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Management Plan for the Mt. Hebo Special Interest Area



February 1996

Siuslaw National Forest

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**MANAGEMENT PLAN FOR THE
MT. HEBO SCENIC-BIOLOGICAL SPECIAL INTEREST AREA**

Hebo Ranger District
Siuslaw National Forest
Hebo, Oregon

February 1996

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I. INTRODUCTION

Anyone fortunate enough to visit the top of Mt. Hebo has discovered a unique place in Oregon's Coast Range. On clear days, Mt. Hebo provides sweeping panoramic views of the Pacific Ocean and coastline, Coast Range, and high peaks of the Oregon Cascades. Within short walking distance from the road crossing the plateau-like mountaintop, is an assortment of landscapes: grassy meadows, rocky outcrops, a sphagnum bog, and spruce-fir forests.

In the meadows, one can still find western red-cedar snags remaining from forests which stood in their place before fires swept over the mountaintop in the 1840s and again in the early 1900s. The meadows are now home to an abundance of wildflowers, including some more typical of alpine areas in the Cascades. The meadows serve as habitat for the largest known population of Oregon silverspot butterflies, a threatened species whose larvae feed exclusively on the common blue violets that grow there. The rare Mt. Hebo fawn lily (*Erythronium elegans*), is also found here. Discovered in 1982, it has a limited distribution on high peaks in the Coast Range.

The top of Mt. Hebo is a wonderful place for hiking, wildflower viewing, picnicking, camping, and horseback riding. It offers solitude, a haven from urban noise and pace, and a unique opportunity to experience expanses of space and light that contrast with the enclosing forests below. The intent of this management plan is to help maintain, preserve, and ensure the enjoyment of all that makes Mt. Hebo special.



II. PURPOSE OF THE MT. HEBO SPECIAL INTEREST AREA PLAN

Because of Mt. Hebo's exceptional scenic and recreational qualities, and its importance as prime silverspot butterfly habitat, the Siuslaw Land and Resource Management Plan (Forest Plan, 1990) provided direction to protect the mountaintop and to facilitate public enjoyment of the area. The Forest Plan classified portions of Mt. Hebo as a Scenic-Biological Special Interest Area (SIA). The Forest is to manage the SIA's special features "substantially in their natural condition, and, where appropriate and compatible, to foster public use and enjoyment of these characteristics" (Forest Plan, page IV-76).

The Forest Plan also designates 1,926 acres Forestwide as Oregon silverspot butterfly habitat, most of which (1,684 acres) is located on top of Mt. Hebo¹. The Forest Plan refers to these silverspot butterfly habitat areas as Management Area 1 (MA 1). The primary purpose of MA 1 is to assist recovery of this threatened species and allow for its removal from the federal list of Threatened and Endangered Species. Any activities in the management area must be compatible with the U.S. Fish and Wildlife Service's Recovery Plan for the species, and the Siuslaw's associated Oregon Silverspot Butterfly Forest Implementation Plan (Hammond 1989). Recovery is accomplished through activities that maintain or increase the amount of suitable silverspot butterfly habitat.

The Forest Plan contains direction for managing the top of Mt. Hebo, in the form of goals, desired future conditions, and standards and guidelines for the SIA and MA 1. However, it does not completely identify some of the actions, restrictions, and enhancements that are necessary to implement these goals. The dual objectives of protecting habitat and at the same time promoting recreational use of the Mt. Hebo SIA are not "conflict-free".

Documents subsequent to the Forest Plan have made additional land management decisions and given further direction that affects the SIA. The Northwest Forest Plan amended the Siuslaw Forest Plan in 1994; it allocates land within and surrounding the SIA as Late Successional Reserve, Key Watershed, and Riparian Reserve. The SIA also falls within the Northern Coast Adaptive Management Area (AMA). The Siuslaw Access and Travel Management Guide (A&TM Guide (USDA 1994)) identified a network of primary and secondary roads expected to meet travel and access needs throughout the Forest. It makes recommendations regarding the main travel routes to and through the Mt. Hebo SIA.

The purpose of this Plan is to:

- identify all current management direction governing the SIA;
- identify specific opportunities, management activities, and restrictions that further attainment of the SIA's objectives,
- identify a locatable SIA boundary; and
- propose strategies for managing human uses that conflict with protection goals.

¹ The remaining 242 acres of MA 1 are distributed among mountaintops, coastal headlands and terraces, and inland meadows elsewhere on the Forest.

III. PRESENT CONDITION

Maps of the Mt. Hebo SIA are found in the last section of this document. Map VII-A is a location map, showing where the SIA is situated in western Oregon. Map VII-B shows administrative boundaries and land allocations, and Map VII-C shows the area's natural and manmade features.

A. Location

The Mt. Hebo SIA is located in Tillamook County, and includes lands in Sections 11, 12, 13, 14, 15, 22, 23, 24, 26 and 27, T. 4 S., R. 9 W., and Sections 18 and 19, T. 4 S., R. 8 W., Willamette Meridian, Tillamook County, Oregon. It lies within the Hebo Ranger District, and is accessible from both the east and west via Siuslaw National Forest Road 14. It also can be reached via the Pioneer/Indian Trail which stretches eight miles from Hebo Lake on the west side of Mt. Hebo, to South Lake on the southeast side.

B. Description of the Environment

Mt. Hebo is a 2 1/2-mile long ridge running east-west and attaining an elevation of 3,100 feet. The Special Interest Area consists of grassland, brushland, and forest on the top and upper slopes of the mountain. Fog, rain, and windy conditions are common during much of the year due to the area's elevation and proximity to the coast. There is occasional snowfall between late fall and early spring.

