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

Submitted on behalf of:

Mr. Harvey O. Rich
Managing Member
Alton Preserve, LLC
336 Bon Air Center, Box 232
Greenbrae, CA 94904
(415) 472-1086

Prepared by:

Ted P. Winfield, Ph.D.
Ted Winfield & Associates
1455 Wagoner Drive
Livermore, CA 94550
(925) 371-6379

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I INTRODUCTION

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

The ASCB is approximately 8.11 acres of abandoned grape vines, seasonal wetlands and small areas planted with native and non-native trees and shrubs in an annual grassland mosaic. The site provides potential habitat for the California tiger salamander, 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. Special-status plant species surveys conducted in 2006 and 2007, and no special-status plant species were observed in the seasonal wetlands at the ASCB.

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*;

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

3. Provide a program to maintain habitat values for CTS and *Lasthenia burkei* at the ASCB.

Fee title to the ASCB will be transferred to the CDFG along with the management endowment, and the CDFG will be responsible for implementation of the elements of the Long-term Monitoring and Management Plan.

II PROPERTY DESCRIPTION

A Geographic Setting and Location

ASCB is approximately 8.11 acres, part of a larger parcel (A. P. No.034-042-075) located at 2779 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 ASCB is also within the limits of the Alton Conservation Area. The General Plan land use designation and zoning for the ASCB are the same, LIA or "Land Intensive Agricultural."

B History and Land Use

The ASCB is unoccupied but was once converted to a vineyard when the Franks family lived in a residence on the property outside the proposed conservation bank boundaries. The date at which the vineyard was installed is unknown but it appears to have been abandoned for almost a decade and many of the vines have died or been reduced to a fraction of their size when actually managed for grape production. No structures or outbuildings are present within the ASCB but dirt access roads run along the north and east boundaries and through the center of the north end of the ASCB. These roads were graded when the vineyard was actively managed. Mr. Franks also planted ornamental and native trees and installed drip irrigation (Franks, personal communication).

No leases currently exist on the proposed ASCB but a single easement exists. This easement (2743 OR 330, 2743 OR 333) was granted to Pacific Gas & Electric, its respective successors, assigns, lessees, and agents to construct, reconstruct, install, maintain, and operate an overhead electric transmission line within a 25-foot strip along the western ASCB property line. 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 trim branches from or remove any trees or brush that might interfere with the line.

C Soils and Hydrology

The soils on the proposed ASCB are mapped by the Soil Conservation Service (U.S. Soil Conservation Service 1972) as belonging to the Huichica loam series (shallow, 0 - 9 percent slopes). 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).

A physical site investigation of the ASCB site found surface soils to be generally loamy, with clay loam soils uncommon along the main north-south swale; the presence of an almost universal clay horizon with variable amounts of sand and small gravel; the presence of a hardpan over approximately 45 percent of the site and variable cementation from weak to moderately strong, universally decreasing with depth; the presence of a water-restricting horizon (clay horizon and/or hardpan) over most of the site (approximately 90 percent); and that no fill appears to have been imported to the site and no filling appears to have occurred as a result of past vineyard management.

