ANNUAL REPORT FOR THE FISCAL YEAR 2010
(October 2009 - September 2010)

ON THE

BARRY JONES WETLAND MITIGATION BANK

(S028: Skunk Hollow Vernal Pool Preserve)

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I. Introduction

The Barry Jones Wetlands Mitigation Bank (referred to here as Skunk Hollow Vernal Pool Preserve, Skunk Hollow Preserve, or the Preserve) was established in 1997. The Memorandum of Agreement (MOA) among United States Army Corps of Engineers (ACOE), United States Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), and Pacific Bay Homes made credits available for off-site compensatory mitigation for unavoidable impacts to wetlands and waters of the United States, particularly for the Rancho Bella Vista Project (ACOE et al 1997). The Preserve includes a variety of sensitive biological resources, including Skunk Hollow, a 33-acre vernal pool supported within a 150-acre watershed. The Rancho Bella Vista Habitat Conservation Plan (RBV HCP) was developed to protect and conserve these sensitive resources. A Conservation Easement (CE) was recorded over the property known as Skunk Hollow in 2002 in favor of CDFG (CNLM and CDFG 2002). The bank is still open and wetlands preservation credits remain available through McCollum Associates. The Center for Natural Lands Management (CNLM) received fee title and management responsibilities in 2003. The endowment for management was fully funded in 2003 and provided to CNLM.

The Skunk Hollow Preserve is located in the unincorporated French Valley area of Riverside County, north of Murrieta Hot Springs Road and east of Pourroy Road (Figures 1 and 2). The Preserve protects the entire 33-acre (13.4 ha) vernal pool along with approximately 107 ac (43.3 ha) of the pool's upland watershed. There are seven additional smaller vernal pools that form within the watershed. The watershed protected within the Preserve represents approximately 90 percent of the currently functioning watershed for the pool. An additional 13 ac (5.3 ha) are protected outside of the Preserve (within CNLM's Johnson Ranch Preserve), bringing the total amount of protected watershed to approximately 98 percent. The Preserve supports several state and/or federally-listed plant and animal species or their habitats, including California Orcutt grass (*Orcuttia californica*), Riverside fairy shrimp (*Streptocephalus wootoni*), vernal pool fairy shrimp (*Branchinecta lynchi*), San Diego ambrosia (*Ambrosia pumila*), Quino checkerspot butterfly (Euphydryas editha quino), coastal California gnatcatcher (*Polioptila californica californica*), and Stephens' kangaroo rat (*Dipodomys stephensi*), as well as numerous other sensitive species. The Preserve also provides open space that links the Riversidean sage scrub conservation area within the Rancho Bella Vista development project with the Johnson Ranch/Roripaugh Ranch Preserve, and ultimately to the Metropolitan Water District's Lake Skinner East Side Reservoir Preserve and the Southwestern Riverside County Multispecies Reserve.

The purpose of this Annual Report is to summarize the management activities carried out according to the guidelines for goals and objectives set forth in the Barry Jones Wetland Mitigation Bank Management Plan (CNLM 2006) and the Annual Work Plan for the Fiscal Year 2010 (CNLM 2009). Unless otherwise stated, all tasks were performed by CNLM's Preserve Manager, Kim Klementowski, or CNLM's Assistant Preserve Manager, Chris Briggs. This report summarizes CNLM's management and monitoring activities on the Preserve during the fiscal year of October 1, 2009 through September 30, 2010.

The primary management objectives for the Preserve are (CNLM 2006):

1) Contribute to the preservation and restoration of endangered and threatened species.

2) Contribute to the preservation and restoration of sensitive species not currently listed.

3) Protect the hydrologic quality and integrity of the vernal pool.

4) Increase awareness and build a supportive constituency for the preserve within the planned communities adjacent to the property.