Much of the mountaintop is fairly level, and provides impressive panoramic viewing opportunities from its meadows and rocky outcrops. The grasslands are also the key component of silverspot butterfly habitat in the SIA, containing thermal cover and food sources for both larvae and adults. Their most important botanical feature is the common blue violet (Viola adunca), the food source of silverspot larvae. The grasslands also contain a number of plants characteristic of alpine areas in the Cascades, and populations of Mt. Hebo fawn lily (Erythronium elegans). The Mt. Hebo fawn lily is included on both the Regional Forester's list of sensitive plants, and the state of Oregon's threatened species list.

It appears that mature conifer stands dominated the top of Mt. Hebo when the first of two major fires occurred in 1845; the second fire occurred in 1910. In the early 1900s, livestock were grazed in the open meadows that resulted from the fires. Many conifers on the lower slopes were planted in a reforestation effort that began in 1911 and continued through the 1930s.

The series of disturbances (burning, reburning, grazing) in recent history are responsible for the early seral stage vegetation that we see in Mt. Hebo's meadows today. Currently, meadows in the SIA contain grasses and herbaceous plants, with scattered pockets of brush, shrubs, and trees that will continue to spread over time. It is likely that without some form of disturbance, the mountaintop will eventually be covered primarily by forests, with scattered permanent meadows existing on rocky microsites. To maintain prime silverspot butterfly habitat, 65 acres of the SIA are currently managed to maintain vegetation suitable for food and thermal cover and suppress spread of competing vegetation (bracken fern and woody brush).

The most notable signs of human modification within the Mt. Hebo SIA are the paved road through the area and two electronics sites. A number of electronics facilities (buildings, and radio and TV towers) are located at Main Point, and one facility (the Tillamook County Sheriff's radio tower) is located at South Point. From 1956 to 1980, Main Point was the location of the Mt. Hebo Air Force Station, a missile detection base. During the 1980s, equipment, debris, and hazardous materials at the site were removed or buried, and the site was returned to the Forest Service.

C. SIA Boundary

In the Forest Plan, the SIA's boundaries were drawn based on its designation as silverspot butterfly habitat (MA 1). The boundaries included both the mountaintop meadows central to the SIA where the larvae rear, and forested areas surrounding them (commonly referred to as "forest fringe") thought to be used for shelter and feeding by adults. Both were considered important components of silverspot butterfly habitat. To construct the outer boundary, a distance of approximately a quarter mile from the central meadows was selected to provide adequate amounts of forest fringe. Field studies since the original SIA boundaries were drawn have shown that butterflies inhabiting the Mt. Hebo meadows are not using much of the forest fringe set aside (Hammond 1991). Specifically, while adults were found in openings among the trees close to the meadows, they were not frequently found in the steep forested escarpment off the edge of the relatively level mountaintop. This new information has played a part in selecting a suitable, locatable SIA boundary, described in Section V-A.

When the Northwest Forest Plan amended the Siuslaw Forest Plan, it overlaid the SIA with several mapped land allocations that further refine management direction for the area: Late-Successional Reserve, Northern Coast Adaptive Management Area, Key Watershed, and Riparian Reserve. These Northwest Forest Plan allocations are described in Section IV-A.

D. Topography and Geology

Mt. Hebo is located in the Oregon Coast Range, which lies between the Olympic Mountains to the north and the Siskiyou Mountains to the south. The general geomorphology of the northern Coast Range is that of a highly dissected plateau dominated by marine volcanic and sedimentary rocks. As is the case for all the prominent peaks in the Coast Range, Mt. Hebo is capped by hard volcanic rock that is much more resistant to erosion than the surrounding sedimentary rocks and soft volcanic breccias and tuffs. Some fossils can be found in sedimentary rocks near the peak.

Soils at the top of the peak are shallow to moderately deep clay loams that have formed in place on volcanic rocks. Soils below the peak are formed on erosion resistant ridges and ancient landslide deposits that occur along zones of weakness between the sedimentary and volcanic rocks. The combination of somewhat resistant volcanic rock layers mixed with sedimentary rock layers is commonly the source of landslides on steep slopes. Due to the peak's high elevation--and associated low temperatures and windy conditions--the growing season is relatively short.

The Mt. Hebo SIA occupies headwaters of seven streams in the Nestucca River Basin. Four (Boulder, Alder, Limestone, and Powder) are included in the Upper Nestucca Key Watershed under the Northwest

Forest Plan, extending basically northward from Mt. Hebo's central ridge. Three streams (Cedar, Pollard, and mainstem Three Rivers) extend generally southward from the ridge.

E. Botanical Features

Extensive open meadows grow on the flat plateaus at the top of Mt. Hebo. These areas are important habitat for the threatened Oregon silverspot butterfly, particularly because of the abundance of common blue violets (Adunca adunca), which are the primary food source for the larvae. A variety of other grasses and forbs occur including yarrow (Achillea millefolium), thin bent grass (Agrostis diegoensis), pearly everlasting (Anaphalis margaritacea), sweet vernal grass (Anthoxanthum odoratum), tufted hair grass (Deschampsia cespitosa), coast strawberry (Fragaria chiloensis), tough-leaved iris (Iris tenax), false dandelion (Hypochaeris radicata), lupines (Lupinus spp.), heal-all (Prunella vulgaris), dock (Rumex spp.), tansy ragwort (Senecio jacobaea), goldenrod (Solidago spp.), and clovers (Trifolium spp.).