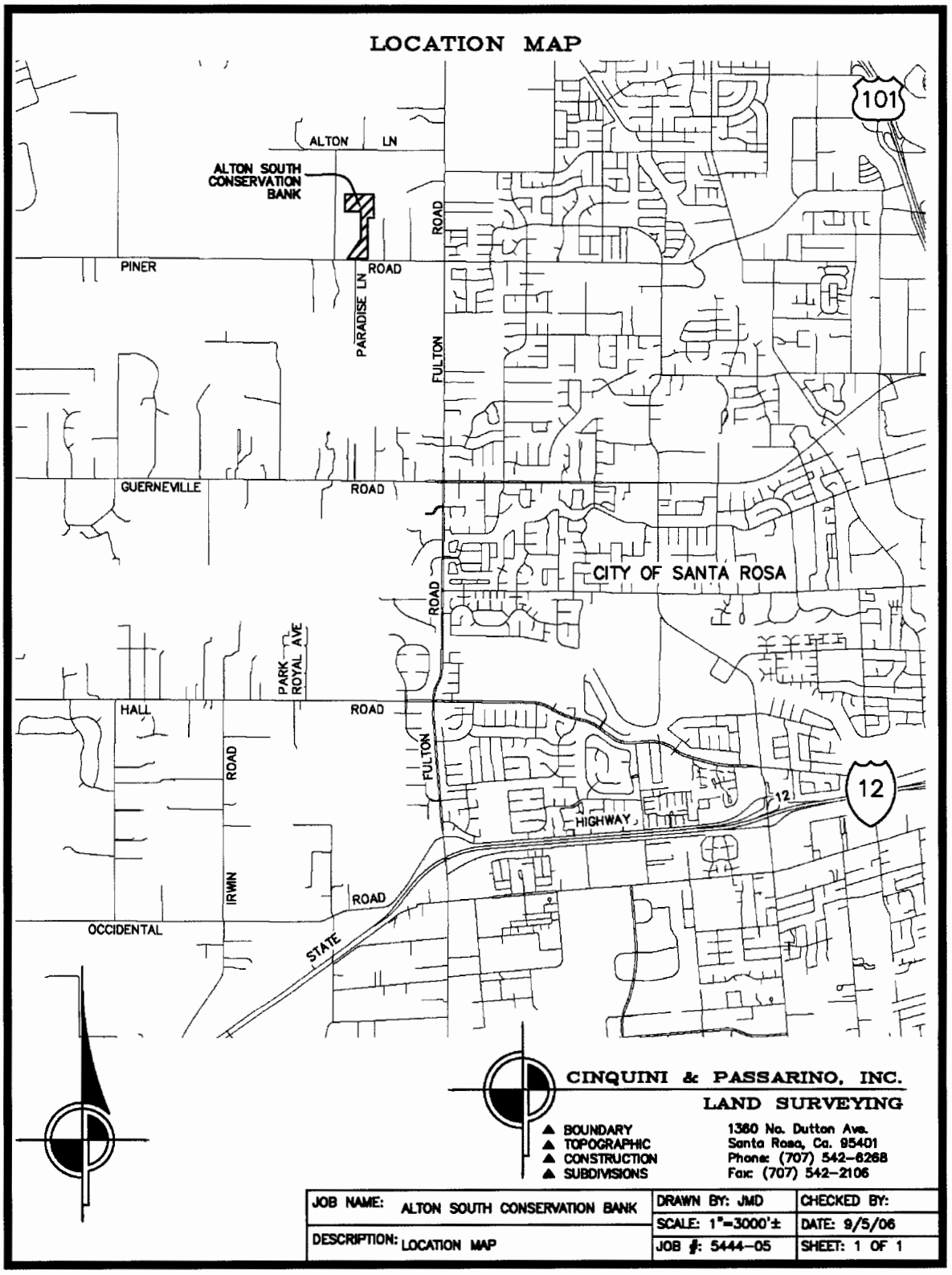

Figure 1. Alton South Conservation Bank location map.

The proposed ASCB site is drained primarily by three swales (Figure 2). One, with a very small contributing watershed, drains only the extreme northwest corner; a small culvert could potentially carry water from the vineyards to the west, but it is small and appears to be crushed. The main swale that runs through the northern part of the ASCB enters from an adjacent vineyard to the north. It also carries a small volume of water from the Porter Mitigation Site north of the vineyard. The swale crossing the southern part of the proposed ASCB carries water from the steeper southern portion of the ASCB as well as the area southwest of the existing residence, which is outside the boundary of the proposed ASCB and the vineyards to the east. This southern swale flows into a 60 in x 48 in. concrete culvert at Piner Road.

