

**ENVIRONMENTAL ASSESSMENT,  
LAND PROTECTION PLAN and  
CONCEPTUAL MANAGEMENT PLAN**

**Ellicott Slough National Wildlife Refuge  
Proposed Buena Vista Addition**

**Santa Cruz County, California**

United States Department of the Interior  
**U.S. Fish and Wildlife Service**

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**Environmental Assessment**

**Ellicott Slough National Wildlife Refuge  
Proposed Buena Vista Addition**

**Santa Cruz County, California**

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# **ENVIRONMENTAL ASSESSMENT**

## **Ellicott Slough National Wildlife Refuge Proposed Buena Vista Addition**

Santa Cruz County, California

### **CHAPTER 1. PURPOSE OF AND NEED FOR ACTION**

#### **1.1 Introduction**

The U.S. Fish and Wildlife Service (Service) is the primary Federal agency responsible for conserving and enhancing the nation's fish and wildlife populations and their habitats. Although the Service shares this responsibility with other Federal, State, Tribal, local, and private entities, the Service has specific trust responsibilities for migratory birds, threatened and endangered species, and certain anadromous fish and marine mammals. Service efforts over the last 100 years to protect wildlife and their habitats have resulted in a network of protected areas that form the National Wildlife Refuge System. This network of protected lands and waters is the largest and most diverse in the world. Refuge System lands provide essential habitat for numerous wildlife species, recreational opportunities for the public, and a variety of benefits to local communities. The mission of the System is:

To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

The broad goals of the National Wildlife Refuge System further describe a level of responsibility and concern for the nation's wildlife resources for the ultimate benefit of people. The goals of the Refuge System are:

- To fulfill our statutory duty to achieve refuge purpose(s) and further the System mission.
- Conserve, restore where appropriate, and enhance all species of fish, wildlife, and plants that are endangered or threatened with becoming endangered.
- Perpetuate migratory bird, interjurisdictional fish, and marine mammal populations.
- Conserve a diversity of fish, wildlife, and plants.
- Conserve and restore, where appropriate, representative ecosystems of the United States, including the ecological processes characteristic of those ecosystems.

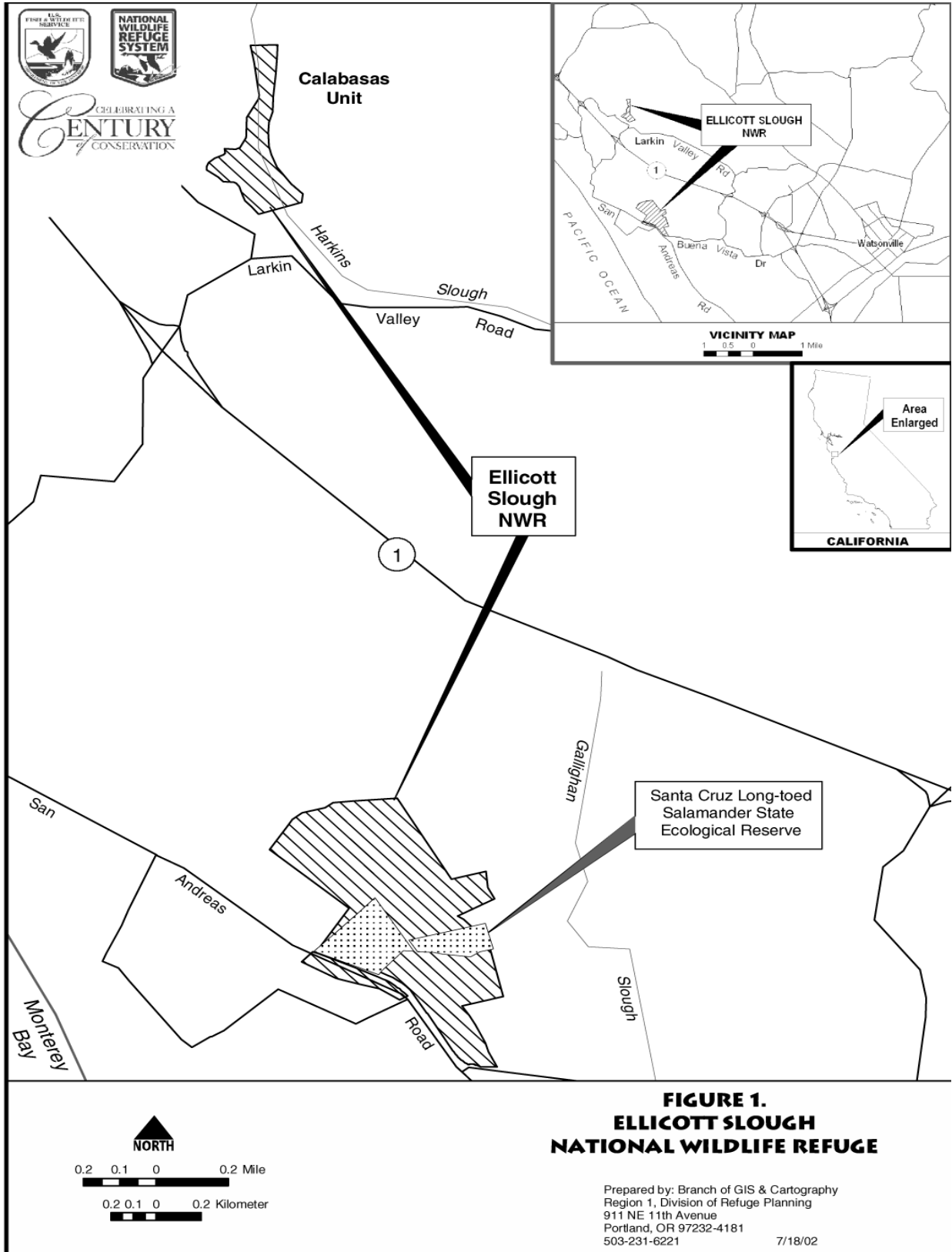
- To foster understanding and instill appreciation of fish, wildlife, and plants, and their conservation, by providing the public with safe, high-quality, and compatible wildlife-dependent public use. Such use includes hunting, fishing, wildlife observation and photography, and environmental education and interpretation.