Soils, drainage, aspect and historical use determine the occurrence of brush species on top of Mt. Hebo. Bracken fern (Pteridium aquilinum) and salal (Gaultheria shallon) invade the open grasslands, while thimbleberry (Rubus parviflorus) and salmonberry (Rubus spectabilis) encroach on slopes and around meadow edges. Pacific serviceberry (Amelanchier alnifolia) and red and blue huckleberry (Vaccinium parvifolium and V. ovalifolium) tend to grow in the open, often where old stumps have decayed. The forest surrounding the open grasslands and brushlands, some of which was planted with "off-site" tree species, is mainly composed of Douglas-fir (Pseudotsuga menziesii), western hemlock (Tsuga heterophylla), western red cedar (Thuja plicata), noble fir (Abies procera), and occasional Norway spruce (Picea abies). Various ferns and herbaceous plants are abundant in these forests, including the yellow stream violet (Viola glabella) and redwood violet (Viola sempervirens). Extensive fires have produced a landscape dominated by alder (Alnus rubra) on the lower slopes and riparian areas surrounding Mt. Hebo.

One particularly interesting area on the southeastern side of Mt. Hebo forms the headwaters of the Three Rivers watershed, and is characterized by flat rock caps covered with layers of moss and lichens. Wet areas are common and include at least one sphagnum bog. Other special habitats on Mt. Hebo contain several unique plant species. Cardwell's penstemon (Penstemon cardwellii), found on rocky, high-elevation peaks in the Oregon Coast Range and Cascade Mountains, grows as mats over the rocky outcrops and cliffs. Rock-brake fern (Cryptogramma acrostichoides) grows in crevices on the rocks. A club-moss, Lycopodium clavatum, is very common in Mt. Hebo's brushlands and forests. This population is disjunct from other known populations in Oregon; in the western United States, club-mosses are most common at high elevations in the northern Cascade and Rocky Mountains. Leathery grape fern (Botrychium multifidum var. silaifolium) occurs in a meadow, growing among bracken ferns. This rare fern is usually limited to salt spray meadows along the ocean.

The Mt. Hebo fawn lily (Erythronium elegans) occurs on top of Mt. Hebo, occupying meadows, rocky cliffs, brushland, and open coniferous forest (Hammond and Chambers 1985). This species, discovered in 1982, has a limited distribution, occurring only on high peaks in the Oregon Coast Range Mountains. Of the six known populations along the Oregon Coast, the Mt. Hebo population is the largest, and is healthy and reproducing. E. elegans is on the Regional Forester's list of sensitive plants and the state's list of threatened species. The "sensitive areas" shown on Map VII-C include this species among others.

F. Oregon Silverspot Butterfly Habitat and Management

Oregon silverspot butterflies (*Speyeria zerene hippolyta*) appear to rely on two habitat components: a meadow complex and an adjacent forest fringe. Within the meadow habitat, the most important feature is the presence of the common blue violet, *Viola adunca*, the only known food source of silverspot larvae. The forest fringe provides cover from high winds in the meadows, and also may be important for feeding, courtship and mating. New information (Hammond 1991) indicates that the Mt. Hebo butterfly population may require less forested area than was set aside when the Forest Plan was adopted.

Oregon silverspot butterflies depend on Coast Range meadows formed as a result of disturbance, or on permanent meadows (where soils and/or climatic conditions inhibit conversion to later seral stages). Before European settlement, fires in the Coast Range occurred infrequently (every 150 to 300 years) but were apparently sufficient to create adequate butterfly habitat scattered across the range. Since then, residential and commercial development, grazing, and fire suppression have reduced suitable habitat for silverspots, by eliminating permanent meadows, or by reducing opportunities for creation of "new" early seral sites as others progress to higher seral stages. Although severe climatic conditions on top of Mt. Hebo slow the pace of meadow conversion to later seral stages, succession will nevertheless proceed in most areas in the absence of fire or other management-induced disturbances.

Historically seventeen Oregon silverspot butterfly sites were known, extending from southern Washington to northern California. There are now only five known sites having viable Oregon silverspot butterfly populations: two populations on the Siuslaw National Forest's Waldport Ranger District; Cascade Head on Nature Conservancy land; Del Norte County, California; and Mt. Hebo. The Mt. Hebo population is the largest and the most stable, fluctuating between 1,000 and 3,000 adults during most years. This is about half of the total number known for the species.

The Oregon silverspot butterfly was added to the federal threatened species list by the USDI Fish and Wildlife Service in 1980, and the first Recovery Plan for the species prepared in 1982. An updated Recovery Plan is, at this writing, in review form, and has not been finalized due to other Fish and Wildlife Service priorities. The Siuslaw's most recent Oregon Silverspot Butterfly Forest Implementation Plan (Hammond 1989) contains site-specific management direction for carrying out the objectives of the Recovery Plan in silverspot habitat on the Forest for 1990-1996.

The Mt. Hebo SIA consists of forest, brushland, and grassland along the edges and top of Mt. Hebo. Of this area, 65 acres are currently managed as silverspot habitat. These acres are distributed among eight management areas of from three to thirteen acres in size. Treatments such as mowing, handslashing, and burning are employed to prevent encroachment of bracken fern and woody brush. Transplanting of violets is also being used to establish new habitat.

Techniques for butterfly habitat improvement have the potential to negatively affect Mt. Hebo fawn lily (*Erythronium elegans*) populations in some locations. Specifically, mowing of bracken fern in areas where *Erythronium* grows can prevent *Erythronium* plants from reproducing. The types and timing of treatments that benefit both silverspot habitat and *Erythronium* are discussed in Section V-B (Meadow Management).

