noted that:

. . . even today much of that damaged land has yet to benefit from natural or man-aided restorative processes. (Jackson, 1978, p. 53)

The general policy of federal land disposal first ended with the passage of the Taylor Grazing Act of 1934. The Act provided land classification authority. When the BLM was created in 1946 as the successor to the General Land Office, congressional approval of retaining and managing the federal lands increased.

On October 21, 1976, the United States Congress passed the Federal Land Policy and Management Act into law. The law was written to provide guidance in the use and management of what was originally 451 million acres of federal land, including the public domain lands (Jackson, 1978). From the beginning of the law's enactment, BLM's oversight agency, the U.S. Department of the Interior, cited the ACEC provision as one of eight key policies guiding BLM (Muhn, 1988).

FLPMA mentions areas of critical environmental concern in four distinct sections of the law. First, designation of areas of critical environmental concern is to be a policy of the United States.

The Congress declares that it is the policy of the United States that regulations and plans for the

protection of public land areas of critical environmental concern be promptly developed. (43 USC 1701 Section (a)(11), 1988)

Second, the Act defines areas of critical environmental concern.

The term "areas of critical environmental concern" means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards. (43 USC 1701 (a), 1988)

Third, the Act requires that the land inventory process include identification of areas of critical environmental concern.

The Secretary [of the Interior] shall prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values (including, but not limited to, outdoor recreation and scenic values), giving priority to areas of critical environmental concern. This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values. The preparation and maintenance of such inventory or the identification of such areas shall not, of itself, change or prevent change of the management or use of public lands. (43 USC 1711 (a), 1988)

Finally, designating areas of critical environmental concern shall be part of the land use planning process of BLM.

In the development and revision of land use plans, the Secretary [of the Interior] shall . . . give priority to the designation and protection of areas of critical environmental concern. (43 USC 1712 (c)(3), 1988)

Until the Federal Land Policy and Management Act of 1976, the national resource lands had no coherent unifying

legislation, yet they comprised 20 percent of the U.S. land base and 60 percent of all federally held land (Haskell, 1975). The national resource lands are lands serving as sources of energy, minerals, and trees. National resource lands are distinct from lands held by the Forest Service and the National Park Service. Congress passed legislation called "organic acts" for these two agencies early in the twentieth century, providing comprehensive objectives and policies for each. The Federal Land Policy and Management Act is BLM's first organic act and the first law that makes reference to areas of critical environmental concern on the national resource lands.

The concept of areas of critical environmental concern received considerable attention during the legislative years of the 1970s. Four bills are discussed here: FLPMA; the National Resource Lands Management Act, introduced to Congress in 1971; Senate bill S. 2401 (1971); and the National Land Policy, Planning, and Management Act of 1972.

The Legislative History of the Federal Land Policy and Management Act of 1976 (Jackson, 1978) offers some insight into the legislative meaning ascribed to areas of critical environmental concern. With reference to the national resource lands, then Secretary of the Interior Rogers Morton emphasized the importance of:

. . . giving priority to lands in critical environmental areas, which [is] defined to include among

others flood plains, coastal zones and scenic or historic areas. The inventory will give priority to such critical resources as clean burning fossil fuels to assist this Nation's efforts to combat pollution. The identification of the most critical environmental areas will be given a high priority by this Department so that those areas may be given the protection they so urgently need. A thorough knowledge of the resources we possess and purposeful plans for their use will greatly assist us to arrest the destruction we have too long and too carelessly inflicted on our natural resources. The national resource lands are in a real sense our last frontier. We cannot afford to squander their riches. (Jackson, 1978, p. 1174)

First, this definition specifically names the ecological habitats considered for protection: flood plains and coastal zones. Second, energy development and protection are mentioned in the same context. The idea of concurrent management for protection and development will later be clarified even more. In the "Report on the National Resource Lands Management Act" (Jackson, 1978), the report notes that:

. . . unlike wilderness areas to be designated pursuant to Section 103 (d), areas of critical environmental concern are not necessarily areas in which no development can occur. Quite often, limited development, when wisely planned and properly managed, can take place in these areas without unduly risking life or safety or permanent damage to historic, cultural or scenic values or natural systems or processes (p. 108).

Section 201 in the final version of the Federal Land Policy and Management Act fully allows development to continue on public lands, but the law is not clear about how development will affect ACECs:

The preparation and maintenance of such inventory or the identification of such areas shall not, of itself,

change or prevent change of the management or use of public lands. (43 USC 1711 (a), 1988)

The National Resource Lands Management Act classifies the types of regions eligible for ACEC designation: coastal zones, estuaries, shore lands and flood plains of rivers, lakes and streams, rare or valuable ecosystems, scenic or historic areas, and such additional areas of similar valuable or hazardous characteristics which the Secretary determines to be of critical environmental concern (Jackson, 1978, p. 1196). This list is more specific than the final wording in the Federal Land Policy and Management Act. However, the phrasing in the final regulations for the Federal Land Policy and Management Act is broad enough to include all of the above categories: "fish and wildlife resources or other natural systems or processes" (43 CFR 1610.7-2, 1989).

In Senate bill S. 2401, submitted to the Committee on Interior and Insular Affairs on August 3, 1971, areas of critical environmental concern were defined as

. . . areas where uncontrolled use or development could result in irreversible damage to important historic, cultural, or aesthetic values, or natural systems or processes, or life and safety as a result of natural hazards. (Jackson, 1978, p. 1113)

This definition includes the ideas of uncontrolled development and irreversible damage to values, systems, processes, or life. In FLPMA, the word "irreversible" becomes "irreparable," and the phrase "uncontrolled

development" does not appear. FLPMA does not envision the designation of ACECs as a way of preventing uncontrolled development. Again, the law is unclear about the relationship between ACECs and development.

The term "areas of critical environmental concern" means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required). (43 USC 1702 (a), 1988)

In 1972, the Committee on Interior and Insular Affairs considered the National Land Policy, Planning, and Management Act. The Act warned that certain areas of critical environmental concern were being lost, and the well-being of all citizens was being affected. The bill authorized the Secretary of the Interior to make a maximum of two annual grants per state for land use programs. Funding qualifications required a state to designate areas of critical environmental concern. The states were to include: (a) a method for inventorying and designating areas of critical environmental concern; (b) a method for inventorying and designating areas impacted by key facilities; and (c) a method for exercising state control over areas of critical environmental concern and areas affected by key facilities. The grants were generous, providing up to 50 percent federal funding (Jackson, 1978). This bill did not become law.

FLPMA, unlike the National Land Policy, Planning, and Management Act, does not mention the idea that the general

citizenry is being affected by the loss of critical land areas. FLPMA emphasizes protection from specific natural hazards and the maintenance of personal safety, as opposed to general well being.

The term "areas of critical environmental concern" means areas within the public lands where special management attention is required . . . to protect life and safety from natural hazards. (43 USC 1702 (a), 1988)

FLPMA does not include a 50 percent grant provision for the states. That provision did remain a part of the federal Land and Water Conservation Fund Act (LWCF) enacted in 1965. States provided 50 percent of the funds for the acquisition of park lands. Matching federal monies from offshore oil revenues provided the other 50 percent.

The legislative language in the Federal Land Policy and Management Act for areas of critical environmental concern was brought before Congress in 1976 (Callison, 1984). In the House of Representatives, one amendment was made and agreed upon. The word "values" was replaced by the phrase "fish and wildlife resources." The change was accepted, and all of the remaining ACEC language was accepted by voice vote. The Senate did not change any provisions concerning ACECs.

In its final form, FLPMA assigns ACECs specifically to protect fish and wildlife resources, and generally to protect natural systems and processes. The next chapter

outlines the procedure for nominating an area of critical environmental concern, and discusses the major planning steps involved.

CHAPTER III

THE NOMINATION PROCESS

This chapter outlines the formal nomination and designation process for ACECs. The process comprises three stages: candidate ACEC, potential ACEC, and designated ACEC. During the first ten year planning cycle since the enactment of FLPMA, BLM has designated eighteen ACECs in western Oregon that did not already have another management designation.

During the first stage, a candidate area is nominated. Citizens or private (non-government) organizations may nominate an area of critical environmental concern.

Any member of the public may at any time nominate environmental resources or natural hazards for consideration for ACEC identification. (Federal Register, 1980, p. 57319)

Employees of state and local government may also make nominations, as well as employees of BLM. For all nominations, a determination as to whether the nomination will be accepted must occur not later than six months after the nomination (Callison, 1986).

Of the first eighteen nominations, fifteen were made by BLM staff, primarily biologists, botanists, archaeologists, and persons in charge of wildlife resources. One was the

result of collaboration between BLM staff and private citizens. One nomination came from a university faculty member, and one source was not readily identifiable.

A candidate area is evaluated by an interdisciplinary team of the Bureau of Land Management, such as wildlife biologists, soil scientists, and other specialists appropriate for the area nominated. During the evaluation process of candidate areas, the team makes an assessment without regard for other uses of the area.

Identification is a matter for professional evaluation, and will be made on the basis of the values or qualities of the resource or hazard itself, without consideration of alternative potential uses. (Federal Register, 1980, p. 57319)

The interdisciplinary team of BLM specialists determines whether the candidate ACEC fulfills the regulatory definitions of relevance and importance. If an area does not meet the criteria, the nomination is tabled and deficiencies in the nominations are recorded.

If an area is identified as meeting the criteria of relevance and importance, it is then labeled a potential ACEC. The potential ACEC is analyzed to see if other management designations might be more appropriate. For example, some features may already be protected under currently existing management plans. Such an area may or may not also be designated an ACEC. At this stage, planners

also determine how an ACEC designation will affect other resources, such as minerals, trees, and forage for wildlife.

Cutting of trees for timber may not necessarily disqualify an area for consideration. For example, the Nestucca River area of critical environmental concern contains what is called a primary or no-cut zone and a secondary zone. The primary zone follows the course of the river, which is a highly productive spawning and rearing site for steelhead trout and salmon. The purpose of the primary zone designation is to regulate tree cutting so that fisheries and wildlife along the stream are protected. Cutting is permitted in the secondary zone, or caution zone, giving managers the flexibility to cut trees while evaluating the effect on the fisheries in the primary zone.

The final stage is the actual designation of an area. Each district manager makes the final decision on whether or not to designate. The five BLM districts consider an ACEC to be designated when its relevance and importance criteria are approved and included in the district Resource Management Plan (RMP). The development of specific management plans often occurs later, sometimes years after the ACEC has been included in the RMP. The delay can be attributed to shrinking budgets and inadequate planning personnel (Callison, 1986).

The districts approved the first RMPs in 1982. By 1983, the eighteen ACECs of this study officially became part of BLM's larger land management plan in western Oregon. The next chapter looks at the natural and historical settings of these ACECs, searching for linkages between an area's attributes, its nominating criteria, and its management plan.

CHAPTER IV
ANALYSIS OF NOMINATING CRITERIA
AND MANAGEMENT PLANS

This chapter presents a description of the natural environment of each ACEC. The description is followed by a discussion of why the BLM considers the area relevant and important. The discussion searches for links between each area's attributes, the written criteria, and the plan directives. Appendix B contains verbatim copies of the actual nominating criteria.

The Medford District

The three designated areas of critical environmental concern on the Medford district are King Mountain Rock Garden (90 acres), Upper and Lower Table Rocks (340 acres), and Eight Dollar Mountain (1,240 acres) (see Figure 3).

King Mountain Rock Garden

Description of Area

King Mountain Rock Garden is located in northeastern Josephine and southern Douglas counties. It lies directly south and west of King Mountain. King Mountain is one of

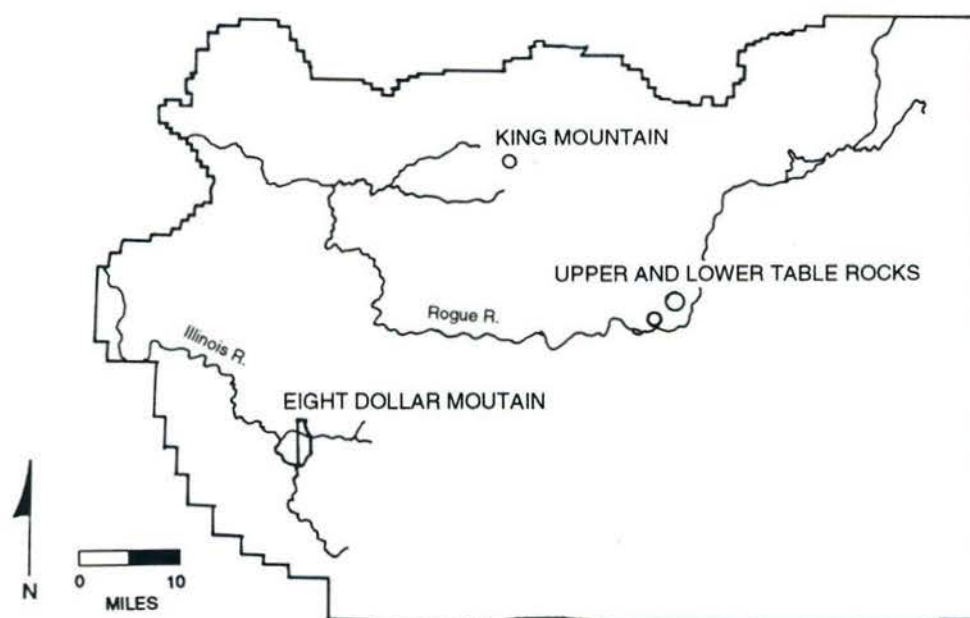


Figure 3. ACECs in the Medford District.
Source: Carrie Coyle.

the tallest peaks in the northwest portion of the Klamath Mountains. The base elevation of the ACEC is 4,300 feet, with the upper elevation at 5,000 feet.

The vegetation is similar to other high elevation serpentine areas. Low, open caespitose brush fields are dominated by Ceanothus cuneatus and Arctostaphylos patula. There are prominent rocky, exposed tracts supporting a variety of herbaceous plants, such as Sedums, Alliums, Penstemons, and ferns. A small portion of the area is Jeffrey pine woodland, containing Pinus jefferyi, Pseudotsuga menziesii, Librocedrus decurrens, and native grasses, such as Danthonia californica and Bromus marginatus. One-hundred and thirty-nine plant species have been inventoried in the ACEC. The ACEC contains two sensitive plant species, Phacelia verna, a candidate in 1986 for federal listing as a threatened or endangered species, and Fritillaria glauca, a Bureau of Land Management sensitive species at the same time of designation. A treeless area contains the more unusual flora, including the federal candidate and Bureau sensitive species. There are approximately fifteen acres of commercially valuable trees within the ACEC.

Annual precipitation amounts to 55 inches, with October through March being the rainy season. Summer months are hot and dry. Air temperatures in the King Mountain area range

from 10 degrees Fahrenheit in the winter to the low eighties in the summer.

There are no structural improvements or roads in the ACEC, and no developed trails. The majority of visitors to the area come to observe birds or wildflowers.

Discussion

The Medford district was unable to locate the relevance and importance criteria for this ACEC, so comparisons were impossible between the nominating criteria and the management plan.

Upper and Lower Table Rocks

Description of Area

The Upper and Lower Table Rocks are mesas in southwest Oregon, located in central Jackson County with Upper Table Rock located opposite the confluence of Little Butte Creek and the Rogue River, and lower Table Rock located on the north bank of the Rogue River. Upper and Lower Table Rocks are bordered to the east by the Cascade Mountains and to the west by the Klamath Mountains. The area is part of the Rogue River Valley and was first inhabited by Native Americans called the Takelma. The name Takelma means "those living alongside the river." They used the river for

transportation and food, and the Table Rocks were used for shelter and food.

In 1846, Jesse and Lindsay Applegate forged a trail across the southern Cascade Mountains. This trail, called the Applegate Trail, opened the Rogue River Valley to settlement. In 1848, hostilities began to break out between the settlers and the Takelma. In 1853, a peace treaty was signed on the southwest slope of Upper Table Rock, and Table Rock was offered as a reservation. Later, the tribe was moved to the Willamette Valley.

The ACEC is a remnant of a basalt lava flow that covered the region an estimated 5 million years ago. Weathering and erosion by the Rogue River has caused the relief now recognized as the mesas. The rocks rise 800 feet above the surrounding land, with their top surfaces lying 2,044 feet above sea level.