Summary of Activities for the 2009-2010 Fiscal Year:

- Four Skunk Hollow vernal pools (Skunk Hollow vernal pool, Skunk Hollow 1, Skunk Hollow 2, and Road Rut) were inundated by 25 January, 2010.
- Conducted surveys for the presence of larval stages of amphibians and fairy shrimp; species detected include vernal pool fair shrimp (VPFS), Western toad (*Anaxyrus boreas*) tadpoles, and Spadefoot toad (*Spea hammondii*) tadpoles.
- Conducted surveys for presence of adult Quino checkerspot butterfly (QCB); presence was confirmed.
- Took photographs at permanent photopoints
- Continued experiment to determine best of three grassland management techniques (mowing, grazing, and fire); collected vegetation data
- Collected vegetation data in vernal pool
- Using funding from a CDFG NCCP Local Assistance Grant, monitored artificial burrowing owl burrows in centers of grassland management plots. One pair occupied a natural burrow within a burn plot.
- Mowed 20 acres that was hydroseeded with sage scrub species.
- Mowed and weed-whacked mustard and non-native grasses surrounding the vernal pool.
- Maintained fuel breaks around the perimeter where structures are present on adjacent parcels
- Maintained wildlife-passable fences.
- Controlled access of unauthorized people, vehicles, livestock, and domestic pets into the Preserve by patrolling and maintaining signs, fencing, gates, and locks.
- An Annual Work Plan for 2011 and an Annual Report for 2009 were drafted.

II. Management Activities

A. Biotic Surveys

1. Vegetation monitoring
    a) *Vernal pool flora*. In 2008, a vernal pool vegetation monitoring protocol was established and implemented in the Skunk Hollow vernal pool. The objective is to monitor distribution and relative abundance of rare (i.e. Orcutt's grass) and non-native plants. Four transects were installed at evenly spaced intervals perpendicular to the natural southeast axis of the vernal pool (Figure 3). Transects vary in length between 170 meters and 270 meters so that each transect extends into upland vegetation beyond the high-water level of the pool. Quadrats (50-cm^2) were placed along transects every 10 meters and all plant species present were recorded. By completion of this report, the vernal pool has again filled during the FY 2010-2011. The three-year data set will be analyzed and reported in the FY 2010-2011 Annual Report.
    b) *Coastal sage scrub*. Data are collected on four 100-meter-long transects every three years. Data were last collected in 2009 and results were reported in the Annual Report for FY 2009 on the Barry Jones Wetland Mitigation Bank (CNLM 2010). Data were not collected on transects in 2010.

2. Avian surveys
   Waterfowl bird surveys were conducted formally on one morning prior to conducting fairy shrimp surveys and informally while conducting other management activities. A list of waterfowl observed using the vernal pool can be found in Appendix A.

3. Amphibian surveys
   Surveys for larval amphibians were conducted in conjunction with fairy shrimp monitoring. Tadpoles of both Western toad (WETO) and Spadefoot toad (SPTO) were observed in the Skunk Hollow vernal pool. SPTO tadpoles were observed in the Road Rut. No adults, tadpoles, or egg sacks of any species were observed within Skunk Hollow 1 or Skunk Hollow 2 (Figure 3). While conducting amphibian surveys a few egg masses were located, including SPTO and an unidentified species. We were told by Robert Fischer of USFWS that they are likely snail eggs, not amphibian eggs (pers. comm.). Photos of the SPTO and unidentified invertebrate eggs are located in Appendix B.

4. Fairy shrimp surveys
   Fairy shrimp surveys were conducted by CNLM Orange County Preserve Manager, Lee Ann Carranza (USFWS Permit No.TE-221411-0). Kim Klementowski, Western Riverside Preserve Manager, assisted Ms. Carranza with her surveys. Surveys were first performed on 8 February in all four pools that were inundated. During this survey, VPFS were detected within the large Skunk Hollow vernal pool. No further detections of any branchiopod species were detected in the Skunk Hollow vernal pool during follow up surveys on 25 February and 19 March. Versatile fairy shrimp (*Branchinecta lindahli*) were detected in the Road Rut on all three survey occasions. No branchiopods were observed in either Skunk Hollow 1 or Skunk Hollow 2 during the first survey, and pools were dried up during follow up surveys. The full field survey report was submitted to the USFWS and can be made available upon request.

5. Quino Checkerspot Butterfly Monitoring
   QCB non-protocol adult surveys were conducted by Ken Osborne (USFWS Permit No.TE-837760-6) of Osborne Biological Consulting. Winter rains were sufficient enough to produce an abundance of California plantain (*Plantago erecta*), the QCB host plant, and other nectar-producing wildflowers. The QCB flight season was said to be excellent with thousands of adults found on Oak Mountain displaying aggregation behavior never before documented in *Euphyrdryas* species (Osborne 2010). One male was detected flying non-stop through the Preserve. The full field survey report was submitted to the USFWS and can be made available upon request.

