NORTH ETIWANDA PRESERVE

MANAGEMENT PLAN

October 19, 2010

Developed by USFWS and CDFG

in Cooperation With

San Bernardino Special Districts Department

and the North Etiwanda Board of Directors

NORTH ETIWANDA PRESERVE MANAGEMENT PLAN

1. INTRODUCTION

The purpose of the North Etiwanda Preserve Management Plan (Management Plan) is to guide the North Etiwanda Board of Directors (Board), the San Bernardino County Special Districts Department (Special Districts), and the San Bernardino County Board of Supervisors in protecting and appropriately managing the habitat of the North Etiwanda Preserve (Preserve) in perpetuity.

The original Preserve, formally established in 1998, was a single 763 acre parcel of high quality, sensitive habitat (Figure 1). The original Preserve was set aside as mitigation for the State Route 30 (now known as State Route 210) Improvements Project, and was intended to permanently protect the sensitive Riversidean alluvial fan sage scrub community (alluvial scrub) as well as other native communities and species that occupy the site.

In July 2009, the Preserve was expanded to include 440 acres of additional land that was set aside for conservation purposes. This additional land is managed by the Special Districts with the intent of permanently protecting the alluvial scrub and other native communities and species that occupy the land. Over time, the Special Districts may continue to expand the Preserve by acquiring more conservation land within its jurisdiction and managing it pursuant to the terms of this management plan.

1.1 Relationship of the North Etiwanda Preserve to the Route 30 Improvements Project

San Bernardino Associated Governments (SANBAG) acquired the Preserve as part of an overall mitigation program for the State Route 30 Improvements Project. The lead agencies which approved this project include the California Department of Transportation (Caltrans) and Federal Highways Administration (FHWA). Subsequently, SANBAG, in cooperation with FHWA, Caltrans and the San Bernardino County Open Space District-1 (OS-1), under consultation with USFWS and CDFG, established the Preserve as a permanent natural habitat preserve.

A Cooperative Management Agreement (CMA) between and among SANBAG, Caltrans, County Service Area 70 - Open Space District-1, U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) was signed on the effective date of February 24, 1998. The CMA: 1) identifies the resources to be protected and managed in perpetuity; 2) provides an overall inter-agency management process; 3) outlines management objectives, activities, and actions; 4) identifies holders of conservation easements and fee title; and 5) generally describes other permissible or allowable management actions to preserve and protect sensitive species and their habitats.

This Management Plan was prepared cooperatively by the Board, USFWS, and CDFG, and replaces the 1998 version previously followed and adopted by the Board and County Board of Supervisor. This Management Plan also meets the requirements of Section 4.5 of the CMA and is identified as the NEPMP in the CMA document. In 1998, a $700,000 endowment was established to cover expenses associated with protection and management of the 763 acre Preserve in perpetuity. Expenditures for management pursuant to this Management Plan are limited to the amount of endowment interest available, calculated as described in the CMA Sections 4.4.2c and 4.4.2f.

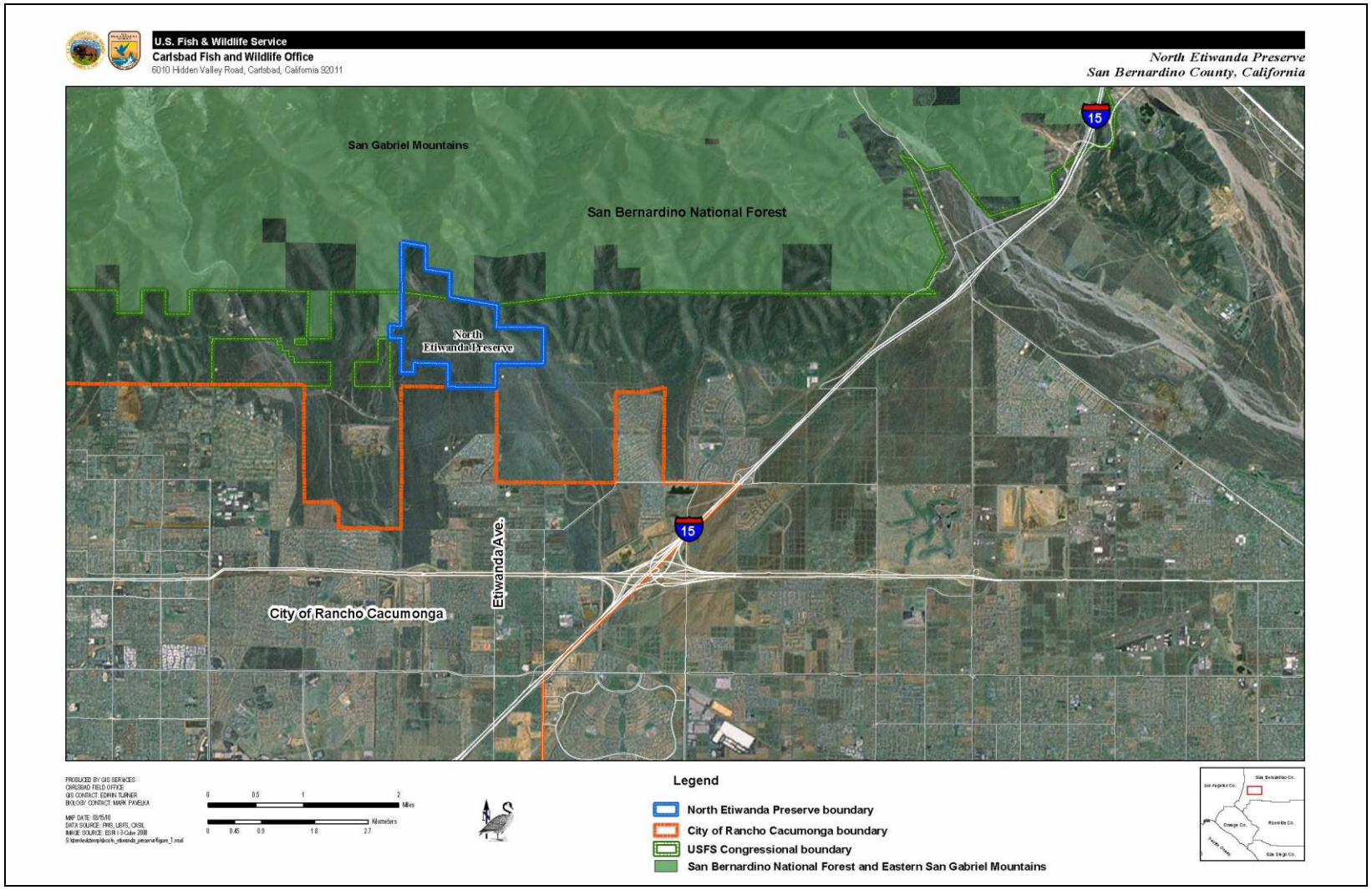

Figure 1. Map of 763 acre North Etiwanda Preserve and surrounding area.

1.2 Expansion of Preserve to Incorporate Additional Conservation Lands

In July 2009, County Service Area (CSA) 70 - Open Space District-1 was replaced with CSA 120. The newly formed CSA 120 covers a larger geographical area than CSA 70 and encompasses significantly more of the sensitive alluvial fan habitat that is contiguous with the Preserve (Figure 2). The Special Districts are responsible for managing the 763 acre Preserve as well as 440 acres of additional conservation lands within the CSA 120 boundary. The Board considers these additional lands as part of the Preserve, thereby expanding the Preserve to cover approximately 1203 acres.

With the creation of CSA 120 and acceptance of the additional land, funding for management of the CSA 120 controlled properties increased from $700,000 to $1,594,250.00. Thus as of July 2009, the account has a non-wasting balance of $1,594,250.00 from which interest earned can be used for management of the Preserve, including both the original Preserve and the additional lands. Expenditures from the endowment for management pursuant to this Management Plan are limited to the amount of endowment interest available, calculated as described in the CMA Section 4.2.2c.

