

CALIFORNIA COASTAL COMMISSION

CENTRAL COAST DISTRICT OFFICE
725 FRONT STREET, SUITE 300
SANTA CRUZ, CA 95060
(631) 427-4863

F.6

C.7.L.
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**STAFF RECOMMENDATION ON
COASTAL CONSERVANCY ENHANCEMENT PLAN
NUMBER CP-99-001**

Conservancy Project No. CP-99-001, Elkhorn Slough Conservation Plan

Applicant..... California Coastal Conservancy (Lisa Ames, Project Manager)

Project Location Elkhorn Slough Watershed, Monterey County, California.

Project Description Conservation plan that identifies critical biological, agricultural and scenic resources within the Elkhorn Slough watershed, and threats to these resources; recommends strategies to abate the threats and maintain the long-term ecological viability of Elkhorn Slough and its related upland communities.

File documents..... Elkhorn Slough Conservation Plan (final report and technical appendices, prepared for the Elkhorn Slough Foundation and The Nature Conservancy, July 2, 1999); Initial CEQA evaluation of Elkhorn Slough Conservation Plan (SCH 99102095; Ca. Coastal Conservancy, 10/21/99); North [Monterey] County Land Use Plan (June, 1982); CD-051-98 Staff Recommendation on Consistency Determination of Elkhorn Slough Watershed Project; Elkhorn Slough Watershed Project: Information for the California Coastal Commission (NRCS, January 7, 1998).

Staff recommendation ...Approval in Concept

Summary of Staff Recommendation: Staff recommends that the Commission approve in concept the Elkhorn Slough Conservation Plan, a project funded in part by the Coastal Conservancy. The Plan furthers Coastal Act policy objectives of wetland protection and restoration, non-point source pollution control, agricultural preservation, viewshed preservation and public access enhancement. Elkhorn Slough is a biologically rich wetland system, providing habitat for numerous resident and migratory birds, fish and marine mammals, including rare and endangered species. The surrounding upland landscape includes a series of ridges covered with the rare maritime chaparral community and associated



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coast live oak woodlands. The watershed is being threatened due to excess erosion, sedimentation, new residential construction, and groundwater depletion. Future development projects emanating from this Plan will require their own environmental and permit review. The Commission's main recommendation to the Coastal Conservancy is to continue to ensure that the Plan is implemented, as it is based on voluntary inter-agency cooperation, coordination and funding, as well as public involvement and additional public funding.

STAFF NOTE: CONSERVANCY PROJECT REVIEW PROCEDURE:

The California State Coastal Conservancy submitted the Elkhorn Slough Conservation Plan to the Commission on October 27, 1999 for its review and approval as required by Section 31258 of the Coastal Conservancy Act of 1976. Under Section 31258, following completion of a coastal resource enhancement plan, the Conservancy forwards the plan to the Commission for determination of plan conformity with the policies and objectives of the Coastal Act. As defined in Section 31008 of the Coastal Conservancy Act, a "coastal resource enhancement project means actions taken by a local public agency or a state agency necessary to restore, as nearly as possible, degraded natural areas to their original condition or to enhance the resource values of a coastal zone." The Commission reviews a Conservancy enhancement plan when it affects lands over which the Commission retains jurisdiction under Section 30519(b) of the Coastal Act, which includes (potential) public trust lands. In this case, the Coastal Commission retains jurisdiction over portions of Elkhorn Slough, Moro Cojo Slough and Carneros Creek that are within the coastal zone. The Conservation Plan is considered equivalent to an enhancement plan since proposed strategies, actions, and goals are intended to enhance the resource values of the watershed. Section 31258 provides that the Commission has 60 days to review the plan and transmit its findings to the Conservancy. If no Commission findings are made prior to December 27, 1999, the Conservation Plan is deemed to be approved and consistent with the Coastal Act. Monterey County has a certified Local Coastal Program and so will also review the Conservation Plan to determine consistency with land use policies established in the North County Land Use Plan.

Under the Coastal Act and the Coastal Conservancy Act, the Commission's task is to conduct a conceptual review of the Conservancy Plan and indicate to the Conservancy what provisions, if any, must be included in a final project or plan to find it consistent with the Coastal Act. The submitted Conservation Plan is not an application for a coastal development permit, and prior to the Conservancy implementing the Conservation Plan, a coastal permit for any development projects emanating from that Plan must be reviewed and approved by the Coastal Commission or its successor public agency.



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- H. Comment Letter from Commission staff to Monterey County Planning Commission

Commissioners will receive a complete copy of the Elkhorn Slough Conservation Plan. A complete copy is also available for public review at the Coastal Commission Central Coast District Office in Santa Cruz.

I. STAFF RECOMMENDATION: MOTION FOR APPROVAL IN CONCEPT

The staff recommends that the Commission, after public hearing, **approve in concept** the proposed enhancement plan. Staff recommends a **YES** vote on the following motion:

***Motion:** I move that the Commission grant conceptual approval of the Elkhorn Slough Conservation Plan and that the Commission adopt the following resolution:*

***Approval in Concept.** The Commission hereby grants conceptual approval of the Elkhorn Slough Conservation Plan on the grounds that conservation goals and implementation strategies contained within the Plan are consistent with the requirements of Chapter 3 of the California*



Coastal Act of 1976 (Coastal Act), and will not prejudice the ability of Monterey County to enforce policies of its certified Local Coastal Program.

A yes vote would result in conceptual approval of the Elkhorn Slough Conservation Plan. The motion passes only by affirmative vote of a majority of the Commissioners present.

The staff recommendation for conceptual approval of the Elkhorn Slough Conservation Plan is based on the following findings:

II. FINDINGS AND DECLARATIONS

The Commission hereby finds and declares the following:

A. SUMMARY OF PLAN CONTENTS

The plan describes the physical setting of the Elkhorn Slough watershed including its critical biological, agricultural and scenic resources, and describes implementation strategies to reach conservation goals intended to protect those resources (Exhibit A contains excerpts of the Plan's conservation goals and implementation strategies).

Elkhorn Slough is one of the few relatively undeveloped coastal wetland/estuarine complexes remaining in California. Elkhorn Slough is located near the middle of the Monterey Bay coast, approximately 100 miles south of San Francisco. It lies between the cities of Santa Cruz (approximately 26 miles north) and Monterey (approximately 18 miles south), and between two river systems, the Pajaro River (approximately 1.5 miles north) and the Salinas River (approximately 4 miles south). (See Exhibit B for regional location map and Exhibit C for watershed map.) Elkhorn Slough contains the first National Estuarine Research Reserve (the Elkhorn Slough NERR), and the Moss Landing Wildlife area, both managed by the California Department of Fish and Game. Other protected natural resource areas in the watershed include Long Valley, Manzanita County Park, Royal Oaks County Park and Zmudowski State Beach. Moss Landing Harbor lies at the mouth of Elkhorn Slough, connecting it to the Pacific Ocean and the Monterey Bay National Marine Sanctuary.

The 45,000-acre Elkhorn Slough watershed contains numerous aquatic and terrestrial habitats (Exhibit D) including coastal salt water and brackish water marsh, freshwater marsh, maritime chaparral, oak woodlands, riparian forest, and coastal dune scrub. Natural communities in the Elkhorn Slough estuarine complex (which includes Elkhorn Slough and Moro Cojo Slough) include tidal channels, mudflats, and salt and brackish water marshes. The main channel of Elkhorn Slough winds nearly seven miles inland and encompasses over 2,500 acres of marsh and tidal flats. Combined with the marshes of the Moro Cojo Slough (whose watershed occupies 17 square miles), the area includes approximately 4,182 acres of wetlands, making it the largest wetland area between San Francisco and Moro Bay.

Upland communities surrounding the Slough include coastal dunes, alluvial terraces, canyon and valley areas with tributary stream channels, and coastal ridges and hillsides. The estuary itself is separated from



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the ocean by a series of sand dunes both north and south of the Moss Landing Harbor entrance. The eastern portion of the watershed includes the upper and lower Carneros Creek sub-watersheds, and a series of parallel ridges, known as the Elkhorn Highlands, that contain dense oak woodlands and healthy expanses of rare maritime chaparral. The largest and most productive cultivated farmlands in the watershed are located in the Springfield Terrace and Moro Cojo area (Exhibit E); smaller farms are scattered throughout the Carneros Creek and Elkhorn Highlands areas.

Hérons, Golden Eagles, White-tailed Kites and other raptor species have been observed in the marshes of Elkhorn Slough, which provide an important feeding and resting ground for many kinds of migrating and resident birds. The Monarch Butterfly, Short-eared Owl and Tri-colored Blackbird are also known to occur in the watershed. At least six rare, threatened or endangered species use the slough and environs, including peregrine falcons, the Santa Cruz long-toed salamander, clapper rails, brown pelicans, snowy plovers and sea otters (NOAA, CDF&G). Other sensitive species known to occur in Elkhorn Slough include the California Tiger Salamander, the California Red-legged Frog, the Southwest Pond Turtle and the California Brackishwater Snail. Rare plant species include Hooker's Manzanita, Pajaro Manzanita, Monterey Ceonothus, Eastwood's Goldenbush, Gairdner's Yampah and Yadon's Piperia.

While the Conservation Plan is concerned with the entire watershed, conservation actions focus on the western half of the watershed (west of San Miguel Creek) where biological resources characteristic of the slough and unique to its marine-influenced ecology are concentrated (Exhibit C). This area includes the marshes of both the Elkhorn and Moro Cojo Sloughs, the freshwater wetlands of McClusky Slough, the rich farmlands of Springfield Terrace, the lower floodplains of Carneros Creek and the upland ridges of the Elkhorn Highlands.

The Elkhorn Slough Conservation Plan has identified the critical biological, agricultural, and scenic resources within the watershed, as well as the threats to those resources (Table 1). Threats to critical watershed resources are associated with many factors, such as increased residential development pressures as a result of job growth in Silicon Valley, subsequent increased land values and increased lease rates for farmers, groundwater overdraft for high-water-demand cash crops (such as strawberries), grading for access roads or farming on steep hillslopes, and inadequate enforcement of scenic and resource protection ordinances during project permitting.

The main goal of the plan is to preserve an intact and interconnected network of five conservation zones (Table 2, Exhibit F) in order to maintain the long-term ecological viability of the Slough and its related upland communities. These five conservation zones include over 4,000 acres of marsh within the Elkhorn and Moro Cojo Sloughs, freshwater wetlands in McClusky Slough, restored riparian forest in the lower Carneros Creek floodplain, and maritime chaparral and oak woodlands atop upland ridges in the Elkhorn Highlands. Together, these five conservation zones cover nearly half (approximately 22,500 acres) of the Elkhorn Slough Watershed. Critical habitats in each of these zones are shown in Exhibit G.



Table 1. Critical Biological Resources and Significant Threats in Elkhorn Slough Watershed.

Critical Resources	Most Significant Threats to Critical Resources
<ul style="list-style-type: none"> • Coastal Marsh • Riparian forest and freshwater wetlands • Maritime chaparral and associated oak woodlands and grasslands • Highly productive cultivated farmlands • Scenic viewsheds surrounding Elkhorn Slough and Carneros Creek 	<ul style="list-style-type: none"> • Sedimentation and contamination of marshes, and stream channels largely due to uncontrolled runoff from steep cultivated fields • Loss of marsh habitat by tidal erosion and conversion as a consequence of human manipulation of the marsh hydrology • Destruction and fragmentation of maritime chaparral habitat associated with residential development • Severe depletion of groundwater resources and accompanying seawater intrusion due to excessive pumping of wells for irrigation

Table 2. Proposed Conservation Zones in Elkhorn Slough Watershed.

Conservation Zone	Critical Biological Resources
Elkhorn Slough Zone*	Salt, and brackish and freshwater marshes and ponds of Elkhorn Slough, as well as freshwater marshes and ponds in the upper reaches of Elkhorn Slough
Moro Cojo Slough Zone*	Marshes of Moro Cojo Slough and surrounding farmlands
Springfield Terrace Zone	McClusky Slough freshwater wetland system, surrounding agricultural lands, and two upper drainages of McClusky Slough that could be restored as upland habitat for rare amphibians
Elkhorn Highlands Zone	Large blocks of unfragmented, connected maritime chaparral, associated oak woodlands, grazing lands and cultivated fields in N and E portions - S portions are fragmented by low-density residential development.
Carneros Creek Zone*	Porter Marsh and Porter Ranch, and the 100-year floodplain and remnant riparian forest of Carneros Creek.

* Portions of these conservation zones are in areas of original Coastal Commission jurisdiction.



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The Elkhorn Slough Conservation plan proposes a three-year implementation plan, with a list of goals, implementation strategies and specific actions for protecting and enhancing the resource values of the critical biological resources in these conservation zones within the watershed. Conservation goals common to all zones include protecting critical resources and ecological linkages, eliminating or reducing major stresses, restoring and enhancing biological functions in the watershed and educating

Table 3. Implementation Strategies and Actions in the Elkhorn Slough Conservation Plan.

Implementation Strategy Category	Action
1. Raise the visibility of Elkhorn Slough on regional and statewide levels to secure political support for funding programs recommended in [the] plan	1. Develop and implement a public recognition marketing plan for the Elkhorn Slough and its programs
2. Continue to build the capacity of local organizations to implement the Plan	1. Provide further support to the Elkhorn Slough Foundation to coordinate existing and proposed conservation programs and to manage Elkhorn Slough conservation lands, 2. Provide ongoing support as needed to allow MCAHLC, NRCS, RCD, RDC and other partners to implement the Plan's agricultural conservation actions 3. Provide ongoing support to RCD to work with local residents to develop intermittent stream management plans for seasonal streams (CRMPs)
3. Acquire fee or conservation easements on key habitat-rich parcels and surrounding agricultural lands	1. Acquire wetland portions and buffers on three parcels in Moro Cojo Slough 2. Acquire conservation easements on parcels in Elkhorn Highlands where maritime chaparral habitat is most intact 3. Complete acquisition of Elkhorn Slough marshlands 4. Acquire conservation easements on bluff and bluff-top portions of properties north and west of Elkhorn Slough 5. Acquire conservation easements to secure buffers on agricultural properties on the southern edge of Elkhorn Slough



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Implementation Strategy Category	Action
4. Restore and enhance natural habitats where suitable, and re-establish ecological linkages	<ol style="list-style-type: none">1. Restore marsh habitat in Moro Cojo Slough2. Develop and implement invasive weed eradication plan3. Restore two key Elkhorn Highland Properties (to protect maritime chaparral and reduce further erosion and weed invasion)4. Restore Porter Marsh
5. Provide ongoing incentives and assistance to farmers to improve management practices that are compatible with biological resources	<ol style="list-style-type: none">1. Sustain and integrate agricultural assistance and monitoring programs (to reduce sedimentation and contamination from agricultural runoff)2. Participate in forums that seek to solve the groundwater overdraft problem, and ensure that natural resource protection and restoration in an integral part of any solution
6. Provide outreach to local citizens regarding conservation issues, and encourage local involvement in the County Planning Process	<ol style="list-style-type: none">1. Provide workshops and information exchange for local residents interested in reviewing County land use decisions that affect Elkhorn Slough watershed resources
7. Educate and mobilize decision makers and landowners to better understand and manage resources lands	<ol style="list-style-type: none">1. Provide workshops for decision makers, landowners and other stake holders regarding importance of natural habitats throughout the Elkhorn Slough Watershed

stakeholders about the importance of managing Elkhorn Slough's resources. The major implementation strategies and actions of the Elkhorn Slough Conservation Plan are included in Table 3. A description of the three-year implementation plan (including projected cost and potential funding sources) is included in Section VII of the Plan (Exhibit A).

The Conservation Plan recommends that the Elkhorn Slough Foundation coordinate existing and proposed conservation programs and manage Elkhorn Slough conservation lands because of their ecological expertise and long-term experience working in the watershed. The Plan lists public agencies and non-profit groups involved in conservation and natural resource management in the Elkhorn Slough watershed as conservation stakeholders (Appendix H) and potential partners for conservation efforts in the watershed. Non-profit groups listed as stakeholder/partners include the Nature Conservancy (TNC), the Elkhorn Slough Foundation (ESF), Sustainable Conservation (SC), the Monterey County Agricultural and Historic Land Conservancy (MCAHLC), and the Watershed Institute (WI). Public agency stakeholder/partners listed include both the Central Coast Region and Elkhorn Slough Natural



Estuarine Research Reserve (NERR) branches of the California Department of Fish and Game (CDFG), the California State Coastal Conservancy (CC), the National Resources Conservation Service (NRCS), the Monterey County Resource Conservation District (MCRCD), the Monterey County Planning Department (MCPD), the Monterey County Water Resources Agency (MCWRA), the Pajaro Water District (PWD), and the California Coastal Commission (CCC).

Implementation actions listed in the Plan are intended to complement ongoing resource conservation efforts currently being conducted by the NRCS, RCD, RDC and other agencies working in the area. Funding for planning, acquisition, scenic and conservation easements, restoration and enhancement projects, and trail and facility development will be sought from conservation stakeholders and other federal, state and local government agencies and private foundations that have watershed management, restoration, and conservation grant programs.

B. CONSISTENCY WITH COASTAL ACT

Most of the Elkhorn Slough watershed, west of the Monterey/San Benito County line and west of Highway 101, lies within the Coastal Zone boundary. Monterey County has a certified Local Coastal Program that enables the County to issue Coastal Development Permits for development projects in the coastal zone. The California Coastal Commission (CCC), however, retains original jurisdiction on lands below the mean high tide (MHT) line and on public trust lands (e.g., historic wetlands and tidal channels). The original CCC jurisdiction in the Elkhorn Slough watershed includes the tidal channels and marshlands below MHT. Along Elkhorn Slough and part of Carneros Creek, original CCC jurisdiction extends approximately 7,000 feet east of the community of Hall, near San Miguel Canyon Road. Similarly, for Moro Cojo Slough (which divides into both a northern and southern arm), original CCC jurisdiction extends nearly to Elkhorn Road along the northern arm and to just north of Castroville along the southern arm. The California Coastal Commission also retains post-LCP appeal jurisdiction in areas up to 100 feet from the edge of original jurisdiction wetlands and streams, extending into many of the upper drainages in the watershed.

This conceptual review focuses on portions of the project area and proposed conservation zones that are within the Coastal Commission's original jurisdiction, and the consistency of plan components for these areas with the Coastal Act. These areas include portions of the Elkhorn Slough, Moro Cojo Slough and Carneros Creek Conservation Zones.

1. Resource Protection and Enhancement

The following Coastal Act sections are relevant:

Section 30001.5: The Legislature further finds and declares that the basic goals of the state for the coastal zone are to:

(a) Protect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources



Section 30230. *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231: *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.*

Section 30233: *(a) The diking filling or dredging of open coastal waters, wetlands, estuaries and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*

(4) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.

(5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

(7) Restoration purposes.

(8) Nature study, aquaculture, or similar resource dependent activities.

(c) In addition to the other provisions of this section, diking, filling or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary.

Section 30236. *Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.*



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Section 30240: (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.

Three of the five critical resources identified by the Elkhorn Slough Conservation Plan include coastal marsh, riparian forest and freshwater wetlands, and maritime chaparral and associated oak woodlands and grasslands. The Conservation Plan contains a number of implementation strategies that will further natural resource protection policies of the Coastal Act and North County Land Use Plan (LUP). Implementation strategies in the Elkhorn Slough and Moro Slough conservation zones include purchasing unprotected marsh parcels, acquiring fee or conservation easements on surrounding farmlands, providing adequate buffers between cultivated fields and wetlands, and restoring natural habitats where suitable. Additionally, the plan recommends identifying and implementing actions and policies that reduce tidal scouring, increase adjacent freshwater marsh and pond area where possible, and prevent overflow of floodwaters (and subsequent water quality degradation) from Pajaro River into Elkhorn Slough. These strategies are intended to preserve unprotected wetlands, improve water quality by reducing runoff from surrounding farmlands, and maintain a balance between freshwater and saltwater marshes.

Implementation strategies in the Carneros Creek conservation zone include restoring Porter Marsh and the riparian corridor along Carneros Creek, providing adequate vegetated buffer strips between agriculture and natural habitat areas, and supporting the Carneros Creek Coordinated Resources Management Program (CRMP) process. Conservation goals are to protect and restore the Carneros Creek riparian corridor, enhance groundwater recharge by restoring freshwater wetlands, and improve water quality by retaining and filtering runoff from adjacent agricultural fields. These goals are consistent with Section 30230 and 30231 of the Coastal Act.

Specific restoration projects are not included in the Conservation Plan, therefore detailed plans of individual projects will need to be analyzed for consistency with the above-cited Coastal Act and related LUP policies when they are proposed for implementation. Implementation of any restoration project in the Elkhorn Slough, Moro Cojo Slough or Carneros Creek conservation zones will likely involve work in and adjacent to wetlands, riparian corridors, or other environmentally sensitive environments. In accordance with Section 30233 above, restoration and enhancement projects requiring diking, filling or dredging will only be allowed where there are no feasible, less environmentally damaging alternatives, and where feasible mitigation measures are provided which minimize any adverse environmental effects. If any construction is planned, it is likely that mitigation measures will be required, including pre-construction surveys, the use of low-impact construction measures, on-site biological observation, and post-construction monitoring.



The Conservation plan encourages continued cooperation with the NRCS and Elkhorn Slough Watershed Project, which provides assistance to farmers who desire to change to Best Management Practices (BMPs) in order to, among other things, reduce agricultural runoff, improve wildlife habitat and improve stream bank stabilization. Specific development activities are already permitted under the NRCS Elkhorn Slough Watershed project; development projects outside of those already listed will require individual coastal development permits. Enhancement and restoration projects in Carneros Creek are intended to improve the hydrologic function and riparian habitat value of the system and thus improve fish and wildlife habitat as required by Section 30236 above. The plan also recommends that future development be sited to avoid natural habitat areas, consistent with Section 30240 of the Coastal Act. Thus, the Plan is conceptually consistent with the above-cited resource protection policies.

2. Agriculture

The following excerpts from the Coastal Act are applicable:

Section 30007.5. The Legislature further finds and recognizes that conflicts may occur between one or more policies of the division. The Legislature therefore declares that in carrying out the provisions of this division such conflicts be resolved in a manner, which on balance is the most protective of significant coastal resources...

Section 30200(b). Where the commission or any local government in implementing the provisions of this division identifies a conflict between the policies of this chapter, Section 30007.5 shall be utilized to resolve the conflict and the resolution of such conflicts shall be supported by appropriate findings setting forth the basis for the resolution of identified policy conflicts.

Section 30241. The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the areas agricultural economy, and conflicts shall be minimized between agricultural and urban land uses ...

Section 30242. All other lands suitable for agricultural use shall not be converted to nonagricultural uses unless (1) continued or renewed agricultural use is not feasible, or (2) such conversion would preserve prime agricultural land or concentrate development consistent with Section 30250. Any such permitted conversion shall be compatible with continued agricultural use on surrounding lands.

The Elkhorn Slough Conservation Plan includes highly productive cultivated farmlands as the fourth critical watershed resource in need of protection. Threats to agricultural resources are largely due to erosion from uncontrolled runoff on steep cultivated fields, groundwater depletion and seawater intrusion due to excessive pumping for irrigation, subsequent loss of productive farmlands, and potential conversion of agricultural lands for development. Stresses to the agricultural resources in the watershed also lead to degradation of the natural habitats, water quality and wildlife resources in the watershed.



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The Conservation plan suggests implementation strategies that are complementary for both agricultural and resource protection. For the Elkhorn Slough, Moro Cojo Slough, and Carneros Creek conservation zones, these include acquiring conservation easements to avoid the conversion of agricultural lands to development, utilizing land swaps, where possible, to secure protection of natural habitat lands, and incorporating adequate buffers between cultivated areas and wetlands to reduce farm runoff and subsequent sediment and chemical accumulation in Elkhorn Slough. Additional implementation strategies include providing on-going farm assistance and outreach to ensure 50% reduction in sedimentation into Elkhorn Slough through the use of BMPs, and integrating results of water quality monitoring with agricultural assistance programs in order to measure relative success of programs. The Conservation Plan also recommends providing educational outreach programs to inform farmers about the critical resources of the watershed and ways of implementing resource compatible land use management practices.

Both agricultural lands and riparian wetlands are considered significant coastal resources under the Coastal Act. Agricultural land use areas in the Elkhorn Slough, Moro Cojo Slough and Carneros Creek conservation zones include both "Agricultural Preservation" and "Agricultural Conservation" land use categories. The "Agricultural Preservation" designation is applied to prime and productive agricultural lands on areas that do not exceed an average of 10 percent slope. "Agricultural Conservation" is a broader land use category applied to small pockets of prime soil, grazing lands, and other productive agricultural lands characterized by slopes greater than 10 percent and erodible soils once an agricultural management plan has been approved. Implementation of the Conservation Plan may result in the elimination of an undetermined amount of agricultural use from some lands where it occurs. While the acquisition of viable farmlands may reduce the amount of land designated for agricultural production, many of these acquisitions and conservation easements would occur in areas with steep slopes where active soil erosion is occurring and in areas where cultivated fields abut directly against environmentally sensitive habitats. Cultivation in such areas is inconsistent with the protection of environmentally sensitive habitats such as salt and fresh water wetlands, ponds and riparian corridors. The acquisition of fee or conservation easements would provide greater protection of these lands and the habitats they contain and therefore be more protective of coastal resources. Restoration of these areas will also be more protective of coastal resources by improving riparian and wetland function and expanding wildlife habitat.

Restoration projects proposed will be conducted in areas that have been converted from wetland and adjacent upland environments to agricultural use generally without regard to resource protection (e.g., buffering, controlling runoff on-site, slope stability, etc.). Restoration efforts are intended to reduce the negative impacts that diking, ditching, filling and soil compaction have had on natural habitats. Implementation of the proposed plan will complement both agriculture and natural resource protection; agriculture will still be a predominant use of the watershed, but some natural areas will be expanded and enhanced to protect natural habitats.

Although Conservation Plan strategies include limited conversions of generally non-prime agricultural lands, wetland and riparian restoration of these lands are most protective of coastal resources, and can be



distinguished from other agricultural conversion situations, because:

- the areas in question historically comprised riparian and wetland habitat;
- a higher percentage of coastal wetlands have historically been lost than coastal agricultural lands (agricultural expansion in North Monterey County is a recent occurrence);
- the project will expand the existing Elkhorn Slough and Moro Cojo Slough wetland ecosystem - one of the most important wetland systems in the State; and
- the project will improve and expand freshwater marsh and pond areas and thereby improve groundwater recharge .

In conclusion, although Conservation Plan provisions do not fully meet the intent of Section 30241, the Plan can be conceptually approved, pursuant to the cited balancing provisions of the Coastal Act.

3. Land Resources

The following excerpts of Coastal Act provisions are relevant

Section 30240. (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.

Section 30253. (1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard

Section 30236. Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.

Loss of habitat and degradation of habitat quality and species diversity has occurred in numerous areas of the Elkhorn Slough watershed. In the Elkhorn Slough and Moro Cojo Slough areas, such losses are due to sediment accumulation, pollution and turbidity from uncontrolled agricultural runoff, tidal scour, and conversion of wetland areas to agricultural use through diking, ditching, and grazing. In the Carneros Creek area, habitat loss and degradation are due to the channelization of riparian corridor areas,



conversion of riparian areas to agriculture, siltation from uncontrolled agricultural runoff and subsequent changes in the hydrologic regime of the fluvial drainage system.

