LONG-TERM MONITORING AND MANAGEMENT PLAN FOR THE ALTON NORTH CONSERVATION BANK SONOMA COUNTY, CA

Submitted on behalf of:

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1 INTRODUCTION

This Monitoring and Management Plan (Plan) describes the long-term monitoring and management activities on the Alton North Conservation Bank (ANCB). The ANCB was established as a conservation bank to sell credits and preserve habitat for California tiger salamander (CTS), and to create and preserve habitat for the endangered plant species *Lasthenia burkei* and *Blennosperma bakeri*.

The ANCB is approximately 22.67 acres of active grapevines, seasonal wetlands, and small areas planted with native and non-native trees and shrubs. The site provides potential habitat for CTS, which is known to occur in the vernal pools created in the northwest corner of the existing Alton Lane Preserve and well within the migratory distance for juvenile and adult CTS.

The purposes of the plan are as follows:

1. Provide guidelines for the management and monitoring of upland habitat for CTS and seasonal wetlands that provide habitat for *Lasthenia burkei* and *Blennosperma bakeri*;

2. Provide a framework for implementing an adaptive management program, including reporting to other agencies, to manage the site for the benefit of the CTS and *Lasthenia burkei* and *Blennosperma bakeri*; and

3. Provide a program to maintain habitat values for CTS, and *Lasthenia burkei* and *Blennosperma bakeri* at the ANCB.

Fee title to the ANCB will be transferred to the California Department of Fish and Game (CDFG) along with the management endowment, and the CDFG will be responsible for implementation of the elements of this Plan.

II PROPERTY DESCRIPTION

A Geographic Setting and Location

The ANCB is approximately 22.67 acres, part of a larger parcel (A. P. No.034-042-080) located at 2795 Piner Road in the northwest part of the City of Santa Rosa, along the north side of Piner Road between Marlow Road and Fulton Avenue (Figure 1). The ANCB is also within the limits of the Alton Conservation Area. The General Plan land use designation and zoning for the ANCB are the same, LIA or "Land Intensive Agricultural."

B History and Land Use

The ANCB is currently an active vineyard. No structures or outbuildings are present within the ANCB, but dirt access roads run along the east boundary of most of the site and the south boundary of the small southern part of the site adjacent to the Alton South Conservation Bank (Figure 2). This dirt road provides access to the site from Piner Road to the south and Alton Lane to the north.

The bank site was part of the Vera Gold Vineyards, and most of the site was managed for wine grape production for several decades and is currently being managed as vineyards. Two residences, a driveway and parking area, large barn, storage sheds, and several outbuildings used to store vineyard management equipment (grape boxes, tee posts, cable, spraying equipment, stakes) are clustered with an array of facilities used by the owners for their own recreational pleasure and for catered events, such as weddings and parties, on approximately 2.10 acres adjacent to the ANCB on property to be retained by the current owner. These facilities include a gazebo, bocciball courts, horseshoe pits, swings, barbeque grills, restrooms, etc. The area around the residences and other facilities has been landscaped with lawns and ornamental vegetation. This area also includes a leachfield, access roads, older farm and vineyard management equipment stored outside the barn, and sheds and ruderal annual grassland habitat. A handful of large valley oaks (*Quercus lobata*) are scattered throughout these areas adjacent to the ANCB.

Five easements currently exist on the ANCB (Figure 3). California Telephone Light Company has a pole line easement along the northern border of the ANCB. Pacific Gas & Electric Company has a pole line easement (2743 OR 329 and 333) that runs parallel with the dirt access road along the eastern boundary of main part of the ANCB. This easement straddles the ANCB and the adjacent Alton Lane Preserve for much of its length. PG&E has the rights for vehicular access to the property and to transport all necessary persons, equipment, materials, etc. within the easement to conduct whatever activities are necessary to transmit, distribute, and supply electrical power to the public in general, to install gates in existing or future fences as necessary to maintain access for these purposes, and to trim branches from or remove any trees or brush that might interfere with the line.

The State of California has a conservation easement (DN 1994-0009048) over a small portion of the ANCB where is adjoins part of the Alton Lane Preserve (Figure 3). There is a small ingress and egress easement (DN 2000-0047263) in favor of Thomas F. Feeney at the northwest corner of the ANCB. Finally, there is a right-of-way easement (1458 OR 480) granted to Ken Porter that provides access to the site from Piner Road.