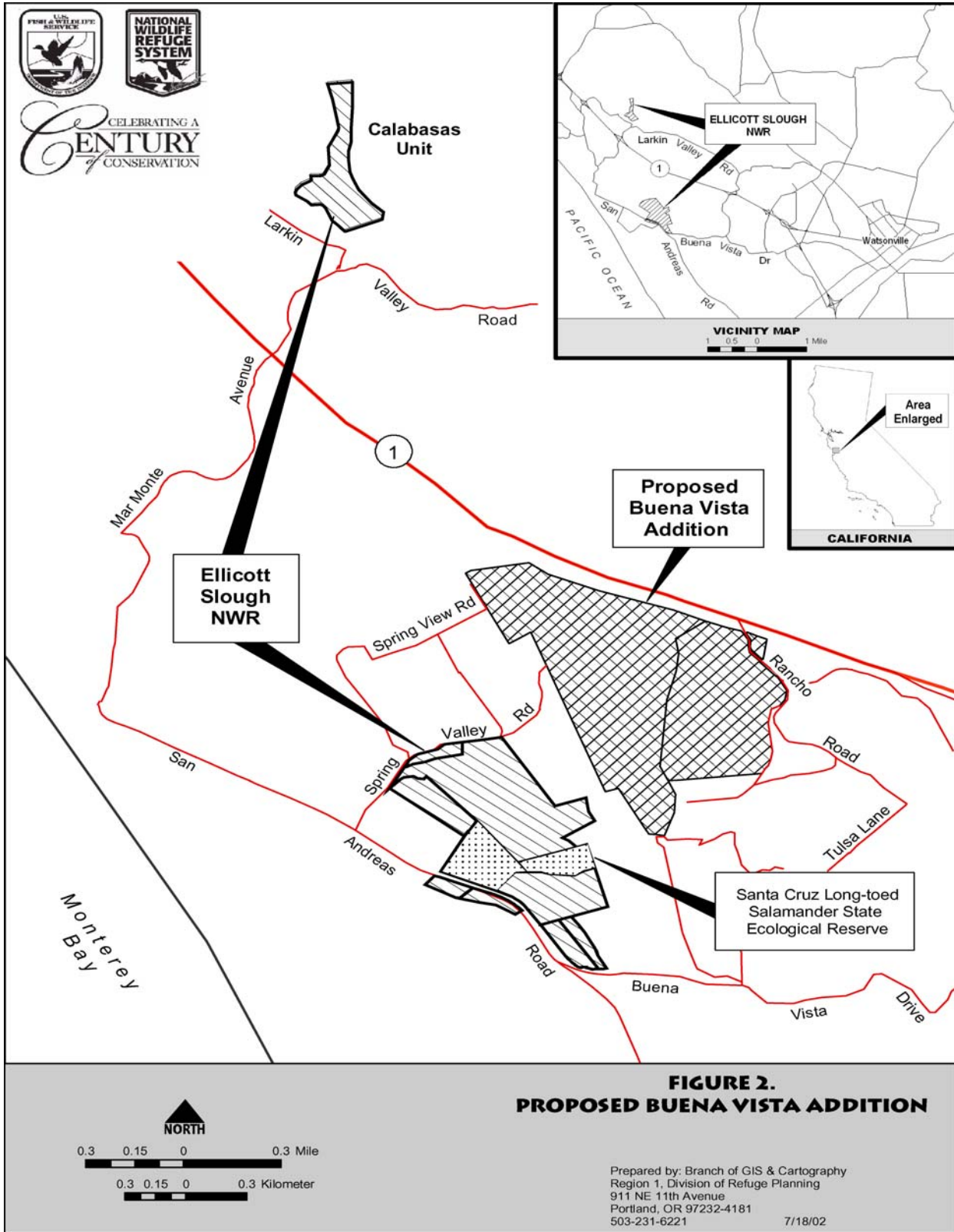
## 1.2 Purpose of and Need for Action

Ellicott Slough National Wildlife Refuge (Refuge) was established in 1975 for the protection of the endangered Santa Cruz long-toed salamander (SCLTS). There are 170 acres of Refuge-owned land adjacent to the 30-acre Santa Cruz Long-toed Salamander Ecological Reserve which is owned by California Department of Fish and Game (CDFG). Both properties are managed cooperatively as the Ellicott Slough National Wildlife Refuge and State Ecological Reserve (Figure 1). The Refuge protects 2 of the 11 remaining SCLTS breeding sites, as well as the surrounding uplands which serve as nonbreeding habitat for the salamander. The Service proposes to add approximately 289 acres of land to the Ellicott Slough National Wildlife Refuge by acquiring the Buena Vista property with CDFG and managing the entire property as part of the Refuge (Figure 2). This Environmental Assessment provides analysis and documentation for National Environmental Policy Act compliance.

The purpose of acquiring the Buena Vista property is to enhance survival prospects of endangered species in the area and provide opportunities for compatible wildlife-dependent recreational activities in partnership with the local community and interested groups and individuals. This expansion is being proposed primarily to protect the endangered Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*). In addition, acquisition of this site would benefit other rare species including the endangered robust spineflower (*Chorizanthe robusta* var. *robusta*) and the threatened California tiger salamander (*Ambystoma californiense*). Buena Vista supports one of only six known populations of the robust spineflower, and 135 acres of the property are included in the designated critical habitat (50 CFR 17 36822-36845). Other rare plants on the site include Hooker's manzanita (*Arctostaphylos hookeri* ssp. *hookeri*) (CNPS 1B), Kellogg's horkelia (*Horkelia cuneata* ssp. *sericea*) (CNPS 1B), and California bottlebrush grass (*Elymus californicus*) (CNPS 4).

The Trust for Public Land (TPL) acquired the Buena Vista property in 2004 to protect the property from development. The TPL is a non-profit organization that assists public land management agencies in acquiring and protecting lands for conservation of natural resources and open space. The TPL has the ability to work through the land acquisition process with landowners much more quickly than government agencies. In addition, TPL assists agencies with fund raising to finance the acquisitions. However, TPL is not a land management group, and their ultimate goal of acquiring land is to transfer it to a public agency for long-term management.







Because the Service had not completed the planning process for Buena Vista, the entire property was transferred from the TPL to CDFG shortly after they acquired it. However, CDFG has indicated that they have limited resources to manage Buena Vista. The Buena Vista property consists of three parcels; one is approximately 187 acres, one is approximately 100 acres, and another is approximately 2 acres. The CDFG is interested in donating the two smaller parcels to the Service, while retaining ownership of the largest parcel. CDFG has asked the Service to manage the entire property. The Service can more efficiently manage Buena Vista because we currently manage Ellicott Slough National Wildlife Refuge, which is nearly adjacent to Buena Vista. In addition, the Service has already developed many valuable management partnerships in the Monterey Bay area, including those with California Conservation Corps, California Department of Forestry, California State University at Monterey Bay, as well as other conservation and volunteer groups. The Service is thus proposing to expand the approved Refuge boundary to include the entire 289-acre Buena Vista property, accept fee-title ownership of the two smaller parcels, and cooperatively manage the entire Buena Vista property as a unit of the Ellicott Slough National Wildlife Refuge and State Ecological Reserve under a Memorandum of Understanding with CDFG.

Buena Vista remains as the largest undeveloped and unfarmed area of oak forest and maritime chaparral west of State Highway 1 in Santa Cruz County. Protection and enhancement of the Buena Vista property is needed to implement recovery actions for the long-toed salamander and robust spineflower and their habitat. As one of less than a dozen known active breeding sites for the salamander and one of only six known populations of the robust spineflower, protection and management of the property is essential for furthering recovery of these two endangered species.

Buena Vista's San Andreas coast live oak woodland and San Andreas maritime chaparral communities are recognized by the Santa Cruz County Planning Department as "sensitive habitat types"—the coast live oak woodland because of its high species diversity and complexity and its restricted distribution, and the maritime chaparral because of the rare endemic Hooker's manzanita and its highly restricted distribution (Coastal Resources Institute 1995).

The proposed addition to Ellicott Slough National Wildlife Refuge would become part of a nationwide system of Federal refuges that are operated in accordance with the overall mission of the National Wildlife Refuge System.

This Environmental Assessment addresses only the proposed land acquisition, interim management, and potential public use opportunities for the site.

### 1.3 Related Agency Actions

Two wildlife areas are located near the Buena Vista property: the Service's Ellicott Slough National Wildlife Refuge and the adjacent Santa Cruz Long-toed Salamander Ecological Reserve (Figure 1). These wildlife areas are managed cooperatively by the Service and the California Department of Fish and Game.

The Ellicott Slough Refuge is administered by the San Francisco Bay National Wildlife Refuge Complex. The Complex oversees six other refuges within the San Francisco and Monterey Bay areas, including the San Pablo Bay National Wildlife Refuge and the Salinas River National Wildlife Refuge.

In the area of Ellicott Slough Refuge, the Service works cooperatively with other agencies such as the California Department of Fish and Game and Santa Cruz Open Space Alliance, to develop land protection strategies to protect endangered species, provide habitat connectivity, and protect valuable watersheds.

In the Monterey Bay area, the Service continues to be involved in regional land protection planning, and there is one other potential acquisition in process in the area. The Farm Service Agency (FSA) of the U.S. Department of Agriculture owns a 116-acre property along lower Harkins Slough (Figure 3). It is no longer considered farmable and FSA is looking to dispose of the property. The Service recognizes the wildlife values of the site and has requested fee-title transfer from FSA.

