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Annual Report (2008)

4S Ranch Specific Plan Habitat Management Plan Area



JULY 2009

PREPARED FOR:

Newland California/4S Kelwood GP
10815 Rancho Bernardo Road, Suite 310
San Diego, CA 92127
Contact: Mr. Mike Rust (858) 674-1300

PREPARED BY:

DUDEK

605 Third Street
Encinitas, CA 92024
Contacts: John Minchin & Andy Thomson
(760) 942-5147

ANNUAL REPORT (2008)
for the
4S RANCH SPECIFIC PLAN
HABITAT MANAGEMENT PLAN AREA

San Diego County Department of Planning and Land Use
Specific Plan 95-01

Prepared for:

Newland California/4S Kelwood General Partnership

10815 Rancho Bernardo Road, Suite 310

San Diego, California 92127

Contact: Mr. Mike Rust (Vice President)

Preserve Manager

Tel. 858.674.1300

Prepared by:

DUDEK

605 Third Street

Encinitas, California 92024

Contacts:

John Minchin – RLA #2225/Habitat Restoration Specialist

Andy Thomson – Biologist/Habitat Restoration Specialist

Tel. 760.942.5147

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EXECUTIVE SUMMARY

This report summarizes the results of the 2008 monitoring and habitat management activities within the 4S Ranch Specific Plan Area. The Specific Plan Area includes open space preserve areas in the northerly, central, and southerly sections of the 2,891-acre 4S Ranch development area. The development includes residential neighborhoods, estate lots and a mixed-use district. The monitoring and long term habitat management work for this project is being conducted in accordance with the *4S Ranch Habitat Management Plan* (RMA Consultants, revised September 1999).

Newland California/4S Kelwood General Partnership (G.P.) is responsible for the long-term management of the Specific Plan Preserve Sections of 4S Ranch. Mike Rust, Vice President of Newland California/4S Kelwood G.P., is serving as the Preserve Manager for the Specific Plan Area. The Ralphs Family is responsible for the Ralphs Family Ranch Preserve section of the project, which encompasses approximately 1,065 acres. Separate reporting is being conducted by the Ralphs Family.

A total of approximately 547 acres of open space area comprises the 4S Ranch Specific Plan Area. Of that amount, 312 acres are located in the northern portion of the project, adjacent to the Ralphs Family Ranch Preserve Section. A second open space area totaling 5 acres is located within the center of the project, associated with Artesian Creek, adjacent to Camino Del Norte. (Note: This area, while part of the overall development open space area, is not technically part of the Habitat Management Plan [HMP] management area, nor part of the Lake Hodges Segment of the County's Multiple Species Conservation Plan [MSCP] Subarea Plan, due to its relative isolation from other major natural preserve areas. This area is managed by the 4S Ranch Master Home Owner Association) A third open space area totaling 230 acres is located in the southerly portion of the site, within La Jolla Valley, surrounding the Lusardi Creek riparian corridor.

The northerly portion of the open space area is being preserved and managed as a natural habitat area. No mitigation or revegetation programs are being implemented in those areas. Two designated trails are located in this area, associated with pipeline corridors to water tanks on the easterly and westerly hillsides. All of this area burned in the October 2007 Witch Creek Fire and is in the process of recovering.

The central portion of the project associated with Artesian Creek had a wetland mitigation program implemented, which has already completed its five-year maintenance and monitoring period. That area successfully fulfilled its permit requirements as of July 2006. That area is not technically part of the Specific Plan HMP areas and is now being managed by the Master Homeowners Association.

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Within the southerly portion of the Specific Plan Area, a wetland mitigation program is also being implemented along the Lusardi Creek riparian corridor. The wetland mitigation area encompasses approximately 7.3 acres of land that is being revegetated as wetland and riparian habitat on either side of Lusardi Creek. The mitigation areas lie between the two preserved man-made lakes with associated wetland vegetation and are bisected by Carmel Valley Road. The Lusardi Creek wetland mitigation program is currently in its final year of the five-year long term maintenance and monitoring period, required to help fulfill its resource agency permit conditions. The status of the wetland mitigation areas is being reported on separately in annual mitigation monitoring reports by Dudek. The latest Year Four report was completed in January 2009 (Dudek 2009). The mitigation/revegetation areas are progressing extremely well and are on track to meet their success criteria.

From October 20–21, 2007, the Witch Creek Fire burned the entire northerly portion of the Specific Plan Area. The central portion of the site along Artesian Creek and the entire southerly portion of the open space area, associated with Lusardi Creek, were spared in the fire and were not damaged. The burned portions of the Specific Plan Area in the northerly open space areas are in the process of recovering from the 2007 wildfire, with vigorous new growth from surviving shrubs, and prolific wildflowers in spring of 2008 and 2009. Dudek monitored the burned areas for potential erosion issues and weed invasion over the 2008 monitoring period, but no problem areas severe enough to warrant remedial action were observed.

In the southern open space areas surrounding the upper lake, there were a few gaps/holes in the perimeter preserve fencing that were observed in 2008. Pedestrian trails have developed at the locations of the gaps/holes in the perimeter fencing. Repair to the fencing has been recommended to prevent unauthorized entry into preserve areas. Fence repairs have been completed by Newland California/4S Kelwood G.P., as recommended. No illegal off-road vehicle activities were noted during the monitoring period.

As described in the 2007 annual report, exotic/invasive species control within the native habitat open space areas continues to be the main long-term maintenance and management issue to date. There are several species of perennial, invasive weeds that have been observed in localized areas within the preserve that are in need of control. Of particular concern is the thread-leaved brodiaea (*Brodiaea filifolia*) preserve area in the southwest corner of the preserve, which is under extensive pressure from the non-native invasive species artichoke thistle (*Cynara cardunculus*) invading from the adjacent fields. Artichoke thistle is also prevalent in a non-native grassland area in the northern preserve areas. Weed species observed within the preserve areas that are of primary concern that will require on-going control include artichoke thistle, salt cedar (*Tamarisk* sp.), fennel (*Foeniculum vulgare*), tree tobacco (*Nicotiana glauca*), and gum tree (*Eucalyptus*

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sp.). Newland California/4S Kelwood G.P. has initiated control efforts for the invasive species, but due to their pervasive nature, ongoing control efforts will be required.

ongoing maintenance of invasives

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1.0 PROJECT INFORMATION

The 4S Ranch development is a 3,525-acre project located within the west-central unincorporated portion of San Diego County, west of Interstate 15 and Rancho Bernardo, and northeast of Rancho Peñasquitos (Figures 1 and 2). Out of the total 3,525 acres within the project boundaries, 634 acres located along the easterly boundary have been under development since 1987 and include commercial/industrial facilities and residential housing.

The remaining 2,891 acres of 4S Ranch have been under development over the last eight years pursuant to a **General Plan Amendment and a Specific Plan Amendment (SPA 95-01)**. The total project is composed of four residential neighborhoods, a mixed-use district, and an estate lot area in the northerly portion of the site known as the “Ralphs Family Ranch.” Environmentally sensitive/constrained areas were preserved throughout the development, including upland habitats and the Artesian Creek and Lusardi Creek riparian/wetland habitat areas which are being preserved in conserved open space, as part of the Specific Plan Area.

Wetland impacts resulting from the 4S Ranch project were mitigated for under permits with the U.S. Army Corps of Engineers (ACOE) and the California Department of Fish and Game (CDFG), in both the Artesian Creek and the Lusardi Creek drainages. Mitigation for wetland impacts was implemented in two phases: the first mitigation phase was implemented within the Artesian Creek development area, Phase 1, which reached the end of the five-year maintenance and monitoring period in April 2006. The implementation of the second phase of the mitigation within the Lusardi Creek development area is currently in the final year of a mandatory five-year maintenance and monitoring period.