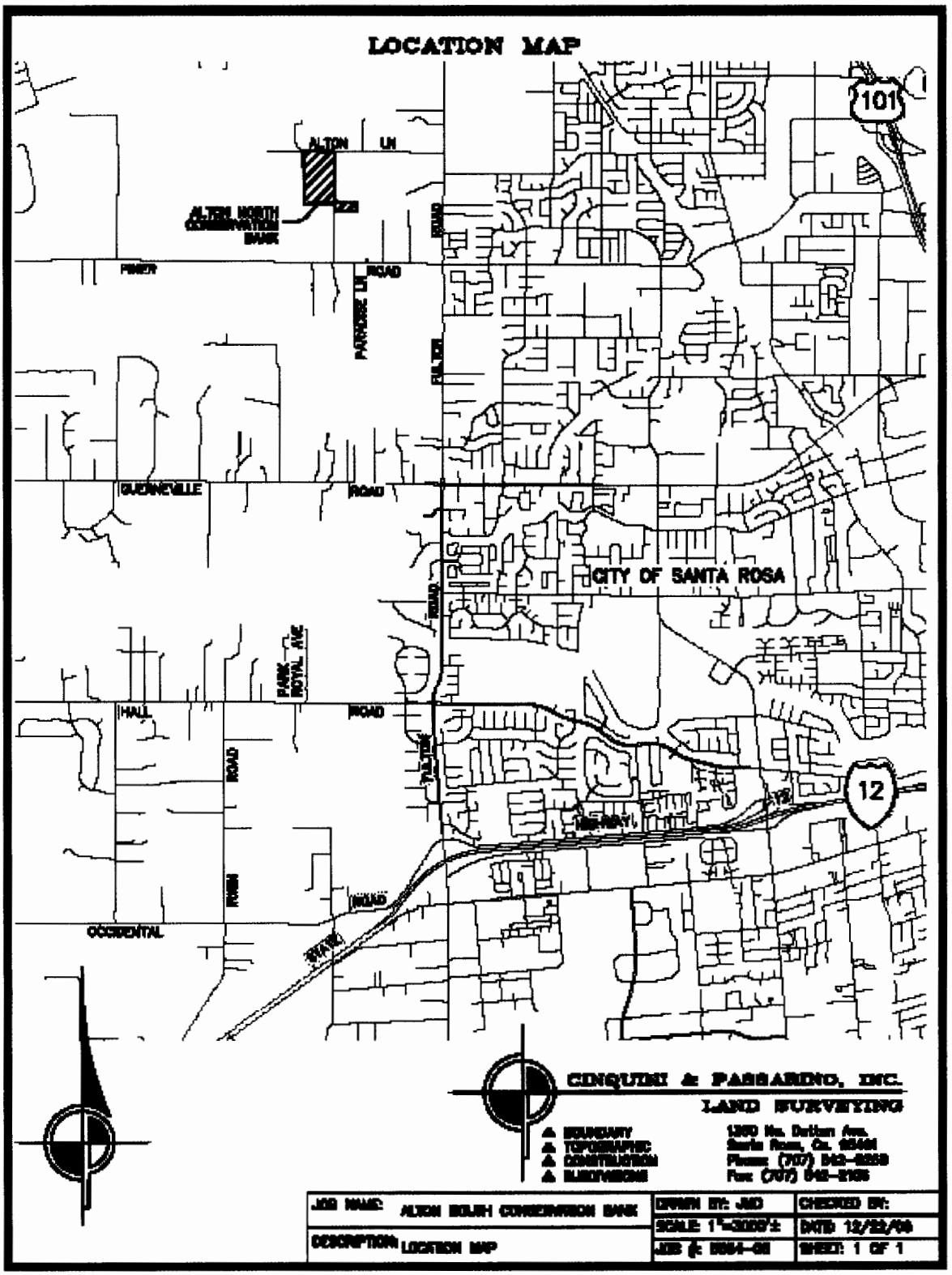

Figure 1. Alton North Conservation Bank location map.

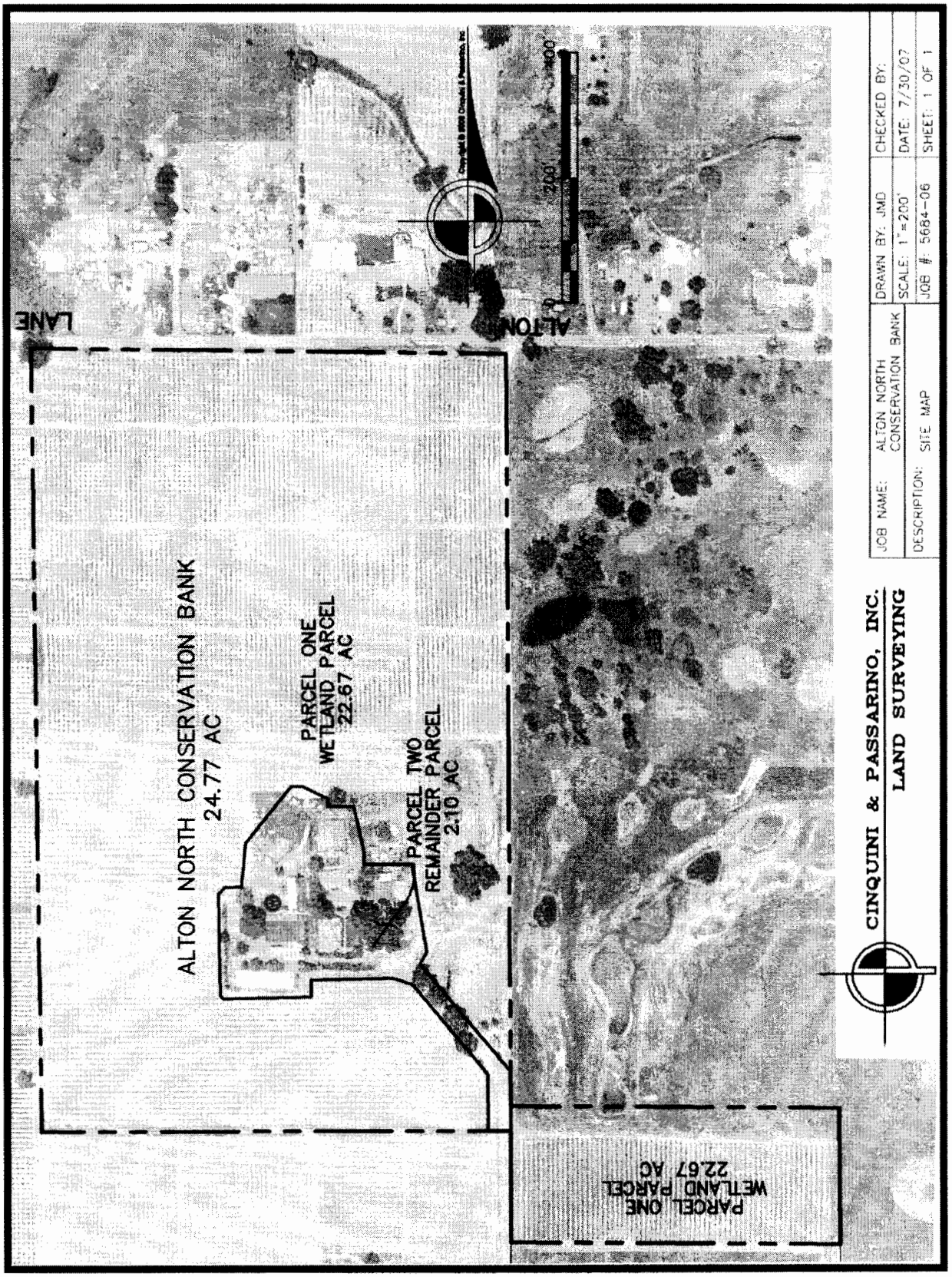

Figure 2. Alton North Conservation Bank vicinity map.