For the purposes of this Management Plan, the original 763 acre Preserve will be referred to as Unit 1 of the expanded Preserve, and the additional lands are referred to as Unit 2 of the expanded Preserve. The Goals, Objectives, and Actions articulated in this Management Plan apply to the entire Preserve (e.g., both Unit 1 and Unit 2) unless otherwise specified. Over time and as the Preserve continues to expand, the Board or Special Districts may choose to divide the Preserve into more units to facilitate management. Regardless of future designations, all land within the original 763 acre Preserve boundary is subject to any terms of this management plan specified for Unit 1, and all lands outside the original 763 acre Preserve are subject to any terms specified for Unit 2.

It is important to note that the CSA 120 boundary also encompasses approximately 1,016 acres of lands owned by the San Bernardino National Forest. These lands will continue to be managed by the U.S. Forest Service pursuant to any approved management plans for the San Bernardino National Forest, and will not be subject to the management provisions articulated in this management plan. However, the Board will coordinate with the San Bernardino Forest to assure compatibility of management actions wherever possible.

1.3 Importance of North Etiwanda as a Regional Resource

The alluvial fans located at the base of the San Gabriel Mountains near the City of Rancho Cucamonga are considered by the CDFG and the USFWS to be an important ecological area. The Preserve is wholly located within a State-designated Significant Natural Area (Fish and Game Code Section 1930 et. seq.) on the North Etiwanda alluvial fan. The original Preserve's (Unit 1) value as an important ecological and cultural resource is attributed to the following:

- Presence of approximately 473 acres of alluvial scrub, ranked by the State as a very threatened and rare natural community;
- Presence of other rare and threatened habitats such as sycamore alluvial woodland, white alder riparian forest, California walnut woodland, and fresh water marsh;
- Presence of many sensitive species of wildlife and plants within the Preserve and/or in locally contiguous habitats, including State- and federally listed endangered, threatened,

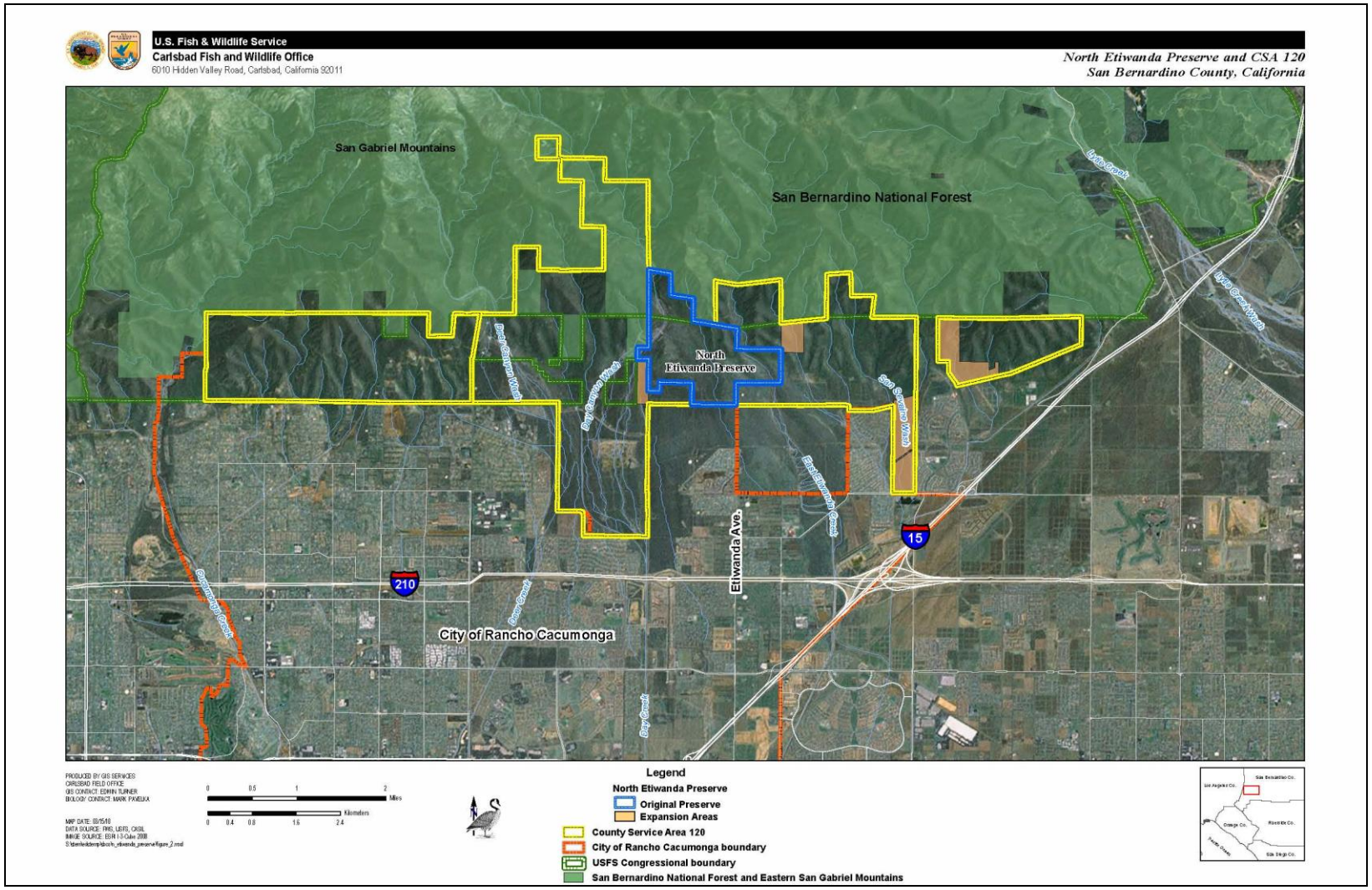

Figure 2. Map of North Etiwanda Preserve showing the CSA 120 boundary, the boundary of the original North Etiwanda Preserve (Unit 1) and the location of the 440 additional acres (the 5 parcels collectively = Unit 2) used to expand the North Etiwanda Preserve in 2009.

and/or sensitive species such as the California gnatcatcher, least Bell's vireo, Los Angeles pocket mouse, Plummer's mariposa lily, Parry's spineflower, Bell's sage sparrow, rufous-crowned sparrow, and San Diego homed lizard;

- The Preserve and the surrounding area is considered to be a sacred site by the Gabrielino-Shoshoni Nation and Serrano people and is currently used for cultural purposes;
- Much of the northern boundary is contiguous with the San Bernardino National Forest.

The additional land used to expand the Preserve (Unit 2) is composed of multiple parcels that are individually much smaller than Unit 1 and have not been subjected to the same detailed cultural and biological investigations as Unit 1. However, Unit 2 is located on the same alluvial fan system as Unit 1 (formed by flows emanating from Deer, Day, Etiwanda, and San Sevaine creeks), and supports similar habitat types and species. The entire Preserve is therefore important to the long term conservation of the unique flora and fauna of this region. A more thorough characterization of the resources within Unit 2 is a future task described more fully later in this Management Plan.

1.4 Purpose of the North Etiwanda Management Plan

The general purpose of this Management Plan is to provide a conceptual framework for the overall long-term preservation, management, and restoration of the Preserve as managed by the Board. The primary goal of this Management Plan is to guide the protection, preservation, restoration, and management of existing on-site resources by providing direction toward the development of annual work plans by the Board. In support of this overarching goal, this plan will:

- Identify the resources to be preserved, managed and protected under this plan;
- Identify general management goals, objectives and actions to protect sensitive habitats within the Preserve from existing and future impacts and allow compatible forms of public use;
- Identify a hierarchy of management actions associated with management objectives; and
- Outline a management process for the Board whose direction is to implement the objectives of the Management Plan.

Note the Property Description and Habitat and Species Descriptions sections contained herein (Sections 2 through 3.2) are limited to the original boundaries of the 763 acre Preserve (Unit 1). Therefore, detailed descriptions of the land and biological resources presented in this Management Plan are limited to Unit 1. However, unless otherwise specified, the goals, objectives, and hierarchy of management actions identified in this Management Plan will apply to the entire Preserve, including any future mitigation or open space lands acquired by the County or Board within the boundaries of CSA 120.