On a regional basis, the marshes of the Watsonville Slough Watershed, of which the FSA property and Harkins Slough are a part, are valuable to wetland-dependent wildlife. The watershed contains the largest complex of freshwater marsh between Pescadero Marsh to the north and Elkhorn Slough to the south. The most biologically productive areas of the watershed contain freshwater marshes associated with the sloughs, such as those found at the FSA property. Santa Cruz County and a number of cooperating agencies and environmental organizations support protection and restoration of the habitats at Watsonville Sloughs, as detailed in the Watsonville Sloughs Watershed Resource Conservation and Enhancement Plan (Santa Cruz County 2001). The plan considers the area of Lower Harkins Slough, which includes the FSA property, as "the best area for large wetland and ecosystem restoration." It recommends conversion of agricultural lands to resource conservation to the extent allowable, enhancement of native vegetation in available areas, and improvement of wildlife and fisheries resources.

A population of the federally threatened Santa Cruz tarplant (*Holocarpa macradenia*) is known to occur on neighboring lands along the east side of Harkins Slough, just south of Harkins Slough Road. This plant is extremely rare, currently known only from approximately 14 native and 8 experimentally seeded populations in Contra Costa, Monterey, and Santa Cruz Counties.

The limited range and small number of populations of this species make it especially vulnerable to extinction. On October 17, 2002, the Service included the FSA property in the species' critical habitat designation. Because the Harkins Slough tarplant population is less than ¼ mile from the FSA property boundary, there is high potential that it exists on the property. The Service has not conducted specific surveys on the FSA property for the plant but if it currently does not occur there, it would be a prime site for reintroduction.

The County of Santa Cruz included the Buena Vista property in its Watsonville Sloughs Watershed Resource Conservation and Enhancement Plan (County of Santa Cruz 2001). The Buena Vista property is located within the Gallighan Slough watershed, which is part of the larger Watsonville Slough Watershed. Within the planning area boundaries, the County recognizes the need for nonnative vegetation control, native plant restoration, and protection of wildlife corridors through land acquisition or conservation easement programs.

In addition to the proposed Ellicott Slough Refuge expansion, other habitat protection measures are being considered within the Refuge Complex. Most potential acquisitions, such as the proposed Alameda National Wildlife Refuge, and additions to the San Pablo Bay Refuge, are within the San Francisco Bay area.

#### **1.4 Decisions to be Made**

Based on the analysis documented in this Environmental Assessment, the Service's California/Nevada Operations Manager will select an alternative that best fulfills the purposes of the Refuge and determine whether the selected alternative would have a significant impact on the quality of the human environment. The Director of the U.S. Fish and Wildlife Service will determine whether or not to expand the Ellicott Slough National Wildlife Refuge boundary to include the Buena Vista property.

The authorities for this habitat protection effort are the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended, and the Fish and Wildlife Act of 1956 (16 U.S.C. 742a-742j), as amended. The Endangered Species Act authorizes the acquisition of land for the conservation of listed species with Land and Water Conservation Fund (LWCF) monies. The Fish and Wildlife Act authorizes the acquisition of refuge lands for development, advancement, management, conservation, and protection of fish and wildlife resources with LWCF monies.

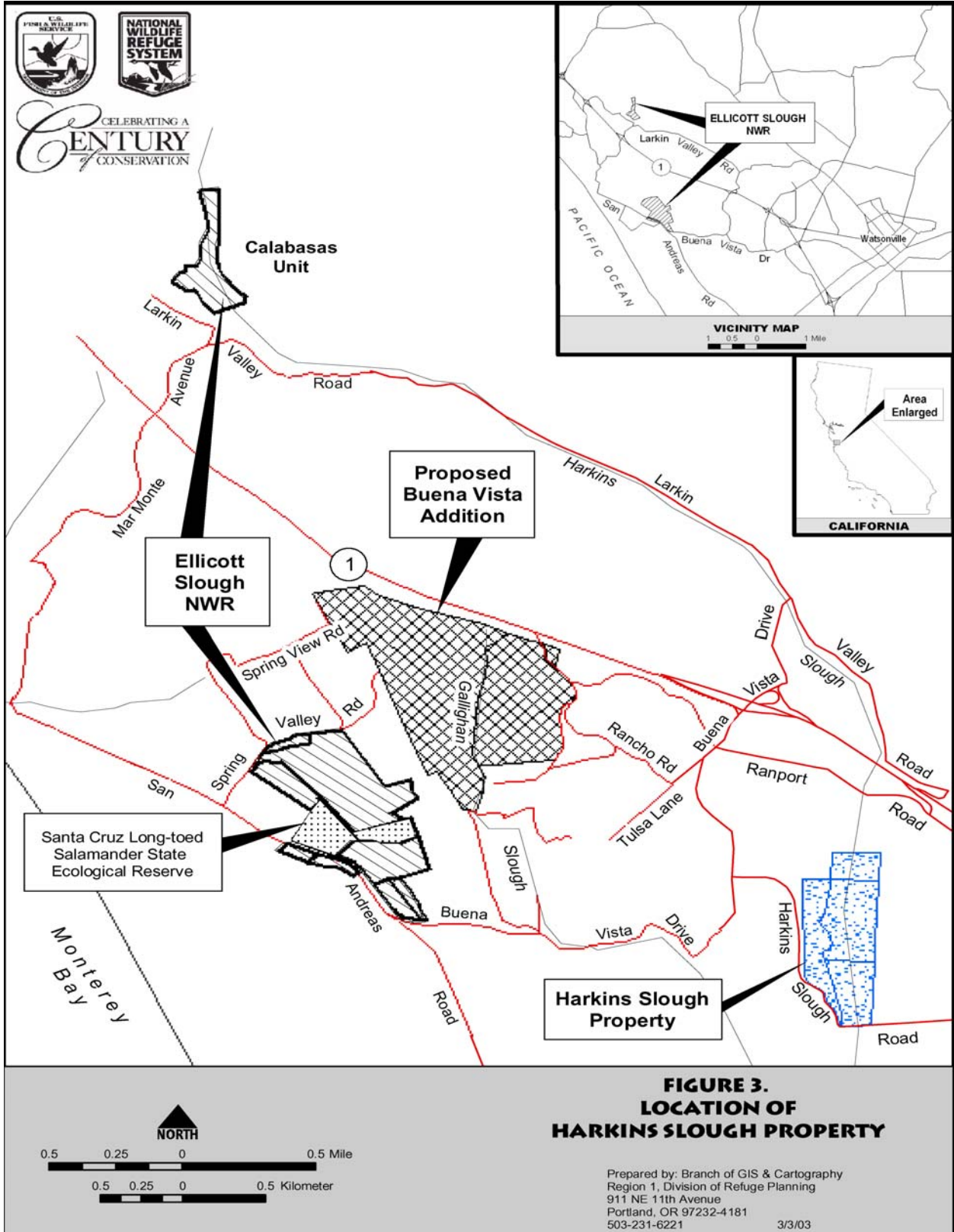
#### **1.5 Issues and Concerns**

Issues and concerns were identified through discussions with the Service's Endangered Species Division as well as with personnel from other agencies and groups including the California Department of Fish and Game, Santa Cruz County, Santa Cruz Open Space Trust, and conservation organizations. The following issues are considered relative to the proposed land

acquisition at Ellicott Slough Refuge:

- The proposed acquisition could provide opportunities for wildlife-oriented recreation.
- The need for active habitat management to maintain and enhance the area's wildlife habitat value.
- A satellite office could make resource management more effective.

In addition, the public will have the opportunity to provide input and identify other concerns during a 30-day public comment period on this Environmental Assessment. This Environmental Assessment addresses the proposed means for habitat protection and land acquisition as well as management as part of the National Wildlife Refuge System.