Implementation strategies of the Elkhorn Slough Conservation Plan include restoring natural habitats where suitable to improve fish and wildlife habitats in salt and freshwater marsh, freshwater ponds, and riparian areas. Such actions are consistent with Section 30236 of the Coastal Act. In the Elkhorn Slough and Moro Cojo Slough conservation zones, the Conservation Plan proposes to acquire key lands to protect and restore marsh habitat. In the Carneros Creek conservation zone, the Conservation Plan proposes to restore and enhance Porter Marsh, and to restore the riparian corridor along Carneros Creek. Restoration of the Carneros Creek riparian corridor and reduced sediment loads into the creek should also improve the hydrologic function of the system and reduce potential flooding as required in Section 30253 above. Proposed restoration projects will still have to undergo individual review for consistency with provisions of the Coastal Act. As described, the Elkhorn Slough Conservation Plan is conceptually consistent with the above-cited land and flood policies.

4. Visual Resources and Scenic Viewsheds

The following excerpts from the Coastal Act are applicable:

Section 30250. (a) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels.

Section 30251. The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

The fifth critical resource listed in the Elkhorn Slough Conservation Plan in need of protection is scenic viewsheds. The Conservation plan notes the highest priority viewsheds in need of protection are those surrounding Elkhorn Slough and Carneros Creek. Additional scenic areas of concern include the bluffs and bluff tops west of Elkhorn Slough, the hillsides east of Elkhorn Slough, the agricultural landscape along Carneros Creek and ridge tops of the Elkhorn Highland area. Within the Carneros Creek conservation zone, the Plan also proposes to protect the scenic viewsheds of Hall and Tarpey Roads, and



to locate new residential development away from scenic viewsheds, viable agricultural lands and natural habitat areas. The Plan notes that although Monterey County has designated three scenic routes in the area (Highway 1, Highway 156 and portions of Elkhorn Road) and has designated the Elkhorn Slough as an official "Scenic Waterway," there are no protective land use regulations associated with these designations. Implementation strategies to protect viewsheds include reviewing development projects in the watershed and encouraging County Planners to limit residential development to areas away from viewsheds and ridge tops (as required by the North County LCP), and acquiring fee or conservation easements along Carneros Creek and along bluff and bluff top portions of properties north and west of Elkhorn Slough. As described, the Plan is conceptually consistent with Coastal Act visual resource policies described above.

5. Public Access

The following excerpts from the Coastal Act are applicable:

Section 30210. In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

Section 30212. (a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:

(1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources,

(2) adequate access exists nearby, or,

(3) agriculture would be adversely affected.

(c) Nothing in this division shall restrict public access nor shall it excuse the performance of duties and responsibilities of public agencies which are required by Sections 66478.1 to 66478.14, inclusive, of the Government Code and by Section 4 of Article X of the California Constitution.

Section 30214. a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access ...

(c) In carrying out the public access policies of this article, the commission and any other responsible public agency shall consider and encourage the utilization of innovative access management techniques, including, but not limited to, agreements with private organizations which would minimize management costs and encourage the use of volunteer programs.



Except for the provisions that address visual access to coastal resources above, the Elkhorn Slough Conservation Plan does not include public access strategies, per se. However, it does include watershed-wide outreach and educational programs. These educational outreach programs, oriented to decision makers, landowners and the local community, are meant to encourage a better understanding of conservation issues, wise land and resource management, and increased public involvement during the County planning and review process. The plan also includes implementation strategies to raise the visibility of Elkhorn Slough on regional and statewide levels in order to secure political support for funding programs recommended in the Plan. The raised visibility program is intended to increase awareness of the natural resources of the watershed and the need for its long-term protection. The plan also includes posting signs to inform the public when they have entered the watershed. Proposed restoration projects should include public access and educational components; detailed public access and education proposals will need to be developed. Where appropriate to wildlife habitat and environmentally sensitive resources, public access (including marked trails and overlooks) should be provided in restoration and conservation easement areas similar to those in areas of the watershed already protected (e.g., the Elkhorn Slough Wildlife Management Area and the Elkhorn Slough NERR managed by the CDF&G). With these recommendations in place, the Plan would be conceptually consistent with Coastal Act public access policies.

C. CONSISTENCY WITH LOCAL COASTAL PROGRAM

The Coastal Commission certified the North County segment of the Monterey County Local Coastal Program in June 1982. The North [Monterey] County Land Use Plan (LUP) provides for protection of the plant and wildlife values of environmentally sensitive habitats, including but not limited to riparian corridors, wetlands, dunes, and sites of known rare and endangered species of plants and animals. The Elkhorn Slough Conservation Plan complies with a number of Recommended Actions for resource management in the North County. The main purpose of the Conservation Plan is to provide a comprehensive wetland management plan for the estuarine areas of Elkhorn Slough (as provided for in Section 2.3.4.2). The plan encourages the restoration of sensitive plant habitats on public and private lands (as provided for in Section 2.3.4.5), encourages the ongoing development and application of BMP practices for controlling non-point discharge and erosion (as provided for in Section 2.3.4.1); and requires protection of scenic routes and waterways (as provided for in Section 2.2.4.3). The Plan also describes implementation actions to be undertaken further up in the watershed that can help to restore riparian and estuarine habitats in the Elkhorn and Moro Cojo Slough complex.

Within areas of CCC original jurisdiction, LUP land use areas designated in the Elkhorn Slough, Moro Cojo Slough and Carneros Creek include "Resource Conservation, Wetlands and Coastal Strand." Areas outside of original CCC jurisdiction, but retained in appeal jurisdiction include "Agricultural Preservation," "Agricultural Conservation," and "Rural Density Residential" land uses.

The North County LUP (p.69) describes the "Resource Conservation, Wetlands and Coastal Strand" land use category as follows:



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Elkhorn Slough Conservation Plan

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“Protection of sensitive resources, plant communities, and animal habitats is emphasized. This land use is applied to wetlands, dunes, and riparian corridors under the Wetlands and Coastal Strand Category, and to sensitive forest and upland habitats... Only very low intensity uses and supporting facilities compatible with protection of the resource are allowed. Uses would include low intensity recreation, education, and research, and where no feasible alternative exists, essential public utility lines outside of Elkhorn Slough... In appropriate wetland areas, aquaculture would also be encouraged. Agricultural uses which would destroy or disrupt the habitat area not allowed.”

The Elkhorn Slough Conservation Plan is consistent with “Resource Conservation” land use. The Plan also describes ways to minimize actions on adjacent agricultural and rural residential areas that destroy or disrupt the habitat values of wetlands, dunes and riparian corridors.

As described previously, the “Agricultural Preservation” designation is applied to prime and productive agricultural lands on areas that do not exceed an average of 10 percent slope. “Agricultural Conservation” is a broader land use category applied to small pockets of prime soil, grazing lands, and other productive agricultural lands characterized by slopes greater than 10 percent and erodible soils once an agricultural management plan has been approved. “Rural Residential” land use areas allow low density residential and agricultural development, with site densities from 1 unit per 40 or more acres to a maximum of 1 unit per 5 acres.

While implementation measures may remove some areas from agricultural production, such measures are intended to reduce activities that destroy or disrupt adjacent wildlife habitat and thereby protect environmentally sensitive habitat. Given the various Land Use Plan policies supportive of wetland restoration, removing these areas from agricultural production would be acceptable. If such actions are taken, the County may eventually choose to amend the Land Use Plan map to reflect changes resulting from implementation of this Conservation Plan.

Much of the upland watershed area included in the Elkhorn Slough Conservation Plan falls within the coastal permit jurisdiction delegated to Monterey County, where specific policies of the North County LUP govern. LUP policies are derived from Coastal Act policies, and are intended to provide appropriate land use management consistent with natural resource protection. At this time no major inconsistencies are apparent between the Conservation Plan and the Land Use Plan. Land acquisition and resource management strategies designed for upland areas outside of the Commission’s original jurisdiction are intended to improve the natural habitats of the watershed by appropriately siting residential developments and minimizing erosion due to agricultural and residential developments. Many of the implementation strategies for the Springfield Terrace and Elkhorn Highlands conservation zones are consistent with resource protection and residential development siting policies in the LUP. The Monterey County Planning Department will also be reviewing the Elkhorn Slough Conservation Plan; additional comments will be sent explaining Commission concerns regarding Coastal Act policies related to agriculture and biologic resources in the upland zones (specifically the potential of retiring



agricultural land use on prime agricultural lands and management of maritime chaparral habitat, see letter attached as Exhibit H).

D. PLAN IMPLEMENTATION

As previously described, the Elkhorn Slough Conservation Plan includes a three-year implementation plan for accomplishing its conservation goals; implementation strategies and actions are listed in Table 3 above. Appendix J of the Conservation Plan includes a breakdown of potential conservation partners, projected costs and possible funding sources for each key action defined. At this conceptual stage, the Conservation Plan does not include a schedule for implementation actions, nor does it describe how implementation will be assured. Setting project priorities or phasing implementation actions would facilitate visualizing how such projects will be accomplished in the three-year plan. Future projects will require coastal development permits from Monterey County or the Coastal Commission (depending on location). The Conservation Plan contains flexible language that will allow individual projects to be modified to meet Land Use Plan standards.

The Plan recommends ongoing support for Elkhorn Slough Foundation (ESF) staff to coordinate existing and proposed conservation plan activities and land acquisitions, and to manage Elkhorn Slough conservation lands. Such coordination is supported by LUP Section 2.3.4.2, which suggests that "...management responsibility for the wetland areas should be assigned to an agency with adequate technical and supervisory staff to implement the plan." ESF staff has been promoting the conservation of natural resources in the Elkhorn Slough watershed for over fifteen years. With strong scientific backgrounds in watershed ecology and experience working with numerous agencies, organizations and individuals involved with restoration efforts in Elkhorn Slough, ESF staff is well qualified to handle the management responsibility for the Elkhorn Slough Conservation Plan.

The Plan intends to work in partnership with ongoing agricultural assistance and monitoring programs provided by the NRCS, RCD, and other local conservation agencies, each of which would benefit from coordination and additional funding assistance through the Conservation Plan. Additional funding for Conservation Plan projects will need to be obtained from agencies that provide conservation and watershed grants. The Coastal Conservancy may already have funding available to implement some Plan components, as they are currently requesting authorization for funding the acquisition of an easement within the Elkhorn Highlands area of the watershed (Triple M Ranch). Because the Plan requires the coordination of so many environmental and conservation agencies, without an established implementation schedule, it may be difficult to measure progress or to track program success. The Coastal Commission therefore encourages that final adoption of the Elkhorn Slough Conservation Plan by the Coastal Conservancy be accompanied by a commitment to ensure that the Plan will be implemented. We further support that the plan be managed by Elkhorn Slough Foundation staff and suggest that each conservation stakeholder and partner agency be involved as part of a Watershed Conservation advisory committee, which can help to develop guidelines for tracking plan implementation and establish program success criteria.



E. CEQA (CALIFORNIA ENVIRONMENTAL QUALITY ACT)

The California Coastal Conservancy has reviewed the Elkhorn Slough Conservation plan and determined that a Negative Declaration would be prepared on the basis of the initial evaluation of the plan (SCH 99102095). The Coastal Commission concurs with the Conservancy's findings of no significant environmental impact. As the Conservation Plan is conceptual at this stage, additional CEQA review will be necessary for implementation of some of the recommendations and implementation actions described therein.

F. APPROVAL IN CONCEPT FOR CONSERVANCY ENHANCEMENT PLAN

In conclusion, with regard to the upcoming Coastal Conservancy action, the Coastal Commission grants its approval in concept to the Elkhorn Slough Conservation Plan. This conceptual approval is granted with the recommendation to continue to ensure that the Plan is implemented. The project proponents (be they the Coastal Conservancy, Elkhorn Slough Foundation, Monterey County, or other entities) must apply for and receive a coastal development permit from the Commission and/or Monterey County before implementing the Conservation Plan or portion(s) thereof. At that time, the permit applicant(s) will need to demonstrate that a proposed development is fully consistent with the Chapter 3 policies of the Coastal Act and (with respect to the County's coastal permit jurisdiction) relevant North County Land Use Plan provisions.



Exhibits



VII. Conservation Zones, Goals and Strategies

Recommended conservation strategies are organized conceptually around five conservation zones. Each of these zones has viable occurrences of one or more of the critical resources identified for protection in this Plan. Together, these conservation zones form an interlinked landscape that is the conservation focus of the Plan. Figure 6 shows the boundaries of the conservation zones. Appendix I shows the same Conservation Zones Map with underlying critical resources. The five conservation zones comprise 22,500± acres, which is approximately 50% of the Elkhorn Slough watershed.

The conservation zones represent the most intact occurrences of the critical resources within the watershed. If protected, the land within these zones will provide sufficient natural habitat to sustain the Elkhorn Slough ecosystem into the future. Areas left white on the Conservation Zones Map are either already highly fragmented, or too isolated to provide viable habitat for critical resources. However, some of these areas are sources of stress to the resources within the conservation zones, and accordingly there are strategies which focus on these adjacent areas.

Conservation goals which are common to all zones include:

- 1) Critical resources and ecological linkages
- 2) Eliminating or reducing major stresses
- 3) Restoring and enhancing biological function; and
- 4) Educating stakeholders about the importance of managing Elkhorn Slough's resources

For each zone, the Plan identifies strategies which address the most significant threats mentioned earlier:

- inappropriate agricultural activities
- residential development
- groundwater overdraft
- manipulation of marsh hydrology

These strategies are largely derived from the input by workshop participants. Each strategy was evaluated for its effectiveness in abating stresses and its likelihood for success.

The following is a description of each zone, its critical biological resources, conservation goals, stresses and sources of stress, and strategies to achieve conservation goals.

Elkhorn Slough Zone - includes salt, and brackish and freshwater marshes and ponds of Elkhorn Slough, as well as freshwater marshes and ponds in the upper reaches of Elkhorn Slough.

Conservation goals include:

- Protect remaining privately-held marshes and adjacent freshwater wetlands and ponds
- Improve water quality through reduction of runoff from surrounding farmlands

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Exhibit A: 1 of 6
Plan Excerpts¹⁸

- Abate erosion of marshes due to tidal scouring
- Maintain a balance between freshwater and saltwater marshes.

Major stresses and their sources include:

- Loss of habitat, habitat quality and species diversity due to sediment accumulation, pollution and turbidity from uncontrolled agricultural runoff
- Loss of marsh habitat due to tidal scour

Strategies include:

- Purchase remaining unprotected marsh parcels, and provide suitable buffers between cultivated fields and wetlands
- Restore areas suitable for habitat restoration
- Provide on-going farm assistance and outreach to ensure 50% reduction in sedimentation into Elkhorn Slough
- Integrate results of water quality monitoring with agricultural assistance programs in order to measure relative success of programs
- Identify and implement actions and policies that:
 - reduce tidal scouring
 - increase freshwater marsh where possible
 - prevent future breach of floodwaters from Pajaro River into Elkhorn Slough
- Provide outreach programs that inform local decision makers, real estate brokers, buyers, farmers and landowners about Elkhorn Slough's critical resources and ways of implementing resource-compatible land use management

Moro Cojo Slough Zone - includes the marshes of Moro Cojo Slough and surrounding farmlands.

Conservation goals include:

- Protect marshes and adjacent freshwater wetlands and ponds
- Restore lands suitable for natural habitat
- Protect productive agricultural lands surrounding marshes

Major stresses and their sources include:

- Loss and conversion of habitats due to diking, ditching and grazing
- Decline of sensitive amphibian species due to sedimentation and contamination from uncontrolled agricultural runoff
- Future conversion of agricultural lands to development

Strategies include:

- Acquire key lands to protect and restore marsh habitat; and, where possible, utilize land swaps to secure further protection of natural habitat lands
- Acquire fee or easements on viable farmlands, especially those surrounding wetlands through fee or conservation easement purchase
- Provide adequate wetland buffers
- Restore natural habitat where suitable

Exhibit A: 2 of 5
Plan Excerpts 19

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Springfield Terrace Zone - includes the McClusky Slough freshwater wetland system, surrounding agricultural lands, and two upper drainages of McClusky Slough that could be restored as upland habitat for rare amphibians.

Conservation goals include:

- Protect and restore McClusky Slough marsh habitat
- Recover sensitive amphibian populations to sustainable levels
- Restore groundwater aquifers
- Protect productive agricultural lands
- Protect scenic bluffs.

Stresses and sources of stress include:

- Habitat loss and modification of McClusky Slough wetlands from adjacent cultivation
- Long-term decline in agricultural viability due to overdraft and seawater contamination of aquifers, leading to conversion to development
- Degradation of bluff drainages due to uncontrolled storm water runoff from cultivation in or at the edge of bluffs, and potential stress due to future residential development

Strategies include:

- Work with landowners, Pajaro Valley Water Management Agency (PVWMA), and other stakeholders to develop a groundwater plan for Springfield Terrace which: 1) provides incentives to restore and maintain groundwater at appropriate levels, 2) protects natural habitats and 3) improves water quality
- Acquire conservation easements on farms with high natural habitat value
- Encourage participation in the Williamson Act and the Agricultural Securities Zone Act programs
- Protect bluffs through purchase of fee or conservation easements
- Purchase cultivated fields on bluffs and restore
- Provide proper stormwater retention from cultivated fields before runoff reaches bluff and McClusky Slough drainages

Elkhorn Highland Zone - The Highlands offer one of the few areas of intact upland habitats surrounding Elkhorn Slough. The northern and eastern portion of this zone includes large blocks of connected and unfragmented maritime chaparral, associated oak woodlands, grazing lands and cultivated fields. The southern portions are fragmented by low density residential development.

Conservation goals include:

- Protect large connected blocks of maritime chaparral and associated oak woodlands
- Reduce erosion and runoff on cultivated fields
- Protect grazing lands and cultivated fields on more gentle slopes
- Restore steep cultivated slopes to natural habitat
- Control invasive weeds
- Future residential development is sited to avoid natural habitat areas and ridgetops.

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Exhibit A: 3 of 6
Plan Excerpts 20

Stresses and sources of stress include:

- Habitat fragmentation and degradation due to residential development, long-term fire suppression and invasive weeds
- Loss of topsoil and agricultural viability due to farming on steep slopes
- Drop in aquifer levels due to overdraft of groundwater
- Degradation of viewsheds due to residential development on eastern hillsides and ridge-tops, agricultural erosion and invasive weeds

Different strategies are recommended for the northern and southern portions of the zone.

Northern-portion strategies include:

- Purchase fee or conservation easements to protect relatively large, connected parcels with intact natural habitats
- Use conservation easements to retire the most erosion-prone portions of cultivated fields and, where appropriate, create appropriate buffers between agricultural fields and the edge of habitats and seasonal streams
- Wherever cultivated fields are taken out of production, immediately control weeds, establish a cover crop and/or restore natural habitat
- Provide incentives to hillside farmers to utilize sustainable methods of cultivation

Southern-portion strategies include:

- Develop outreach and incentive programs that help landowners in primarily residential areas manage maritime chaparral areas wisely

Strategies for all areas in the Elkhorn Highlands Zone include:

- Educate local residents and landowners to promote effective monitoring of County enforcement of land use regulations designed to steer development away from maritime chaparral and ridge-tops
- Establish and implement a plan to eradicate and control invasive weeds
- Work with landowners to develop and implement management plans for intermittent streams

Carneros Creek Zone - includes Porter Marsh and Porter Ranch, the 100 year floodplain of Carneros Creek with remnant riparian forest. The riparian forest serves as a major filter and collector for sediment and pesticides that erode from surrounding hillside farms.

Conservation goals include:

- Protect and restore the Carneros Creek riparian corridor
- Protect viable agriculture on more gentle slopes
- Protect scenic viewsheds of Hall and Tarpey Roads
- Locate new residential development away from scenic viewsheds, viable agricultural lands and natural habitat areas
- Retain runoff from fields to restore wildlife and enhance water recharge and quality

Stresses and sources of stress include:

- Loss of riparian habitat due to channelization and conversion to agriculture

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Exhibit A: 4 of 6
Plan Excerpts 21

- Flooding of farmlands due to siltation and loss of riparian habitat
- Loss of natural habitat and species diversity due to sediment accumulation and turbidity from uncontrolled agricultural runoff
- Potential loss of viable agriculture and scenic viewsheds from development
- Changes in hydrologic regime in Porter marsh

Strategies include:

- Support the ongoing Carneros Creek CRMP carried out by the NRCS, RCD and local Carneros Creek Association; implement recommendations
- Protect viable farmlands and viewsheds by purchasing fee or conservation easements, with priority to lands along Carneros Creek
- Restore riparian corridor along Carneros Creek
- Provide adequate vegetated buffer strips between agriculture and natural habitat areas
- Monitor County enforcement of existing land use controls that are designed to steer improvement away from maritime chaparral and ridge-top viewsheds
- Restore and enhance Porter Marsh

Areas Outside Conservation Zones

Strategies include:

- Work with San Benito County to enact regulations that prevent uncontrolled runoff from new development
- Work with Granite Rock Company and San Benito County to ensure that dams which hold mining overburden deposited in Muertos Canyon will not pose a future threat to the Elkhorn Slough due to dam failure
- Work with local residents to develop intermittent stream management plans for Live Oak, Strawberry, Paradise, Hidden and Long Creeks.

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Exhibit A: 5 of 6
Plan Excerpts

Appendix K: GIS Map Sources of Information:

All GIS Maps:

By GreenInfo Network, using ESRI ARCview and ARCInfo software

Figure 5, Elkhorn Slough Biological Resources and Appendix C: Sensitive Species:

Community types interpreted from aerial photography by Scharffenberger Land Planning & Design

Hydrology from USGS 200k DLG

Shaded relief from USGS 24k Digital Elevation Models

Flood areas from FEMA 1996

Protected lands derived from Monterey County Water Resources District

Species data from Natural Diversity Data Base Maps, Atlas of Breeding Birds of Monterey County, Moro Cojo Slough Management and Enhancement Plan, Elkhorn Slough Management and Enhancement Plan, Deborah Hillyard, Martha Schauss and Terry Palmasanto (CA Dept. of Fish and Game), Don Roberson and Dawn Reise.

Figure 6, Elkhorn Slough Agricultural Resources:

Cultivated Fields, Grasslands, Ponds and Wetland Areas interpreted by Scharffenberger Land Planning & Design

Cultivated Fields edited by Jonathan Berkey, Resource Conservation District of Monterey Co., and Daniel Mountjoy, USDA Natural Resources Conservation Service

Seawater Intrusion and Elevated Chloride Level data from Monterey County Water Resources Agency

Additional hydrology from USGS 100k DLG

Slope data and contours from USGS 24k Digital Elevation Models

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Exhibit A: 6 of 6
Plan Excerpts