2. PROPERTY DESCRIPTION

For a more detailed description of the Preserve and surrounding area, see Safford and Quinn's 1998 *Conservation Plan for the Etiwanda-Day Canyon Drainage System Supporting the Rare Natural Community of Alluvial Fan Sage Scrub.*

2.1 Location

The Preserve is located on a large alluvial fan at the southern base of the San Gabriel Mountains and north of the City of Rancho Cucamonga at the northerly terminus of Etiwanda Avenue. The Preserve is generally bounded on the west by Day Creek; on the north, by the San Bernardino National Forest and private lands; on the east, by East Etiwanda Creek; and on the south by a Los Angeles Department of Water and Power (LADWP) transmission easement and privately owned parcels. Although the northerly 120 acres of the property are located within the Congressionally-designated boundary of the San Bernardino National Forest, they are owned by the County and are not part of the lands managed by the U.S. Forest Service.

2.2 Site Description

The northernmost portion of the Preserve encompasses the mouth of Day Canyon at an elevation of approximately 2,900 feet above sea level, and slopes to the south and southeast at an average 10 percent slope to approximately 2,100 feet elevation at the southern property line. The Preserve is bordered on the west by Day Creek, which flows from Day Canyon, and on the east by Etiwanda Creek that flows from East Etiwanda Canyon northeast of the Preserve. A small portion of the Preserve lies east of Etiwanda Creek. The Preserve lies on a geomorphologically complex alluvial fan, bordered on the north by the San Gabriel Mountains, and transitioning southward into the San Bernardino Valley.

Where Day Creek exits the San Gabriel Mountains, it flows into a detention basin, downstream of which the creek is channelized. The hydrology of East Etiwanda Creek remains relatively intact north of the LADWP power transmission lines. In addition to the Day and East Etiwanda Creeks, the Preserve is traversed by Middle Canyon Wash that crosses the central portion of the Preserve. A system of faults that cross the Preserve has created scarps and a freshwater seep that feeds a cienega. The Preserve is covered with a number of plant communities associated with alluvial fans and washes, including alluvial scrub, coastal sage scrub, alluvial chaparral, walnut woodland, sycamore woodland, and vegetation unique to the freshwater cienega. On the mountain slopes, chaparral and sage scrub elements occur. (See Section 3.1, Natural Communities)

2.3 Existing Uses

The Preserve area is currently used for passive recreation and cultural activities. Uses which have degraded habitat and wildlife values here include, but are not limited to, plinking and shooting, trash dumping, off-road vehicle use and water diversion.

Structural improvements within the Preserve are limited to the Cucamonga Valley Water District (CVWD) water transmission system and access roads, the San Bernardino County Flood Control District (SBCFCD) Day Creek Detention Basin, and the LADWP power transmission lines. All three agencies have easements through the Preserve. The CVWD has easements over existing wells, gauging stations, and water distribution lines. The system conveys water from Day Creek, at the northerly boundary of the property and the central part of the site near the freshwater

cienega, to the Royer-Nesbit Water Treatment Plant. The CVWD also has water distribution lines from East Etiwanda Canyon that traverse the easterly portion of the Preserve.

The SBCFCD has drainage easements within Day Creek and East Etiwanda Creek extending into the canyon mouths. Day Creek has a detention basin, rip rap, and associated levees to minimize downstream debris flows during flood events. LADWP operates a main power transmission line with large towers located along the southern edge of the Preserve.

Unimproved access roads and fire roads for U.S. Forest Service, Rancho Cucamonga Fire Protection District (RCFPD), LADWP and CVWD use provide the only legal access within the site. The roads are currently gated near the boundary of the property. The main access road intersects the LADWP power easement and leads north to a knoll once used as a Forest Service Station site. Farther north, the main access road branches to several service/access roads used by the U.S. Forest Service, SBCFCD, and the CVWD. Other on-site roads have been associated with unauthorized vehicle use, or historical farmland production. Some of those roads were barricaded and ripped in early 1996 to promote recovery of native vegetation.

3. HABITAT AND SPECIES DESCRIPTIONS

The Preserve's biological communities and habitats have developed in response to long-term geologic and hydrologic processes. The Etiwanda alluvial fan formed over tens of thousands of years. At the base of the steep San Gabriel Mountains, Deer Creek, Day Creek and East Etiwanda Creek debouch onto the valley floor. As flood flows emerge from the canyons and slow down, their load of boulders, rocks, cobbles, sand and silt are deposited forming alluvial fans. The Preserve is located on the fan primarily formed by Day Creek, and to a lesser extent, East Etiwanda Creek.

The existing fan consists of areas that continue to receive hydrologic runoff and intervening upland terrain that is not currently fluvially active. Episodic flooding events scour vegetated channels and deposit fresh debris, which triggers recolonization of plants. This creates a mosaic of different aged stands of vegetation.

Downstream of the Day Canyon Detention Basin, on the western boundary of the Preserve, Day Creek (just offsite to the west) is channelized. Detention and removal of debris eliminates the depositional processes that build alluvial fans and terraces over time. In the absence of flooding, vegetation in wash areas will likely continue to mature to more upland forms of alluvial scrub or alluvial chaparral vegetation.

East Etiwanda Creek remains largely unmodified along the upper fan within the Preserve. However, flood control modifications, including a debris basin, have been constructed about two miles downstream of where Etiwanda Creek exits the San Gabriel Mountains. No flood control modifications have been constructed within the North Etiwanda Preserve; thus the fluvial activity which rejuvenates alluvial scrub vegetation along the upper portion of East Etiwanda Creek remains intact.

For a more detailed description of geologic and hydrologic processes at the Preserve, see Safford and Quinn's 1998 *Conservation Plan for the Etiwanda-Day Canyon Drainage System Supporting the Rare Natural Community of Alluvial Fan Sage Scrub.*

3.1 Natural Communities

Vegetation on the Preserve has developed in response to geologic and hydrologic processes. It has also been influenced by periodic wildfires. The project site possesses a high degree of biological diversity and habitat value. Areas such as East Etiwanda Creek and Middle Canyon Wash receive flood flows and therefore tend to support early successional stages of alluvial scrub. Where groundwater persists near the surface, riparian tree species such as California sycamore occur. Day Creek sustains perennial stream flows in the canyon, which has allowed white alders to develop. Intervening upland portions of the fan are dominated by intermediate and mature successional stages of alluvial scrub. On the south-central portion of the Preserve's fan is an area of alluvial chaparral which contains a blend of chaparral and alluvial elements. This area probably represents the oldest geologic surface on the fan. South facing mountain slopes are largely dominated by chaparral and coastal sage scrub.

Based on ESA[1] and LSA Associates[2] field surveys in 1994, the Preserve contains tree, shrub/scrub, and herbaceous-dominated plant communities. Maps from these field surveys were digitized and are presented in Figure 3. The enabling documents for the Preserve contained a summary of the acreage estimates of each vegetation community on the Preserve, as shown in Table 1. Unfortunately, the number of vegetation categories was not consistent between these two reporting efforts and the means by which the acreage estimates were generated (e.g., combining some vegetation categories, incorporating other data) is unclear. A comparison of the acreage estimates from the digitization of the maps to numbers (Table 1) shows a difference of up to 15 percent in any one vegetation category. Thus the Figure and acreage estimates provided herein should be used as a general representation of the location and abundance of vegetation communities across the NEP. These acreage estimates should not be used for quantitative comparisons (e.g. trend analysis) because the accuracy of either of these efforts cannot be substantiated.

The Preserve supports several unique vegetation features. The alluvial scrub occupying the upland portions of the fan is dominated by white sage. In a study initiated by the CDFG and USFWS, Barbour and Wirka (1997) conducted a floristically based analysis of alluvial scrub in the Southern California region and found that the white sage-dominated group on the Etiwanda fan was unique and distinct from other sampled stands of alluvial scrub in Los Angeles, San Bernardino, and Riverside Counties.