Annual precipitation is low, around 18 to 24 inches, with most coming during October to March. The surface of the Rocks is flat, with water forming in shallow depressions called vernal pools. Only a few small creeks fed by underground springs are found on the top surface. Temperatures range from the low 20s to the high 80s Fahrenheit.

Mixed evergreens grow at the base of the rimrocks. The lower slopes consist of grasslands and oak scrub, with chaparral appearing as elevation increases. The Table Rocks

are treeless over most of the top surface. Wildflowers bloom in thick carpets at different times of the year.

A diversity of habitats support animal life, such as meadowlarks, lark sparrows, mountain quail, dusky-footed woodrat, pocket gophers, coyote, and blacktail deer. Eagles and osprey have been sighted. Also found are the rare blue-gray gnatcatcher, common and mountain king snakes, and striped whip snakes. The ACEC is the only place known today in the world where a subspecies of meadow foam is found, Limnanthes flocossa spp. pumila (Reich, 1985).

Discussion

Instead of individually defining why an area is relevant by listing the particular historic, cultural, scenic, or natural systems present, the BLM often states that an area is relevant because the law says it is so. This circular and self-referential definition is common for many of the areas. Chapter V discusses some of the effects of this failure to individually describe relevance, and the reader is referred to that chapter whenever appropriate.

The Table Rocks ACEC is relevant because it meets the Federal Land Policy and Management Act definition for relevance (see discussion of self-referential definition in Chapter V). The ACEC is also relevant because of the scenic

values of the mesas and their status as a local landmark representing the settlement of the valley.

The BLM considers the interest of the Nature Conservancy, Sierra Club, Oregon Native Plant Society, and botanical researchers as more than local significance (Dew, 1981). BLM regards the ACEC as important because the mesas add substantial scenic value to the Rogue River Valley. The recreational value of viewing the Table Rocks from the valley floor or viewing the countryside from the top of the mesas is important. BLM considers important the protection of scenic values from conflicting uses, such as mining, cattle grazing, off-road vehicle use, radio and microwave tower construction, aircraft landing sites, and rock quarry development.

BLM judges the region to be more than locally significant because the geology is unique to southwestern Oregon and northern California, with the nearest similar geomorphic feature near Chico, California (Dew, 1981).

In this case, the nominating criteria have successfully incorporated the important features of the ACEC. As a result, the management plan for Table Rocks ACEC contains 33 specific directives for preserving the ACEC. Most of these contribute to maintaining the scenic qualities of the area by preventing logging or mineral extraction, and by cooperating with local landowners to ensure that land use does not

degrade the area. An important part of the scenic quality of the region is the presence of the native plants that are candidates for federal protection. The management plan contains several specific directives for protecting plant species in the ACEC, including maintaining water supplies for plant survival.

The importance criterion for this ACEC specifically mentions the conflicts between the scenic values of the ACEC and development. Preservation of this region hinges on recognizing the conflict and managing for it. This is one of the few ACEC nominating criteria to be so explicit about conflicting uses and the damage which development could cause. There is a high correlation between the issues discussed in the nominating criteria and the directives in the management plan. No tree cutting or firewood cutting is allowed. No vegetation removal is allowed. However, livestock grazing is permitted, and aircraft may use the landing strip on the mesas.

These directives run counter to preserving the features in the nominating criteria. Otherwise, Upper and Lower Table Rocks ACEC exhibits a high correlation between plan directives and nominating criteria.

Eight Dollar Mountain

Description of Area

The Eight Dollar Mountain area of critical environmental concern is located in Josephine County. The ACEC is located on the east side of Eight Dollar Mountain. The region within the ACEC contains a number of diverse habitats supporting 11 plants that at the time of designation were under review by the U.S. Fish and Wildlife Service for listing as threatened or endangered species. These plants inhabit the local serpentine soils and are endemic to the area. The plants are known to botanists as Illinois Valley endemics (Eight Dollar Mountain Coordinated Management Plan, 1987). As of 1988, Hastingsia bracteosa was a Federal Category I species. The other ten species are Category II species: Arabis kohleri var. stipitata, Balsamorhiza sericea, Calochortus howellii, Epilobium oreganum, Eriogonum pendulum, Gentiana bisetacea, Microseris howellii, Senecio hesperius, Streptanthus howellii, Thlaspi montanum var. siskiyouense. Category I species means that the U.S. Fish and Wildlife Service has sufficient information to support a threatened or endangered listing. Category II means that listing as threatened or endangered is probably appropriate, but more research is needed. (See Appendix C for chart of endangered species categories.)

The region that includes both the ACEC and approximately three thousand additional acres of surrounding land is rich in minerals. Current inventories indicate, that on the BLM-administered region around Eight Dollar Mountain, there are 5 million tons of known nickel laterite deposits (Eight Dollar Mountain Coordinated Management Plan, 1987). Seven-hundred and sixty acres of the ACEC are confirmed to contain nickel-bearing laterites. The nickel is composed of chromium and cobalt.

Discussion

The ACEC is relevant because it has been mapped by Jean Siddall for the U.S. Fish and Wildlife Service and because BLM considers the endemic species unique. The ACEC is also relevant due to the historical significance of state owned land nominated for inclusion in the National Historic Register. The BLM attributes relevance to two federal sensitive species: Aster paludicola and Schoenidirion bracteosum. The species are properly relevant because they are inseparable from their larger support ecosystem, which qualifies as a natural system or process. The plant-ecosystem relationship should be made explicit in the nominating criteria.

The ACEC is important because the Oregon Natural Heritage Program and the Oregon Natural Area Preserves Committee have identified serpentine endemic species. The ACEC is

also important because it has the highest species diversity of any known serpentine soil (Shera, 1981), giving the area more than local significance.

The management plan for the Eight Dollar Mountain ACEC is seven pages long and general in nature. The Action Plan section discusses coordinating the management plan with other agencies and doing further research and monitoring. In case of mineral development, there are no specific directives named to protect the botanical species or historical values. Under the headings transportation, timber management, grazing/wildlife, communications, and fire management, the only directives involve doing studies and making observations. Under the headings community involvement and land exchange, there are plans to develop cooperative relationships with private associations and with other landowners. Nowhere in the last two categories is there any reference to management actions that protect the botanical or historical qualities listed in the nominating criteria. Although the nominating criteria successfully define the region's unique attributes, this management plan fails to provide adequate plan directives.

Roseburg District

The Roseburg district contains three designated areas of critical environmental concern: North Umpqua River (1620

acres), Golden Bar (253 acres), and Brad's Creek (127 acres) (see Figure 4).

North Umpqua River

Description of Area

The North Umpqua River ACEC is nationally known for its sports fishing and scenery. Located in southwest Oregon in Douglas County, the ACEC follows the course of the North Umpqua River for one and one-half miles west of Rock Creek to the BLM district boundary on the east. The ACEC is approximately one-quarter mile wide on each side of the River. The river itself is listed in the National Wild and Scenic Rivers Inventory.

The region of the ACEC consists of volcanic rocks formed twenty to thirty-five million years ago, typical of the Cascade Mountains. Erosion in the ACEC has reduced the mountains into a rugged ridge and ravine landscape with little trace of the original volcanic mountains. The region is dominated by andesite rocks with occasional basalt lava flows. Fossilized trees, limbs, and carbonized vegetation are present, and some of the ash flows have cemented into natural bridges.

Elevations in the region range from 775 feet to 3,000 feet above sea level. The river itself lies in a V-shaped canyon with steep, heavily-forested lower slopes. The trees

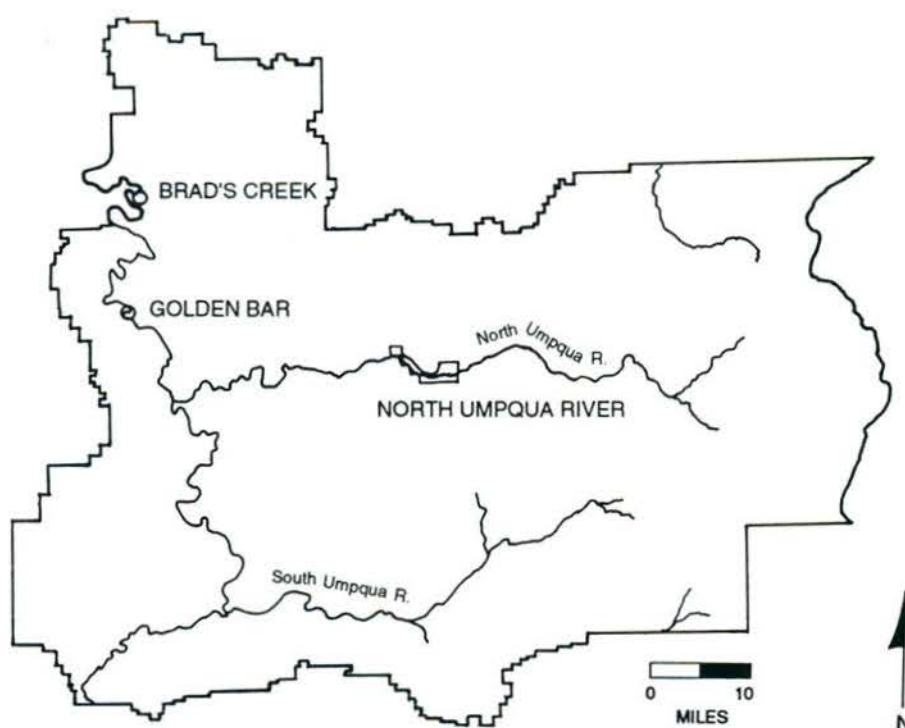


Figure 4. ACECs in the Roseburg District.
Source: Carrie Coyle.

on the upper slopes have been clear cut. Waterfalls up to 200 feet in height and large boulders form a significant portion of the scenic attraction of the area.

The North Umpqua River supports native populations of rainbow and coastal cutthroat trout, coho salmon, and steelhead salmon. The author Zane Grey has written extensively on the aesthetic qualities and fishing of this region of the North Umpqua River. The region, receiving international recreational use, contains a significant number of campgrounds and picnic sites. Camping, fishing, rafting, big-game hunting and swimming are all popular.

Wildlife in the region includes osprey, blue heron, deer, mink, otter, beaver, red black vole, and 35 species of small birds. Presently there are no known threatened or endangered wildlife or plant species.

Discussion

BLM considers the area relevant because it is an environmental resource consisting of recreational, scenic, wildlife, and natural systems or processes (Berg, 1981). The area is more than locally significant because the North Umpqua River has been identified as part of the Wild and Scenic Rivers System, and because of the nationally known fisheries. It is also important because Oregon considered

the river for a scenic waterway designation in 1980, and because of the scenic values.

The management plan is vague. There are discussion sections such as "Potential for Scenic Damage" (Issue Number 2) and "Conflicts Between Fishermen and Rafter, Kayakers and Floaters" (Issue Number 6). However, there are no directives for on-the-ground protection of the scenic qualities of the region. Generic statements under Issue Number Two reinforce the sense that no new management directives are being developed under FLPMA and the ACEC program:

It is not so much what is done, as how it is done that makes the difference. (Telford, 1984, p. 23)

Planning jargon contributes to vagueness. For example, Issue Number Nine is "Land Ownership Patterns Present Special Problems." The discussion under action 9.1 reads:

Maintain V.R.M. Class II standards on B.L.M. lands in the NUSRMA. Monitor changes on private lands so as to adjust, and modify actions and plans in response to changes. (Telford, 1984, p. 25)

It is not clear how V.R.M. Class II (visual resource management standards) contribute to or detract from preserving the relevance or importance of the ACEC. Clarification on how V.R.M. Class II standards apply to this particular ACEC would help. Naming the activities on private lands that might affect the ACEC would also help clarify the management plan.

Designations such as the Wild and Scenic Rivers and the Oregon State Scenic Waterways are important. However, directives for preserving the river's importance are not well developed. For example, Action 1.2 is framed in the negative and does not serve as a directive, but rather directs to:

. . . take no action which would impair the potential for designation as a recreational river under the national Wild and Scenic River System. (Telford, 1984, p. 22)

Other phrases, such as "appropriate action" (Telford, 1984, p. 24), do not offer concrete directions to preserve importance. These types of directives are helpful in the sense that sometimes not doing anything is better for a natural system than any activity at all. However, a management plan needs to account for activities such as potential development. The ACEC program offers the opportunity to manage development. The no-action directives by themselves do not fulfill the ACEC mandate to manage for co-existence of natural systems and development.

The seven specific management directives found in the management plan are: (a) motorized access will be provided to the north side of the river; (b) access to the south bank will be limited to non-motorized activity; (c) visitor use will be limited; (d) sheriff patrols will be increased; (e) rafters will be required to obtain permits; (f) trail building will be started with volunteers; and (g) brochures

will be distributed to recreators concerning conflicts of use.

In summary, relevance is generalized and not well translated into management directives. Importance is defined in terms of other laws. Because so much of importance is based standards set by other designations, the management plan cannot effectively protect the ACEC. Although it is rational to cite other legislation when defining relevance and importance, FLPMA's ACEC designation offers the opportunity to specify management objectives that expand on other laws or create completely new directives. This ACEC management plan has not taken advantage of that opportunity.

Golden Bar and Brad's Creek

Description of Areas

These two ACECs are discussed together because their management plans are both part of the larger Umpqua River Corridor Management Plan which guides the management of 4,125 acres of land. The primary goal of the plan is to maintain the habitat for at least two known productive bald eagles (Berg, 1986). Both Golden Bar ACEC and Brad's Creek ACEC are located in southwest Oregon on the Umpqua River. The Umpqua River runs through Douglas County within the Coast Range Mountains, with Brad's Creek ACEC located 25

miles northwest of the city of Roseburg, and Golden Bar ACEC located 15 miles northwest of Roseburg.

In addition to the bald eagles, osprey and the northern spotted owl also inhabit the areas. The vegetation of these areas is primarily Douglas fir, a subclimax species, and western hemlock with western red cedar as climax species. There are old growth stands of Douglas fir, western hemlock, and western red cedar. Incense cedar and occasionally ponderosa pine are present as well. The riparian zones are characterized by willows, black cottonwood, red and white alder, Oregon ash, and California laurel. The geology of the region consists of sandstone and siltstone, and a water-lain layer of silt, sand, and gravel.

BLM considers water quality along the Umpqua River good. Thirty-three species of fish are found along this stretch of the River, including trout, salmon, and bass. Many of these species provide food for the eagles and the osprey.

Discussion

BLM considers both ACECs relevant as environmental resources containing wildlife, natural systems, or processes (Hart, 1981a, 1981b). Both qualify as important because the presence of the bald eagle provides the ACEC with more than local significance. Federal legislation, the Endangered

Species Act, and the Bald Eagle Act provide evidence of national concern which all indicate more than local significance. For each ACEC, the old growth forest is important because it provides nesting and forage for eagles, osprey, and spotted owls. The Bureau regards the pending determination by U.S. Fish and Wildlife Service of both areas as critical habitat more than locally significant.

BLM defines Class A scenery, recreational opportunities, fragile soils, and existing oil and gas leases as important in Golden Bar. Class A scenery, potential inclusion in the (then existing) Heritage Conservation and Recreation Service inventory of wild, scenic, or recreational rivers qualify as important in Brad's Creek. BLM considers applications for oil and gas leasing in Brad's Creek as important.

The section of the management plan devoted to both ACECs is two pages long. Management directives include a generalized caveat to restrict recreational development in both ACECs and to limit sand and gravel removal from the community gravel pit in Golden Bar ACEC. The plan suggests that the timing for sand removal not conflict with nesting for bald eagles (between January 15 and August 15). The management plans direct the BLM to monitor the region in and surrounding the two ACECs.

The relevance criteria for both ACECs are generalized (environmental resource: wildlife, natural system, or process). The relevance and importance criteria have highlighted but not defined the conflict between logging and wildlife survival in the ACEC. The old growth trees and the critical habitat have been included as important in the nominating criteria. However, the management plan does not follow up on either of these. The management directives are not adequate, partially because they are not well differentiated from the larger Umpqua River management plan. The two ACEC management plans are embedded in the larger Umpqua River Corridor Management Plan, which is devoted to plans for and methods of cutting commercial trees in the Umpqua River area. BLM has not taken the opportunity to develop distinct, detailed management plans for the two ACECs.

