West Valley HCP
Delhi Sands Flower-loving Fly (DSF) Preserve Management Plan

City of Colton, San Bernardino County, California

Riverside Land Conservancy
September 2012

INTRODUCTION

There are five conservation areas organized into four distinct management units. Exhibit 1 shows the location of each of the conservation areas and proposed management units:

- Unit 1: the San Bernardino Avenue Management Unit includes two conservation areas, the Indigo Avenue Conservation Area in the northwest corner of the Plan boundaries and King is Coming Conservation Area located to the east of the Indigo Conservation Area. These two conservation areas are connected by a land bridge designed to support DSF movement between the two areas

- Unit 2: the Valley Blvd management area that includes the Hospital Reserve Conservation Area and a 2-acre parcel set aside by the County of San Bernardino for the realignment of Valley Blvd;

- Unit 3: the Hermosa Cemetery Management Unit that is comprised of a 9 acres of occupied DSF habitat located in the southeast corner of the cemetery; and

- Unit 4: the Slover Avenue Management Unit, a 4.5 acre linear parcel along Slover Avenue that will be abandoned to allow sand movement across the road south into the Colton Dunes Conservation Bank.

All proposed restoration and maintenance activities will take place outside of the general DSF flight season (July 1 - September 30), unless urgent action is required.

SITE RESTORATION

Site Restoration Goal 1: Restore native habitat and vegetation in order to re-establish high quality DSF habitat.

Objective 1: Achieve 20-50% overall coverage of native shrubs.

Task 1: Establish at least one vegetation transect line for documenting baseline conditions and for conducting subsequent annual assessments within each conservation area or management unit. Additional transects to be established, as necessary, to track changes in habitat restoration areas; details of survey methodology (*e.g*. line-intercept) to be determined by qualified botanist/plant ecologist; at least two transect lines will be established in each conservation area or management unit (see below).

Task 2: Record shrub coverage and species composition as part of documenting baseline conditions.

Task 3: If coverage is over 50%, selectively remove shrubs by hand; selection of shrubs to be overseen by permitted DSF biologist and/or native plant botanist.

Task 4: If coverage is under 20%, plant seeds and/or potted seedlings obtained through onsite seed collection or by seed collection on nearby sites, as determined by permitted DSF biologist and/or native plant botanist.

Objective 2: Achieve less than 20% coverage of non-native vegetation.

Task 1: Assess the non-native coverage and species composition utilizing above- referenced transect lines.

Task 2: If non-native coverage is greater than 20%:

a. In areas dominated by non-native invasive grasses and other ruderal species, removal may be done by selective use of herbicides in coordination with and approval by USFWS.

i. Current herbicides anticipated for use are Fusillade, Roundup (glyphosate)

ii Should additional herbicides be required for use, formal application will be made to USFWS requesting specific written approval.

b. In higher quality habitat areas (rated as high or moderate quality) removal will be done only by hand and under supervision of a permitted DSF biologist and/or native plant botanist.

Task 3: Remove surface organic material (including dead exotic vegetation) and dispose off-site

Site Restoration Goal 2: Restore/maintain a structurally diversified nature plant community within all conservation areas and/or management units.

Objective 1: Achieve vegetation diversity within each conservation areas or management units.

Task 1: From documentation of the baseline condition, assess the vegetative composition within each Management Unit. Diversity of coverage and species composition should be goal, with any one species coverage constituting no more than 25% of any management unit; except California buckwheat (*Eriogonum fasciculatum*), which may constitute no more than 50% coverage of any management unit.

Task 2: Species comprising greater than 35%, except California buckwheat, should be selectively thinned by hand;

Task 3: Planting of under-represented species will done under the guidance of the permitted DSF biologist and/or native plant botanist.

Task 4: Create and/or maintain patchy vegetative coverage within each management Unit. Open linear areas are necessary for DSF viability. This would include establishing/maintaining linear openings among shrubs as fly-ways. The exact size and location of linear openings to be created and/or maintained will be intended to mimic nearby high and moderate quality habitat.

Site Restoration Goal 3: Control impacts of trash, trespass and other human intrusion into DSF habitat.