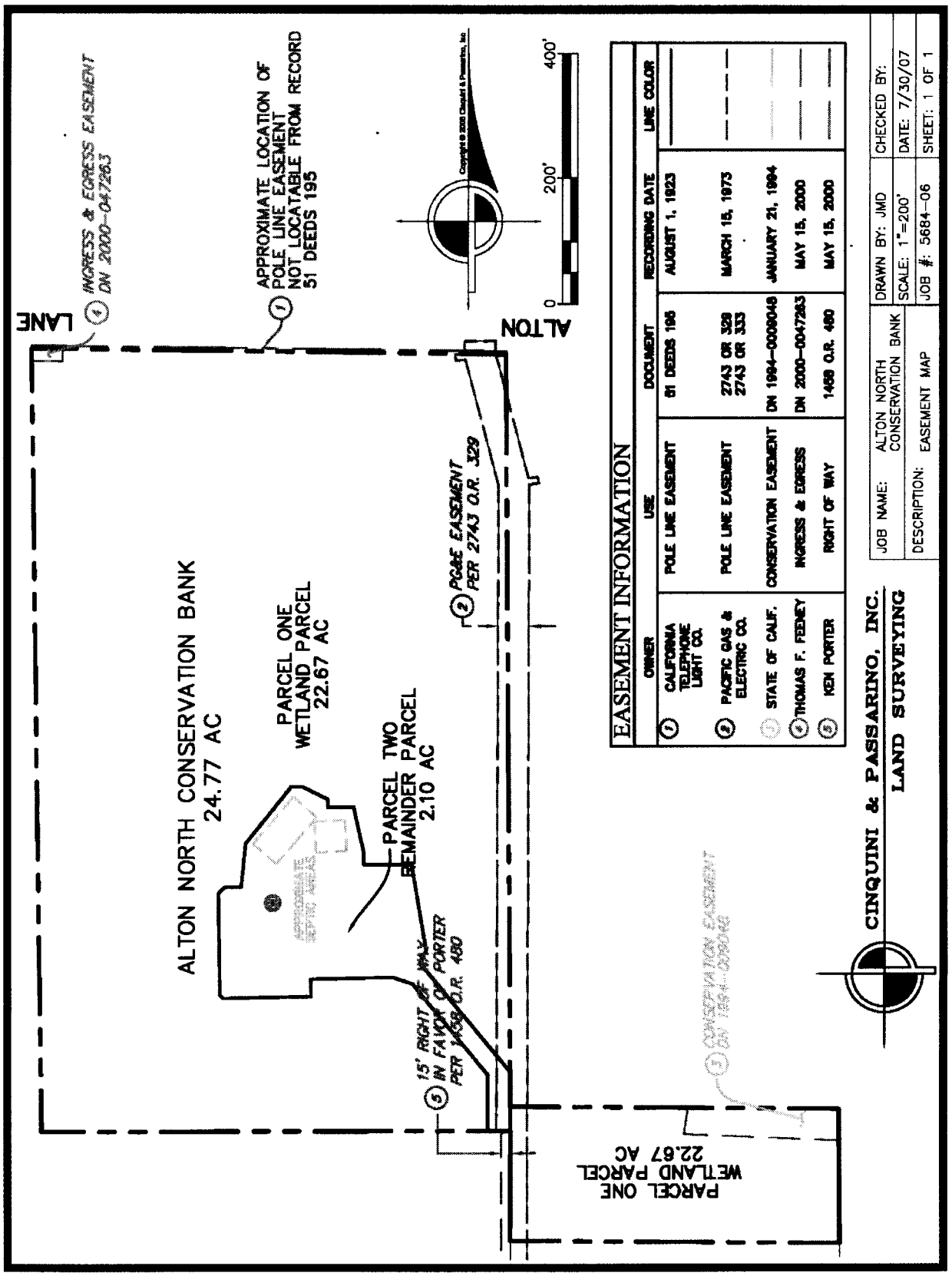

Figure 3. Map of easements at the Alton North Conservation Bank.

C Soils and Hydrology

The ground surface at the ANCB slopes in all directions toward a network of swales, with the slopes ranging from virtually zero (in small areas) to just over 10 percent. Parts of the site must at one time have been characterized by mound-and-depression microtopography, but decades of vineyard management have eliminated or muted much of it. West of the access road, the topography is dominated by high ground in the southwest corner and moderate slopes toward relatively gently sloping topography to the northeast and southeast. All of the ground west of the access road slopes toward a network of swales that converge and form a single major swale in the north half of the site. Almost all of the area west of the access road site eventually drains to the west toward Abramson Creek via the major swale, which exits on the west boundary of the bank site, approximately 200 feet south of Alton Lane. Abramson Creek flows to the southwest, approximately 200 feet northwest of the northwest corner of the bank site.

The ground in the vineyard block east of the access road flows in three directions. The northwest corner of the block slopes to the north, and the northeastern corner slopes to the northeast, but most of the block slopes to the south toward the Alton South Conservation Bank.

A network of swales drains the bank site, carrying water from the east through the site toward Abramson Creek. Runoff from the northwest corner of the block east of the access road drains to the north into the Porter Mitigation Site but eventually finds its way, through a network of constructed vernal pools, into the swale network that crosses the major bank site area west of the access road. Runoff from the northeast corner of the vineyard block east of the access road also flows through a network of natural swales and constructed vernal pools and non-wetland depressions toward the rural residential area to the east of the existing Alton Lane Preserve. A swale through the center of the east vineyard block carries water through the Alton South Conservation Bank site to a small tributary drainage to Santa Rosa Creek.

The primary soils on the ANCB are mapped by the Soil Conservation Service (U.S. Soil Conservation Service 1972) as belonging to the Huichica loam, shallow, ponded, 0 to 5 percent slope. There are also small areas of Huichica loam, 0 to 2 percent slope and 2 to 9 percent slope The Huichica soils possess a clay horizon at a depth of about two feet and occasionally a cemented hardpan below the clay. Together, they form an effective barrier to deep percolation and perch water near the surface. Although the surface relief appears to have been modified, the properties that affect ponding at the surface appear to remain intact on the property. The Huichica loam series is considered a vernal pool soil by the Vernal Pool Task Force (CH2M Hill 1996).

III HABITAT AND SPECIES DESCRIPTION

A Vegetation Communities, Habitats, and Plant Species

The ANCB supports a mosaic of habitats, subject to the jurisdictional authority of the federal (U.S. Army Corps of Engineers) and state (Regional Water Quality Control Board) governments (Figure 4), distributed across a large, ruderal, annual grassland habitat dotted with abandoned vines and prune trees and scattered ornamental and native trees.

Seasonal Wetlands

Approximately 2.03 acres of jurisdictional habitat occur on the property. With a few exceptions, these seasonal wetlands occur in swales. They are depauperate and the reduced number of species in these wetlands are directly related to the annual disturbance associated with vineyard management. The habitat is characterized by parallel lines of vines with open areas between the rows of vines and the seasonal wetlands cross the areas of vines at oblique angles.

The seasonal wetlands are dominated by annual bluegrass (*Poa annua*), California semaphore grass (*Pleuropogon californicus*), ryegrass (*Lolium perenne*), curly dock (*Rumex crispus*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), six-weeks fescue (*Vulpia bromoides*), spiny-fruited buttercup (*Ranunculus californicus*), purple loosestrife (*Lythrum hyssopifolium*), red maids (*Calandrinia ciliata*), water blinks (*Montia fontana*), and willow herb (*Epilobium densiflorum*).