Coos Bay District

The one designated area of critical environmental concern on the Coos Bay district is the New River ACEC (509 acres) (see Figure 5).

New River

Description of Area

New River is an estuary and freshwater ecosystem running parallel to the ocean coastline in southern Oregon.

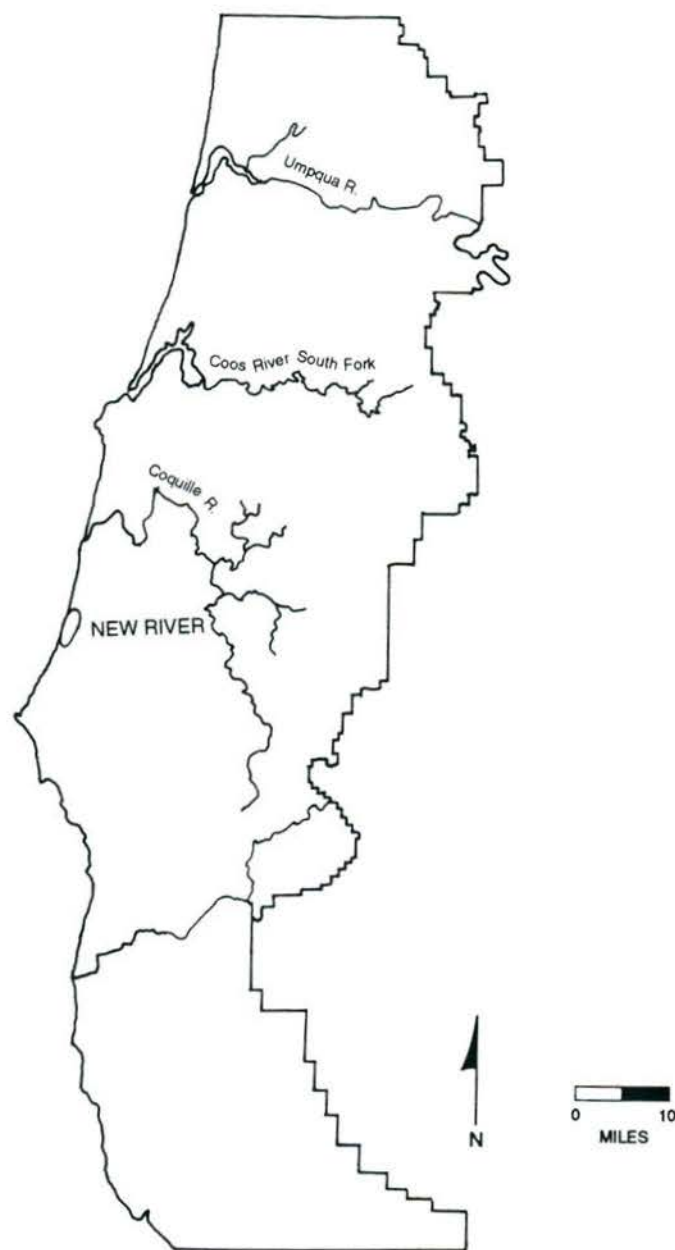


Figure 5. ACECs in the Coos Bay District.
Source: Carrie Coyle.

The New River ACEC is located in southern Coos and northern Curry Counties. The river is less than 100 years old, which makes it one of the youngest rivers in North America. Vegetation and soils are in an early stage of development. The channel which the river passes through is unstable, and wide variations exist in the volume of water flow. The landscape supports a broad spectrum of wildlife, especially in response to interactions with the marine environment. New River flows northward for eight miles from Floras Creek to Fourmile Creek where it empties into the ocean. Dunes and sand spits separate the river from the ocean in widths that vary from 200 to 600 feet.

Before the 1800s, New River was a backwater marsh and swamp associated with a large floodplain. The first settlers in the 1850s cleared forested areas and drained water from higher points to allow grazing and agriculture. The discovery of gold in California stimulated export of food crops from the area. It is hypothesized that, even without large machinery, many channels to the ocean were cut to aid in irrigation. The increased flow of water to the ocean eroded out a channel immediately behind (to the east of) the ocean dunes and spit. The zone immediately behind the ocean dunes was already a depression called a deflation plain. Erosion from the drainage ditches enhanced the formation of a defined north-south running channel.

In the early 1900s, European beachgrass (Ammophila arenaria) was introduced to the Oregon coast. By the 1930s, beachgrass stabilized the spit between the ocean and New River. Water flow was confined to a north-south direction. Scouring of the river bottom intensified and the channel depth increased.

Since the 1950s, the New River channel has stabilized, except for the location of the mouth of the river. The spot where the river empties into the ocean is continually moving north. The mouth has moved three miles in the last 40 years. The outlet will continue to move north until it reaches sandstone rock formations on the north side of China Creek.

Plant and animal species located in the ACEC include the western snowy plover. The population of snowy plovers here is one of the highest populations along coastal Oregon. The snowy plover is a candidate for federal status under the Endangered Species Act. The American peregrine falcon, a federally endangered species, is a year-round resident using New River for forage and migration in the winter. The Arctic peregrine falcon, a federally threatened species, is suspected of using New River as forage during migration times. The bald eagle, a federally threatened species, forages here on a year-round basis. The Aleutian Canada Goose makes migratory stops here in fall and spring, and is a

federally endangered species. The plant silvery phacelia is present in sparse patches in open sand areas and is a candidate for threatened or endangered status. Also present are chinook salmon in older age classes weighing from 30 to 50 pounds.

Discussion

Relevance and importance criteria were never written for New River ACEC. The ACEC coordinator for Coos Bay district has stated that criteria for designating New River "just evolved," but were never explicitly written out (R. Pullen, personal communication, 22 March 1990). Searches for relevance or importance criteria by the district ACEC coordinator and myself were unsuccessful in locating the documentation.

A report by Yolande Park (1990) for the Oregon Institute of Marine Biology indicates that protection for the New River ACEC should include eliminating cattle grazing, restricting off-road vehicle use, exclusion of livestock from the riparian corridor on the east side of New River, and the restoration of wetlands within the ACEC. The overall goal of these directives is to protect the riparian corridor, sustain the river bank, and ensure water flow stability. Certainly, any relevance and importance criteria should emphasize these factors.

Eugene District

The Eugene district has designated three areas of critical concern. They are the Long Tom ACEC (8 acres), the Lake Creek Falls ACEC (3 acres), and Horse Rock Ridge ACEC (190 acres) (see Figure 6).

Long Tom

Description of Area

The Willamette Valley was settled in the middle of the nineteenth century. By the 1860s, the most desirable agricultural lands had been claimed, including those along the Long Tom River. However, some land claims were surveyed without reference to the cardinal compass points. The Long Tom ACEC is a tract of land that went unclaimed because it was in between other claimed lands and never surveyed as a separate tract of land. The surrounding properties have been used for agriculture or grazing for more than a hundred years. The ACEC itself has never been cultivated. If the area has been grazed, it has received only slight use (Clausen, 1984b). There is casual use of the region for hunting and fishing by people who have gained permission for entry from the surrounding private landowners.

The Long Tom area of critical environmental concern remains in a pre-settlement condition (Clausen, 1984b). The

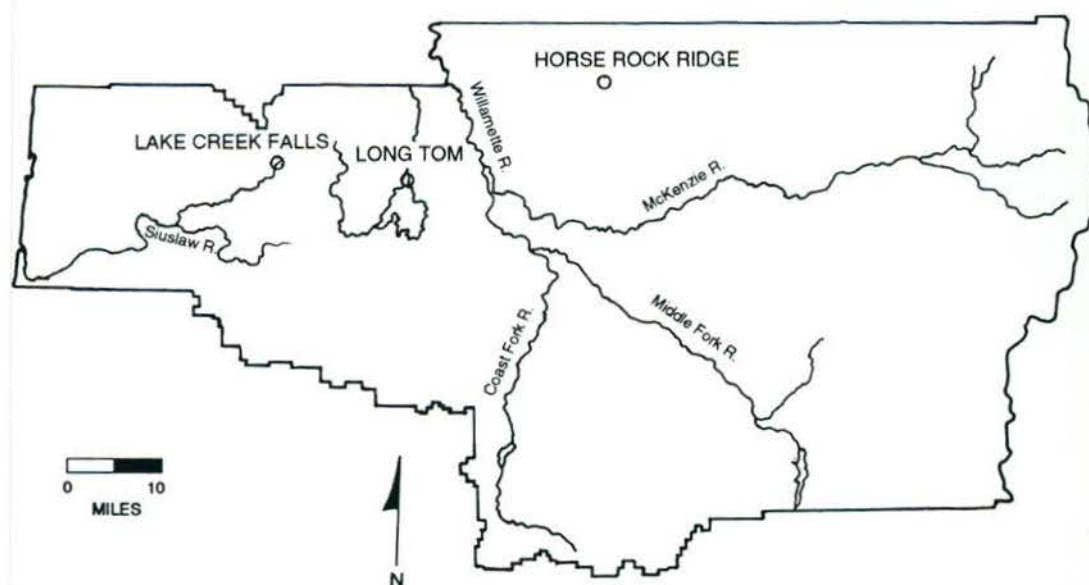


Figure 6. ACECs in the Eugene District.
Source: Carrie Coyle.

habitat is a valley floor savannah, a mixture of grasslands and woodlands. A preliminary list of 93 plant species reveals that 75 percent of the plants are native. Lomatium bradshawii is a federally endangered species in the area. Some of the woodlands flood during the winter, and vernal pools are common on other parts of the tract.

Discussion

Long Tom is relevant because it meets the Federal Land Policy and Management Act definition for relevance (see discussion of self-referential definition in Chapter V). No descriptors or further refinements are available. The ACEC is important because it was proposed (but never nominated) as a Research Natural Area, giving it more than local significance. The area is important because of the vertebrate community within a relic flora region. The importance of the ecosystem is its fragile condition and the special attention needed to maintain the habitat. BLM considers important the 93 species of vascular plants, including the federally endangered Lomatium bradshawii. BLM also regards the area important because it has not yet been adequately surveyed.

The nominating criteria of Long Tom ACEC are well written because they mention the fragile ecosystem, the plants, and the need for a survey. They adhere well to the

guidelines provided in the importance definition, although the ecosystem would better be described as relevant. The nominating criteria provide substantive material for use in the management plan. Management directives include prohibiting public access, allowing research by permits only, closing of the ACEC to vehicular traffic, marking survey boundaries, maintaining the successful prescribed burns of the past. The directives appear to be generated directly from the nominating criteria.

The district has decided to preserve this region and not use the minerals or the trees. Directives for research and prohibition of public access will effectively protect the features described in the nominating criteria. If trees or minerals were to be taken from the area, the research directives and denial of public access would not necessarily preserve relevance or importance. For this ACEC, the high correlation between the nominating criteria and the management plan is due partly to the absence of development plans.

Lake Creek Falls

Description of Area

The Lake Creek Falls area of critical environmental concern is located in the Coast Range Mountains 24 miles northwest of Eugene, Oregon. The entire ACEC consists of a 50- to 60-foot canyon within which Lake Creek flows. The

ACEC is a scenic and recreational area. The Bureau has categorized the area as a primitive, unimproved recreation area (Clausen, 1987). Four- to six-thousand visitors use the site in the summer. There are four sandstone stream pools for swimming and a one-hundred foot bedrock slide made slippery by algae and creek water. Water play and sunbathing are popular during sunny weather. Some trout fishing is available from May to October. Pool number three is used by BLM personnel for salmon study and extraction.

One of four natural sandstone pools contains boulders, which make it hazardous for diving. Makeshift swings and diving platforms are present. Logs washed downstream into the ACEC can dislodge and injure divers and people who crawl on the logjam. The steep-walled canyon makes entry and exit into the ACEC potentially dangerous.

Discussion

The Lake Creek Falls ACEC is relevant because it meets the Federal Land Policy and Management Act definition for relevance (see discussion of self-referential definition in Chapter V). No descriptors or further refinements are available. The region is important and more than locally significant because it is a popular recreation area for people from Corvallis and Albany. Recreation includes swimming, natural hazards such as water slides and

underwater boulders, and cliffs from which divers take risky plunges.

The management plan is ten pages long, containing directives to protect recreation activities in the ACEC. Directives include posting of danger signs, removal of unstable logs, and coordination of recreation activities with the objectives of the fisheries biologists.

Importance does get translated partially into management directives. The recreational activities are preserved by coordination of fisheries staff with the recreation staff; however, the directives are not specific. Overall, the management plan lacks details on preserving the natural systems that provide the recreational setting. As long as tree cutting or mineral removal do not occur, the directives will preserve the ACECs relevance and importance.

Horse Rock Ridge

Description of Area

The Horse Rock Ridge ACEC is located on a ridge line approximately 19 miles northeast of Eugene. The ACEC consists of 80 acres of grassy balds and rock outcrops, 80 acres of mixed coniferous forest, predominantly Douglas fir forest and incense cedar, and 30 acres of old-growth Douglas fir. The undisturbed grassy bald area contains, by

preliminary count, 121 plant species, representing a mixture of lowland as well as subalpine varieties.

Discussion

Horse Rock Ridge is relevant because it meets the Federal Land Policy and Management Act definition for relevance (see discussion of self-referential definition in Chapter V). No descriptors or further refinements are available.

The area is important because it is under consideration for status as a Research Natural Area. Horse Rock Ridge ACEC is also important because of the large, grassy balds containing numerous rock outcrops identified by the district as the most extensive undisturbed habitat of its kind in the Eugene district. Importance is also attributed to the 121 species of vascular plants present, representing a mix of lowland and subalpine species. And the area is important because of the disjunct populations of rare species found nowhere else in the district (presumably a basis for more than local significance).

The management directives for the ACEC require research by permit only, periodic site reviews to ensure compliance with the management plan, and prohibition of recreational use. Felling of trees, extensive soil excavation, and modification of any part of the ecosystem of the bald and the

forest are prohibited. The removal of fallen trees is not allowed.

There is high correlation between the nominating criteria and the management plan. The district can successfully manage this ACEC for protection of the nominating values due to the lack of conflicts between preservation and development. If development were to occur, the plan would need additional directives to preserve ecological integrity. Currently, the nominating criteria and management directives are congruent.

Salem District

The Salem district of the Oregon Bureau of Land Management has designated eight areas of critical environmental concern. They are Lost Prairie ACEC (60 acres), Rickreall Ridge ACEC (175 acres), Williams Lake ACEC (90 acres), Soosap Meadows ACEC (412 acres), Nestucca River ACEC (5,272 acres), Elk Creek Bald Eagle ACEC (2,058 acres), Big Canyon ACEC (280 acres), and Sheridan Peak ACEC (305 acres) (see Figure 7).

