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Staff: James R. Baskin AICP
Staff Report: October 14, 2011
Hearing Date: November 4, 2011
Commission Action:

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: **1-11-031**

APPLICANT: **California Department of Fish and Game**

PROJECT DESCRIPTION: Restore habitat for the Oregon Silverspot Butterfly by manually changing vegetative cover seasonally over a two-year period.

PROJECT LOCATION: At two sites of 3.11 acres and 4.5 acres in size within the Pacific Shores Subdivision near the unincorporated community of Fort Dick (Del Norte County) (APNs 107-082-05; 108-031-05 through -13; 108-053-03 & -04; 108-173-08, & -10 through -14; and 108-240-02, -03, -10, & -11).

LOCAL APPROVALS RECEIVED: None required.

OTHER APPROVALS REQUIRED: None required.

SUBSTANTIVE FILE DOCUMENTS: (1) *Draft Oregon Silverspot Butterfly (Speyeria zerene hippolyta) Species Account and Management Plan* (R.M. Sullivan, California Department of Fish and Game, August 3, 2011); (2) *2010 Section 6 Project Statement (Proposal) Federal Endangered Species Act Traditional Section 6 Grant, California*

Department of Fish and Game (Gary Falxa, Bob Smith, California Department of Fish and Game, March 16, 2010); and (3) Coastal Development Permit File Nos. 1-00-057, 1-04-008, 1-07-050, and 1-09-047.

SUMMARY OF STAFF RECOMMENDATION:

Staff recommends approval with special conditions of the proposed restoration of habitat for the Oregon Silverspot Butterfly involving manually changing vegetative cover at two separate sites on California Department of Fish & Game (Department) owned property within the undeveloped Pacific Shores Subdivision adjoining Lake Earl in Del Norte County. The proposed development is part of the Department's *Oregon Silverspot Butterfly Cooperative Habitat Improvement Project*.

The proposed habitat improvements are intended to enhance conditions for the emergent growth of the early blue-violet (*Viola adunca*), a plant species crucial to the larval stage of the Oregon Silverspot Butterfly (*Speyeria zerene hippolyta*) (OSB), a federal Endangered Species Act-listed threatened insect.

To minimize impacts to sensitive aquatic and wetland biological resources and water quality, certain best management practices would be incorporated into the project. These actions include the use of impact minimization scheduling, avoiding ground disturbance through limiting vegetation removal to above ground clearing, limiting release of cuttings to upland areas, and managing for the removal of exotic Scotch broom vegetation. Detailed project plans are provided as Exhibit No. 6.

Staff believes that the proposed habitat improvement project is consistent with all applicable policies of Chapter 3 of the Coastal Act. The proposed major vegetation removal would enhance site conditions for the growth of a host plant that serves as a critical food source for an endangered species. Therefore, because the treatments must be conducted within Oregon Silverspot Butterfly ESHA and wetland ESHA to be effective and the project is being performed to aid the recovery and restoration of the Oregon Silverspot Butterfly ESHA, the project represents a use dependent on the resources of the ESHAs consistent with the limitations imposed by Coastal Act Section 30240(a). Moreover, staff believes that with the requirements of recommended Special Condition Nos. 1 and 2, potential significant adverse impacts to adjoining forested wetlands ESHA on the sites will be avoided and minimized as required by Section 30230, 30231, 30232, and 30240(b). Included among these conditions are requirements that the Department implement as proposed certain permanent water quality best management practices including the staging of all cutting equipment fueling and maintenance on the existing cleared roadways adjoining the treatment areas, and following established prescriptions

for any associated piling, burning, and/or chipping and scattering of the resulting cut vegetation. These actions will serve to both enhance and partially restore the biological productivity of this degraded area.

The Motion to adopt the Staff Recommendation of Approval with Conditions is found below on pages 3 and 4.

STAFF NOTES:

1. Jurisdiction and Standard of Review

The proposed project is located within the unincorporated boundaries of Del Norte County in an area situated on a low peninsula that juts into the coastal lagoon known as Lake Earl/Talawa. The County of Del Norte has a certified LCP, but the project site is within the "Pacific Shores Special Study Area," an Area of Deferred Certification (ADC) over which the Commission retains coastal development permit jurisdiction. Therefore, the standard of review that the Commission must apply to the project is the Chapter 3 policies of the Coastal Act.

I. MOTION, STAFF RECOMMENDATION AND RESOLUTION:

The staff recommends that the Commission adopt the following resolution:

MOTION:

I move that the Commission approve Coastal Development Permit No. 1-11-031 pursuant to the staff recommendation.

STAFF RECOMMENDATION OF APPROVAL:

Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

RESOLUTION TO APPROVE THE PERMIT:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment.

II. STANDARD CONDITIONS: See Appendix A.

III. SPECIAL CONDITIONS:

1. Protection of Environmentally Sensitive Habitat Areas and Coastal Water Quality

The permittee shall conduct the authorized development subject to the following performance standards:

a. All vegetation removal shall be conducted between September 15 and April 1;

b. Fueling and/or maintenance of vehicles and fuel-powered tools shall not be undertaken within environmentally sensitive areas but conducted only on cleared roadway areas;

c. Adequate supplies of spill prevention and response clean-up materials shall be provided to all work sites involving the use of motorized equipment;

d. Lopped, cut, and/or chipped green wastes from manual cutting / clearing work intended to be composted/mulched onsite shall be disposed of only in non-wetland upland areas;

e. On-site burn piles shall not be sited in wetlands; and

f. Vegetation removal shall be limited to above-ground surface cutting to avoid ground disturbance;

g. Areas to be cleared of vegetation shall be retreated to remove Scotch broom and other invasive plants at least one additional time after the initial clearing during the project period; and

h. Prior to the commencement of any development authorized under this CDP, the permittee shall ensure that all on-site workers and contractors be trained in spill

prevention and response and understand and agree to observe the standards for work outlined in this permit and in the detailed project description included as part of the application submittal and as revised by these conditions.

2. Burn Permits

PRIOR TO THE COMMENCEMENT OF ANY ONSITE BURNING OF CUT VEGETATION PURSUANT TO COASTAL DEVELOPMENT PERMIT NO. 1-07-018, the applicant shall provide for the review and approval of the Executive Director, copies of burn permits from the California Department of Forestry and Fire Protection (CALFIRE), the North Coast Unified Air Quality Management District (NCUAQMD), and the Fort Dick Volunteer Fire Department (FDVFD) or evidence that no permit or permission is required from these agencies. The permittee shall inform the Executive Director of any changes to the project required by CALFIRE, NCUAQMD, of the FDVFD. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

IV. FINDINGS & DECLARATIONS

The Commission hereby finds and declares as follows:

A. Project Setting and Description.

1. Project Setting

The development would be performed at two discrete locations situated approximately five miles west of the unincorporated town of Fort Dick, on state-acquired lots within the Pacific Shores Subdivision, an existing albeit undeveloped low-density rural residential subdivision[1] in northwestern Del Norte County. The Pacific Shores Subdivision is located north of Lake Talawa, south of Kellogg Road, between Lake Earl and the Pacific Ocean. (see Exhibit Nos. 1-4). The project site, as with the majority of the peninsula separating the two lobes of the Lakes Earl/Talawa coastal lagoon, lies within the "Pacific Shores Special Study Area of Deferred Certification" with respect to the County of Del Norte's certified Local Coastal Program. As a consequence, the Commission retains coastal development permit jurisdiction over the site, and the standard of review for issuance of a coastal development permit is whether the development would be consistent with the policies of Chapter 3 of the Coastal Act.

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[1] See Coastal Development Permit File Nos. 1-00-057 and 1-04-008, for detailed discussions of the history, environmental setting, and status of the *Pacific Shores Subdivision*, and related habitat and flood control management within the adjoining Lake Earl Wildlife Area.

The Pacific Shores Subdivision is located north of Lake Talawa, south of Kellogg Road, between Lake Earl and the Pacific Ocean (see Exhibit Nos. 2 & 3). The Subdivision comprises a total of 1,524 roughly ½-acre lots platted over an area of 1,486 acres. Approximately 27 lineal miles of roadway were offered for dedication and subsequently accepted by the County and constructed with paved, chip-sealed, and/or gravel surfaces shortly after the subdivision was approved in 1963. However, except for the road system, the subdivision remains essentially undeveloped. Since 1963, infrastructure improvements within Pacific Shores have been minimal, consisting primarily of a system of roadways and an electrical power line corridor. Only the main north-to-south access road, Tell Boulevard, and several other cross streets has been maintained (i.e., vegetation clearing, minor drainage improvements). One permanent residence has been developed within the bounds of the subdivision. The residence was developed prior to the 1972 Coastal Initiative (Proposition 20) and therefore did not require a coastal development permit.

In 1981, the Coastal Commission approved the Coastal Element of the County's General Land Use Plan, but denied certification of the Pacific Shores Subdivision area. The Pacific Shores Subdivision then became an area of deferred certification. The subdivision is noted on the County's LUP map as a "Special Study Area."

The California Department of Fish and Game (CDFG), through its Wildlife Conservation Board (WCB), has been purchasing private property from willing sellers who own land around the Lakes Earl/Talawa coastal lagoon below the +10 feet MSL elevation. In addition to the initial purchase of approximately 5,000 acres in the mid-1970s to establish the Lake Earl Wildlife Area (LEWA), the Department has acquired additional properties. Since 2001, the Department has purchased ten parcels along the eastern shoreline of Lake Earl, totaling approximately 158 acres of private lands having portions lying at and below the ten-foot contour. The Department estimates that outside of the Pacific Shores Subdivision, about 144.7 acres of privately held land below the roughly ten-foot contour[2] is still subject to periodic flooding. This approximately 145-acre area is spread among portions of six private ownerships, does not include any permanent inhabitable structures, and does not include land within the Pacific Shores subdivision. The Department's Wildlife Conservation Board, through the Smith River Alliance serving as its outreach intermediary, and in coordination with the Coastal Conservancy, has to date purchased 779 ½-acre lots within the Pacific Shores Subdivision. These lots are managed by the CDFG as part of the operation of the overall Lake Earl Wildlife Area complex.

The roughly 7.61-acre aggregate, two-plot project area is situated between the ocean and the first through public road paralleling the sea, Lower Lake Road (see Exhibit Nos. 1-4).

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[2] Based upon a review of 1992 aerial photography when the lagoon surface elevation was at a +9.44′ MSL level.

The parcels currently have either single- or double-frontage along gravel-surfaced public roads, with the plots abutting Ficher Drive, Placone Street, or Porteck Street (Northern Treatment Area) or Vergine Drive, Porteck Street, or Prigmore Street (Southern Treatment Area). Due to the presence of intervening significant forested tree and shrub cover, and significant breaks in topography, no views across the property to and along the ocean are afforded from vantage points along public streets, parklands, or the open shoreline.

The project setting consists of a generally flat, uplifted coastal plain extending back from the ocean blufftop margins, at an elevation range of approximately 4 to 16 feet above sea level. The two development sites and surrounding areas are comprised of a mosaic of three habitat types: (1) Coastal Maritime Forest consisting primarily of a Sitka spruce (*Picea sitchensis*) / grand fir (*Picea grandis*) / beach or shore pine (*Picea contorta* ssp. *contorta*) complex, with an attending understory of twinberry (*Lonicera involucrata*), hairy honeysuckle (*Lonicera hispidula*), dogwood (*Cornus stolonifera*), silk tassel (*Garrya elliptica*), salal (*Gaultheria shallon*), wax myrtle (*Myrica californica*), Oregon crabapple (*Malus fusca*), and cascara (*Rhamnus purshiana*); (2) an interspersing Grasslands/Pasture association composed of sweet vernal grass (*Anthoxanthum odoratum*), velvet grass (*Holcus lanatus*), orchard grass (*Dactylis glomerata*), tall fescue (*Festuca arundinacea*), soft chess (*Bromus hordeaceus*), barley (*Hordeum* spp.), sheep sorrel (*Rumex acetosella*), English plantain (*Plantago lanceolata*), Douglas' iris (*Iris douglasiana*), European beach grass, and lupine (*Lupinus bicolor*) that extends into the deflation plain inland of the adjoining open beach strand; and (3) Coastal Dunes habitat made up a diverse collection of exotic and native plants including European beach grass (*Ammophila arenaria*), sea rocket (*Cakile maritima*), beach pea (*Lathyrus littoralis*), sand verbena (*Abronia latifolia*), beach buckwheat (*Eriogonum latifolium*), beach sagewort (*Artemisia pycnocephala*), silver bursage (*Ambrosia chamissonis*), beach evening primrose (*Camissonia cheiranthifolia*), beach blue grass (*Poa douglasii*), and a variety of other grasses and forbs and related undergrowth species. Most notably of these herbaceous layer plants is the early blue violet (*Viola adunca*), the larval stage host plant to the threatened Oregon Silverspot Butterfly (OSB) (*Speyeria zerene hippolyta*) (OSB), a federal Endangered Species Act-listed threatened insect (see Exhibit Nos. 7 and 8).