Dudek is serving as the biological monitor for the 4S Ranch Specific Plan Area on behalf of the owner, Newland California/4S Kelwood General Partnership (G.P.). The representatives for the project at Dudek are John Minchin (Landscape Architect #2225/Habitat Restoration Specialist) and Andy Thomson (Biologist/Habitat Restoration Specialist). Dudek also provided monitoring on behalf of Newland California/4S Kelwood for the Artesian Creek wetland mitigation program and is currently monitoring the Lusardi Creek wetland mitigation program.

2.0 SITE INFORMATION

A total of approximately 547 acres of open space area comprise the 4S Ranch Specific Plan Area. Of that amount, 312 acres are located in the northern portion of the project, adjacent to the Ralphs Family Ranch Preserve Section. A second open space area totaling 5 acres is located within the center of the project, associated with Artesian Creek (i.e., part of the overall open space area, but not technically part of the Specific Plan Preserve Section areas). A third open

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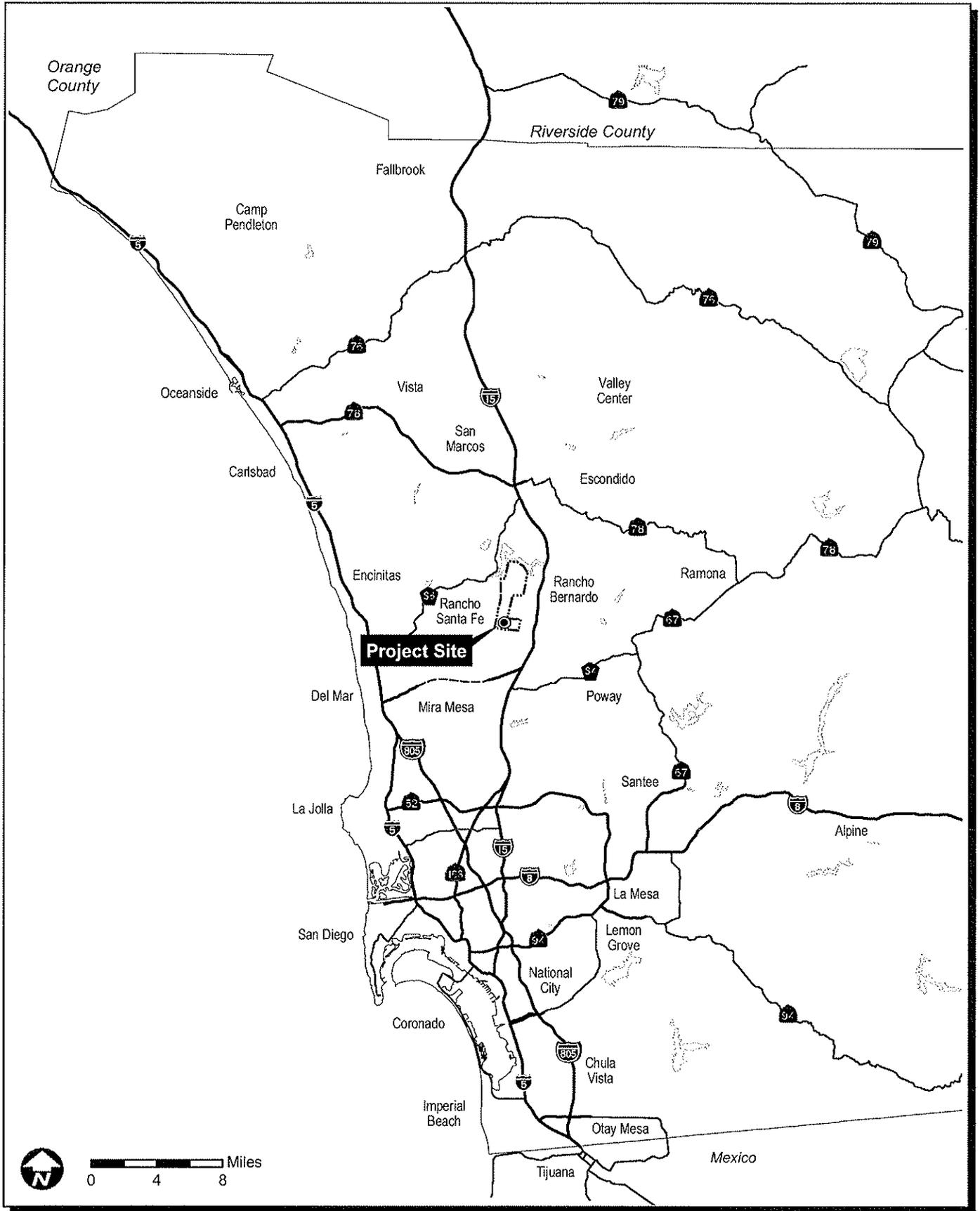
space area totaling 230 acres is located in the southerly portion of the site, within La Jolla Valley, surrounding the Lusardi Creek riparian corridor. Figure 3 shows the overall open space habitat preserve sections and the various habitats/plant communities within the 4S Ranch Specific Plan Area. Figure 4 shows the locations of sensitive species within the open space habitat preserve areas.

The southerly open space portion of the Specific Plan area is located within La Jolla Valley and includes the Lusardi Creek wetland mitigation project area, which is 7.3 acres in size. The mitigation areas are situated south of Dove Canyon Road and Bernardo Center Drive, as shown on Thomas Bros. Map 1169:G5-F5, in San Diego County, California. The sites are now bisected by Carmel Valley Road. The project site is located on the U.S. Geological Survey (USGS) 7.5-minute Escondido quadrangle; T13S, R2W. The Assessor's Parcel No. is 3121500100. Elevations on site range from approximately 470 feet above mean sea level (AMSL) to 540 feet AMSL.

Lusardi Creek is a USGS "Blueline Stream," with the headwaters and watershed originating in the Rancho Bernardo area. There are two man-made historic lakes on this portion of Lusardi Creek within the project boundaries, which have been preserved. Lusardi Creek is a secondary tributary feeding the San Dieguito River and discharges west of Lake Hodges Dam. The southerly wetland mitigation areas along Lusardi Creek, which are being monitored separately, traverse the site from the east to the west.

The 4S Ranch Wetland Mitigation Areas (i.e., along Artesian Creek and Lusardi Creek) are being implemented in accordance with ACOE Clean Water Act Section 404, Permit No. 952022400-DZ; and CDFG Section 1603, Streambed Alteration Agreement No. 5-017-99. The mitigation program is being implemented for compliance with the approved *4S Ranch Conceptual Wetland Mitigation and Monitoring Plan* (Dudek & Associates 1999).