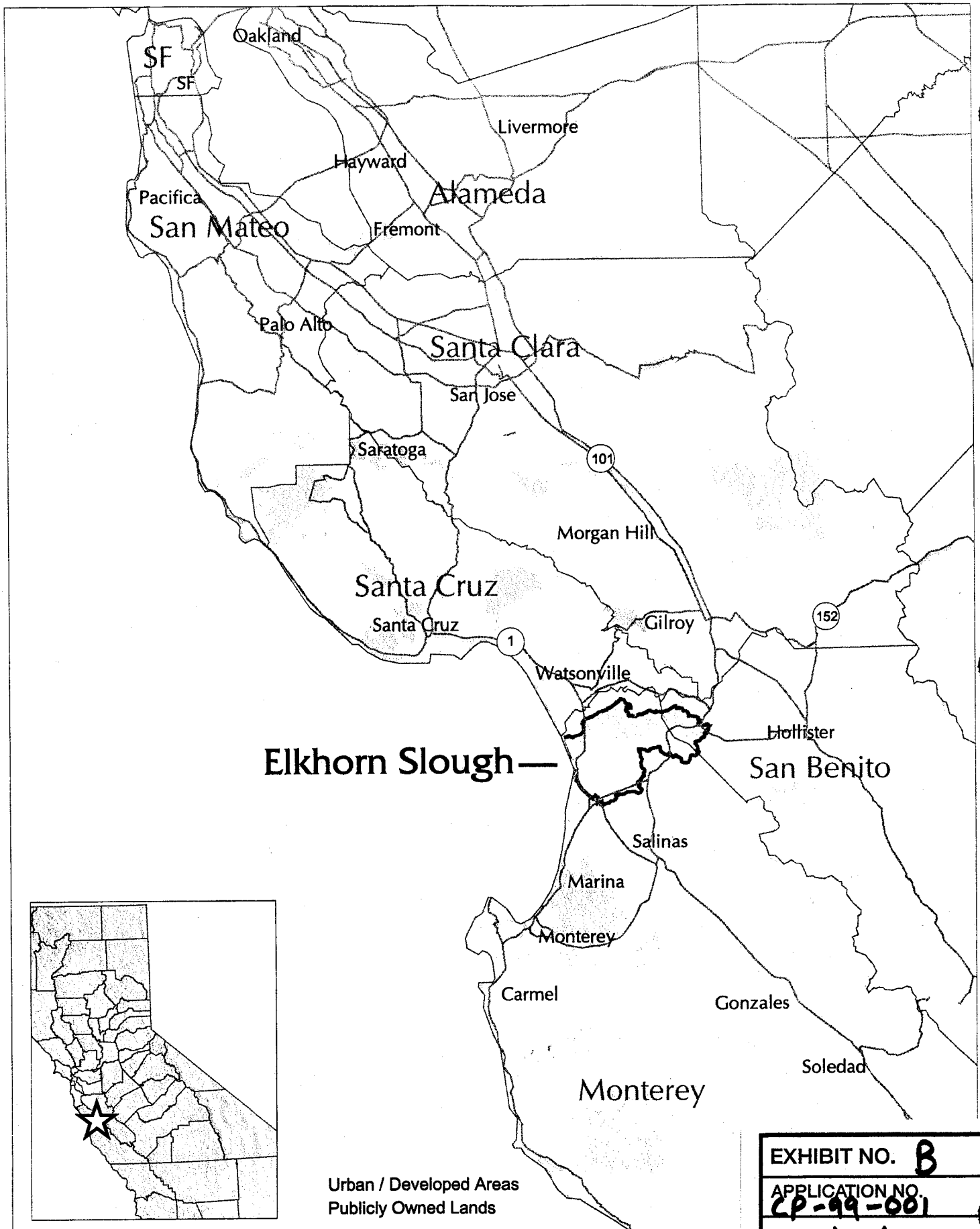


EXHIBIT NO. B
APPLICATION NO. CP-99-001
Regional Map

Figure 1 - Regional Context Map

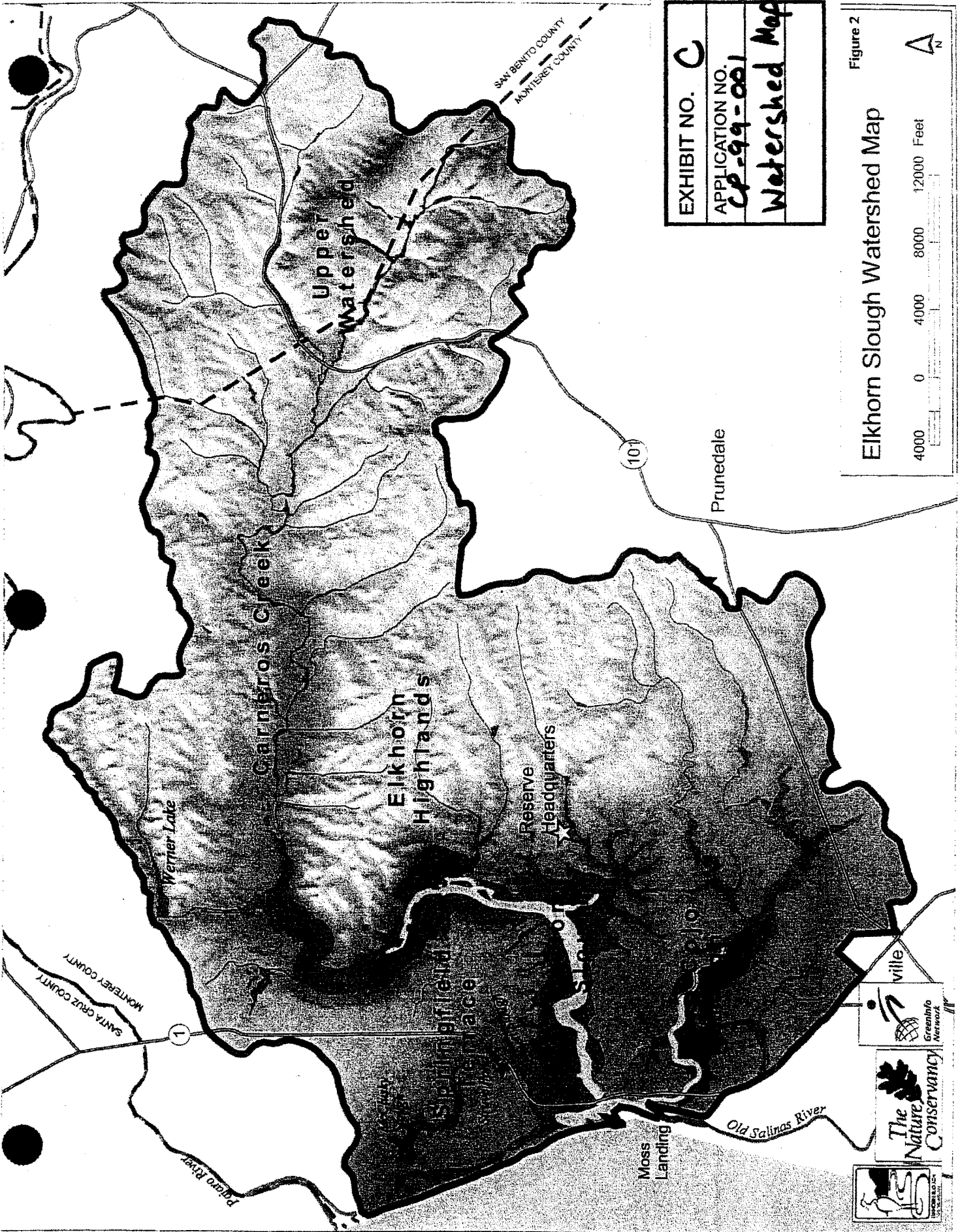
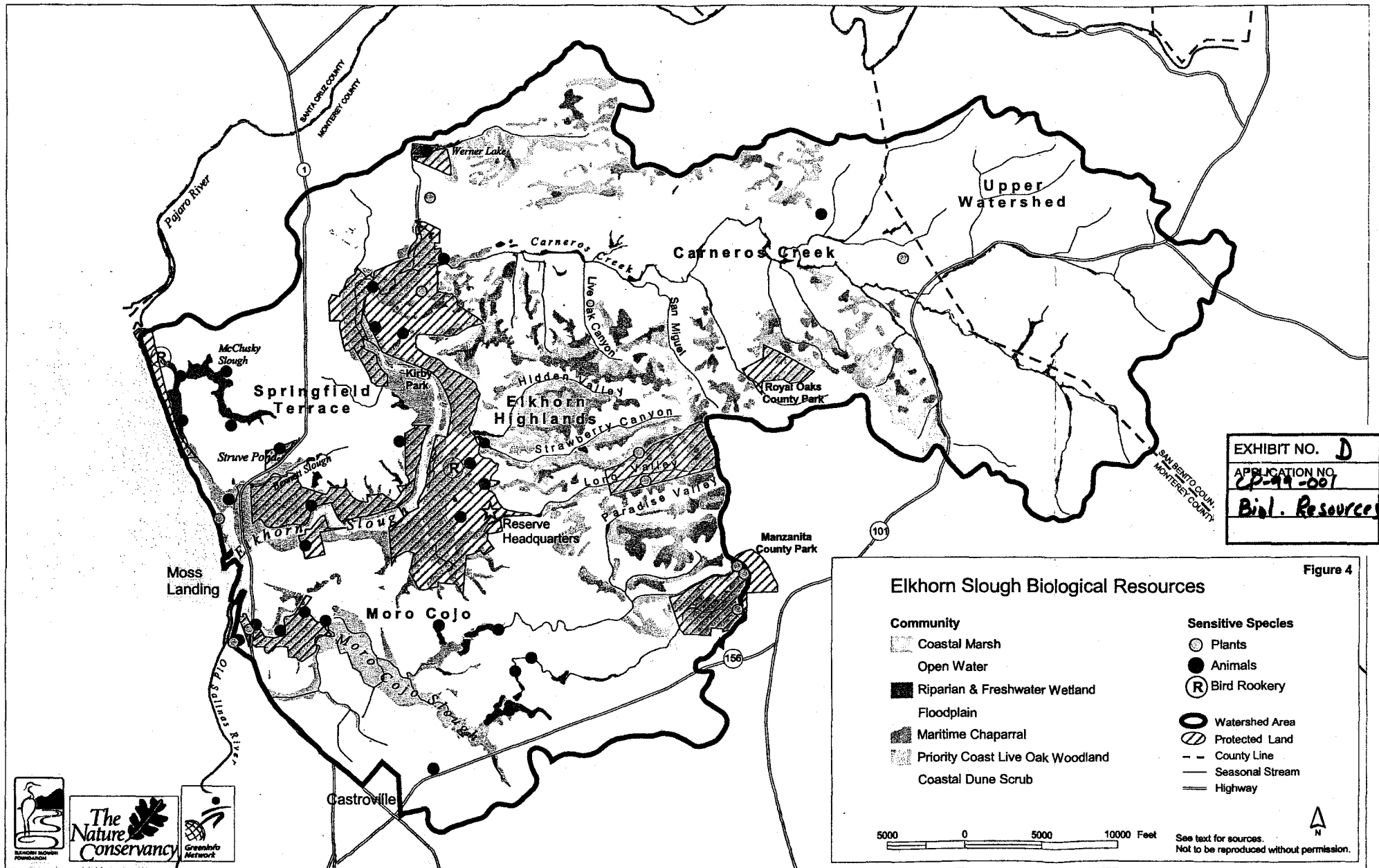


EXHIBIT NO. **C**
 APPLICATION NO. **CP-99-001**
Watershed Map

Figure 2

Elkhorn Slough Watershed Map





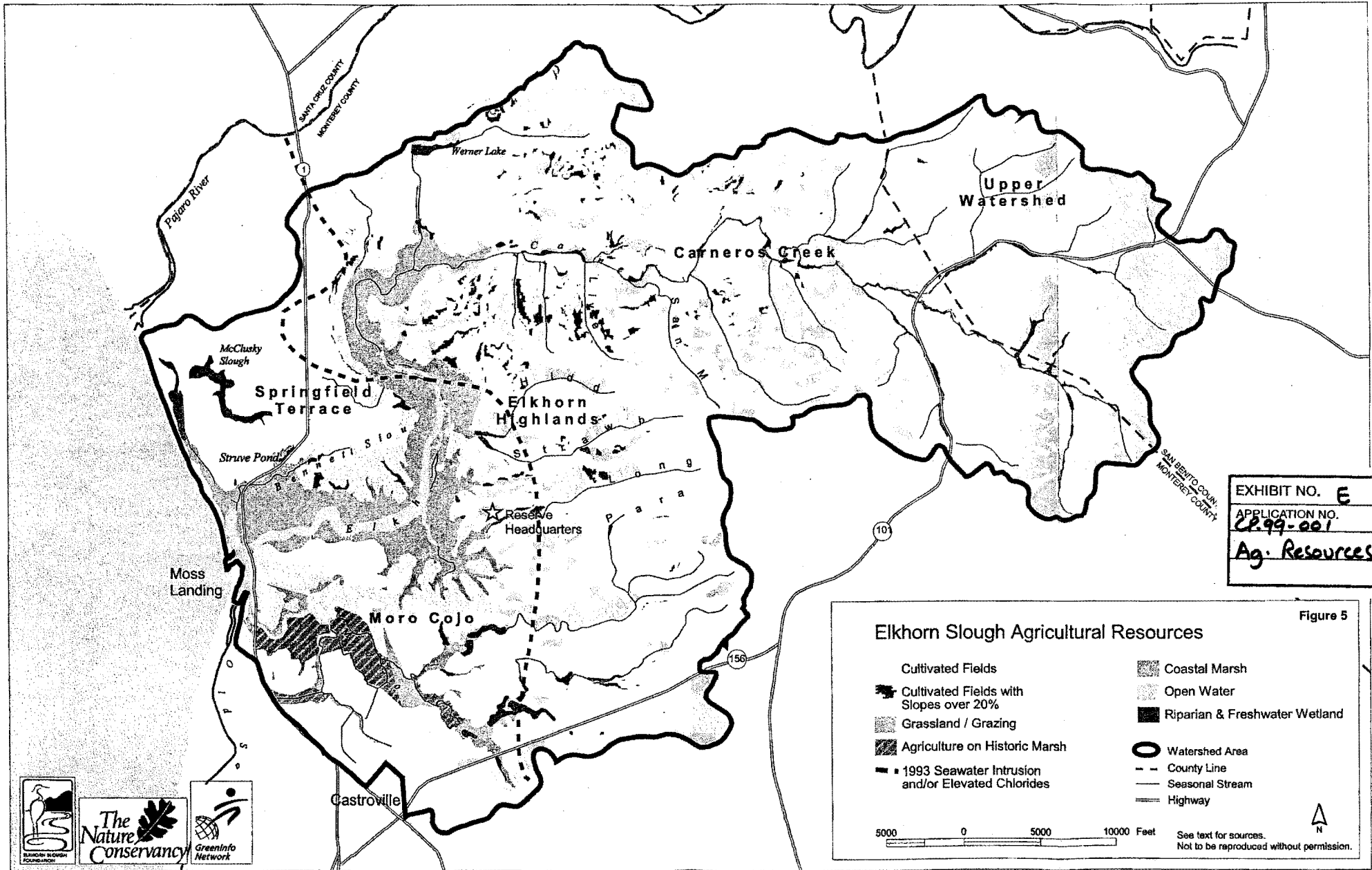


EXHIBIT NO. **E**
 APPLICATION NO. **CP99-001**
Ag. Resources

Elkhorn Slough Agricultural Resources

Figure 5

- | | |
|---|-------------------------------|
| Cultivated Fields | Coastal Marsh |
| Cultivated Fields with Slopes over 20% | Open Water |
| Grassland / Grazing | Riparian & Freshwater Wetland |
| Agriculture on Historic Marsh | Watershed Area |
| 1993 Seawater Intrusion and/or Elevated Chlorides | County Line |
| | Seasonal Stream |
| | Highway |

5000 0 5000 10000 Feet

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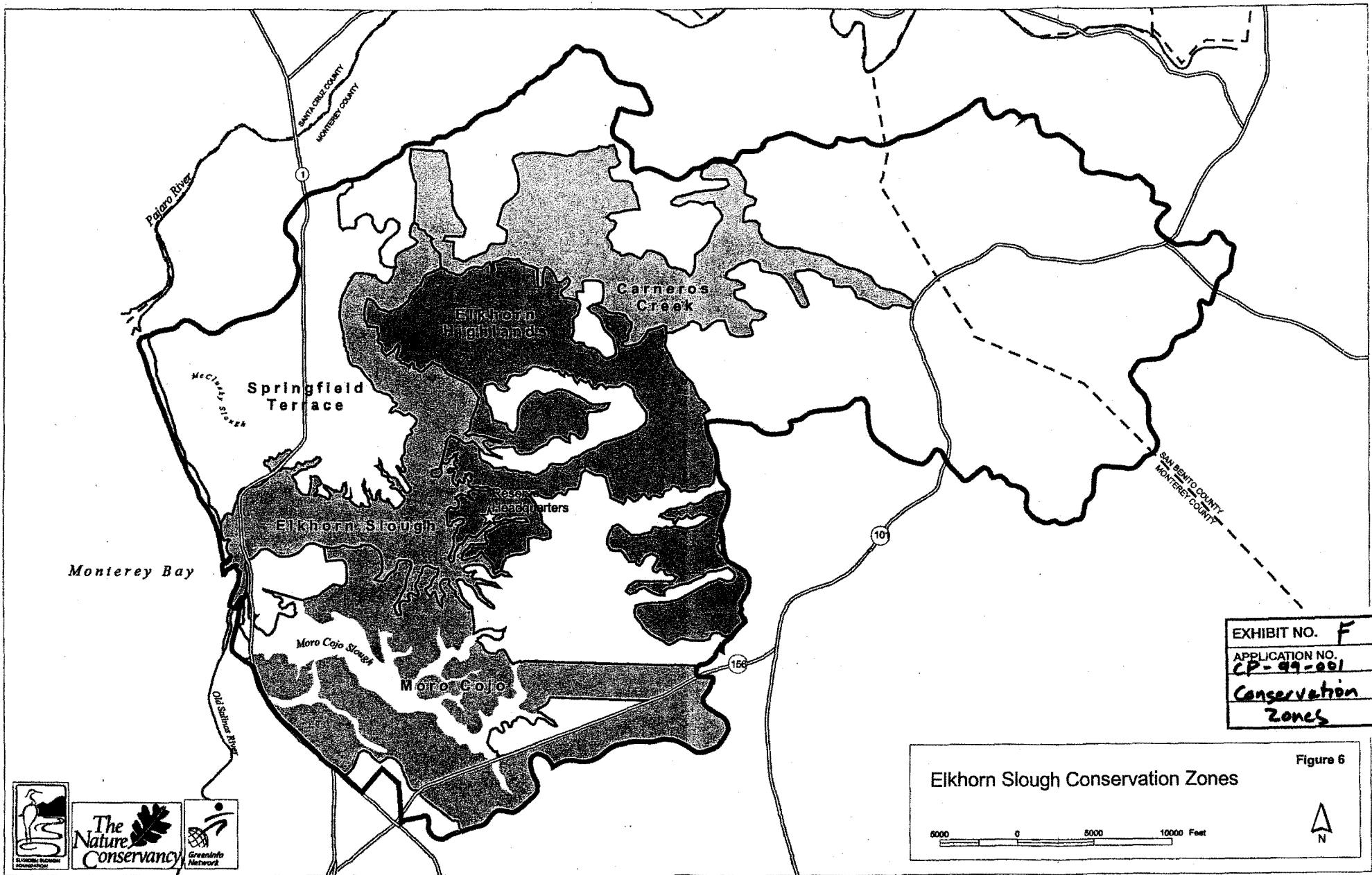


EXHIBIT NO.	F
APPLICATION NO.	CP-99-001
Conservation Zones	

Eikhorn Slough Conservation Zones Figure 6

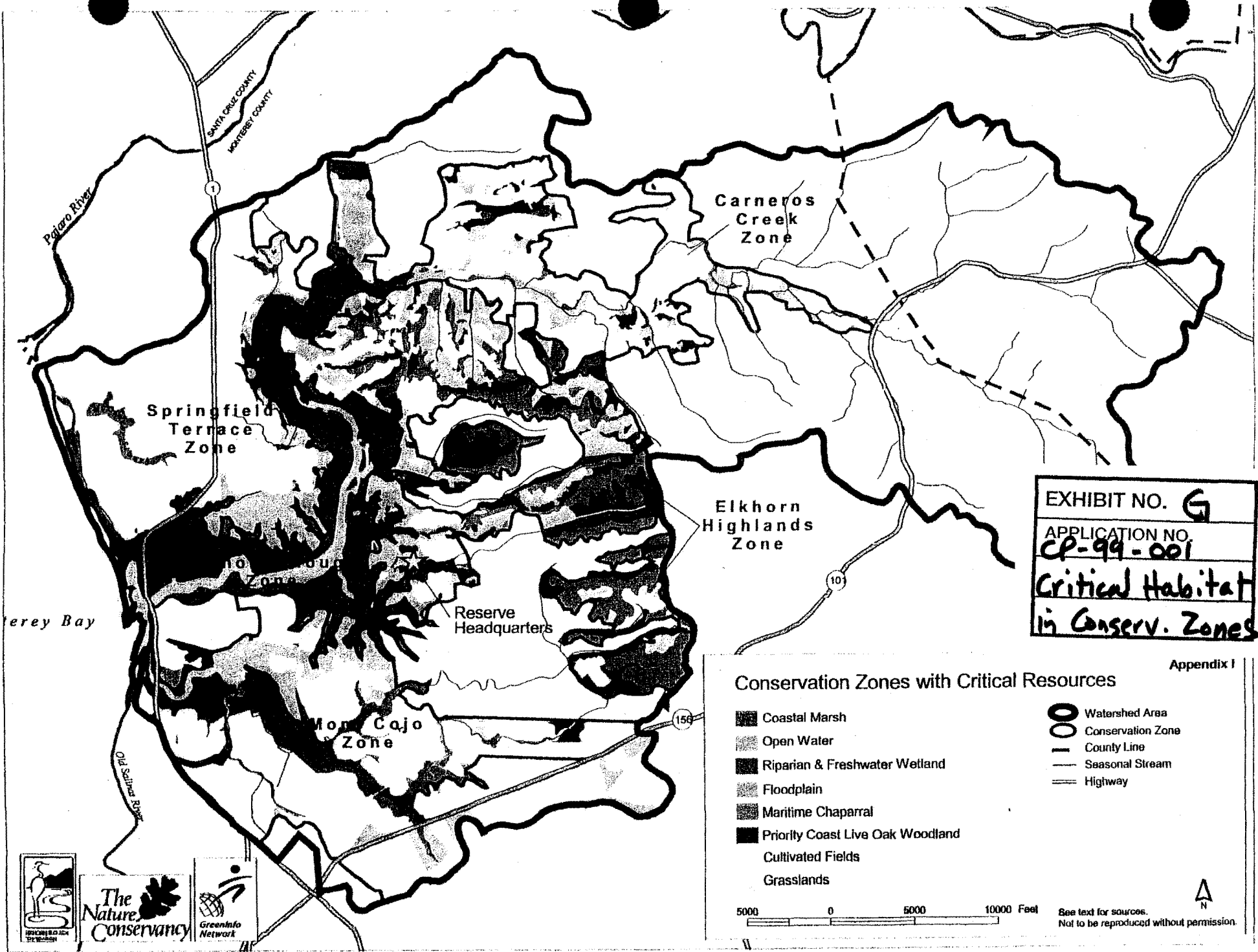













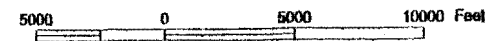


EXHIBIT NO. **G**
 APPLICATION NO.
CP-99-001
Critical Habitat
in Conserv. Zones

Appendix I

Conservation Zones with Critical Resources

- | | |
|--|---|
|  Coastal Marsh |  Watershed Area |
|  Open Water |  Conservation Zone |
|  Riparian & Freshwater Wetland |  County Line |
|  Floodplain |  Seasonal Stream |
|  Maritime Chaparral |  Highway |
|  Priority Coast Live Oak Woodland | |
|  Cultivated Fields | |
|  Grasslands | |



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CALIFORNIA COASTAL COMMISSION

CENTRAL COAST DISTRICT OFFICE
725 FRONT STREET, SUITE 300
SANTA CRUZ, CA 95060
(831) 427-4863



November 18, 1999

Steven Maki, Project Planner
Monterey County Planning Department
P.O. Box 1208
Salinas, CA 93902

RE: ***Elkhorn Slough Conservation Plan; Comments on Plan Implementation Strategies***

Dear Mr. Maki,

We understand that the Coastal Conservancy has submitted a copy of the Elkhorn Slough Conservation Plan to you for review. The Coastal Commission has recently completed a review of the Plan for the Coastal Conservancy as required by the Coastal Conservancy Act. While our review of the Plan focussed only on areas within the Commission's original jurisdiction (i.e., areas below the mean high tide line), we would like to forward some observations we have about areas of the Plan that remain within the County's LCP jurisdiction. Our main comments for the County's review involve implementation strategies for land acquisition and conservation easements in agricultural and maritime chaparral areas.

Overall we are pleased that the Conservation Plan is taking a watershed-wide approach to conservation issues in the Elkhorn Slough area. The plan includes numerous strategies to reduce the impact of threats to the Slough (e.g., soil erosion, sediment and chemical accumulation due to uncontrolled agricultural runoff, loss of natural habitats due to residential and agricultural encroachment). Many of the strategies proposed in the Plan appear to be appropriate responses for protecting the coastal resources in the watershed.

Section 30241 of the Coastal Act requires that the maximum amount of prime agricultural land be maintained in production to protect the area's agricultural economy. Nonetheless, the concept of removing agricultural use from some lands, where such an action would be more protective of coastal resources is allowable under the Coastal Act and the Local Coastal Program. However, since the Conservation Plan does not state whether prime agricultural land would be taken out of production or how much, there is a concern that implementation of the Plan would possibly take more land out of agricultural use than may be required. The hypothetical conservation easement scenario portrayed in Figure 7 notes that farming "may" be continued on gentle slopes using Best Management Practices, that vegetated buffer strips be provided and that cultivation be retired on steepest slopes. While these are good recommendations that do protect agricultural lands themselves by minimizing erosion and loss of productive soils, the Plan does not ensure that farming continue on remaining lands, and does not state how wide buffer strips should be or what percent slopes are considered "steepest." Because the Plan is general in nature, it doesn't provide details about land acquisitions, but rather serves as background information for future acquisition and resource management efforts. However, without such information, it is difficult to evaluate potential impacts to agricultural lands. We therefore suggest that the County invite the Nature Conservancy and Elkhorn Slough Foundation to provide their guidelines for areas they are

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Exhibit H: pg 1 of 2

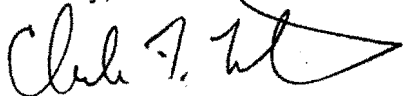
proposing to remove from agricultural production to ensure that the objectives of the Plan are carried out consistent with LCP objectives.

The other issue raised by the Plan includes the management of maritime chaparral in the Elkhorn Highlands area. The Plan provides a map that shows, for the first time, the coverage and distribution of maritime chaparral and associated oak woodlands in the area. As the Conservancy Plan states, maritime chaparral is a rare habitat in California, containing a unique assemblage of plants that are found no where else. Implementation strategies proposed to improve and protect these areas include land acquisition, conservation easements in erosion-prone portions, invasive weed eradication, appropriate siting of residential areas away from sensitive habitat, and incentives to hillside farmers to use sustainable methods of cultivation. We feel that while these strategies will help to improve the preservation and management of maritime chaparral habitat, they alone will not be fully protective of the resource.

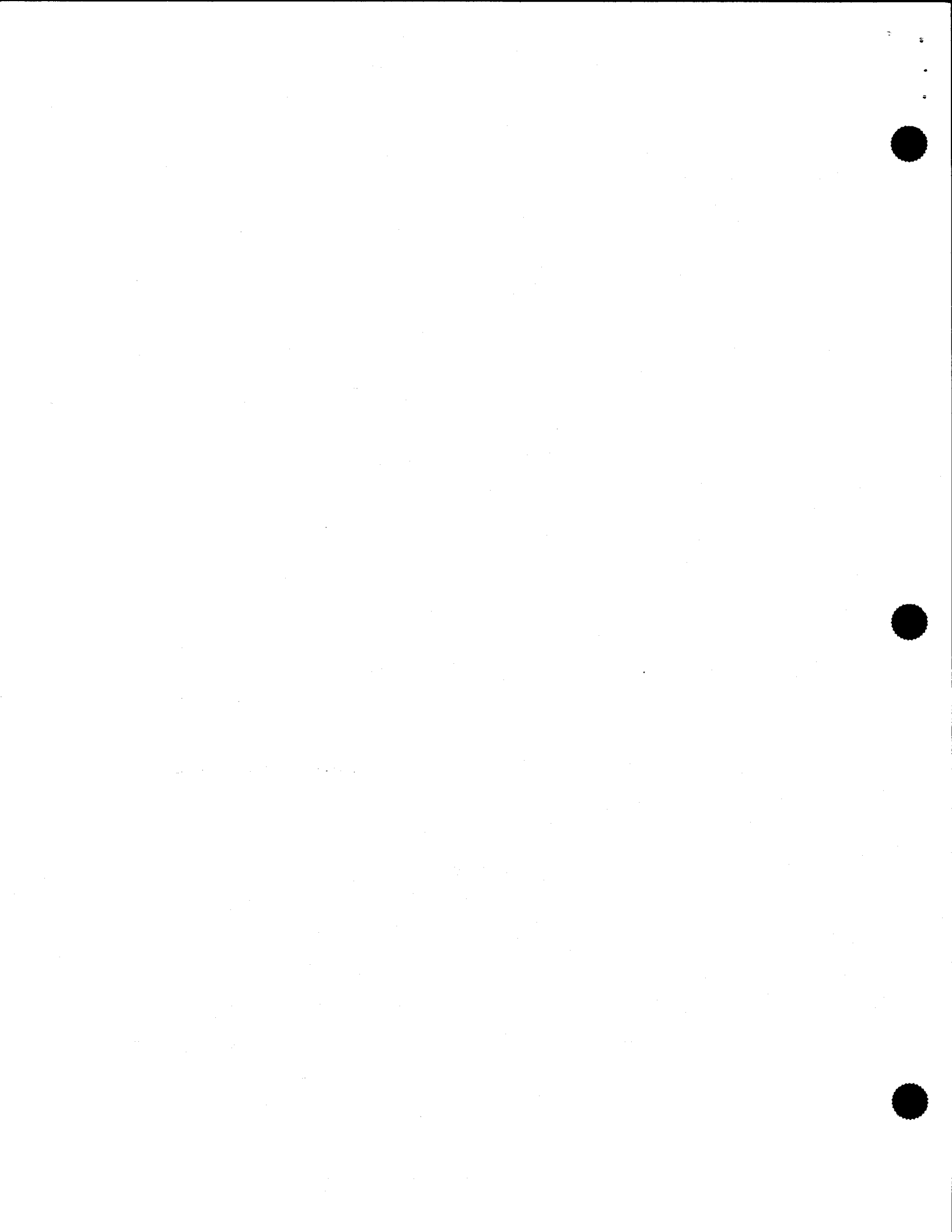
Because the Plan will not result in acquisition and resource management of the entire maritime chaparral habitat, it will still be incumbent upon the County to ensure protection through its coastal development permitting process and LCP policies. Since the Plan would hopefully result in an acquisition and management program for maritime chaparral areas, we would urge the County to take advantage of such a program when considering development permits in these areas. For example, if there are cases where single family development permits would unavoidably result in some loss of maritime chaparral, the County could perhaps require compensatory mitigation or in-lieu fees that could be used to fund habitat acquisition, restoration and/or management of scenic easement areas. Additionally, as the Elkhorn Slough Foundation develops management strategies for the preservation of maritime chaparral, we would hope that the County incorporates them in their ongoing General Plan and LCP update efforts as well as through permit conditions and scenic easement provisions.