G. Access and Travel

The Mt. Hebo SIA is seven miles up Forest Development Road (Road) 14 east of the town of Hebo, which is at the junction of Highways 22 and 101 (see Map VII-A). Road 14 provides access to recreationists heading towards Hebo Lake Campground (west of the SIA), Mt. Hebo Campground (within the SIA), and South Lake Campground (south of the SIA). This road is paved from its origin at Highway 22 through most of the SIA, until it reaches Mt. Hebo Campground close to the SIA's eastern edge. Beyond that is a 1.4 mile primitive section which drops steeply from the mountaintop to North Lake. The road reverts to all weather unpaved surface after its junction with Road 1424. Short spur roads off Road 14 lead to the two electronics sites (at Main Point and South Point), to East Point, and to Mt. Hebo Campground. The Pioneer/Indian Trail, an eight-mile trail from Hebo Lake Campground to South Lake Campground, also passes through the SIA, where it crosses Road 14 three times.

The portion of Road 14 from Highway 22 to Mt. Hebo Campground is classified as a secondary low-clearance road by the A&TM Guide. It must therefore be maintained in a fashion acceptable for travel by all passenger vehicles. The short steep section of Road 14 from Mt. Hebo campground to Road 1428 is classified as a secondary high-clearance road (i.e., recommended only for vehicles with an under-carriage clearance greater than six inches). According to the A&TM Guide, travel on this segment by passenger cars should be discouraged. Lower maintenance requirements may allow some rutting, potholes, minor slides and debris.

Off-road use of motor vehicles in the SIA is prohibited, except by law enforcement or firefighting personnel, or by snowmobiles operating in at least two inches of snow (Forest Supervisor's Order: Use of Vehicles off Forest Development Roads, 1993). Illegal off-road driving in the SIA, and vandalism of gates and roadside barriers installed to prevent such activities have been a continuing problem. There are a number of places along Road 14 where illegal off-road entry is evident. A metal gate blocking the access road to East Point was heavily damaged during the winter of 1994/1995.

A visible result of off-road driving is damage to meadow vegetation. Tracks are clearly visible across portions of meadow due to habitual use and probably serve as an inducement to continued illegal off-road vehicle use. It is also unlikely that a minimum of two inches of snow is adequate to protect underlying vegetation from snowmobile use. Strategies to curtail illegal off-road driving and recommendations regarding snowmobile use are found in the Implementation section of this plan.

State police have periodically driven through meadows to viewpoints in the SIA for surveillance purposes, primarily during hunting season. In 1994, in order to lessen negative impacts on the meadows and give vegetation an opportunity to fill in well-worn car tracks, the Hebo Ranger District asked state police to refrain from driving on the meadows, and they have complied.

H. Public Uses and Values

Most people use the Mt. Hebo SIA during the relatively dry summer and early fall months, due to adverse weather conditions (fog, high winds, and rain) during the rest of the year. Popular recreational activities include: scenery viewing (from the road, and from vantage points in the meadows, at electronics facility sites, and rocky outcrops); hiking, horseback riding and mountain biking on the Pioneer/Indian Trail;

camping in Mt. Hebo Campground; picnicking; wildflower viewing; and other leisure activities. Most use is by small groups of individuals, though some organized groups are known to visit the area (e.g., horseback riding clubs, wildflower viewing field trips such as those sponsored by the Native Plant Society of Oregon). The Nature Conservancy has strong interests in the ecology and management of the area, and monitors the status of the meadows and silverspot butterfly populations. In addition, the land north of Road 14 was identified as part of the Hebo-Nestucca roadless area during the Roadless Area and Review Evaluation (RARE II) process of 1977.

Most horseback riders have traditionally parked their vehicles and commenced their rides several miles west of the SIA, near the former Air Force housing site off Road 14. In spring 1995, the Hebo Ranger District established the Mt. Hebo Day Use Area at this site. A parking facility for three to five vehicles, it is linked to the Pioneer Indian Trail via a 200-300 foot access trail. Riders can follow the Pioneer/Indian Trail as far as to Mt. Hebo Campground, and return by the same route or over Road 14. Organized riding groups (Oregon Equestrian Trails and the Polk County Riding Club) use Mt. Hebo primarily in the spring and fall, riding elsewhere (e.g., trails in the Cascades) during the summer. Some local riders use the Mt. Hebo area throughout the April-November season. Overall use is judged to be light, with little known impacts on wildlife, vegetation, or soils at current levels. Riders are supposed to keep their horses on the trails, rather than riding on meadow vegetation.

Mt. Hebo Campground is a small primitive campsite designed for three parties, with few facilities. No drinking water or regular campground maintenance is available, and the site is not recommended for trailers. A trail from the campground joins the Pioneer Indian Trail, allowing for hikes to North or South Lake, or westward to the mountaintop meadows and viewpoints, and ultimately to Hebo Lake.

There is currently little quantitative information on actual numbers and types of recreationists using the SIA, and vehicular traffic patterns through the area. The Hebo Ranger District plans to use traffic counters to provide information on traffic and overall recreation use patterns over time.

Electronics facilities--consisting of buildings, towers, and antennae for transmitting purposes--are located at Main Point (five buildings with 24 permittees) and South Point (one building with five permittees). Permittees visit the sites occasionally to do routine maintenance work.

I. Scenery

Visitors to the SIA can enjoy the surrounding scenery from Road 14, or better yet by hiking short distances to vantage points at Main, South, and East Points, as well as from north-facing rocky outcrops at the edge of the mountain's escarpment. Views include the Pacific Ocean and coastline, Coast Range, and high peaks of the Oregon Cascades. The electronics facilities at Main Point and the single facility at South Point are not picturesque, but the areas still provide unimpeded viewing opportunities. The best viewing area at Main Point is a short hike beyond the electronics facilities (which are clustered together), so the viewer can leave them behind and enjoy an unobstructed panorama to the north and west.