The proposed project involves a continuing effort to determine the most appropriate vegetation maintenance techniques to stimulate the growth of the early blue-violet. Given the species facultative hydrophytic character, portions of the project site test plots lie within forested and emergent shrub-scrub wetlands. The wetland habitat at the two sites, as well as the habitat of the threatened Oregon Silverspot Butterfly species at each sites, comprise environmentally sensitive habitat areas (ESHA). Several environmentally sensitive habitat areas are also located in proximity to the project sites, including other forested and emergent wetlands.

2. Project Description

The applicant, California Department of Fish and Game ("Department"), proposes to manually change vegetative cover at the two project sites as part of a continuation of a pilot wildlife management study, initiated in 2008 (see Coastal Development Permit No. 1-07-050). The current proposed habitat enhancement work involves continued systematic habitat manipulations, specifically the manual removal of tree and shrub canopy overstory to gather data as to the most effective vegetation management strategies for stimulating the growth of the early blue-violet (*Viola adunca*), a plant species crucial to the larval stage of the Oregon Silverspot Butterfly. The project would involve implementation of the "management of habitat" recovery activities 2.2.1.1 through 2.2.1.6, as established for the Del Norte Habitat Conservation Area within the *Revised Recovery Plan for the Oregon Silverspot Butterfly*, adopted by the U.S. Fish and Wildlife Service in 2001, and the Department's 2011 *Draft Oregon Silverspot Butterfly Species Account and Management Plan* (see Exhibit Nos. 8).

All activities would be staged on existing county roads which are immediately adjacent to each treatment site. These activities would include vehicles, trailers, and equipment. All of the treatment plots would be clearly marked to define the outer limits of each treatment. The proposed vegetation removal and management methods entail the manual cutting of tree and shrub layer overstory undertaken on 2.25- and 1.5-acre portions of the larger approximately 4.5- and 3.11-acre test plot areas, respectively by CALFIRE Conservation Camp crews using hand tools such as chain saws and hand saws. Woody vegetation would be cut at ground level and either piled and left to decompose, chipped, or burned on-site as appropriate on the upland portions of the sites. No ground disturbance or wetland filling would occur as a result of this treatment method.

The applicant anticipates that planting of blue violets within the overstory removal areas will not be necessary as both early blue and Aleutian violets (*Viola langsdorfii*), a possible surrogate host plant, and other non-woody, herbaceous vegetation growing on adjacent areas which the adult butterflies feed upon will be able to colonize these sites naturally due to significantly reduced plant competition.

The project will take place in the winter to avoid disturbance to adult butterflies and nectar food sources. Following planting, monitoring to determine the relative degrees of success of violet growth stimulation for each vegetation removal method would be undertaken through stem count plot surveys conducted in each plot area.

Table One below, summarizes the continuing habitat enhancement activities to be undertaken at the two test plot sites:

Table One: 2011-2012 Oregon Silverspot Butterfly Experimental Habitat Improvement Pilot Program Summary

Test Area	Location (APNs)	Gross Acreage	Treatment Method	Notes
4 ("Northern Treatment Area")	108-031-02 108-031-04 108-031-06 108-031-18 108-031-19 108-031-20 108-031-21 108-031-22 108-031-23	4.55	Manual Release	Approximately 50% of plot area to be cut by chainsaw, brush hook, and similar hand tool clearing
5 ("Southern Treatment Area")	108-173-02 108-173-08 108-173-10 108-173-11 108-173-12 108-173-13	3.11	Manual Release	Approximately 50% of plot area to be cut by chainsaw, brush hook, and similar hand tool clearing

B. Protection of Coastal Water Quality, and Environmentally Sensitive Habitat Areas.

1. Applicable Coastal Act Policies and Standards

Section 30231of the Coastal Act states the following (emphasis added):

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.* [Emphasis added.]

Section 30232 of the Coastal Act states the following:

> *Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containments*

> *and cleanup facilities and procedures shall be provided for accidental spills that do occur.*

Section 30240 states, in applicable part:

> *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values and only uses dependent on those resources shall be allowed within those areas.*
>
> *(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

2. Consistency Analysis

Coastal Act Sections 30231 requires that coastal waters and wetlands be maintained and, where feasible, enhanced. These policies also call for restoration of coastal waters, streams, wetlands, and estuaries where feasible. Additionally, Coastal Act Section 30232 requires protection against the spillage of crude oil, gas, petroleum products and hazardous substances and requires that effective containments and cleanup procedures be provided for accidental spills that do occur. Section 30240(a) requires that environmentally sensitive habitat areas be protected against any significant disruption of habitat values and only uses dependent on those resources shall be allowed within those areas. Section 30240(b) requires that development in areas adjacent to ESHA be sited and designed to prevent significantly degrading impacts, and be compatible with the continuance of both the proximate sensitive habitat and recreational areas in the project vicinity.

As mentioned above in Findings Section IV.B.1 *Project Setting* above, the two treatment areas lie in close proximity to forested, seasonal wetlands situated throughout the *Pacific Shore Subdivision* area. These areas comprise environmentally sensitive habitat areas containing stabilized dune vegetation exhibiting riverine characteristics supportive of a mixture of coastal grassland and forested back-dune plant and animal species.

The Commission must evaluate whether the project components are consistent with the limitations imposed and the protections required under Coastal Act Sections 30231, 30232, and 30240. When read together as a suite of regulatory directives, these policies set forth a number of different limitations on the location and design of development projects with respect to their potential adverse effects on marine and freshwater aquatic biological resources, water quality, and wetlands and other environmentally sensitive habitat and recreational areas. For analysis purposes, the limitations applicable to the subject project can be grouped into four general categories as discussed below.

Prevention of Runoff Impacts to Water Quality from Construction Activities

The two treatment areas comprise a mosaic of upland clearings interspersed with forested seasonal wetland areas comprising the northern peninsula of the Lakes Earl/Talawa basin sub-unit of the Smith River Hydrologic Unit. Entry into the project areas during the wet season or the improper disposal of cut woody vegetation in adjoining wetland areas could result in adverse effects on the water quality of the area from sedimentation associated with ground disturbances and/or the alteration of natural drainage patterns from woody debris impoundments within depressions on the sites.

Therefore, the Commission attaches Special Condition No. 1. **Special Condition No. 1** limits the construction of the project improvements to the dry season months of the year to minimize pollutant entrainment in stormwater runoff. In addition, **Special Condition No. 1** requires that any dispersal of cut woody vegetation or onsite burning be limited to non-wetland areas. These performance standards will ensure that the enhancement work is conducted during times with low probability of storm events and that the resulting onsite disposition of cut wood vegetation materials do not significantly adversely impact wetlands within and adjacent to the treatment areas.

Accidental Releases of Hazardous Materials

As discussed above, Coastal Act Section 30232 requires protection against the spillage of crude oil, gas, petroleum products and hazardous substances and requires that effective containments and cleanup procedures be provided for accidental spills that do occur. The applicant is proposing habitat enhancement methods and activities that would entail the use of mechanized equipment (wood chipper) petroleum-fueled, motor-driven cutting tools. If such devices are inappropriately staged, operated, or maintained, an increase in sediment and other pollutants entering sensitive habitats through either the release of polluted runoff from the project site and/or leaky equipment contaminating coastal groundwater and surface waters could result. Accordingly, the Commission attaches Special Condition Nos. 1 and 2, as described below.

- **Special Condition No. 1** in part requires that all construction activities within coastal waters authorized under the permit shall be conducted during dry-season periods only to minimize the introduction of suspended sediment in stormwater runoff and associated water quality impacts. In addition, **Special Condition No. 1** requires that the habitat enhancement work adhere to various performance standards including, but not limited to, the following: (a) fueling and/or maintenance of vehicles and fuel-powered tools shall not be undertaken within environmentally sensitive areas but conducted only on cleared roadway areas; (b) impact avoidance and minimization training and adequate supplies of spill prevention and response clean-up materials shall be provided to all work sites involving the use of motorized equipment; (c) lopped, cut, and/or chipped green wastes from manual cutting / clearing work intended to be composted/mulched onsite shall be disposed of only in non-wetland upland areas; (d) on-site burn

piles shall not be placed in wetlands; (e) vegetation removal shall be limited to above-ground surface cutting to avoid ground disturbance; (f) areas to be cleared of vegetation shall be retreated to remove Scotch broom and other invasive plants at least one additional time after the initial clearing during the project period; and (g) prior to the commencement of any authorized development all on-site workers and contractors shall be trained in spill prevention and response and understand and agree to observe the standards for work outlined in this permit and in the detailed project description included as part of the application submittal, as revised by the permit conditions.

- **Special Condition No. 2** requires, prior to the commencement of any onsite burning of cut woody vegetation, copies of burn permits issued by the California Department of Forestry and Fire Protection (CALFIRE), the North Coast Unified Air Quality Management District, and the Fort Dick Volunteer Fire Department be submitted for the review of the Executive Director for a determination as to whether any conditions or restrictions associated with onsite burning would necessitate amending the subject coastal development permit. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required

The measures required by these conditions will help protect against spills of petroleum products from equipment consistent with Section 30232 of the Coastal Act.

Protection of Environmentally Sensitive Habitat Areas

Portions of the treatment sites are within known locations for Oregon Silverspot Butterfly habitat and/or are wetlands. The Oregon Silverspot Butterfly habitat and the wetland habitat constitute ESHA. Section 30240(a) of the Coastal Act limits the allowable use of ESHA to only uses dependent on the resources of the ESHA. The principal objective of the project is to evaluate the feasibility and effectiveness of vegetation removal techniques to stimulate the growth of the early blue-violet (*Violet adunca*), a plant species crucial to the larval stage of the Oregon Silverspot Butterfly. As such, the project is part of an ongoing effort to provide for the recovery and restoration of the Oregon Silverspot Butterfly species. According to the applicant's project narrative (see Exhibit No. 6), the vegetation to be removed consists of overstory canopy vegetation that has encroached within the last 20 to 30 years over former violet and/or Oregon Silverspot Butterfly habitat. The early blue-violet grows along the edge of wetlands and is a part of the wetland habitat. Therefore, because the treatments must be conducted within Oregon Silverspot Butterfly ESHA and wetland ESHA to be effective and the project is being performed to aid the recovery and restoration of the Oregon Silverspot Butterfly ESHA, the project represents a use dependent on the resources of the ESHAs consistent with the limitations imposed by Coastal Act Section 30240(a).

Section 30240(a) also requires that ESHA shall be protected against any significant disruption of habitat values. As discussed above, the development is planned to improve Oregon Silverspot Butterfly habitat values. With regard to the wetland ESHA, the development will not result in significant disruption of wetland habitat values for the following reasons:

- The proposed action does not include the cutting of any mature trees (over 10-inch DBH) existing within the DFG lots that may provide significant perching and/or nesting habitat to raptors and special-status passerine bird species, such as the Willow Flycatcher (*Empidonax traillii*), bank swallow (*Riparia riparia*), Black-capped Chickadee (*Poecile atricapillus*), Yellow Warbler (*Dendroica petechia*), or Yellow-breasted Chat (*Icteria virens*).