We encourage the County to work with the proponents of the Plan to address these issues and are available to assist you. If you have any questions, please contact Kelly Cuffe or Rick Hyman at (831) 427-4863.

Sincerely,



Charles Lester,
District Manager
Central Coast District Office



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Elkhorn Slough Conservation Plan

Prepared for:

Elkhorn Slough Foundation and
The Nature Conservancy

July 2, 1999

Prepared by:

Tom Scharffenberger
Scharffenberger Land Planning & Design

In conjunction with:

Mark Silberstein, Elkhorn Slough Foundation
Robin Cox, Chris Kelly and Lynn Lozier, The Nature Conservancy
Karyn Gear, California State Coastal Conservancy

GIS by:

Brian Cohen, GreenInfo Network

Project Funding by:

The David and Lucile Packard Foundation

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Project Summary

Elkhorn Slough is an ecological gem located on the edge of Monterey Bay (Figure 1). It supports one of California's most threatened ecosystems, the coastal estuary. Its surrounding landscape of working farms and undeveloped ridges and hills are highly scenic and remarkably intact, considering their close proximity to the metropolitan Bay Area.

Although not pristine, Elkhorn Slough is a biologically rich wetland system, providing habitat for numerous resident and migratory birds. A great diversity of rare plants and animals are found in its natural communities. Elkhorn Slough serves as an important fish nursery and source of nutrients for Monterey Bay. The State of California has designated Elkhorn Slough an ecological preserve, and the National Oceanic and Atmospheric Administration has included its tidal waters as part of the Monterey Bay National Marine Sanctuary, and established a National Estuarine Research Reserve on its shores. Surrounding Elkhorn Slough is a series of ridges covered with the rare maritime chaparral community, and associated coast live oak woodlands.

This Conservation Plan, sponsored by the David and Lucile Packard Foundation, was developed to identify critical biological, agricultural, and scenic resources within the Elkhorn Slough watershed and threats to those resources, as well as to devise strategies to abate the threats and maintain the long-term ecological viability of the Slough and its related upland communities. The Plan's vision is to preserve an intact and interconnected network of conservation zones, including over 4,000 acres of marsh within Elkhorn and Moro Cojo Sloughs, the freshwater wetlands of McClusky Slough, a restored riparian forest in the lower Carneros Creek floodplain, and a series of upland ridges with unfragmented maritime chaparral in the Elkhorn Highlands (Figure 2). The Plan envisions these natural communities surrounded by productive, habitat-compatible farmland, scenic vistas and residences. As a whole, the landscape embraced by this vision comprises 22,500 acres, or approximately one half of the total watershed.

To develop this vision, this study identified critical resources within the Elkhorn Slough watershed that are of highest priority for protection:

- Coastal marsh
- Riparian forest and freshwater wetlands
- Maritime chaparral and associated oak woodlands and grasslands
- Highly productive cultivated farmlands
- Scenic viewsheds surrounding Elkhorn Slough and Carneros Creek

These critical resources are discussed in detail in Section III.

The most significant threats to the critical resources within Elkhorn Slough are:

- Sedimentation and contamination of marshes, largely due to uncontrolled runoff from steep cultivated fields;
- Destruction and fragmentation of maritime chaparral habitat associated with residential development;
- Severe depletion of groundwater resources and accompanying seawater intrusion due to excessive pumping of wells for irrigation; and

- Loss of marsh habitat by tidal erosion and conversion as a consequence of human manipulation of the marsh hydrology.

These threats and their underlying socioeconomic influences are discussed in Sections IV and V.

To protect critical resources from the most significant threats, the Plan calls for implementation of the following strategies:

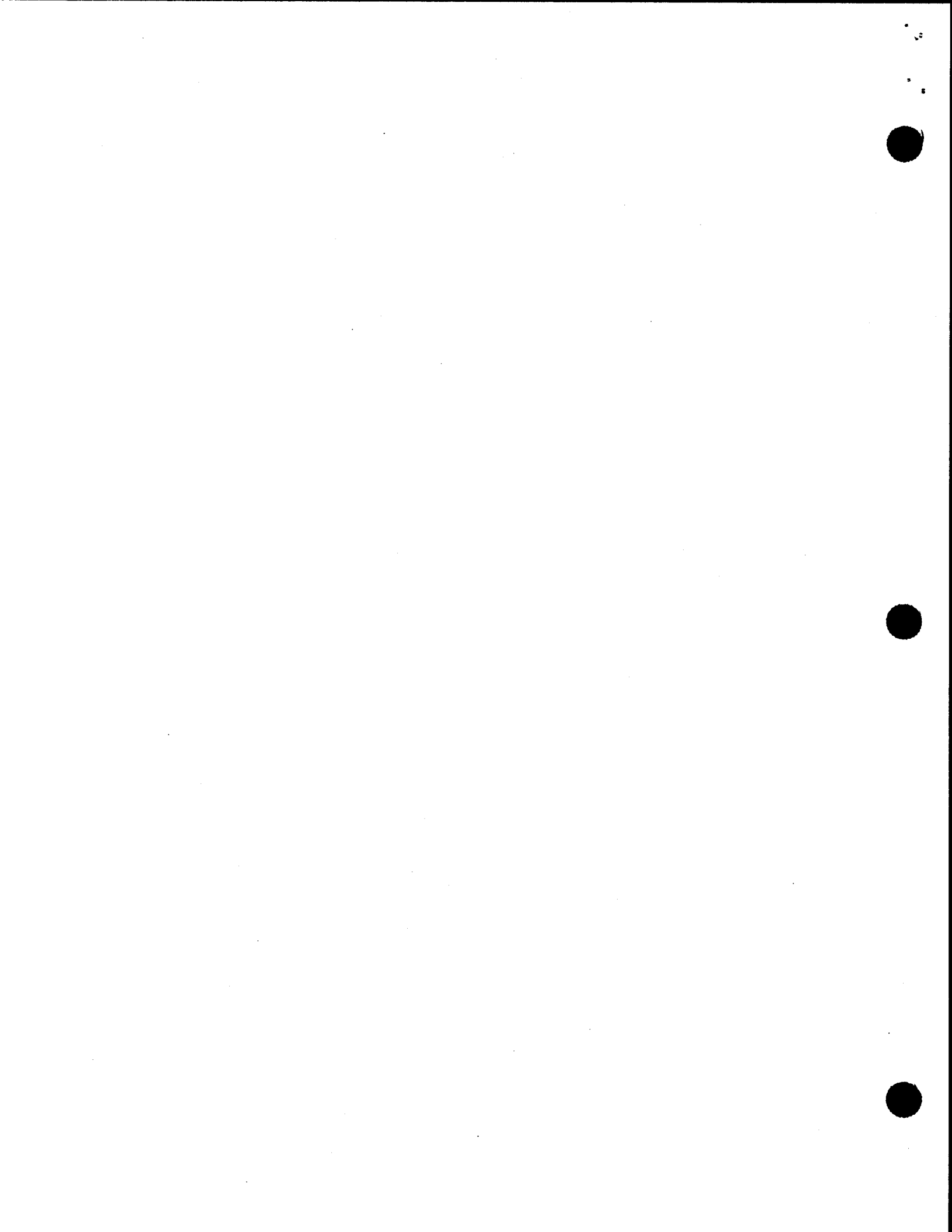
- Raise the visibility of Elkhorn Slough on regional and state-wide levels to secure political support for funding programs recommended in the Plan
- Continue to build the capacity of local organizations to implement the Plan
- Acquire fee or conservation easements on key habitat-rich parcels and surrounding agricultural lands
- Restore and enhance natural habitats where suitable, and re-establish ecological linkages
- Provide ongoing incentives and assistance to farmers to improve management practices that are compatible with biological resources
- Provide outreach to local citizens regarding conservation issues, and encourage local involvement in the County Planning Process
- Educate and mobilize decision makers and landowners to better understand and manage resource lands

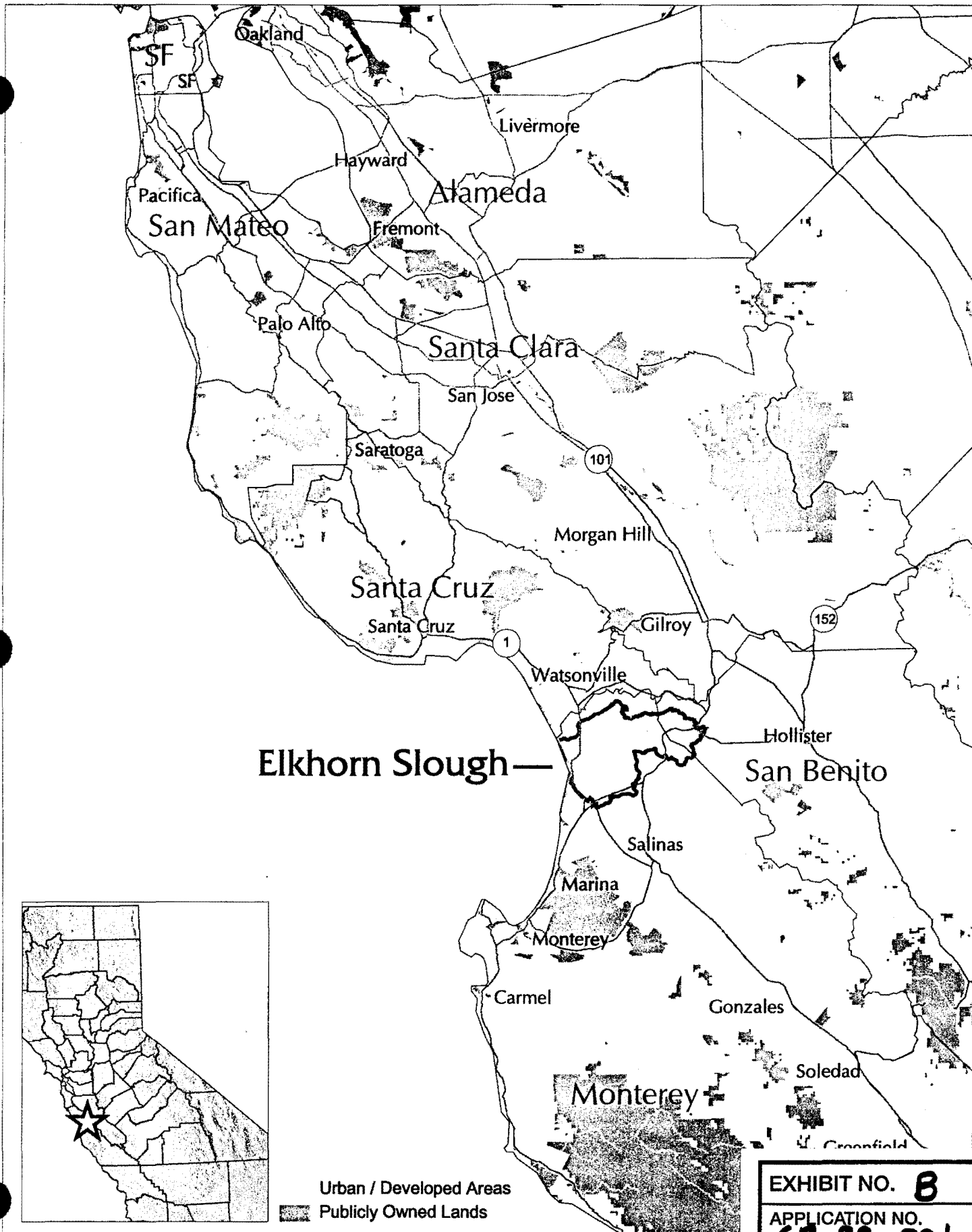
These strategies are developed in detail for each of the conservation zones in Section VII. Specific actions which should be implemented over the next three years are set forth in Section VIII.

To be successful, the Plan will require a sustained public and private effort to secure funding for recommended programs. On a local level, the Plan calls for ongoing support to the Elkhorn Slough Foundation (ESF) and other partners to implement the Plan. The Plan also calls for increased support for the land trust function of ESF in acquiring and managing conservation lands and easements throughout the Elkhorn Slough watershed.

Resource protection, particularly on the few remaining large blocks of connected natural habitat lands, is a key element of the Plan. Recommended fee and easement acquisitions include marsh and buffer portions of properties in western Moro Cojo Slough, a crescent of linked Elkhorn Highland properties between The Nature Conservancy Blohm Ranch and the Elkhorn Slough Foundation's Long Valley properties, and bluff portions of properties north and west of Elkhorn Slough. The plan calls for protection of McClusky Slough, as well as surrounding highly productive farmlands in Springfield Terrace. Priority restoration projects include Moro Cojo Slough marshlands, Porter marsh, and critical linkages in the Elkhorn Highlands that were once maritime chaparral.

Abatement of major stresses is also a key element of the Plan. The Plan recommends continuation of programs, such as the Natural Resource Conservation Service (NRCS) Elkhorn Slough Watershed Project, to help farmers implement management practices that will substantially reduce sedimentation in adjacent marshlands. It further recommends that conservation organizations play a supportive role in solving the groundwater overdraft problem, while ensuring that natural habitat protection is a key part of any solution. It also recommends outreach to the local community on





Elkhorn Slough —

Urban / Developed Areas
Publicly Owned Lands

EXHIBIT NO. B
APPLICATION NO. CP-99-001
Regional Map

Figure 1 - Regional Context Map



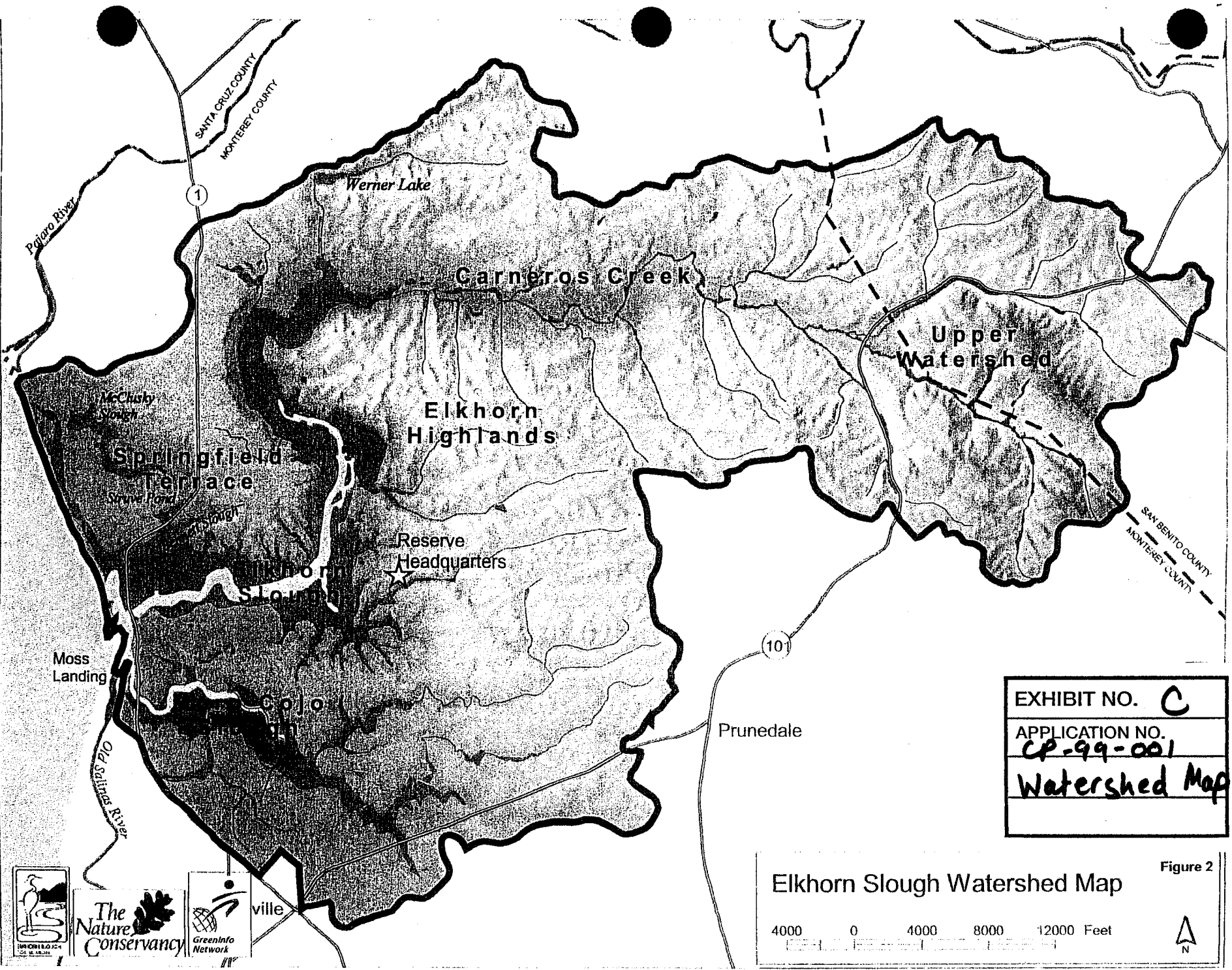


EXHIBIT NO. C
APPLICATION NO. CP-99-001
Watershed Map

Elkhorn Slough Watershed Map

Figure 2

4000 0 4000 8000 12000 Feet



ville

conservation issues, and how local citizens can become involved in the County's planning decisions that affect Slough resources.

This is a pivotal time for protecting Elkhorn Slough. There are a number of well-established conservation programs and committed organizations already involved. And there are a number of encouraging developments, such as the recent purchases of Long Valley and Catellus properties, and the positive response of local farmers to soil conservation practices promoted by NRCS and the local Resource Conservation District. Uncertain markets and recent restrictions on the use of methyl bromide may reduce the economic viability of strawberry cultivation in more marginal farms east of Elkhorn Slough, and hasten their conversion to other uses. Some of these lands, therefore, may be available for purchase to protect maritime chaparral habitat. Finally, there are significant opportunities to obtain conservation funding from public and private sources.

I. Planning Purpose and Process

The overall goal of this project was to develop a Conservation Plan which will guide future conservation activities by both public and private organizations. The project was funded by a grant of The David and Lucile Packard Foundation, as part of their "Conserving California Landscapes" program.

The Plan identified critical resources, the most significant threats (stresses and sources of stress) to these resources, and strategies to protect these resources over time. Land use and resource layers were mapped on ARCVIEW GIS. To ensure we were working with the best and most current information regarding Elkhorn Slough and its conservation needs, three workshops were conducted at the Elkhorn Slough National Estuarine Research Reserve (ESNERR) offices. In addition, one-on-one interviews were held with experts to solicit added guidance. The planning process is summarized in Figure 3, "Planning Process Flow Chart".

ELKHORN SLOUGH PLANNING PROCESS

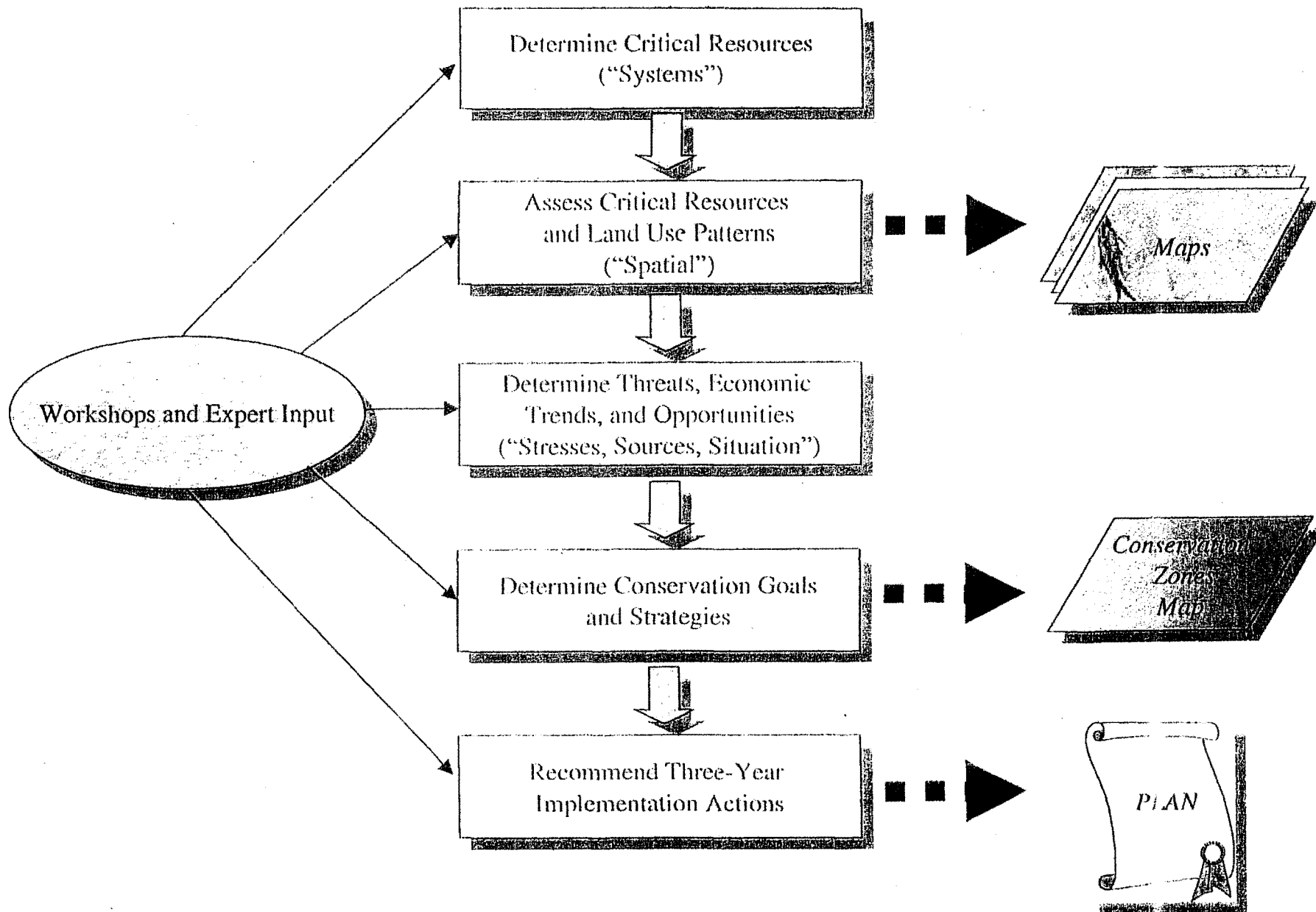


Figure 3

II. Setting and Project Area

Elkhorn Slough is located one hundred miles south of San Francisco, in the curve of Monterey Bay. At its mouth is Moss Landing Harbor. The entire Elkhorn Slough watershed contains 45,000± acres, some of which extend east beyond Highway 101 into San Benito County. Although the project took into consideration the entire watershed, its primary focus is on the western half of this watershed, where biological resources characteristic of the Elkhorn Slough and unique to its marine-influenced ecology are concentrated. This area is roughly bounded on the east by San Miguel Canyon Road.

The project area includes the marshes of both Elkhorn and Moro Cojo Sloughs, the freshwater wetlands of McClusky Slough, the rich farmlands of Springfield Terrace, the lower floodplains of Carneros Creek, and a series of high ridges east of Elkhorn Slough described here as "Elkhorn Highlands." Just beyond the project area are three small cities: Watsonville and Pajaro to the north, and Castroville to the south. Within the project area are two small communities, Las Lomas and portions of Prunedale.

III. Critical Resources

The project identified "critical resources" or conservation targets, throughout the Elkhorn Slough project area. A primary focus is on the unique biological and agricultural resources of the Elkhorn Slough watershed, as described below. Where biological and agricultural resources conflicted, biological resources were favored. Scenic resources, so pervasive in the Elkhorn Slough watershed, are generally presumed to be covered through the selection of critical biological and agricultural resources. Biological resources are summarized in Appendix A, "Critical Biological Resources," and shown on Figure 4, "Biological Resources Map". Agriculture resources are shown on Figure 5.

Wetland Habitats

Elkhorn Slough is an estuary of great habitat diversity and species richness. Its marshes represent a particularly valuable resource as California has lost more than 75% of its coastal marshes. At 4,182± acres, the combined marshes of Elkhorn and Moro Cojo Slough are the largest between San Francisco and Morro Bays.

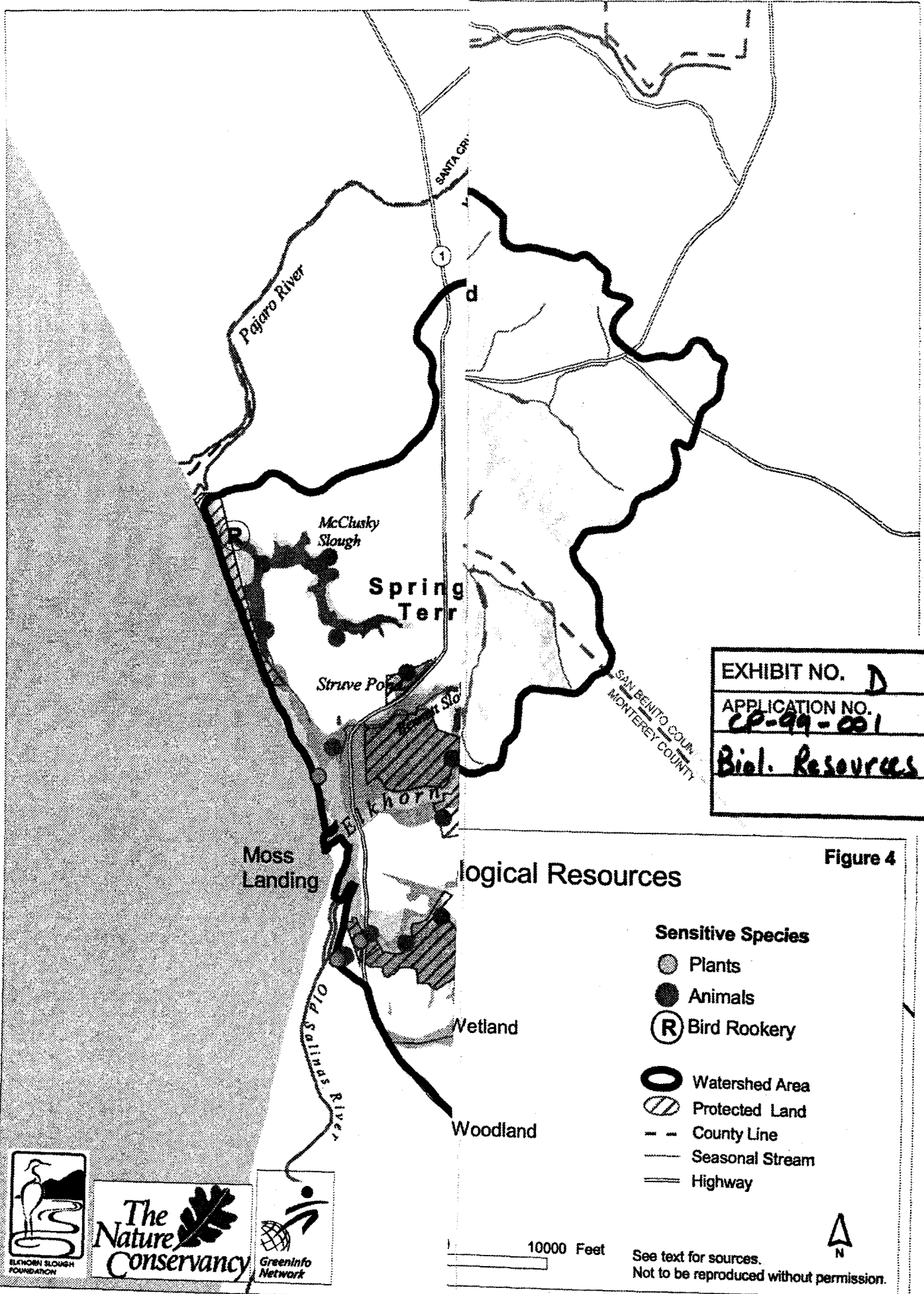
Its natural communities include tidal canals, mudflats, salt and brackish marshes of Elkhorn and Moro Cojo Sloughs. In its upper reaches are freshwater wetlands, the remnant riparian forests and floodplain of Carneros Creek and numerous seasonal streams. McClusky Slough is a freshwater wetland system that drains into Elkhorn Slough at Moss Landing Harbor.