**FIGURE 3.  
LOCATION OF  
HARKINS SLOUGH PROPERTY**

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Ellicott Slough NWR

Environmental  
Assessment



## **CHAPTER 2. ALTERNATIVES INCLUDING THE PROPOSED ACTION**

Chapter 2 outlines three alternatives: Alternative A is the “no action” alternative in which the Service acquires no interest in the Buena Vista property; Alternative B is an action alternative where entities other than the Service acquire and manage the Buena Vista property; and under Alternative C, the Service acquires a portion of the Buena Vista property in fee title from CDFG and the Service manages the entire property.

### **2.1 Alternative A, No Action Alternative**

Under Alternative A, the Service would not acquire any interest in the Buena Vista property. The current approved Refuge boundary would not be changed. The property would be owned by the State and would likely be closed to the public, due to the State’s limited budget, although research would be allowed.

### **2.2 Alternative B, Acquisition and Management of the Buena Vista Property by Entities Other than the Service**

Under Alternative B, organizations or agencies other than the Service could cooperatively manage the Buena Vista property with CDFG. The Service would not acquire any interest in the Buena Vista property. It is not certain what level of management or public use would occur if another entity managed the property. To date no other agency or group has indicated that they have the necessary interest or resources to manage the property.

### **2.3 Alternative C, Acquisition of the Buena Vista Property in Fee Title by the Service and/or Other Entities and Management by the Service (Proposed Action)**

Under Alternative C (the proposed action), the Service proposes to expand the approved Refuge boundary by approximately 289 acres, acquire approximately 102 acres (in two parcels) of the 289-acre Buena Vista property in fee title, and cooperatively manage the entire 289-acre property as a unit of the Ellicott Slough Refuge and State Ecological Reserve. CDFG would retain ownership of the 187-acre parcel and enter into a Memorandum of Understanding with the Service for management of the Buena Vista property. This is similar to the current management arrangement at the Refuge where the Service manages the entire area, including a 30-acre parcel owned by CDFG. Alternative C offers optimum enhancement of Buena Vista’s endangered species habitat and sensitive plant communities.

The Service would administer and manage the entire property. This alternative would provide the most protection for endangered species and other wildlife on Buena Vista.

The new unit of the Refuge would operate under interim management until a formal habitat management plan or Comprehensive Conservation Plan is developed and approved. Interim management would include nonnative vegetation control using chemical and mechanical means, habitat restoration with native plant species, endangered species surveys, law enforcement patrols, and limited environmental education and interpretation. Buena Vista is relatively pristine, with few invasive nonnative species. However, there are some patches of nonnatives including *Acacia* sp., *Eucalyptus* sp., and pampas grass (*Cortaderia selloana* and *C. jubata*). Nonnative species would be controlled with Roundup™ (glyphosate), Rodeo™, or Garlon4™ (triclopyr). Mechanical means would also be used to remove pampas grass by the root systems and to remove nonnative trees using chain saws. Areas that have undergone vegetation control would be revegetated with native species. Seeds from native plants would be collected on-site and grown in a greenhouse at the Refuge Headquarters in Fremont for later outplanting.

Endangered species surveys of Santa Cruz long-toed salamander and robust spineflower would be conducted annually. During the winter breeding season for the salamander, several night-time surveys would be conducted to document breeding migrations. Using headlamps, Refuge staff would walk around the breeding pond looking for adults. Adults found would be measured, checked for sex, and immediately released. In addition, in the late spring, ponds would be sampled for larval salamanders. Individual larvae would be measured, checked for overall condition and presence of deformities, and released back into the pond. Research compatible with Refuge purposes and goals may be allowed.

The Buena Vista site would also serve as a site for environmental education and interpretive tours. Public access to the Refuge would only occur during Refuge staff-led interpretive tours and volunteer programs. These events would only be offered occasionally, approximately 2 to 4 times per year, and would be limited to groups of 20 people or fewer. Finally, the small house on the property would be converted into a satellite office for Refuge staff, initially just the Refuge Manager and Refuge Biologist. These two staff positions are also responsible for the Salinas River National Wildlife Refuge, 15 miles south of the Buena Vista property. This would increase the efficiency of staff time by eliminating the long commute from the Fremont headquarters to both of these refuges, which is a three- to four-hour round trip. The satellite office would allow for more efficient management and monitoring of these Monterey Bay refuges.

Of any site at Ellicott Slough Refuge, the Buena Vista site provides the greatest opportunity for environmental education and interpretation activities. The Service will examine the potential for other compatible wildlife-oriented public uses when the Comprehensive Conservation Plan is developed for the Refuge (planning is scheduled to begin in 2005).



## 2.4 Alternatives Considered, but Eliminated from Further Evaluation

One alternative considered was management by the Service without any fee-title acquisition. This alternative was eliminated because logistically, it would be better to own the buildings and breeding pond to more effectively manage those lands. Also, the State is interested in donating those parcels to the Service, therefore, there would not be any acquisition costs.

**Table 1. Comparison of Alternatives**

Actions	Alternative A No Action	Alternative B Acquisition and Management by Others	Alternative C Acquisition in Fee Title by Service and/or Others and Management by the Service
Proposed Service Acquisition	Service would acquire no interest in Buena Vista. The property would remain in State ownership.	Service would acquire no interest in Buena Vista. The property would remain in State ownership with management by another agency or group.	Service and State would both partially own property in fee title and the Service would manage as the Ellicott Slough Refuge and State Ecological Reserve.
Habitat Enhancement	Due to budget limitations, limited or no habitat enhancement would occur.	Unknown, depending on resources of management agency or group.	Management would include nonnative vegetation control, native plant restoration, and pond maintenance.
Endangered Species Monitoring	Unknown. Likely annual larval surveys for SCLTS.	Unknown. Likely annual larval surveys for SCLTS.	Annual surveys for adult and larval SCLTS and robust spineflower.
Public Use	No public access likely due to budget limitations. Research may be allowed.	Unknown.	Staff-led interpretive tours and volunteer events would be available to the public. Wildlife observation and photography opportunities would occur during these events. Research may be allowed.



## CHAPTER 3. AFFECTED ENVIRONMENT

### 3.1 Physical Environment

The area that would be affected is known as the Buena Vista property, located in southwestern Santa Cruz County. It consists of three contiguous parcels identified as Assessor's Parcel Nos. 046-041-01 (187 acres), 046-041-03 (100 acres), and 046-051-24 (2 acres). This 289-acre property is located about 1.5 miles west of the Watsonville airport and about 2 miles northwest of the city of Watsonville. It is bounded on the northeast by State Highway 1, on the south by Fiesta Way and Rancho Road, and on the west by cultivated lands east of Willow Creek Drive (Figure 2). It is located less than 700 feet from the current boundary of Ellicott Slough National Wildlife Refuge (Figure 2).

The site is characterized by a Mediterranean climate of warm, dry summers and mild, wet winters. Rainfall averages 20 to 25 inches per year. Average humidity is fairly high at 70 to 80 percent during the entire year due to a strong marine influence. Clouds, fog or overcast conditions prevail on 30 to 40 percent of the daylight hours throughout the year.

The project site includes several north-south trending ridges and valleys; elevations range from approximately 250 feet in the valleys to 490 feet on ridge tops (Coastal Resources Institute 1995). Overall, the terrain is sloping. Four drainage ways exist on the site and carry seasonal runoff water. The breeding habitat for the Santa Cruz long-toed salamander (SCLTS) and California tiger salamander is Buena Vista Pond, an ephemeral pond on the southeastern portion of the site. It was created out of a depression in a draw with a 250-foot long and 21-foot high berm built on the down side of the draw with soil from the depression. It is believed that the depression and berm were built in the 1950s (Buena Vista Country Club 1995). The pond is typically 40 feet wide by 65 feet long and approximately 2 feet deep in the winter, and is completely dry most summers (Buena Vista Country Club 1995).