- The smaller-class tree and shrub layer vegetation that would be removed does not consist of other rare or endangered plants, nor provides significant habitat for rare or endangered wildlife.

- The roughly three-acre area of the types of vegetation that would be removed is very abundant in the area, represents a small fraction of the Coastal Dunes (1975 acres) and forested wetlands (1,180 acres) habitats within the greater LEWA environs.

- The project will not result in any reduction of wetland area.

Section 30240(b) of the Coastal Act requires that development adjacent to ESHA be sited and designed to prevent impacts which would significantly degrade those areas and shall be compatible with the continuance of those habitats. Most of the surrounding *Pacific Shores* lots contains sensitive habitats composed of wetlands and Oregon Silverspot Butterfly habitat, dune mat, unvegetated dunes, back dune deflation plain, and maritime forest ecotones, and the vegetation removal and planting associated with the project has the potential of negatively affecting these adjacent areas unless appropriate protective measures are included to avoid and minimize such potential adverse impacts.

In addition to the enhancements the proposed project would hopefully afford to OSB habitat both directly and through furthering the wildlife management knowledge base, the project has included several measures to ensure that untoward impacts to other proximate environmentally sensitive areas do not result. These include:

- Scheduling the project to occur during a winter-spring timeframe to avoid impacts to OSB using habitat plants, particularly adult-phase food source species during the summer and fall;

- Avoiding ground-disturbance through limiting the vegetation removal to above-surface cutting;

- Limiting the disposal of lopped/mulched manual release cutting to non-wetland sites; and

- Retreating areas to be cleared of vegetation to remove Scotch broom at least one additional time during the project period.

The U.S. Fish and Wildlife Service (USFWS) has prepared a biological assessment and determined that the project would not result in more than incidental take of Oregon Silverspot Butterflies provided conditions such as those listed above and as proposed by the applicant are followed. Accordingly, provided the development is undertaken consistent with the description within the project application, the development will not significantly degrade adjacent ESHA and the development will be compatible with the continuance of those habitat areas.

To ensure that the project does not impact the onsite and nearby ESHAs, the Commission attaches Special Condition Nos. 1 and 2. **Special Condition No. 1** sets certain performance standards for conducting the vegetation removal program requiring that: (1) vegetation clearing be seasonally restricted and limited to above-ground cutting; (2) that the cuttings slash or chips be released only to non-wetland sites as proposed; and (3) cleared areas be retreated to remove Scotch broom and other invasive plants at least once during the project period to prevent the spread of invasive species into ESHA. In addition, the condition includes certain performance standards addressing the prevention of spillage of petroleum products from the use of motorized equipment within or in proximity to wetlands and areas subject to periodic inundation. Special Condition No. 2 requires the submittal of copies of secured burn permits prior to the commencement of any onsite burning to assess whether any conditions applied to the burning authorization which might impact ESHA would first require securement of a permit amendment wherein additional mitigation measures for reducing any new significant adverse impacts to less than significant levels, if needed, could be applied.

Conclusion

The Commission finds that as conditioned to include spill prevention and clean-up measures, all feasible mitigation measures have been provided to minimize adverse environmental effects on water quality and biological productivity consistent with Sections 30231 and 30232 of the Coastal Act. In addition, the Commission finds that as conditioned to: (1) limit the habitat enhancement activities to specified times of the year when endangered species habitat plants are not actively growing and being utilized and (2) including a post-clearing invasive plants removal component, no significant disruption of habitat values within the Oregon Silverspot Butterfly habitat ESHA will result and the development will be for a resource dependent use consistent with Coastal Act Section 30240(a). Furthermore, with the inclusion of the special conditions requiring: (1) adherence to various project performance standards to protect coastal

wetlands resources from improper slash disposal; (2) limiting the cutting of wetland ESHA vegetation to above-ground growth; (3) incorporating worker training to ensure that the proposed and conditioned restrictions are implemented; and (4) including provisions for the review of any approved burning of cut wood wastes to assess if such optional burning might impact ESHA, the development has been sited and designed to prevent impacts to adjacent ESHA that would significant degrade such ESHA and the development will be compatible with the continuance of those ESHA, consistent with Section 30240(b) of the Coastal Act.

C. Archaeological and Paleontological Resources.

1. Applicable Coastal Act Policies and Standards

Coastal Act Section 30244 states:

> *Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

2. Consistency Analysis

The proposed project area is located within the ethnographic territory of the Tolowa Indians, who lived in villages along the protected shores of Lakes Earl/Talawa, the mouth of the Smith River, and at other sheltered sites inland of the open coast. The relatively large and sedentary populations of these villages engaged in an economy of salmon fishing, marine-mammal hunting, shellfish gathering, and seasonal excursions inland for acorns.

As part of the environmental impact analysis conducted for the Lake Earl Wildlife Area Management Plan, an extensive cultural resources investigation conducted by Jamie Roscoe as part of the Lake Earl Intensive Habitat Study (Tetra Tech 1999). This cultural resource investigation involved a thorough records search, including records of the (then) Northwest Information Center, review of previous archaeological investigations, a nearly complete field survey of the LEWA entire area, and interviews with knowledgeable sources. The field survey resulted in the discovery of no archaeological resources on or in the immediate vicinity of the treatment areas, with the closed resource materials being two shell middens located more than a kilometer within the sand dune complex to the west of the sites. Furthermore, based on the field and records examinations, and the consultation between the principal investigator and the THPO, no concerns were identified with respect to potential adverse impacts to archaeological and/or need to mitigation measures to avoid or reduce impacts associated with the Oregon Silverspot Butterfly habitat enhancements identified in the management plan. Therefore, the Commission finds the development as proposed and conditioned herein consistent with Coastal Act Section 30244.

D. Public Access.

Coastal Act Section 30604(c) requires that every coastal development permit issued for new development between the nearest public road and the sea "shall include a specific finding that the development is in conformity with the public access and recreation policies of [Coastal Act] Chapter 3." Portions of the proposed project are located seaward of the first through public road.

Section 30210 of the Coastal Act requires that maximum public access shall be provided consistent with public safety needs and the need to protect natural resource areas from overuse. Section 30212 of the Coastal Act requires that access from the nearest public roadway to the shoreline be provided in new development projects except where it is inconsistent with public safety, military security, or protection of fragile coastal resources, or adequate access exists nearby. Section 30211 requires that development not interfere with the public's right to access gained by use or legislative authorization. Section 30214 of the Coastal Act provides that the public access policies of the Coastal Act shall be implemented in a manner that takes into account the capacity of the site and the fragility of natural resources in the area. In applying Sections 30210, 30211, 30212, and 30214, the Commission is also limited by the need to show that any denial of a permit application based on these sections, or any decision to grant a permit subject to special conditions requiring public access, is necessary to avoid or offset a project's adverse impact on existing or potential access.

2. Consistency Analysis

Primary objectives of the development are to provide habitat enhancements to facilitate the recovery of populations of the endangered Oregon Silverspot Butterfly in the Del Norte County area. The project comprises removal of major vegetation on state-owned parcels at interior locales within the Lake Earl Wildlife Area, at significant distances from either coastal access ways along the open ocean coast and lagoon shorelines.

Accordingly, the proposed project would not adversely affect public access. The project sites do not front directly on the ocean or the lagoon and are separated from the open, sandy shoreline by several rows of parcels to the west and east, respectively. As noted previously, the project site is located in the *Pacific Shores Subdivision* adjoining Lake Earl Wildlife Area where public access via a series of developed trail facilities to the coastline is open and available for use. The project site is located well away from these trail facilities. Therefore, the proposed project would not adversely affect any existing rights of access that may have been acquired through use, as no existing public access would be blocked by the proposed development. Therefore, the Commission finds that the proposed project does not have any significant adverse effect on public access, and that the project as proposed without new public access is consistent with the requirements of Coastal Act Sections 30210, 30211, 30212, and 30214.

E. California Environmental Quality Act (CEQA).

The California Department of Fish and Game served as the lead agency for the project for CEQA purposes. The Department found the subject habitat improvements qualified for "Class 33" categorical exemption to environmental review, pursuant to Section 153033 of the CEQA Guidelines (14 CCR §§15000) as a small habitat restoration project. Notice of Exemption No. 2007128155 was subsequently filed with the Office of Planning and Research – State Clearinghouse on December 10, 2007.

Section 13906 of the California Code of Regulation requires Coastal Commission approval of a coastal development permit application to be supported by findings showing that the application, as modified by any conditions of approval, is consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Public Resources Code Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available, which would significantly lessen any significant effect that the activity may have on the environment.

The Commission incorporates its findings on conformity with Coastal Act policies at this point as if set forth in full. These findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. As discussed herein in the findings addressing the consistency of the proposed project with the Coastal Act, the proposed project has been conditioned in order to be found consistent with the policies of the Coastal Act. As specifically discussed in these above findings which are hereby incorporated by reference, mitigation measures which will minimize all adverse environmental impact have been required. These required mitigation measures include requirements that limit construction activities to avoid impacts to environmentally sensitive habitat areas and to conduct the project work during periods of time when impacts to such areas would be minimized. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse impact that the activity would have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act and to conform to CEQA.

V. EXHIBITS

1. Regional Location Map
2. Vicinity Topographic Map
3. Project Site(s) Location Aerial Photo
4. Project Site(s) Location Oblique Aerial Photo
5. Project Site Plans
6. Project Narrative
7. FESA Section 6 Grant Project Statement
8. CDFG Draft Species Account and Management Plan

APPENDIX A

STANDARD CONDITIONS

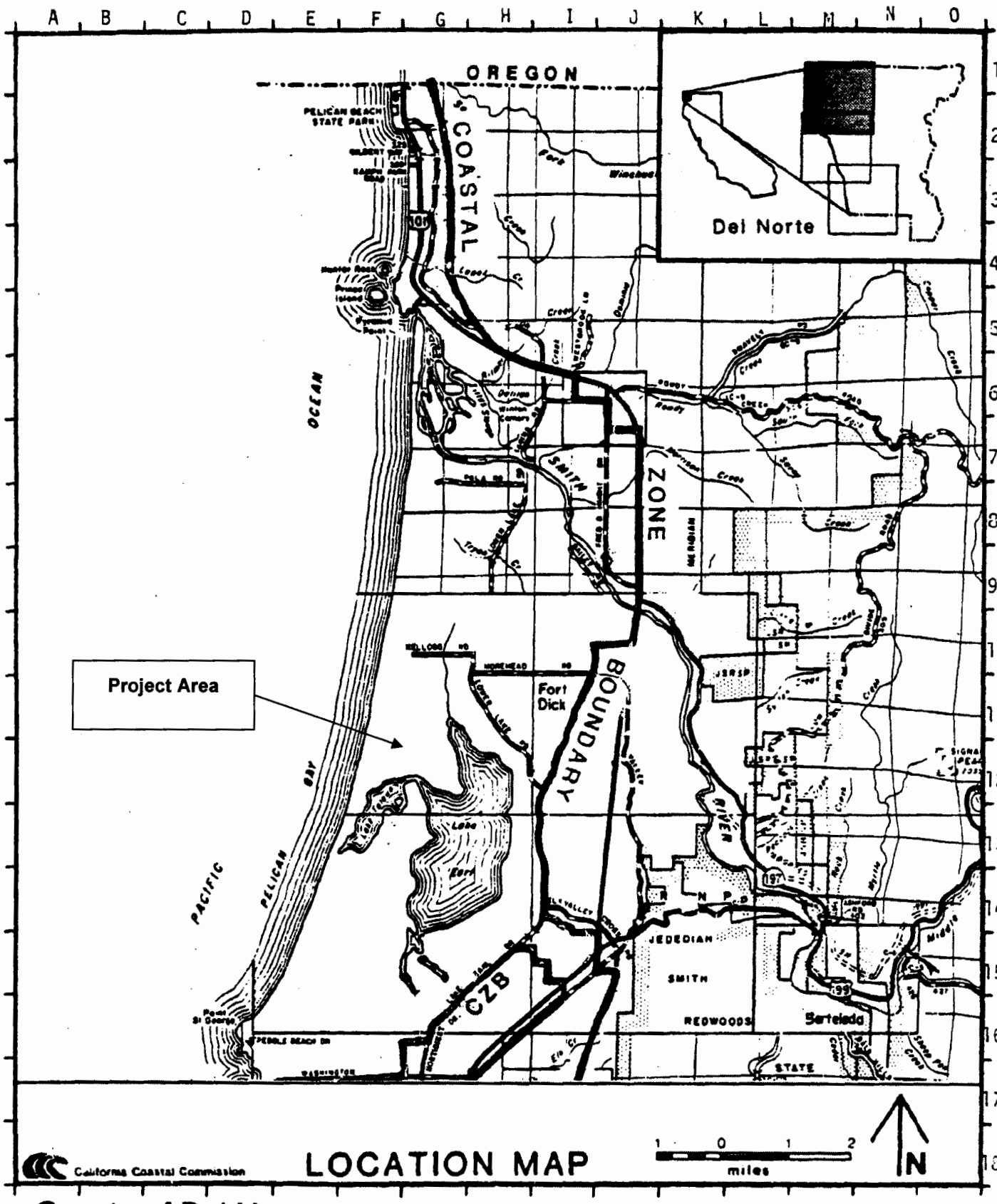
1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.