6. General Monitoring
   Photographs were taken from long-term photo-points to monitor extent of vernal pool inundation (Appendix C).

B. Habitat Maintenance

1. Fuels Management
   A dirt road along the perimeter of the Preserve and adjacent to properties with structures was maintained as a fuel break. This road is the primary fuel break. Along the edge of this road, a 30-foot-wide mowed strip was also maintained as a reduced fuels zone (Figure 3).

2. Treatment of nonnative plants
   a) *Mowing of hydroseed area.* In FY 2006-2007, CNLM staff wrote a proposal for and CNLM was granted funds from the USFWS Partner's for Fish and Wildlife Grant Program for the restoration of a 20-acre strip of former agricultural field to sage scrub. This 20-acre strip stretches from Johnson Ranch through the Preserve (Figure 3) and is designed to create a habitat linkage between the high-quality sage scrub at the neighboring

Johnson Ranch and the high-quality sage scrub on the western side of the Preserve and the future Rancho Bella Vista Preserve. The area has been hydroseeded and we have committed to doing weed control in this restoration area. We mowed the hydroseeded area to reduce nonnative grass cover in 2010.

b) *Other nonnative plants.* A few wild raddish (*Raphanus sativus*) were hand-pulled within the Preserve.

3. Stephens' kangaroo rat habitat management study

An extension of the study that was initiated in 2008 for CNLM's March Stephens' Kangaroo Rat (SKR) Preserve was also implemented in the former agricultural fields on the Preserve. This study tests which method of vegetation management will best enhance the annual grasslands for SKR: burning, grazing, or mowing (CNLM 2007, Figure 3). This study is funded from another source and Preserve's budget does not cover this activity. Seven 2.68-acre plots were established on the Preserve in 2008. These plots were treated in 2008 and 2009 and will be monitored for up to five years. No treatments were applied in 2010, only vegetation monitoring was conducted. These data were not analyzed at the time this report was drafted and are not presented here.

4. Monitoring of artificial burrows

There are seven artificial burrowing owl burrows located within the Preserve. Burrows were installed in November 2008 and funded by CDFG's Natural Community Conservation Plan's Local Assistant Grant Program. Burrows are located in the centers of each of the seven experimental plots for SKR habitat management (see B.3 above and Figure 3). In FY 2009-2010, burrows were monitored monthly. Some burrows were monitored via motion-activated camera that was periodically moved throughout the year. The internal structure of the burrows were monitored via peep scope in early March 2010. Unfortunately, four of the seven burrows were found to be flooded. This is due to the high water table within the Preserve and the depth of the burrow nesting box. Burrows will be dug up and moved in the future to an alternative location, likely outside of the Preserve. Two burrows were used frequently by a pair of BUOW, which eventually nested in a natural burrow within one of the burn plots. One of the adults is banded although band number and color has yet to be confirmed. Three BUOW chicks were trapped and banded from this burrow. The CDFG funding ended in March 2010. CNLM will continue to monitor for BUOW and maintain artificial burrows as necessary.

C. Public Services and General Maintenance

1. Patrols

Regular patrols were conducted formally at least once per month and more frequently given the proximity of the Preserve to CNLM managed Johnson Ranch Preserve. Trash was picked up during these site visits. Maintenance

workers from the adjacent Valley Wide Recreation and Park District (Park) were found trespassing and cutting vegetation within the Preserve. CNLM staff asked them to stop working and exit the Preserve. CNLM Preserve Management followed up with Park Management in an effort to establish a relationship and remind them of the appropriate process for attaining permission to enter the Preserve for future maintenance needs. Little to no other trespassing was observed within the Preserve.