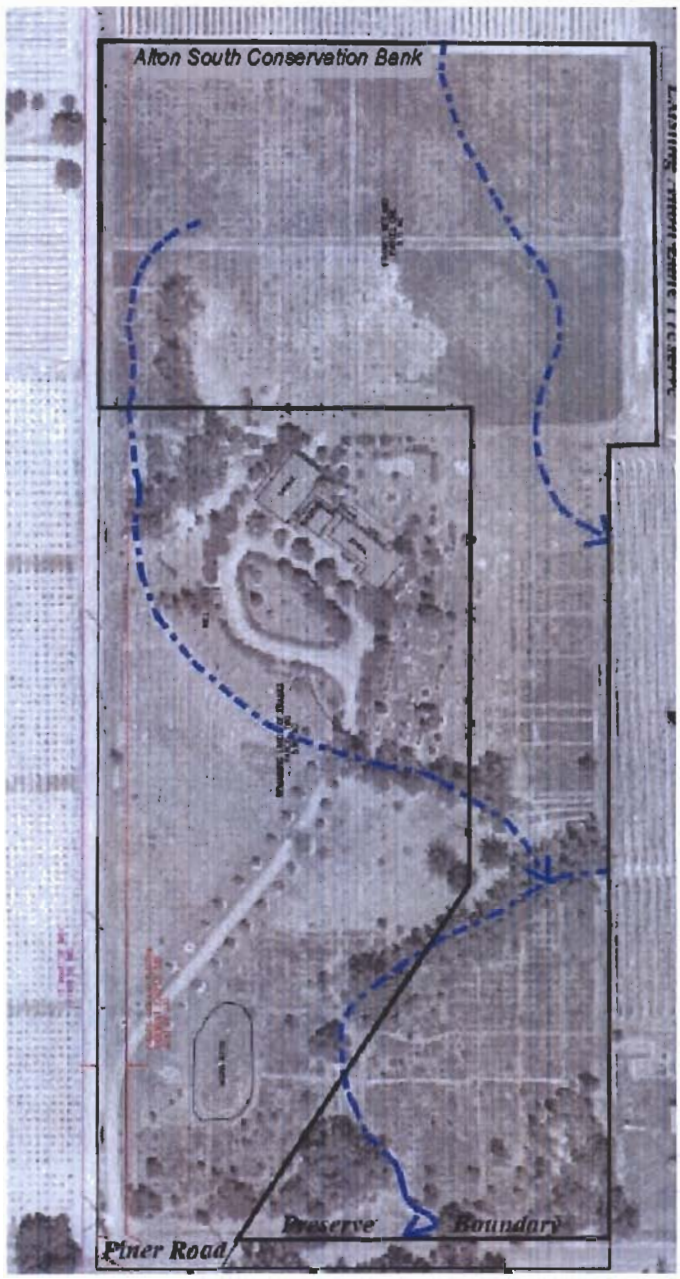

Figure 2. Surface drainage patterns at Alton South Conservation Bank.

III HABITAT AND SPECIES DESCRIPTION

A Vegetation Communities, Habitats and Plant Species

The ASCB 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 2) distributed across a large, ruderal, annual grassland habitat dotted with abandoned vines and prune trees and scattered ornamental and native trees.

Seasonal Wetlands

Approximately 0.63 acre of habitat subject to the jurisdiction of the U.S. Corps of Engineers occurs on the property (Figure 3). The seasonal wetlands occur almost entirely in the swales or in very shallow headwater depressions. They are very shallowly inundated and, as a result, show little range in plant species composition. They were disturbed in the installation and maintenance of the vineyard, but when compared with the swale through the vineyard to the north show considerable recovery in terms of both total cover and species composition. The species present in these seasonal wetlands are typical of the habitat on the Santa Rosa Plain where the gradient is relatively steep. The dominant species are ryegrass *(Lolium perenne),* Mediterranean barley *(Hordeum marinum* ssp. *gussoneanum),* California oatgrass *(Danthonia californica),* curly dock *(Rumex crispus),* and soft chess *(Bromus hordeaceus).* Subdominant species include California buttercup *(Ranunculus californicus),* sheep sorrel *(Rumex acetosella),* tall flatsedge *(Cyperus eragrostis),* tall fescue *(Festuca arundinacea),* slender oats *(Avena barbata),* and other upland species found in the annual grassland on the Santa Rosa Plain.