Lost Prairie

Description of Area

The Lost Prairie area of critical environmental concern is located twelve miles east of Lincoln City, Oregon. The

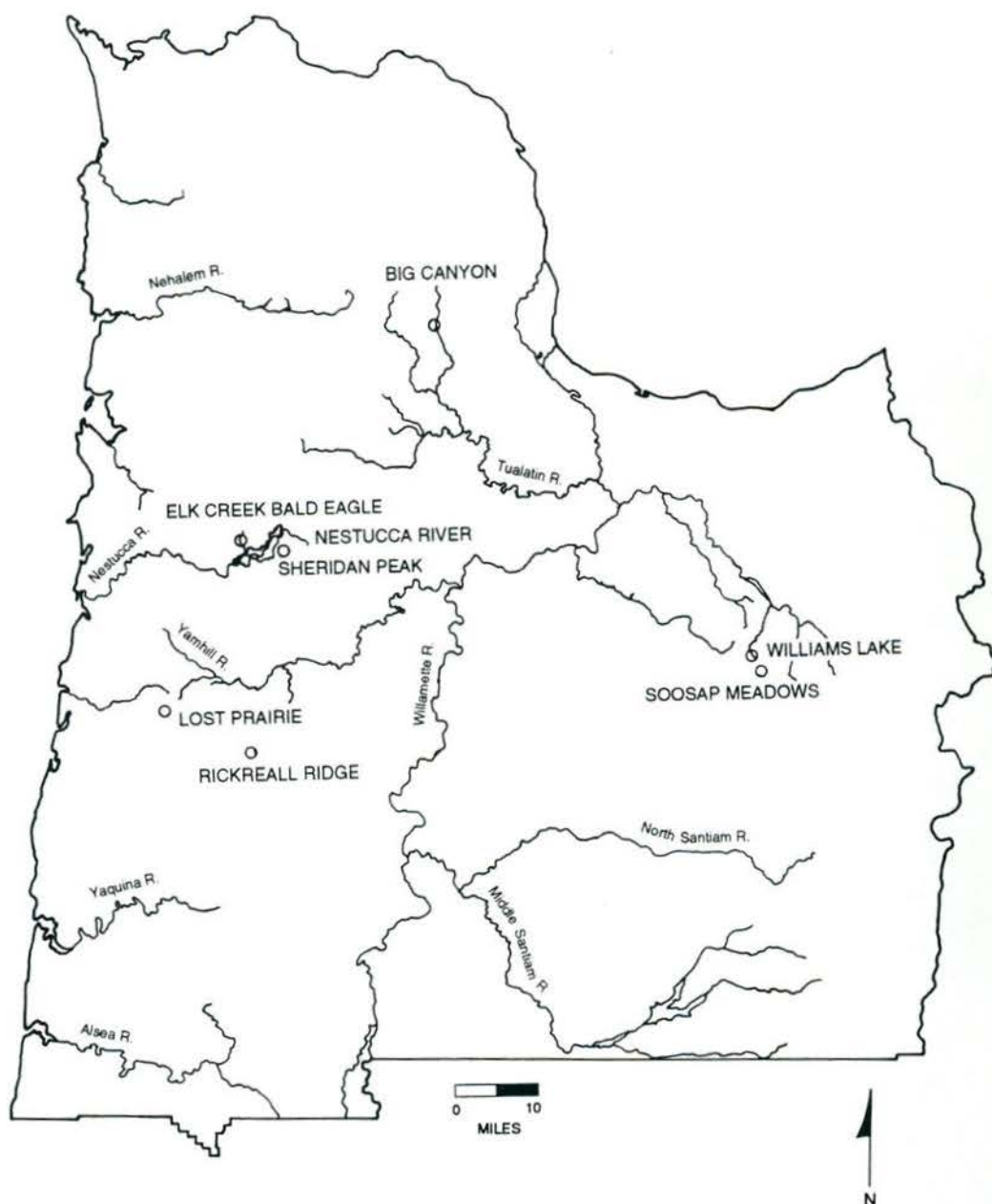


Figure 7. ACECs in the Salem District.
Source: Carrie Coyle.

ACEC is a natural high-elevation peat bog which the BLM considers rare, lying at an elevation of 2,700 feet above sea level in a shallow basin (Dose, 1981a). The region is a continuous, soggy-wet carpet of sphagnum moss with a diverse number of sedges, bog herbs, and other wildflowers. A small, slow-moving stream passes through the center of the bog. The bog moves upward and outward in a circular direction. The vegetation grades into a mixture of beargrass, bog huckleberry shrub, and western white pine. The outer circumference of the bog, the highest portion of the ACEC, is a series of islands covered by 50-foot western red cedar and western hemlock trees, with a tall Pacific rhododendron shrub understory. The perimeter habitat is a primary growing environment for mosses, lichens, and liverworts.

The ecological zones represented in the ACEC are a western red cedar community, a Coast Range shrub wetland, a Coast range emergent wetland, a Coast Range moss-lichen wetland, and a bog riparian stream. One flower, Anemone oregana var. felix, is a candidate for threatened status under the Endangered Species Act. A newly described lily called Erythronium oregonum is present at the site. Fetid adder's tongue, or Scoliopus hallii, is found on the site and is being monitored by BLM resource specialists.

Discussion

The Lost Prairie ACEC is relevant because it meets the Federal Land Policy and Management Act definition for relevance (see discussion of self-referential definition in Chapter V). No descriptors or further refinements are available. It is important because several organizations have identified it as an area of concern: the U.S. Fish and Wildlife Service Endangered Species Biological Section; the Oregon Native Plant Society (Willamette Chapter); the Oregon Endangered Plant Species Task Force; and Donald Zobel, Oregon State University Department of Botany, acting on behalf of the Nature Conservancy.

BLM regards the ACEC important because of the presence of the 60-acre sphagnum bog, considered rare, with plants under consideration as federal endangered species. BLM considers the complex ecosystem important: the bogs, riparian zones, ponds, and nesting trees all located in a very small area.

The management plan provides generic guidelines to maintain undisturbed conditions and allow natural systems to prevail. The plan limits public use to observational activities, such as research and education. The one specific management objective directs the BLM to develop recovery plans for Anemone oregana var. felix. Even this, though, is the development of a plan, and not a set of directives, such

as setting aside monitoring plots and schedules, defining when a development activity threatens the habitat of the Anemone, or providing authorization for cessation of development if the habitat is threatened.

Despite the criteria's specification of the uniqueness of the ecosystem, the plan contains no discussion of the level of development that the ecosystem can tolerate and still continue to be viable bog, riparian, pond, and snag habitat. Since FLPMA allows development in ACECs, this is an absolutely critical discussion item in this management plan. The FLPMA ACEC program was designed to identify this type of conflict and manage for it, and this plan has failed to do that.

Rickreall Ridge

Description of Area

This 175-acre area of critical environmental concern is located eleven miles west of Dallas, Oregon. The rocky ridge was not logged in the 1940s because the trees were not considered commercially valuable. Thus, the trees and plants exist in an undisturbed fashion. The area is used as a botanical study and sight-seeing area.

Rickreall Ridge supports a wide range of plant and animal species. Several Willamette Valley species reach their upper elevational limits, and some Coast Range plants

can also be found within the ACEC. Botanists suspect that the region is a disjunct refuge for species that had spread northward during a previously warmer and drier climatic period (Stauber, 1981e). Several of the plants and animals are more characteristic of southwestern Oregon. One moss located on the ridge is an arctic/boreal species and has not been found elsewhere in the Oregon Coast Range (Dose, 1981b). Six strains of butterflies are under observation for interaction with their supporting plants. Two populations of Indian paintbrush are being studied for their genetic codes for making pigment. A population of dwarf Oregon white oak is being studied as an indicator of past climatic events in the area.

Discussion

The Rickreall Ridge ACEC is relevant because it meets the Federal Land Policy and Management Act definition for relevance (see discussion of self-referential definition in Chapter V). No descriptors or further refinements are available. BLM attributes importance to the area because the Oregon Natural Heritage Program considers the region ecologically and scientifically significant.

BLM has judged Rickreall Ridge important because of the high diversity of plants in a relatively small area, considered a disjunct refuge. BLM regards ongoing research

important: Dr. McCorkle's butterfly research; Dr. Johnson's genetics studies of pigment formation in the Indian paintbrush plant; and studies of dwarf Oregon white oak (Stauber, 1981e).

The management plan divides the ACEC into an 80-acre primary zone and a 95-acre caution zone, providing a map of the two zones. The plan prohibits the application of herbicides and cutting of trees in the primary zone. In the caution zone, trees can be cut "in such a manner that significant ecological values in the primary zone will not be jeopardized" (Dose, 1981b, p. 34). The plan specifies using existing roads for hauling. "Timber management activities will be designed to provide special protective measures against windthrow, fire, herbicide spray drift and other potential threats to the ACEC" (Dose, 1981b, p. 35). Unfortunately the special protective measures are not listed in the plan.

The importance of this ACEC has been defined by the diversity of plant species. The plants appear in the importance criterion, but the management plan stipulates only that the ecological resources of the ACEC will be monitored once a year, without requiring monitoring plots for the plant species. Further, there is no way to measure whether plants in the primary zone can tolerate development in the secondary zone. The plan prohibits tree cutting in the

primary zone, and allows trees that blow down to decay as part of the nutrient cycling system. However, the plan does not mention protecting the habitat in the secondary zone where cutting occurs, but only requires filing research reports with the Salem district. The management plan ought to include directives for preserving the ecosystems in both zones in such a way that protecting the primary zone preserves relevance and importance. The moss, found nowhere else in the Coast Range, ought to qualify as more than locally significant and be protected in the plan.

Williams Lake

Description of Area

Williams Lake area of critical environmental concern is located in northwest Oregon, southeast of the city of Portland. Williams Lake itself is surrounded by wetlands and ridges. The lake and bog are 35 acres in size, lying at an elevation of 3,600 feet, surrounded by forests made up of Douglas fir, Pacific silver fir, noble fir and western hemlock. Willow trees surround the lake on the east and west sides, and water flows from the lake through a beaver dam on the east side. Hunting and fishing are major recreational activities at the lake, and there is some recreational camping.

The ACEC is a lake and bog ecosystem, called a Cascadian seep-formed lake, undergoing peat bog/quaking bog succession (Dose, 1981d). The water for the lake has its source in a series of seeps on the north-facing slopes. The seeps are 50 to 125 feet wide and reach within 150 feet of the ridgetop surrounding the lake. The seep system has nourished the peat bog around the rim of the shallow lake.

Plant communities at the bog have become adapted to the specialized geography and hydrology of the lake system. Rare plants in the ACEC include Isopyrum hallii, Parnassia fimbriate, and Lycopodium inundatum. At the time of designation, the Lycopodium inundatum was a proposed state-listed threatened species.

Discussion

Williams Lake ACEC is relevant because it meets the Federal Land Policy and Management Act definition for relevance (see discussion of self-referential definition in Chapter V). No descriptors or further refinements are available. It is important because several organizations have recommended protection for the area: the Nature Conservancy Oregon Natural Heritage Program, the Research Natural Area Committee, and the Clackamas County Department of Environmental Services. The ACEC is also important because BLM botanists consider the area the best example in

the Salem district of a Cascadian seep-formed lake undergoing peat bog/quaking bog succession (Dose, 1981d; Stauber, 1981h). The area is important because the plant communities have adapted to the conditions surrounding the lake. BLM botanists nominated this ACEC, and there is a high degree of correlation between the botany of the region and the description of importance.

The management plan divides the ACEC into a 60-acre primary zone and a 30-acre secondary zone. The primary zone is to be managed to maintain relatively undisturbed conditions, while the secondary zone will be managed for multiple use. Collecting of rocks, plants, and animals for commercial use is prohibited in the primary zone. Tree cutting and road construction are also not allowed. Trees blown down by the wind and damaged trees will be allowed to decay as part of the nutrient recycling system.

In the caution zone, trees blown down by the wind will be cut so that the ecological values in the primary zone will not be jeopardized. Other directives to protect the ecological values are not included. The plan lacks specifics on how trees blown down by the wind are to be cut and removed in such a way as to protect the primary zone. There are no management directives for the secondary zone; special protective measures are to be designed, but are not mentioned in the management plan. The plan directs that the

Isopyrum hallii be monitored by a botanist every three years. The lake shore is to be photographed annually. In total, the plan is strong on monitoring the ecological systems listed in the nominating criteria, but lacks specific directives that name and protect species and natural processes.

Soosap Meadows

Description of Area

Soosap Meadows ACEC is located approximately 30 miles southeast of Portland, west of the boundary of Mt. Hood National Forest, and just east of Soosap Peak. Soosap Meadows was the site of overnight campsites along an early trail that led to Soosap Peak and other nearby peaks. The trail was first mapped in the 1890s and is probably aboriginal in nature (Stauber, 1981g). In the 1920s and 1930s, the trail was used by the U.S. Forest Service to provide access to lookout towers in the region. Soosap Meadows served as a camp for crews who maintained the fire lookout stations in the area.

The region defined by the ACEC has never been logged. The subalpine meadows, large and undisturbed, are located in a bowl-shaped area resulting from a glacial moraine which prevented run-off from flowing into the area. Three plants in the meadows are of interest to botanists: Grass of

Parnassus (Parnassia fimbriata), Gnome plant (Hemitomes congestum), and Hall's isopyrum (Isopyrum hallii). The forested portions surrounding the meadows are inhabited by the northern spotted owl. Since there are no roads and no past history of logging in the ACEC, the Research Natural Area Committee recommended RNA status for the region. However, that recommendation was never acted upon.

Discussion

The Soosap Meadows area of critical environmental concern is relevant because it meets the Federal Land Policy and Management Act definition for relevance (see discussion of self-referential definition in Chapter V). No descriptors or further refinements are available. The ACEC is important because it has more than local significance due to recommendations for further protection by the Oregon Native Plant Society and the Oregon Wilderness Coalition. Also, the area was recommended for potential Research Natural Area status by Sarah Greene, the Research Natural Area scientist. The ACEC is listed as important because the meadows are the only large, undisturbed expanses of natural Cascadian sub-alpine meadows in the Salem district. The area is also important because of gnome plants and Hall's isopyrum. Part of the importance listing hinged on the fact that the gnome plants were under review at the time for state and federal

listing as threatened species. The meadows and forest also are important because they provide an opportunity for study and monitoring.

The objective of the management plan is to preserve the subalpine meadow ecosystems for educational and scientific purposes. This objective is generated directly from the importance criterion to study and monitor the area. The ACEC is divided into a primary zone of 150 acres encompassing the meadows, and a 250-acre caution zone. Tree cutting is prohibited in the primary zone, and trees are allowed to decay as part of the natural nutrient cycling system. Trees in the caution zone are to be cut at the rate of no more than ten percent of the available commercial trees per decade. The slow rate of cutting will reduce disturbances to the primary zone. The ten percent directive is a very positive correlation between the importance of the region and the management directives. This is a good example of specific management actions developed under FLPMA that otherwise may not have been implemented without the ACEC program.

Nestucca River

Description of Area

At 5,272 acres, the Nestucca River ACEC is the largest ACEC in western Oregon. Located in the northwest corner of Oregon in the Coast Range Mountains, the designated region

lies within Tillamook and Yamhill Counties. The ACEC follows the course of the Nestucca River for 11.6 miles, and includes 6.6 miles of named tributaries. The primary zone of the ACEC encompasses 1,115 acres of land along a ribbon-like stretch on both sides of the river. The remaining 4,157 acres expand the ACEC outwards along both sides of the primary zone.

The Nestucca River is located in a canyon which is steep and dissected in the shape of a "V." Elevation of the river ranges from 600 to 2,800 feet. The canyon is known by recreators for its color and variety. Clear pools reflect red, green, and yellow vegetation on the riverbank. The upper portion of the river is narrow and runs over an almost uninterrupted bed of rock, creating numerous white water cascades. The water and natural surroundings contribute to the river's popularity as a recreation area. Four developed recreation sites are found within the primary zone. The section of the river flowing through the ACEC is inventoried as a potential addition to the National Wild and Scenic Rivers System.

BLM considers the river a major contributor to Oregon's economy (Dose, 1984a). The portion of the river within the ACEC contains some of the most significant fish habitat in the Nestucca River drainage system. Historically, the river has been a source of winter steelhead salmon, coho salmon,

and sea-run cutthroat trout. Summer steelhead salmon was introduced in 1962. Inventories by BLM indicate that water quality within the ACEC is generally good for fish. However, use of the Nestucca Access Road has contributed fine sediments to the river during the winter, reducing fisheries and smothering the eggs used as food by wildlife.

Two hundred species of wildlife inhabit the ACEC. The two dominant wildlife habitats are riparian vegetation and coniferous forest dominated by Douglas fir. Bald eagles forage along the river and use large old-growth trees along the river for roost sites. The northern spotted owl has been sited within the ACEC, and clumps of large, older trees provide nesting habitat for this species. Roosevelt elk use most of the area and have been expanding in range and numbers. Black-tailed deer are present throughout the ACEC. Black bear range throughout the area. Woodpeckers and other cavity-nesters are found in the ACEC. Vacated cavities are the prime habitat for 60 species of wildlife. Large, partially decayed trees in the riparian areas provide habitat for raptors, such as hawks.

The plant communities in the ACEC are part of the western hemlock forest zone. Five plants are considered special by botanists. They are fringed pinesap (Pleuricospora fimbriolata), gnome plants (Hemitomes congestum), calypso orchids (Calypso bulbosa), phantom orchids (Eburophyton

austiniae), and weak bluegrass (Poa marcida). The Nestucca River ACEC contains the world's largest known concentration of fringed pinesap. Studies on calypso orchids and phantom orchids are ongoing to help determine requirements for survival. The orchids are located in the ACEC caution zone. At the time of the designation of the ACEC, weak bluegrass was a candidate for threatened status under the Endangered Species Act. The populations of weak bluegrass are located in the northern portion of the ACEC in the caution zone. Logging and other activities have caused a gradual decline in the numbers of this species.