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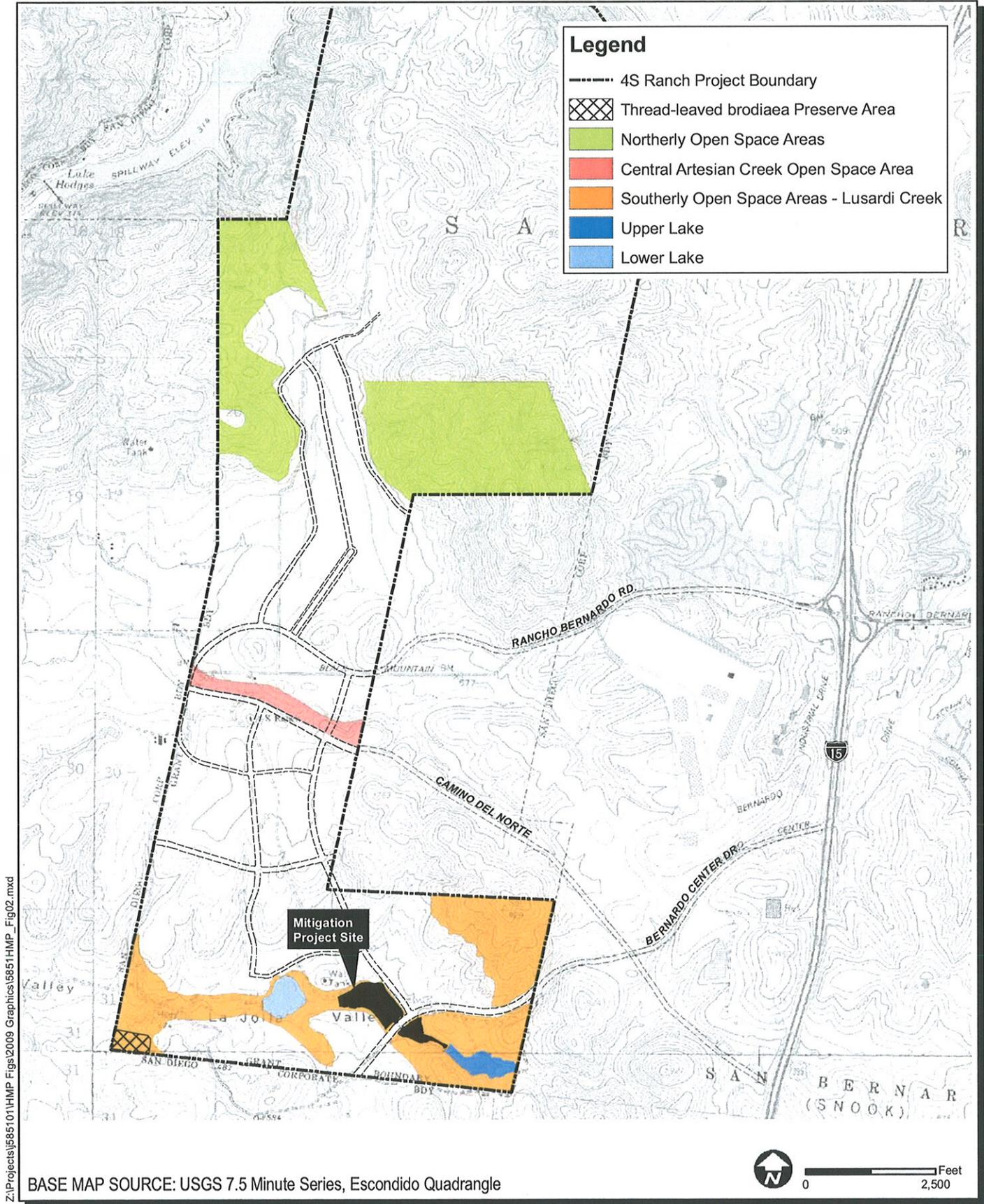


4S Ranch Specific Plan Habitat Management Plan Area - Annual Report (2008)
Regional Map

FIGURE
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BASE MAP SOURCE: USGS 7.5 Minute Series, Escondido Quadrangle

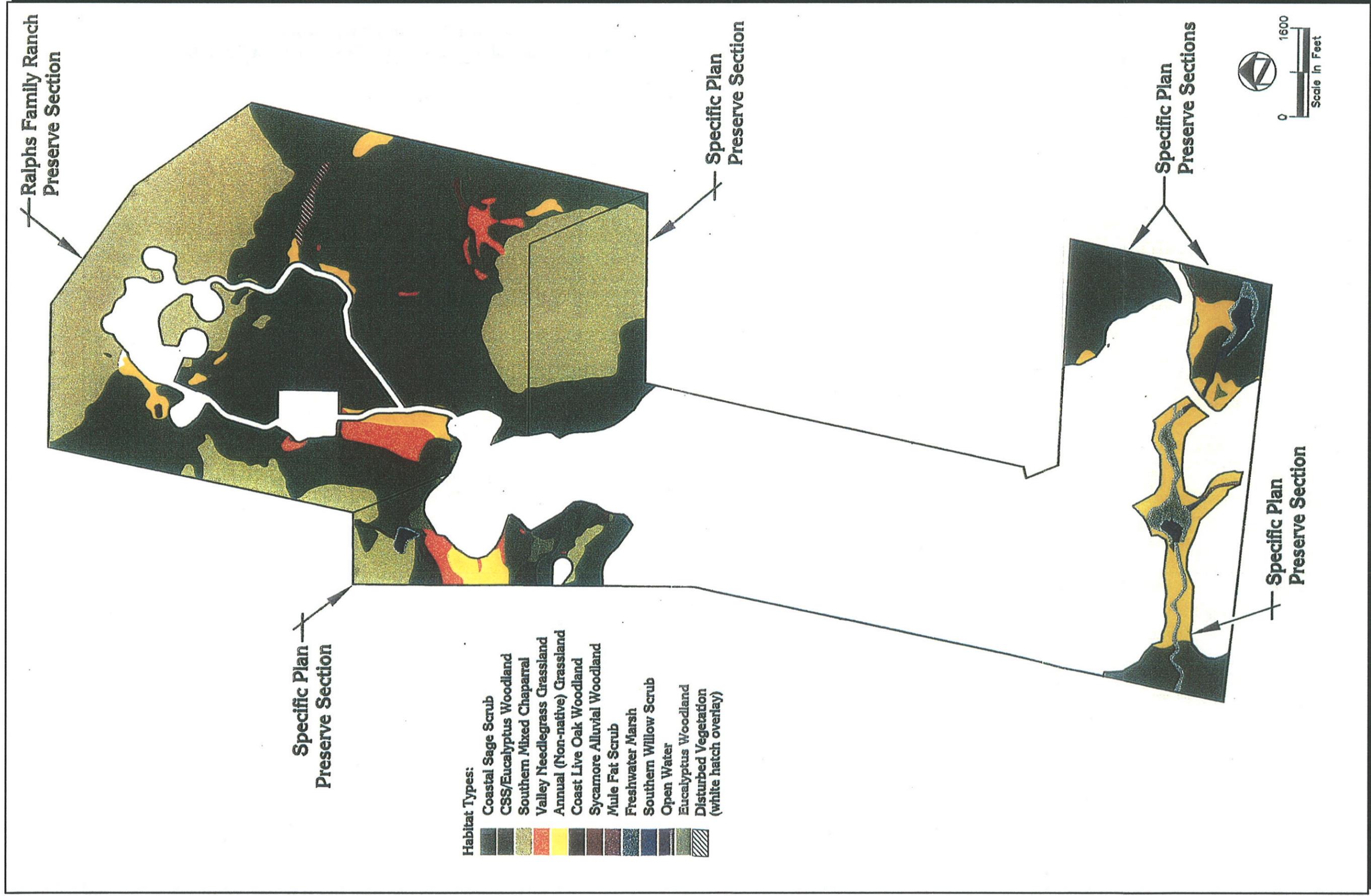


4S Ranch Specific Plan Habitat Management Plan Area - Annual Report (2008)
Vicinity Map