The narrow swale sections at the southern end of the proposed preserve vary in width from three to six feet. Reaches that are partially covered by the overhanging eucalyptus are undervegetated and littered with bark and fallen leaves. The dominant species include tall flatsedge, tall fescue, curly dock, and penny royal *(Mentha pulegium).* In some locations, the swales pass beneath thickets of Himalaya berry *(Rubus discolor).* At the far southern limit, fluellin *(Kicksia spuria),* epilobium *(Epilobium cleistogamum),* yellow water cress *(Rorippa curvilisqua),* and rabbitsfoot grass *(Polypogon monspeliensis)* also occur in the swale.

Upland Vegetation

The upland vegetation in the northern half and the narrow north-south limb of the proposed ASCB is a ruderal "annual grassland" habitat that reflects the long-term disturbance associated with vineyard operations. In the southern half of the Preserve, the vegetation is a mosaic of tree- and shrub-dominated types within which are interspersed small patches of annual grassland.

The annual grassland is, in its current condition, typical of the type that occurs throughout the Santa Rosa Plain. This description of the vegetation is, however based on data collected during the late fall (2005) when subdominant and small species are less readily observable. The dominant species include perennial ryegrass, soft chess, two species of vetch *(Vicia sativa, V. cracca),* filarees *Erodium cicutarium, E. botrys*), rattlesnake grass *(Briza minor, Briza maxima),* tarweeds *(Madia elegans, Hemizonia congestum),* ripgut brome *(Bromus diandrus),* and, in a few small areas, medusa head *(Taeniatherum asperum).* Subdominant species include California oatgrass, slender and wild oats, fireweed *(Epilobium paniculatum),* hedge bindweed, Mediterranean barley, rough and smooth

cat's ear (*Hypocheris radicata* and *H. glabra*), and cutleaf geranium (*Geranium dissectum*).