Upland Vegetation

The annual grassland on the site is representative of the type in the region and supports the typical array of annual introduced grasses and forbs. The dominant species are ryegrass, soft chess (*Bromus hordeaceus*), filaree (*Erodium cicutarium*), vetch *(Vicia sativa*), oats (*Avena fatua, A. barbata*), ripgut brome (*Bromus diandrus*), little rattlesnake grass, hairgrass (*Aira caryophyllea*), six-weeks fescue (*Vulpia bromoides)*, and cat's ear (*Hypocheris radicans*). In the vineyard, the vegetation on the slightly raised ground beneath the vines and in other non-wetland areas can be considered a ruderal annual grassland. The dominant species include bur clover (*Medicago polymorpha*), stickwort (*Spergula arvensis*), subterranean clover (*Trifolium subterraneum*), common groundsel (*Senecio vulgaris*), and field mustard (*Brassica rapa*). Subdominant species include bittercress (*Cardamine oligosperma*), speedwell (Veronica persica), tall fescue (*Festuca arundinacea*), miner's lettuce (*Montia perfoliata*), filarees *(Erodium botrys, E. cicutarium, E. moschatum*), and wild radish (*Raphanus sativus*).

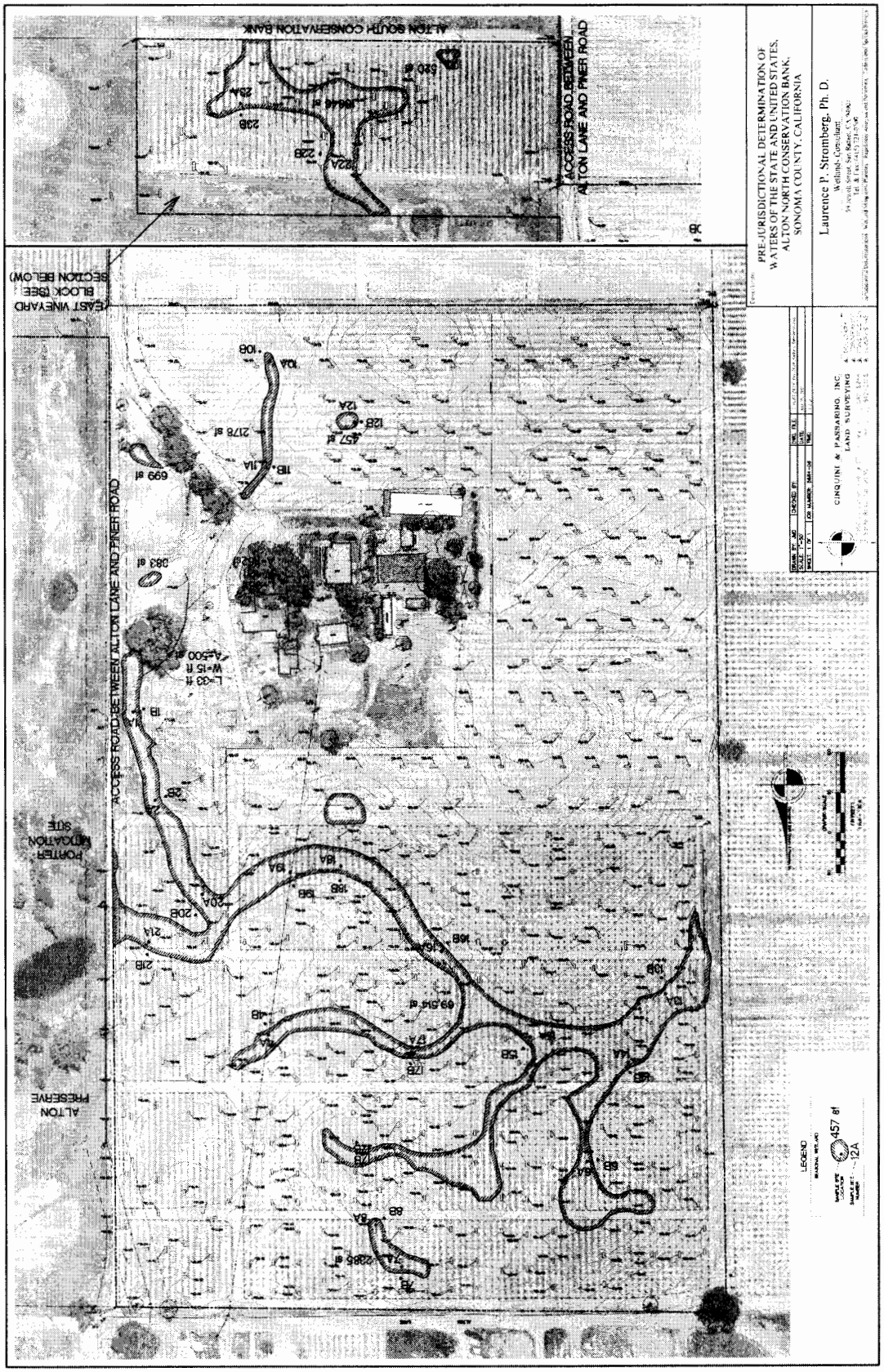

Figure 4. Jurisdictional waters of the U.S. and State at Alton North Conservation Bank.

B Animal Species

No specific information has been collected on common animal species on the ANCB. Information will be compiled during field site visits and from other information sources.

C Endangered, Threatened, and Rare Species

California Tiger Salamander (*Ambystoma californiense*)

No surveys were conducted for aquatic invertebrates, nor were adult or larval surveys conducted for the CTS. Gopher mounds and holes are common and provide potentially suitable aestivation habitat for the CTS. CTS are known to occur in vernal pools created in the northwest corner of the existing Alton Lane Preserve, and the ANCB is well within the migratory distance for juvenile and adult CTS. There are no physical or other barriers to migration between the ANCB and these known CTS breeding ponds, and the ANCB provides a suitable aestivation and migration habitat. CTS are assumed to be present on the ANCB.