County of Del Norte

EXHIBIT NO. 1

APPLICATION NO.

1-11-031

CALIF. DEPT. OF FISH & GAME

REGIONAL LOCATION MAP

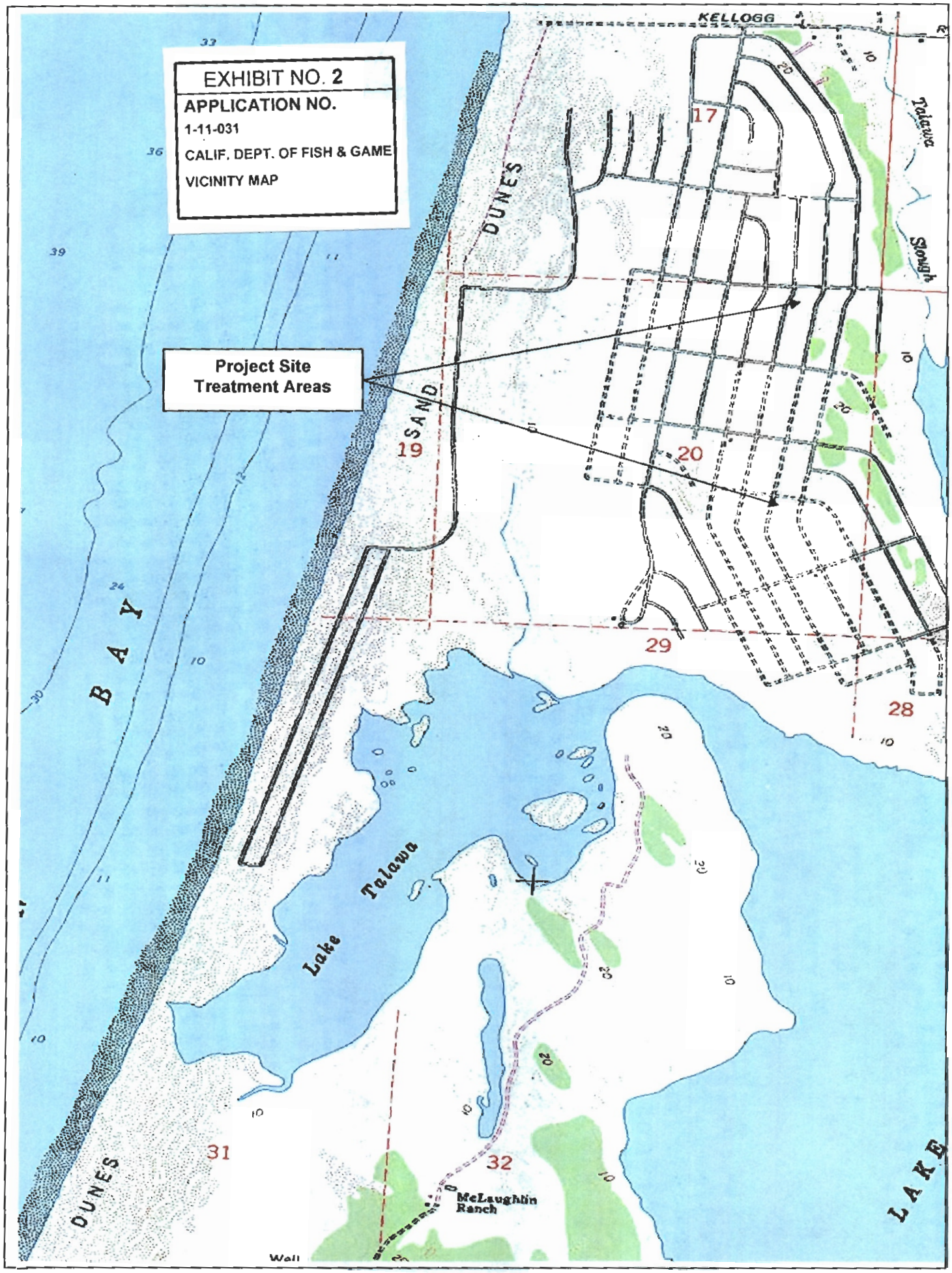


EXHIBIT NO. 2
APPLICATION NO.
1-11-031
CALIF. DEPT. OF FISH & GAME
VICINITY MAP
Project Site
Treatment Areas
KELLOGG
DUNES
SAND
BAY
Talawa Slough
Lake Talawa
McLaughlin Ranch
LAKE
17
19
20
29
28
31
32

EXHIBIT NO. 3

APPLICATION NO.

1-11-031

CALIF. DEPT. OF FISH & GAME

SITE AERIAL

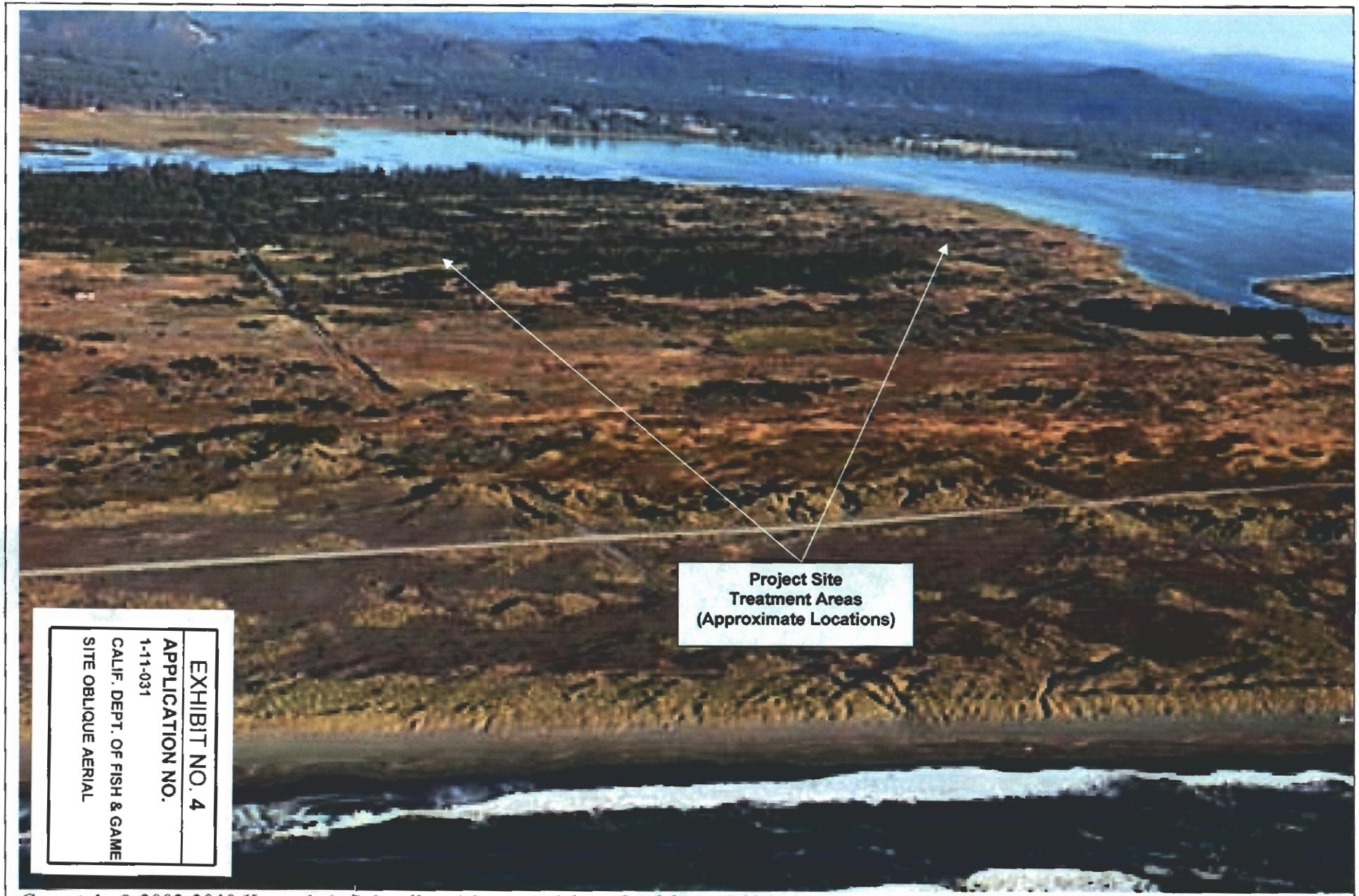


EXHIBIT NO. 4
APPLICATION NO.
1-11-031
CALIF. DEPT. OF FISH & GAME
SITE OBLIQUE AERIAL

Figure 1. Project map showing location of Pacific Shores Subdividion, Lake Earl Wildlife Area (red), and overstory vegetation removal research plots (green).

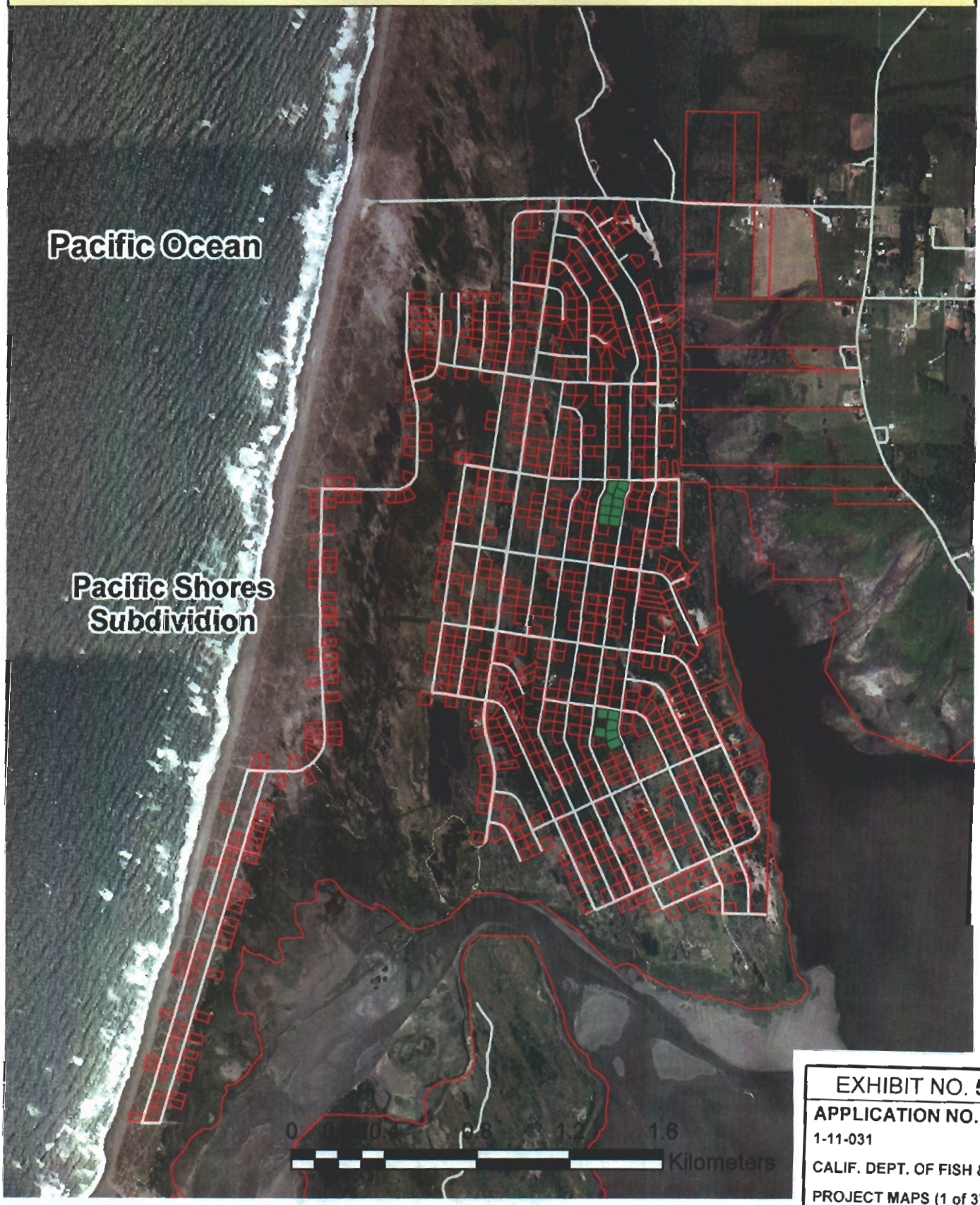


EXHIBIT NO. 5
APPLICATION NO.
1-11-031
CALIF. DEPT. OF FISH & GAM
PROJECT MAPS (1 of 3)