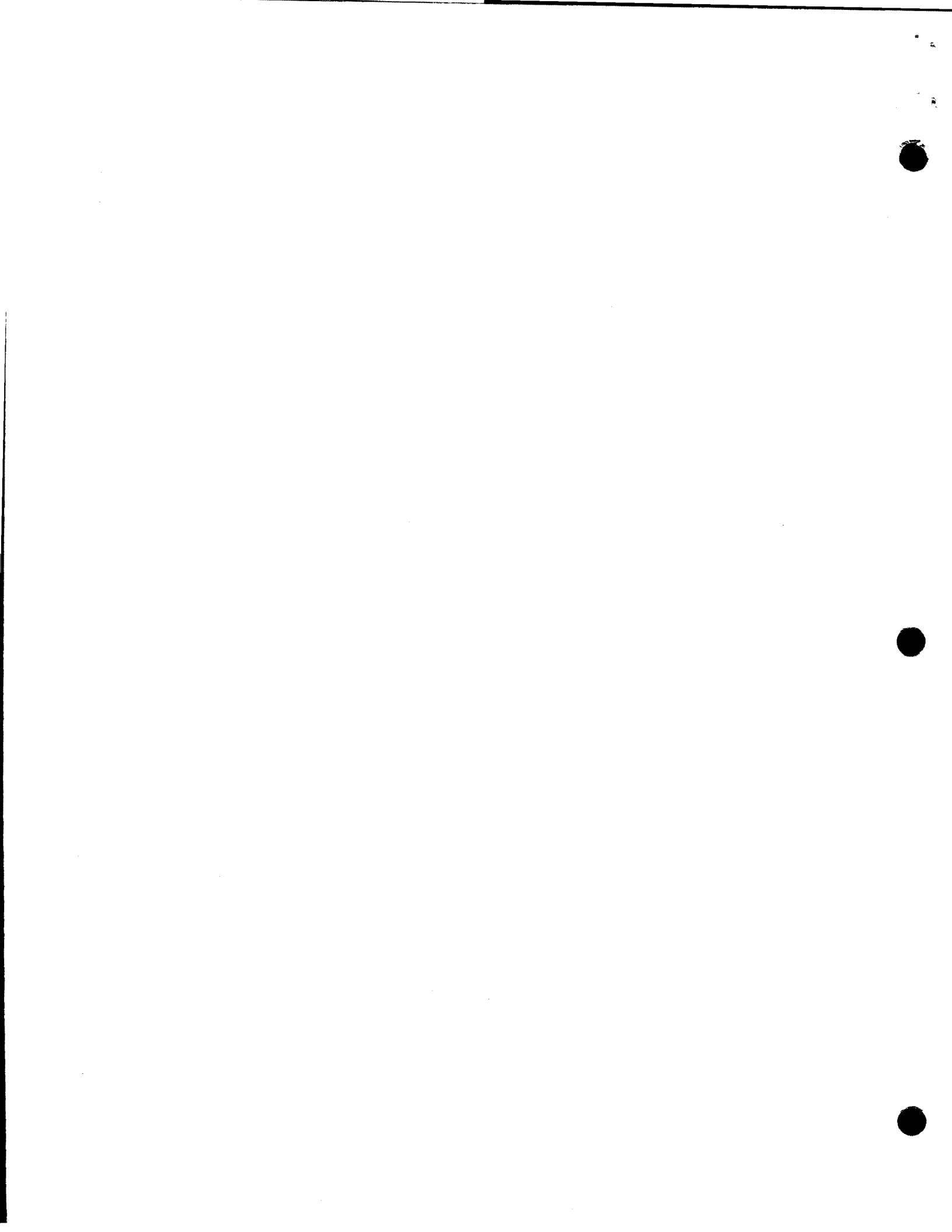
More than half of California's threatened and endangered animals are associated with wetlands. Sensitive species in Elkhorn Slough include the Santa Cruz Long-toed Salamander (SCLTS), California Tiger Salamander, the California Red-legged Frog, the Southwest Pond Turtle and the California Brackishwater Snail. The first four of these are dependent on freshwater wetland and pond habitats. McClusky Slough is one of the largest of nine habitats where the federally endangered SCLTS is found. The CA Brackishwater Snail is found in both Elkhorn and Moro Cojo Slough marshes and tidal channels.

Elkhorn Slough's marshes provide important feeding and roosting habitat for a large variety of migrant and resident birds. Along the shores of the marsh are two heron rookeries, a small breeding population of Snowy Plovers, and nesting pairs of Golden Eagles, White-tailed Kites and many other species of raptors. It also serves as an important fish nursery, and functions as a sponge and filter for sediment and pollution from surrounding upland farms and residential uses. This function is particularly significant, as the mouth of Elkhorn Slough opens into one of the deepest and most productive oceanic resources along the California coast, the Monterey Submarine Canyon.

Upland Habitats

The surrounding uplands are no less diverse. Sheltering the estuary from the ocean is a series of largely intact sand dunes, most of which have been protected in public ownership. To the east of the estuary is a series of parallel ridges, known as Elkhorn Highlands, which have dense coast live





oak woodlands on north-facing slopes and maritime chaparral on south-facing slopes. Maritime chaparral is a community that is rare in California, and in Elkhorn Highlands it has a unique assemblage of plants found no where else. Rare plant species include Hooker's Manzanita, Pajaro Manzanita, Monterey Ceanothus, Eastwood's Goldenbush, Gairdner's Yampah and Yadon's Piperia. Though some fragmentation has occurred due to farming and residential development, the northern and eastern-most hills in Elkhorn Highlands contain healthy expanses of maritime chaparral.

The Biological Resources Map (Figure 4) shows critical natural communities which are a priority for protection in the Conservation Plan. These communities include coastal marsh, freshwater wetlands, riparian forests and maritime chaparral. Though coast live oak woodlands are a relatively common community in California, those associated with maritime chaparral have been considered as a priority for protection, as the two communities are often found intermixed in an ecological mosaic. The Biological Resources Map also shows documented occurrences of rare animal and plant species.

Agriculture

The farmlands surrounding the estuary are unique in California. The combination of deep, well-drained, sandy soils and a warm Mediterranean climate tempered by summer fog, allows for year-round production of crops like strawberries, cut flowers and artichokes. 10% of the watershed is planted in strawberries alone, and the watershed produces 10% of California's strawberries. The largest, most productive farms are concentrated in Springfield Terrace and Moro Cojo Slough areas. Smaller farms are scattered within the Carneros Creek and Elkhorn Highlands areas. Elkhorn Slough's farms are a vital component of the local and County economy, but they are also the major cause of sedimentation, a chief stress to marsh habitats. One of the challenges in Elkhorn Slough is to balance both agricultural and resource protection. Fortunately, protection strategies for the two are often complementary.

Scenic Viewsheds

Although much of the estuary is largely hidden from the public eye, the scenic panoramas of marshland, farm fields and forested uplands that unfold as one travels along Elkhorn Road, Hall/Tarpey Roads and Highway 1 are outstanding. Monterey County has designated three scenic routes in the area, including Highway 1, Highway 156 and portions of Elkhorn Road. The County has also made Elkhorn Slough an official "Scenic Waterway", as it is enjoyed by many in kayak and canoe. However, no protective land use regulations come with these designations. The Plan identifies additional scenic areas of concern, including the bluffs and bluff tops west of Elkhorn Slough, the hillsides east of Elkhorn Slough, the agricultural landscape along Carneros Creek, and Elkhorn Highland ridge tops.

IV. Major Land Uses, County Regulations and Land Use Trends

Land Use

There are over 5,550 legal parcels in the Monterey County portion of the watershed, on which approximately 75-80% have residences. Despite the high number of parcels, over 75% of the total watershed is largely undeveloped, a combination of farms and preserve lands. Approximately 4,260 acres (roughly 10%) of the watershed have been protected through agency and non-profit acquisitions. Most of the protected lands lie within or adjacent to Elkhorn Slough itself, with some in the Elkhorn Highlands and Moro Cojo areas.

Approximately 24% of the watershed is in cultivated agriculture. Relatively large family and corporate-owned farms with high-value crops are concentrated in the Springfield Terrace and Moro Cojo areas. Smaller farms, many operated by tenants, are found throughout the Carneros Creek valley, as well as in scattered patches throughout Elkhorn Highlands. Farms in the Elkhorn Highlands are often found in hillside areas with steep slopes (15-30+%).

Approximately 10% of the watershed consists of residential areas with lots under 5 acres in size. Most of these are clustered in the communities of Las Lomas, Prunedale, the southern portion of Aromas, and the Oak Hills subdivision along Highway 156. Five, ten and twenty acre lots are interspersed with larger agricultural parcels in the Elkhorn Highlands and Carneros Creek areas. Here the historic development pattern has been modest homes built in valley bottoms near existing roads. More recently, scattered development of larger, more expensive homes has occurred on south-facing hillsides and ridge tops.

Land Use Regulations

The majority of the Monterey portion of the watershed is within the Coastal Zone, and regulated by the Monterey County North County Land Use Plan (LUP). The LUP land use designations for the western portion of the project area (Springfield Highlands, Lower Moro Cojo and Elkhorn Slough areas) are either "Agricultural Preservation" or "Scenic and Natural Resource Recreation". Land use regulations are very restrictive here, and residential development is discouraged. On the other hand, regulations in Elkhorn Highlands and Carneros Creek zones are much less restrictive. Here, the land use designations, "Rural Density" and "Low Density", allow for residential development in all areas but wetlands, maritime chaparral and ridge tops. Densities range from 2.5 to 40 acres per unit. Appendix D provides a more detailed summary of land use regulations and jurisdictions which regulate land uses in the project area. Appendix E provides a table of significant land ownership patterns, conservation status, land use regulations and economic trends, by zone.

Economic and Regulatory Trends that will Influence Future Land Uses

Growth and immigration to coastal areas will increase pressure for development. Contributing factors include job growth in the Silicon Valley, desirability of the coastal climate, and overall population growth in the coastal counties. After several years of slow growth, the real estate market here is on the upswing, and land values are escalating. Undeveloped land in the Highlands

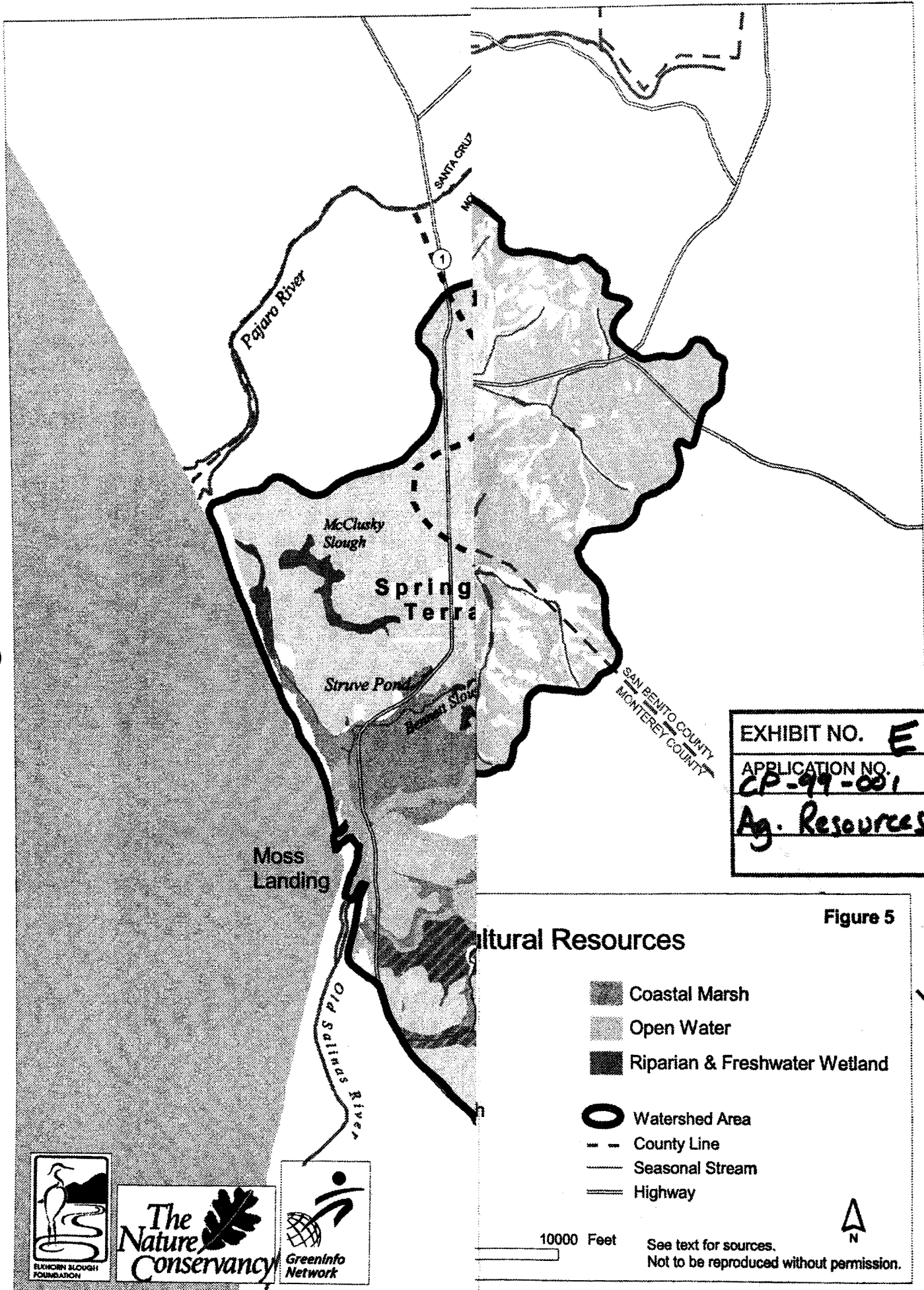






EXHIBIT NO.	E
APPLICATION NO.	CP-99-001
Ag. Resources	

Agricultural Resources

Figure 5

-  Coastal Marsh
-  Open Water
-  Riparian & Freshwater Wetland
-  Watershed Area
-  County Line
-  Seasonal Stream
-  Highway

10000 Feet

See text for sources.
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area is now priced at \$5,000 to 6,000 per acre. Recently a 200-acre Highlands farm near Las Lomas, called Triple M Ranch, was subdivided into 31 one-acre lots. A second proposal calls for a development surrounding the golf course near Los Lomas.

The uncertainty in the economics of strawberry production may phase out the smaller, more marginal farms in the Highlands. Highland farms are currently facing steep lease increases (as high as \$1,000 per acre, as opposed to \$300 per acre a few years ago) and volatile commodity prices. In addition, a recent restrictions on the use of methyl bromides, on which this cultivation relies, and a potential future ban, may further reduce the economic viability of hillside strawberry farming. If farmers abandon their farms, landlords who have become accustomed to high returns from strawberry leases may be tempted to sell their land for development. By contrast, strawberry and other cultivation in Springfield Terrace is carried out by larger, corporate farmers on more level and more productive agricultural lands, and are less likely to be impacted by falling prices. Cultivated land in Springfield Terrace ranges from 15,000 to 20,000 acre, compared to only \$6,000 per acre in Elkhorn Highlands.

Groundwater overdraft in the area is acute, and there appears to be no clear solutions on the horizon. Monterey County Water Resources Agency (MCWRA) has calculated the overdraft in Springfield Terrace to be 498%, and the Highlands area to be 96-137%. This overdraft has resulted in seawater intrusion in the aquifers, and the need for ever deeper wells. The Pajaro Valley Water Management Agency is committed to solving the problem by importing water, but this may prove infeasible due to recent voter initiatives restricting water fee increases and pipeline construction. Without imported water or large-scale retiring of fields, agriculture in many areas may no longer be viable, and may ultimately give way to residential development.

Monterey County's resource-protection regulations are strong, but enforcement is often weak. For example, the County has never exercised its authority to impose fines on landowners whose runoff from agricultural fields has accumulated on County roads. If the County imposed such fees, not only would County roads be free from soil runoff, but a major stress to Elkhorn Slough might be substantially reduced. Also, the County is uneven in its enforcement of ordinances which protect maritime chaparral and ridge top areas. Recent house construction on ridge tops and south-facing maritime chaparral hillsides conflicts with the County's scenic and resource protection ordinances, as well as its grading ordinances. County planners who review building permit applications are often unaware of the importance of maritime chaparral as a resource, or of the problems created when steep access driveways are constructed in fragile Highland soils.

V. Major Stresses and Sources of Stress to Resources

This project employed The Nature Conservancy's customary "3S" methodology for devising site-specific conservation plans. It involves identification of a site's most critical systems (also called "conservation targets" or "critical resources"), the stresses to these systems, and the sources of these stresses. Appendix F provides a detailed list of Elkhorn Slough's stresses and the sources of these stresses.

The most serious threats to Elkhorn Slough resources include the following:

- 1) inappropriate agricultural activities,
- 2) residential development,
- 3) groundwater overdraft, and
- 4) manipulation of marsh hydrology.

Inappropriate Agricultural Activities

Sediment and associated chemical accumulation in wetlands due to uncontrolled runoff from cultivated fields and access roads is the cause of the most serious stress to the Elkhorn Slough ecosystem. Although residential uses contribute, the major source of this sedimentation is steep hillside farms, primarily in the Elkhorn Highlands, and to a lesser extent, the Carneros Creek sub-watershed. This problem particularly impacts freshwater wetlands and ponds in the upper reaches of the Elkhorn Slough, which harbor sensitive amphibians, as well as riparian habitats in lower Carneros Creek. Due to the high value of crops in the area, cultivated agriculture has often been pushed to the edge of wetland habitats, without any buffer.

In Moro Cojo and McClusky Sloughs, agricultural activities are not only a source of sedimentation, but they have more directly resulted in actual natural habitat destruction and conversion. Diking, ditching, filling, and soil compaction from grazing have turned much of Moro Cojo's wetlands into grasslands. Portions of McClusky Slough wetlands have been converted to agricultural production, though several of the surrounding landowners are currently working to buffer and restore wetland areas adjoining agricultural lands, and are discussing ways of increasing water retention and recharge in the McClusky system.

Residential development

Recent residential development on Elkhorn Highland ridges is destroying and fragmenting maritime chaparral and associated oak woodland habitats, as well as adjacent marsh habitats. Site development, especially the construction of steep access drives, is creating severe soil erosion and encouraging the spread of invasive pampas grass. Related stresses include predation on sensitive marsh animal species by pets and feral animals, nutrient loading in marsh habitats caused by runoff from lawns and corrals, and suppression of the natural fire regime, on which maritime chaparral depends for its long-term viability.

Groundwater overdraft

A severe overdraft of groundwater from agricultural wells has caused aquifers to retreat and seawater to intrude. Without feasible sources of imported water, and/or a willingness of landowners to voluntarily cut water use, the overdraft may eventually result in loss of productive farmlands, especially those in Springfield Terrace, and future conversion of farms to residential uses. Another result may be local de-watering of freshwater habitats, such as McClusky Slough, and the freshwater "fingers" in Elkhorn Slough.

Manipulations of marsh hydrology

The opening of Elkhorn Slough at Moss Landing Harbor in 1947 has subjected this once protected estuary to the full force of Monterey Bay's tides. This daily tidal scour is slowly eroding the site's most extensive marsh habitats: Salicornia (pickleweed) beds. At the current rate of erosion, it is possible that most of the Salicornia beds will be converted to mud flat habitats in 50 to 100 years. However, current research is inconclusive regarding how fast this process is actually taking place, and whether there are other factors, such as a possible subsidence of Elkhorn Slough after the Loma Prieta earthquake, which will have an even greater impact on the long-term composition of Elkhorn Slough's marsh habitats. Other hydrological manipulations include the construction of channels, levies and tide gates (although some tide gates have been successfully used to restore the freshwater fringes of Elkhorn Slough). Finally, inadequately-sized culverts beneath Route 1 has caused peak floodwaters of the Pajaro River to back up into the Elkhorn Slough. Contaminants from the Pajaro River may have been responsible for the failure of a breeding colony of Caspian Terns in Elkhorn Slough in 1995.

VI. Conservation Opportunities and Partnerships

Opportunities for protecting critical biological, agricultural and scenic resources in Elkhorn Slough include both ongoing and potential conservation programs. Recently, several new conservation organizations have become involved in protecting Elkhorn Slough, and potential opportunities exist for collaborations between the various agencies and non-profit conservation organizations. There are also new funding sources, which are summarized in Appendix F. Appendix H provides a list of key conservation organizations and agencies.

Ongoing Programs for Permanent Protection of Significant Resource Lands - Public and Private Partnerships

As mentioned earlier, the majority of Elkhorn Slough marsh has already been protected, and is either owned by The Nature Conservancy (TNC) or the CA Department of Fish and Game. In addition, the Elkhorn Slough Foundation (ESF), in partnership with the Coastal Conservancy, has recently purchased an important wetland parcel in the lower Moro Cojo Slough, and has begun negotiations with several other landowners in the area.

Since the integrity of wetlands is so dependent on management of surrounding uplands, Elkhorn Slough conservation efforts have begun to focus on protecting upland resources. Several years ago, TNC, with funds from the Coastal Conservancy, purchased Azevedo and Blohm Ranches. On each of these properties, natural habitats are being restored, along with appropriate agricultural buffers. The Monterey County Agricultural and Historic Land Conservancy (MCAHLC) will eventually take sole ownership to the agricultural portion of Azevedo Ranch (it now co-owns this with TNC). TNC and the CA Wildlife Conservation Board (WCB) secured easements on portions of Porter Ranch, which has oak woodland habitat as well as the rare Santa Cruz Tarplant. These lands are managed by ESF. Finally, the ESF and the Big Sur Land Trust, with a grant from the Packard Foundation, recently purchased Long Valley, one of the largest unfragmented stands of maritime chaparral and associated coast live oak woodlands. So far, conservation purchases by non-profit and agency or foundation partners have resulted in protection of over 4,260 acres, which represent just under 10% of the project area.

Today there are increasing opportunities for ESF and other private non-profit and agency partners to raise funds for ongoing and new conservation programs. So far, these organizations have been relatively successful in obtaining funding, even though Elkhorn Slough has remained a relatively "hidden" resource relative to its famous County neighbors, Big Sur and the Monterey Peninsula. In the future, a marketing program geared to raising the visibility of Elkhorn Slough on local, regional and state-wide levels will help provide the political support necessary to secure funding of its many conservation programs.

Implementation of Best Management Practices - Existing NRCS and RCD Programs

In 1995 a team consisting of the Monterey County Resource Conservation District (RCD) and the local office of the National Resources Conservation Service (NRCS) started the "Elkhorn Slough Watershed Project". The goal of the program is to reduce sedimentation and chemical transport

into Elkhorn Slough by 50% over an eight-year period. To accomplish this, the project's goal is to implement "Best Management Practices", as specified by NRCS-designed agricultural management plans, on 120 targeted farms. These farms are located in all areas of the Elkhorn Slough watershed where erosion problems are most acute. Typical plans call for construction of proper drainage along access roads, and creation of vegetated buffer strips and sediment basin at the base of fields. So far, the NRCS/RCD team has helped 60 of the 120 farms implement Best Farm Practices, and the team is optimistic that they will reach out to the others before the program's funding is exhausted.

To provide an incentive to local farmers to implement the NRCS/RCD plans, Sustainable Conservation, a non-profit from San Francisco, recently helped establish a permit streamlining, A one-stop-shopping application process. The permit streamlining program allows farmers to comply with all permits required for erosion control and natural habitat improvements by working through a single agency, (in this case, the NRCS), in return for implementing NRCS agricultural management plans.

Proposed Farmer training program - Rural Development Center and NRCS

A non-profit farmer-advocacy group called the Rural Development Center (RDC), is involved in providing Best Management Practices assistance to mostly Hispanic farmers in the Salinas Valley. The RDC, in partnership with a national group called Association for Community Based Education, has proposed a farmer training facility for the Elkhorn Highlands, based on an existing facility in the Salinas Valley. The purposes of the proposed facility are 1) to train existing farmers in sustainable techniques on hillside farms in order to carry out the NRCS/RCD program objectives of reducing sediment and chemicals entering the Elkhorn Slough, 2) to provide a place to stage on-going outreach for farmers and to integrate the work of local agricultural organizations and 3) to promote research and education of sustainable agriculture. The project is designed to carry out the work of the NRCS/RCD Elkhorn Slough Watershed Project by various groups once the USDA portion of the funding expires. Currently the RDC is negotiating to purchase Triple M Ranch, the Highlands property that was recently approved for residential development. Placement of conservation easements on this property will protect the agricultural and natural values of the land and preclude future development.

Potential Role in Resolving Groundwater Overdraft Problem - MCAHLC, ESF, RCD, NRCS, California Association of Family Farmers, (CAFF) and Sustainable Conservation Partnerships

As the groundwater problem becomes more acute, there is an opportunity for conservation organizations to act as a catalyst in helping restore aquifers while protecting agriculture and natural habitat lands. Marginal portions of farms might be purchased, natural habitat restored and buffers provided, and the underlying water rights transferred to more productive, resource-compatible farming areas. In addition, groups such as Sustainable Conservation or MCAHLC might assist agencies and stakeholders to initiate a sustainable groundwater plan. Other proposed conservation programs include creating a water credit program for farmers willing to temporarily retire farming and flood portions of McClusky Slough and other areas of Springfield Terrace to increase water recharge.

Potential Role in Encouraging Involvement by Local Citizens in the Monterey County Planning Process

Several organizations, such as the Elkhorn Slough National Estuarine Research Reserve and the RCD, have initiated outreach to local citizens regarding conservation issues within the watershed. There is an opportunity to expand this outreach to inform local citizens of how they can become involved in the Monterey County's planning process, and provide their input in the County's review of activities that may affect the local environment. Potential vehicles for this involvement include the North County Advisory Committee, the Ad Hoc North Monterey County Water Issues Advisory Committee and the Elkhorn Slough National Estuarine Research Reserve Advisory Committee, as well as the potential to form a new local citizens group which can review County land use proposals in the watershed.