IV. DESIRED FUTURE CONDITION AND MANAGEMENT OBJECTIVES

A. Sources of Direction

Siuslaw Forest Plan (1990):

Most direction for management of the Mt. Hebo SIA comes from Siuslaw Forest Plan goals, desired future condition, and standards and guidelines for Management Area 1 (Oregon Silverspot Butterfly Habitat) (Forest Plan, pages IV-62 through IV-65). All acres in Management Area 1, including the SIA, were administratively withdrawn from timber production. Specific plans for treatment of the eight silverspot butterfly management areas in the SIA's meadows are in the Oregon Silverspot Butterfly Forest Implementation Plan (Hammond 1989).

Desired condition for the SIA is influenced by the Northwest Forest Plan and the Siuslaw Access and Travel Management Guide; both are described briefly below. A detailed description of the desired future condition for the SIA follows.

Northwest Forest Plan (1994):

The Northwest Forest Plan established a number of land allocations that overlay the SIA. The entire SIA falls within the Northern Coast Range Adaptive Management Area (AMA), and portions of the SIA are designated as: 1) Late Successional Reserve (LSR), 2) the Upper Nestucca River Key Watershed, and 3) Riparian Reserves around streams, lakes, and other wetlands (see Map VII-B). Northwest Forest Plan standards and guidelines for these designations are found in the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl (1994), referenced below as the "ROD". Direction in the ROD for administratively withdrawn areas is to apply the most restrictive applicable standards and guidelines, whether from the ROD or from existing plans.

Some of the Siuslaw Forest Plan's original management objectives for the SIA are consistent with Northwest Forest Plan direction; some are at odds. The most obvious difference is that the SIA's primary goals are maintenance of early-successional conditions for butterfly habitat, and of scenic vistas unencumbered by tall vegetation, while the Northwest Forest Plan emphasizes restoration of late-successional and old-growth forest conditions.

The Northwest Forest Plan does not specifically exempt the SIA from producing late-successional conditions. It does, however, indicate that "...activities required by recovery plans for threatened and endangered species take precedence over LSR standards and guidelines" (ROD, page C-11). Therefore, the Forest Plan MA1 guidelines for maintenance of butterfly meadows are appropriate and permitted. In addition, since MA1 is administratively withdrawn from timber management, the Forest Plan MA1 silvicultural guidelines, which are more restrictive than the ROD, supercede LSR silvicultural guidelines, i.e., silvicultural treatments of commercial thinning are not appropriate in the SIA.

LSR standards and guidelines for multiple use activities other than silviculture (ROD, C-16) are consistent with Siuslaw Forest Plan guidance for existing and future development in the SIA: "New development proposals that address public needs or provide significant public benefits...will be reviewed on a case-by-case basis and may be approved when adverse effects can be minimized and mitigated...Existing

developments in LSRs such as campgrounds...and electronics sites are considered existing uses with respect to LSR objectives, and may remain, consistent with other standards and guidelines...Maintenance activities may include felling hazard trees along utility rights-of-way, trails, and other developed areas" (ROD, C-17).

The SIA falls within the Northern Coast Range AMA, where general emphasis is "management for restoration and maintenance of late-successional habitat, consistent with marbled murrelet guidelines..." (ROD, page D-15). The non-LSR portions of the SIA, including the portion of the Upper Nestucca River Key Watershed and Riparian Reserves, are subject to the same exception as the LSR portion discussed above.

Siuslaw Access and Travel Management Guide (1994):

The Siuslaw Access and Travel Management Guide (A&TM Guide) identified a network of primary and secondary roads expected to meet travel and access needs throughout the Siuslaw National Forest, and designated maintenance levels for them. It adds to and modifies MA 1 standards and guidelines related to transportation, which stipulated that existing access roads be maintained for low clearance vehicles. While the A&TM Guide classifies the portion of Road 14 from Highway 22 to Mt. Hebo Campground as a secondary low-clearance road (i.e., it must be maintained in a fashion acceptable for travel by all passenger vehicles), the short steep section of Road 14 from Mt. Hebo campground to Road 1428 is classified as a secondary high-clearance road (i.e., recommended only for vehicles with an under-carriage clearance greater than six inches). According to the A&TM Guide, travel on this segment by passenger cars should be discouraged.

B. Desired Future Condition

This description of SIA desired future condition incorporates Siuslaw Forest Plan direction, modifications introduced by the Northwest Forest Plan and A&TM Guide, and some added details provided by SIA Plan contributors.

Meadows in the SIA consist of wildflowers and native grasses which provide cover for butterfly larvae. An abundant growth of common blue violets provides food for larvae. California asters, a preferred source of nectar for adult butterflies, are dispersed throughout this vegetation. A forested fringe adjacent to the meadows provides food and protection for butterflies in adverse weather. Fringe habitat consists of relatively small, grassy openings interspersed with large trees (at least 50 feet tall). Some scattered open-grown trees with limbs to the ground are present in the openings, as well as nectarous plants such as goldenrod, yarrow, or asters. Healthy reproducing populations of Erythronium elegans are also found in the meadows.