Figure 2. Project map showing location of California Department of Fish and Game (DFG) northern-most vegetation overstory removal research plots along Fisher and Portech roads, Del Norte County, California.

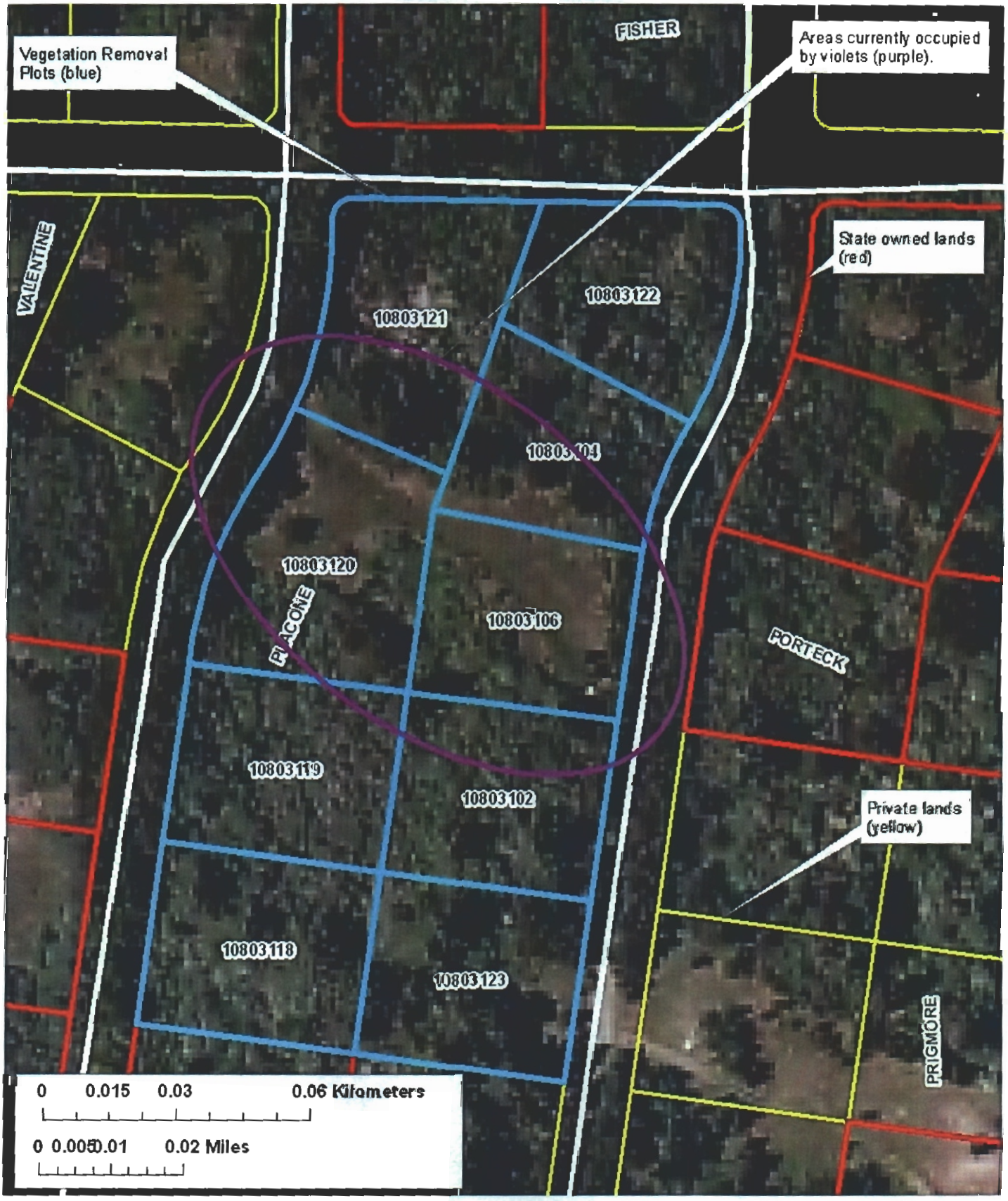
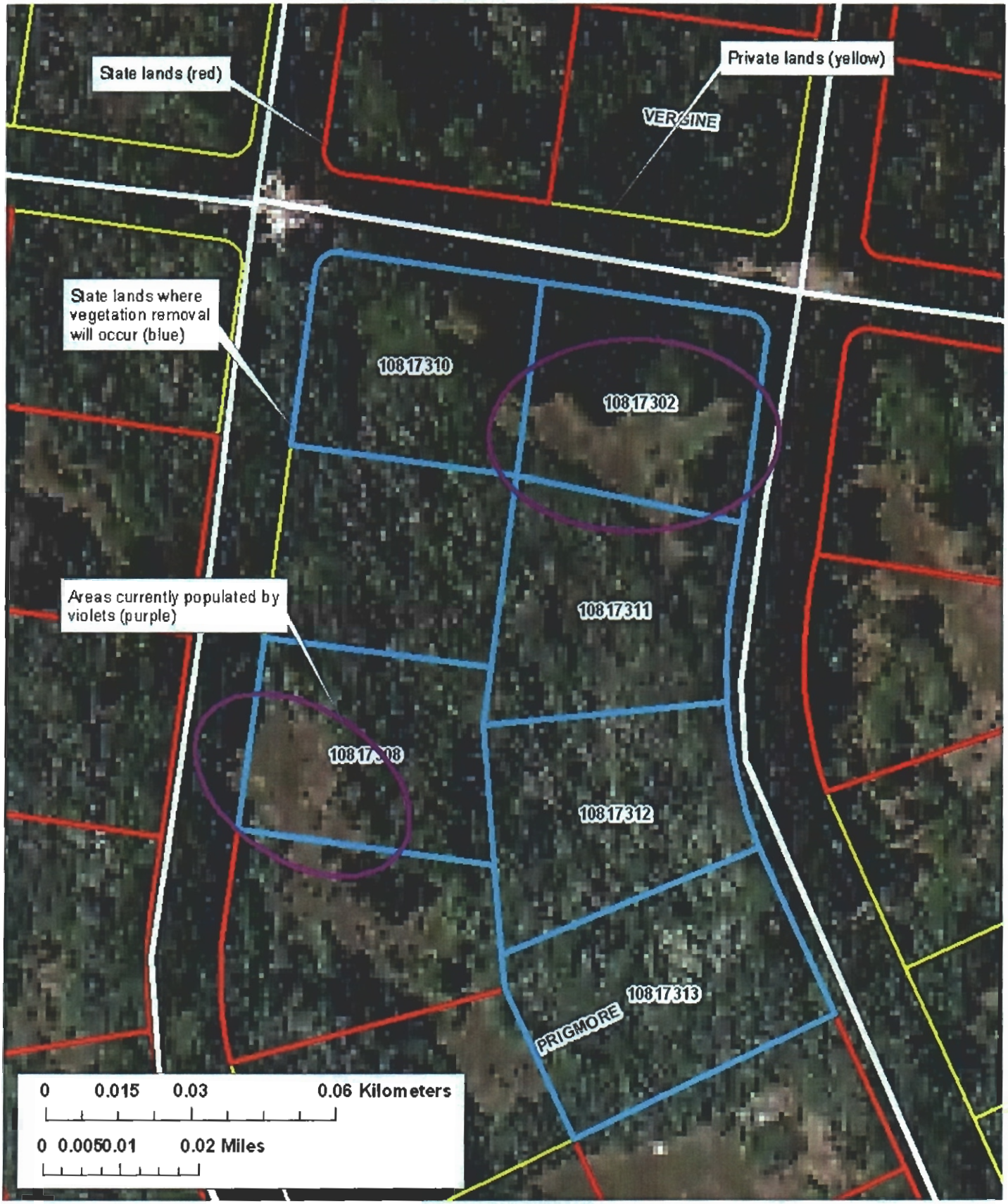


Figure 3. Project map showing locations of southern-most California Department of Fish and Game (DFG) vegetation overstory removal research plots along Vergine and Prigmore roads, Del Norte County, California.



The California Department and Game (CDFG), in cooperation with the U.S. Fish and Wildlife Service (USFWS), seeks to improve habitat for the Oregon silverspot butterfly (*Speyeria zerene hippolyta*)(OSB) through the use of habitat manipulation in parcels within the Pacific Shores subdivision. Habitat occupied by the Oregon silverspot butterfly within its range includes a native grassland community containing early blue violet, nectar plants, and adjacent coniferous forest. The early blue violet is an essential component to the butterfly's habitat because it is the obligatory food component of the species larvae. Good or high quality breeding and rearing habitat for the butterfly is related to abundant, frequent, or high densities of the violet, low vegetation height, and availability of nectar species throughout the flight season.

Currently there are four populations of OSB large enough to be considered viable in or near coasts of central Oregon and northern California. These are the Mt. Hebo, Rock Creek/Big Creek, Cascade Head, and Del Norte County populations. There is concern that the population of this species is declining throughout its' range for a number of reasons, one being loss of early successional habitat. Ecological succession, fire suppression, invasion of non-native vegetation, development, and habitat fragmentation has contributed to loss of butterfly's habitat. In recognition of the species' need for special management consideration, USFWS listed the Oregon silverspot butterfly as threatened with critical habitat on July 2, 1980. CDFG, with support and guidance from USFWS, propose to regain early successional habitat preferred by the violet by setting up a series of experimental plots designed to quantify varying methods of habitat manipulation.

Overstory Removal Areas:

Various types of trees and shrubs, including willow (*Salix sp.*), Scotch broom (*Cytisus scoparius*), spruce (*Picea sitchensis*), wax myrtle (*Myrica californica*), and beach pine (*Pinus contorta*) up to 10" in dbh will be removed in the overstory vegetation plots (see original Coastal Commission permit).

The two areas, northern and southern, selected for overstory vegetation removal were based on the following criteria;

- Ownership by CDFG.
- Proximity to known high quality violet and OSB-occupied habitat.
- Presence of unsuitable overstory canopy that has encroached within the 20-30 years over former violet and/or OSB habitat.