VII. Conservation Zones, Goals and Strategies

Recommended conservation strategies are organized conceptually around five conservation zones. Each of these zones has viable occurrences of one or more of the critical resources identified for protection in this Plan. Together, these conservation zones form an interlinked landscape that is the conservation focus of the Plan. Figure 6 shows the boundaries of the conservation zones.

Appendix I shows the same Conservation Zones Map with underlying critical resources. The five conservation zones comprise 22,500± acres, which is approximately 50% of the Elkhorn Slough watershed.

The conservation zones represent the most intact occurrences of the critical resources within the watershed. If protected, the land within these zones will provide sufficient natural habitat to sustain the Elkhorn Slough ecosystem into the future. Areas left white on the Conservation Zones Map are either already highly fragmented, or too isolated to provide viable habitat for critical resources. However, some of these areas are sources of stress to the resources within the conservation zones, and accordingly there are strategies which focus on these adjacent areas.

Conservation goals which are common to all zones include:

- 1) Critical resources and ecological linkages
- 2) Eliminating or reducing major stresses
- 3) Restoring and enhancing biological function; and
- 4) Educating stakeholders about the importance of managing Elkhorn Slough's resources

For each zone, the Plan identifies strategies which address the most significant threats mentioned earlier:

- inappropriate agricultural activities
- residential development
- groundwater overdraft
- manipulation of marsh hydrology

These strategies are largely derived from the input by workshop participants. Each strategy was evaluated for its effectiveness in abating stresses and its likelihood for success.

The following is a description of each zone, its critical biological resources, conservation goals, stresses and sources of stress, and strategies to achieve conservation goals.

Elkhorn Slough Zone - includes salt, and brackish and freshwater marshes and ponds of Elkhorn Slough, as well as freshwater marshes and ponds in the upper reaches of Elkhorn Slough.

Conservation goals include:

- Protect remaining privately-held marshes and adjacent freshwater wetlands and ponds
- Improve water quality through reduction of runoff from surrounding farmlands

- Abate erosion of marshes due to tidal scouring
- Maintain a balance between freshwater and saltwater marshes.

Major stresses and their sources include:

- Loss of habitat, habitat quality and species diversity due to sediment accumulation, pollution and turbidity from uncontrolled agricultural runoff
- Loss of marsh habitat due to tidal scour

Strategies include:

- Purchase remaining unprotected marsh parcels, and provide suitable buffers between cultivated fields and wetlands
- Restore areas suitable for habitat restoration
- Provide on-going farm assistance and outreach to ensure 50% reduction in sedimentation into Elkhorn Slough
- Integrate results of water quality monitoring with agricultural assistance programs in order to measure relative success of programs
- Identify and implement actions and policies that:
 - reduce tidal scouring
 - increase freshwater marsh where possible
 - prevent future breach of floodwaters from Pajaro River into Elkhorn Slough
- Provide outreach programs that inform local decision makers, real estate brokers, buyers, farmers and landowners about Elkhorn Slough's critical resources and ways of implementing resource-compatible land use management

Moro Cojo Slough Zone - includes the marshes of Moro Cojo Slough and surrounding farmlands.

Conservation goals include:

- Protect marshes and adjacent freshwater wetlands and ponds
- Restore lands suitable for natural habitat
- Protect productive agricultural lands surrounding marshes

Major stresses and their sources include:

- Loss and conversion of habitats due to diking, ditching and grazing
- Decline of sensitive amphibian species due to sedimentation and contamination from uncontrolled agricultural runoff
- Future conversion of agricultural lands to development

Strategies include:

- Acquire key lands to protect and restore marsh habitat; and, where possible, utilize land swaps to secure further protection of natural habitat lands
- Acquire fee or easements on viable farmlands, especially those surrounding wetlands through fee or conservation easement purchase
- Provide adequate wetland buffers
- Restore natural habitat where suitable

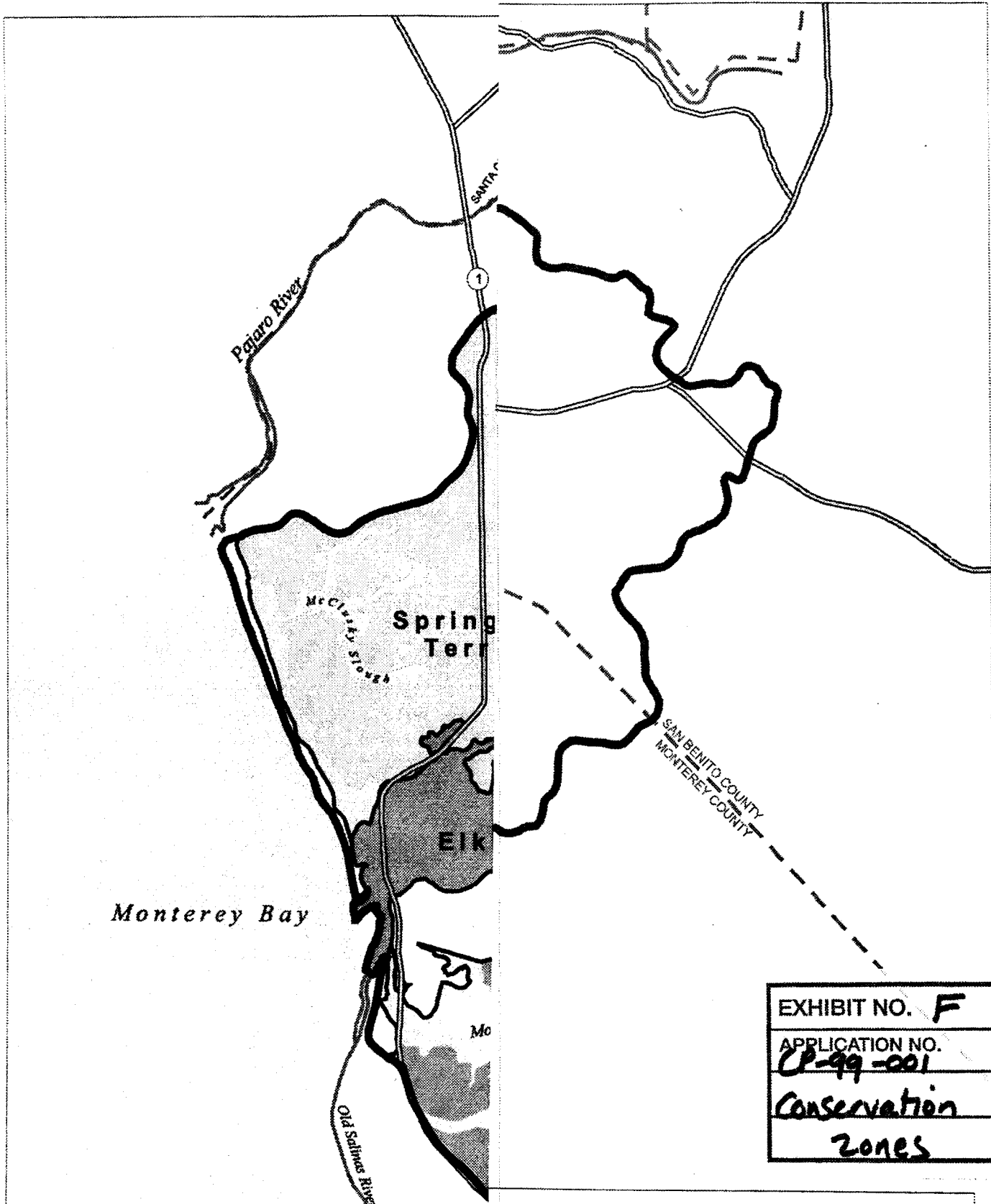


EXHIBIT NO. F
APPLICATION NO. CP-99-001
Conservation Zones

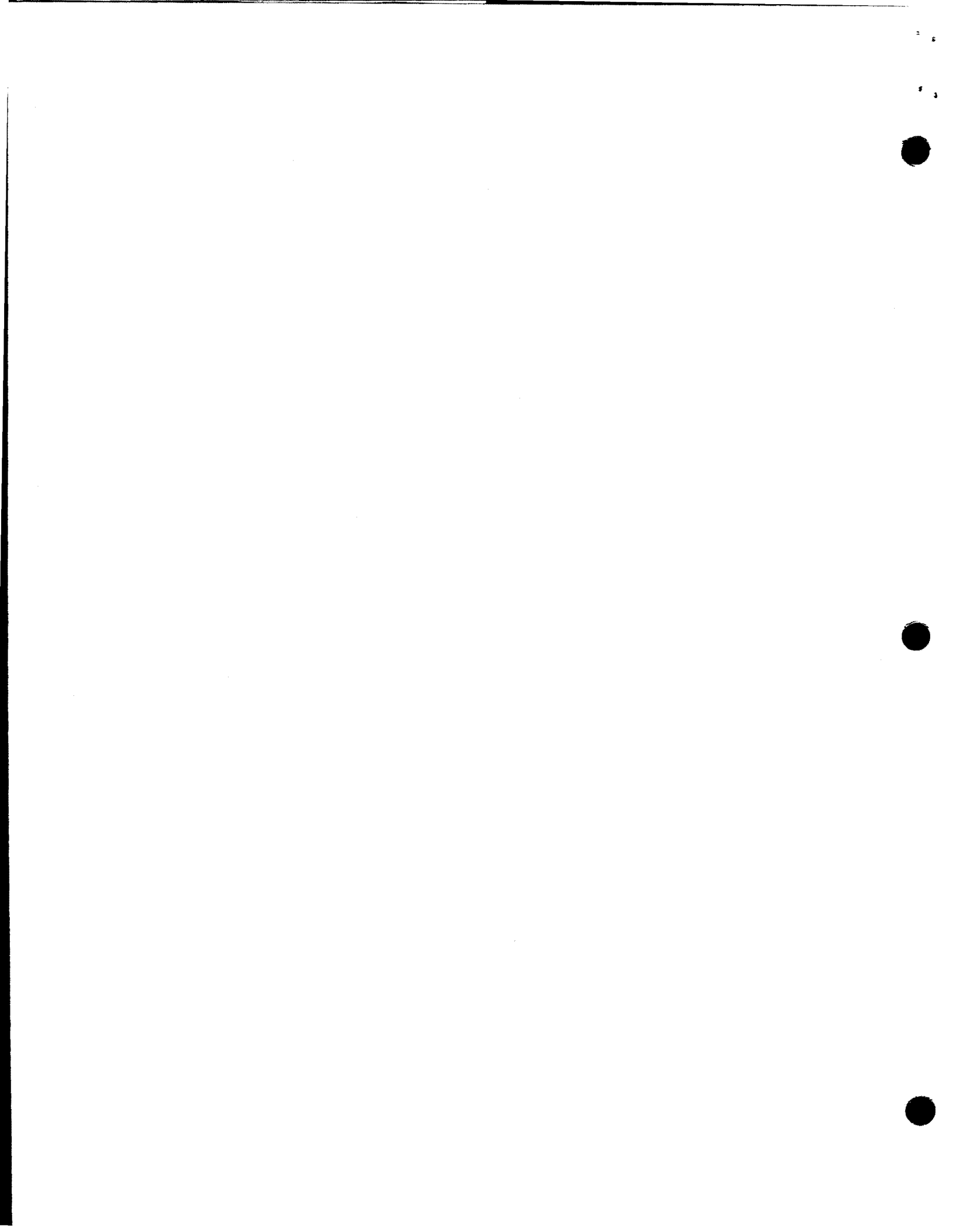
h Conservation Zones

Figure 6

5000 10000 Feet

N





Springfield Terrace Zone - includes the McClusky Slough freshwater wetland system, surrounding agricultural lands, and two upper drainages of McClusky Slough that could be restored as upland habitat for rare amphibians.

Conservation goals include:

- Protect and restore McClusky Slough marsh habitat
- Recover sensitive amphibian populations to sustainable levels
- Restore groundwater aquifers
- Protect productive agricultural lands
- Protect scenic bluffs.

Stresses and sources of stress include:

- Habitat loss and modification of McClusky Slough wetlands from adjacent cultivation
- Long-term decline in agricultural viability due to overdraft and seawater contamination of aquifers, leading to conversion to development
- Degradation of bluff drainages due to uncontrolled storm water runoff from cultivation in or at the edge of bluffs, and potential stress due to future residential development

Strategies include:

- Work with landowners, Pajaro Valley Water Management Agency (PVWMA), and other stakeholders to develop a groundwater plan for Springfield Terrace which: 1) provides incentives to restore and maintain groundwater at appropriate levels, 2) protects natural habitats and 3) improves water quality
- Acquire conservation easements on farms with high natural habitat value
- Encourage participation in the Williamson Act and the Agricultural Securities Zone Act programs
- Protect bluffs through purchase of fee or conservation easements
- Purchase cultivated fields on bluffs and restore
- Provide proper stormwater retention from cultivated fields before runoff reaches bluff and McClusky Slough drainages

Elkhorn Highland Zone - The Highlands offer one of the few areas of intact upland habitats surrounding Elkhorn Slough. The northern and eastern portion of this zone includes large blocks of connected and unfragmented maritime chaparral, associated oak woodlands, grazing lands and cultivated fields. The southern portions are fragmented by low density residential development.

Conservation goals include:

- Protect large connected blocks of maritime chaparral and associated oak woodlands
- Reduce erosion and runoff on cultivated fields
- Protect grazing lands and cultivated fields on more gentle slopes
- Restore steep cultivated slopes to natural habitat
- Control invasive weeds
- Future residential development is sited to avoid natural habitat areas and ridgetops.

Stresses and sources of stress include:

- Habitat fragmentation and degradation due to residential development, long-term fire suppression and invasive weeds
- Loss of topsoil and agricultural viability due to farming on steep slopes
- Drop in aquifer levels due to overdraft of groundwater
- Degradation of viewsheds due to residential development on eastern hillsides and ridge-tops, agricultural erosion and invasive weeds

Different strategies are recommended for the northern and southern portions of the zone.

Northern-portion strategies include:

- Purchase fee or conservation easements to protect relatively large, connected parcels with intact natural habitats
- Use conservation easements to retire the most erosion-prone portions of cultivated fields and, where appropriate, create appropriate buffers between agricultural fields and the edge of habitats and seasonal streams
- Wherever cultivated fields are taken out of production, immediately control weeds, establish a cover crop and/or restore natural habitat
- Provide incentives to hillside farmers to utilize sustainable methods of cultivation

Southern-portion strategies include:

- Develop outreach and incentive programs that help landowners in primarily residential areas manage maritime chaparral areas wisely

Strategies for all areas in the Elkhorn Highlands Zone include:

- Educate local residents and landowners to promote effective monitoring of County enforcement of land use regulations designed to steer development away from maritime chaparral and ridge-tops
- Establish and implement a plan to eradicate and control invasive weeds
- Work with landowners to develop and implement management plans for intermittent streams

Carneros Creek Zone - includes Porter Marsh and Porter Ranch, the 100 year floodplain of Carneros Creek with remnant riparian forest. The riparian forest serves as a major filter and collector for sediment and pesticides that erode from surrounding hillside farms.

Conservation goals include:

- Protect and restore the Carneros Creek riparian corridor
- Protect viable agriculture on more gentle slopes
- Protect scenic viewsheds of Hall and Tarpey Roads
- Locate new residential development away from scenic viewsheds, viable agricultural lands and natural habitat areas
- Retain runoff from fields to restore wildlife and enhance water recharge and quality

Stresses and sources of stress include:

- Loss of riparian habitat due to channelization and conversion to agriculture

- Flooding of farmlands due to siltation and loss of riparian habitat
- Loss of natural habitat and species diversity due to sediment accumulation and turbidity from uncontrolled agricultural runoff
- Potential loss of viable agriculture and scenic viewsheds from development
- Changes in hydrologic regime in Porter marsh

Strategies include:

- Support the ongoing Carneros Creek CRMP carried out by the NRCS, RCD and local Carneros Creek Association; implement recommendations
- Protect viable farmlands and viewsheds by purchasing fee or conservation easements, with priority to lands along Carneros Creek
- Restore riparian corridor along Carneros Creek
- Provide adequate vegetated buffer strips between agriculture and natural habitat areas
- Monitor County enforcement of existing land use controls that are designed to steer improvement away from maritime chaparral and ridge-top viewsheds
- Restore and enhance Porter Marsh

Areas Outside Conservation Zones

Strategies include:

- Work with San Benito County to enact regulations that prevent uncontrolled runoff from new development
- Work with Granite Rock Company and San Benito County to ensure that dams which hold mining overburden deposited in Muertos Canyon will not pose a future threat to the Elkhorn Slough due to dam failure
- Work with local residents to develop intermittent stream management plans for Live Oak, Strawberry, Paradise, Hidden and Long Creeks.

VII. Three Year Implementation Plan and Budget

Of the strategies listed above, some are specific to conservation zones, while others are common to many. They all fall within the following broad categories:

- 1) Raise the visibility of Elkhorn Slough watershed on regional and state-wide levels in order to secure political support for funding programs recommended in the Plan
- 2) Continue to build the capacity of local organizations to implement the Plan
- 3) Acquire fee or conservation easements on key habitat-rich parcels and surrounding agricultural lands
- 4) Restore and enhance natural habitats where suitable, and re-establish ecological linkages
- 5) Provide ongoing incentives and assistance to farmers to improve management practices that are compatible with biological resources
- 6) Educate community on conservation issues and encourage their involvement in the County Planning Process
- 7) Educate and mobilize decision makers and landowners to better understand and manage resource lands

Because it is unlikely that future funding for conservation programs in the Elkhorn Slough watershed will be sufficient to meet all goals at once, the Plan recommends first steps or actions that are key in meeting long-term conservation goals. Also provided are organizations that would likely be involved in the implementation, as well as projected costs. Appendix K, at the end of this report, provides a table summary of these recommended actions.

Implementation Category 1: Raise the visibility of Elkhorn Slough on regional and state-wide levels in order to secure political support for funding programs recommended in the Plan

Action 1: Develop and implement a marketing plan for the Elkhorn Slough and its programs

Discussion: The purpose of this will be to increase regional and state-wide awareness of the Elkhorn Slough and its natural resources, in order to promote and gain funding for its long-term protection. ESF will develop a marketing plan which might include 1) a media package, 2) an information package for state legislators, 3) a slogan or message for Elkhorn Slough and 4) signs that announce when one is entering the Elkhorn Slough watershed.

Projected

<u>Costs:</u>	Develop marketing plan, media and legislators package:	\$ 80,000
	Create 10 watershed signs	<u>20,000</u>
	Total:	\$100,000

Implementation Category 2: Continue to build the capacity of local organizations to implement the Plan

Action 1: Provide further support to ESF as needed to coordinate existing and proposed conservation programs, as well as to acquire and manage Elkhorn Slough conservation lands.

Discussion: The Plan recommends ongoing support of ESF as a coordinating partner in the promotion and implementation of conservation actions in the Elkhorn Slough watershed. The plan also calls for increased support for the land trust function of ESF in acquiring and managing conservation lands and easements throughout the Elkhorn Slough watershed.

Since its establishment in 1982, the ESF has played an important role in promoting the conservation of natural resources in Elkhorn Slough and Monterey Bay. ESF and TNC have been strong partners in the coordination of land management and restoration on hundreds of acres of Slough watershed lands. ESF has been a committed partner working with diverse agencies, organizations and individuals to focus on the broad management issues facing Elkhorn Slough watershed.

With a scientific grounding and knowledge of ecological function, a track record in successful conservation, experience in conservation land management and ability to foster cooperative approaches to problem solving with diverse groups, ESF is poised to expand its responsibilities as a land trust and in implementing this conservation plan.

There are three recommended roles for ESF: 1) to serve as a catalyst in the coordination and implementation of this conservation plan with local agency and non-profit partners, 2) to acquire, with appropriate partners, key conservation properties and 3) to manage the existing conservation holdings of TNC and ESF, along with new acquisitions and easements.

To acquire lands identified in this Plan, ESF will require funding for a full-time project manager, and funding for contract legal assistance on specific acquisition projects.

ESF, with support from the Packard Foundation and TNC, is building capacity to take on responsibilities for TNC properties and the recently acquired Long Valley and Moro Cojo Slough lands. ESF has established a stewardship endowment to ensure a revenue stream for long-term care and protection of these conservation lands. TNC has an endowment established for lands which is transferrable when ESF takes title to TNC lands. Augmenting these combined resources into an endowment sufficient to protect and manage the all of the Slough's conservation lands is a critical need of ESF.

Projected Costs: Land Acquisition:
 Project Manager, \$65,000/year over 3 years: \$ 195,000
 Legal Costs related to Land Acquisition, 3 years: 150,000

Land Management/Endowment:
 Endowment needs for long-term management of conservation lands:
 Fund raising to date: \$340,000
 TNC existing endowments: 560,000
 Total existing sources: 900,000
 Projected annual management costs: 150,000
 Total endowment needed to sustain annual management costs:
 \$3 million
 Endowment shortfall: 2,100,000
 Total costs: \$ 2,445,000

Action 2: Provide ongoing support as needed to allow MCAHLC, NRCS, RCD, RDC and other partners to implement the Plan’s agricultural conservation actions.

Discussion: MCAHLC needs on-going support to partner with ESF in the purchase of fee and conservation easements and to assume management responsibility for lands that have an agricultural component. The NRCS, RCD, RDC and other partners also need on-going support to continue to provide assistance to farmers who desire to change to Best Management Practices, and to provide outreach programs such as RCD’s current CRMP program in the lower Carneros Creek watershed (see Implementation Category 4, below)

Projected Costs: Amount to be determined by agricultural partners

Action 3: Provide on-going support to RCD to work with local residents to develop intermittent stream management plans for seasonal streams

Discussion: RCD has been working with local residents and farmers to create a “Coordinated Resource Management Program” (“CRMP”) in the lower Carneros Creek watershed. Some of the objectives/actions of this program include 1) prevention of erosion and sedimentation by promoting BMPs, 2) prevention of flooding by increasing on-site detention of flood waters, 3) restoring water quality by preventing agricultural chemicals from reaching marshes and 4) improving water quantity by increasing water recharge. The purpose of this is to secure funding as necessary which will allow the RCD to develop CRMP’s with local residents in the following intermittent stream areas: Strawberry, Hidden, Long Valley, Live Oak and Paradise Creeks. In addition, RCD should be funded to develop a CRMP for the upper Carneros Creek watershed (similar to its existing CRMP in the lower watershed).

Projected Costs: To be determined by the RCD

Implementation Category 3: Acquire fee or conservation easements on key habitat-rich parcels and surrounding agricultural lands (note - these are the highest priorities for acquisition in the first three years, though other opportunities may arise which may equally meet conservation objectives)

Action 1: Acquire wetland portions and buffers on three parcels in Moro Cojo Slough

Discussion: ESF, in partnership with the Coastal Conservancy, MCAHLC and/or other partners, will continue to acquire marsh-portions of parcels in Moro Cojo Slough, with priority on parcels located between the Catellus property and the railroad. This includes 280 acres of marshlands and buffers. Where possible, use fee or conservation easements acquisition to secure buffers on surrounding agricultural lands.

Projected Costs: 300± acres of marsh and buffer @ \$3,500/acre = \$1,050,000
(assumes fee acquisition of wetland portions of farms, and conservation easements over a variable buffer strip averaging 50 feet in width)

Action 2: Acquire conservation easements on parcels in Elkhorn Highlands "northern crescent" where maritime chaparral habitat is most intact

Discussion: To permanently protect the watershed's best stand of connected maritime chaparral, ESF and/or its conservation partners will purchase fee or conservation easements on habitat-rich parcels in the Elkhorn Highland's "northern crescent." Highest priorities would go to parcels that have connections to corridors of intact maritime chaparral habitat and/or that have portions of the property where incompatible land uses must be retired. In some instances, it may be possible or desirable to purchase just the natural habitat portion of the property, or to allow some limited, envelope-restricted development to subsidize this protection. The northern crescent also includes 15-20 smaller parcels, ranging from 5 to 20 acres in size, where landowner outreach and monitoring strategies will be more appropriate for long-term protection (see below). Figure 7 illustrates how a hypothetical Highland farm may be protected through a carefully crafted conservation easement.

Projected Costs: 1,400± acres @ \$3000/acre = \$4,200,000
(assumes conservation easements purchased on all portions of Properties)

Action 3: Complete acquisition of Elkhorn Slough marshlands

Discussion: Although the majority of Elkhorn Slough marshlands are protected, several parcels remain in private ownership. In most cases, these parcels include surrounding upland portions, which can remain in private ownership with appropriate agricultural buffers.

Projected Costs: 300± acres @ \$3,000 per acre = \$900,000

Limited residential development may be appropriate on gentle slopes, away from viewsheds, ridge tops and resource areas. Carefully site buildings and driveways to ensure least impacts from grading.

Long-term protection of maritime chaparral and oak woodlands may be assured through conservation easement and/or fee purchase of resource lands.

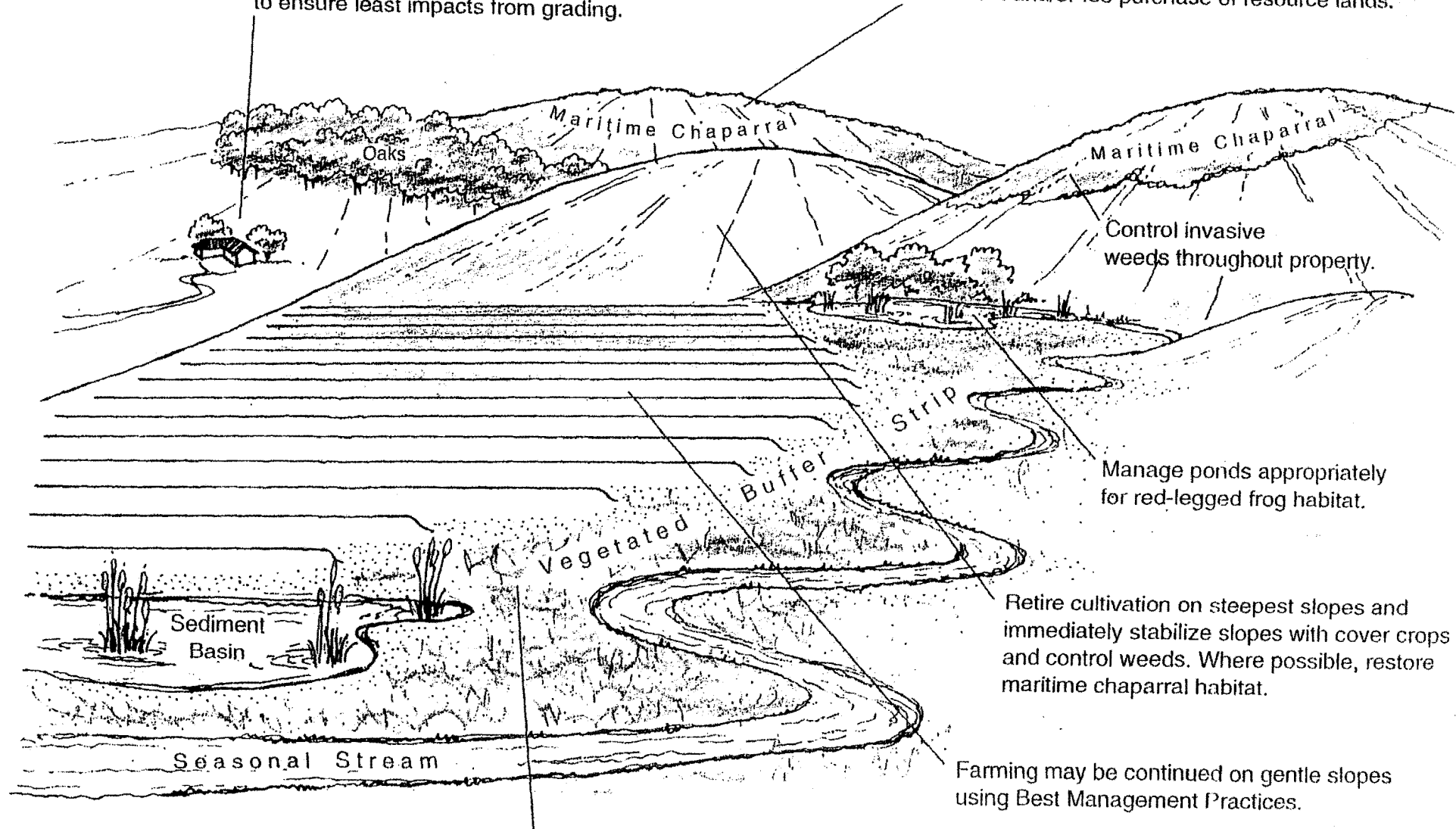


Figure 7: Conservation Easement on a Hypothetical Elkhorn Highlands Farm

Action 4: Acquire conservation easements on bluff and bluff top portions of properties north and west of Elkhorn Slough

Discussion: These actions will 1) protect bluffs and their drainages from further erosion, 2) retire existing cultivation within bluffs, 3) prevent sediment and agricultural chemicals from entering the Elkhorn Slough and 4) protect scenic viewsheds.