Another unique feature is the presence of a 13-acre wetland in the central portion of the Preserve's fan. Geologically, the wetland is a form of sag pond, where ground water is intercepted by a visible earthquake fault and backs up, creating saturated soil conditions for much of the year. This wetland is variously described as a cienega, freshwater seep, or freshwater marsh, and may represent the last example of this type of wetland in the Los Angeles Basin and San Bernardino Valley. For a detailed description of this complex wetland, see Stephen Fischer's 1995 Masters Thesis, *A quantitative description of the vegetation of an inland freshwater marsh in southwestern San Bernardino County.*

[1] ESA, Inc. North Etiwanda Planned Development Environmental Impact Report Draft. December 7, 1993.
[2] LSA Associates. Biological Survey of North Etiwanda. November 1994.the originally reported

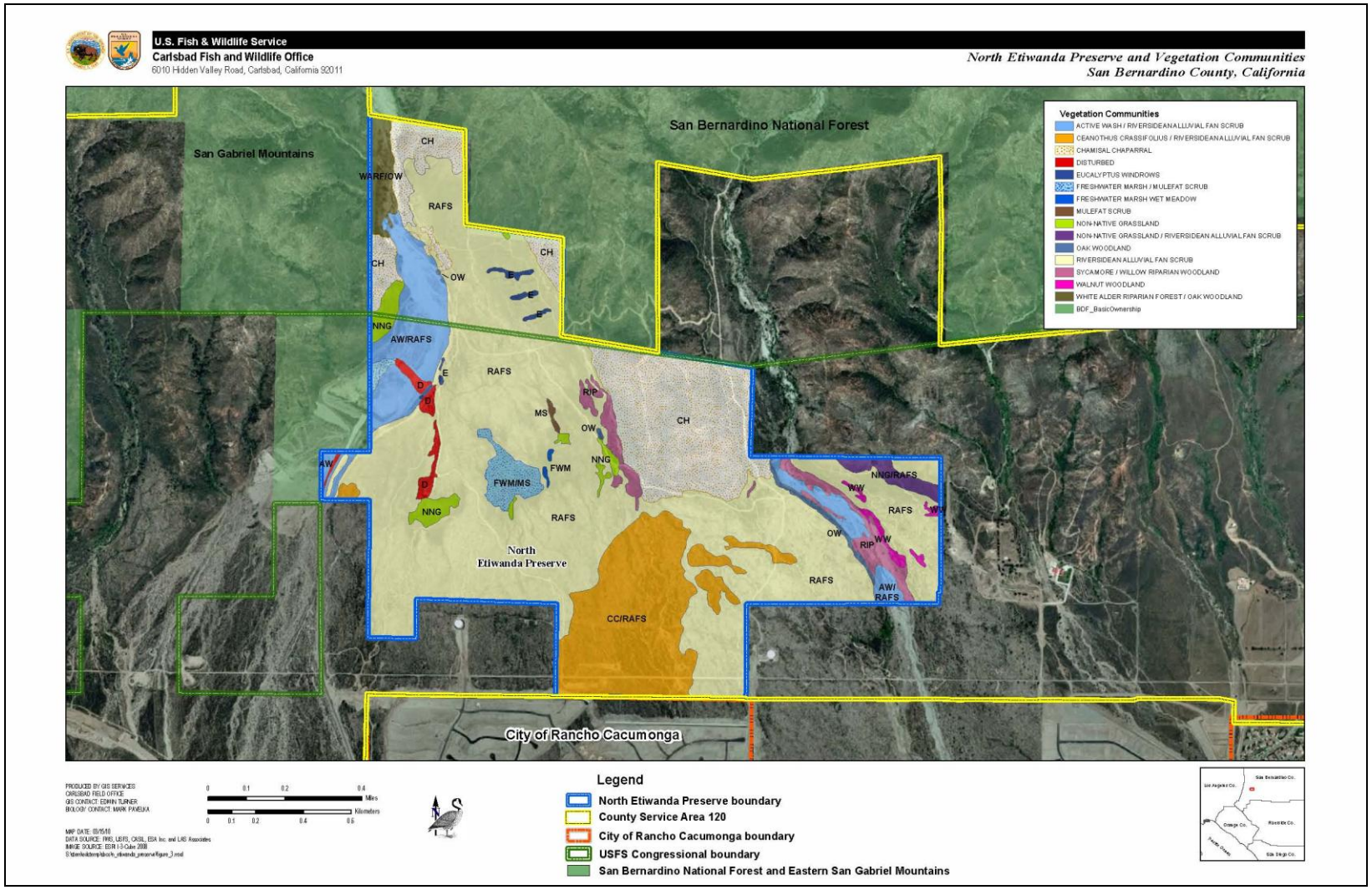

Figure 3. Vegetation communities within the Preserve based on 1994 surveys (ESA, Inc. North Etiwanda Planned Development Environmental Impact Report Draft. December 7, 1993, and LSA Associates. Biological Survey of North Etiwanda. November 1994.)

TABLE 1
AREA OF NATURAL COMMUNITIES WITHIN THE PRESERVE[a]

Community	Size (in acres)
White Alder Riparian Forest (WARF)	12.5
Interior Live Oak Woodland (OW)	2.9
Sycamore Alluvial Woodland (RIP)	17.1
California Walnut Woodland (WW)	3.3
Eucalyptus Windrows (E)	2.4
Riversidean Alluvial Fan Sage Scrub (Alluvial Scrub)	472.6
Chamise Chaparral (CH)	120.2
Ceanothus crassifolius Chaparral/Riversidean Alluvial Fan Sage Scrub (CC*I*Alluvial Scrub) or Alluvial Chaparral	95.4
Fresh Water Cienega (Cienega)	12.9
Non-native Grassland (NNG)	16.5
Disturbed Areas (D)	6.2
TOTAL	762.0

[a] LSA Associates, Inc., December 1994 survey. Abbreviations correspond to plant communities as shown in Figure 3

The following descriptions of the vegetation communities that occur on the Preserve are based on field surveys conducted in 1994.

3.1.1 Tree Dominated Communities

There are five tree-dominated natural communities on the site. Figure 3 shows the locations of these communities within the Preserve. The communities are summarized as follows:

White Alder Riparian Forest (WARF/OW) - This natural community is found in Day Canyon at the north side of the property. It is supported by a clear, swiftly flowing stream.

Interior Live Oak Woodland (OW) - Interior live oak, canyon oak, and mountain mahogany vegetation communities occur along rocky margins, slopes, and sand bars in Day Canyon and the western bank of Etiwanda Creek. There are few understory species except poison oak.

Sycamore Alluvial Woodland (RIP) - This community occurs along Etiwanda Creek, the Middle Canyon Wash, along several unnamed stream courses and in a few dry washes. This community is considered rare by CDFG (CNDDB 2003).

California Walnut Woodland (WW) – This community occurs on the Preserve and is considered rare by CDFG (CNDDB 2003).

Eucalyptus Windrows (E) - Three windrows of *Eucalyptus* sp. were planted on the north central portion of the alluvial fan during past agricultural periods. While the trees are non-native species, they do supply roosting and nesting habitat for raptors and other birds.

3.1.2 Shrub/Scrub Dominated Communities

The majority of the Preserve is characterized by shrub-dominated plant communities. These shrubland types include sage scrubs, which are dominated by soft-leaved drought deciduous species, and chaparrals dominated by woody evergreen species.

Riversidean Alluvial Fan Sage Scrub (Alluvial Scrub) - This community is found on the coastal base of the Transverse Range and on a few isolated alluvial fans on the cismontane base of the Peninsular Range. On the Preserve, alluvial scrub also covers most of the gently sloping alluvial fan surfaces that have not been recently subjected to scouring by flood waters. This type of substrate comprises the large majority of the site.

The CDFG and the USFWS are concerned about the continued losses of alluvial scrub. The CDFG'S Natural Diversity Data Base ranks alluvial scrub as S1.1 (very threatened) and a G1 (global level) rare natural community. This is the highest ranking used by CDFG in its inventory of rare natural communities and receives high priority ranking for preservation.

Chamise Chaparral (CH) - This community occurs on the Preserve primarily on south facing mountain slopes.

Ceanothus Chaparral/Riversidean Alluvial Fan Sage Scrub (CC/Alluvial Scrub) or Alluvial Chaparral - This mixed shrubland occurs on the south-central portion of the Preserve. This large area of shrubland has been visibly evident on aerial photographs since the 1930s and has been described as Alluvial Chaparral in recent floristic treatments (Barbour and Wirka, 1997).

3.1.3 Herbaceous Species Dominated Communities

There are two communities on the site dominated by herbaceous plant species: freshwater cienega and non-native grassland.