The following soil information was taken from the Soil Survey Report (Coastal Resources Institute 1995). Soils on the site vary according to topographic locations and are generally sandy loam or loamy sand. Soils on the ridge tops tend to be shallow and finer textured. Soils on the flat, lower lying positions on the ridge tops often have argillic horizons (clay-enriched subsoils), indicating relatively stable soils which are accumulating finer alluvial materials in the subsoil. Soils on the shoulders and backslopes tend to be deeper and more sandy. Soils in valleys and drainages vary, from soils similar to those on backslopes to small areas of hydric soils. The hydric soils occur throughout flat areas in the middle of drainages and in the eastern part of the site. The hydric soils display chemical characteristics of wetland soils, indicating that wet conditions occur at least some time of the year, most likely in the late winter and early spring.

The Buena Vista property is in the Gallighan Slough watershed, as part of the larger Watsonville Slough watershed. Buena Vista is part of an especially high-value groundwater recharge zone of approximately 1,000 acres south of State Highway 1 and north of Spring Valley which is underlain by sandy soils (Hecht et al. 1984). Virtually none of the rain falling on this unusual oak woodland runs off; rather, it percolates through to support the water table. The high recharge rate is essential in supporting local ground water free of dissolved salts so that flowers, berries, and other specialty crops can be grown in the area. Water recharged in this area generally moves southeastward toward the municipal water supply wells of the city of Watsonville.

## 3.2 Biological Environment

### 3.2.1 Flora

The vegetation of the Buena Vista site is a mosaic of 10 plant communities. Though some communities have been modified directly or indirectly by human activity, much of the habitat is undisturbed. The plant communities on the site include: (1) San Andreas Coastal Live Oak Woodland; (2) San Andreas Maritime Chaparral; (3) Riparian Forest; (4) Freshwater Marsh; (5) Monterey Pine Woodland; (6) Seasonal Wetlands (including SCLTS pond); (7) Monterey Pine/Coastal Live Oak Woodland; (8) Douglas Fir Woodland; (9) Northern Coastal Scrub; and (10) Coastal Valley Grassland. The dominant habitat types are described below.

**Oak Woodland:** The site is mainly covered by woodland or forest-type vegetation. The dominant plant cover is the San Andreas Coastal Live Oak Woodland, which covers about 70 percent of the area. The oak woodland present in Santa Cruz is locally referred to as San Andreas Coastal Live Oak Woodland and is considered a sensitive habitat by Santa Cruz County because of its high species diversity and relative scarcity. This type of habitat is restricted to the sandy, infertile soils on hillsides and canyons north of Watsonville. San Andreas Coastal Live Oak Woodland occurs throughout the site, occupying mesic slopes and canyon areas. The majority of San Andreas Coastal Live Oak Woodland on the site shows little to no sign of disturbance (Coastal Resources Institute 1995). The San Andreas Coastal Live Oak Woodland is also considered a locally rare community in the Biotic Resources Section of the Santa Cruz County Growth Management Plan (1977) and as a sensitive community type in the Santa Cruz Local Coastal Program Land Use Plan (1982) (Santa Cruz County Code 16.32).

**Chaparral:** The San Andreas Maritime Chaparral is considered a distinctive type of chaparral by Santa Cruz County because of its unique species composition. This plant community is dominated by two species of manzanita: Hooker's manzanita, which is a rare species endemic to the Monterey Bay region of Santa Cruz and Monterey Counties, and wooly manzanita (Buena Vista Country Club, Inc. 1995). Its dominance in the area makes the San Andreas Maritime Chaparral a unique, sensitive plant community. In addition, this community has a highly restricted distribution in California. Only 207 acres of San Andreas

Maritime Chaparral remain and approximately 18 acres of it are located on the Buena Vista site (Coastal Resources Institute 1995).

**Riparian Forest:** Riparian woodlands occur on the Buena Vista site along the ephemeral creeks that border the eastern portion of the property, around the ephemeral freshwater pond, along the drainage south of the pond, and along the canyon bottoms near the center of the site. Where permanent, slow moving pools of water occur along these drainages, small patches of freshwater marsh-type vegetation have become established and form a mosaic with the San Andreas Coastal Live Oak Woodland and riparian communities that occur there. Riparian woodlands usually form a dense, well-developed corridor of woodland vegetation, but there are some small sections of willow scattered along some of the canyon bottoms. The Riparian Woodlands on the site appear to be healthy, although in some areas, such as along the berm of the artificial pond, there is evidence of past disturbance (Coastal Resources Institute 1995).

**Freshwater Marshes:** There are small scattered seasonal freshwater marshes within the boundaries of the Buena Vista site. The largest areas of freshwater marsh occur around the breeding pond. In addition, there are several small areas of freshwater marsh along some of the canyon bottoms and in other drainages (Coastal Resources Institute 1995).

Within some of the canyon bottoms on the site are small areas that retain water long enough to support aquatic and semi-aquatic species of seasonal marshes. Seasonal marshes do not have a permanent supply of water throughout the year, and dry out during late summer. Most of the seasonal freshwater marshes are associated with small natural drainages that traverse the site. These wetland areas appear to be located in naturally occurring depressions that hold water longer than the soils of the adjacent areas. These small wetland areas are associated with the lowland drainages of the dense and moderate phases of the San Andreas Coastal Live Oak Woodland. They can also be associated with the scattered willows present in some of the canyon areas. (Coastal Resources Institute 1995)

**Monterey Pine Forest:** Monterey pine (*Pinus radiata*) has been planted in small stands north and east of the SCLTS breeding pond, and individual Monterey pines are present along the western portion of the site. Occasional Douglas fir (*Pseudotsuga menziesii*) and knobcone pine (*Pinus attenuata*) occur in small groups on the site. Riparian scrub, dominated by willow (*Salix sp.*), is present in portions of the drainages. French broom (*Genista monspessulanus*) and pampas grass (*Cortaderia selloana*) are invasive nonnatives and form small stands in disturbed areas. The extreme eastern portion of the property shows influence of human disturbance, which is where the roads, trails, and cleared areas occur. The rest of the Buena Vista site shows almost no sign of human disturbance (Coastal Resources Institute 1995).

**Pond:** Buena Vista Pond, the SCLTS's breeding pond, was created out of a depression in a draw approximately 125 feet wide by 250 feet long. A berm, 250 feet long and 21 feet high, was built on the down side of the draw with soil from the depression. Through the years, runoff from the draw has created an ephemeral pond slightly uphill from the base of the berm. The breeding pond generally retains water during the rainy season and for short periods thereafter. The amount and duration of water retention is a function of the amount and duration of rainfall during the year (Buena Vista County Club, Inc. 1995).

### 3.2.2 Sensitive Species

The Buena Vista site includes both breeding and aestivating habitat for both the Santa Cruz long-toed salamander, a federally and state listed endangered species, and the California tiger salamander, a federally threatened species and a California Species of Special Concern (Buena Vista County Club, Inc. 1995). Buena Vista Pond may support several hundred adult SCLTS, based on trapping studies conducted during 1995 (Jennings 1995). The habitat is contiguous with that of Ellicott Slough Refuge and another potential SCLTS breeding pond along Rancho Road. The Buena Vista site also contains one federally endangered plant species, the robust spineflower, and three rare plant species, as identified by the California Native Plant Society, the California Department of Fish and Game, and the Service. These are Hooker's Manzanita (*Arctostaphylos hookeri* ssp. *hookeri*), California bottlebrush grass (*Elymus californicus*), and Kellogg's horkelia (*Horkelia cuneata* ssp. *sericea*) (Buena Vista Country Club, Inc. 1995).

The Buena Vista property is extremely important to the survival of the SCLTS because of the small number of active breeding populations and the limited amount of suitable habitat available for this species. The SCLTS requires ephemeral pond habitat to successfully breed, and native oak woodland/chaparral upland habitat to aestivate. Much of this habitat, however, has been developed for agricultural and residential purposes within the species' range.