FIGURE
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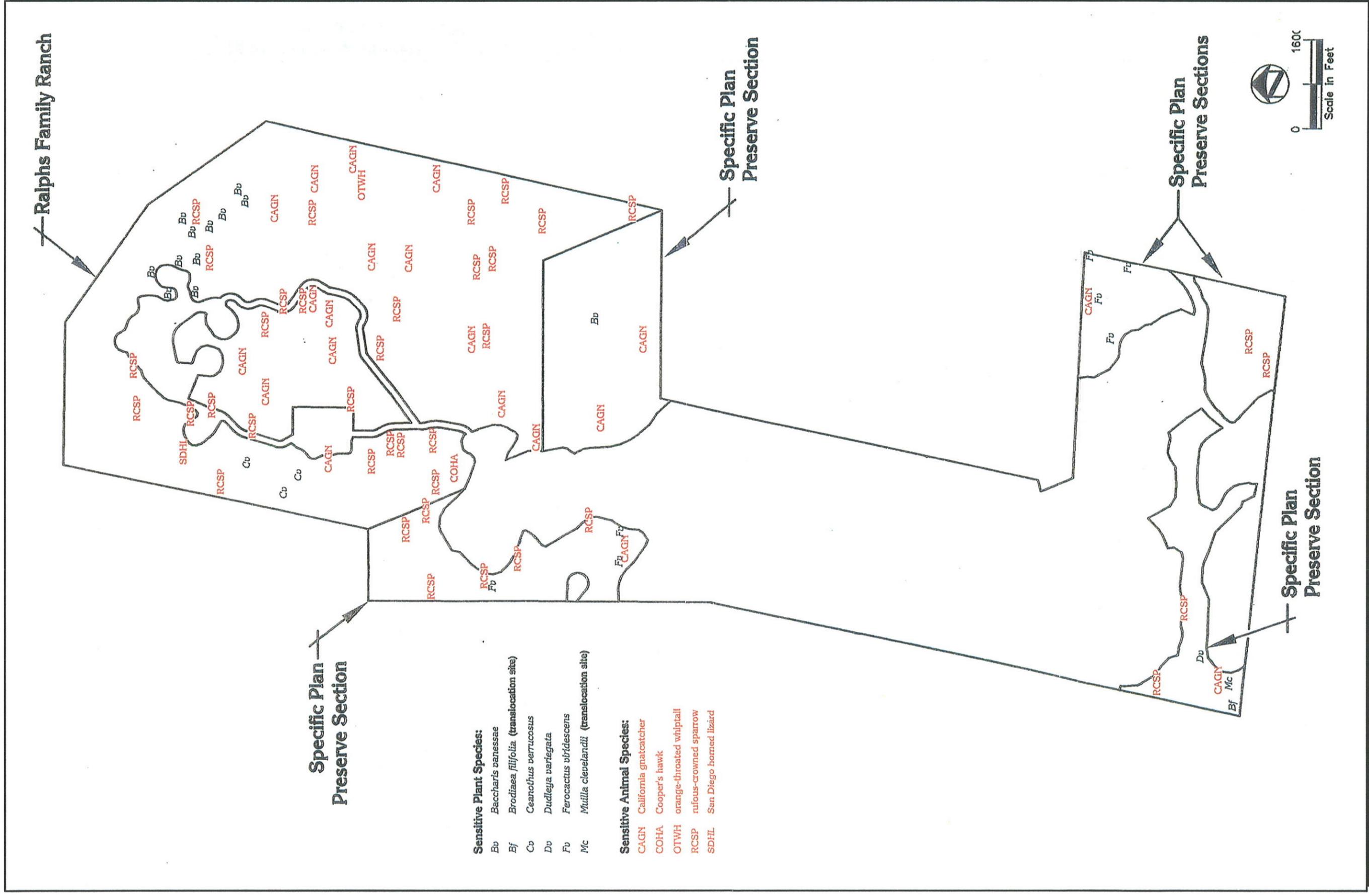
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4S Ranch Specific Plan Habitat Management Plan Area - Annual Report (2008)

Overall Open Space Preserve Area Reference Map



4S Ranch Specific Plan Habitat Management Plan Area - Annual Report (2008)

Open Space Preserve Area Sensitive Species Locations

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Mitigation for wetland impacts was implemented in two phases: the first mitigation phase was implemented within the Artesian Creek development area, Phase 1, which reached the end of the five-year maintenance and monitoring period in April 2006. The implementation of Phase 2 of the mitigation program within the Lusardi Creek development area is currently in the final year of a mandatory five-year maintenance and monitoring period.

Dudek monitored the implementation of the mitigation installation work. Installation of the Phase 2 (Lusardi Creek) mitigation areas was completed by JMD Landscape for Newland California/4S Kelwood GP on September 3, 2004. The long-term maintenance and monitoring period is scheduled to last five years and began at the completion of 120-day plant establishment period on January 3, 2005. The landscape maintenance contractor for the long-term maintenance and monitoring period for the Lusardi Creek wetland mitigation areas continues to be JMD Landscape.

The conceptual mitigation plan for the 4S Ranch Lusardi Creek Wetland Mitigation Project proposed to provide 6.0 acres of wetland habitat creation within the Lusardi Creek corridor. Figure 5 shows the Lusardi Creek wetland mitigation areas. The original wetland revegetation scheme for this area was composed of 2.8 acres of southern willow scrub and 3.2 acres of mulefat scrub habitats. A total of 7.3 acres of combined area were actually revegetated, based upon final site conditions. In addition, approximately 1.9 acres of additional area within the floodplain of the creek was planted with mulefat scrub vegetation for potential future mitigation credit use. The intent of the mitigation program in this area is to expand upon the existing wetland resources and to improve the overall habitat quality of the area.

In addition to the wetland mitigation program, an area on the northeast side of Bernardo Center Drive, adjacent to the wetland creation area, totaling 0.5 acre, was revegetated to coastal sage scrub habitat as mitigation for an emergency water line break that occurred during the construction of 4S Ranch and the extension of Bernardo Center Drive. This is a separate mitigation area not subject to the success criteria of the wetland mitigation program. Both the wetland and upland mitigation areas are included in the open space areas managed as part of the Specific Plan Area.

3.0 MONITORING RESULTS

Monitoring Methods

Monitoring of the open space area consisted of field monitoring visits conducted periodically throughout the year to provide a general qualitative (i.e., visual) assessment of the open space

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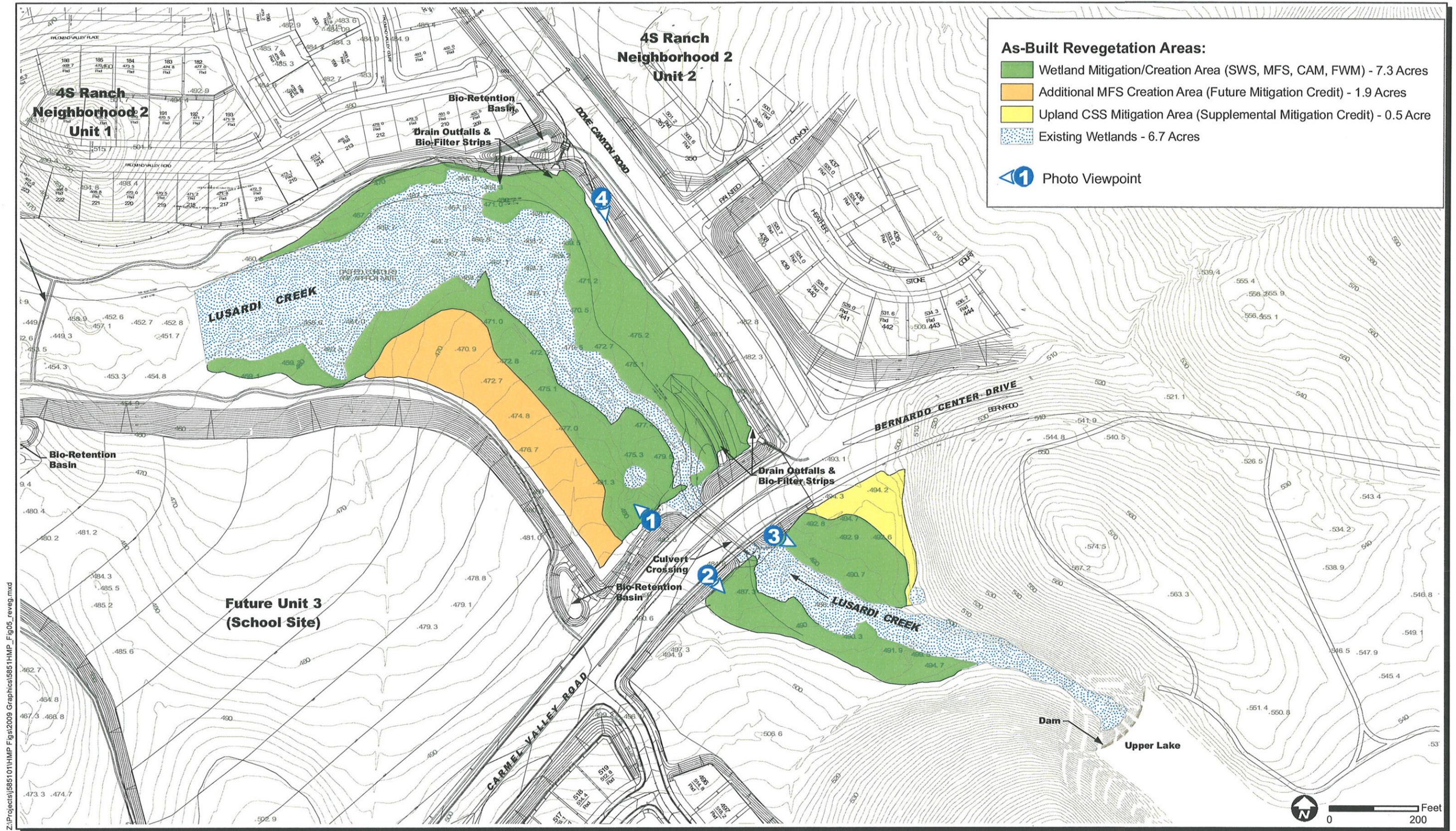
areas. Management and monitoring visits included qualitative assessments of the open space areas to document the status of the areas and to address various management issues including:

- Protection of the open space areas from unauthorized vehicular access
- Assessments of vandalism
- Unauthorized access by the public via foot traffic
- Maintenance status of established trails
- Status of signage and fencing
- Trash and debris accumulation and removal
- Maintenance of utilities and existing facilities
- Protection of existing mitigation/revegetation areas
- Removal of exotic/invasive plant species
- Protection of sensitive habitats and species
- Implementation of adaptive management strategies to address changing site conditions.

Monitoring visits were conducted at the following intervals:

- Dudek monitored the overall open space areas on several occasions as indicated below
 - July 31, 2008, Lusardi Creek mitigation area assessment and general preserve monitoring.
 - October 15, 2008, Lusardi Creek mitigation area assessment.
 - March 11, 2009, Southerly preserve area monitoring and assessment.
 - March 31, 2009, Northerly preserve area monitoring and assessment.

Representative photographs showing the various open space areas are shown on Figures 6 and 7.



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4S Ranch Specific Plan Habitat Management Plan Area - Annual Report (2008)
 Revegetation Area Reference Map

FIGURE
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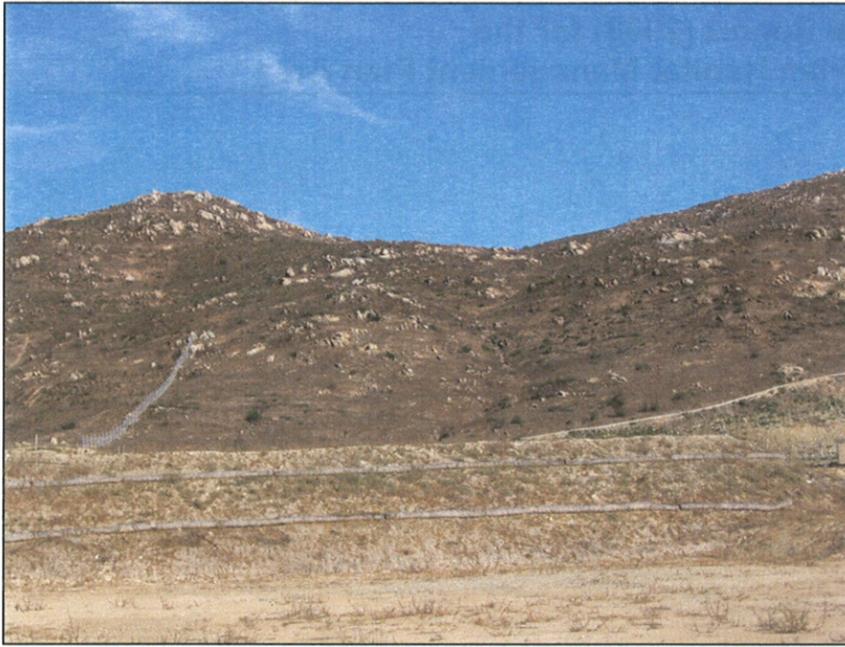


Photo 1:
View looking east towards open space hillside (October 2008)

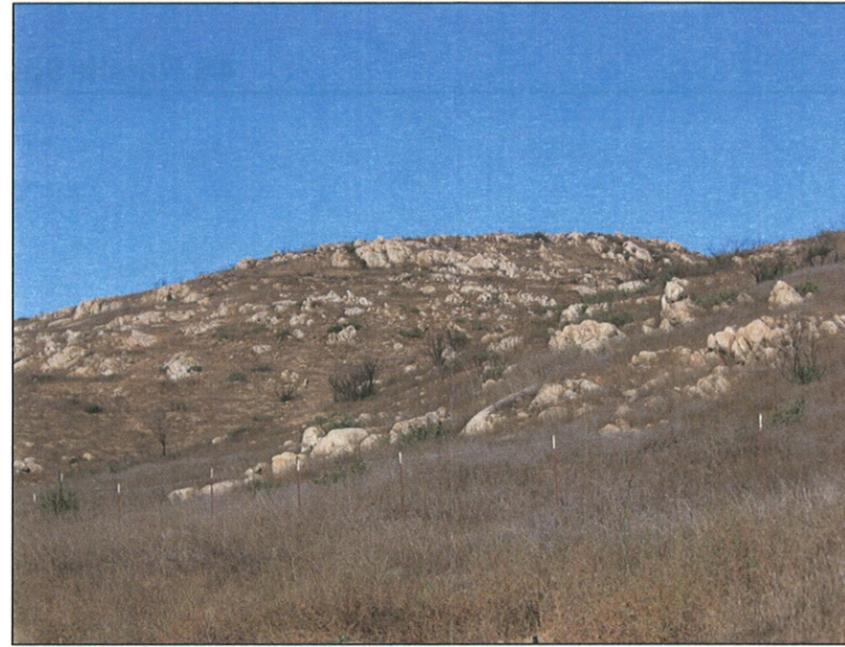


Photo 2:
View looking northeast towards open space hillside (October 2008)



Photo 3:
Wildflowers in bloom in northerly open space areas (March 2009)



Photo 4:
View looking northwest along development edge (October 2008)



Photo 5:
View looking east towards openspace hillside (July 2008)

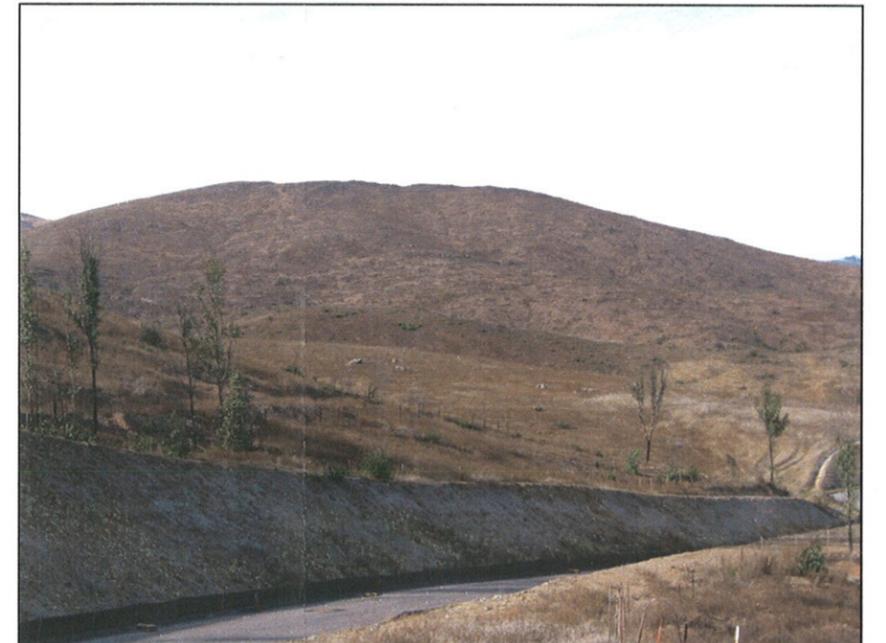


Photo 6:
View looking northwest towards open space hillside (October 2008)