The northern area treatment boundary is located southwest of the intersection of Fisher and Porteck Streets, and includes nine lots or 4.5 acres (**Figure 2**). Within this area, the majority of broad-leaved shrubs and trees, and conifers (spruce, beach pine) smaller than 10" diameter at breast height (dbh) would be removed manually, and either piled and left to decompose, chipped, or burned as appropriate. Based on presence of encroaching scrub and conifers, it is estimated about 50% of the area would have the overstory habitat manually thinned. About 0.45 acres contains dense populations of violets within the most open and non-encroached portion of the nine lots (**Figure 2** purple oval area). Removal of woody vegetation proposed herein will greatly increase the density of violets, as plants from open areas will populate areas cleared of woody overstory vegetation, thus promoting larger populations of butterflies dependent on violets for nectar.

EXHIBIT NO. **6**
APPLICATION NO.
1-11-031
CALIF. DEPT. OF FISH & GAME
PROJECT NARRATIVE (1 of 3)

The southern area treatment boundary is southwest of the intersection of Prigmore and Vergine Streets (**Figure 3**). Depending on available labor, the area treated could occupy between three and seven lots, of up to 3.11 acres overall. Methods of overstory removal would be the same as the northern area, and based on presence of encroaching trees and shrubs, likely would affect about 50% of the area or 1.5 acres. Similarly, this area currently contains dense populations of violets on 0.17 acres of the most vegetatively open portion of the seven lots (**Figure 3** purple oval areas). Again, removal of woody vegetation proposed herein will greatly increase the density of violets, as plants from open areas will populate areas cleared of woody overstory vegetation, thus promoting larger populations of butterflies dependent on violets for nectar.

Importantly, in both the northern and southern research treatment areas, brush removal will largely take place within the interior of each DFG-owned parcel, which means that these removal areas are located further than 100 feet from adjacent private parcel property boundaries, and most DFG parcels are clearly separated by roads from adjacent private property parcels.

To date, there is no ongoing active management of habitat for OSB in Del Norte County. CDFG and USFWS believe that through the aforementioned management practices, the restoration of early successional habitat which is preferred by violets will greatly enhance the habitat for the butterfly in positive manner.

SECTION III. ADDITIONAL INFORMATION

11. The subdivision lies within the territory once held by the Tolowa Indians. The Tolowa occupied a territory that extended from the mouth of the Winchuck River, on the north in Oregon, to the mouth of Wilson Creek, with a total area of about 640 square miles. The "Pacific Shores Special Study" drafted by consulting engineers, Winzler and Kelly, identified two shell midden sites within the subdivision. Both sites are located on the sand dunes between the beach and the first public road. Neither of the sites is located near the project area. The draft also found that the great majority of the subdivision appears to be free of archaeological sites.

2010 SECTION 6
PROJECT STATEMENT (PROPOSAL)

Federal Endangered Species Act
Traditional Section 6 Grant
California Department of Fish and Game

EXHIBIT NO. 7
APPLICATION NO.
1-11-031
CALIF. DEPT. OF FISH & GAME
SECTION 6 PROJECT STATEMENT (1 of 7)

PROJECT NAME: Recovery actions to conserve the Oregon Silverspot Butterfly (*Speyeria zerene hippolyta*) and its habitat in Del Norte County, CA

FEDERAL FUNDS REQUESTED: $49,438

NEED:
The distribution of the federally-threatened Oregon silverspot butterfly (OSB) is currently restricted to 4 populations located between Mt. Hebo, Tillamook County, Oregon and Lake Earl, Del Norte County, California. Available data suggest that overall, populations have declined, and several previously documented sites were extirpated over the past 15-20 years.

The revised OSB recovery plan calls for two viable butterfly populations to be permanently managed within the Del Norte Habitat Conservation Area (DNHCA), which generally extends from Crescent City north to the Oregon border. In 2003 the entire known OSB population was observed within one mile of the north shore of Lake Earl. While recent work has extended this area northward by about 2 miles, most of the known population is within 2 miles of the north shore of Lake Earl. Surveys prior to 2005 used various sample methods and were inadequate to detect trends in this OSB population, its distribution, and to some extent its habitat. Aerial photography and limited quantitative data suggested that significant changes in vegetation have occurred within this area over the past 15 years, during which the lake has generally been managed at a higher level. There is evidence that the OSB larval host plant, the early blue violet (*Viola adunca*) has been displaced in some areas. At the same time, new OSB habitat may have developed at higher elevations, but that has not been quantified.

In addition to the potential for changes in groundwater hydrology and soil moisture to affect habitat over the past 20 years, other changes in land management practices (primarily removal of livestock), undoubtedly have changed the successional dynamics such that the canopy of conifers, willows and other woody plants is rapidly closing in many areas. As a result, there has been concern that the Del Norte OSB population is declining over the long-term as a result of an overall decrease in suitable habitat quality and extent. The non-native Scotch broom (*Cytisus scoparius*) is also expanding into OSB habitat; the Recovery Plan notes that this invasive shrub has been a cause of habitat degradation and loss at many sites (U.S. Fish and Wildlife Service 2001).

In 2005, with funding from a previous Section 6 grant, the U.S. Fish and Wildlife Service (Service), in collaboration with the Department and other partners, began systematically monitoring this OSB population and of its habitat. In part with funding from the same grant, the Department and Service initiated a controlled experimental study on Department lands to test the efficacy of alternative restoration techniques for restoring the early successional habitat which the butterfly requires. In addition to the above studies, the Service's Arcata Fish and Wildlife Office (FWO) has funded a study habitat selection by egg-laying (ovipositing) OSB, from 2006 to the present.

The proposed study would build on previous work, and would include 5 elements: 1) continue monitoring the experimental habitat restoration treatment plots and conduct sampling to further characterize and map vegetation in the study area; 2) using information from recent studies, assess the study area to identify high priority areas for conducting habitat management to restore early successional OSB habitat;

3) remove conifers and scotch broom from former OSB habitat to maintain and restore early successional habitat, focusing on high priority areas identified in the assessment; 4) continue annual OSB surveys for 3 more years using the current standardized protocol; and 5) provide additional vegetation sampling to support the oviposition study. The results of the above elements will extend and build on past efforts to conserve and manage habitat for the OSB in the study area. The study would also provide the first comprehensive estimate of the OSB population trends for the Del Norte population, building on the baseline developed by surveys since 2005.

Due to recent State acquisition of OSB habitat within the Pacific Shores subdivision west of the lake, and management of those lands by the Department, opportunities are great for expanded OSB recovery efforts. In addition, recent work has documented a substantial OSB presence on nearby Tolowa Dunes State Park lands.

PROJECT HISTORY:
This is a continuation of a previously funded project. A 2005 Section 6 grant provided funds ($45,770 federal, $15,257 nonfederal) for 3 study elements: 1) detailed characterization of habitat within the current and recent historical OSB distribution near Lake Earl; 2) annual OSB surveys for 3 years using a standardized protocol; and 3) controlled experimental habitat manipulation designed to enhance OSB habitat. This project would continue some elements of that project (annual OSB surveys, post-treatment monitoring of the controlled habitat manipulation), would build on information developed by the past grant (identify high-priority OSB habitat management areas and implement habitat treatments to remove expanding Scotch broom and conifers. In addition to those projects, since 2006, the Service's Arcata FWO has annually funded a complementary study to provide information on habitats selected by OSB for egg-laying, focusing on elevation and vegetation characteristics.

Accomplishments include:

- Establishment of 15 fixed survey transects, totaling 5.7 km in length, for population monitoring.
- 2005-2009: Completed annual population surveys, based on weekly surveys along the transects during the OSB flight season. This provided the first quantitative information on population size and trend for the Del Norte OSB population.
- Completed habitat treatments on 12 experimental plots in 2008 (3 replicate sets of 4 plots each: burn, mowing, grazing, and control treatments). Completed pre-treatment sampling to characterize baseline vegetation characteristics and violet density, and will do a first round of post-treatment vegetation sampling in 2010 (using existing funds), to help evaluate efficacy of the 3 habitat management methods.
- A team of agency staff and local volunteers planted about 1,000 early blue violet plants within the experimental plots, to help evaluate violet response to treatments.
- Completed vegetation surveys of the areas of all 15 survey transects in 2007, establishing a baseline of habitat conditions.
- Conducted an ongoing study of habitat selection for oviposition sites by OSB, collecting data information on site selection on 38 ovipositing females, to date.
- Provided annual reports on results to the Oregon Silverspot Working group and other interested parties.
- Organized, in collaboration with the Xerces Society, a stakeholder meeting on Butterfly Conservation and Management Meeting on California's North Coast. The meeting was held at the Department's Lake Earl Wildlife Area in fall 2008, to discuss conservation issues for the OSB and other rare butterflies in the Del Norte area.

RECOVERY PLAN TASK/PRIORITY:
This project will contribute to the following tasks identified in the Oregon silverspot butterfly revised recovery plan (USFWS 2001):

Task #	Priority	Recovery Task Name
2.1.1	1	Determine habitat requirements for OSB
2.1.2	1	Determine distribution & habitat requirements for violets and nectar plants
1.6.3	2	Select Del Norte habitat areas
1.6.5	2	Develop Del Norte management plans
2.2.1.2	2	Increasing or maintaining violets
2.2.1.3	2	Increasing or maintaining nectar plants
2.2.1.4	2	Controlling trees
2.2.1.5	2	Controlling exotic brush
2.2.1.6	2	Monitoring and controlling exotic forbs
2.2.2	2	Determining the effects of management on non-target species
3.1	2	Determine appropriate parameters to determine population trends
3.2	2	Determine habitat parameters
3.5.6	2	Develop monitoring plans for Del Norte
3.6.6	2	Implement monitoring plans for Del Norte

EXPECTED RESULTS OR BENEFITS:
The project will enable an assessment of the current OSB population and population trends, and enable informed management of the OSB and its habitat. The project will also identify priority areas for management, where potential is greatest for habitat restoration. Using information from this assessment, the project will fund management in priority areas by removing Scotch broom and thinning or removing pines where encroachment by these plants has degraded or threatens to degrade OSB habitat. Without the information provided by continued monitoring of OSB populations and distribution, and of the experimental habitat restoration, we cannot reliably predict the outcome of restoration efforts or focus limited financial resources, and ultimately, we risk extirpation of this critically endangered species. There are several collateral benefits expected as a result of the experimental habitat restoration work, including the maintenance of biological diversity as a result of maintaining the open coastal grassland prairie habitat, maintenance of habitat for other rare species such as the seaside hoary elfin, coastal greenish-blue and Yontocket ringlet butterflies, linked to early successional habitats, and a reduction in European beachgrass extent in the area,

MULTI-SPECIES BENEFIT:
The project will benefit a wide range of species and plant communities associated with the area's dune ecosystem. Three highly localized butterfly species that may benefit from the project include the seaside hoary elfin (*Callophrys polios maritima*), coastal greenish blue (*Plebejus saepiolus littoralis*), and Yontocket ringlet (*Coenonympha tullia yontocket*). While none of these has special status, for all three species the dune system near Lake Earl appears to support the largest known remaining population, as well as the southernmost. The seaside hoary elfin is of particular concern, with only three known populations with the largest near Lake Earl. The larval host plant for the elfin is bearberry (kinnikinnik) (*Arctostaphylos uva-ursi*), which occurs locally in stabilized coastal dunes and, in the absence of disturbance, has lost habitat to encroachment by pines, Scotch broom, and other vegetation.

OBJECTIVE:
The project, including in-kind services provided by the Department, will address key conservation needs of the Oregon silverspot butterfly:

- Provide the first information on population trends and spatial distribution for the Del Norte population, based on intensive population monitoring over 9-years, a period long enough to distinguish year-to-year fluctuations in population size from trends.
- Identify priority areas where habitat restoration, enhancement, and other management activities are expected to provide the greatest benefit to OSB.

3 of 7

- Reverse habitat loss and degradation due to invasive and expanding woody plants.
- Provide experimental results on effectiveness of different habitat management tools for reintroducing disturbance to coastal grasslands threatened by succession.
- Further characterize and map vegetation within the study area
- Understand habitat characteristics of oviposition sites used by OSB

MAJOR TASKS:
Conduct OSB population monitoring during the adult flight season for 3 years starting in 2011.