Freshwater Cienega - The cienega is an area of saturated and mesic soils that is supplied by a seep. Groundwater, which enters the alluvium up-grade, surfaces at a fault where further sub-surface flow downhill and to the south is blocked. The size of the cienega is a function of groundwater flow. Fine sands and organic material have accumulated in the depression behind the fault. Vegetation, adapted to hydric soils low in oxygen content, has established. Vegetation at the cienega is highly complex, with zonation developing in response to moisture levels and soil nutrients.

Non-native Grassland (NNG) - Three small areas of non-native grassland are currently described. One area is located to the east of Etiwanda Creek levee road and below the road along the lower toe of the hill. The second is on the western boundary of the property on the west side of Day Creek, and the third is located on the fault scarp below and south of the fonner Day Canyon Forest Service Station (knoll).

Disturbed (D) - There are several acres within the Preserve that have been disturbed. It should be noted that portions of the preserve that are not considered disturbed were affected by past agricultural clearing and are recovering from these activities.

3.2 Threatened, Rare, or Endangered Species

The North Etiwanda area supports a number of sensitive plant and wildlife species, several of which are Federal or State listed threatened or endangered. Several California Species of Special Concern and also occur within or nearby the Preserve. Listed species that may occur on the Preserve include the least Bell's vireo, California gnatcatcher, the southwestern willow flycatcher and San Bernardino Merriam's kangaroo rat. Sensitive species include: Los Angeles pocket mouse, San Diego black-tailed jackrabbit, American badger, Coastal cactus wren, San Diego horned lizard, coastal western whiptail, Southern sagebrush lizard, San Bernardino ringneck snake, coastal rosy boa, coastal patch-nose snake, mountain yellow-legged frog, two-striped garter snake, Parry's spineflower, and Plummer's mariposa lily.

4. MANAGEMENT GOALS, OBJECTIVES, AND ACTIONS

Each year, the District Manager shall prepare an annual report on the status of the NEP. This report shall include, at a minimum: 1) the annual work plan for the previous year; 2) a description of all activities undertaken to implement the work plan; 3) a summary of any new biological studies and/or information collected on the NEP for that year; 4) a summary of the status of public access to the NEP, including an estimated of number of visitors, a summary of activity conducted under any docent or volunteer programs, level of patrol, violations, and corrective measures; 5) a statement of the finances of the NEP; 6) a synopsis of any fire related activities on the NEP; 6) a summary of any other noteworthy events or issues that had arisen during the previous year; 7) an affirmation that the data from that year has been entered into the database for the NEP and a location where that database can be accessed by the public; and 8) the proposed work plan for the upcoming year. This report shall be made available to the public.

The annual work plan for each year will be developed by the Board incorporating substantive input from qualified professional biologists and botanists, CDFG and USFWS. The annual work plan will specify which actions will be taken pursuant to Sections 4.1 through 4.5 of this Management Plan. When formulating the annual work plan, any unforeseen work items will be presented to CDFG and USFWS for comment. Because habitat and resource protection is the first and foremost purpose of the Preserve, other uses and public benefits of the Preserve will be given a lower priority when formulating the annual work-plans and establishing budgets.

All annual activities that involve natural resource management, restoration and biological monitoring will be based upon management practices and specific plans developed with the assistance of qualified biologists and/or botanists as appropriate. When developing specific plans that deal with vegetation and plant-related issues, the Board will seek assistance of qualified botanists experienced with native plant ecology and onsite plant communities whenever possible. Where these activities could potentially affect wildlife species, a qualified wildlife biologist will be consulted.

Implementation of these activities will be overseen and supervised by the Special Districts manager seeking assistance from qualified botanists and biologists. Volunteers, students, conservation corps crews, or other sources of labor may also be used. As funding permits, the Board will investigate hiring a professional preserve manager on a full or part time basis to oversee annual work planning and preserve management activities.

The central management issue that affects the success of the Preserve and additional lands is the protection and preservation of all native species, habitats, and natural features and ecosystem processes existing on site. To that end, this Management Plan identifies six principal goals:

1) Preservation of Native Species, Habitats, and Ecosystem Processes;
2) Protection and preservation of Cultural Resources;
3) Monitoring Existing Habitats, Species and Physical Conditions;
4) Restoration of Disturbed On-Site Habitats;
5) Develop and Maintain an Informational Database;

Action Hierarchy

In addition to describing management actions, this Management Plan also identifies a recommended hierarchy of relative priority. The hierarchy of actions is defined as follows:

First Priority	Critical actions to be initiated immediately upon availability of funding.
Second Priority	Those less critical actions to be completed under the annual work plan in years where funding is available in excess of that needed to implement first priority actions.
Additional Actions	Actions not having First or Second priority, but still invaluable to overall management, operation and protection of the Preserve and Additional Lands. These actions are to be accomplished as funding is available. Direct Special Districts funding can be used to fund these items providing First and Second level priorities have been fully met. The Special Districts is able to seek and secure funding for these items from independent sources, and/or through coordination with easement holders, local jurisdictions, state and federal Wildlife Agencies, and like entities.
Permissible Actions	These actions can be completed at any time, do not depend on available funding, and are generally associated with activities that can be initiated and completed by volunteer or service-related organizations.

Associated with each goal are specific management objectives and actions needed to accomplish the objectives. Management objectives together with prioritized actions are described for each major goal in sections 4.1 through 4.5. In all cases, Goals, Objectives, and Actions designed to protect and preserve resources are considered of highest priority. These actions should be implemented first, with accommodations for public uses and other activities being secondary.

4.1 Goal: Preservation of Native Species, Habitats, and Ecosystem Processes

Protecting the Preserve from detrimental effects is central to the mandate of perpetual preservation of species, habitat, and ecosystem processes. The Preserve is overlain on existing uses, and Unit 1 is accessible to the public by virtue of the trail component approved in the CMA. However, public access within Unit 1 is allowable only to the extent it is compatible with the primary purpose of species and habitat preservation. Therefore, minimizing impacts associated with public access and existing uses is a vital component of the management of the Preserve.

Any take of listed species associated with management of the Preserve (within all areas) can only be authorized through consultation with the wildlife agencies.

4.1.1 Objective: Achieve and Maintain Site Protection Through Security and Monitoring

Authorized vehicle access is currently restricted to agencies such as the CVWD, SBCFCD, the Special Districts (and their designees), RCFPD, and the U.S. Forest Service. Heavy-duty security gates and boulders have been placed on the primary entry points to the Preserve by CVWD and the Board. These gates and the placement of boulders are designed to preclude illegal vehicle access to the Preserve and the CVWD facilities on the property. The Board will continue to identify other vehicle entry points that need to be blocked by gates or boulder barriers. Aerial photos and site surveys will be used to detect if any new entry points are illegally created.

The use of access roads by the LADWP, SBCFCD, CVWD, and the U.S. Forest Service will be monitored by the Special Districts, and all agencies with vehicle access to the Preserve will be required to police and secure their access points. Responsibility for regular patrols on the NEP is with the District Board. Maintenance of any gates or barriers erected to control access to the NEP will be the responsibility of the agency that put the barrier in place, unless other arrangements have been made by special agreement. Access roads used by the LADWP, SBCFCD, CVWD, and the U.S. Forest Service will be maintained by those agencies. Agencies are to contact and consult with the Board prior to working or undertaking any maintenance projects or operations within the Preserve or additional lands. Any additional roads required for management of the Preserve will be maintained by the Board. All unnecessary roads will be barricaded with large boulders or other effective barriers to facilitate and support restoration of these areas.

First Priority Actions:

- Regular site monitoring and patrol will be performed. The purpose of the site monitoring will be to check for evidence of incompatible human activities such as trash dumping, vehicular encroachments, shooting, gate damage, etc. Remedial actions, such as barricade enhancements, will be performed as necessary. The purpose of patrol is to provide, through official presence and enforcement, a deterrent to incompatible activities.

- Institute a system of regular patrolling of accessible preserve perimeter areas, internal road system, and other areas as appropriate. A private security service may be retained to implement regular patrols. Patrolling should be sufficiently intensive to establish an active presence and timed to deter unauthorized activities, including night patrols as needed. Patrolling needs will be re-evaluated each year, and adjusted as appropriate.