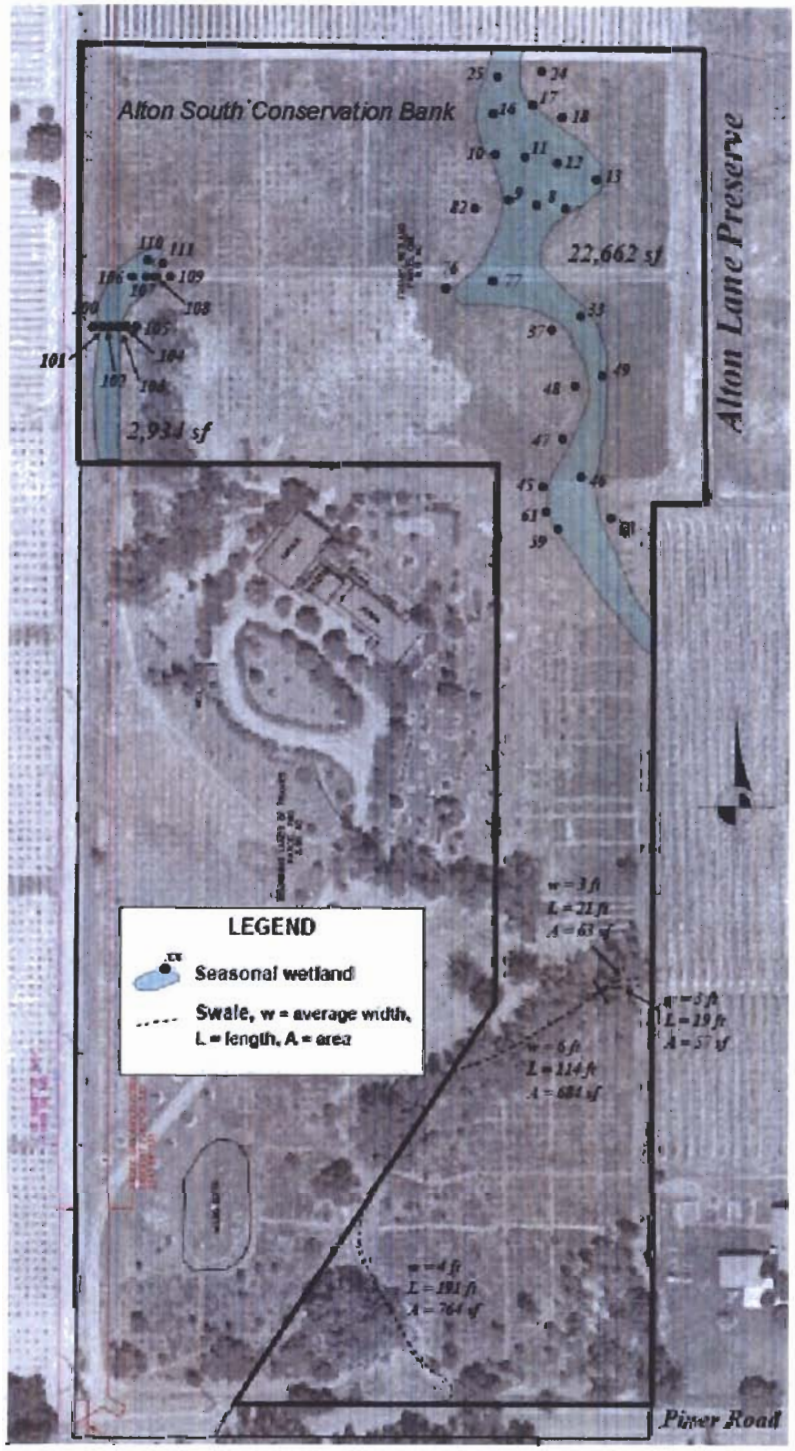

Figure 3. Jurisdictional waters of the U.S. and State waters at Alton South Conservation Bank.

Scattered throughout the grassland in the northern part of the ASCB are the abandoned vines (*Vitus vinifera),* a few coyote brush *(Baccharis pilularis consanguinea),* a privet hedgerow, and a stand of eucalyptus *(Eucalyptus globulus).*

In the narrow limb that connects the northern with the southern parts of the proposed ASCB, the previous landowner planted a half-dozen cypress *(Cupressus* sp, species not determined) and coast live oak *(Quercus agrifolia),* a valley oak *(Quercus lobata),* and a pair of cotoneaster *(Cotoneaster pannosa).* In this limb a few of the abandoned vines also remain in the grassland matrix.

In the southern part of the proposed ASCB, many more of the vines remain and the habitat appears to be dominated by these vines, shrubs, and planted and native trees. The trees include eucalyptus, valley, coast, and blue *(Quercus douglasii)* oak, the eucalyptus and valley oak typically 20 - 40 feet tall and the coast and blue oaks typically 12- 20 feet tall, and occasionally growing in the eucalytpus understory with eucalyptus saplings. Some blackwood acacia *(Acacia melanoxylon)* and fruit trees *(Prunus* spp.) line Piner Road. Poison oak *(Toxicodendron diversiloba),* coyote brush, and Himalaya berry *(Rubus discolor)* are also scattered through the southern part of the proposed ASCB.

B Animal Species

No specific information has been collected on more common animal species on the ASCB. Information will be compiled during field site visits and 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 ASCB is well within the migratory distance for juvenile and adult CTS. There are no physical or other barriers to migration between the ASCB and these known CTS breeding ponds, and the ASCB provides a suitable aestivation and migration habitat. CTS are assumed to be present on the ASCB.

Special-status Plants

Special-status plant species surveys were conducted in 2006 and 2007, and no special-status plant species were observed in the seasonal wetland habitat at ASCB. Target special-status species will be those listed in the Santa Rosa Plain Vernal Pool Ecosystem Preservation Plan (CH2M Hill 1996) and which, by virtue of their known occurrence in the vicinity, their habitat requirements, and the types of habitat on the ASCB site, were considered to have the potential to occur on the ASCB site, and are listed below along with notes on the suitability of habitat at the ASCB for each species:

- Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*) – no suitable habitat occurs on the ASCB.
- 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 absent on the proposed ASCB site, but the species is present in the existing adjacent Alton Lane Preserve. Marginal habitat occurs in the main swale in the north part of the ASCB.
- Bogg's Lake dodder (*Cuscuta howelliana*) – parasitic species on many vernal pool species, particularly *Eryngium*, which is not present on the ASCB.
- Dwarf downingia (*Downingia humilis*) – no suitable habitat is present on the ASCB site.
- Burke's goldfields (*Lasthenia burkei*) – good-quality habitat is absent on the ASCB site, but the species is present in the existing adjacent Alton Lane Preserve. Marginal habitat occurs in the main swale in the north part of the ASCB.
- Sebastopol meadowfoam (*Limnanthes vinculans*) – no suitable habitat is present on the ASCB site. No vernal pools are present, and the period of inundation in the existing wetlands is insufficient.
- Many-flowered navarretia (*Navarretia pleiantha*) – no suitable habitat is present on the ASCB site.
- Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*) – suitable soils are not present on the ASCB site.
- Small-flowered mesamint (*Pogogyne douglasii* ssp. *parviflora*) – no suitable habitat is present on the ASCB site. No vernal pools are present, and the period of inundation in the existing wetlands is insufficient.
- Lobb's aquatic buttercup (*Ranunculus lobbii*) – no suitable habitat is present on the proposed ASCB site. No vernal pools are present, and the period of inundation in the existing wetlands is insufficient.
- Showy Indian clover (*Trifolium amoenum*) – the upland habitat on the ASCB site provides marginally suitable habitat, but the species was not observed during wetland surveys.

No special-status species of plants were observed during the spring 2006 surveys.

IV MANAGEMENT AND MONITORING: ELEMENTS, GOALS AND TASKS

The following section provides details of the management and monitoring at the ASCB 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 develop 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 ASCB. 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 standardized ***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: 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 ASCB do pond deep enough or for sufficient duration to support development of CTS larvae. The vernal pools to be constructed at the ASCB have been designed to provide habitat for Burke's goldfields and are unlikely to provide suitable breeding habitat for the CTS.

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

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 1-2: *Lasthenia burkei*

The 0.78 acre of constructed vernal pools will be inoculated with *Lasthenia burkei* with the goal of establishing *Lasthenia burkei* populations in the constructed pools.

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

Goal – Management to maintain and enhance habitat for *Lasthenia burkei*.

Task – annual monitoring surveys of the constructed vernal pools and existing seasonal wetlands using quadrats. The number of *Lasthenia burkei* 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*, 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* 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*, including Elements 1-3, 1-4 and 1-5.

Element 1-3: Constructed Vernal Pool Habitat

Goal – Measure performance of constructed vernal pool habitat.

Goal – Management to maintain constructed vernal pool habitat.

Goal – Management to maintain and enhance existing habitats.

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

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

Vegetation: implement vegetation monitoring program described in Element 1.2 and compare vegetation composition to previous years composition.

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

Element 1-4: Invasive Species

On ASCB, 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. The Vegetation Management Plan developed by Alton Preserve, LLC following bank approval, and approved by CDFG and Service, will be implemented by CDFG as part of the long-term management of the site. Alton Preserve, LLC will implement the invasive plant control element during the interim management period, and will be continued by CDFG following the five-year interim management period.

Control of exotic vegetation may, on occasion and if approved by the Service and CDFG, include the use of specific herbicides. Prior to any use of herbicides to control exotic vegetation during the interim management period, which is anticipated to be the first five years of the bank following completion of construction of the seasonal wetland habitat, an invasive plant control plan would be submitted to the Service and CDFG that would identify the target species, non-chemical control methods to be used, herbicide(s) proposed to be used, application methods, and any anticipated collateral effect the herbicide may have on non-target vegetation or other biotic resources. If the target species occurs in the seasonal wetland habitat, such as pennyroyal or prostrate mamma grass, no herbicide application would occur until the wetlands are dry and the native vernal pool species have set seed. Only herbicides approved for use in aquatic areas would be applied in this situation. Whenever possible, a wick applicator to apply the herbicide will be utilized. Herbicides will only be applied during the late spring, summer, or early fall months, when CTS are known to be below ground to avoid the likelihood of CTS coming into direct contact with the herbicide during the period of time the herbicide is active. Only herbicides with a short active period, on the order of days or weeks, will be used to eliminate the possibility that CTS would come into contact with the herbicide during their migrations to and from the breeding ponds.