2. Access requests
    a) *Valley Wide Recreation and Park District and Verizon Wireless.* In July, CNLM was contacted by the Park to request a Right of Entry (ROE) into the Preserve in order to install a Verizon wireless antennae onto their property. CNLM Preserve Management initially denied access, citing conflicts with the CE held by CDFG. Park Management followed up with CDFG to further investigate the possibility of an ROE. CNLM staff met on-site with Verizon and communicated concerns with the potential impacts that heavy equipment (cranes and semi-trucks) could have upon the resources on the Preserve. Potential solutions were discussed with Verizon ultimately deciding that they would pursue an alternative method by which to install the antennae without entering into the Preserve.
    b) *Riverside County Transportation and Butterfield Stage Road.* In July, CNLM was contacted by the Riverside County Economic Development Agency (County) to request an ROE into the Preserve in order to perform various Biological, Cultural, and Jurisdictional Surveys related to the extension of Butterfield Stage Road. Preserve Management responded by requesting a proposal outlining the specific activities they wished to perform, including methodologies and maps. Communications expanded to include TRC Solutions, the consultant hired by the County to surveys. A species list for proposed surveys was provided and we were informed that they would need to dig pits two feet deep every 100 yards for jurisdictional delineations; no maps were provided as to where pits would be dug. Further communications resulted in CNLM denying access due to a lack of information provided, concern over impacts associated with jurisdictional delineation, and request to perform surveys that duplicate CNLM required management responsibilities. The County and TRC Solutions later decided that they would not need access into the Preserve and were just concerned with the Skunk Hollow watershed located outside of the Preserve boundaries.

D. Site Construction

No new fencing was installed this FY.

E. Budget and Endowment

The budget for FY 2009-2010 was $15,469.69. CNLM spent $15,635.02, or 101.1% of the budgeted funds on preserve management. As standard practice, CNLM always accounts for a 10% contingency for each Preserve budget for use in case of emergency. Spending $165.33 over budget is well within the 10% contingency funds. Appendix D provides a summary of the fiscal year 2009-2010 expenditures. The original endowment provided to CNLM was in the amount of $452,040.00. The endowment balance as of September 30, 2010 was $502,260.00.

III. References

ACOE, USFWS, CDFG, Pacific Bay Homes. 1997. Memorandum of Agreement Regarding the Establishment, Operation and Use of the Barry Jones Wetland Mitigation Bank. December 1997.

CNLM and CDFG. 2002. Center for Natural Lands Management and California Department of Fish and Game. Conservation Easement Deed. Instrument No. 2002-095313, as recorded in the County of Riverside on February 22, 2002. 18pp.

CNLM. 2006. Management Plan for the Barry Jones Wetlands Mitigation Bank. 23pp.

CNLM. 2009. Annual Work Plan for the Fiscal Year 2009-2010 on the Skunk Hollow Vernal Pool Preserve. November 2009. 22pp.

CNLM. 2010. Annual Report for the Fiscal Year 2008-2009 on the Barry Jones Wetland Mitigation Bank. March 2010. 23pp.

Osborne, Kendall H. 2010. Year 2010 Non-protocol Adult Surveys for Quino Checkerspot Butterfly (*Euphydryas editha quino*) on a series of ecological reserves managed by the Center for Natural Lands Management. Osborne Biological Consulting. June 2010.