- Signs will be posted along essential roads advising public visitors that the Preserve is an important habitat area and to remain on the trail at all times.

- Perimeter signage identifying the "North Etiwanda Preserve" will be installed at all points of entry into the Preserve. These signs will list restrictions and cite enforcing ordinances. As needed, fencing and signage will be added along the perimeters of the NEP to deter trespass and increase law enforcement authorities.

- All known points of unauthorized vehicular access will be blocked with large boulders or similarly effective barriers, and maintain as necessary.

- Trash will be removed when discovered.

- The discharge of firearms fireworks, and model rockets, and the use of open flames (campfires, cooking stoves, BBQ's) will be prohibited using signage and patrols.

- Human impacts on sensitive habitats (e.g. trail use, ORV impacts, trash accumulation) will be monitored and appropriate counter measures will be implemented.

- Protocols for emergency situations will be developed.

- The occurrence of human activities incompatible with the purpose and goals of this plan will be monitored. Proposals to restrict and prevent these activities, and to remedy damage, will be developed for inclusion in the annual work program. Emphasis must be placed on activities that negatively affect the habitat. All public access will be limited to daylight hours. Within Unit 1, motorized vehicles, mountain bikes, horses, and dogs will not be permitted. Within Unit 2, motorized vehicles will not be permitted, but the Board may develop a plan for the allowance of mountain bikes, dogs and/or horses in designated areas providing that the habitat value and species diversity of the Preserve is maintained. With written concurrence from the USFWS and CDFG, the Board may adopt and enact policies for the allowance of mountain bikes, dogs and/or horses in designated areas provided such policies include provisions for environmental protection and the monitoring of these allowances.

- The Board will solicit additional funding for operation and maintenance of the Preserve.

- The Board will solicit additional funding or assistance for patrols and/or security when warranted.

Second Priority Actions:

- Wildlife-proof trash receptacles may be placed along roads and hiking trails. All trash receptacles on the Preserve will be serviced regularly.

- Further curtail illegal dumping and vandalism with additional patrol and monitoring of the Preserve.

- A graveled parking area has been provided near the juncture of Etiwanda Avenue and the LADWP easement in order to reduce unauthorized vehicle access. Vehicle gates and an informational kiosk have been installed near this location and will be checked and maintained regularly.

Additional Actions:

- The Board, CDFG, and USFWS shall work with CVWD, RCFPD, and the County Sheriff's Department to develop a patrol protocol to reduce unauthorized activity in the Preserve.

- All utility service vehicles will be restricted to designated access roads, official utility work, and normal business hours.

- Permissible maintenance activities associated with fire protection, flood control, power line maintenance, and water system operations shall be developed in consultation with USFWS and CDFG. The Board shall pursue a Memorandum of Understanding (MOU) between the Board, City of Rancho Cucamonga, RCFPD, San Bernardino County Transportation and Flood Control District, CVWD, CDFG, USFWS, and the U. S. Army Corps of Engineers to clearly detail roles, responsibilities and incorporate the best management practices for preservation of the habitat while allowing for maintenance activities.

Permissible Actions:

- Volunteer and/or service-related organizations may be enlisted for the collection and disposal of trash, removal of graffiti, etc.

- Preserve volunteers and docent programs will be encouraged to enable the education of visitors as to appropriate activities within the Preserve and to aid in the protection of onsite resources.

- The San Bernardino County Sheriff's Department, County Code Enforcement, CDFG, USFWS, RCFPD, and other enforcement entities will have full authority to patrol and issue citations within the Preserve. Patrols will use the Preserve's existing internal road system in order to avoid damaging Preserve habitat. The Board will coordinate with these agencies to track the level of law enforcement activity on the Preserve.

- Local neighborhood watch groups may assist in patrolling the Preserve and reporting of illegal activities to the proper authorities.

4.1.2 Objective: Manage Public Access

The management of the Preserve will provide for public access on foot into the Preserve for passive hiking and nature study in a manner that ensures use levels are compatible with Preserve protection and preservation. The historical pattern of dispersed public activities in the Preserve have resulted in a multitude of foot trails, OHV tracks, and areas of degraded habitat, as well as direct impacts to wildlife. The primary strategy will be to contain public use to designated trails and points of interest.

First Priority Actions:

- Maintain existing roads and trails that have been designated for foot access (see North Etiwanda Preserve Enhancement Project: Initial Study). Hiking trails will not lead directly into potentially sensitive areas and way-finding signs will be posted to discourage access to these sensitive sites.

- Develop and implement a system to provide a reasonable estimate of visitor use levels and activity areas. This may include visitor logs, registration box, volunteer surveys, and other appropriate methods.

- Public access will be limited to daylight hours. Within Unit 1, motorized vehicles, mountain bikes, horses, and dogs will not be permitted. Within Unit 2, motorized vehicles, mountain bikes, horses, and dogs will not be permitted, but the Board may

develop a plan for the allowance of mountain bikes, dogs and/or horses in designated areas within Unit 2 provided that the habitat value and species diversity of the Preserve is maintained. With written concurrence from the USFWS and CDFG, the Board may adopt and enact policies for the allowance of mountain bikes, dogs and/or horses in designated areas provided such policies include provisions for environmental protection and the monitoring of these allowances. If biological surveys and/or monitoring of recreational use indicate non-compliance with the containment strategy (e.g., failure of hikers to stay on trail) or access restrictions (e.g., continued incursion into the Preserve by unauthorized motor vehicles, bicycles, horses, or pets) further access restrictions will be implemented. This could include closure of some trails or trail segments, seasonal closures, closure of critical areas, restrictions on open days and times of day, or conversion to a docent-lead program with guided access only.

4.1.3 Objective: Manage Easements and Roads

There are a number of unimproved dirt roads that traverse the Preserve. Some of these roads function as service roads providing access to water facilities and equipment owned by the CVWD. The SBCFCD has a service road to the Day Creek Detention Basin located near the northeastern portion of the property. The U.S. Forest Service has two access roads that serve the San Bernardino National Forest.

There is one main access road into Unit 1 of the Preserve. This access road intersects the LADWP easement road on the south and continues north to the knoll that was once used as a Forest Service facility. The access road continues north to an abandoned gauging station. Service roads used by the U.S. Forest Service and the CVWD branch to the east and central portions of the property.

Maintenance of necessary roads will remain the responsibility of the respective easement holders. The District Board shall work with easement holders to assure all maintenance activities are environmentally sensitive and restricted to the roadbed. Routine maintenance activities should be limited to minimal re-grading of the road bed and other activities as agreed. No take of listed species resulting from operational use and maintenance of easements is authorized in this Management Plan, the CMA, or the biological opinion for the State Route 30 Improvements Project. Such take can only be authorized through consultation with the Wildlife Agencies.

First Priority Actions:

- The District Board will work with all easement holders to identify existing legal easements that are in use and to identify easements that are not being used. Withdrawal of unused and unnecessary easements will be encouraged, and establishment of new easements will be prevented, unless established for the sole purpose of habitat conservation.

- All unofficial or unnecessary roads and trails will be blocked and re-vegetated. Re-vegetation of closed roads can be passive or active as appropriate.

- Keys to the Preserve will be issued to CDFG, USFWS, and USFS upon request. A list of key holders will be reported in the annual work plan.

- The District Board shall coordinate with the CVWD regarding any proposed future expansion of their water delivery system on Preserve lands. Any expansion resulting in

biological impacts in the Preserve will need to be coordinated and approved by CDFG and USFWS. Any impacts to the Preserve must be avoided, minimized, and mitigated to the maximum extent practicable.

Additional Actions:

- Maintenance of utility and/or easement roads will remain the responsibility of the easement holder. The District Board shall work with easement holders to assure all maintenance activities are environmentally sensitive and restricted to the road bed and the minimum area needed immediately adjacent to the right-of-way. Routine maintenance of the road bed will be limited to the use of approved weed control methods, and other activities as agreed upon between the easement holders, the Board and the Wildlife Agencies. Any erosion or hydrological impacts caused by easement roads will require remediation by easement holders.