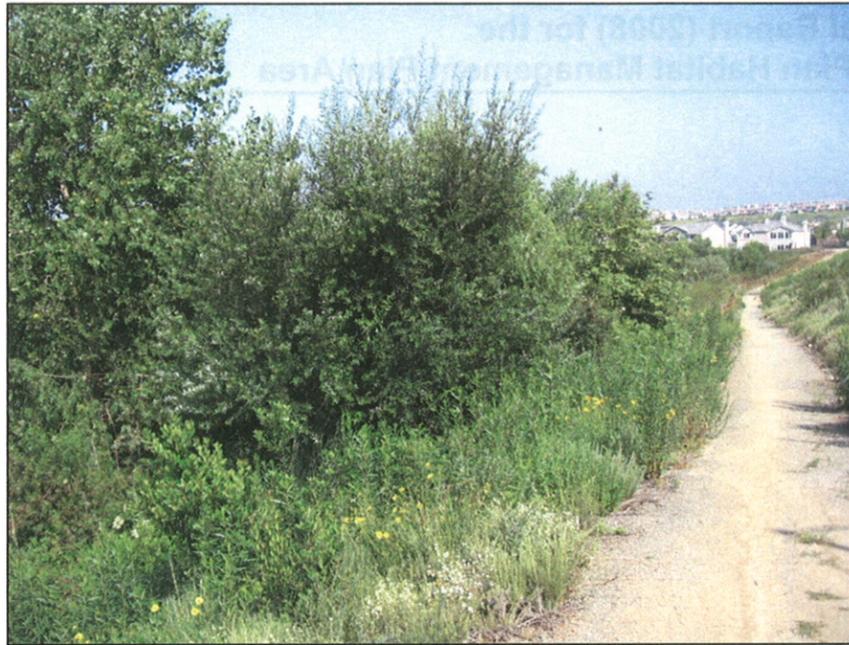


Photo 7:
View of Lusardi Creek wetland mitigation area (July 2008)

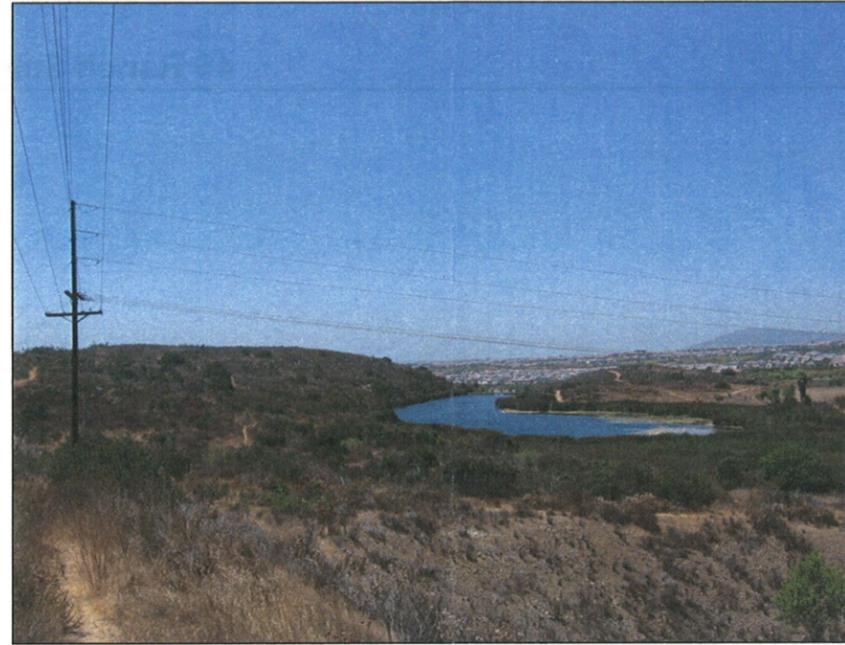


Photo 8:
View looking west towards open lake (July 2008)



Photo 9:
View looking south towards lower lake (July 2008)

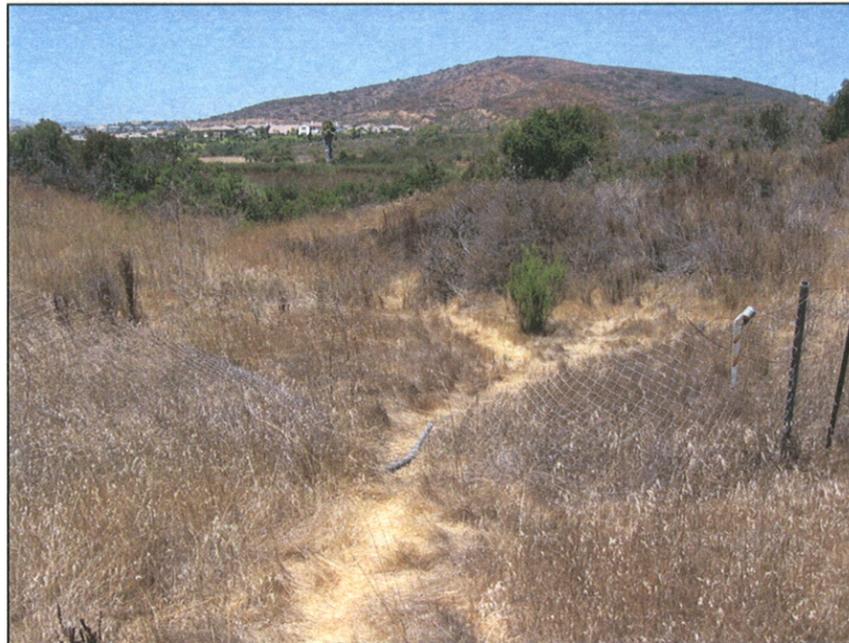


Photo 10:
Example of fencing in need of repair at southern perimeter of open space areas (July 2008)



Photo 11:
View of thread-leaved brodiaea planing area (March 2009)



Photo 12:
Thread-leaved brodiaea in the western rock ring (March 2009)

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Annual Rainfall Data

Precipitation received during 2008 was below average overall, with half of the total rainfall for the year received in December 2008 (CIMIS 2008).

The annual rainfall total for the monitoring period January–December 2008 equaled 9.15 inches (CIMIS 2008).

The three largest rainfall months were the following:

- Rainfall amount January 2008: 2.11 inches
- Rainfall amount November 2008: 1.22 inches
- Rainfall amount December 2008: 4.63 inches.

Monitoring Results

The general condition of the overall 4S Ranch Specific Plan open space preserve areas during 2008 was excellent with some localized exceptions. As described in the 2007 report, the October 2007 Witch Creek Fire had a considerable effect on the character of the vegetation in the northerly portion of the Specific Plan Area, burning most vegetation to the ground. In 2008 and early 2009, the burned vegetation exhibited a dramatic recovery from the 2007 wildfire, with vigorous new growth from surviving shrubs, and prolific wildflowers in spring 2008 and 2009. Dudek monitored the burned areas for potential erosion issues and weed invasion over the 2008 monitoring period. Some minor rill erosion on steep slopes was observed, typical of post-fire conditions, but it was not severe enough to warrant remedial action. Annual species recruited quickly, helping to stabilize loose soil. Some weed growth was also observed throughout the burned areas, but the weed species observed tended to be annuals such as non-native annual grasses (*Bromus* spp., *Avena* spp.) and filaree (*Erodium* spp.), which are ubiquitous weed species in the region, and are species which quickly germinate, aiding with soil stabilization in post-fire conditions.