IV. Figures

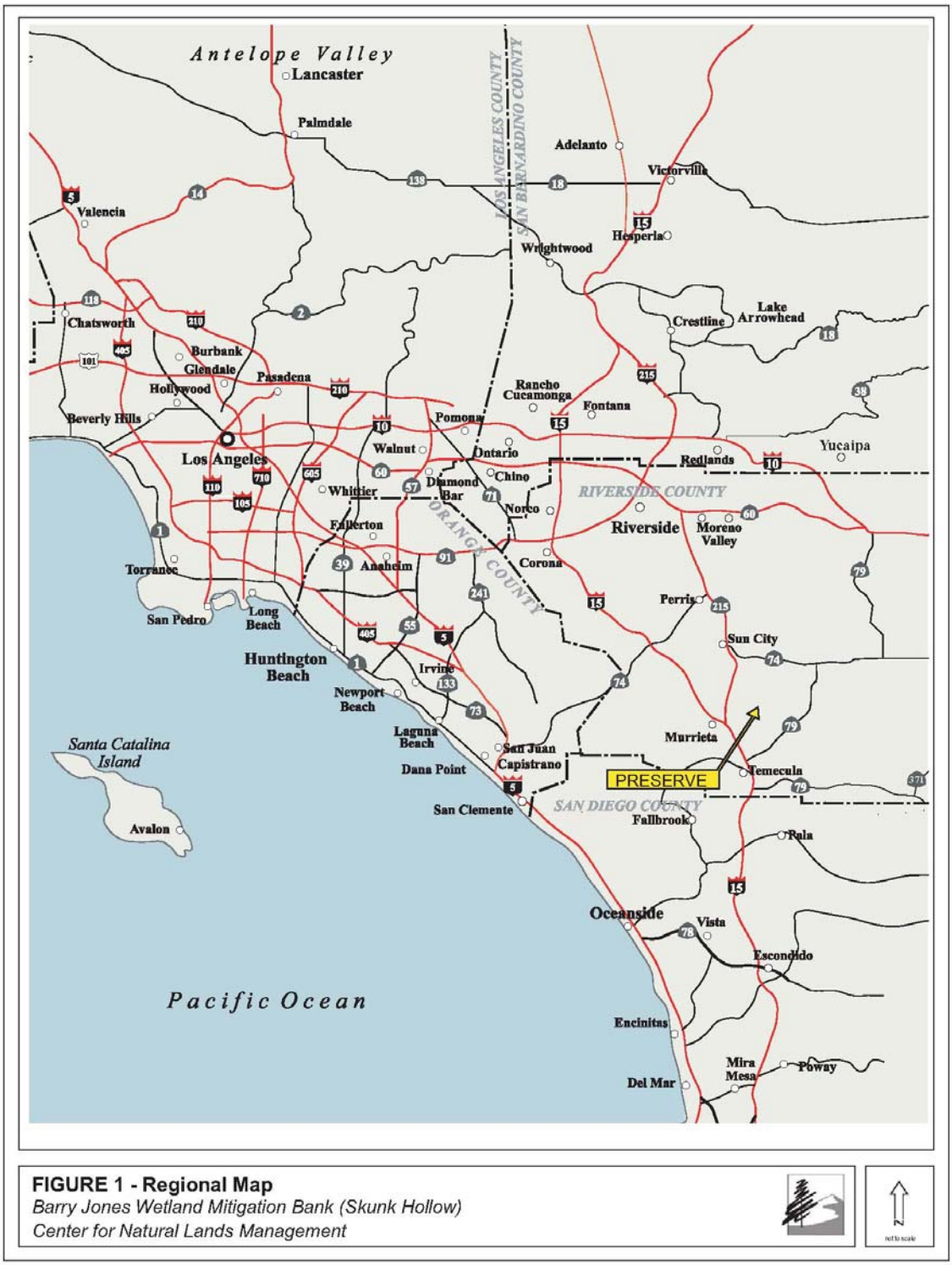

Figure 1. Regional location of Skunk Hollow Vernal Pool Preserve.

Figure 2. Skunk Hollow Vernal Pool Preserve Boundaries.