Santa Cruz long-toed salamanders have been found at only 14 individual breeding ponds, all within Santa Cruz and Monterey Counties. Of these 14 ponds, only 11 have documented any breeding activity in recent years (Orton-Palmer 2001). These include Ellicott and Calabasas Ponds, both protected by Ellicott Slough Refuge. The only other breeding ponds on public land are the Valencia Lagoon, owned and managed by California Department of Fish and Game, and the McClusky vernal pool, owned and managed by California State Parks. At Valencia Lagoon, reproduction has dramatically decreased due to repeated habitat alteration beginning in 1969. Although a single larval SCLTS was found there in 1997, and another in 2001, essentially no reproduction has occurred at Valencia Lagoon since 1978 (USFWS 1999), and the local population will likely be extirpated. The McClusky vernal pool site is also not considered a healthy population. Extensive surveys in 2001-2002, using drift fences and pit fall traps, captured less than 20 SCLTS (Allaback, personal communication). All other known active breeding ponds are on privately owned land.

Buena Vista is also an extremely important site for the endangered robust spineflower. Buena Vista supports one of only six known populations of this spineflower and Buena Vista is one of two sites that is privately owned. Approximately 135 acres of the property are included in the designated critical habitat (50 CFR 17 36822-36845). The spineflower population at Buena Vista is between 1,000 to 1,500 individual plants (USFWS 2000). The draft recovery plan for the robust spineflower (USFWS 2000) lists protection and management of the Buena Vista site as high priorities for the recovery of the species. This site additionally supports a wide variety of birds, mammals, reptiles, and amphibians.

### **3.3 Social and Economic Environment**

Santa Cruz County covers approximately 446 square miles. In 2000, the population of Santa Cruz County was 255,602 (<http://www.naco.org/>). Major industries include information and knowledge based industries, tourism, and agriculture. The average per capita income is \$26,202 (<http://www.co.santa-cruz.ca.us/cao/econprof.htm>).

The Buena Vista property is open space with one residential unit. The residence could provide office space in the future.

#### **3.3.1 Cultural Resources**

One previous archaeological reconnaissance encompassed most of the current project area (Cartier 1993). It was conducted in 1993 for the proposed Buena Vista Country Club in compliance with the California Environmental Quality Act (CEQA). The report indicates that no cultural resources were identified within the project area. However, due to heavy vegetation, only 20 percent of the subject area was surveyed. The report notes the presence of a large stand of eucalyptus trees, often associated with historic activities, on the northwest edge of the property. No historic resources were observed in the vicinity. Due to the limited accessibility, the report recommends that further survey be conducted prior to earthmoving activities. Also, a search of the California Historical Resources Information System for the Buena Vista Country Club site found no listed historical resources (Northwest Information Center).

Historical research indicates that the project area is within the Rancho San Andres lands, one of three grants given to the Castro family in 1833. At the time of the 1993 report, the family's large adobe house still stood approximately 5,500 feet northeast of the project area.

Indigenous people utilized resources long ago that are still found on this property today such as acorns, hazelnuts, wild game, bulrushes, and willows. Humans have lived in Santa Cruz County for over 5,000 years. Hunter-gatherers moved regularly following seasonal food supplies, but approximately 1,500 years ago they began to store food—primarily acorns—and develop more permanent residence sites. Houses were made from bent willows, tules, bulrushes, or grass.

According to Milliken, the Aptos/Cajastaca group lived in the area of this project site (Lonnberg 1994). During the Spanish period, this property was part of the Rancho San Andres, a land grant of almost 9,000 acres, which was given to Jose Joaquin Castro in 1833. In 1846, it was surveyed and a map was drawn by James Weeks (Becker 1969). This map shows many hills with oaks and chaparral, areas that were never cleared and remain today. Only half of the San Andres Rancho was considered good for cultivation, the rest was wooded, chaparral, and swamp land. Grain and potatoes were grown in the area (Francis 1896). Over the years people such as James Harkins and Charles Ford owned these parcels and kept them intact, providing a unique opportunity for conservation in an otherwise heavily impacted landscape.

No known cultural resources exist on the site. A cultural resource survey will be conducted prior to any management activity that has the potential to disturb cultural resources.

### **3.3.2 Contaminants and Hazardous Wastes**

The site and surrounding area within one mile, is not listed as a contaminated site on the U.S. Environmental Protection Agency National Priorities List of Superfund (CERCLA) Sites or the California State list of confirmed release sites. In accordance with Department of the Interior regulations, a preacquisition Level 1 Contaminant Survey would be conducted on any parcel of land prior to Service acquisition.

### **3.3.3 Wildlife Dependent Public Use**

The Buena Vista property is owned by CDFG and no recreational use by the general public is allowed. No public use was allowed by the previous private owners either.



## **CHAPTER 4. ENVIRONMENTAL CONSEQUENCES**

Implementing each of the alternatives described in Chapter 2 could affect the Buena Vista environment. The anticipated effects and their significance are analyzed in this chapter. The phrase “environmental consequences” should be understood to include not only the physical and biological environment of the project area, but also the effects upon the human population which are part of the associated environment.

### **4.1 Alternative A. No Action Alternative**

Under the No Action Alternative, the Service would not pursue adding the 289-acre Buena Vista property to the Refuge. The CDFG would continue to own the Buena Vista property. The CDFG agreed to accept ownership, however, they have a limited budget and would not be able to manage the land as effectively as the Service. Habitat enhancement activities, such as nonnative weed control and native plant restoration would not likely be conducted. A satellite Refuge office would not be established on Buena Vista, thus the Service would not benefit from the increased efficiency an on-site office would afford. Over time, if not managed adequately, the property could become more heavily infested with invasive nonnative plant and animal species, compromising the biological value of the site.

No long-term Federal funding or Federal commitments for protection of natural resources on the Buena Vista property would be made. This alternative may not contribute to the protection of endangered species and rare vegetative communities. Long-term benefits to wildlife and the public may be lost or degraded through time. Habitat connectivity to other SCLTS and robust spineflowers could be lost due to lack of management. The SCLTS could be harmed or could disappear from the site if habitat is not managed to prevent exotic species from out competing native species, or if the breeding pond is not maintained. The endangered robust spineflower would not be provided additional protection plants receive on Federal land, and the species is not State listed. This species could be extirpated from the site if nonnative species out compete it.

Opportunities for public enjoyment of wildlife-oriented activities would not be available. Additionally, Federal ownership requires compliance with Section 106 of the National Historic Preservation Act, another safeguard not available under State ownership.

### **4.2 Alternative B. Acquisition and Management of the Buena Vista Property by Entities Other than the Service**

Under Alternative B, the Buena Vista property, acquired by CDFG, would be managed by another agency or organization with objectives to protect and enhance endangered species and other wildlife. This alternative would require long-term commitments of land, water, and monetary resources from another entity. The Service currently has an active management

presence at Ellicott Slough National Wildlife Refuge and can provide staff to cover the additional management needs of the Buena Vista site. The level of management another organization or agency could provide is unknown. To date no other agency or group has indicated that they have the necessary interest or resources to manage the property.

This alternative would maintain existing habitat connectivity and meet two of the goals in the Draft Revised Recovery Plan for the Santa Cruz Long-toed Salamander (USFWS 1999) to protect breeding (Goal 1.1.8) and upland habitat (Goal 1.2.1); and two of the tasks in the Draft Recovery Plan for the Robust Spineflower (USFWS 2000) to protect populations (Task 1.1) and to manage habitat (Task 2.3). However, it is unknown what level of habitat enhancement activities would be carried out by another party.

It is not known what level of public use would be allowed on the property. The land has been removed from the Santa Cruz County tax rolls since the State acquired it. Cultural resources may or may not receive adequate protection depending on the managing entity. Additionally, Federal ownership requires compliance with Section 106 of the National Historic Preservation Act, a safeguard not available under State ownership.