In the southern open space areas, Dudek observed a few gaps/holes in the preserve perimeter fencing surrounding the upper lake. Pedestrian and mountain bike trails have developed at the locations of the gaps/holes in the perimeter fencing. Repair to the fencing has been recommended to prevent unauthorized entry into preserve areas and to the lake. Newland California/4S Kelwood G.P. mended the gaps/holes in the fences as recommended; however, there continues to be pedestrian pressure at these locations, and new holes in the fencing have occurred. No illegal off-road vehicle activities were noted during the monitoring period.

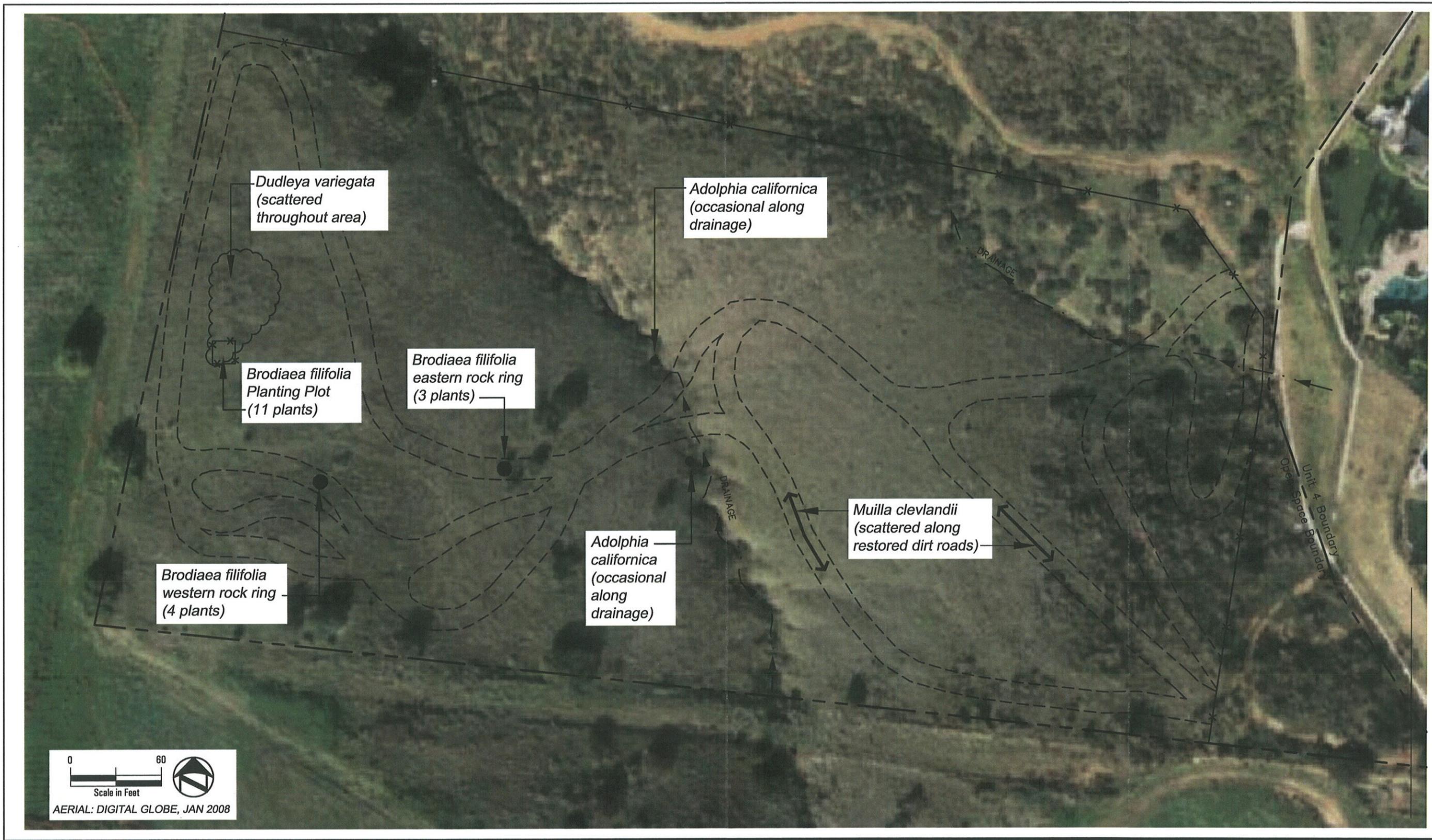
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Dudek evaluated the status of the state-listed endangered and federally listed threatened thread-leaved brodiaea plants that were transplanted into the preserve area in the southwest corner in the late 1990s as part of the project's mitigation obligations. Dudek observed 18 thread-leaved brodiaea plants in three locations within the preserve area during 2008–2009, including 11 individuals in the original planting plots, 4 individuals in the western rock ring and 3 individuals in the eastern rock ring (Figure 8). Dudek observed the plants in a vegetative state during the March 11, 2009, monitoring visit. All plants appeared generally healthy. Dudek did not monitor the plants during the blooming period. The thread-leaved brodiaea preserve area supports a rich diversity of plant species, including several that are rare according to the California Native Plant Society (CNPS). Dudek observed variegated dudleya (*Dudleya variegata*; CNPS List 1B.2), California adolphia (*Adolphia californica*; CNPS List 2.1) and San Diego goldenstars (*Muilla clevelandii*; CNPS List 1B.1) within the preserve.

There continues to be vandalism of sprinkler heads along the pedestrian trails near the school site in the southerly open space areas. These problems have been addressed on a case by case basis as necessary.