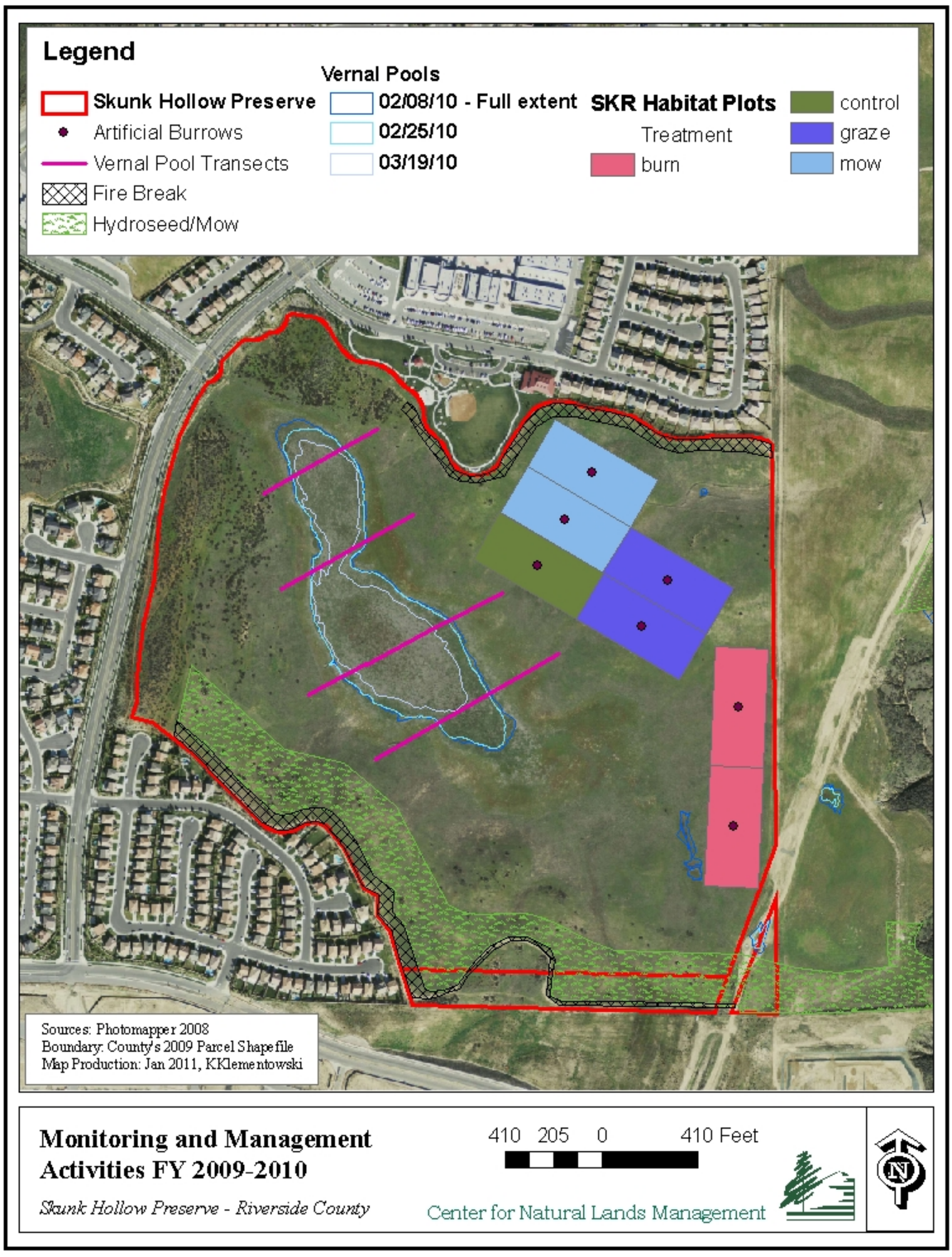

Figure 3. Monitoring and Management Activities FY 2009-2010.

V. Appendices

Appendix A: Birds observed using Skunk Hollow vernal pool

	SURVEY DATE	
SPECIES (common name)	**2/8/2010**	**misc dates**
American Coot		X
American Wigeon	X	
Black-necked Stilt	X	
Canada Goose		X
Killdeer	X	
Northern Shoveler	X	
Red-winged Blackbird		X
Ring-necked Duck	X	
Short-billed Dowitcher	X	
Wilson's Snipe		X

Appendix B: Photos of SPTO and unidentified invertebrate egg masses.

SPTO egg mass ready to hatch.

Unidentified egg mass, presumed to be snail eggs.

Appendix C. Photo Monitoring of Vernal Pool.

Appendix D. Summary of Expenditures in FY 2009-2010.

Skunk Hollow Vernal Pool Preserve (S028)

Activity	Expenses Oct 09 - Sept 10	Budget Oct 09 - Sept 10	Budget
Administration Fee	3,026.14	2,994.13	101.1%
Biotic Surveys	3,523.79	3,749.30	94.0%
Field Equipment	853.13	750.00	113.8%
General Maintenance	124.45	0.00	0.0%
Grants	477.66	0.00	0.0%
Habitat Maintenance	2,689.50	2,782.56	96.7%
Office Maintenance	2,488.49	122.84	2025.8%
Operations	1,115.17	3,507.74	31.8%
Public Services	331.32	953.04	34.8%
Reporting	980.35	610.08	160.7%
Site Construction	25.02	0.00	0.0%
Totals	15,635.02	15,469.69	101.1%