Discussion

The Nestucca River ACEC is relevant because it meets the Federal Land Policy and Management Act definition for relevance (see discussion of self-referential definition in Chapter V). No descriptors or further refinements are available. The ACEC is important because the sightseeing and fishing opportunities have more than local significance. The ACEC is also listed as important because the five species of game fish are used for commercial and recreational purposes. BLM considers the river important because of potential candidacy for the National Wild and Scenic Rivers program.

The five plants of special interest are not listed as relevant or important. This is troubling, given that some of them are not known anywhere else in the world and therefore qualify as important because they are more than locally significant to the scientific community. None of the 200 species of wildlife, which include bald eagles, black bear, spotted owls, or elk, are mentioned in the nominating criteria. This is problematic, because the interaction of these species with their habitat represents a large and dynamic ecosystem that is relevant as a natural system or process. One directive encourages studies or research on three of the botanical specimens (Dose, 1984a). It is not clear which species are included and what the directive means: conduct or encourage?

The nominating criteria emphasize scenic qualities, fisheries, and recreational opportunities. The management plan focuses on those attributes, ignoring ecological and biological systems except for the fisheries. Twenty-six management directives address the recreational, visual, and scenic factors mentioned in the nominating criteria. Some generic directives do benefit the unmentioned plants and wildlife. Trees in the caution zone are to be harvested so that a minimum of ten years is left between the cutting of adjacent units. The management plan divides the ACEC into an interior primary zone and a surrounding caution zone.

Trees in the primary zone are allowed to decay and will not be removed, unless they block fish passage, trails, or roads. Overall, the management plan does an excellent job of providing directives for protecting the recreational and visual values mentioned in the nominating criteria. However, the underlying ecological and natural systems are ignored in the plan and the nominating criteria.

Elk Creek Bald Eagle

Description of Area

The Elk Creek Bald Eagle area of critical environmental concern is located southwest of Portland in the Oregon Coast Range Mountains. Two-thousand fifty-eight acres have been set aside to protect habitat for bald eagles. In 1978, the bald eagle was officially listed by the U.S. Fish and Wildlife Service as threatened in Oregon, Washington, Minnesota, Michigan, and Wisconsin. The Bureau has observed the ACEC to be a wintering and nesting habitat for bald eagles. The ACEC is primarily a conifer forest with Elk Creek River, a tributary of the Nestucca River, flowing through the ACEC. Elk Creek provides a food source for the bald eagles. Chinook salmon, coho salmon, and steelhead trout spawn according to a staggered schedule that provides food for the eagles in the form of dead and dying fish. Chinook spawn from October to mid-December, coho spawn from late October

to mid-January, and steelhead trout spawn from November to mid-April.

In 1876, the Nestucca fire burned in the region, destroying the older forest stands. The trees that remain are approximately 90 years old. Small patches of old-growth forest 200 years old and older remain along Elk Creek. Individual old-growth trees that survived the fire are scattered throughout. All of the bald eagle nest trees that have been sited are in the old growth trees. Bald eagles have been observed in the Elk Creek drainage since the 1950s by local residents. Nesting within the drainage has produced 15 known fledglings since 1970.

Discussion

Elk Creek ACEC is relevant because it meets the Federal Land Policy and Management Act definition for relevance (see discussion of self-referential definition in Chapter V). No descriptors or further refinements are available. It is important because the presence of the bald eagle is more than locally significant due to its listing as a threatened species in 1978 for the states of Oregon, Washington, Minnesota, Michigan, and Wisconsin (and endangered for the rest of the conterminous United States). The ACEC is also important because this area has the only active bald eagle nest site in the Salem district.

The management plan divides the ACEC into a primary zone around the nesting trees. The secondary zone is a buffer around the primary zone and contains foraging habitat along Elk Creek. In the primary zone, no tree cutting is allowed. All of the directives for the primary zone are prohibitions: no new road construction, no removal of roadside vegetation except for traffic safety, no use of compression brakes from January 1 to August 15, no low level (1,000 feet) aircraft operations from January 1 to August 15, and no use of chemicals on animals. Certain roads will be closed to vehicle travel.

In the secondary zone, there are also a number of prohibitions: no tree cutting in the riparian zone along Elk Creek, and no low level (1,000 feet) aircraft operation from January 1 to August 15 if eagles are in the area. No use of chemicals for animal control. Designated roads will be closed to vehicles. The plan directs loggers to leave at least two of the largest trees for roost trees in each sale unit within 400 yards of Elk Creek.

There is a high correlation between protecting the eagle habitat, the nominating criteria, and the management directives. Federal laws provide basic guidelines used in the nominating criteria for eagle survival. However, the nominating criteria and management plan could be more specific concerning this habitat and the survival of the eagles.

FLPMA provides the opportunity to write these requirements into the law. In this case, additional directives for protecting the natural systems would benefit the eagles.

Big Canyon

Description of Area

The Big Canyon Area of Critical Environmental Concern consists of 280 acres of isolated land. There is no public access to the ACEC. The primary feature is the main fork of the Big Canyon Creek. The Creek is narrow with nearly vertical slopes rising to 150 feet in height. There are a variety of plant species in the ACEC, including Douglas fir trees up to 400 years in age. At the time of designation, three species of plants in the ACEC were being monitored by BLM botanists: Calypso bulbosa, Eburophyta austeniae, and Scoliopus hallii.

Although the area appears undisturbed, the region has been logged. However, the lower slopes and the riparian zones along streams that feed into the Creek are untouched by logging or other human activity (Stauber, 1981a). The region is known for excellent scenery. Hiking and equestrian trails are well-used in this region.

Discussion

The Big Canyon Area of Critical Environmental Concern is relevant because it meets the Federal Land Policy and Management Act definition for relevance (see discussion of self-referential definition in Chapter V). No descriptors or further refinements are available. The ACEC is important because the Oregon Natural Heritage Program identified the region as a potential Natural Area in 1977, giving it more than local significance. BLM considers letters from outside the county concerning the botanical and ecological values important and attributes more than local significance to the region.

BLM regards the main fork of the canyon with its steep slopes important, along with the 400 year old Douglas fir trees, and three plant species. The BLM considers the ACEC important because the older forest ecosystem is unusual. The Bureau also considers the visual and scenic qualities, as well as the hiking and equestrian trails important.

There is a strong correlation between the natural features of the region, especially the plant species under study, and the importance criterion. According to the ACEC coordinator for the Salem district, no management plan has been written for this ACEC, so no comparison with the nominating criteria is possible.

Sheridan Peak

Description of Area

Nestucca River ACEC, Elk Creek ACEC, and Sheridan Peak ACEC are all located near one another in the vicinity of the Nestucca River, southwest of Portland, Oregon. To the north, all are bordered by the Tillamook State Forest. To the south and west, they are bordered by the Siuslaw National Forest. Sheridan Peak ACEC consists of 305 acres. As with the Nestucca River ACEC and the Elk Creek ACEC, the Sheridan Peak ACEC experienced a fire when the Nestucca River drainage burned in 1876. The ACEC is forested, with a number of rare plants. At the time the ACEC was designated, Poa marcida, weak bluegrass, had been recommended for threatened status by the U.S. Fish and Wildlife Service. This species has been found in several concentrated patches scattered throughout the ACEC. When Sheridan Peak was designated, this region was the most significant site for Poa marcida in Oregon (Dose, 1984b; Stauber, 1981f).

Two other rare plants occur in the ACEC: Poa laxiflora (loose-flowered bluegrass) and Eburophyton austini (phantom orchid). The Poa laxiflora sites are important because there are no collections of this species from 1947 to 1979. BLM botanists consider the range and status of loose-flowered bluegrass here to be than locally significant.

Discussion

The Sheridan Peak ACEC is relevant because it meets the Federal Land Policy and Management Act definition for relevance (see discussion of self-referential definition in Chapter V). No descriptors or further refinements are available. BLM considers the pending U.S. Fish and Wildlife Service decision to list Poa marcida as a threatened species more than locally significant. BLM has also determined that the U.S. Fish and Wildlife Service decision to stop three commercial tree sales in the ACEC is more than locally significant. The Poa laxiflora sites are new and afford the opportunity to augment scant collections of this species. BLM considers the sites important.

The importance of this ACEC is predictable in that we have seen previous ACECs declared important because of U.S. Fish and Wildlife Service protection for threatened or endangered species. However, this ACEC is unique because the status of the Poa marcida as a threatened species is pending. That status appears to be sufficient to stop three sales in the ACEC while a decision is made on the plant's condition. It is logical that almost any tree cutting on or near threatened or endangered species habitat could be a threat to the survival of a species because of changes in sunlight/shade ratios, water regimes, understory micro-

climates, and other factors. In this case, BLM saw that threat as important, and the ACEC designation allowed the BLM to continue a five-year study of the Poa marcida habitat. This is a good example of the ACEC designation leading to a significant management action to protect the values listed in the nominating criteria. The one exception is the species Poa laxiflora. The plant is listed as important in the nominating criteria, but is not protected by any specific directives in the management plan.

The management plan comes right to the point concerning the protection of the rare plants. There will be no tree cutting in the primary zone where the concentrated populations of Poa marcida are located. Tree cutting will be allowed in the secondary zone where study plots for Poa marcida will be protected and monitored to determine if further cutting should occur. The management plan is explicit on this:

Forest management activities affecting Poa marcida will be conducted only when sufficient manpower is available to carry out the appropriate research on their effects. . . . All timber management and research activities affecting Poa marcida in this zone will be coordinated with the U.S. Fish and Wildlife Service. (Dose, 1984b, p. 11)

Later, however, the plan contradicts itself by claiming that individual Poa marcida plants will be protected when practical, when protection does not preclude cutting of trees. The conclusion is that the pre-marked plots will be

protected, but the non-marked individual plants will be subject to destruction from tree cutting.

The plan also prohibits recreation, camping, and hobby collection of rare plants. Except for the danger to individual rare plants in the secondary zone, these plan directives correlate highly with the relevance and importance criteria. This is a successful example of FLPMA providing active protection in the management plan for values embodied in the nominating criteria.

This ends the discussion of the five districts. The next chapter outlines some of the political and economic factors that have influenced the nomination and management of ACECs in western Oregon.

CHAPTER V

SUMMARY AND CONCLUSION

Despite the initial enthusiasm of BLM managers, the ACEC program has met with resistance. Managers perceive special use designations as threats to the economic health of the eighteen western Oregon counties. To understand the relationship between Oregon's counties and the BLM, we must look at the politics of the timber industry in western Oregon.

First, this chapter examines the economic influence of a federal timber statute, the O&C Act of 1937, to show the importance of timber cutting to the counties in western Oregon.¹ Four prominent preservation programs in western Oregon which have reduced the acreage available for revenue from timber are then outlined. Some of the common characteristics of the ACECs in this study are then discussed, citing (a) the number of nominations based on ecosystems, (b) the number of plans that resolve development conflicts, (c) the importance of size, and (d) how well the nominating criteria have been used.

¹O&C refers to the Oregon and California Railroad.

The chapter includes an example of a recent ACEC nomination in which the language of the nominating criteria has been poorly used, with the result that the nomination fails to protect the ecological systems of the nominated area. A district-by-district analysis summarizes how well the ecological language of the nominating criteria has been used to generate management directives. The conclusion emphasizes the power of the language of the ACEC nominating criteria to preserve natural diversity in western Oregon, and offers suggestions for improving the ACEC program.

The O&C Act

The eighteen O&C counties of western Oregon contain the majority of Oregon's population (see Figure 8). The Southern Pacific Railroad, which had assumed ownership of the vast tracts of alternate sections of land granted to the Oregon and California Railroad, was forced to return these lands to the U.S. Government in 1916 because of failure to live up to the terms of the original grant. These lands were placed under the jurisdiction of BLM at its founding (Tollenaar, 1981).

In the O&C Act of 1937, which is still in effect, Congress provides revenue to western Oregon counties based on the financial return on trees cut on the old railroad grant lands. From 1916 to 1979, the eighteen O&C counties

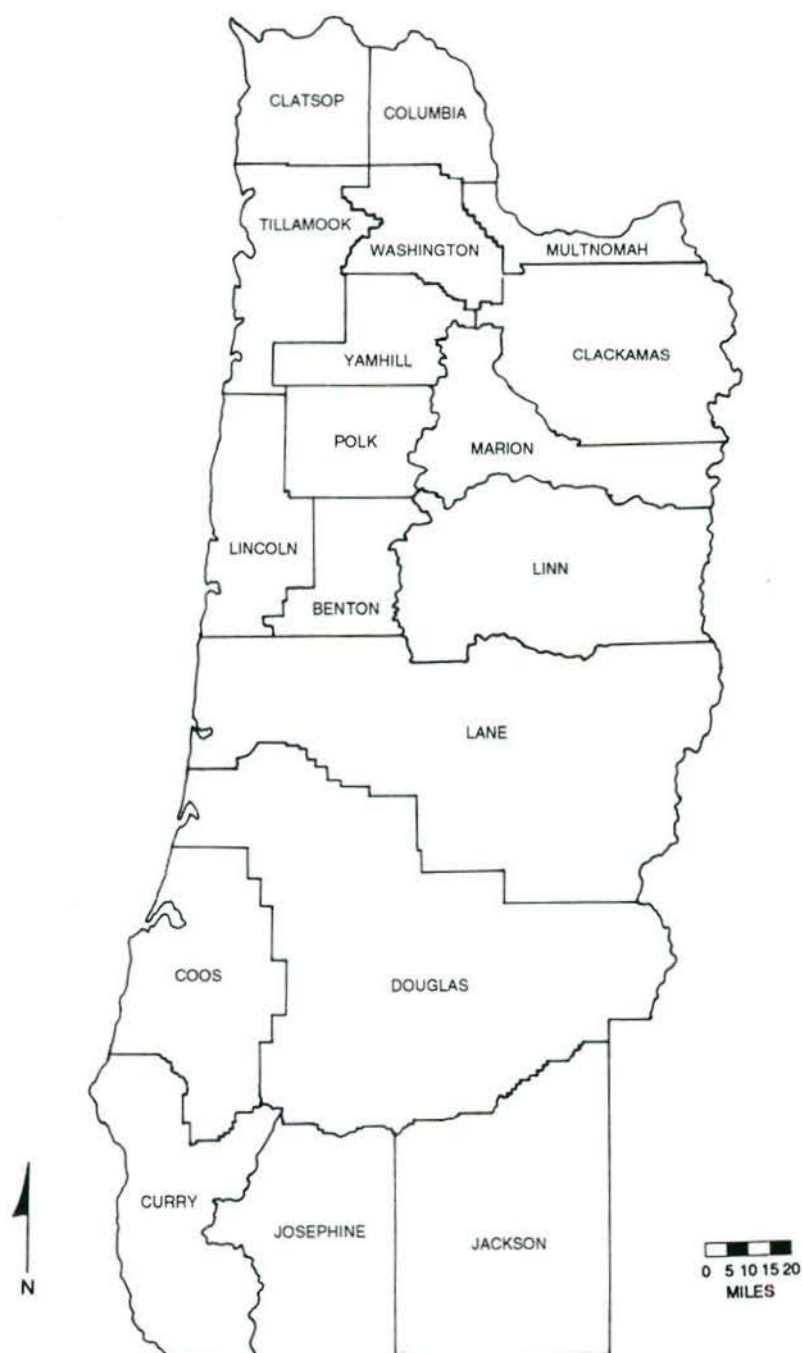


Figure 8. Eighteen O&C Counties in Western Oregon. Source: Carrie Coyle.

received \$945 million in direct payments from log sales. The federal government provided the U.S. Forest Service and BLM an additional \$477 million in log receipts to build county roads (Tollenaar, 1981). From 1916 to 1979, the average annual payment to the counties was \$22 million, increasing to an average annual \$64 million dollars during the period 1979 to 1988 (BLM Facts, 1979-1988).