### **4.3 Alternative C. Acquisition of the Buena Vista Property in Fee Title by the Service and/or Other Entities and Management by the Service (Proposed Action)**

In this Alternative, the Service proposes to expand the approved Refuge boundary by approximately 289 acres, acquire approximately 102 acres (in two parcels) of the 289-acre Buena Vista property in fee title, and cooperatively manage the entire 289-acre property as a unit of the Ellicott Slough National Wildlife Refuge and State Ecological Reserve. The CDFG would retain ownership of 187 acres and enter into a Memorandum of Understanding with the Service for management of the Buena Vista property. This is similar to the Refuge's current management arrangement with the Service managing the entire area, including CDFG's 30-acre parcel.

#### **4.3.1 Physical Resources**

Nonnative vegetation would be removed from the Refuge through a combination of chemical and mechanical means including herbicide spraying, hand pulling, and removal by use of chainsaws and other tools. Relatively few nonnatives occur on Buena Vista so their removal is not expected to significantly increase soil erosion. Vegetation control will essentially maintain good habitat and prevent the spread of nonnative vegetation. Herbicides would be applied by hand to target exotic plants. Only herbicides approved for use near water, such as Rodeo™, would be applied at sites within 100 feet of open water or wetlands. No spraying would take place when wind velocities exceed 5 miles per hour, when vegetation is wet, or when precipitation is occurring or is forecasted in the following 24 to 36 hours.

Nozzles with orifice diameters of 1/16 inch or greater, or low-drift flat spray nozzles, would be used. These precautions would prevent adverse impacts to water quality as well as to non-target species.

No significant impacts would occur to soils or air quality. No new structures or other construction are proposed under this alternative. Currently, a CDFG warden lives on the property and accesses it daily. Vehicle use under Alternative C could increase slightly by having two full-time staff members working from the site. There is the potential for small groups of visitors during interpretive tours or volunteer events. These events would occur only a few times per year and are not expected to significantly increase vehicle emissions.

### **4.3.2 Biological Resources**

With Service management of Buena Vista, endangered species populations and wildlife habitat would be protected and enhanced in a timely manner. Wildlife values would be maximized as part of Ellicott Slough Refuge. Three active and healthy SCLTS breeding ponds—Ellicott, Calabasas, and Buena Vista—would be protected through Service management. Acquiring the Buena Vista property would meet two goals in the Draft Revised Recovery Plan for the Santa Cruz Long-toed Salamander (USFWS 1999) to protect breeding and upland habitat (Goals 1.1.8 and 1.2.1) and two of the tasks in the Draft Recovery Plan for the Robust Spineflower (USFWS 2000) to protect populations and to manage habitat (Tasks 1.1 and 2.3).

Service management of the Buena Vista population of the SCLTS could increase the prospect for long-term survival of the species, especially given the current fragmented and isolated distribution of the known populations.

Partial acquisition in fee title, in conjunction with a Memorandum of Understanding (MOU) between the Service and the State for Service management of the 187-acre parcel, would provide greater potential for wildlife restoration and increasing biodiversity than would be afforded without Service management. For example, nonnative weed populations would be controlled and disturbed areas would be enhanced or restored. Removal would be carried out from April through October to avoid adversely affecting the SCLTS during its breeding season. There could be adverse impacts on non-target plants from pesticide drift, but these effects are expected to be minimal, due to the small quantities that would be used and the precautionary measures taken. Such action would greatly improve the ecological integrity of the property and would assist in the protection and recovery of endangered species. In addition, nonnative weed control of the Gallighan Slough Watershed has been identified as a need in the Watsonville Sloughs Watershed Resource Conservation and Enhancement Plan (County of Santa Cruz 2001).

Seed collection, planting native vegetation, and endangered species surveys would be conducted or supervised by Refuge staff trained in site specific endangered species identification and

biology. No more than five percent of an individual plant's seeds would be collected in order to avoid effects to the immediate seed bank. Endangered species surveys would be conducted using protocols and techniques designed to minimize disturbance to individual animals or plants. Surveys would be conducted under the authority of endangered species permits and all permit conditions would be strictly adhered to. No significant impacts to endangered species or other natural resources are expected from these activities.

In order to protect listed species and sensitive resources, the area would initially be open to the public only through Refuge staff-led tours and volunteer programs. Group size would be limited to 20 people and groups would be supervised by Refuge staff to ensure that resources are protected. The Service may also allow limited access for scientific research and for study groups on a case-by-case basis through a special-use permit process. Research that is nondisruptive to wildlife or archaeological resources and compatible with Refuge purposes and goals may be allowed. For further details on proposed interim public uses, refer to the Compatibility Determinations in Appendix A of the Conceptual Management Plan.

### **4.3.3 Social and Economic Environment**

Under Alternative C, the Buena Vista site would initially be open to limited staff-led public use, providing interpretative and educational opportunities during Refuge tours and volunteer events. There would also be the opportunity for the public to enjoy wildlife observation and photography during these on-site visits. Further, in 2005, the Service is scheduled to begin a long-term management planning effort for Ellicott Slough National Wildlife Refuge. This Comprehensive Conservation Plan (CCP) will describe goals, objectives, and strategies for public use, as well as resource management, and will involve public input. When planning begins for the CCP, the Service will examine the potential for other compatible wildlife-oriented public use of the Refuge. Of any site at Ellicott Slough Refuge, the proposed Buena Vista addition provides the greatest opportunity for environmental interpretation and education activities. Any public use allowed would be in strict conformance with applicable Federal and State statutes.

State acquisition has removed the property from the Santa Cruz County tax rolls slightly reducing County property tax revenues. The economic impact of Service acquisition would be partially offset by the following:

- Annual payments to the County in accordance with the Refuge Revenue Sharing Act.
- Additional Federal spending for Refuge development, management, services, and supplies would have beneficial effects on the local economy.

- Though interim public access would be limited, the Refuge may allow further public use in the future. If so, revenues could be generated by Refuge visitors. The traffic impacts of any additional public use would be evaluated when specific proposals are developed.
- The inherent long-term benefits of enhancing wildlife habitat and open space and increasing the populations of State and federally listed endangered species.

Refuge status would bring cultural resources under the protection of Federal historic preservation laws, the most important being the National Historic Preservation Act (NHPA), the Archaeological Resources Protection Act (ARPA), and the Native American Graves Protection and Repatriation Act (NAGPRA). Prior to any land modifying activities, a cultural resource survey would be conducted, and cultural resources would be considered in the planning process as required by National Environmental Policy Act (NEPA) and NHPA.

#### **4.4 Cumulative Impacts**

The proposal to expand the approved Refuge boundary and acquire the Buena Vista property as a unit of the Ellicott Slough Refuge, in concert with other land and habitat protection efforts in the region (section 1.3), would have long term cumulative benefits for wildlife and their habitats within the Santa Cruz County region. Although the addition of the FSA property to Ellicott Slough NWR is being addressed in a separate planning process with the FSA, it is briefly described here to describe all reasonably foreseeable Refuge expansion actions. The benefits of these land acquisitions, however, would be limited in light of continuing development and commensurate loss of open space within the region. Thus, the proposed acquisition and management of the Buena Vista property and FSA property as part of the National Wildlife Refuge System does not represent a significant impact on the human environment.