Projected Costs: 500± acres @ 5,000/acre = \$2,500,000

Action 5: Acquire conservation easements to secure buffers on agricultural properties on the southern edge of Elkhorn Slough

Discussion: ESF and MCAHLC will acquire a vegetated buffer between cultivated fields and the wetland edge, and prevent sediment and agricultural chemicals from entering Elkhorn Slough.

Projected Costs: 20± acres @ \$5,000/acre = \$100,000
(assumes conservation easements purchased on only a 50-foot wide buffer strip)

Implementation Category 4: Provide ongoing incentives for farmers to improve management practices so they are compatible with biological resources

Action 1: Sustain and integrate agricultural assistance and monitoring programs

Discussion: These actions are designed to reduce one of the Elkhorn Slough's greatest stresses, sedimentation and contamination from agricultural runoff. It is important to both continue support for programs which help improve agricultural practices, and to make sure such programs are carefully integrated and coordinated. Programs include 1) the NRCS Elkhorn Slough Watershed Project (120 targeted farms, goal of 50% reduction in sediments entering Elkhorn Slough, funding expires in two years), 2) RCD's CRMP projects, 3) Azevedo and Blohm Ranch demonstration projects, 3) ESNERR and MCWRA Elkhorn Slough Monitoring Program, 4) Watershed Institute's habitat restoration programs, 5) Sustainable Conservation's Permit Streamlining Program, 6) Rural Development Center's (RDC) farmer training programs, both existing and proposed, and 7) (proposed) NRCS/RCD proposed farmer accreditation and model lease programs.

While each of these programs have met with considerable success, there is much to be gained by ensuring better integration among the partners and the programs, and incorporating specific habitat protection and conservation goals where appropriate.

To that end, develop a coordinated, multi-purpose outreach program which is reflected in an MOU that:

- Builds on the NRCS Elkhorn Slough Watershed Project and RCD CRMP Programs
- Serves as a model for an integrated watershed-wide approach that will influence future NRCS and other agency priorities
- Integrates assistance programs with new biodiversity and other agency biological conservation programs as proposed in this Plan
- Integrates water quality monitoring programs with field assistance programs to measure success in reduction of sediments and pollutants in Elkhorn Slough
- Secure sustained funding for these integrated programs

Projected Costs: Agricultural partners to jointly determine amount required

Action 2: Participate in forums that seek to solve the groundwater overdraft problem, and ensure that natural resource protection and restoration is an integral part of any solution.

Discussion: ESF, in cooperation with its partners and the community, should participate in developing a solution to the groundwater overdraft problem. Three possible actions include 1) working with stakeholders to develop solutions that include creation of recharge areas with natural habitat value, 2) encouraging implementation of land management practices that conserve water and reduce runoff and 3) acquiring interests in properties that can provide recharge areas, reduction of groundwater pumping and improvement of natural habitats.

Projected Costs: Costs to be covered by support for new ESF project manager (described above in Category 2, Action 1)

Implementation Category 5: Educate community on conservation issues and encourage their involvement in the County Planning Process

Action 1: Provide workshops and information exchange for local residents interested in reviewing County land use decisions that affect Elkhorn Slough watershed's resources

Discussion: The Conservation Plan should serve as a blue-print for County land use decisions which affect the Elkhorn Slough's resources. While the County has relatively strong environmental protection regulations in place to protect Elkhorn Slough, these are not always enforced. To increase adherence to County policies, it would be useful to provide education and outreach to the local community on conservation issues and the County's planning process. In particular, opportunities exist for local citizens and the agricultural community to work with the North County Advisory Committee and the Ad-Hoc North Monterey County Water Issues Advisory Committee to incorporate conservation and natural habitat concerns into their review process, and to assist the County in its upcoming North County General Plan update.

A further recommendation is to provide the County with pre-planning studies in areas where resources are at stake. In particular, this would be useful in protecting areas where relatively small undeveloped parcels cover maritime chaparral corridors in the Elkhorn Highlands, and where it is impractical to purchase multiple conservation easements. Creation of a "green build-out" plan would show the County where development of existing lots could occur that is both sensitive to ridge tops and maritime chaparral, and consistent with County ordinances, while respecting landowner's rights to use their land.

<u>Projected Costs:</u> Build local neighborhood involvement in land use decisions by providing education/outreach to local community on conservation issues and involvement in County planning process:	\$ 50,000
Review regulations and develop a green build-out plan for critical corridors:	<u>50,000</u>
<u>Total Costs:</u>	\$100,000

Implementation Category 6: Restore and enhance natural habitats where suitable, and re-establish ecological linkages

Action 1: Restore marsh habitat in Moro Cojo Slough

Discussion: The Moro Cojo Slough Management and Enhancement Plan calls for restoration of seasonal freshwater habitats, and agricultural buffers. To carry out the recommendations in that plan, the Watershed Institute will work closely with landowners to develop appropriate buffers both to protect remaining cultivated fields from tidal flows and flooding, and to protect wetlands from agricultural runoff.

Projected Costs: 280± acres X \$1000/acre for drill seeding = \$280,000

Action 2: Develop and Implement Invasive Weed Eradication Plan

Discussion: The spread of pampas grass has recently become a serious problem, particularly in the Elkhorn Highlands area. It has covered large areas of fallow fields, such as in the El Chamisal and Hambey properties, and is a particular threat to maritime chaparral habitat, where it establishes itself in any disturbed areas, even small animal trails. ESF and ESNERR will jointly develop an Invasive Weed Eradication Plan which may include 1) eradication and prevention measures both on public and private lands, 2) public outreach workshops and 3) research of potential measures Monterey County can take to ensure weed control on fallow lands.

Projected Costs: (plan only) \$ 25,000

Action 3: Restore Two Key Elkhorn Highland Properties

Discussion: Many of the Highland properties that will be protected by fee or conservation easement purchase will require restoration to protect maritime chaparral and reduce further erosion and weed invasion. Lands taken out of production on steeper slopes, or lands that are already fallow, will require immediate erosion stabilization and weed control, and, where appropriate, eventual restoration to maritime chaparral. Some ponds and wetlands may require mechanical removal of sediment, restoration of wetland vegetation, and protection from future erosion. For each protected property, ESF, in partnership with the Coastal Conservancy and Watershed Institute, will assess the restoration needs of each property and secure needed funding for that restoration. The El Chamisal and Hambey properties could serve as priority demonstration restoration/weed control projects.

<u>Projected Costs:</u> Restoration assessment:	\$ 50,000
Restoration/Weed Control on Hambey and El Chamisal Properties:	
650± acres @ \$2,500/acre =	<u>1,625,000</u>
Total costs:	\$1,675,000

Action 4: Restore Porter Marsh

Discussion: As part of the negotiations in acquiring Porter Marsh, Monterey County required a restoration plan be implemented in the near future. The purpose of this would be to determine what costs would be involved, and to fund and carry out the project.

Projected Costs: To be determined

Implementation Category 7: Educate and mobilize decision makers and landowners to better understand and manage resource lands

Action 1: Provide workshops for decision makers, landowners and other stakeholders regarding importance of natural habitats throughout the Elkhorn Slough watershed

Discussion: The purpose of these workshops, provided by ESF, ESNERR, NRCS, RCD, The California Associations of Family Farms, and the Farm Bureau, will be to build local awareness of and support for conservation programs throughout the Elkhorn Slough watershed (both in Monterey and San Benito Counties). Each will be geared to a specific audience. The measure of success for such workshops will be increased memberships, increased queries for involvement, offers to donate conservation easements, better County enforcement of ordinances and adoption of better land management practices.

<u>Projected Costs:</u> Conduct 15 workshops:	\$30,000
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Total Costs of 3 Year Implementation Plan

\$13,405,000+

Appendices

Appendix A: Critical Biological Resources

COMMUNITY/SPECIES	STATUS	OCCURRENCE	HABITAT
Primary Communities			
Coastal Salt/ Coastal Brackish Marsh	G3		
Coastal and Valley Freshwater Marsh	G2		
Central Maritime Chaparral	G2		
Secondary Communities			
Coast Live Oak Woodland (Associated with Maritime Chaparral)	G3		
Central Coast Arroyo Willow Riparian Forest	G3		
Coastal Dune Scrub	G2		
Sensitive Plant Species			
<i>Arctostaphylos hookeri ssp hookeri</i> Hooker's Manzanita	G3T2	K	Chaparral
<i>Arctostaphylos pajorensis</i> Pajaro Manzanita	G2 C2	K	Chaparral
<i>Ceanothus cuneatus var. rigidis</i> Monterey Ceanothus	C2	K	Chaparral
<i>Chorizanthe pungens var pungens</i> Monterey Spineflower	G2T2 FT	K	Coastal Dunes
<i>Ericameria fasciculata</i>	G2	K	Maritime Chaparral

COMMUNITY/SPECIES	STATUS	OCCURRENCE	HABITAT
Eastwood's Goldenbush	C2		
<i>Fritillaria liliacea</i> Fragrant Fritillary	G2	P	Grasslands
<i>Hemizonia parryi</i> ssp. <i>congdonii</i> Congdon's Tarplant	G5T1	P	Grasslands
<i>Holocarpha macradenia</i> Santa Cruz Tarplant	G1 C1 CE	K	Coastal Terrace Prairie, Grasslands
<i>Lomatium parvifolium</i> Small-leaved Lomatium		P	?
<i>Perideridia gairdneri</i> spp. <i>gairdneri</i> Gairdner's Yampah	C2	K	Grasslands, Chaparral
<i>Piperia yadonii</i> Yadon's Piperia	G1 C1	K	Maritime Chaparral
<i>Plagiobothrys diffusus</i> San Francisco Popcornflower	SE	K - Brigantein Property	Coastal Terrace Prairie, Grasslands
Sensitive Animal Species - Documented			
California Brackishwater Snail	G2G3S2S3 C2	K - Parson's and Moro Cojo Sloughs	Slough/Aquatic Habitats
California Red-legged Frog	G4T2T3S2S3 FT CSC	K	Freshwater Ponds, Willow Riparian, Chaparral
California Tiger Salamander	G2G3S2S3 C2 CSC	K	Freshwater Ponds and Wetlands, Brackish and Salt Marsh, Grasslands
Santa Cruz Long-Toed Salamander	G5T1S1 FE SE	K - McClusky, Bennett and Moro Cojo Sloughs, Struve Pond	Freshwater Ponds, Grasslands, Willow Riparian, Chaparral

COMMUNITY/SPECIES	STATUS	OCCURRENCE	HABITAT
Southwestern Pond Turtle	G4S3 C1 CSC	K	Freshwater Ponds
Burrowing Owl	G4T2S2	P	Grasslands
California Clapper Rail	G5T1S1 FE SE	P	Slough marshes
Monarch Butterfly	G5S3	K - Eucalyptus Grove near PG&E	Eucalyptus Groves
Short-eared Owl	G5S3	K	Brackish and Fresh- water Marsh, Grasslands
Tri-colored Blackbird	G3S3	K - Werner Lake	Grasslands, Fresh- water Ponds, Brack- ish and Freshwater Marsh

Legend:

Status:

First set of symbols - Heritage Designation

Second set of symbols - Federal Designation:

FE - Listed as Federally Endangered by the Federal Government

FT - Listed as Federally Threatened by the Federal Government

C1 - Category 1 candidate for Federal listing

C2 - Category 2 candidate for Federal listing

Third set of symbols - State of California Designation:

SE - Listed as Endangered by the State of California

ST - Listed as Threatened by the State of California

SCS - California Dept. Of Fish and Game Species of Special Concern

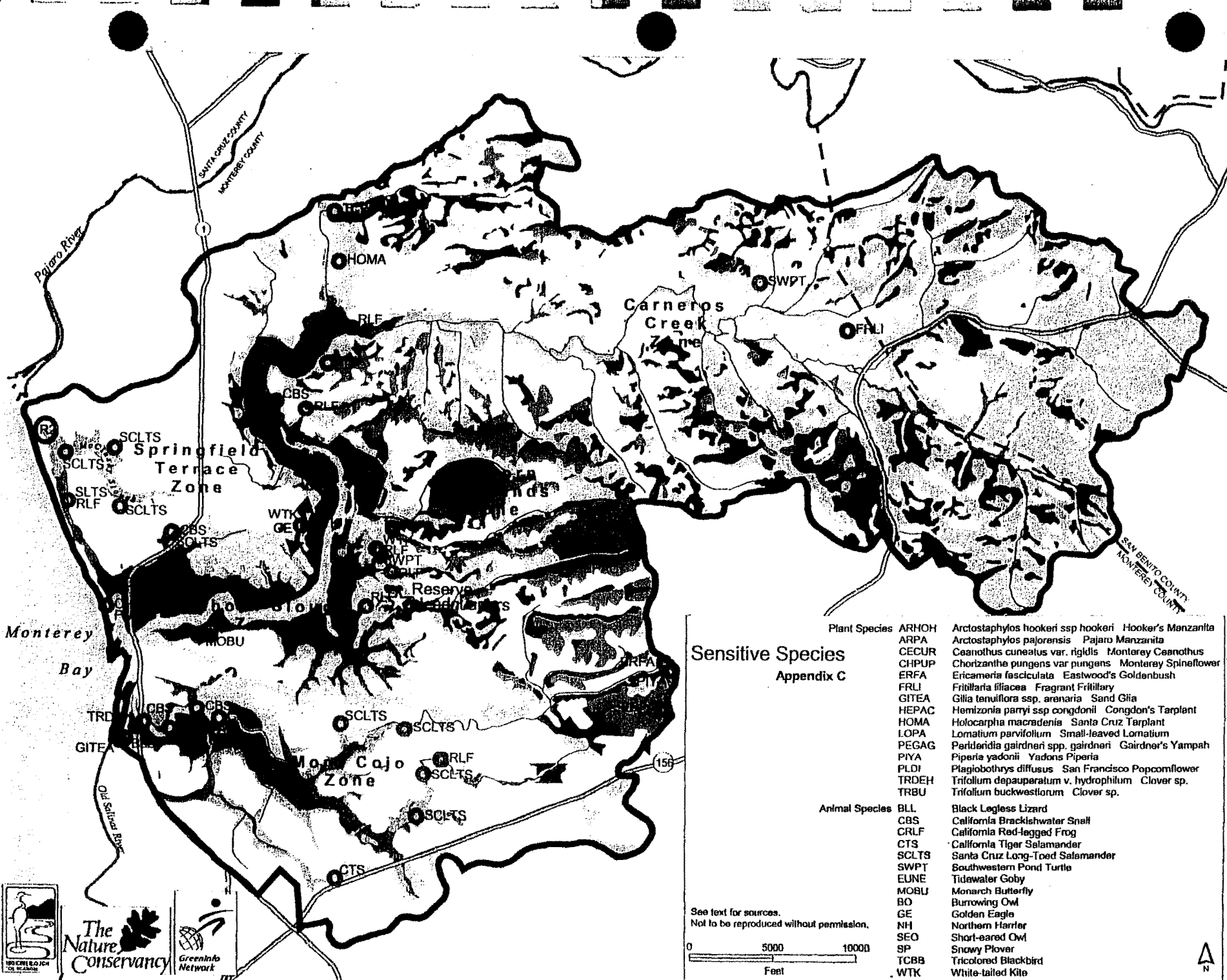
Occurrence:

K - Known Occurrence

P - Potential Occurrence

Appendix B: Distribution of Critical Resources in Elkhorn Slough

Critical Resource	Critical Resource Coverage, in acres	Critical Resource Protected Coverage, in acres
Coastal Marsh (including slough channels)	4,182	1,924
Inland Wetlands, Ponds and Riparian Forests	1,214	48
Maritime Chaparral	1,875	388
Priority Oak Woodlands (those associated with Maritime Chaparral)	3,636	502
Coastal Dune Scrub	135	73
Cultivated Fields	10,674	188
Total	21,716	3,123



Sensitive Species
Appendix C

Plant Species	Animal Species
ARHOH	BLL
ARPA	CBS
CECUR	CRLF
CHPUP	CTS
ERFA	SCLTS
FRLI	SWPT
GITEA	EUNE
HEPAC	MOBU
HOMA	BO
LOPA	GE
PEGAG	NH
PIYA	SEO
PLDI	SP
TRDEH	TCBB
TRBU	WTK
Arctostaphylos hookeri ssp hookeri	Black Legless Lizard
Arctostaphylos pajorensis	California Brackishwater Snail
Ceanothus cuneatus var. rigidis	California Red-legged Frog
Chorizanthe pungens var. pungens	California Tiger Salamander
Ericameria fasciculata	Santa Cruz Long-Toed Salamander
Fritillaria liliacea	Southwestern Pond Turtle
Gilia tenuiflora ssp. arenaria	Tidewater Goby
Hemizonia parryi ssp. congdonii	Monarch Butterfly
Holocarpha macradenia	Burrowing Owl
Lomatium parvifolium	Golden Eagle
Perideridia gairdneri ssp. gairdneri	Northern Harrier
Piperia yadonii	Short-eared Owl
Plagiobothrys diffusus	Snowy Plover
Trifolium depauperatum v. hydrophilum	Tricolored Blackbird
Trifolium buckwestionum	Clover sp.

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Appendix D: Land use Regulations, Jurisdictions and Development Trends

- A. All of the project area is within the Coastal Zone, and is regulated by the Monterey County North County Land Use Plan, adopted in June, 1982 "LUP", as well as the Monterey County Coastal Implementation Plan, Parts 1 and 2. The prime objective of the LUP is to protect coastal resources while maintaining coastal access and recreational opportunities. A secondary objective is to maintain the rural character of North County while clustering medium and high density residential development only in those areas where water, sewer and transportation services are available. The limited capacities of roads, highways, school and public wastewater treatment systems, and the fact that almost all uses rely on a very limited, overdrawn source of groundwater, affect potential growth in the area.
- B. The LUP designates fifteen land use districts in the project area. Generally, in all districts a coastal development permit is required for the following: development on slopes exceeding 25%, on ridge lines, and within 100 feet of mapped or field identified environmentally- sensitive habitats, agricultural operation expansions into areas where 50% or more of the parcel has a slope of 10% or greater, conditional certificates of compliance and lot line adjustments. The most significant districts in the project area are:
1. **Agricultural Preserve and Agricultural Conservation:** most of Springfield Terrace and lower Moro Cojo Slough areas are included. Minimum lot size is 40 acres; residential development strong discouraged.
 2. **Rural Density Residential:** 5-40 acres per unit: Most of Elkhorn Highlands is included. Agricultural expansion is discouraged.
 3. **Wetlands and Coastal Strand:** No further divisions are allowed except under very special circumstances.
 4. **Low Density Residential:** 2.5 to 10 acres maximum per unit: includes most of Elkhorn Highlands and Carneros Creek areas.
 5. **Medium Density Residential:** 1-4 unite per acre maximum density-: includes Oak Knolls in Upper Moro Cojo, and town of Las Lomas.
 6. **High Density:** 5-10 acres per unit maximum density: includes just two small areas flanking High School in central Moro Cojo area; one of these areas has been approved for a low cost housing project called CHISPA.
 7. **Recreational:** includes three County parks (Kirby, Manzanita and Royal Oaks) and one golf course west of Elkhorn Road near the town of Las Lomas
 8. **Industrial:** includes areas in lower Moro Cojo Slough north and south of Dolan Road

II. Jurisdictions

- A. There are numerous Federal, State and local agencies which have regulatory roles in the Elkhorn Slough watershed. The agencies have the greatest effect on protecting critical resources are:
1. **US Army Corps of Engineers (COE)** - Regulates discharge of dredged and fill materials into navigable waters and adjacent wetlands of the U.S. Issues Section 404 permits for wetland alterations;
 2. **US Fish and Wildlife Service (USFWS)** - Regulates, through permitting, the taking of Federally-listed wildlife species;
 3. **California Department of Fish and Game (CDFG)** - Regulated activities affecting the bed and banks of stream courses, and issues Streambed Alteration Agreements. Also, has permit authority to take State-listed threatened and endangered wildlife and plant species, and regulates take of plant species which are both State and Federally-listed;

4. California Coastal Commission (CCC) - Regulates some development activity within the coastal zone, and hears appeals of selected coastal permit actions by Monterey County's implementation of the North County segment of the Local Coastal Program; and
5. Monterey County - Reviews and grants permits for proposed development and major land use changes. Monterey County also permits well drilling and on-site sewage treatment plants through its Health Department. In conjunction with its Water Resources Agency, Monterey County has developed policies, programs and ordinances aimed at protecting groundwater as part of a Phase I Comprehensive Water Resource Management Plan; Phase II is in the works.

III. Development Trends, by Zone:

- A. Springfield Terrace - not much residential development pressure due to land use restrictions mentioned above, and the high value of agricultural crops. Intensification of agricultural crops continues as agricultural leases have increased from \$300/acre two years ago to \$1,000/acre (similar lease increases in Moro Cojo and Central Highlands). New subdivision application in works for 64 estate lots adjacent to Pajaro Valley Golf Course, west of Las Lomas, and current build-out of Hoffman and Brood 19 single family homes near same golf course.
- B. Elkhorn Slough - no development pressures in wetlands themselves, but high value of agricultural crops and expensive leases may increase pressure on farmers to farm right up to wetland and bluff edges to maximize profits.
- C. Elkhorn Highlands and Carneros Creek - not much development activity in past years in western portion of Highlands, but increase in development in eastern portion of highlands, in form of infill of existing smaller parcels and parcel map subdivisions, many built with large estate-type residences. One new subdivision recently approved just east of Las Lomas is called Triple M Ranch: 31 lots clustered on 195 acres, adjacent to Carneros Creek flood plains.
- D. Moro Cojo Slough - little new development surrounding western slough. Surrounding eastern slough, similar type of development to Elkhorn Highlands (infill of existing parcels, parcel map subdivisions). New high density low-cost housing development near high school on Castroville Boulevard called "CHISPA."

Outside Project Area:

- E. San Benito County - Interspersed between large Ranches, mostly west of Highway 101, are numerous new residences on large lots, presumably created through Parcel Map subdivisions (four lots or less). New subdivisions may be kept in check due to the overall lack of water. Silverbridge, a 144-lot subdivision that is currently under construction, was able to purchase water rights from the Aromas Water District. However, this type of water transfer is unlikely to be allowed in the future.

Appendix E: Significant Land Ownership Patterns, Conservation Status, Land use Regulations and Economic Trends, By Zone

Zone	Land use, Ownership & Conservation Status	Land use Regulations	Development and Economic Trends
Elkhorn Slough	Large wetland parcels and surrounding uplands. Largely owned by agencies (CA DF&G) and non-profits (TNC and Monterey County Ag. Land Conservancy), some wetland and upland parcels still privately owned	Very restrictive - resource conservation zoning in wetlands	Short term: development unlikely; Long term: increasing pressures to develop unprotected hillsides and bluff tops surrounding Elkhorn Slough, especially if agriculture declines due to groundwater depletion
Elkhorn Highlands	Mix of small residential parcels (2, 5 and 10 acres) and small farms, mostly privately owned. Farms mostly leased. Protected parcels include: Long Valley (ESF) Blohm Ranch (TNC) and Azevedo Ranch (MCAHLC)	Rural and low density zoning. Prohibitions on development on ridge tops and maritime chaparral, but these are sometimes overcome through variance	Short term: development of existing parcels and parcel splits of larger lots, with continued pressure to develop desirable ridge top chaparral areas. Long term development of farm parcels likely as strawberry farming on marginal lands becomes less viable. Recent approval of 31-lot subdivision on Triple M Ranch east of Las Lomas may encourage other farms to convert to residential uses
Springfield Terrace	Large family and corporate-owned farm parcels; no secured conservation protection	Very Restrictive agricultural preservation zoning	High-value farm products will keep area in agriculture for short term; long-term uncertain due to groundwater overdraft and seawater intrusion
Moro Cojo	Large family and corporate farms; recent purchase of Catellus parcel by ESF and Coastal Conservancy	Very restrictive agricultural preservation zoning	High-value farm products will keep area in agriculture for short and long term; groundwater problem less acute than in Springfield Terrace
Carmeros Creek	Mix of small farms and low-density residential	Rural and low density residential zoning; few resource protection regulations	Similar development scenarios to Elkhorn Highlands, but higher quality, less marginal farmlands here may slow conversion to residential

Appendix F: Stresses to Critical Resources within the Elkhorn Slough Watershed

Stress	Source of Stress	Affects on Critical Resources	Ranking of Stress
Soil erosion Sediment accumulation in wetlands/ riparian areas Increased suspended sediment and turbidity in aquatic habitats	Storm runoff from farm fields and roads	Loss of agricultural viability and risk of long-term conversion to residential development Loss of freshwater wetland and riparian habitats by burying, and loss of dependent animal species Reduction in species diversity in wetlands/aquatic systems Incremental impact on health of Monterey Bay	High Very High High High
Erosion of stream banks; increase in flooding in lowlands	Increased storm runoff and scour due to agriculture and residential development	Loss of riparian and aquatic diversity	Medium
Erosion of bluffs Creation of sediment fans over wetlands at base of bluffs	Existing farmland and potential future residential development on bluff tops	Degradation of undeveloped viewsheds from Elkhorn Slough to bluffs Conversion of marsh to uplands	High High
Migration of pesticides and nutrients into riparian/ aquatic habitats and groundwater	Storm runoff from farm fields and roads Pesticides in soils of pre-1980's cultivated fields Diversion of Pajaro River water and sediment into Elkhorn Slough	Contamination of aquatic systems including incremental impacts on Monterey Bay ecosystem Contamination of potable groundwater supplies Decline of aquatic diversity and direct impacts on breeding birds	Medium to High Medium Medium
Infiltration of nitrates into groundwater Nutrient loading in aquatic systems Coliform contamination	Agriculture Failed septic systems Animal wastes	Contamination of potable groundwater supplies Decline in aquatic diversity and degradation of fish nursery; incremental impacts on Monterey Bay ecosystem	Medium Medium Medium
Retreat of freshwater in	Overdraft of wells	Decline in agriculture	High

Stress	Source of Stress	Affects on Critical Resources	Ranking of Stress
aquifers resulting in sea-water intrusion Seawater infiltration	Pumping from wells adjacent to marshes	Degradation of wetland habitats	Medium
Fragmentation and loss of maritime chaparral Soil erosion Fire suppression Contamination of local creeks and marshes Spread of invasive weeds	Residential development Runoff from roads and impervious surfaces Domestic animals roaming beyond areas of human occupancy Ground disturbance	Decline of maritime chaparral habitat Decline of marsh and riparian habitats Degradation of viewsheds	Very High High High High High
Increase in farm costs Nuisance suits from adjacent landowners	Conversion of agriculture to development Incompatible residential development adjacent to farmland	Decline of agricultural viability Loss of open space viewsheds	Medium Low
Tidal scour Increase in salinity of some marsh habitats De-watering of wetland areas Compaction, competition from range grasses Contamination and sedimentation	Opening of Elkhorn Slough mouth for Moss Landing harbor Draining and diking for flood control and grazing land Over-grazing Harbor and Industrial Development	Loss of Salicornia beds Decline in marsh habitat diversity Conversion of coastal marsh habitat to less-diverse mud flat	Unknown High Unknown Unknown
Competition to native marine species	Introduction of exotic marine species	Decline of native marine species	Medium
Predation on native amphibians	Improper pond management	Decline in populations of red-legged frogs, tiger and long-toed salamander and turtle populations	Medium
Competition with native vegetation by non-native	Farming and residential development; any type of	Decrease in health and species diversity of maritime chaparral	Very high

Stress	Source of Stress	Affects on Critical Resources	Ranking of Stress
plants, especially pampas grass	ground disturbance Introduction of non-native plants	and other natural communities	

Appendix G: Potential Conservation Funding Sources:

Although there are many issues which need to be addressed in the Elkhorn Slough watershed, the ones which will most likely galvanize public support for conservation funding in the next decade are: 1) the decline of the local aquifer, which is the sole source of local drinking water, due to agricultural overdraft and contamination; 2) the loss of open space due to the conversion of agricultural lands to development; and 3) an increased awareness on a local, regional and state-wide level of Elkhorn Slough as a unique ecological and recreational resource in an increasingly urbanized State.