The public has reasonable opportunity to explore and enjoy the beauty of the area from the road, from existing trails, and by traveling off trails by foot. Recreational facilities allow for hiking, picnicking, camping, horseback riding, snow use, and other low-impact uses. Butterfly habitat and special natural features are unimpaired by human activities and facilities provided for human use. Any new recreational development for the purpose of enhancing scenic viewing opportunities is concentrated at a single site where butterfly habitat will not be lost or damaged. Interpretive information promotes understanding of the uniqueness, ecology, and management of the area. Signs are placed along roads and trails where necessary

to promote safety and resource protection. There are no new roads, and no new trails through meadow habitat. SIA boundaries incorporate necessary silverspot habitat, and include special habitats and points of biological and scenic interest; the boundary is well marked at entry points.

The SIA's visual quality objective (VQO) is partial retention: human activity may be evident, but must remain subordinate to the characteristic landscape. Electronics sites are in locations which do not conflict with butterfly habitat. Electronics facilities are concentrated in one site at the summit (Main Point), except for the single facility at South Point. No new electronics facilities will be constructed; heights of any added towers or antennas do not exceed 60 feet.

All land in the SIA is categorized as "unsuitable for timber production" (Forest Plan, page IV-62). Vegetation is manipulated to improve silverspot habitat, maintain scenic views, eliminate hazards, or if it interferes with transmitting ability from electronics sites. One exception is noted in Section V-E. Trees felled, limbed or topped to meet these objectives are left on-site unless they create a hazard or obstruct activities in the area.

C. Management Objectives

Desired future condition provides the foundation for the following broad management objectives. Specific management actions are presented in the Implementation section which follows.

- 1) Maintain early-seral plant communities and other special resources necessary to sustain viable populations of rare plant and animal species. Early-seral habitat will be concentrated in at least 65 acres of grassy meadow maintained as breeding and rearing habitat for silverspot butterflies, with additional grasslands and openings scattered elsewhere on top of the mountain. Rare plants, such as E. elegans, may require additional early-seral acreage not normally managed for the silverspot butterfly.
- 2) Assist recovery of the silverspot butterfly and its removal from the federal list of T&E species through activities which increase suitable habitat. The Forest has a goal of providing two viable secure populations in a Coastal Mountains Habitat Conservation Area, one being the Mt. Hebo population. This goal comes from the revised U.S. Fish and Wildlife Service Recovery Plan for Oregon Silverspot Butterfly (still in review form as of February 1996).
- 3) Allow public access to Mt. Hebo's outstanding scenic and biological features by car (on Road 14) and by foot (walking on trails, off-trail, and at a developed scenic viewing/interpretive area).
- 4) Prohibit activities that are ground- or vegetation-disturbing (except for authorized management activities that help meet SIA objectives). Inform the public regarding prohibited and approved activities. Design and implement strategies to alter or reduce harmful patterns of use.
- 5) Monitor meadows and other sensitive areas for over-use and other resource damage. Adjust management actions and restrictions on public use accordingly.

V. IMPLEMENTATION: ACTIONS, STRATEGIES, AND RESTRICTIONS

The specific actions, strategies, and restrictions discussed below are intended to help "bridge the gap" between current and desired conditions, and to counter current and potential human impacts on SIA resources. The extent to which these recommendations can be implemented will depend in part on future Forest budgets.

A. Boundary Adjustments

The Mt. Hebo SIA boundary should meet all the purposes for which the area has been set aside. When Management Area 1 was designated in the Siuslaw Forest Plan, the boundary was placed approximately one-quarter mile from its central meadows to provide adequate amounts of adjacent forest fringe as cover for adult butterflies. It is now recognized that portions of the SIA on the steep escarpment below the mountaintop plateau are generally not used by the butterflies.

The revised Mt. Hebo SIA boundary and the original MA 1 boundary are shown on Map VII-B. Criteria for deciding the placement of the new boundary were that it should:

- 1) include special habitats and points of scenic or biological interest;
- 2) provide critical habitat for silverspot butterflies (meadows and bordering forest fringe on mountaintop);
- 3) include a buffer between recreationists and managed forest stands; and
- 4) be easily located and marked, to the extent possible, making use of features such as roads, trails, and contour lines.

A boundary that follows the 2,500' elevation contour line was found to meet all these criteria, except for the following deviations:

- 1) in the southwest corner of Section 13 (T. 4S., R. 9W.). A very small segment of Road 1424 is used as the SIA boundary, rather than the 2500' contour.
- 2) in the southeast corner of the SIA. In this area, following the 2,500' contour would include a large number of acres not relevant to SIA purposes. Instead, the boundary departs temporarily from the 2,500' contour as follows (traveling counter-clockwise): from the intersection of the 2500' contour and Road 14 (northwest of North Lake), the boundary follows Road 14 southeast to North Lake. The boundary follows the south edge of North Lake, then follows the drainage from the southeast corner of the lake until it connects with a trail that leaves from the north side of that drainage. The boundary follows that trail until it intersects with Road 1477, then follows Road 1477 until it comes to the lowest point in the saddle to the north of the road. The boundary follows that saddle to the fork of Powder Creek, then follows the north fork of Powder Creek until it intersects with the 2500' contour.

The boundary as identified in this Implementation Plan may be subject to minor adjustments as the management activities in the SIA and adjacent areas are implemented. As projects are designed, breaks in

topography and other natural features may suggest logical refinements to the boundary. In all cases, the management objectives of the SIA will have the highest priority in determining any adjustments.

With its revised boundary, the size of the Mt. Hebo SIA is 1,666 acres, compared to the Siuslaw Forest Plan's acreage estimate of 1,684 acres.

B. Meadow Management

These measures are needed to protect and enhance silverspot butterfly habitat, protect Mt. Hebo fawn lily populations, and maintain the scenic qualities and natural appearance of Mt. Hebo's meadows.