Special-status Plants

A special-status plant species survey was conducted in the spring of 2006, and the second survey will occur in the spring of 2007. Target special-status species will be those listed in the Santa Rosa Plain Vernal Pool Ecosystem Preservation Plan (CH2M Hill 1996), which, by virtue of their known occurrence in the vicinity, their habitat requirements, and the types of habitat on the ANCB site, were considered to have the potential to occur on the ANCB site. They are listed below along with notes on the suitability of habitat at the ANCB for each species:

- Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*) – no suitable habitat occurs on the ANCB.
- Bent-flowered fiddleneck (*Amsinkia lunaris*) – the upland habitat may provide suitable habitat, but it has been disturbed annually.
- Sonoma sunshine (*Blennosperma bakeri*) – good-quality habitat is present on the ANCB site, and the species is present at several locations on the ANCB.
- Bogg's Lake dodder (*Cuscuta howelliana*) – parasitic species on many vernal pool species, particularly *Eryngium*, which is not present on the ANCB.
- Dwarf downingia (*Downingia humilis*) – suitable habitat is present on the ANCB site.
- Burke's goldfields (*Lasthenia burkei*) – potentially suitable habitat is present at the ANCB site, and the species is present in the existing adjacent Alton Lane Preserve.
- Sebastopol meadowfoam (*Limnanthes vinculans*) – suitable habitat is present on the ANCB site.
- Many-flowered navarretia (*Navarretia pleiantha*) – no suitable habitat is present on the ANCB site.
- Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*) – suitable soils are not present on

the ANCB site.

- Small-flowered mesamint (*Pogogyne douglasii* ssp. *parviflora*) – suitable habitat is present on the ANCB site.
- Lobb's aquatic buttercup (*Ranunculus lobbii*) – suitable habitat is present on the proposed ANCB site.
- Showy Indian clover (*Trifolium amoenum*) – the upland habitat on the ANCB site has been continually disturbed by vineyard activities and does not provide suitable habitat.

IV MANAGEMENT AND MONITORING: ELEMENTS, GOALS, AND TASKS

The following section provides details of the management and monitoring at the ANCB site. Management and monitoring issues are classified into Super Elements and Elements. Each numbered Element has one to several goals and a list of specific tasks for implementation. Task implementation will also include development of a record of the site, which will allow for periodic assessment and the potential development of adaptive management strategies.

Adaptive management was developed as a strategy to address complex environmental problems. The strategy was developed in the recognition that initial management steps may not work, that first ideas may not be the best ideas, that effective long-term management requires recognition of successes and failures, and that managers must adapt their strategy to new information. The six main steps in adaptive management are assessment of the problem, design of a management strategy (solution), implementation of the management strategy, monitoring, evaluation, and adjustment.

Adaptive management is a pragmatic approach, given the limited existing information and experience in managing and maintaining habitat for the listed species on ANCB. Initial strategies may appear ecologically sound, but, in practice, they may be impractical, ineffective, or inefficient. Management and maintenance methods may be adjusted to improve the effectiveness and efficiency of long-term management and maintenance and to adjust performance criteria.

Over time, the specific tasks may be revised, added, or deleted as determined appropriate by the agencies. It is anticipated that these management and monitoring tasks will be adapted to the needs of the biological resources on site, new information, and changes on the site and the surrounding environment.

Implementation of activities will generally follow the ***Annual Task Schedule*** (Table 1 at end of this section) and utilize the standard ***Management and Monitoring Reporting Forms,*** which are presented in Section VI of this document. The standard forms will be used for recording of information identified in each task.

A Super Element 1 – Biological Resources

Element 1-1: *Lasthenia burkei* and *Blennosperma bakeri*

The 5.91 acres of constructed vernal pools and 1.33 acres of enhanced seasonal wetland habitat will be inoculated with *Lasthenia burkei* and *Blennosperma bakeri*, with the goal of establishing one or both species in the constructed and existing pools.

Goal – Monitor population status and trend of *Lasthenia burkei* and *Blennosperma bakeri* populations in the constructed vernal pools.

Goal – Employ management to maintain and enhance habitat for *Lasthenia burkei* and *Blennosperma bakeri.*

Task – Conduct annual monitoring surveys of the constructed vernal pools and existing seasonal wetlands using quadrats. The number of *Lasthenia burkei*

and *Blennosperma bakeri* individuals and total cover by vegetation by species will be determined in each quadrat. A semi-quantitative measure of the cover of each species will be employed, including *Lasthenia burkei* and *Blennosperma bakeri*, using cover classes of the type employed with the releve method (i.e., 0 - 1 percent, 1 - 5 percent, 2 - 25 percent, 25 - 50 percent, 50 - 75 percent, 75 - 95 percent, and 95 - 100 percent).

Task - Visually observe pools for changes to *Lasthenia burkei* and *Blennosperma bakeri* habitat, such as changed hydrology or vegetation composition. Record any observed changes.

Task – Implement other tasks that enhance or monitor habitat characteristics for *Lasthenia burkei* and *Blennosperma bakeri*, including Elements 1-3, 1-4, and 1-5.

Element 1-2: Constructed Vernal Pool Habitat

Goal – Measure performance of constructed vernal pool habitat.

Goal – Employ management to maintain constructed vernal pool habitat.

Goal – Employ management to maintain and enhance existing habitats.

Task – Monitor status of constructed vernal pools annually by two parameters: hydrologic function and vegetation.

Hydrologic function will be measured using staff gauges and determining water levels in each created pool measured (nearest 0.1 ft.) on average of every two weeks.

Vegetation: Implement vegetation monitoring program described in Element 1.2, and compare vegetation composition to previous year's composition.

Task – Implement other tasks that enhance habitat characteristics of seasonal wetlands, including Element 1-4 and 1-5.

Element 1-3: CTS Habitat

CTS are likely to traverse the site during seasonal migration to breeding habitat at the adjacent Alton Lane Preserve. The seasonal wetlands at the ANCB do not pond deeply enough or for sufficient duration to support development of CTS larvae, so one vernal pools covering approximately 0.33 acre will be constructed at the ANCB to provide suitable breeding habitat for the CTS.

Goal – Monitor CTS status to document breeding

Goal – Manage upland habitat to maintain and enhance habitat for CTS.

Task – Monitor presence by conducting larval surveys in all known and potential

CTS breeding ponds at an appropriate time every other year, generally between March 20 and April 20. Conduct CTS larval surveys using standard dip-netting procedures consistent with standard CDFG and U.S. Fish and Wildlife Service (USFWS) protocols. Assess presence and abundance by total larvae netted, recognizing this provides only a general abundance level for considering trends.

Task – Visually observe the site for changes to CTS habitat, such as burrow abundance and vegetation height and composition. Record any observed changes.

Task – Approximate the abundance of aestivation sites every year by counting gopher mounds, gopher holes, and other potential aestivation sites. The resulting estimates will be used to assess trends and the potential need for management.