Table 2. Comparison of Environmental Consequences

Impact	Alternative A No Action	Alternative B Acquisition and Management by Others	Alternative C Acquisition in Fee Title by Service and/or Others and Management by the Service
Physical Resources	No effects to physical resources.	No effects to physical resources.	No effects to physical resources. Use of herbicides would be mitigated to prevent effects to water quality.
Endangered Species	Habitat would be protected for endangered species. It is unknown what level of habitat enhancement would occur. Adverse effects to species could occur over time due to habitat degradation from invasive species.	Habitat would be protected for endangered species. It is unknown if habitat enhancement would occur. Adverse effects to species could occur over time due to habitat degradation from invasive species.	Endangered species would receive the most protection. Habitat would be protected and enhanced through nonnative vegetation removal and native plant restoration. Annual surveys for SCLTS and robust spineflower would occur. Listed species populations would be maintained and possibly improved.
Other Biological Resources	Sensitive and unique habitats and associated wildlife would be protected. Habitats could be degraded over time from invasive species.	Sensitive and unique habitats and associated wildlife would be protected. Habitats could be degraded over time from invasive species.	Sensitive and unique habitats and associated wildlife would be protected. Weed control and native plant restoration would maintain and slightly improve native plants and wildlife.
Cultural Resources	Cultural resources would not likely be disturbed, since limited management would occur. Resources would receive State protection.	Depending on management entity, cultural resources may or may not be adequately protected.	Any cultural resources would receive additional protection afforded to Federal lands, due to the requirements of Section 106 of the National Historic Preservation Act.
Social and Economic Environment	No effect to social or economic environment. No opportunities for wildlife-oriented public use. No operational costs to Service. No Refuge Revenue Sharing with County.	Unknown effects to social or economic environment, depending on level of public use allowed. No operational costs to Service. No Refuge Revenue Sharing with County.	Public use opportunities for environmental education and interpretation, and wildlife observation and photography would be created, with little to no impact. For Service acquired parcels, County revenues increased by Refuge Revenue Sharing Act.

## **CHAPTER 5. COORDINATION, CONSULTATION AND COMPLIANCE**

### **5.1 Agency Coordination and Public Involvement**

The proposal to acquire the Buena Vista property as a unit of the Ellicott Slough National Wildlife Refuge has been discussed with landowners, conservation organizations, Federal, State, and County governments, the local Ohlone/Costanoan Tribal representative, and other interested groups and individuals. The Service consulted with agencies and organizations such as the California Department of Fish and Game, the California Department of Transportation, the California Coastal Commission, the California Coastal Conservancy, the County of Santa Cruz, the California Native Plant Society, and the Trust for Public Land.

The public has been notified of the availability of this Environmental Assessment and has a 30-day period to provide comments.

### **5.2 National Environmental Policy Act**

As a Federal agency, the Service must comply with provisions of the National Environmental Policy Act (NEPA). An environmental assessment (EA) is required under NEPA to evaluate reasonable alternatives that will meet stated objectives, and to assess the possible environmental, social, and economic impacts to the human environment. The EA serves as the basis for determining whether implementation of the proposed action would constitute a major Federal action significantly affecting the quality of the human environment. The EA facilitates the involvement of government agencies and the public in the decision making process.

### **5.3 Other Federal Laws, Regulations, and Executive Orders**

This acquisition would be in compliance with the following executive orders and legislative acts:

#### **Executive Orders**

- Floodplain Management (Executive Order 11988). No structure that could either be damaged by or significantly influence the movement of floodwater in the project area is planned for construction by the Service, thus the proposed action is consistent with this executive order.
- Intergovernmental Review of Federal Programs (Executive Order 12372). Copies of this EA were sent to the California State Clearinghouse, Federal and State agencies, and local governments.
- Protection of Historical, Archaeological, and Scientific Properties (Executive Order 11593). No cultural resources were identified in the project area during an

archaeological reconnaissance in 1993. Further surveys would be conducted before any earthmoving activities.

- Protection of Wetlands (Executive Order 11990). The Service plans no detrimental impacts to wetlands but plans to preserve wetlands in the project area, thus the proposed action is consistent with this executive order.
- Environmental Justice (Executive Order 12898). The proposed action will not have a disproportionately high and adverse human health or environmental effect on minority populations and low-income populations. The proposed action promotes reasonable and appropriate uses of the land that preserve the natural character and protect the natural resources of the area.
- Consultation and Coordination with Indian Tribal Governments (Executive Order 13175). No Tribal contacts were identified in the project area.

### **Legislative Acts**

- Endangered Species Act of 1973. A preliminary internal consultation concerning the proposed acquisition to the Refuge indicated that the project would have a beneficial effect on endangered and candidate species.
- Comprehensive Environmental Responses, Compensation, and Liability Act of 1980. No evidence of contaminants or hazardous waste was identified in the project area.
- National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997. The Service determined that wildlife observation, photography, environmental education and interpretation are compatible with the purposes for which the Refuge was established.
- Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970. Should any relocation be required, the Service will comply with the Act.
- Coastal Zone Management Act of 1972, as amended. The Service will undergo a Federal Consistency review with the California Coastal Commission on the proposed acquisition and interim management of the Buena Vista property.
- National Historic Preservation Act. The Service completed a cultural resource record search in conjunction with this EA, and would conduct a cultural resource survey prior to any management activity that has the potential to disturb cultural resources.



## **5.4 Distribution and Availability**

Notice of the availability of the EA, Conceptual Management Plan and Land Protection Plan were sent to many agencies, organizations, groups, and individuals (see Appendix A). These documents are available from the following U.S. Fish and Wildlife Service, Division of Refuge Planning website: <http://pacific.fws.gov/planning>.



## **CHAPTER 6. LIST OF PREPARES**

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### **Personal Communications**

Allaback, M., Wildlife Biologist, Biosearch Wildlife Surveys. June 2002.

Hecht, B., Hydrologist, Balance Hydrologics. January 2002.

Orton-Palmer, A., Wildlife Biologist, U.S. Fish and Wildlife Services, Endangered Species Division. 2001.

**APPENDIX A**  
**NOTIFICATION LIST FOR ENVIRONMENTAL ASSESSMENT,**  
**CONCEPTUAL MANAGEMENT PLAN**  
**AND LAND PROTECTION PLAN**

State and Federal Congressional Delegation

U.S. Senator Dianne Feinstein  
U.S. Senator Barbara Boxer  
U.S. Congressman Sam Farr  
State Senator Bruce McPherson  
State Assemblyman John Laird

Federal, State, and County Agencies

Department of Agriculture, Natural Resources Conservation Service  
Department of Defense, U.S. Army Corps of Engineers  
Department of Transportation, Federal Highway Administration  
Governor Arnold Schwarzenegger  
California Resources Agency  
California Fish and Game Commission  
California Department of Fish and Game  
    Director  
    Regional Manager  
    Local Manager  
Wildlife Conservation Board  
Office of Planning and Research  
California Coastal Commission  
California Coastal Conservancy  
California Department of Transportation  
California Department of Parks and Recreation  
State Historic Preservation Office  
County of Santa Cruz  
    Planning Department  
    Board of Supervisors  
    Parks, Open Space and Cultural Services

Landowners, Private Individuals, and Groups

Trust for Public Land  
Land Trust of Santa Cruz County  
Landowners Adjacent to Ellicott Slough National Wildlife Refuge and Buena Vista  
Open Space Alliance of Santa Cruz  
Cooperative Alliance for Refuge Enhancement  
National Wildlife Refuge Association  
Defenders of Wildlife

The Wildlife Society  
The Wilderness Society  
Wildlife Legislative Fund of America  
National Fish and Wildlife Foundation  
National Rifle Association of America  
The Izaak Walton League of America  
Safari Club International  
Wildlife Forever  
National Audubon Society  
Congressional Sportsmen's Foundation  
American Sportfishing Association  
National Wildlife Federation  
American Fisheries Society  
Trout Unlimited  
Wildlife Management Institute  
Ducks Unlimited  
International Association of Fish and Wildlife Agencies  
California Native Plant Society  
Fund for Animals  
Jones & Stokes Associates, Inc.  
California Farm Bureau Federation

#### Libraries

Santa Cruz Public Library  
Central Library  
La Selva Beach Library

#### Newspapers

Santa Cruz Sentinel  
Register Pajaronian