1. Using sampling methods used in previous monitoring periods, document vegetation characteristics and violet density in all 12 experimental plots, in 2013 (year 5 post-treatment), in plots used by the oviposition study, and in the larger study area.
2. Map the distribution of Scotch broom and conifers in the study area with an emphasis on Department lands, and on identifying areas where timely removal of a small number of initial colonizing individuals would prevent rapid expansion.
3. Identify and prioritize areas based on where habitat management would provide the greatest benefit for protecting or restoring OSB habitat.
4. Restore and enhance OSB habitat by removing Scotch broom and conifers.

APPROACH:
Task 1: Conduct OSB population monitoring
A contractor will conduct OSB surveys in 2011, 2012, and 2013, using the standardized protocol developed by the Nature Conservancy in Oregon and adapted for the Del Norte area. Surveys will be conducted once a week on each of the 15 established transects during the adult flight season (typically 8-9 weeks between early July and early September). Funding is budgeted for 7 weeks of surveys in each year. Service biologists and other cooperators will do additional surveys to meet the goal of weekly surveys; this is consistent with past survey years. CDFG will provide housing and vehicles as necessary for the contractor to complete the surveys. A qualified contractor will be selected via Department contracting procedures. Contractor will deliver completed, standardized data forms for each survey.

Task 2: Vegetation monitoring and characterization
Using sampling designs and methods used in previous sampling by each study, contractor(s) will sample 1) vegetation characteristics and violet and nectar plant density in the 12 experimental habitat treatment plots; 2) vegetation characteristics in the study area; and 3) violet density and other vegetation characteristics in random plots of the oviposition study, throughout potential habitat in the study area. For characterizing vegetation in the study area, sampling will tentatively use the previous design using plots along the 15 OSB population monitoring transects, but other designs may be considered, if more efficient for the purpose of describing and mapping vegetation types throughout the study area. Service biologists will assist in providing the sampling methods. Vegetation sampling for the treatment plots and for vegetation characterization will be sampled once, in July 2013 (year 5 post-treatment for experimental plots). Sampling of oviposition plots is also once, and is planned for the first year of the study, in late summer 2011 (during the OSB egg-laying period), as this data can be used in Task 4. Contractor(s) will provide completed standardized data forms, and will enter data into a database format provided by the Service. Dr. Christine Damiani of the Institute for Wildlife Studies is a potential contractor for the sampling for the oviposition study; she is the study's principal investigator.

Task 3: Map distribution of Scotch broom and conifers in study area
Department staff will take the lead for mapping the distribution of Scotch broom and conifers in the study area, and will input the data into an ArcGIS system. Service biologists will assist in mapping. Mapping will occur early during the study period, as soon as possible after funding is secured and no later than the first spring-summer season of the grant, starting with mapping Scotch broom, identifying broom density

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classes by parcel or parcel block. Mapping of Scotch broom during the spring flowering period will simplify mapping, as flowering plants are very conspicuous. Mapping will indicate both distribution and density class of the species, in a way that will distinguish areas with only a few colonizing plant individuals. Mapping will emphasize lands south of Kellogg Road, and is expected to take about 1-2 weeks.

Task 4: Identify and prioritize areas for habitat management
Using information from available sources, including past studies by the Service, Department and others, and information from Task 3, Department staff will identify and prioritize areas based on where management would best protect or restore OSB habitat. Considerations will include current and restored habitat value for OSB, size of a treatable habitat block, and ease of maintaining the restored habitat. For example, conifer removal would likely target current and former habitat areas where conifer encroachment, often along roads, has fragmented and reduced habitat, as well as areas of recent conifer expansion. Results will be mapped using ArcGIS. Service staff familiar with areas of importance to the OSB will provide input and available data in these aspects. Data from previous vegetation mapping and from the oviposition study's random vegetation plots will provide spatial information on violet density and other vegetation attributes. It is anticipated that this task will take about 2-3 weeks. This task includes contacting lot owners in the Pacific Shores subdivision to obtain access to remove invasive plants, which would increase treatment efficacy by treating both publicly-owned and adjacent private lots, and thus reducing potential for re-colonization of public lands from nearby sources.

Task 5: Restore and enhance OSB habitat
Department staff will oversee this task, with the work done by corrections (inmate) work crews. It is anticipated that Scotch broom and conifers will be removed mechanically with hand tools (such as loppers or weed wrenches) and in the case of conifers, chain saws. The type of treatment and total area to be treated will depend on the treatment needs of the sites identified by the prioritization task. The entire Pacific Shores subdivision area, which is the main area of habitat degradation, includes about 700 acres total and originally had more than 25 miles of roads. Of this, more than 50% of the lots are now State-owned and managed by the Department. A total of about 7 weeks of crew work are budgeted. It is estimated Scotch broom can be treated on most of the Department lands in the study area, and all of the low density areas; repeat treatments over a period of years are often needed to control Scotch broom in areas where seed banks have developed (Huckins and Soll 2004). Much of the conifer encroachment into OSB habitat initiates along road edges, and these sites will likely be prioritized. Soil disturbance should be kept to a minimum during treatment, as broom readily invades disturbed soils. Funds will be allocated to provide for an initial treatment and at least one retreatment of Scotch broom areas during the project period. Initial treatment of priority Scotch broom areas is planned to start the first year of the project (2011), continuing in 2012 and 2013, to allow for retreatment, with conifer removal in the latter two years to allow time to identify treatment areas and do any required planning or permitting.

LOCATION:
All study sites will be located on CDFG and DPR lands located west or north of Lake Earl, in the coastal plain of Del Norte County north of Crescent City. The affected habitat ranges across an elevation gradient of about 10-15 feet. Habitat located at the lowest elevation (former suitable OSB habitat) is now predominately freshwater marsh, dominated by slough sedge, willow, and other wetland indicator species. At slightly higher elevation are expanses of coastal grassland and scrub, dominated by perennial grasses such as Pacific reedgrass, tufted hairgrass, velvet grass and others, and a variety of shrubs such as willow, twinberry and salal. At highest elevation are the restricted dune mounds and broad dune surfaces, generally dominated by European beachgrass and other exotic and native dune species. In areas where the sand has been stabilized longest, typically at more inland areas, beach pine and Sitka spruce trees occur, along with willows, bearberry and other native vegetation.

It is not anticipated that the project will impact any cultural resources, or involve any significant ground

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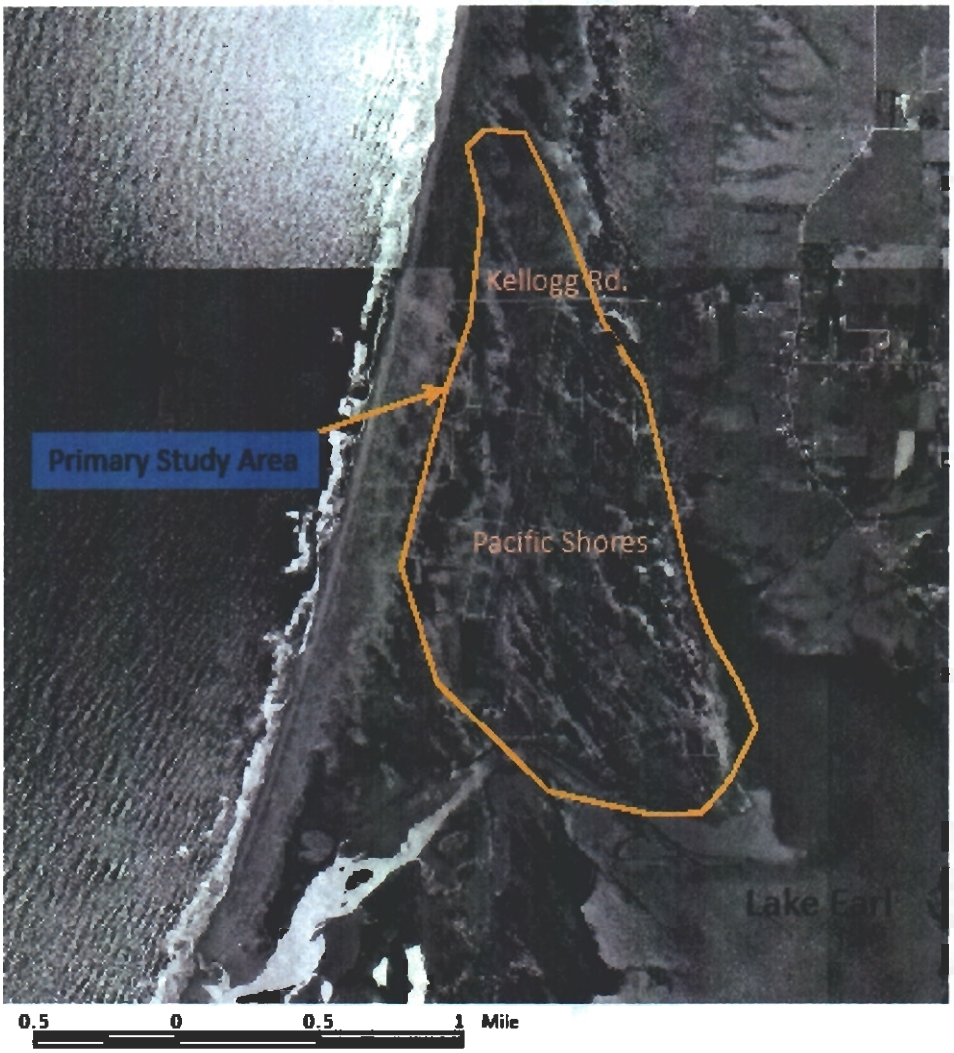
disturbance.



Map of the Study Area, primary range of the Del Norte Oregon Silverspot butterfly population.

ESTIMATED COST: Provide, on the Budget Worksheet, a detailed breakdown of how the federal funds will be allocated to attain the project objectives. Document how State/private match requirements will be met.

Federal Share: $49,438 ***Nonfederal share**: $16,490 **Total Project**: $65,928

*Nonfederal share must be at least 25% of the total project cost unless project is a multi-state effort in which case match is 10% of the total project cost.

TAKING:
The habitat enhancement portion of the study has the potential to result in take of a very small number of OSB larvae, depending on the density of larval host plant present within the treatment areas and the removal methods used. The USFWS has conducted a Section 7 programmatic consultation that exempts take of OSB associated with Section 10(a)(1)(A) permits issued for recovery and scientific purposes of OSB, and explicitly covers projects funded pursuant to Section 6 and Service Cooperative Agreements with state cooperating agencies. This consultation covers a number of activities, including

habitat manipulation, restoration and enhancement. Dr. Damiani has a Section 10a1A permit for her oviposition research. Take of non-target federally-listed species will not occur as a result of the project.

Other listed species in the vicinity include the Pacific coast population of the western snowy plover (*Charadrius alexandrinus nivosus*) and the tidewater goby (*Eucyclogobius newberryi*). Historically, snowy plovers nested near Lake Talawa, at the western end of the Lake Earl/Talawa lagoon system, and used the beaches between the Smith River and Crescent City in the winter. There have been no known snowy plover nest sites in the last 15 years in this area or elsewhere in Del Norte County, and there is no known suitable nesting or wintering habitat in areas where this project will be conducted. While the tidewater goby occurs in the waters of Lake Earl, the proposed project will not occur in or affect the aquatic habitats where the goby occurs. Therefore, our determination is that this project will have no effect on these species.

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Prepared by: Gary Falxa/Bob Smith
Date: 16 March 2010

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DRAFT

Oregon Silverspot Butterfly (*Speyeria zerene hippolyta*) Species Account and Management Plan

OVERVIEW

The Oregon silverspot butterfly (*Speyeria zerene hippolyta*) is listed as a threatened species under the United States Endangered Species Act. Patches of Oregon silverspot habitat occur in Oregon, Washington and Norther California. Development, grazing and off-road vehicles are all to blame for this butterfly's decline. Changes in fire regime, introduced plant species and pesticides also threaten this butterfly. Historically, coastal meadow habitats used by the Oregon silverspot were maintained in an early successional state by periodic fires. Fires prevent trees and shrubs from overshadowing low-growing plants such as violets (genus *Viola*). Recently, fires have been prevented because development has made them undesirable. Thus, meadow habitat has gradually been replaced by forest. Recognition of the role of fire and other periodic disturbance in the maintenance of Oregon Silverspot Butterfly (OSB) has allowed appropriate management strategies to be enacted for the conservation of this species.