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 which 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 its rate of growth and seed production. 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 the plants out, 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.

Goal – Identify grape vines and other non-native trees, shrubs, and other vegetation removed from the site during the interim management period that are re-sprouting.

Task – Once annually, at appropriate time, generally spring, document primary areas, if any, with significant invasive species populations, or where grape vines, and other non-native trees, shrubs, and other vegetation removed during site preparation are re-sprouting. 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 ASCB supports abandoned grape vines, 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 grape vines, 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 will be implemented by CDFG following the five-year interim management period, according to the provisions of the Vegetation Management Plan developed by Alton Preserve, LLC following bank approval.

Goal – Determine and implement an acceptable vegetation management program.

Goal – Adaptively manage the vegetation at the ASCB 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 Santa Rosa Plain, and grazing opportunities. Revise this Management Plan as necessary.

Task – Implement 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, 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/entity 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 or 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 management 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, 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 standardized 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 – No specific administration goal. Conduct other administrative duties as necessary.

Table 1. Management and Monitoring Schedule.

TASK	SCHEDULE	TASK TYPE	FREQUENCY (YRS)
CTS burrow assessment	March to April	Specific	Survey every other year
CTS habitat monitoring	Spring	General	Several times a year
Lasthenia burkei population monitoring	Late March to May	Specific	Complete survey every 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* in the constructed pools. A mitigation account will be funded, by Alton Preserve, LLC, and will be established by the CDFG that will contain the endowment funding for long-term management of the ASCB. 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 Management Endowment Fund, and any other available sources of funding along with an assessment of management priorities.

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

General Bank Management and Monitoring Activities	Unit	Unit Cost	No. of Units	Total Cost	Life (yrs)	Annual Cost
Element 1-1: CTS Aestivation Habitat						
CTS burrow assessment	hr.	$ 50	2	$ 100	2	$ 50
CTS habitat monitoring	hr.	$ 50	1	$ 50	2	$ 25
Element 1-2: *Lasthenia burkei*						
Lasthenia burkei population monitoring	hr.	$ 50	2	$ 100	1	$ 100
Element 1-3: Constructed Vernal Pool						
Assess wetland hydrologic function	hr.	$ 70	1	$ 70	1	$ 70
Wetland habitat monitoring	hr.	$ 70	1	$ 70	1	$ 70
Element 1-4: Invasive Species						
Invasive species assessment	hr.	$ 100	2	$ 200	1	$ 200
Invasive species eradication	hr.	$ 100	5	$ 500	5	$ 100
Element 1-5: Vegetation Management and Enhancement						
Vegetation monitoring and management	hr.	$ 100	14	$ 1,400	1	$1,400
Element 2-3: Trash and Trespass						
Trash/trespass monitoring	hr.	$ 70	1	$ 70	1	$ 70
Trash removal/trespass repair	hr.	$ 50	2	$ 100	1	$ 100
Element 2-4: Fire Control						
Fire control	hr.	$ 50	2	$ 100	1	$ 100
Element 3-1: Fences and Gates						
Fence and gate repair	hr.	$ 50	4	$ 200	5	$ 40
Fence replacement	lf	$ 6	3570	$ 21,420	20	$ 1,071
Gate replacement	gate	$ 500	1	$ 500	20	$ 25
Element 3-2: Other Infrastructure						
Other infrastructure repair	hr.	$ 50	2	$ 100	1	$ 100
Element 4-1: Annual Report						
Report	hr.	$ 50	4	$ 200	1	$ 200
Total						$ 3721
Annual Capitalization Rate						2.2%
TOTAL ENDOWMENT						**$169,136**

VI MANAGEMENT AND MONITORING REPORTING FORMS

MANAGEMENT and MONITORING REPORTING FORM - PRIMARY

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

Staff: _____

Biological Resources

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

Security, Safety, 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 South 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- 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 South 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

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