Element 1-4: Invasive Species

On the ANCB, several species could interfere with the establishment of native plant species and are unwanted. These include ryegrass, prostrate manna grass, pennyroyal, swamp timothy, field bindweed, barnyard grass, and Harding grass.

Should it be necessary, control of exotics will be accomplished through a combination of manual and chemical control methods. Broadcast chemical control will not be used within the limits of any vernal pool and, wherever possible, wiper application will be employed so that the herbicide is applied directly to the target plants. Broadcast spraying will be done only when wind velocities are below five mph.

Control of Ryegrass

Ryegrass can be controlled by increasing the period of inundation. Soil compaction may also be effective in reducing ryegrass productivity. Soil compaction may also promote native species diversity and cover by lowering the height of ryegrass.

Control of Prostrate Manna Grass

Before the seedheads mature and are ready to shatter, the culms of prostrate manna grass bend to the ground ,and the plants become prostrate, placing the seedheads two to three feet from the parent plants. Where the heads shatter, new plants become established. The pattern of establishment repeats itself until the species has both expanded outward from initial establishment points and grown back to recover the intervening ground as well. The result: a thick net that reduces the space available for native plants to germinate and complete their life cycle. Prostrate manna grass is a perennial species apparently well-adapted to long periods of inundation. An increase in period of inundation, therefore, will not control prostrate manna grass. Because the species is deeply rooted, control might be possible by reducing soil depth and productivity. Soil compaction may also provide a means for reducing manna grass cover and controlling the species. Although the species has no leaf mass, spike rush is one native vernal pool species that appears to fare relatively well when growing in association with prostrate manna grass. Observations on the Santa Rosa Plain (Stromberg and Talley, personal observations) suggest that, through its uptake of water and

nutrients, spike rush may modify the rooting environment in which it grows with prostrate manna grass and reduce the rate of growth and seed production of prostrate manna. Grazing may also be useful in controlling prostrate manna grass and ryegrass.

Control of Harding Grass

Harding grass is a perennial grass that forms large clumps with short rhizomes around the base. Local observations indicate the species is shunned by milk cows and heifers. The dominance of Harding grass in a plant community is often related to its ability to increase its biomass and spatial influence through tillering. As a result, it forms dense stands that can eliminate all other species. It has a broad ecological tolerance and has been observed growing in eight inches of water, on top of dry rubble piles, under redwood trees, through Himalaya berry, and in both wetland and upland habitat in Sonoma County.

Control of the species is possible through mechanical and chemical means as well as burning. In general, frequent removal of herbage during the active growth period of Harding grass reduces total biomass and promotes mortality. Burning the vegetative shoots of Harding grass during the winter can reduce subsequent growth for about two years and allow more competitive, fire-adapted plants to increase their density and biomass. Several herbicides are effective in controlling Harding grass, although relatively high rates are necessary. At 3.4 kg/ha, the following herbicides achieved good control of six-week-old seedlings: 2,4-D amine; 2,4-D ester; dicamba, picloram; and 2,4-D plus atrazine. The pre-emergent herbicides naptalam, vernolate, alachlor, diphenamid, and trifluralin provide good control at rates of 1 kg/ha.

Harding grass may be eradicated by digging out the plants, but the effort is very labor intensive and can disperse roots that may resprout.

Control of Spiny Cocklebur

Spiny cocklebur is becoming a growing challenge on grazing lands throughout the Santa Rosa Plain. This species, which tends to grow in degraded wetlands, is not palatable to either cattle or sheep at any stage. The spines on the plant and seed pods are harmful to young lambs' and calves' eyes and can trigger pink eye, particularly in lambs in fields where mature plants are relatively dense. The spiny seed pods also hook onto the coats of sheep and cattle and can be difficult to remove. In sheep, cocklebur seed pods can render the wool worthless. The spiny seed pods also can puncture the skin causing abscesses, and too many abscesses can affect the salability of the meat from the livestock.

Control of the species is possible by burning the plants using a propane torch on individual plants early in the growing cycle and often during the growing season to prevent development of the spiny seed pods. During subsequent springs, as the new plants emerge, they can be removed by hand.

Goal – Identify which invasive species are most readily available to eradicate or control.

Goal – Develop and implement treatments for invasive species as funding allows.

Task – Once annually, at an appropriate time, generally spring, document primary areas, if any, with significant invasive species populations. Identify species and map general area of population.

Task – Prioritize treatments and maintain a priority list, updated at least annually, based on: 1) location and distribution of targeted invasive species, 2) potential threat of the species and candidate treatment impact upon CTS, *Lasthenia*, and wetland habitats, 3) probability of treatment success, and 4) cost of treatment.

Task – Implement specific treatments methods.

Element 1-5: Vegetation Management and Enhancement

Much of the ANCB supports abandoned grapevines, and various native and non-native shrubs and trees have been planted on a portion of the site. The site has not been subject to grazing in recent years due to the presence of the grapevines, but these and other undesirable trees and shrubs will be removed as part of the enhancement of the site. The conditions that result may be more conducive to the growth of non-native annual grasses and fords, which could increase fire danger at the site.

One means of controlling the fuel load would be to graze the site, but other approaches may also be appropriate (e.g., fire, mowing). The use of fire to manage the vegetation at the site would probably not be desirable, so grazing or mowing or a combination of both may be acceptable for managing the buildup of vegetation at the ANCB, which if left unmanaged could adversely impact the constructed vernal pools and Burke's goldfields that will be inoculated into each of the constructed vernal pools.

Goal – Remove undesirable exotic vegetation.

Task – Remove grapevines and other non-native trees and shrubs.

Task – Conduct annual surveys of the site to control the regrowth of grapevines

Goal – Determine and implement an acceptable vegetation management program.

Goal – Adaptively manage the vegetation at the ANCB based on site conditions and data acquired on CTS, special-status plant species, and constructed vernal pools to enhance biological values.

Task – Analyze grazing studies, particularly information related to the Santa Rosa Plain and grazing opportunities. Revise this Management Plan as necessary.

Task – Implement a grazing program similar to that presented in the grazing management plan developed for the Todd Road Ecological Preserve (Bush 2006), if determined beneficial and as funding allows, to maintain vegetation height and composition similar to baseline conditions or as determined likely to provide improved seasonal wetland function, CTS habitat, or *Lasthenia burkei* habitat.

Task – Determine if alternative grazing regimes, grazing species, or other vegetation control techniques (e.g., mowing) are cost-feasible and provide likely benefit to habitat quality. Implement with the approval of the agencies.