- 1) Follow the Forest's Oregon Silverspot Butterfly Forest Implementation Plan.
- 2) When improving meadows, choose methods and intensity of treatment that protect the food supply of butterfly larvae and do not harm various life stages.
- 3) Prohibit the following activities that disturb vegetation, tear up the ground, interfere with other conditions required by silverspot butterflies, or take away from the "natural" appearance of Mt. Hebo's meadows:
 - a) unauthorized introduction of plant and animal species
 - b) collection of silverspot butterflies
 - c) use of insecticides and artificial lighting
 - d) destruction of sparse aster stands and ant hills
 - e) off-road driving and mountain biking
 - f) operation of snowmobiles on less than 6 inches of snow
 - g) use of metal detectors
 - h) collection of special forest products, except for berries and fungi

Implementation of item (3f) will require amending the current "Forest Supervisor's Order: Use of Vehicles off Forest Development Roads", which presently allows snowmobile operation on two or more inches of snow. The reason for the change in the SIA is to better protect underlying vegetation from snowmobile damage.

- 4) Schedule any roadside mowing/brushing outside of the flowering season (mid-July through late September) in the SIA, to maintain nectar-producing plants for adult silverspots. [This measure was suggested by the Nature Conservancy.]
- 5) Protect populations of Mt. Hebo fawn lily (Erythronium elegans). Most mowing of silverspot butterfly habitat does not overlap with Erythronium populations, so there is potential for conflict in relatively few areas. Where there is overlap, the timing, intervals, and techniques (e.g., weed-eating rather than mowing) of bracken fern/brush removal can be varied to minimize damage to Erythronium populations. Strategies for promoting both Viola and Erythronium should be incorporated into the next version of the Oregon Silverspot Butterfly Forest Implementation Plan, which will be revised after the U.S. Fish and Wildlife Service updates its Recovery Plan for the species.

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- 6) Develop no new trails through SIA meadows (see Section IV-D.).

C. Resource Protection from Human Uses

1) Steps should be taken to prevent illegal off-road driving of vehicles in the SIA, and riding of mountain bikes off-road and off-trail. The use of an "incremental" approach to prevent vehicle entry is recommended, starting with simple actions (a) and proceeding if necessary to more rigorous measures (c, d):

a) Construct barriers (such as fences, guard rails, and boulders) in trouble spots where signs of entry are evident. Barriers should be visually compatible and affordable. Experiment first with less expensive options (e.g., wooden post and rail fences less than 30 inches in height).

b) Monitor effectiveness by observing damage or circumnavigation of barriers. If necessary, extend barriers beyond original locations and/or use more durable barriers.

c) Close seasonally the portion of Road 14 between Main Point (east of the Main Point and South Point turnoffs) and North Lake to all but administrative use. This may be more effective than roadside barriers, but may also be somewhat unpopular. Since most signs of off-road driving and vandalism have been observed in the late fall/early winter, the Forest could experiment initially with seasonal closure beginning after hunting season, opening the road again in the spring. The Mt. Hebo campground may need to be closed seasonally as well to prevent vandalism.

d) Permanently close Road 14 (as described above) if off-road driving and vandalism continue.

In addition to tactics that block access, interpretive signs can be used to explain habitat preservation efforts in the SIA (how much detail can be revealed will depend on U.S. Fish and Wildlife Service restrictions on disclosure regarding threatened and endangered species) and reasons for prohibiting off-road use of vehicles and mountain bikes. Signs might include information on who to contact if people witness any off-road travel in the SIA.

2) Monitoring is an important component of resource protection. Currently, the Forest and The Nature Conservancy monitor status of silverspot butterfly populations and Erythronium elegans. There are a number of other conditions that can be monitored to provide a better picture of human use in the area, and alert managers to problems associated with over-use. These include:

- a) traffic and recreational use patterns (numbers and seasonal variation)
- b) horse use
- c) other native flora
- d) trail use and damage, and evidence of damage in meadows due to trampling (foot and horse)
- e) compliance with prohibition on firewood collection at Mt. Hebo Campground

3) Education and research activities should be allowed, provided they do not negatively impact the SIA.

D. Development of Scenic Viewing Opportunities and New Facilities

MA 1 standard and guideline 01-02 states that recreational facilities (trails, parking, viewpoints) should be provided to make special recreational and scenic features available to the public. Their location, design, construction, and use should not damage butterfly habitat.

1) Main Point, South Point, and East Point were considered for development as scenic viewing areas. Main Point is the best candidate, based on its panoramic view, relatively even terrain for road construction, trails and a viewing area, and ease of access from Road 14. Main Point underwent considerable development during its history as an Air Force station, and later ground disturbance during clean-up and reclamation. Because it has been so greatly modified, Main Point has "little to lose" in terms of its potential as silverspot habitat, as compared to the other two sites. East Point in particular already contains prime habitat. East Point and South Point also are valuable for their more "natural" appearance. People can reach South Point by parking at Main Point and walking the short (but steep) access road, and East Point by parking near the locked gate and walking a short distance.

2) Development of Main Point for scenic viewing would be contingent on funding for such a project, as well as adequate funding for continued maintenance. Recommended features of a scenic viewing area include restroom facilities to accommodate higher visitor use levels, a barrier-free trail, and interpretive signs. Interpretive signs could include information on natural history, scenery, resource protection, outdoor ethics and appropriate/prohibited activities in the SIA.

3) Electronics facilities should remain concentrated at Main Point and South Point. No new electronics facilities will be constructed. Heights of any added towers or antennas will be limited to 60 feet in height (the current maximum height), unless permittees submit engineering data demonstrating the need for taller towers or antennas.