Below is a list of public and private programs that have the best potential for protecting the Elkhorn Slough watershed's resources. Of these, the most promising sources of acquisition funds for Elkhorn Slough appear to be 1) TEA-21 program (acquisition, scenic easements, trail and facility development), 2) National Wetlands Reserve Program (acquisition, enhancement and restoration), 3) State Coastal Conservancy Grant Programs (planning, acquisition, restoration), 4) Wildlife Conservation Board Grants (acquisition, restoration), 5) County mitigation grants (acquisition), and 6) private foundation grants (various).

FEDERAL AGENCIES

1. National Oceanographic and Atmosphere Agency (NOAA)
 - A. Management funds available for National Marine Sanctuaries and Estuarine Reserves.
Purpose/Priorities: Acquisition, research and educational grants to create and conserve marine sanctuaries and estuarine reserves
 - B. Coastal Nonpoint Source Pollution Control Program (NPSP)
Purpose/Priorities:
Contact: (202) 260-9133
2. Environmental Protection Agency (EPA)
 - A. Wetlands Protection Development Grants
Purpose/Priorities: Planning, restoration, enhancement and management grants to improve wetland protection programs
Who can apply: state, tribal, regional and local governments
Contact: Suzanne Marr, US EPA (415) 744-1974
 - B. 205j Water Quality Planning Grants
Purpose/Priorities: Funds for watershed management planning projects to reduce and prevent water pollution
Who can apply: Local public agencies and special districts (water districts, Resource Conservation Districts, etc.)
 - C. 319h Water Quality NPS Grants
Purpose/Priorities: Implementation of nonpoint source pollution management practices
 - D. Potential funds through penalty fees/ mitigation funds
3. Natural Resource Conservation Service (NRCS)
 - A. Wetlands Reserve Program (WRP)
Purpose/Priorities: Acquisition (of conservation easements), enhancement and restoration of wetlands on private property where wetlands constitute 15% of the overall property, and wetlands have been degraded by agricultural activities
Who can apply: Private landowners
Notes: Funding limit for Acquisition of Easements: \$2,000 per acre
Contact: Daniel Mountjoy (831) 424-1036
 - B. EQIP and WHIP Programs - cost-share for restoration and enhancement activities on farmlands
 - C. Conservation Reserve Program (CRP) - offset payments for 10 year retirement of highly erodible agricultural lands
 - D. Farmland Protection Program (FPP) - purchase of agricultural easements on farmland subject to development
4. United States Fish and Wildlife Service (USF&WS)
 - A. National Wildlife Refuge Fund (Land and Water Conservation Funds)
Purpose/Priorities: Protect land and water resources

- B. National Coastal Wetland Conservation Grants
Purpose/Priorities: Grants for acquisition, restoration and management of coastal lands or waterways
Contact: Division of Federal Aid (503) 231-6128
 - C. Partners for Wildlife
Purpose/Priorities: Natural habitat restoration on private property
Who can apply: private landowners
Notes: Up to 50% cost-share program for design and implementation
Contact: Deborah Schlaffman (916) 979-2085
5. National Fish and Wildlife Foundation
- A. Various Grant Programs
Purpose/Priorities: Grants for protection and restoration of sensitive fish and wildlife habitats, and plants species
Notes: Requires matching 2 to 1 matching funds. Maximum \$200,000 grants
Contact: Eric Hammerling, (916) 484-1692
6. North American Wetland Conservation Council
- A. North American Wetland Conservation Grants
Purpose/Priorities: Grants to carry out wetlands conservation projects, primarily for acquisition and restoration
Who can apply: Individuals and organizations
Contact: North American Wetlands Conservation Council (703) 358-1784

STATE OF CALIFORNIA AGENCIES

1. Coastal Conservancy
- A. Resource Enhancement Program Grants
Purpose/Priorities: Planning, acquisition, restoration grants to enhance and restore coastal resources
Who can apply: Public agencies and non-profits
2. State Water Resources Control Board
- A. 205j Water Quality Planning Grants (see EPA, above)
 - B. 319h Water Quality NPS Grants
 - C. Revolving funds for low interest loans for water system development, sometimes may be used for resource conservation (protection of vernal pools, etc.). Who can apply: Public agencies and non-profits.
Notes: No voter approval needed. Priority given to target watersheds identified by the Regional Boards. 40% non-federal matching grant required. This is a potential source of funding for County's future fallow land bank program.
Contact: Judy Bloom
3. State Department of Parks and Recreation
- A. Habitat Conservation Fund Grants
Purpose/Priorities: Grants for acquisition and restoration of wildlife habitat and significant natural areas
Who can apply: Local public agencies
Contact: Odell King (916) 653-7423
4. State Resources Agency
- A. Coastal Resource Grants Program
Contact: Chris Potter
5. Wildlife Conservation Board
- A. Riparian Habitat Conservation Program
Purpose/Priorities: Grants to protect, restore, enhance riparian habitat along rivers and streams
Who can apply: Local and State agencies, non-profits

- Contact: (916) 653-5656
- B. Public Access Projects
 Purpose/Priorities: Development of public access projects (including acquisition and improvements) that utilize fish and game resources throughout the state
 Who can apply: Agencies and special districts
 Contact: Wildlife Conservation Board
6. State Department of Water Resources
 A. Urban Streams Program
 Purpose/Priorities: Grants to assist communities in reducing damages from flooding, and to restore environmental and aesthetic values of streams
 Who can apply: Local governments in partnership with Non-profits.
7. State Department of Conservation
 A. Agricultural Land Stewardship Program (ALSP) Grants
 Purpose/Priorities: Grants to acquire conservation easements to protect agricultural lands, and 10% funding for conservation improvements
 Who can apply: Local agencies and non-profits
 Notes: Easement may not limit agricultural practices in any way
 Contact: Charles Tyson, ALSP Coordinator (916) 324-0862
8. State Department of Education
 A. Environmental Education Grants
 Purpose/Priorities: Grants for environmental education programs
 Who can apply: Non-profits and schools
 Contact: Bill Andrews, Education Programs Consultant (916) 657-5374
 Note: Other agency environmental education grant programs offered through the National Fish and Wildlife Foundation and EPA
9. State Department of Transportation (Caltrans) and Federal Transportation Agency
 A. Environmental Enhancement and Mitigation Grants (EEMP)
 Purpose/Priorities: Grants to mitigate environmental impacts from transportation facilities, including acquisition and restoration of resource/habitat lands
 Who can apply: Agencies and Non-profits.
 Notes: Grants limited to \$250,000
 Contact: Scott Clemons
10. State line item funding by local legislator

LOCAL/COUNTY AGENCIES

1. Resource Conservation District of Monterey County
 A. Watershed Management Programs
 Purpose/Priorities: Help landowners and communities improve and sustain the health of watersheds.
 Contact: Jonathan Berkey (831) 728-7709
2. Transportation Agency of Monterey County (TAMC)
 A. (Federal) Transportation Equity Act (TEA-21)
 Purpose/Priorities: Grants for acquisition, restoration and enhancement of coastal resources, public access improvements, etc.
 Who can apply: Public agencies (often in partnership with non-profits)
 Notes: TEA program funds require potentially significant up-front investments for environmental studies, lobbying, etc. Over a six year period, TAC will receive up to \$4 million for projects. TEA-21 program funds may be used to purchase scenic easements related to transportation corridors, trail development, wildlife crossings and other transportation-related facilities.
 State Contact: Marsha Mason (916) 654-5275
 Website: www.dot.ca.gov/hq/TransEnhAct/

Local Contact: Mary Orison (831) 755-8961

PRIVATE FOUNDATIONS

1. **The David and Lucile Packard Foundation**
Program: Conserving California Landscapes, Central Coast Region
Purpose/Priorities: Protect significant and threatened California resources. The program places priority on protection of scenic viewsheds, open space, recreational access, viable natural systems and agricultural lands. Funding provided for acquisition, policy, planning, capacity building and conservation loans
Notes: Entire program has \$175 million to be granted over five years. Typically, 50% matching funding required from other sources. In the Central Coast, the watersheds of Elkhorn and Watsonville Sloughs are among the listed priority areas
Contact: Jeanne Sedgwick (650) 948-7658

2. **Hewlett Foundation**
Purpose/Priorities: Funds available for various conservation projects, with particular interest in resolving conflicts between development and open space. Planning, management, acquisition and pre-acquisition grants available
Notes: Conservation Program has approximately \$9-12 million annually for western North American projects, of which \$1-2 million is typically spent on California projects
Contact: Michael Fischer (650) 329-1070

3. **National Fish and Wildlife Foundation**
(see above, federal agencies)

Appendix H: Conservation Stakeholders:

Non-profits:

1. The Nature Conservancy (TNC) Chris Kelly, Robin Cox and Lynn Lozier
Strengths - Began acquisition of key Elkhorn Slough parcels twenty years ago. Have considerable knowledge of Slough's biological resources, conservation needs and priorities for acquisition, management and restoration (on-the ground experience with Blohm and Azevedo Ranches). Extensive experience with real estate transactions on conservation lands.
Potential roles: help establish conservation priorities within the Elkhorn Slough watershed, and assist local conservation organizations where needed in technical skills of acquiring key natural habitat lands, and managing and restoring natural habitat lands.
2. The Elkhorn Slough Foundation (ESF) Mark Silberstein
Strengths - Skills in negotiating and acquiring conservation lands (Catellus parcel, Long Valley) and land management (Long Valley); considerable knowledge of biological resources, conservation needs and priorities, and ongoing research and research needs; strong working relationship with local conservation organization and agencies, especially ESNERR
Potential roles: help establish conservation priorities in the Elkhorn Slough watershed; provide leading role in coordinating conservation activities in Elkhorn Slough and acquiring, managing, monitoring and restoring (mostly) natural habitat lands; serve as a local source for GIS and mapping efforts; provide outreach/workshops to various stakeholders and the public
3. Sustainable Conservation Ashley Boren, Laura Hattendorf, Lynn Dwyer
Strengths - Skills in solving difficult conservation issues, often by finding economic incentives for appropriate conservation actions (example - permit streamlining program in Elkhorn Highlands provided farmers an incentive to implement Best Management Practices)
Potential roles - work with Elkhorn Slough Foundation and other groups in assessing effectiveness of local farm assistance programs, and finding ways of continuing such programs;; work with NRCS and local farmers in finding economically feasible and less intensive alternatives to strawberry farming; help mediate/solve groundwater overdraft problem
4. The Monterey County Agriculture and Historic Land Conservancy Sherwood Darrington
Strengths - Extensive land trust skills, including owning, managing and monitoring conservation lands; knowledge of local agricultural issues and players.
Potential role - Hold and monitor conservation easements on predominantly agricultural lands; help solve groundwater/overdraft problem
5. Watershed Institute: Scott Hennessy
Strengths: On-the-ground experience with restoration of Elkhorn Slough habitats. As a Monterey County planning commissioner, Scott is knowledgeable of both local and County-wide conservation issues and strategies
Potential roles: Habitat restoration of marsh and upland areas, and development of a watershed-wide plan for removal of invasive weeds. Scott could be involved in diverse strategies, from developing a sustainable groundwater plan for Springfield Terrace to creating a private fallow land banking program to working on and promoting County awareness of the value of Elkhorn Slough watershed's resources to the local economy

Agencies

1. California Department of Fish and Game - ESNERR - Becky Christensen, ESNERR manager
Strengths - Manages ESNERR lands, knowledgeable of marsh and upland biological habitats, land management and habitat restoration and enhancement.
Potential roles: The ESNERR will continue to manage public lands, and coordinate research conducted on Elkhorn Slough issues, such as tidal scour. Has potential to develop a plan to control invasive weeds. ESNERR, with ESF, could provide workshops to local stakeholders. ESNERR, with ESF, could become a clearing house for Elkhorn Slough-related information and education.
2. California Department of Fish and Game - Central Coast Region - Deborah Hillyard

Strengths - reviews major development plans and provides environmental review of development proposals, especially in regards to sensitive communities and species.

Potential roles: Continue to provide information on sensitive communities and species, help develop a plan to control invasive weeds, and review the County's upcoming North County LUP update

3. California State Coastal Conservancy (CC) - Karyn Gear

Strengths - over years CC has funded preparation of resource enhancement/management plans, and programs to acquire, manage and restore conservation lands in the Elkhorn Slough watershed. Like TNC, considerable real estate transaction skills and knowledgeable of conservation issues and priorities throughout the Elkhorn Slough watershed.

Potential roles: help establish conservation priorities, continue working as ESF partner in acquiring and eventually restoring marshlands in Moro Cojo Slough; assist ESF in future acquisitions of key Highlands and McClusky Slough properties; and RCD with creation of Carneros Creek Watershed Management Plan

4. National Resources Conservation Service (NRCS) - Daniel Mountjoy

Strengths - NRCS assists farmers and provides funding for agricultural management plans on farms throughout the project area; assists local residential communities in preventing runoff. Good working relationship with farmers, good bridge between conservation organizations and farm organizations

Potential roles: Continue working on "Elkhorn Slough Watershed Project" to reduce runoff entering Elkhorn Slough by 50%; after program ends, continue to monitor and assist farmers

5. Resource Conservation District of Monterey County (RCD)- Jonathan Berkey

Strengths: Initiated and assists NRCS in ES Watershed Project; works with Carneros Creek landowners on conservation measures and flood control

Potential roles: continue work of NRCS when funding for ES Watershed Project runs out in three years; develop Carneros Creek Watershed Management Plan with local landowners

6. Monterey County Planning Department; - Steven Maki, Planner

Strengths: County has strong resource protection regulations in Elkhorn Slough watershed. Steven has strong commitment to Elkhorn Slough resource protection, understands conservation priorities and groundwater overdraft issue ; provides conservation perspective in MCWRA decisions

Potential role: with watchdog group at its side, begin to enforce existing regulations that have not yet been enforced, such as imposing fines on landowners whose runoff collects on County roads, and keeping development out of ridge tops and chaparral areas. Develop new regulations where needed to strengthen resource protections, especially as part of LUP update.

7. Coastal Commission - Rick Hyman

Strengths: understands and is committed to resource protection throughout Elkhorn Slough watershed; reviews appeals of County land use decisions in Coastal Zone

Potential roles: Rick Hyman has expressed interest in implementing more innovative land use techniques in the Coastal Zone, such as cluster development and in lieu fees/ off site mitigation

8. Monterey County Water Resources Agency (MCWRA) and Pajaro River Water District

Strengths - knowledgeable of groundwater overdraft issues

Potential roles - work with stakeholders to reverse aquifer depletion and seawater intrusion, especially in Springfield Terrace; will soon develop Pajaro River Project plans.

Appendix J: Three Year Implementation Plan

Implementation Category and Key Actions	Potential Conservation Partners Involved	Projected Costs	Potential Funding Sources
<p>Raise the visibility of Elkhorn Slough to secure funding</p> <p>1. Develop an identity and political marketing plan for Elkhorn Slough programs</p>	<p>ESF, TNC, CC and other Partners</p>	<p>100,000</p>	<p>Private foundations and local fund raising</p>
<p>Build capacity of local organizations to implement the Plan</p> <p>1. Provide support to ESF to coordinate existing and proposed conservation programs, and to acquire and manage Elkhorn Slough conservation lands</p> <p>2. Provide ongoing support to MCAHLC, NRCS, RCD, RDC and other partners to implement agricultural conservation programs</p> <p>3. Provide ongoing support to RCD to work with local residents to develop intermittent stream management plans for seasonal streams</p>	<p>ESF, TNC, and Coastal Conservancy</p> <p>MCAHLC, NRCS, RCD, RDC and other partners</p> <p>RCD</p>	<p>\$2,445,000</p> <p>To be determined by partners</p> <p>To be determined</p>	<p>Existing TNC management endowment, ESF fund raising, private foundation grants, State Water Resources Control Board Water Quality Revolving Funds</p>
<p>Acquire conservation lands</p> <p>1. Purchase wetland portions and buffers on 3 properties in Moro Cojo Slough</p> <p>2. Acquire conservation easements on _____ properties along Elkhorn Highlands "northern crescent," where maritime chaparral is most intact.</p> <p>3. Complete acquisition of Elkhorn Slough marshlands</p> <p>4. Acquire conservation easements on bluff and bluff top portions of _____ properties north and west of Elkhorn Slough</p> <p>5. Acquire conservation easements to secure buffers on _____ agricultural properties south of Elkhorn Slough</p>	<p>ESF, Coastal Conservancy, USFWS</p> <p>ESF, Coastal Conservancy, TNC, MCAHLC</p> <p>ESF, Coastal Conservancy, TNC</p> <p>ESF, Coastal Conservancy</p> <p>ESF, Coastal Conservancy, MCAHLC</p>	<p>\$1,050,000</p> <p>\$4,200,000</p> <p>\$900,000</p> <p>\$2,500,000</p> <p>\$100,000</p>	<p>Coastal Conservancy and USFWS Grants, WCB grants, private foundation grants TEA-21 grants, State Ag. Stewardship Program, FPP Program, State Water Resources Control Board Water Quality Revolving Funds</p>

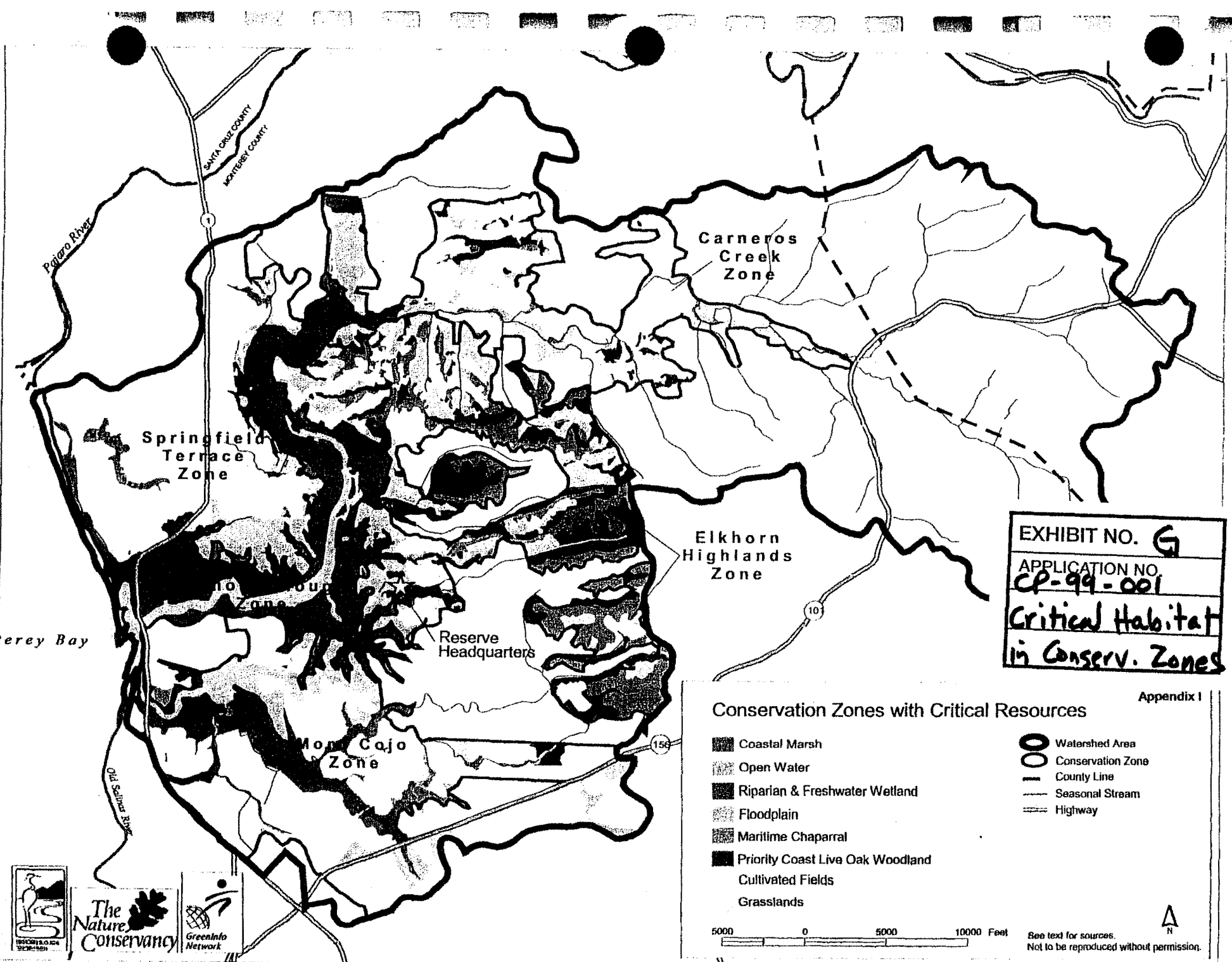


EXHIBIT NO. **G**
 APPLICATION NO.
CP-99-001
Critical Habitat
in Conserv. Zones

Appendix I

Conservation Zones with Critical Resources

- Coastal Marsh
- Open Water
- Riparian & Freshwater Wetland
- Floodplain
- Maritime Chaparral
- Priority Coast Live Oak Woodland
- Cultivated Fields
- Grasslands
- Watershed Area
- Conservation Zone
- County Line
- Seasonal Stream
- Highway

5000 0 5000 10000 Feet

See text for sources.
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Implementation Category and Key Actions	Potential Conservation Partners Involved	Projected Costs	Potential Funding Sources
<p>Provide ongoing incentives for farmers to improve management practices so they are more compatible with biological resources</p> <p>1. Sustain and integrate agricultural assistance and monitoring programs</p> <p>2. Participate in forums that seek to solve groundwater overdraft problem, and ensure natural resource protection is integral to solutions</p>	<p>NRCS, RCD, RDC, Sustainable Conservation, MCWRA, ESNERR, ESF</p> <p>ESF, Sustainable Conservation, MCAHLC</p>	<p>To be determined by agricultural partners</p> <p>Included above</p>	<p>NRCS, private foundation grants</p> <p>Costs covered by ESF project manager funding</p>
<p>Educate community on conservation issues and encourage involvement in County Planning Process</p> <p>1. Provide workshops and information exchange for local residents interested in reviewing County land use decisions which affect the Elkhorn Slough watershed's resources, and develop a "green build-out" plan</p>	<p>ESF and CA DF&G</p>	<p>\$100,000</p>	<p>Private foundation grants</p>
<p>Restore and enhance habitats where suitable, and re-establish ecological linkages</p> <p>1. Restore marsh habitat in Moro Cojo Slough</p> <p>2. Develop and Implement Invasive Weed Control Program</p> <p>3. Restore 2 Key Elkhorn Highland Properties</p> <p>4. Restore Porter Marsh</p>	<p>ESF, , Watershed Institute, Coastal Conservancy, CA Dept. of Fish and Game, ESNERR</p>	<p>\$280,000</p> <p>\$25,000</p> <p>\$1,675,000</p> <p>costs to be determined</p>	<p>CC and private foundation grants</p> <p>CC and NOAA grants</p> <p>CC, NRCS, private foundation grants</p> <p>Monterey County, CC grants</p>

Implementation Category and Key Actions	Potential Conservation Partners Involved	Projected Costs	Potential Funding Sources
<p>Educate and mobilize stakeholders to better understand and manage resource lands</p> <p>1. Provide 15 workshops to decision makers, landowners and other stakeholders regarding importance of Elkhorn Slough watershed natural habitats</p>	<p>ESF, ESNERR, RCD, NRCS, RDC and other partners</p>	<p>\$30,000</p>	<p>NOAA, CC and private foundation grants</p>
<p>Total Costs of all Implementation Actions for first three years:</p>		<p>\$13,405,000+</p>	

Appendix K: GIS Map Sources of Information:

All GIS Maps:

By GreenInfo Network, using ESRI ARCview and ARCinfo software

Figure 5, Elkhorn Slough Biological Resources and Appendix C: Sensitive Species:

Community types interpreted from aerial photography by Scharffenberger Land Planning & Design

Hydrology from USGS 200k DLG

Shaded relief from USGS 24k Digital Elevation Models

Flood areas from FEMA 1996

Protected lands derived from Monterey County Water Resources District

Species data from Natural Diversity Data Base Maps, Atlas of Breeding Birds of Monterey County, Moro Cojo

Slough Management and Enhancement Plan, Elkhorn Slough Management and Enhancement Plan, Deborah Hillyard, Martha Schauss and Terry Palmasanto (CA Dept. of Fish and Game), Don Roberson and Dawn Reise.

Figure 6, Elkhorn Slough Agricultural Resources:

Cultivated Fields, Grasslands, Ponds and Wetland Areas interpreted by Scharffenberger Land Planning & Design

Cultivated Fields edited by Jonathan Berkey, Resource Conservation District of Monterey Co., and Daniel Mountjoy,

USDA Natural Resources Conservation Service

Seawater Intrusion and Elevated Chloride Level data from Monterey County Water Resources Agency

Additional hydrology from USGS 100k DLG

Slope data and contours from USGS 24k Digital Elevation Models