B Super Element 2 – Security, Safety, and Public Involvement

Element 2-1: Scientific Research

Goal – Allow and provide the opportunity for research related to the monitoring, management, and enhancement of CTS, rare plants, wetlands, uplands, and other biological resources of the Santa Rosa Plain. All researchers will be required to produce a final summary report with management recommendations.

Task – Record contact information for persons/entities conducting research on the site. Provide site access when authorized. Provide authorization, if necessary, when warranted by research.

Element 2-2: Public Access

Goal – There is no particular goal for public access. The public may access the site for compatible activities, non-impacting activities, or beneficial activities with prior approval of the approving agencies.

Task – Provide site access after public access has been authorized.

Element 2-3 – Trash and Trespass

Goal – Monitor sources of trash and trespass.

Goal – Collect and remove trash, repair vandalized structures, and rectify trespass impacts.

Task – During each site visit, record occurrences of trash and/or trespass. Record type, location, and management mitigation recommendations to avoid, minimize, or rectify a trash and/or trespass impact.

Task – At least once yearly, collect and remove as much trash and repair and rectify as much vandalism and trespass impacts as funding allows. Prioritize significant dumping and unfunded site impacts and maintain a priority list, updated at least annually based on: 1) best use of available funds, 2) impacts to biological resources on site, if dumping or site impact was not managed or was managed, and 3) other related issues.

Element 2-4 – Fire Control

Goal – Maintain site as required for fire control and limit fire control activity impacts on site biological values.

Task – Mow, graze, disk, or otherwise clear vegetation in areas required by authority agency(ies). for fire control. Implement any methods that are allowed and cost effective that have the least impacts to site biological resources. Preferred methods would be grazing and/or mowing. Less preferred methods would include the use of chemicals or motorized equipment that disks or similarly disrupts the soil structure.

C Super Element 3 – Infrastructure and Facilities

Element 3-1: Fences and Gates

Goal – Monitor condition of fences and gates.

Goal – Maintain fences and gates to prevent casual trespass, allow necessary access, and facilitate grazing regime (if implemented for vegetation management) and management.

Task – During each site visit, record condition of fences and gates. Record location, type, and recommendations to implement for repair or replacement of fence and/or gate.

Task – Maintain fences and gates as necessary by replacing posts, wire, and/or gates. Replace fences and/or gates, as necessary, and when funding allows.

Element 3-2: Other Site Infrastructure

Goal – Monitor any culverts, signs, measuring or monitoring devices, temporary structures, grazing related facilities (livestock corral), or other site infrastructure.

Goal – Repair or replace any culverts, signs, measuring or monitoring devices, temporary structures, grazing related facilities, or other site infrastructure.

Task – Install signs that: 1) identify the conservation bank, 2) explain what it does, and 3) contain logos of involved agencies.

Task – During each site visit, record conditions of any culverts, signs, measuring or monitoring devices, temporary structures, grazing related facilities, or other site infrastructure. Record the location, type, and recommendations to implement repair or replacement.

Task – Maintain culverts, signs, measuring or monitoring devices, temporary structures, grazing related facilities, or other site infrastructure, as necessary, by repairing any damage. Replace other infrastructure as necessary and when funding allows.

D Super Element 4 – Reporting and Administration

Element 4-1: Annual Report

Goal – Provide annual report on activities conducted and general site conditions to agencies and other parties.

Task – Prepare annual report utilizing standard Management and Monitoring Reporting Forms and any other additional documentation. Include a summary. Complete and circulate to agencies by November 30th of each year.

Element 4-2: Administration

Goal – There is no specific administration goal. Conduct administrative duties as necessary.

Table 1. Management and Monitoring Schedule.

TASK	SCHEDULE	TASK TYPE	FREQUENCY (YRS)
Lasthenia burkei and *Blennosperma bakeri* population monitoring	Late March to May	Specific	Complete survey every year
Assess wetland hydrologic function	Winter and Spring	Specific	Bi-weekly when ponded
Wetland habitat monitoring	Winter and spring	General	At least 2 times a year
CTS burrow assessment	March to April	Specific	Survey every other year
CTS habitat monitoring	Spring	General	Several times a year
Wetland habitat monitoring	Winter and spring	General	At least 2 times a year
Invasive species assessment	Each site visit	General	Several times a year
Invasive species eradication	Generally spring, when needed	Specific	Every 3 to 5 years
Vegetation management	December to May	Specific	Yearly during grazing season
Vegetation monitoring	Each site visit	General	Several times a year
Research and access	When needed	Specific	Unknown
Trash/trespass monitoring	Each site visit	General	Several times a year
Trash removal/trespass repair	One site visit when needed most	Specific	At least once a year
Fire control	Spring	Specific	Once or twice a year
Fence and gate repair	When needed	Specific	Annually
Fence and gate replacement	When needed	Specific	Every 20 years
Other infrastructure monitoring	Each site visit	General	Several times annually
Other infrastructure repair	When needed	Specific	Unknown
Report	November	Specific	Annual report

V OPERATIONS FUNDING

Alton Preserve, LLC will be responsible for the implementation and funding for the initial management and monitoring activities, including the initial monitoring to measure the hydrologic performance of the constructed wetlands and establishment of *Lasthenia burkei* and *Blennosperma bakeri* in the constructed and suitable existing pools. A mitigation account containing the endowment for long-term management of the ANCB will be funded by Alton Preserve, LLC, and will be established by the CDFG. The endowment was calculated based on the activities and assumptions shown in Table 2 below. The endowment, which will be fully funded with close of escrow, is anticipated to generate sufficient funds to implement the above described long-term management, monitoring, and reporting activities in perpetuity. Additional adaptive management activities that may be developed were not included in the endowment calculation, since prior knowledge of what these activities may entail cannot be known at this time. Decisions on what new or adaptive management to implement, therefore, will be driven by available funding from the endowment and any other available sources of funding along with an assessment of management priorities.

Table 2. Management endowment for the Alton North Conservation Bank.