The economic and political incentive of the O&C Act is obvious. Cutting more trees provides more payments to the county coffers. Fifty percent of BLMs gross log receipts goes back to the counties. The ratio of forest receipts to total county revenue ranges from 56 percent in Douglas county, to 23 percent in Lane, and 18 percent in Clackamas. The average for all counties has been around 24 percent (Tollenaar, 1981). O&C payments may be used at the discretion of the counties, usually on libraries, social services, highways, and public safety.

Thus, it is not surprising that FLPMA's definition of relevance may cause some BLM managers anxiety. BLM staff are guided by the legislative mandate of the O&C Act of 1937. The 1937 O&C Act provides the counties with the statutory authority to ignore ecosystem concepts. The O&C Act allows BLM to manage the forest primarily for log production. Through the years, the U.S. Department of the Interior has officially supported a timber-dominant reading

of the O&C Act. The most recent interpretation of the act was written under Robert Burford, director of the BLM under Ronald Reagan.

BLM managers may therefore perceive special use designations as a way of locking up an important source of revenue. ACEC nominating criteria, in conflict with the O&C Act, require managers to view the forest as a whole system, an ecosystem.

Bob Alverts, the ACEC coordinator in the Roseburg district, remembers the beginnings of the ACEC program as a bold step in western Oregon because of the O&C Act's timber dominant policies (R. Alverts, personal communication, 12 November 1989). Initially, ACEC coordinators such as Alverts, Pullen, and others were excited by the new designation because of the promise of increased funding for natural resource management. With Jimmie Carter in the White House, the numbers of BLM resource specialists hired under FLPMA increased. District managers made decisions protecting natural resources even when such decisions conflicted with log quotas. The ACEC program gave managers the flexibility to manage for development and preservation in the context of timber dominant legislation.

Originally, managers thought that funding would increase as the number of designated ACECs increased. However, funds for the program were taken from other budgetary

line items, such as wildlife and recreation in the Coos Bay district, for example (R. Pullen, personal communication, 22 March 1990). The Coos Bay coordinator admitted that managers grew to dislike the ACEC program because it never received sufficient funding. The ACEC coordinator for the Roseburg district agreed (R. Alverts, personal communication, 12 November 1990). During the 1980s, the Reagan presidency decreased budgets for natural resource management. Where funding levels were legally protected, the President implemented orders to transfer management of the timber supply from the district manager level to the area manager (Callison, 1986; R. Pullen, personal communication, 22 March 1990). BLM area managers accept bids from timber companies for the right to cut trees on BLM land. At that level private companies have had a greater influence on how the land is managed (R. Pullen, personal communication, 22 March 1990).

Preservation Programs in Western Oregon

In addition to ACECs, four other programs are designed to set aside land in western Oregon for preservation or research: (a) the Oregon Natural Area Preserves Program; (b) the Oregon Natural Heritage Act; (c) the federal Research Natural Area (RNA) program; and (d) the Nature Conservancy areas. The first two designations set aside state lands,

while Research Natural Areas preserve federal lands. Nature Conservancy areas can comprise federal, state, and private lands.

Oregon's 1973 legislature established the Natural Area Preserves Program as a way of designating and protecting habitat, and to provide opportunities for study and appreciation. The Preserve Committee, acting on behalf of the Division of State Lands, identified unique ecosystem types, and systematically located a finite set of areas that met those preserve qualifications. By 1979, two preserves were established, one in western Oregon. However, the Preserve Committee recommended that four additional preserves be established in western Oregon.

This same program, the Natural Area Preserves Program, was replaced in 1979 by the Oregon Natural Heritage Act. By 1990, the Oregon Natural Heritage Act had been used to set aside one conservation area in western Oregon. The Natural Heritage Conservation Area is off-limits to development and is the equivalent of a Research Natural Area. Twenty-two additional areas have been set aside under the act for listing in the state registry. Registered areas indicate that the state recognizes the natural values present, such as marine and forest ecosystems, as well as habitat for rare and endangered plants. The state program operates in

cooperation with the federal Research Natural Area Committee and the private sector program of the Nature Conservancy.

The federal Research Natural Area program has been active since 1927. These areas are preserved solely for scientific and educational purposes. Designations are made within many administrative units, including land owned by the Atomic Energy Commission (e.g., the Rattlesnake Hills Research Natural Area), BLM, the Forest Service, National Wildlife Refuges, and the National Park Service. Chiefly, however, the designations are made within the Departments of Agriculture and Interior (BLM). Research Natural Areas are defined as:

. . . tracts where natural processes are allowed to dominate and where some natural feature(s) is preserved for research and education. The main reasons for preserving these tracts can be summarized as follows: (1) to provide baseline areas against which the effects of human activities in similar environments can be measured; (2) to provide sites for study of natural processes in undisturbed ecosystems; and (3) to provide gene pool preserves for plant and animal species, particularly of rare and endangered types. (Franklin, 1972, p. 2)

Thirty RNAs are distributed in western Oregon among the Forest Service, BLM, and the National Park Service. In 1988, seventeen of the RNAs in western Oregon were on Bureau of Land Management property (BLM, 1988).

RNAs do not have the federal statutory base that ACECs have. Nonetheless, RNAs are a voluntary cooperative designation that carry an institutional significance broadly

recognized as putting them off limits for log production or mineral extraction.

The Nature Conservancy (TNC), a private, non-profit group, purchases land before it is developed to save as many as possible of the remaining distinct ecosystems, plant communities, and habitat for threatened and endangered species. Protected areas are then held until arrangements for public ownership can be worked out, or TNC owns and manages the land itself. The Nature Conservancy takes the long-term view:

What we see today in the undeveloped landscape is the result of some 3 1/2 billion years of trial and error experiment, of a ruthless and probably random process of selection, and that the survivors, both at the species level and at the systems level, are those pieces best able to withstand the test of time. (Beebe, 1980, p. 5)

By 1980, all twelve of the Nature Conservancy's preserves in Oregon were in western Oregon (Beebe, 1980). By 1990, the Nature Conservancy held thirty reserve areas in western Oregon (C. Macdonald, Nature Conservancy, Portland, Oregon, personal communication, 30 December 1990).

The growth of these four programs and the inertia of fifty years' bias towards timber production on O&C lands have hardened the BLM and the counties against designating special-use areas within forested areas. The cumulative loss of forested acreage to non-timber uses puts pressure on local timber companies to buy more federal timber to make up

the difference. This in turn puts pressure on BLM area managers (a) to maintain or increase acreage for tree cutting, and (b) to restrict designating areas for non-timber special uses. As a result, of the five ACECs designated for recreational or scenic values--(a) North Umpqua River, (b) Golden Bar, (c) Brad's Creek, (d) Lake Creek Falls, and (e) Nestucca River--none contain criteria that describe (or plans that provide for) directives to protect their ecosystems.

For the Nestucca River ACEC, the nominating criteria fail to include even the five rare plant species. The plan singles out two acres of habitat for Pleuricospora fimbriolata and Hemitomes congestum, but does not protect their habitats, allowing logging right up to the boundaries of the primary zone in which the rare plants occur (Campbell, 1989).

Five of the nominating criteria cite federal laws as the basis of relevance and importance, but fail to use FLPMA to develop directives indigenous to specific ecological systems: (a) North Umpqua River, (b) Golden Bar, (c) Brad's Creek, (d) Lost Prairie, and (e) Elk Creek Bald Eagle.

Six management plans (and their nominating criteria) avoid addressing the danger to ACECs if development were to occur: (a) Golden Bar, (b) Brad's Creek, (c) Long Tom, (d) Lake Creek Falls, (e) Horse Rock Ridge, and (f) Lost Prairie.

Three ACECs have been designated because of the apparent lack of trees or minerals useful for development: (a) Long Tom, (b) Lake Creek Falls, and (c) Horse Rock Ridge.

A report from the Natural Resources Defense Council says that ACECs under one thousand acres are too small (Campbell, 1989). ACECs that protect natural areas such as forests are especially at risk. The edge effect and wind-throw progressively reduce the size of a forest as the wind blows down tall trees on the perimeter of a forested region. Fourteen of the ACECs in this study are smaller than a thousand acres (see Appendix A for acreage chart).

The Importance of Ecological Language in the Nominating Criteria

The language of the nominating criteria can be used by managers to protect natural diversity. Managers must be careful with each nomination, however, to use that language specifically for the area in question. Not using the language, i.e., simple neglect, resulted in the failure by the BLM to protect the ecological values of an ACEC in the Walker Creek region of the North Coast Range of Oregon.

In 1986, the Friends of Walker Creek, a private, non-profit organization, nominated the Walker Flat Area of Critical Environmental Concern in the Salem district. The area is characterized as a palustrine wetland, a region

consisting of shrubs growing in marshy forests (Weller, 1987).

Walker Creek meanders through a wetland that is unique in the north Coast Range. The wetland contains varied habitat, ranging from open sedge/grass wet meadows to closed-canopy riparian forest. The abundant and diverse species of plants and animals that inhabit the basin includes Nelson's checkermallow, . . . a pale form of iris, . . . Townsend's big-eared bat, . . . [and] the federally threatened bald eagle . . . in the immediate vicinity. (Armstrong, 1987, p. 1)

The wetlands cross the boundaries of both BLM and Willamette Industries, a private logging firm. The original relevance and importance criteria written by the nominators were:

Relevance--as they fall within the Act's definition of the elements constituting an ACEC.

Importance--the rarity of the plants has been recognized nationally and by the State of Oregon, thus this area has greater than local significance. (Bornholdt, 1986, p. 3)

The plants contributing to importance are Nelson's checkermallow and Iris tenax. The checkermallow grows only in northwest Oregon in the moist, open ground and thickets of the Willamette Valley in Marion, Yamhill, and Benton counties. The flower has candidate status as a threatened species (Category I) under the federal Endangered Species Act. Friends of Walker Creek supplied the biological data to support the plant's importance. According to Siddall and others (1979), the checkermallow is critically endangered. Iris tenax, discovered in 1986, exists only in Oregon

(Bornholdt, 1986). Preservation of the Walker Creek wetland region is essential for the species' survival.

Townsend's big-eared bat (Plecotus townsendii), considered relevant wildlife, is a likely resident of the Walker Creek basin (Perkins, 1987). Funds for locating the bat are scarce. One previous survey in northwest Oregon was done on state and private lands but not on federal lands. Wetlands are ideal habitat for the bat. Walker Creek contains a large population of insects, old tree snags, and abandoned pileated woodpecker nests needed for the bat's survival (Armstrong, 1987). Large alder and cottonwood trees around Walker Creek also provide bat habitat. Biologists Chris Maser, Judy Armstrong, and Mark Perkins recommended surveys to locate the bat.

Immediate inventory of this site is needed to determine if inhabited by Townsend's big-eared bat. If so, management plans for long range monitoring of this sensitive species need to be implemented. (Bornholdt, 1986, p. 3)

The threat to all three of these species was the destruction of the wetlands and the intermingled habitat areas. The threat to rare plants was especially great.

Regional varieties and subspecies of plants, insects and other invertebrates are often confined to single wetlands in a given region. If the habitat is destroyed, the organism is destroyed. (Maltby, 1986, p. 76)

An ACEC must have nominating criteria, but the law is unclear as to what documentation the nominator ought to

provide. Friends of Walker Creek defined relevance as per the language in FLPMA, and importance by quoting outside experts. The Bureau Manual supported their strategy.

Evidence of Importance--An indication of importance may be found in non-BLM sources and in the judgement of specialists qualified by knowledge, training, or experience to assess these qualities. Data obtained by BLM through state, national, international, or other established programs are given special consideration in the evaluation process. (BLM, 1986, pp. 1-5)

However, BLM claimed that there was insufficient data to support the legal importance of the bat. Judy Armstrong of Friends of Walker Creek collected additional data (Perkins, 1987). She clearly felt that this was not her responsibility.

Your request to us, the ACEC nominators, for "data on the relationship of Walker Creek Wetlands to the life cycle of Plecotus townsendii townsendii and the use of the basin as habitat by P. townsendii townsendii" is viewed as neither appropriate nor reasonable, especially when accompanied by your statement that "Failure to provide further information will result in rejection of the nomination." (Armstrong, 1987, p. 4)

She went on to protest that:

While many lay people are actually expert in some areas of natural history, there are very few individuals, amateur or professional, who are knowledgeable about the Townsend's big-eared bat. Further, we find nowhere in law or agency policy, that the responsibility for scientific data concerning an ACEC proposal rests with nominators who are private citizens. (Armstrong, 1987, p. 4)

As the two sides continued their exchanges, a picture emerged of the region's fragile, under-studied and under-protected ecosystem. Despite the evidence, BLM challenged

the nomination again in June of 1987. The Bureau was unable to qualify the area as relevant because the wetlands system crossed over onto private property. Since the whole system could not be protected, the BLM absolved itself of responsibility for designating an ACEC.

In response, the Nature Conservancy, the Wilderness Society, and others requested that BLM purchase the Willamette Industries property using Land and Water Conservation Fund (LWCF) monies (Armstrong, 1987). If BLM had committed to applying for LWCF funds, Willamette Industries might have made more profit from selling the land to the federal government than from cutting the few trees in the difficult swampy area of Walker Creek. BLM rejected the proposal to secure LWCF funds.

Conservationists tried to protect the ecosystem from destruction by filing lawsuits and appeals to stop timber sales in the region. They hoped to protect the area long enough for the ACEC nomination to be successful.

It appears that the proposed timber sale (the PDQ MacMason Sale, or "Pretty Damn Quick" Sale--honest!) has been "slipped in" to a schedule that did not earlier contain it. It likewise appears that BLM is making some sort of effort to rush this sale through. It furthermore appears to me that BLM may make a quick-and-dirty final decision against the ACEC nomination in the next few weeks in order to clear the way for the timber sale. Friends [of Walker Creek] and ONRC [Oregon Natural Resources Council] need immediate legal assistance, in the form of preparation of a law suit. They also need to proceed immediately with the filing of an appeal with the Interior Board of Land Appeals. (Bonine, 1987, p. 2)

However, BLM continued to process timber sales in the region. And Willamette Industries continued to log their trees.

It has recently come to my attention that Willamette Industries is conducting timber harvest and related activities in the Walker Creek Basin. (Armstrong, 1987, p. 1)

Finally, BLM reduced the original private nomination, the Walker Creek Wetlands ACEC, from 400 acres to 40 acres of checkermallow habitat (the Walker Flat ACEC).

The nomination process provided an opportunity to use the ecological language of the nominating criteria to protect the Walker Creek wetlands. The entire 400-acre system of wetlands is a relevant natural system that must be preserved as a whole and not divided into parcels containing rare species in one place and bat habitat in another, if managers hope to maintain the biological viability of the wetlands. The big-eared bat depends on the diversity of the region, including all of the wetlands and trees. The plant species are more than locally significant, because they are found only in Oregon and merit further study.

Thus, management directives should include prohibition of development, such as logging and mineral extraction. The plan should include the purchase of the private lands with LWCF funds to preserve the systems aspect of relevance and the importance of the rare species. Monitoring plots should

be set up for the plant species, and the entire ACEC designated as a natural system without a secondary zone for development because of the sensitivity of the region to disruption and the small area encompassed by the ACEC to begin with. Directives should include provision for scientific research by the nominating agencies who have already invested research time and documentation.

The Walker Creek example shows that FLPMA could be used to translate ecological concepts into a vocabulary useful for managing ACECs. Nonetheless, BLM ignored the ecological language, with the result that the ecosystem was fragmented and lost. Despite the evidence, BLM failed to use this language effectively and did not implement statutory options to protect adequately the Walker Creek wetlands. This example also clearly illustrates the difference between the potential and the reality of using the nominating criteria as management tools. The timber bias of BLM managers, derived from half a century of administration under the O&C Act, continues to limit the effectiveness of the ACEC provision of FLPMA.

The following section, which summarizes district by district the ACEC management directives, shows how the language of the ACEC provision has been used, misused, or neglected. Where the language has been used well, the natural features listed in the nominating criteria are

protected by specific directives in the management plans. Where the language has been misused, the ecological nature of the criteria is ignored, e.g., when oil and gas leasing are named important for Brad's Creek and Golden Bar. Where the language has been neglected, the plans tend to rely on other laws for defining relevance and importance. Some areas focus on implementing research studies, ignoring the ecological terminology of the nominating criteria.