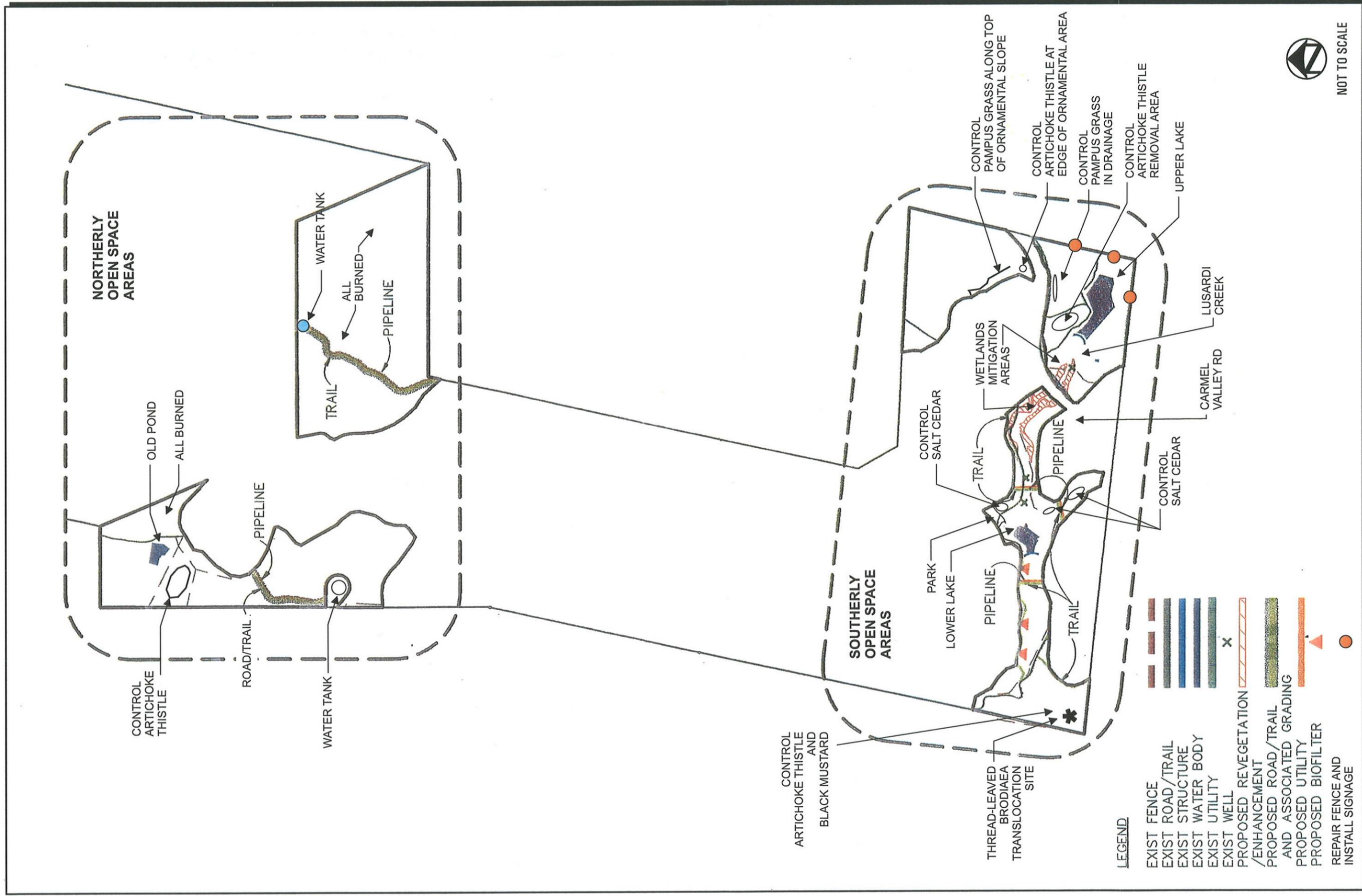
There are several species of perennial, invasive weeds that have been observed in localized areas within the preserve that are in need of control. Of particular concern is the thread-leaved brodiaea (*Brodiaea filifolia*) preserve area in the southwest corner of the preserve, which is under extensive pressure from artichoke thistle (*Cynara cardunculus*) invading from the adjacent fields. Artichoke thistle is also prevalent in a non-native grassland area in the northern preserve areas and north of the upper lake in the southern preserve areas. Other weed species observed within the preserve areas included salt cedar (*Tamarisk* sp.) and castor bean (*Ricinus communis*) around the margins of the lake areas in Lusardi Creek, fennel (*Foeniculum vulgare*) in grassland areas in the northern and southern preserve areas, Pampas grass (*Cortaderia selloana*) in a tributary drainage to Lusardi Creek located north of the upper lake, and tree tobacco (*Nicotiana glauca*) and gum trees (*Eucalyptus* sp.) in the northerly open space areas. Refer to Figure 9 for a map depiction of weed species locations.

In the wetlands mitigation area at Lusardi Creek, weed control efforts are being implemented by JMD Landscape on a regular basis as part of the five-year maintenance and monitoring requirement of the mitigation program.



4S Ranch Specific Plan Habitat Management Plan Area - Annual Report (2008)
Sensitive Plant Species in Thread-leaved Brodiaea Preserve Area

FIGURE
8



4S Ranch Specific Plan Habitat Management Plan Area - Annual Report (2008)
Remedial Work Reference Map

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4.0 SUMMARY OF MAINTENANCE AND REMEDIAL ACTIONS

The long-term maintenance contractor for the five-year maintenance and monitoring period at the Lusardi Creek wetland mitigation area has been JMD Landscape. They have been maintaining the area on behalf of 4S Kelwood and under the monitoring recommendations provided by Dudek, in accordance with the restoration plan.

General maintenance work items completed by JMD Landscape during the 2008 maintenance period were focused in the Lusardi Creek area and included weed control/removal, irrigation system adjustments, and trash and debris removal. Each of the maintenance items conducted during this monitoring period is discussed in more detail below:

Weed removal focused on commonly observed annual weeds (sourclover, mustard, bristly ox-tongue, prickly lettuce, and non-native grasses) as well as a few perennial species (palms, pampas grass, artichoke thistle and salt cedar).

In October 2008, a small isolated patch of the highly invasive perennial pepperweed (*Lepidium latifolium*) was found within the mitigation area. Dudek met with JMD Landscape on site to show them the location and to recommend control measures. Dudek recommended that crews watch for any other potential occurrences while conducting regular maintenance visits.

In July 2008, two small areas where native cover is sparse were noted. In these areas, it was recommended that the irrigation system be evaluated/adjusted to ensure adequate coverage, the areas be re-seeded with the native seed mix, and the areas be fertilized with a general balanced fertilizer to enhance plant growth/establishment.

As noted in previous reports, some of the slope areas surrounding the Mitigation Area are weedy and are contributing weed seed to the Mitigation Area. Dudek recommended controlling weeds in the surrounding ornamental slope areas to help minimize the spread of weeds into the Mitigation Area.

Trash and debris removal was accomplished periodically, as necessary. Most of the trash and debris found on site accumulates at the storm drain outfall locations after storm events and along the trails. Trash and debris should be removed on a regular basis.

Holes/gaps in the perimeter preserve fencing were mended as recommended.

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5.0 ACTION STRATEGY FOR THE 2009 MONITORING PERIOD

Dudek has prioritized the proposed action strategy and remedial work recommendations for the 4S Ranch Specific Plan Habitat Management Plan (HMP) Preserve areas for 2009 based on their perceived importance relative to biological functions and values. Resources dedicated to preserve maintenance should be allocated to the highest priority items first to achieve the greatest ecological value.

1. Address invasive weed problems at the thread-leaved brodiaea preserve area in the southwest corner of the southerly open space areas. Specifically, artichoke thistle continues to invade from the adjacent fields where the species forms nearly monotypic stands. Black mustard (*Brassica nigra*) is also abundant here and should also be controlled. Due to the abundance of sensitive plant species at this location, it is critical that any maintenance efforts to control weeds in this area are conducted by a qualified, experienced landscape contractor, with the assistance of a biological monitor, to avoid impacts to sensitive species.
2. Control perennial invasive non-native plant species within open space areas identified in Figure 9 including, artichoke thistle, salt cedar, fennel, tree tobacco and Pampas grass. These species should be controlled within the entire length and within 100 feet from the banks of Lusardi Creek and the associated two lakes in accordance with project permits. A combination of physical removal and herbicide treatments will likely be needed to control these species. Properly timed, repeat herbicide applications may be required for complete control of most perennial weed species. The contractor shall refer to the herbicide label for information on proper timing and application rates.
3. Repair the gaps/holes in the perimeter preserve fencing in the southerly preserve areas. Repair of the fencing should be coupled with the installation of appropriate signage to identify the preserve boundary (Figure 9). Due to the amount of pressure from public access at some of the locations, Newland California/4S Kelwood G.P. may want to consider the possibility of designating some of the existing trails as part of the overall trail system in the area if compatible with the goals of the management plan.
4. Repair erosion problems at all storm drain outlets that drain into the open space areas. Erosion damage should be repaired by filling in erosion rills and scars with native soil and/or native rock or cobble, and/or through installing gravel bags and straw wattles where appropriate to slow water flow during storm events. Disturbed soil areas at the drain outfalls should be stabilized through hydroseeding with an appropriate non-irrigated hydroseed mix.

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5. Remove any organic and non-organic trash and debris that may be clogging or may have washed into the major storm drains under the roadways crossing the Lusardi Creek corridor, and at all storm drain outfall points to the creek, as necessary.
6. Control and remove eucalyptus seedlings and re-sprouts within the riparian corridor areas along Lusardi Creek where necessary
7. Monitor for illegal off-road vehicle access problems and install protective fencing and/or barricades and signage where necessary to preclude access.
8. Continue to monitor the recovery of the native habitat burned in the northerly open space areas and document overall species presence/recovery.

6.0 REFERENCES

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