- Efforts will be made to coordinate the activities of the SBCFCD and the CVWD in order to avoid and minimize further disturbance of habitat within and contiguous with the Preserve. To facilitate this coordination, a Memorandum of Understanding (MOU) between the Board, SBCFCD, and CVWD will be sought. Coordination will occur with the SBCFCD and the CVWD to limit service vehicles and personnel to designated access and service roads.

- A MOU will be sought between the Board, LADWP, SBCFCD and the CVWD to restrict impacts to habitat during maintenance clean-out of the Day Creek Detention Basin facility.

4.1.4 Objective: Develop and Implement a Fire Management Plan

The Board will develop a fire management plan by July 2010. The fire management plan will be developed in coordination with the RCFPD, California Department of Forestry, the U.S. Forest Service, CDFG, USFWS, and any other local fire agencies with authority over lands within the Preserve. The fire management plan will constitute an addendum to this Management Plan. Until this fire management plan is approved by the Board and adopted, the following actions will be addressed in the annual work plan.

First Priority Actions:

- Coordination with local and State fire agencies to protect sensitive habitats on the Preserve from being impacted by emergency fire breaks.

- No camping, use of open flames (campfires, cooking stoves, BBQ's), or the discharge of firearms, fireworks, and model rockets will be allowed on the Preserve. Every effort will be made to communicate the danger of fire and smoking to the public visitors of the Preserve. Night patrols may be required if signs of campfires are detected.

Additional Actions:

- By means of special agreement with the City, County, RCFPD, and U.S. Forest Service, the weed abatement and brush reduction programs of these agencies will not be permitted within the Preserve.

4.1.5 Objective: Manage the Urban Interface

The Board will work with the City of Rancho Cucamonga and San Bernardino County to seek appropriate low density and open space designations for areas adjoining the Preserve in order to minimize the impacts of future urbanization on the Preserve area. The Board and the Wildlife Agencies shall work with the County, City of Rancho Cucamonga, and developers to assure any new developments on the Eitwanda Fan and adjoining alluvial fans incorporate adequate buffers to protect the Preserve. Such buffers must come from the lands being developed. In no case will Preserve land be considered a buffer for an adjoining development or as an open space area for an adjoining development. Maintaining continuity and linkage with other natural open space through the directed use of mitigation will be a priority.

The occurrence of human activities incompatible with the goals of this plan will be monitored, and proposals to restrict and prevent these activities will be developed for inclusion in the annual work plans.

First Priority Actions:

- Signage and barricades will be installed to deter uncontrolled access into the Preserve.
- Perimeter signage identifying the "North Etiwanda Preserve" will be installed at designated points of entry into the Preserve.
- Interpretive/educational signage will be installed along designated hiking trails and at controlled points of entry.

Additional Actions:

- The Board will coordinate with the County of San Bernardino and the City of Rancho Cucamonga to assure that any residential or other developments adjacent to the Preserve, or to contiguous habitat, are conditioned to include adequate set-backs, cat-proof walls, and any other appropriate protective measures.
- The Board will coordinate with the County of San Bernardino and the City of Rancho Cucamonga to deter the development of equestrian facilities adjacent or in close proximity to the NEP.

Permissible Actions:

- The Board may coordinate educational field trips with local schools, Chaffey College, California State University, San Bernardino, local tribes, and other institutions.
- Nominate and register the Preserve as a State and National Historical Landmark.

4.1.6 Objective: Manage Hydrology

The vegetative diversity and structure of the creeks and washes on the Preserve are dependent on periodic flooding. Without this periodic hydrologic disturbance, natural succession will lead to increased vegetative cover and changes in plant composition, resulting in an overall loss of landscape-scale heterogeneity and biodiversity.

The SBCFCD provides facilities for flood control and is responsible for the planning, construction, and maintenance of regional flood control facilities within San Bernardino County. The SBCFCD has flood control easements within Day Creek and Etiwanda Creek. Both creeks are large, active drainage subject to flooding. No take of listed species associated with the operation and maintenance of these flood control facilities is authorized in this Management Plan, the CMA, or the biological opnions for the State Route 30 Improvements project. Such take can only be authorized through consultation with the Wildlife Agencies.

First Priority Actions:

- Any new flood control activities on or affecting the Preserve will be minimized through coordination with the SBCFCD. More precise definition of easement grants will be sought.

- The Board will coordinate with the SBCFCD to minimize any potential hydrological impacts to alluvial scrub habitat.

- The Board shall coordinate with the SBCFCD to minimize disturbance to alluvial scrub during maintenance activities within flood control easements. Existing on-site washes and ravines shall be preserved to allow natural flow of water and sediment.

- The Board will investigate the possibility of locating and restoring the peizometers previously placed on the NEP to monitor ground-water levels.

- The Board shall seek to preserve groundwater flow to the cienega A plan will be developed and implemented to obtain accurate information on subsurface and surface water levels in the cienega. Should additional monitoring wells, peizometers, or other techniques require physical installations that may cause ground disturbance, impacts will be minimized and emphasize use of existing access and disturbed areas. The Board shall encourage regulation of the specific capacities and draw-down of upstream wells and stream diversions.

Additional Actions:

- SBCFCD should be encouraged to incorporate preventative measures with their levees, such as fencing, gates, and other barriers, that assist in restricting access into the Preserve.

- The Board shall coordinate with SBCFCD to restore alluvial scrub habitat on Preserve lands disturbed by the construction of any new or modified levees.

4.1.7 Objective: Control Exotic Species

The introduction and invasion of exotic species of plants and animals is a threat to all habitat preserves. Control measures will be directed toward exotic species determined through biological monitoring to be a threat to the native species and habitats on the Preserve. Any take of listed species associated with these actions on the Preserve can only be authorized through consultation with the wildlife agencies.

First Priority Action:

- Eradication of any occurrences of noxious weeds may be contracted to a qualified specialist. Noxious weeds include but are not limited to tree tobacco, caster bean, salt cedar, cocklebur, giant reed, and German ivy.

- The Board shall work with easement holders, contractors, and fire crews to assure any equipment operate within in the NEP is washed prior to entry (to prevent the spread of exotic plants and noxious weeds).

Second Priority Action:

- Eradication of other invasive exotic plants, particularly those occurring in the most sensitive areas on the Preserve, may be contracted to a qualified specialist. Such invasive exotic plants include mustards, Mediterranean annual grasses, etc.

Permissible Action:

- Brown-headed cowbird trapping on the Preserve will be encouraged.

- Eradication of exotic plants on the Preserve by volunteer organizations will be encouraged by the Board.

4.2 Goal: Protection of Cultural Resources

Cultural resources will be identified and protected. The Board will seek the assistance of the San Bernardino County Museum cultural and antiquities staff, the Gabrielino-Shoshone Nation, and the San Manuel Band of Serrano Mission Indians in defining objectives and actions.

4.2.1 Objective: Manage Cultural Resources Without Interference

First Priority Action:

- Search historical records and work with the local historic society and tribal representatives to identify important and/or sensitive cultural resources within Unit 1 and Unit 2 that require protection or specific management considerations.

- Coordinate with the San Manuel Band of Serrano Mission Indians and Gabrielino-Shoshoni Nation to facilitate access for ceremonial activities and to allow collection of white sage and other ceremonial materials, where such collection does not result in take of listed species. Encourage small-scale and sustainable collection of ceremonial material while enforcing against large scale and unsustainable collection.

- Develop a plan and/or agreement between the District and the local tribes establishing any terms and/or limitations in access to the NEP for ceremonial and education programs, and for the collection of white sage and other ceremonial materials.

4.3 Goal: Monitor Biological Resources and Ecosystem Processes

Management of species, habitat, and ecosystem processes is critical to maintaining the biological value of the Preserve. Biological monitoring involves ongoing measurement of habitat and species variables with the goal of adapting management strategies to address adverse trends. This

monitoring will include vegetation surveys, sampling, and analysis designed to quantify vegetation structure and species distribution and to detect changes over time.

4.3.1 Objective: Perform Regular and Scientifically Sound Biological Monitoring

Sound management of the Preserve will require ongoing monitoring of the species, habitats, and ecosystem processes occurring within the Preserve. This monitoring shall be performed by a qualified institution which can benefit from the opportunity and also provide the required level of service.