In the Medford district, the relevant scenic values of the Table Rocks are protected in the management plan by the prohibition of tree cutting. The importance description classifies the geology of the ACEC, defines the conflict between preservation and development, and requests the prohibition of mining. The management plan, however, does not explicitly prohibit mining. Otherwise, the Table Rocks plan successfully incorporates the nominating criteria, making provision for water for the rare plants and preventing logging and in certain cases mineral extraction.

The Eight Dollar Mountain plan fails to develop directives designed to protect the rare plants. Although the nominating criteria successfully define the region's unique attributes, this management plan fails to provide adequate plan directives in response to the nominating criteria.

The King Mountain nominating criteria were unable to be located.

In the Roseburg district, the North Umpqua River plan cites other laws and gets mired in planning jargon. The looseness of the plan can be blamed partially on the use of other legislation in the definition of relevance and importance.

Golden Bar's and Brad's Creek's plans are very short, almost indistinguishable from the larger forestry and tree cutting plan of the Umpqua River Corridor Management Plan. The plans fail to protect the bald eagles adequately. The misuse of the nominating criteria is to blame, providing no guidance or clarity on the goals of the ACEC. Golden Bar defines scenery, recreational opportunities, fragile soils and incredibly, oil and gas leases as important. Brad's Creek defines potential national nominations for scenery as important. Here, again, applications for oil and gas leasing in Brad's Creek are important. FLPMA does not define oil and gas withdrawal as natural systems or processes, or as being more than locally significant. If the inclusion of these items was meant to address the potential development conflict, more detail is required. The plans fail in substance because the ecological nature and management potential in the nominating criteria has been ignored.

The Roseburg district consistently generalized its relevance criteria with phrasings such as "environmental resources" and "natural systems or processes" (see Appendix

B for the nominating criteria). The district has failed to take advantage of the nominating criteria as a management tool to specify indigenous ecological systems and supply goals for managing them.

In the Coos Bay district, nominating criteria were never written for the New River ACEC, and without them, the plan covers broad issues such as withdrawal of the ACEC from mineral extraction, the preservation of at-risk species, the purchase of private lands, and the development of cooperative agreements for management. The ACEC coordinator in Coos Bay has been conscientious in seeing that the spirit of the law is carried out. When asked what he thought was being done differently because of the ACEC program, he cited the following: (a) one-month controlled grazing versus twelve-month uncontrolled grazing; (b) active control of off-road vehicle use; (c) purchase of land adjacent to the ACEC for protection as an ACEC; (d) control of illegal use of water by the watermaster and year-round water flow; and (e) monitoring of chinook salmon (R. Pullen, personal communication, 22 March 1990). These goals are attainable and could be described in terms of relevance (the natural systems include wildlife, plants, dunes, and river development, which can be protected by implementing the above five actions), and by importance (the river's age, history, and future growth are more than locally significant). Most

significantly, progress towards meeting these goals could be measured against relevance and importance criteria. New nominations in the Coos Bay district for the second planning cycle include standard relevance and importance descriptions.

In the Eugene district, the importance of Long Tom ACEC is translated into vague management directives to not disturb the area. The nominating criteria do not mention the potential conflict between development and loss of the native plant species, including the federally endangered Lomatium bradshawii. The plan does not address the development conflict either. The Long Tom ACEC plan should address potential development scenarios. The nominating criteria should describe the threats to the Lomatium bradshawii ecosystem.

The Lake Creek Falls plan provides directives for recreational enjoyment of the area. The plan not only fails to protect the natural systems that provide the recreation, it also fails to address how to manage potential development.

The Horse Rock Ridge plan fails to account for potential development and threats to the plant species.

If the Eugene district intended to prohibit development in its ACECs, then the criteria and plans should say so. Otherwise, we must assume that development is possible. The

ACEC program anticipates development activity. The Eugene district needs to write individual relevance criteria rather than using the stock legislative phrase from FLPMA.

Each of the eight ACECs studied in the Salem district uses the stock FLPMA definition for relevance: the ACEC is relevant because it meets the Federal Land Policy and Management Act's definition for relevance. This is a failure by this district, as well as the other districts who have chosen this circular definition, to use the ecological language and management potential of the relevance criterion.

The ACEC coordinator for the Salem district, a botanist, described the botanical and ecological characteristics of each ACEC in the importance criteria. Each of the importance criteria also includes a section called the ACEC plan element, unique to the Salem district. The ACEC plan element explicitly provides substantive directions for preserving the plants, animals, and ecosystems described in the importance descriptions.

The resulting management plans have a slightly better-than-average number of substantive management directives. On the positive side, the district plans have created some new directives and taken some actions not seen under any other plans or laws. On the negative side, although the importance criteria are well written, many of the management plans direct managers to implement more studies of

threatened areas or to set aside monitoring plots for protected species. Studies and plots are helpful, but do not replace actual protection.

In Salem, the 10 percent directive allows no more than 10 percent of the trees in the secondary zone to be cut per decade. The secondary zone is an outer protective buffer surrounding the inner primary zone. The primary zone contains the most endangered part of the ACEC and is not to be disturbed. The 10 percent directive and the zoning concept are new under FLPMA. Seven of the ACECs contain zoning, and four of the ACECs contain the 10 percent directive. The third new development under FLPMA is the detailed botanical and ecological descriptions in the importance criteria. The Salem district provides these descriptions for all of the ACECs.

The most successful Salem plan is the Sheridan Peak ACEC plan. Tree cutting is prohibited in the primary zone to protect the rare plants. The ACEC plan stopped three timber sales to allow a five-year study of a rare plant to continue. If all ACEC directives for research and monitoring were accompanied by a corollary directive halting development activities, then the monitoring plans could be considered substantive directives. Most monitoring is not accompanied by such protections, and thus monitoring cannot

be considered sufficient management of development conflicts.

Conclusion

Conservation groups and BLM staff continue to nominate ACECs. Within the Coos Bay district, nine new ACECs have been nominated (R. Pullen, personal communication, 6 October 1989); within the Eugene district, nine (Bowman, 1989); in the Roseburg district, ten (Moorhouse, 1989); in the Medford district, eighteen (Zuschlag, 1989); and in the Salem district, twenty (Manning, 1989). This has created a planning backlog.

These new ACEC nominations present BLM planners and resource specialists the opportunity to document natural ecological systems, giving those systems a basis for protection in statutory law under FLPMA. Therefore, BLM district managers in western Oregon can improve the ACEC program by: (a) writing nominating criteria which contain ecosystem descriptions specific to each area, especially using the ecological language of the relevance criterion of the ACEC provision; (b) writing plans that define development conflicts and protect each ecosystem from that development; and (c) including an ACEC plan element with the nominating criteria to help formulate management directives. These recommendations can

be implemented immediately by BLM district managers during the current RMP.

In the long term, Congress should amend the language of the law to eliminate the ambivalence in the ACEC provision towards development, with the goal of prohibiting development completely in ACECs. Congress should require that BLM write new administrative regulations that clearly delineate the responsibility for defining relevance and importance, so that the rules for defining ecosystems are understood by all the participants in the nominating process. Congress should designate funds for the ACEC program so that ACEC management goals can be included in employee work plans.

The whole purpose of the ACEC program is to preserve natural diversity. This diversity can be preserved by using the ecological language of the nominating criteria. When an area is managed consistent with the ecological language of the ACEC provision, it will then fulfill the mandate of the ACEC legislation and at the same time preserve natural diversity. The strength of the ACEC provision of FLPMA should be the elegant link it forges between ecological terms and statutory language. The more consistent the link between an area's ecology and BLMs criteria and directives for management, the more effective will be the preservation of natural diversity.

Ecologically significant language has just begun to assume importance in management directives and practices. It will become more meaningful as planners, lawmakers, and natural resource specialists increasingly understand and use it in plans for managing natural areas.

APPENDIX A
SIZE IN ACRES OF WESTERN
OREGON ACECs

Size in Acres of Western Oregon ACECsMedford District

King Mountain Rock Garden	90 acres
Upper and Lower Table Rocks	340 acres
Eight Dollar Mountain	1240 acres

Roseburg District

North Umpqua River	1620 acres
Golden Bar	253 acres
Brad's Creek	127 acres

Coos Bay District

New River	509 acres
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Eugene District

Long Tom	8 acres
Lake Creek Falls	3 acres
Horse Rock Ridge	190 acres

Salem District

Lost Prairie	60 acres
Rickreall Ridge	175 acres
Williams Lake	90 acres
Soosap Meadows	412 acres
Nestucca River	5272 acres
Elk Creek Bald Eagle	2058 acres
Big Canyon	280 acres
Sheridan Peak	305 acres

APPENDIX B
NOMINATING CRITERIA

Nominating Criteria: Medford District

King Mountain Rock Garden ACEC

Relevance and Importance Criteria were not able to be located by the District staff for this ACEC.

Nominating Criteria: Medford District

Upper and Lower Table Rocks ACEC

Relevance: Meets definition: Yes.

Both areas are relevant because they meet the act definition of an ACEC which states, an "Area of Critical Environmental concern is an area within the public lands where special management attention is required (when such areas are developed or used, or where no development is required) to protect and prevent irreparable damage to important historic, cultural or scenic values, fish and wildlife resources or other natural systems or processes or to protect life and safety from natural hazards.

The attention and visitors these two sites draw leaves little doubt concerning their scenic values. Not only are they of interest to visitors to the valley, but they are in view of many of the valley residents and have been viewed as a local landmark since the valley's settlement.

Importance: Interest in the Table Rocks has come from such groups as The Nature Conservancy, Sierra Club, Oregon Native Plant Society, and numerous botanical researchers.

The scenic value that these two landmarks add to the Rogue River Valley can be considered substantial. The recreational value derived from people either viewing the rocks from the valley floor or viewing the surrounding country from the plateau of either rock is also substantial.

Potential and existing land uses of these sites includes mining, cattle grazing, ORV use, radio and micro wave tower site, aircraft landing site and rock quarry.

Continuing or development of these uses could severely damage scenic values without specific management controls.

I recommend that both sites be nominated as potential ACECs.

More than local significance: Interest other than local has been shown by Nature Conservancy.

Values: The Table Rocks are mesas composed of Eocene sandstone which are capped by a 125 feet thick basalt lava flow of Pliocene age. When the lava flowed over the sandstone it was confined to the lowest portion of the

Nominating Criteria: Medford District

Table Rocks ACEC (continued)

valley and subsequent erosion was confined to the edges of the lava flow because the sandstone was more easily eroded. The lava flow now stands topographically higher than the surrounding valley because the lava formed a protective armor against erosion for the sandstone below.

The Table Rocks are a geomorphic feature known as inverted topography which is unique to southwestern Oregon and northern California. The nearest similar geomorphic feature is near Chico, California. It is my recommendation the Table Rocks be an ACEC to prevent any mining or quarrying operation from degrading their scenic beauty.

Interest in protecting the Table Rocks has come from such groups as the Nature Conservancy, Sierra Club, Oregon Native Plant Society, and numerous botanical researchers.

The scenic value that these two landmarks add to the Rogue River Valley can be considered substantial. The recreational value derived from people either viewing the rocks from the valley floor or viewing the surrounding country from the plateau of either rock is also substantial.

Potential and existing land uses of these sites includes mining, cattle, grazing, ORV use, radio and micro wave tower site, aircraft landing site and rock quarry.

Continuing or development of these uses could severely damage scenic values without specific management controls.

Nominating Criteria: Medford District

Eight Dollar Mountain ACEC

Relevance: Botanically unique-recognized as such by professional botanists, mapped by Jean Siddall for U.S. Fish and Wildlife as its own unit, separate from immediately adjacent areas--unique assemblage of endemic species.

Historical significance: Local landmark, type locality for two federal sensitive species (Aster paludicola, Schoanolirion bracteosum), state-owned land nominated for inclusion in National Historic Landmark register.

Importance: Oregon Natural Heritage Program and Oregon Natural Area Preserves Advisory Committee have inventoried \$8 Mountain and recognized its suitability for fulfilling some of the Research Natural Area needs--Important habitat for a large number of serpentine endemic species threatened by increasing prospecting/mining activity. Nature Conservancy is considering purchase of some private land. Exceeds local significance--Art Kruckzberg, Ph.D., University of Washington, authority on serpentine vegetation, says that Illinois Valley has the greatest species diversity of any serpentine area that he knows - Eight Dollar mountain is visited regularly by amateur and professional botanists from the West Coast, including Art Kruckzberg, Kenton Chambers, G. Ladyard Stebbins.

Nominating Criteria: Roseburg District

North Umpqua River Special Recreation Area and ACEC

Relevance: Environmental Resource--recreation, scenic, wildlife, natural system or process.

Importance: More than local significance: Yes, identified for consideration in wild, scenic, recreational rivers system; nationally famous for steelhead trout fishery; important anadromous fish populations (steelhead, chinook salmon); important scenic values (considered for State Scenic waterway 1980).

Description: This area is nationally recognized for its steelhead and salmon fishery and contains well established scenic values. It was considered for designation as a State scenic waterway in 1980, and has been recommended for inclusion in national wild, scenic or recreational rivers system through bill HR 8096. It includes important habitat for anadromous and resident fish species, as well as riparian habitat. It contains some of the highest scenic values in the district, considered to be Class A scenery. It includes portions of a natural, free flowing river identified by the Heritage Conservation and Recreation Service inventory as potential wild, scenic, or recreational river; two recreation and public purpose leases; existing and potential recreation sites; potential locatable minerals and salable minerals (sand and gravel); important BLM roads (part of transportation system) in corridor; obvious high value timber resources (old growth timber) as well as wildlife habitat for cavity dwellers; portion of area contains fragile soils; five mining claims in Section 17; saleable mineral potential (rock pit in Section 17); portion of area withdrawn for BLM recreation sites (Susan Creek trail and Swiftwater); portion of area under power site classification; variety of other intensive land uses in corridor (electrical, telephone and water rights-of-way).

Nominating Criteria: Roseburg District

Golden Bar Wildlife ACEC

Relevance: Environmental resource (wildlife, natural system or process).

Importance: a. More than local significance: Yes; habitat of bald eagle (federal threatened species, national symbol) protected by federal law (Endangered Species Act and Bald Eagle Act).

b. Values: Old growth forest community suitable in structure for nesting, rearing and hiding cover for bald eagle, osprey and other cavity dwelling wildlife.

In close proximity to slack water section of Umpqua River, which provides high value forage area for eagle. Anadromous fish serve as primary food source (shad, steelhead, salmon).

Area has been recommended to U.S. Fish and Wildlife Service as critical habitat (determination pending).

Includes: Class A scenery; portion of natural, free flowing river identified by Heritage Conservation and Recreation Service as potential wild, scenic or recreational river; contains two (2) known but unevaluated cultural sites (pre-historic resources); timber resources; area contains fragile soils; existing BLM stockpile site; existing oil and gas lease (portion Sections 9, 17); existing BLM recreation site; rearing, migrating and limited spawning habitat for anadromous and resident fish species.

Portion of area is immediately adjacent to BLM roads (25-7-21.0, 16.2 and 16.4). Area receives periodic public and BLM traffic.

Area receives limited recreational use including ORV, motor vehicle travel, boating, swimming and fishing during all seasons of the year. It has potential for increased recreation activities.

Area is under power site withdrawal and recreation withdrawal.

Portion of areas has potential for sand and gravel production (Section 15) and Master Title Plot shows community gravel pit in Section 15.

Nominating Criteria: Roseburg District

Brad's Creek Wildlife ACEC

Relevance: Environmental Resource (Wildlife and Natural system or process).

Importance: a. More than local significance: Yes; habitat of bald eagle (federal threatened species, national symbol) protected by federal law (Endangered Species Act and Bald Eagle Act).

b. Values: Prime habitat involving old growth forest community suitable in structure for both nesting, rearing and hiding cover of bald eagle and other cavity dwelling wildlife.

In close proximity to slow water section of Umpqua River, created by natural dam in river bedrock, which provides high value forage area for eagle. Anadromous fish serve as primary food source (shad, steelhead, salmon). Area has been recommended to U.S. fish and Wildlife Service as critical habitat (determination pending).