DESCRIPTION

This butterfly is a member of the family Nymphalidae. It belongs to one of 15 subspecies of *Speyeria zerene Boisduval*. OSB has wings as wide as 27 mm (1 in) for males and 29 mm (1.1 in) for females. OSB has orange and brown markings with black veins and spots on the dorsal side of the wings, and bright metallic silver spots on the ventral sides.

LIFE HISTORY

The Oregon silverspot butterfly requires one of three types of grasslands:

- Coastal salt spray meadows
- Stabilized dunes
- Montane meadows

The western blue violet (*Viola adunca*) is the primery source of food for the OSB. Adults appear throughout late summer and early fall to mate. Eggs are laid during the fall and hatch shortly

thereafter. Larvae feed for a short time in the fall and then enter a dormant state in which they spend the winter. In spring larvae resume feeding until late spring or summer when they pupate. Pupation time is short and adults soon emerge to continue the cycle.

RANGE AND DISTRIBUTION

Historically, OSB occurred along the coastal zone of southern Washington and central and northern Oregon, to northern California (maps/layers to be developed for Lake Earl area)

CONSERVATION STATUS

The Oregon Silverspot Butterfly is a Federal Threatened species and is in jeopardy of extinction due to limited distribution, low numbers, and loss of habitat supporting the western blue violet. Succession, due to lack of disturbance from fire and grazing and the spread of non-native plants, has affected the presence and abundance of early blue violets through crowding and shading. Succession has resulted in trees, shrubs, and ferns developing within coastal grassland communities that were previously maintained by disturbances such as fire and grazing. Non-native pasture grasses that have spread and become well established along the coast crowd out other native plants and create dense layers of vegetation that inhibit the growth of native species, including early blue violets and native nectar sources used by adult butterflies.

HABITAT REQUIREMENTS

Oregon silverspot butterflies are found in coastal salt spray meadows and open-field habitats that support the larval host plant, the western blue violet. Western blue violets grow best in exposed areas free of surrounding vegetation; however, mature violets apparently can survive for long periods in heavily shaded areas (Hammond 1987). Moderate grass cover found in these open habitats provides shelter for the larvae from wind, rain, and sun (Stine 1982). Adult butterflies feed in meadows, on nectar-producing herbaceous plants such as aster, tansy ragwort, goldenrod, thistle, and pearly everlasting. Open areas used by OSB are typically surrounded by a fringe of brush or conifer trees, which provide critical shelter for adults (Stine 1982). In Washington, Oregon, and northern California, the Oregon silverspot butterfly breeds in stabilized sand dune communities where violets persist. Adults rest and feed in nearby open forest glades (Pyle 1985).

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LIMITING FACTORS

Primary limiting factors to OSB include:

- Reduced availability of salt-spray meadow habitat, which supports populations of western blue violet and nearby forest fringe shelterbelts.
- Habitats consisting of heavy grass thatch or areas invaded by woody shrubs or conifers deter violet growth and threaten survival of OSB (Pyle 1985).
- Suitable habitat of OSB is also threatened by residential, commercial, and recreational development.
- Natural succession, bog drainage, conversion to commercial use, and water table changes.
- Application of pesticides and herbicides threatens OSB as well as other butterfly taxa (Pyle 1989, Miller 1992).

MANAGEMENT RECOMMENDATIONS

- **Butterfly and moth surveys:** Before developing and implementing a management plan, conduct a butterfly and moth survey. Make sure your plan will benefit the species present, as well as the ones you hope to attract.
- **Habitat mosaics:** A site will support a wider diversity of butterflies if a mosaic of habitats types is maintained.
- **Habitat continuity:** New management regimes should be introduced gradually to parts of a site, avoiding sudden large-scale changes that could be detrimental. Habitat specialist butterflies need networks of sites within colonizing distance of each other. Linear urban habitats linking sites together, may be beneficial in the longer term. Maintaining populations of butterflies depends upon protecting and restoring habitat of the larval food plant, blue violets, and protecting forest glade habitat used by adults.
- **Rotational management:** This approach is beneficial because it provides a range of suitable habitat within a site for a variety of butterflies and should adhere to some well drafted and thought-out plan.
- **Seasonality:** If possible, management during the breeding season should be avoided (e.g. summer mowing can remove the caterpillar food plants, together with eggs and caterpillars). Note that over wintering sites for hibernating eggs, caterpillars, chrysalises or adults may also be destroyed by management during the winter months, hence the desirability of rotational or piecemeal management.
- **Management intensity:** Traditional management regimes (e.g. coppicing, extensive grazing) maintain the semi-natural habitats preferred by many butterflies. 'Tidying up' urban sites too frequently will be detrimental for some species.
- **Maintain viable populations:** Maintaining viable populations of OSB depends upon protecting and restoring habitat of the larval food plant, western blue violet, and protecting forest glade habitat used by adults.
- **Development:** Development should not occur in areas that support OSB or other endemic, native, or special status butterflies; such areas include forest stands that offer shelter to adult butterflies and dune communities where larvae feed.
- **Shore pine succession:** For some specie (OSB) shore pine succession should be reduced in meadow violet habitat by removing young trees and other woody vegetation.
- **Bogs:** Maintain any open bog conditions by suppressing spruce and hemlock encroachment.

- **Grazing:** Light to moderate grazing is beneficial to many species of butterflies; grazing gives a competitive advantage to their larval food plants (Ellis 1989), but sustained and intense grazing can degrade habitat and eliminate nectar sources during the adult flight. Grazing should be managed to minimize negative impacts on abundance of larval food plants or adult nectar sources. Spatial and temporal effects of grazing can be managed by adjusting stocking rates, species of livestock, modifying grazing regimes (season-long vs. rotational; patch-burn), and managing water resources to avoid concentrating activity in critical habitat areas.
- **Grassland mosaic:** Maintain a grassland mosaic of sward heights and areas of bare ground to provide suitable breeding conditions for a range of species. Sward heights may vary from short (<5cm, usually with bare ground), through medium (6-12cm) to tall (>13cm), rank grassland. Butterflies generally distribute among a number of patches of suitable habitat. Structure and viability of populations may depend on size of habitat patches, quality of habitat within patches, connectivity among and between patches, and habitat management within patches.
- **Mowing:** Older hind dune areas should be mowed two or three times a year for at least three successive years. Mowing should occur in April and June (to remove any bracken fern), and in November. Once violets are reestablished, mowing may only need to be done on a three-year rotation, once in early spring and once in late fall. The mowing regimen should be staggered so that not all habitat areas mowed in the same year. These treatment areas should be monitored to avoid erosion.
- **Bogs:** Maintain any open bog conditions by suppressing woody or shrub vegetation, and encroaching spruce and hemlock. Maintain hydrology of wetland and bog habitat by avoiding activities resulting in drainage or water table alteration. Monitor riparian/willow succession within bog habitat and manage to ensure continued existence of violets.
- **Burning:** Burning may be appropriate on some sites to prevent conifer encroachment, particularly if Native Americans or early settlers used fire to keep sites open. However, burning may not be appropriate for all local species.
- **Restoration and planting:** Restoring and improving habitat conditions can potentially increasing OSB and other local butterfly populations. Plant native coastal meadow vegetation, and/or specifically enhancing early violet plant populations. Landowners can promote violet growth by leaving their lawns and vacant lots natural (i.e., no fertilizers or herbicides) and by mowing only a few times a year. Small openings or strips, 9 to 12 m (30-40 ft.) wide, should be created in forest shelter areas to promote nectar plants.
- **Native endemic species:** Habitat creation schemes should incorporate caterpillar food plants and nectar sources. Native plants from local sources should be used.
- **Invasive vegetation:** Suppress or removing invasive vegetation.
- **Recreation:** Camping, off-road vehicle use, and other recreational activities that damage blue violet habitat should be restricted in dune areas.
- **Collecting:** Special status species should not be collected.
- **Insecticides and herbicides:** Use of insecticides and herbicides may negatively affect butterflies. Insecticides should not be applied in open areas or adjacent forested areas where butterflies occur (Stine 1982). Herbicides that harm violets should not be used.

CONSERVATION NEEDS

Working with Landowners

The USFWS has developed an initial draft of Safe Harbor Agreement for the Oregon silverspot butterfly. It is a programmatic agreement to cover landowners within a five-mile stretch of dispersal habitat between occupied populations on the Oregon coast in Lane County. Habitat restoration is already occurring on two private parcels (both of whom have already received a 'baseline determination' from the USFWS office).

Education

Education sheets available at the California Department of Fish and Game Information Center located on the souther shor of the Lake Earl Wildlife Area of events at which local partners participate are always a valuable way to disseminate information about imperiled butterflies. Additionally, information may be developed on the OSB for education and outreach programming within the local community. The Oregon silverspot butterfly provides a unique opportunity for kids to connect with imperiled species in their local region. In addition to classroom studies, students may be able to visit sites to view the butterflies (where appropriate), as well as talk to the scientists and land managers involved in the species' conservation. Educational activities that school students and community members could do include:

- Studying butterfly (insect) life stages.
- Researching special habitat needs of OSB.
- Corresponding or meeting with the biologists managing current OSB.
- Visiting OSB sites during adult flight season.
- Visiting captive breeding programs.
- Assisting scientists with on-site habitat management.
- Propagating and growing host plants for planting at butterfly sites or use in captive breeding programs.
- Writing letters to decision makers to ensure that the OSB receives adequate resources and protection.

RESEARCH NEEDS

- Continue to delineate the geographic and ecological distributions and critical habitat requirements for OSB.
- Develop experimental plots to assess overall affects on controlled or rotational grazing by livestock (cattle) on suitable habitat of OAB, other butterfly taxa, and local and regional biological diversity in general.

RECOVERY PLAN

A **Revised Recovery Plan for the Oregon Silverspot Butterfly (10MB pdf)** is available from the U.S. Fish and Wildlife Service (revised: August 22, 2001). The Oregon Silverspot

Recovery Plan was finalized in 2001. The objective of this plan is to delist the Federally Threatened OSB. Delisting can be considered when all of the following conditions have been met:

- At least two viable Oregon silverspot butterfly populations exist in protected habitat in each of the following areas: Coastal Mountains, Cascade Head, and Central Coast in Oregon; and Del Norte County in California; and at least one viable Oregon silverspot butterfly population exists in protected habitat in each of the following areas: Long Beach Peninsula, Washington and Clatsop Plains, Oregon. This includes development of comprehensive management plans.
- Habitats are managed long-term to maintain native, early successional grassland communities. Habitat management maintains and enhances early blue violet abundance, provides a minimum of five native nectar species dispersed abundantly throughout the habitat and flowering throughout the entire flight period, and reduces the abundance of invasive non-native plant species.
- Managed habitat at each population site supports a minimum viable population of 200 to 500 butterflies for at least 10 years.

RECOVERY PRIORITIES

The California Department of Fish and Game Land Management Plan (LMP) for the North Coastal Lands Wildlife Areas, including Lake Earl and Tolowa Dunes, seeks to assist the Service recovery plan for OSB by helping in the following conservation actions on State lands:

- Protect and enhance existing OSB critical habitat in the Del Norte habitat conservation area.
- Determine ecological requirements, population constraints, and management needs of OSB.
- Refine our understanding of the habitat requirements and factors that affect population dynamics and long-term viability of OSB.
- Develop monitoring guidelines and techniques for tracking OSB population and habitat status.
- Develop and implement habitat management guidelines for OSB based on science-based assessment of population trends, habitat availability, and key life history attributes.

FOR MORE INFORMATION

- Department of Fish and Game Lake Earl Wildife Area Information Center.
- USFWS Gary Falxa, Arcata Fish and Wildlife Service.
- USFWS Recovery Coordinator/Contact: Amy Horstman, Oregon Fish and Wildlife Office, 2600 S.E. 98th Ave., Portland, Oregon 97266 Phone (503) 231-6179.

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