First Priority Actions:

- Conduct a one-time characterization of the biological resources within Unit 1. Based on the results from Task 4.5.2, new surveys for the covered species will be conducted to estimate the abundance and distribution of those species. Based on either adequate past data (summarized under Task 4.5.2) or the new surveys, a baseline will be established for each species to allow for changes to be detected over time. All surveys will be coordinated with the wildlife agencies to assure 1) an appropriate metric is being measured for the species of interest (e.g., number of breeding pairs, percent area occupied, etc.), 2) the methods are objective and repeatable, 3) the level of effort is sufficient to allow for the appropriate qualitative or quantitative trend analysis, and 4) the methods are consistent with accepted protocols.

- Conduct a one-time characterization of the biological resources within Unit 2 through vegetation mapping, wildlife surveys, and compilation of historical records. To assure compatibility and comparability of data between Units 1 and 2, the methods used for mapping and surveying within Unit 2 will be the same, and with the same or greater survey intensity/data resolution as efforts used in Unit 1. This initial characterization will establish the baseline biological conditions for long-term monitoring and assessing the need for future management actions.

- Develop and implement a plan to monitor long term vegetation change. The plan should address vegetation monitoring for each representative habitat type, with emphasis on alluvial scrub, riparian communities, and the cienega. Data to be obtained will include species richness, species cover, vegetation height, and changes in the distribution of non-native species. These data will be collected at least once every 5 years

- Lists of plant, bird, mammal, reptile, and amphibian species, including distributional and ecological status, will be maintained with annual updates.

- Biological monitoring of restored habitat will be performed annually to track success criteria and provide direction for future restoration efforts.

- Biological monitoring shall include the preparation of annual reports on the surveyed species and habitats, and restored areas. The reports will include management recommendations for the enhancement of species, habitat, and ecosystem process on the Preserve. These reports will contribute to the baseline biological information available about the preserve, and will provide enhancement direction toward subsequent annual work plans.

- The Board may solicit additional funds to conduct supplemental plant and/or wildlife surveys as needed, or to conduct special research programs when warranted.

Additional Actions:

- All study proposals must be submitted to the Board for approval. Studies will be encouraged that add information regarding the biology of the Preserve's plants and animals. No studies will be permitted that damage sensitive habitats. The Preserve is available for non-intrusive, non-manipulative scientific study by permit from the Board. Applicants must have the proper collection permits and approvals from CDFG and USFWS.

Permissible Actions:

- Promote public annual surveys, such as the Christmas bird count, on the Preserve.

4.4 Goal: Restore Disturbed Habitats on the Preserve

Restoration includes activities that improve habitat value and correct problems that degrade local and/or overall habitat value. This is accomplished by returning pre-disturbance vegetation structure and function to disturbed areas.

4.4.1 Objective: Develop and Implement Restoration Plans

First Priority Actions:

- Identify and prioritize areas that would benefit from restoration, re-vegetation and erosion control. Emphasis will be placed on restoration efforts that can be feasibly implemented using available techniques and funding. Potential restoration areas include, but are not limited to, unused roads, trails that are old and undesignated, and trails that may be relocated or taken out of use over time under the provisions of section 4.1.1.

- Develop and implement specific restoration plans and success criteria for key habitat within disturbed areas on the Preserve. It is anticipated that restoration efforts will be implemented in small-scale projects, phased over time. Ripping should only be performed on surfaces where compaction is preventing natural re-colonization. All restoration will be performed under the guidance of a restoration ecologist, and utilize only seeds and/or cuttings collected from the Etiwanda alluvial fan complex. All restored areas will be monitored annually to assess success criteria and provide direction to future restoration projects.

- Assure all seed used in restoration projects is certified weed-free.

- Identify and implement erosion control measures at critical sites, particularly at locations where there is the potential for damage to expand.

- The Board may solicit additional funding for restoration of alluvial scrub habitat.

Second Priority Action:

- Removal of exotic species and other remediation of restoration areas will be performed as needed to meet success criteria.

Permissible Action:

- The Board may coordinate volunteer and/or service-related organizations to assist in restoration projects on the Preserve.

- Experimentally based restoration of areas dominated by non-native grasslands may be implemented with outside funding and expertise. Such restoration efforts that promote or enable academic research, or as mitigation for off-site projects, will be encouraged.

4.5 Goal: Develop and Maintain an Informational Data Base

A thorough, well organized, and accessible database of biological and land use information is a vital tool for Preserve management. The Preserve data base will be initiated as part of the first annual work plan, and will be updated and compiled annually.

4.5.1 Objective: Identify Baseline Habitat Values and Site Conditions

This portion of the database is directed toward aiding planning and long-term monitoring efforts through development of a Geographic Information System (GIS) database and other technical information sources. This database should be compiled prior to implementation of major pro-active management activities.

First Priority Actions:

- Develop and maintain a GIS database to store, track, and display all information related to management of the Preserve.

- Data layers to be obtained include: baseline topography, baseline aerial photograph, streams, washes, floodplains, vegetation polygons, localities of rare species, localities of noxious weeds, restoration areas, existing road system, existing trail system, access points, trash problem areas, easements, structural improvements, and adjacent parcel maps.

- Utilize global positioning system (GPS) to locate and map property boundaries, key features, permanent vegetation plots, etc.

- Assemble and organize all available biological information previously collected on the Preserve. This includes information collected prior to the creation of the Preserve and information collected after the Preserve was created and under the direction of the Board. Data will be entered into the GIS database.

- Develop and implement a plan to create a baseline vegetation map using currently accepted, floristically based, classification schemes.

- Obtain a new color aerial photograph of the preserve every five years to aid in tracking long-term changes in vegetation and other site conditions. These photographs should be

of fine enough resolution to assess minor changes of the cienega. For GIS purposes, these photographs should be orthorectified digital imagery.

Permissible Action:

- Promote the Preserve database to geography programs at local colleges and Universities with educational programs in GIS. Student GIS projects related to the Preserve will be encouraged.

4.6 Goal: Increase Public Awareness and Educate as to the Sensitivities and Significance of the Preserve.

Use education as a tool to help regulate, manage, control, and protect the geological, cultural, and biological significance of the Preserve. Provide mechanism for further study and scientific data collection to identify and interpret cultural artifacts, biological resources, and geological features. Implement an education program to create awareness and teach conservation values.

4.6.1 Objective: Promote greater conservation awareness, gain compliance with rules of use, and encourage behaviors conducive to protection and preservation of the biology, ecology, geological features and cultural resources.

Additional Actions:

- Identify education opportunities and develop conservation education materials geared towards the Preserve.

- Provide internship opportunities to College students that are majoring in Environmental Studies, Biology, Geology, Native American Studies, or closely related field. Allow for the conduction of scientific study of plants, animals, geologic features, and cultures associated with the Preserve.

- Establish volunteer and docent program to help in maintenance and management efforts of the Preserve. Enlist volunteers to assist in the implementation and presentation of an outdoor education program.

- Use interpretive signage to educate visitors, convey conservation message and provide information relative to the significance of the area. Solicit input and assistance from local tribes on education components related to Native American cultures.

- Post site restrictions and develop directional signage to encourage responsible behavior and reduce potential damage to the Preserve.

- Form partnerships with educational institutions, scout groups, youth associations, nature conservancies, environmental organizations, and civic groups, in an effort to build awareness and promote conservation education.

5.1 Amendments and Addendums to the Management Plan

This Management Plan may, by vote of the Board, be amended or receive addenda, provided such changes are consistent with the CMA and have the joint approval of CDFG and USFWS.

5.2 Availability of Funds

Implementation of this Management Plan by the USFWS and CDFG is subject to the availability of appropriated funds. Implementation of this Management Plan by the County and the District is subject to 'the availability of management funding provided by interest from the endowment, as described under section 4.4.2 of the CMA. It is unlikely that the existing funding will be sufficient to support the implementation of all First Priority tasks identified in this Management Plan. Therefore, it is imperative that the County, Board, and wildlife agencies work together to secure additional funding through partnerships, grant programs, and other means to fully implement this Management Plan, including Second Priority and Additional Actions.