General Bank Management and Monitoring Activities	Description	Unit	Cost/Unit	No. of Units	Total Cost	Life (yrs)	Annual Cost
Element 1-1: Lasthenia/Blennosperma							
Lasthenia burkei and *Blennosperma bakeri* population monitoring	Survey of constructred and existing vernal pools and completion of standard recording forms	hr.	$ 50	4	$ 200	1	$ 200
Element 1-2: Constructed Vernal Pool Habitat							
Assess wetland hydrologic function	Check staff guages, complete standard recording forms	hr.	$ 70	2	$ 140	1	$ 140
Wetland habitat monitoring	Make species list, record field notes, complete standard recording forms	hr.	$ 70	4	$ 280	1	$ 280
Element 1-3: CTS Habitat Monitoring							
CTS burrow assessment	Transect count of gopher holes and *other potential aestivation sites*	hr.	$ 50	2	$ 100	2	$ 50
CTS habitat monitoring	Evaluation of conditions of upland areas relative to supporting CTS	hr.	$ 50	1	$ 50	2	$ 25
Element 1-4: Invasive Species							
Invasive species assessment	Field survey and completion of standard recording forms	hr.	$ 70	1	$ 70	1	$ 70
Invasive species eradication	Implement manual, chemical and/or mechanical treatment	hr.	$ 50	4	$ 200	5	$ 40
Element 1-5: Vegetation Management and Enhancement							
Vegetation monitoring and management	Impliment treatment to maintain vegetation height to enhance for CTS	hr.	$ 70	10	$ 700	1	$ 700
Element 2-3: Trash and Trespass							
Trash/trespass monitoring	Field survey of site and boundary areas	hr.	$ 70	1	$ 70	1	$ 70
Trash removal/trespass repair	hand labor to remove trash repair trespass damage	hr.	$ 50	2	$ 100	1	$ 100
Element 2-4: Fire Control							
Fire control	Conduct field survey, identify means of fuels control, contract and supervise	hr.	$ 50	2	$ 100	1	$ 100
Element 3-1: Fences and Gates							
Fence and gate repair	Labor for repairs	hr.	$ 50	4	$ 200	5	$ 40
Fence replacement	Materials for repair	lf	$ 6	4935	$ 29,610	20	$ 1,481
Gate replacement	Materials for repair	gate	$ 500	2	$ 1,000	20	$ 50
Element 3-2: Other Infrastructure							
Pump replacement	cost of replacement pump	pump	$ 7,000	1	$ 7,000	15	$ 467
Pump repair and maintenance	annal maintenace of pump	hr.	$ 50	2	$ 100	1	$ 100
Other infrastructure monitoring and repair	Field survey	hr.	$ 50	2	$ 100	1	$ 100
Element 4-1: Annual Report							
Report	annual report	hr.	$ 50	4	$ 200	1	$ 200
Total							$ 4,212
Annual Capitalization Rate							2.2%
TOTAL ENDOWMENT							$ 191,462

VI MANAGEMENT AND MONITORING REPORTING FORMS

MANAGEMENT and MONITORING REPORTING FORM - PRIMARY

Site: **Alton North Conservation Bank** County: **Sonoma** Date: _____

Staff: _____

Biological Resources

CTS, *Lasthenia burkei* and *Blennosperma bakeri*, Wetlands, Invasive Species and Grazing
(Include and attach **BIOLOGICAL ELEMENT REPORTING FORM pages 1 and 2**)

Security, Safety, and Public Involvement

Research and/or Public Access

Observation: _____

Action: _____

Result/Recommendation: _____

Trash and Trespass

Observation: _____

Action: _____

Result/Recommendation: _____

Fire Control

Observation: _____

Action: _____

Result/Recommendation: _____

Infrastructure and Facilities

Fence and Gate

Observation: _____

Action: _____

Result/Recommendation: _____

Other Infrastructure

Observation: _____

Action: _____

Result/Recommendation: _____

BIOLOGICAL ELEMENT REPORTING FORM – Page 1 of 2

Additional pages attached? _____ yes _____ no ____

No. of additional pages, if applicable _____

Site: Alton North Conservation Bank **County: Sonoma** **Date: _____**

CTS (Gopher hole abundance)

Number of transects: _____ Estimated density of gopher holes_____

Other potential aestivation sites _____

_____

General habitat conditions: _____

_____

General observations:_____

_____

_____

Comments: _____

_____

_____

LASTHENIA/BLENNOSPERMA- Attach separate raw data sheets.

Summary: NUMBER OF VERNAL POOLS IN EACH ABUNDANCE CLASS:
Plants 0 _____ Plants 1-50 _____ Plants 51-100 _____ Plants 101-500 _____

Plants 501-1000 _____ Plants 1001-5000 _____ Plants >5000 _____

NUMBER OF VERNAL POOLS SAMPLED: _____

Observation: _____

Action: _____

Result/Recommendation: _____

Comments: _____

_____

_____

_____

BIOLOGICAL ELEMENT REPORTING FORM – Page 2 of 2

Additional pages attached? __ yes __ no ____

No. of additional pages, if applicable _____

Site: Alton North Conservation Bank **County: Sonoma** **Date: _____**

WETLANDS

Observation: _____

Action: _____

Result/Recommendation: _____

Comments: _____

_____

INVASIVE SPECIES

Observation: _____

Action: _____

Result/Recommendation: _____

Comments: _____

_____

VEGETATION MANAGEMENT (GRAZING)

Type of vegetation management: _____

Average forage height_____ Average residual dry matter _____

Grazing Information (if implemented as a control activity)

Number of Animals present _____ Total AUMs: _____

Type of grazing animal: Cattle _____ or Other (Provide Species): _____

Area of Use: _____

Other factors: _____

Observation: _____

Action: _____

Result/Recommendation: _____

Comments: _____

VII REFERENCES

Bush, L. 2006. Grazing management plan for the Todd Road Unit of the Santa Rosa Plain Ecological Reserve. Plan prepared for California Department of Fish and Game by Lisa Bush, Certified Rangeland Manager, Sotoyome Resource Conservation District.

CH2M Hill. 1998. Final training manual to evaluate habitat quality of vernal pool ecosystem sites in Santa Rosa Plain. Prepared for the U. S. Army Corps of Engineers. December 1998.

Environmental Laboratory. 1987. Corps of Engineers wetland delineation manual. Technical Report 87-Y-1. U.S. Army Engineer Waterways Experiment Station. Vicksburg, Mississippi. 100 pp and Appendices.

Stromberg, L. P. and Talley, S. N. Unpublished. Vegetation data for restored vernal pools on the Gobbi Ranch and from the Southwestern Santa Rosa Plain Vernal Pool Preservation Bank, June-August 1998.

U.S.D.A. Forest Service and Soil Conservation Service and the University of California Agricultural Experiment Station. 1972. Soil survey of Sonoma County. 188 pp. + maps.

U.S.D.A. Forest Service and Soil Conservation Service. 1994. National Food Security Act Manual (NFSAM).