4) No additional trails should be developed through SIA meadows. Additional publicized trails and viewpoints in the meadows would be likely to damage silverspot habitat (requiring mitigation to make up for lost habitat), and may interfere with protection of other botanical features as well.

5) New trails in forested portions of the SIA may be built if recreational use levels warrant, and after information has been gathered and considered regarding linked impacts of overall increased trail use on meadow habitat (see Section C-2.). In 1993, survey work was done for construction of a North Loop Trail through forested portions of the SIA, but due to a variety of concerns, a decision was made to not construct the trail. Possible negative impacts of the North Loop Trail were discussed at that time, and a "history" of those discussions is presented here because it illustrates the kinds of issues that should be addressed when considering new trail construction in the SIA.

The planned North Loop Trail would have passed through forested areas on the north side of the SIA, forming a loop by connecting with the Pioneer/Indian Trail at each end. Its primary users were likely to be horseback riders seeking a loop ride by using both trails. The North Loop Trail did not cross through mountaintop meadows, but was likely to bring about increased passage through meadows via the Pioneer/Indian Trail.

The U.S. Fish and Wildlife Service approved construction of the Pioneer Indian Trail in 1984, on condition of mitigation for a half acre of silverspot habitat lost because of the project. The trail was assumed at the time to be a foot trail and impacts of horse use in the area were not considered in the Biological Opinion. When the Environmental Assessment and Biological Opinion (1992) for the North Loop Trail project were done, linked actions associated with the Pioneer/Indian Trail (namely, impacts from increased horseback riding) were not evaluated.

Construction of the North Loop Trail was deferred largely because of lack of information regarding current, as well as potential, horse use in the SIA. It is likely that construction of the North Loop Trail would lead to increased use of the Pioneer/Indian Trail. One concern is that riders may take their horses off trails into the meadows, or widen the trail, damaging vegetation and bringing about a "take" situation. Another concern is that horse manure may introduce unwanted plants into the meadows that compete with violets and other plants preferred by silverspots.

After consulting informally with the Fish and Wildlife Service, it seems necessary to revisit with the agency the question of whether horse use of the North Loop Trail-Pioneer/Indian Trail loop is compatible with recovery of the Oregon silverspot butterfly. The trail project could be reevaluated after revising the Biological Opinion to include assessment of horse use in the SIA. Making these revisions and consulting with the Fish and Wildlife Service will require collection of information we currently do not have: frequency and patterns of horse use in the SIA, and whether there is currently a noxious weed problem associated with horse use.

E. Vegetation Management and Commodity Uses

- 1) As stated in the Forest Plan, all land in the SIA is unsuitable for timber production. Timber management activities are incompatible with the area's primary objectives of protecting biological and scenic resources.
- 2) Trees may be felled, limbed, or topped to improve silverspot habitat, maintain scenic views, eliminate hazards, or if they interfere with transmitting ability from electronics sites. One exception to this guideline is provided in order to incorporate a young plantation in the southeast corner of the SIA. The plantation will be "pre-commercially" thinned, with no material removed from the site, in order to increase species and structural diversity in the stand. This will enhance the area for wildlife and recreation visitors.
- 3) Trees felled, limbed or topped for the above purposes should be left on-site unless they create a hazard or obstruct activities in the area. Leaving downed wood on the ground is in keeping with LSR objectives.
- 4) To leave existing vegetation and soil intact, and maintain the natural appearance of the area for its scenic values, special forest products collection (with the exception of berries and fungi for personal use) is not permitted. Campers at Mt. Hebo campground are not to cut any standing trees at the site (or strip limbs from standing trees) for firewood.

F. Road and Trail Management

1) No new roads will be developed.

2) Roads are classified and maintained according to standards in the Siuslaw National Forest Access and Travel Management Guide. Road 14 from Highway 22 to Mt. Hebo Campground will be managed and maintained as a secondary low-clearance road; while not a major travel corridor, it allows access by passenger cars to the scenic mountaintop and to Mt. Hebo Campground.

The portion of Road 14 from Mt. Hebo Campground to Road 1428 will be maintained as a secondary high-clearance road; it is steep, narrow, and will receive minimal maintenance. Travel on this segment by passenger vehicles should be discouraged.

3) Vehicle travel on the short spur road to South Point will be discouraged except to provide access for authorized management activities and for maintenance at the electronics site. The road will be maintained for high clearance vehicles only. The South Point area has the potential to be managed for silverspot habitat, and vehicle use will be discouraged to keep that option viable.

4) Schedule any roadside mowing/brushing outside of the flowering season (mid-July through late September) in the SIA, to maintain nectar-producing plants for silverspots.

5) Trails should be inspected periodically to identify trampling, widening, and other damage by pedestrians and/or horses. Trail maintenance and signs should be utilized to cope with such problems.

G. Signage

It is important that people passing through or recreating in the SIA be well-informed about safety-related concerns, and that—for both resource protection and law enforcement purposes—they know which activities are restricted or prohibited. Signs placed along roads and trails should inform the public of the following:

1) SIA boundaries.

2) Need for horses and hikers to stay on trails.

3) Prohibited activities such as special forest products collection, cutting of trees for firewood in Mt. Hebo campground, driving and mountain biking off-road, use of metal detectors, collection of silverspot butterflies, damaging plants or digging in meadows, snowmobiling on less than 6 inches of snow.

4) Status and condition of roads (i.e., that Road 14 is not recommended for passenger cars between Mt. Hebo Campground and Road 1428).

VI. REFERENCES

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VII. MAPS

A. Location Map

B. Administrative Boundaries and Land Allocations

C. Natural and Manmade Features

Map VII-A. Location Map