Includes: Class A scenery (some of highest in Roseburg District): portion of natural, free flowing river identified by Heritage Conservation and Recreation Service inventory as potential wild, scenic, or recreational river; flat terraces or benches which have potential importance for future resources; valuable timber resource; rearing and migrating habitat for anadromous and resident fish species.

Area is currently isolated from direct road access by general public (privately controlled road provides access to area) but includes BLM road.

Area receives limited use from recreational boats, but has potential for increased activity, primarily water oriented activities (swimming along beach and boating).

Area is under power site withdrawal and is segregated from mining and mineral leasing. BLM has received application for oil and gas lease.

Nominating Criteria: Eugene District

Long Tom River ACEC

Relevance: Meets FLPMA definition: Yes.

Importance: a. More than local significance: this area was proposed to the PNW Research Natural Area Committee for consideration as a Federal Research Natural Area. The University of Oregon is conducting research on the flora of this tract. As a relic plant community, this site has been proposed for consideration as a Federal Research Natural Area - with both fauna and flora being of importance for such areas.

b. Values: This nomination is a unique habitat for a vertebrate community within a relic floristic-type. Special management attention is required to maintain the habitat which is subject to attention and is considered fragile.

This site is an example of the pre-settlement Willamette Valley Oak and ash woodland/grassland matrix which has all but disappeared due to agricultural and urban development. This lowland area has been grazed (but not plowed) for decades, yet the flora is in good condition; 93 species of vascular plants have been located here, 3/4 of which are native. This tract is considered as critical habitat for four plants; Lomatium bradshawii, a candidate species for listing as endangered by the USFWS, occurs here.

Description: This relict area represents one of last examples of this formerly widespread Willamette Valley vegetative community. Scientific interest and potential threat to resource justifies special management attention to protect important wildlife and botanical values. Area has not been adequately surveyed; this would be one of the first requirements of an activity plan.

Nominating Criteria: Eugene District

Lake Creek Falls ACEC

Relevance: Meets FLPMA definition: Yes.

Importance: a. More than local significance: This is a popular recreation attraction for people as far away as Corvallis and Albany; about a 3 county radius of attraction. Both the State police and Lane County Sheriff's department are concerned.

b. Values: This popular swimming hole and rock slide attracts thousands (between 4,000 and 6,000) of visitors each year. A number of natural features of the site continually present hazardous situations to visitors. The very algae that creates the slippery rock slide, also creates a very unstable wading surface in the stream. Sharp, poorly visible, underwater boulders in pools present hazards to divers. Unstable logs tend to jam up in the pools following winter floods and present hazards to swimmers. Natural cliffs and trees overhanging the pools invite daredevil stunting (diving) which has led to serious accidents in the past.

Description: This unique geological formation with waterfalls draws people for many purposes; one of them is to experience the interaction of people, water and the excitement of sliding down water-filled rock chutes. There is also a naturalness of timber, rocks, flora and water which is aesthetically pleasing to the eyes and ears.

Nominating Criteria: Eugene District

Horse Rock Ridge ACEC

Relevance: Meets FLPMA definition: Yes.

Importance: a. More than local significance: This area is under consideration by the PNW Research Natural Area Committee for proposed designation as a Federal Research Natural Area.

b. Values: This large, grassy bald contains numerous rock outcrops; the soils are thin and the site is dry. Yet the flora is diverse and 121 species of vascular plants have been located here; there is a unique mix of lowland as well as subalpine types, and of plants representing range extensions for the species. Trees are absent from a major portion of the area. Four species of plants found here occur nowhere else on the Eugene district. Elevation of the area ranges from 2200 to 2600 feet. During the interdisciplinary ACEC team meeting, other specialists orally nominated the area for the following resource values:

Visual: Class I VRM management area

Wildlife: Important habitat: T & E species

Cultural: Prehistoric values

Description: Horse Rock Ridge is the most extensive undisturbed grassy bald-outcrop environment within the Eugene District. The outcrop flora differs from similar communities within the District both in species diversity and composition. Initial studies of the community have produced a non-exhaustive list numbering 121 species, including lowland, sub-alpine, northern and southern species. Several rare species are present as disjunct populations. The series of grassy balds, extensive edge environment and adjacent old growth stands provide a diversity of habitats with exceptionally high wildlife values.

Nominating Criteria: Coos Bay District

New River ACEC

There were no relevance and importance criteria written for the New River ACEC.

Nominating Criteria: Salem District

Lost Prairie Research Area ACEC

Relevance: Meets FLPMA definition: Yes.

Importance: More than local significance: Identified as area of concern by USFWS-Endangered species-Biological Section; Oregon native Plant Society (Willamette Chapter); Oregon Endangered Plant Species Task Force; Donald Zobel, OSU Dept. of Botany, for Nature Conservancy.

Values: This 60 acre sphagnum peat bog is one of the few natural high elevation peat bogs in western Oregon. Considered rare, the "prairie" is a continuous soggy-wet expanse of sphagnum moss, with a meadow-like covering of sedge, herbs and wildflowers, one of which (bog anemone, Anemone oregana var. felix; giant fawn lily, Erythronium oregonum; fetid adder's tongue, Scoliopus hallii) are being considered for threatened or endangered status. "Islands" of beargrass, huckleberry and western white pine are scattered throughout the bog. The highest islands and edge areas support stands of western red cedar and western hemlock with a Pacific rhododendron understory. A small stream meanders through the center of the area.

Lost Prairie provides bog, riparian, pond and snag habitat within a very small area, and the diversity of its plants and animals makes it a unique ecosystem. It offers nesting and feeding areas for a number of amphibians, wetland birds and wildlife such as deer and elk.

Nominating Criteria: Salem District

Rickreall Ridge Research Area ACEC

Relevance: Meets FLPMA definition: Yes.

Importance: More than local significance: Identified by the Oregon Natural Heritage Program as an ecologically and scientifically significant natural area.

Values: Rickreall Ridge is particularly distinctive in the diversity of plant species that inhabit this relatively small area. Several Willamette Valley species reach their upper elevation limits here, and typical Coast Range plants can be found here also. The area harbors some plants and animals that are more characteristic of southwestern Oregon, and appears to be a disjunct refugium for species that had spread northward during a past warmer and drier climatic period.

Rickreall Ridge is important for expanding scientific knowledge and for educational use. Dr. McCorkle is presently studying six isolated and unique strains of butterflies and the unusual food/plant relationships upon which they depend for survival. Dr. Johnson is working with two populations of Indian paintbrush, trying to relate their genetics to their ability to form pigments. Dr. Johnson and his students are also studying a population of dwarf Oregon white oak. The oaks may be important as very sensitive indicators of past climatic events in the area.

Nominating Criteria: Salem District

Williams Lake ACEC

Relevance: Meets FLPMA definition: Yes.

Importance: More than local significance: Recommended for protection by the Nature Conservancy Oregon Natural Heritage Program. Recommended for some form of protection by RNA Committee Scientist and Clackamas County Department of Environmental Services.

Values: The Williams Lake and bog ecosystem is the best example within Salem District of a Cascadian massive seep-formed lake undergoing peat bog/quaking bog succession. At William's Lake bog, sensitive and threatened plant communities have become "specialized", adapting to the geographic and hydrographic systems that have made the lake. The water source for this lake is derived solely from a wide and extensive series of seeps on the north-facing slopes. The seeps vary in width from 50 to over 125 feet, reaching to within 150 feet of the ridgetop surrounding the lake. The seep system has allowed a peat bog to form around the rim of the shallow lake. This peat bog is now beginning to form a quaking bog. Specialized micro-habitats for plants of special interest are found on the wet seep slopes (for Hall's Isopyrum), the bog fringes (for Grass-of-Parnassus), and small seep drainages (for Bog Club-Moss). Bog club-moss is a state-listed threatened species. The entire ecological system is dependent upon the fragile interrelationships between components of the present plant community, the geology and hydrography, and the surrounding forests from which the seeps flow. They have combined to form a rare habitat complex with highly significant botanical values.

Nominating Criteria: Salem District

Soosap Meadows ACEC

Relevance: Meets FLPMA definition: Yes.

Importance: More than local significance: Recommended for potential RNA status by Sarah Greene, RNA scientist, OSU, Corvallis. Also recommended for protection by Oregon Native Plant Society and Oregon Wilderness Coalition.

Values: Soosap Meadows are the only large, undisturbed expanses of natural Cascadian subalpine meadows in the Salem District. Their associated mixed forest is ecologically related to them. These pristine meadows at the headwaters of Dead Horse Canyon Creek are found in a bowl-shaped area, the result of a glacial moraine which originally prevented run-off from flowing down the drainage. Through time, streams have cut through the moraine and have left behind a unique and diverse remnant of natural subalpine habitat. The undisturbed ecology has fostered populations of plants of special interest. These are Grass-of-parnassus, Gnome plant, and Hall's Isopyrum. Gnome plants are under review for State and Federal listing as threatened species. The older forested sections surrounding the meadows are home to the Northern Spotted Owl. There are no roads and no past history of logging in this area. Consequently, these meadows and associated mixed forest provide an unusual opportunity for the scientific study of undisturbed plant and animal communities. The RNA Committee has recommended that his areas be protected to augment similar proposed RNA cells because of its ecological importance. It fulfills the RNA cell need described as "mountain meadow-forest mosaic in the northern portion of the Western Cascades."

Nominating Criteria: Salem District

Nestucca River ACEC

Relevance: Meets FLPMA definition: Yes.

Importance: More than local significance: This is a major Coast Range river corridor offering high value sightseeing and fishing opportunities. The area is intensively used for these values by people from both within and outside of the county.

Values: The characteristic landscape of the corridor's viewshed, as seen from the Nestucca River Access Road, exhibits a thick, largely unaltered coniferous canopy covering steep canyon walls which block out sunlight in many places to create a tunnel-like drive. There are infrequent views up intermediate drainages. The Nestucca River rushes over its rocky bottom exposing white water and dispersed pools. There are moss-covered rock outcrops along the river and above the road, and a wide variety of vegetation including Douglas-fir, hemlock, red alder, big leaf maple, vine maple, and scattered cedar. All of the area's visual values are located within the foreground and middle ground Visual Zones, ie not greater than five miles distant as seen from the Nestucca River Access Road. Visual intrusions are presently considered low, but have recently been increasing as a result of timber management activities within the corridor's viewshed. The area is designated Scenic Quality Class A, the highest rating received within the Nestucca Planning Unit. The Visual Sensitivity Level of the area is high due to the significant amount of public use it receives, the public concerns that have been expressed, the planning proposals that have been developed by other agencies, and the developed recreation sites within the area.

Collectively, the three visual management criteria (Scenic Quality, Sensitivity Level, and Visual Zones) establish the corridor as VRM Classes I and III. Class I is the highest and most protective. Class III provides for less protection of the visual values and permits visual changes in portions of the corridor's landscape which remain subordinate to the visual strength of its existing character. The Class I area ("Primary Zone" on map) is 1160 acres. The Class III area ("Caution Zone on map) is an additional 4120 acres.

Nominating Criteria: Salem District

Nestucca River ACEC (continued)

Within the proposed ACEC, the Nestucca River supports five species of game fish which are valuable commercial and recreational resources. The river bed is the primary spawning grounds for steelhead, coho, and chinook salmon. During the past three years, it has produced the second highest populations of steelhead within the state of Oregon. A significant amount of recreational fishing for coho, resident trout and sea-run cutthroat trout occurs within the proposed ACEC. That portion of the Nestucca River within the nominated ACEC has been proposed as a State Scenic River. It also is a potential candidate for a component of the National Wild and Scenic Rivers program.

Nominating Criteria: Salem District

Elk Creek Bald Eagle Management Area ACEC

Relevance: Meets FLPMA definition: Yes.

Importance: More than local significance: Federally listed threatened species.

Values: A pair of bald eagles have nested in this vicinity since 1970. It is reported by BLM personnel, although no documentation was kept until 1979, that the eagles successfully fledged young 8 of the last 10 years. The bald eagles utilize three nest sites. Two nest trees are located on steep southeastern-facing slopes. The third location about 1 mile south of the other two was last active in 1971. The eagles nested in the northern-most nest #2 from 1972 until 1978. They either failed at this nesting attempt or deserted in 1978. In 1979 the pair constructed site #3 and successfully fledged two young. Again in 1980 the pair successfully fledged one young. This is the only active nest site in the Salem District.

Nominating Criteria: Salem District

Big Canyon ACEC

Relevance: Meets FLPMA definition: Yes.

Importance: More than local significance: 1) Identified for unique values by Oregon Natural Heritage Program as potential Natural Area (1977), 2) Letters received from several areas outside of county expressing concern for the area's special botanical and ecological values.

Values: The 280 acres is an isolated parcel of public land in a relatively undisturbed state. The main fork of Big Canyon Creek with its nearly vertical slopes rising to 150 feet above the narrow canyon floor (as little as 20-30 feet in width) exhibits the most significant values of the area. This main stream drainage ("Primary Zone" on map) contains an unusually large variety of plant species, including a remnant stand of old-growth Douglas-fir, some of it suppressed in size, that is 3 to 6 feet DBH and greater than 400 years old. This combination of old-growth forest with its associated ecosystem situated within a steep canyon is very unusual in Washington County. While no intensive BLM botanical survey of the areas has been completed, three species within the area are presently being monitored by BLM botanists. These are: Calypso bulbosa and Eburophyta austeniae, on the state "Watch List"; and Scoliopus hallii, on the BLM "sensitive" list.

The area adjacent to the main stream drainage ("Caution Zone" on map) has several feeder streams draining into the main fork within the parcel. This larger area has a mixture of old-growth conifer and younger forest as a result of fire and historic logging operations. Today the area appears to the casual observer to be undisturbed. The lower slopes and riparian zones of its feeder streams are unaltered and represent important factors in maintaining natural and undisturbed conditions within the main channel of the creek.

The visual qualities of the Big Canyon area are considered high (scenic quality class A). The main fork drainage is designated VRM Class I in recognition of the outstanding scenic values associated with its characteristic landscape. The visual integrity of the main fork of Big Canyon Creek depends in part upon the continued maintenance of unaltered conditions in its feeder streams within the adjacent "Caution Zone".

Nominating Criteria: Salem District

Big Canyon ACEC (continued)

Widespread support for the protection of the botanical and scenic values within the main fork of Big Canyon Creek has been exhibited for several years. The presence of primitive hiking and equestrian trails established by public use throughout the 280 acre parcel further attests to the area's sightseeing attractions. Professional educators have also used the area for its important botanical values.

Nominating Criteria: Salem District

Sheridan Peak Botanical Study Area ACEC

Relevance: Meets FLPMA definition: Yes.

Importance: More than local significance: Decision to include Poa marcida on Federal list as "threatened" is pending. Fish and Wildlife Service recommendation to close three timber sales in the area (in consultation with State Office BLM).

Values: The grass Poa marcida (weak bluegrass) has been recommended for threatened status by the Fish and Wildlife Service (10/80). The species has been found in concentrated patches and scattered extensively in various areas within the 305 acres delineated. Very few sites of the plant are known elsewhere in Oregon. This concentration of sites, and the fact that the plant's habitat is declining rapidly throughout its range due to logging, prompted the FWS Endangered Species Office to recommend closure of three proposed timber sales while additional information about P. marcida is gathered. BLM began a 5-year research project on the species in 1979, focusing on the Bald Mtn./Sheridan Peak area because of the quantity and diversity of populations observed in that area. Protection designation would allow the study to continue.

A few small, scattered patches of Poa laxiflora (a plant considered rare and threatened in Oregon by NAPAC--"State listed") also occur in the Bald Mtn./Sheridan Peak area, as do some colonies of the Watch List species Eburophyton austinae (Phantom orchid). The Poa laxiflora sites are of special concern since no known collections of the species were made between 1947 and 1979--all current information on its range and status is critical and could be collected in connection with the P. marcida research.

APPENDIX C
FEDERAL ENDANGERED SPECIES
CATEGORIES

Federal Endangered Species Categories

Endangered: Imminent extinction throughout most of its range

Proposed Endangered

Threatened: Likely to be endangered within 5-15 years

Proposed Threatened

Category I: Sufficient data exists to support proposed nomination

Category II: Additional data needed to support proposed nomination

Category III: No longer being considered for listing

Source: 1987 Oregon Natural Heritage Data Base.

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