Objective 1: Secure site.

Task 1: Install fencing around the various conservation properties or management units;

Task 2: Prohibit unauthorized access.

Task 3: Install signage along the boundaries of each conservation area to ensure that build-out of the West Valley Specific Plan area does not encroach onto conservation areas.

Task 4: Patrol area on semi-annual basis, or as needed to maintain security.

Objective 2: Remove all signs of human disturbances.

Task 1: Collect trash and other debris onsite by hand, where feasible.

Task 2: Removal of trash may be done by machine if:

i. Individual items weigh over 50 pounds, or cannot easily be carried off-site by 1 individual.
ii. A qualified biological monitor will be present to ensure trash removal operations will not impact DSF habitat and adversely affect the conservation value of sites.

PERPETUAL SITE MANAGEMENT

Site Management Goal 1: Document site biological value.

Objective 1: Collect and maintain data relative to vegetative diversity and habitat quality.

Task 1: Conduct annual vegetation transect survey to monitor changes in native vegetation density and diversity.

a. At least one transect will be utilized, traversing the length of each conservation area from north to south (see Site Restoration Goal 1, Objective 1, Task 1).
b. Transects will be situated to include all prominent vegetation communities and re-vegetated areas.

Task 2: Establish permanent photo points to document site conditions; take photographs annually from photo points to document habitat values and changed conditions including conditions on each transect line.

Task 3: Tabulate transect results and determine vegetation changes.

Task 4: Prepare annual report utilizing transects and photo points to record changes over time and to provide data for annual vegetation management assessment.

Task 5: Submit copies of annual report, with copies to USFWS and the City of Colton.

Objective 2: Collect and maintain data relative to DSF viability on-site.

Task 1: Conduct focused surveys every 3 years.

a. Surveys shall be conducted by a biologist permitted by the USFWS to conduct DSF surveys or a biologist otherwise considered qualified by the USFWS to conduct such surveys.
b. Field surveys shall occur 1st week August, 3rd week August, 1st week September, unless special circumstances require a change as agreed to by USFWS and RLC.
c. Surveys shall be conducted between the hours of 10:00am and 2:00pm, under full sun with temperatures at 90° or above and winds less than 5 miles per hour.
d. Surveys shall be conducted by walking the perimeter of the conservation area and along the vegetation transects twice each visit.
e. Record survey evidence of any DSF and other typically associated insects observed, such as *Thyridanthrax atra*, *Apiocera chrysolasia*, *A. convergens*, and Nemomydas *pantherinus*.

f. Should survey protocol indicated above not produce necessary data or require further modification, RLC shall submit a request in writing to USFWS. USFWS shall approve such request in writing if request is reasonable.

Task 2: Should biotic survey show no evidence of DSF activity, annual surveys will be conducted until presence of DSF has been revalidated through survey findings.

a. The RLC will contact the USFWS to discuss appropriate actions should surveys fail to detect DSF for 3 consecutive years.

Task 3: Submit reports to USFWS and the City of Colton

Site Management Goal 2: Maintain appropriate vegetation community for DSF.

Objective 1: Maintain 20-50% coverage of native shrubs. (Continue "Site Restoration" tasks as identified above under Site Restoration Goal 1, Objective 1)

Objective 2: Maintain non-native coverage of less than 20%. (Continue "Site Restoration" tasks as identified above Site Restoration Goal 1, Objective 1)

Objective 3: Maintain native vegetation diversity. (Continue "Site Restoration" tasks as identified above Site Restoration Goal 1, Objective 2)

Site Management Goal 3: Control impacts of trash and trespass.

Objective 1: Secure site.

Task 1: Repair signage detailing nature of site as endangered species preserve and private property, as necessary.

Task 2: Patrol area on semi-annual basis (about 6 months after vegetation transect surveys)

Task 3: Should trespass have adverse impact on habitat, coordinate with the City of Colton and USFWS to implement corrective measures.

Objective 2: Remove all signs of human disturbance.

Task 1: Collect trash, by hand whenever feasible unless otherwise approved by USFWS.

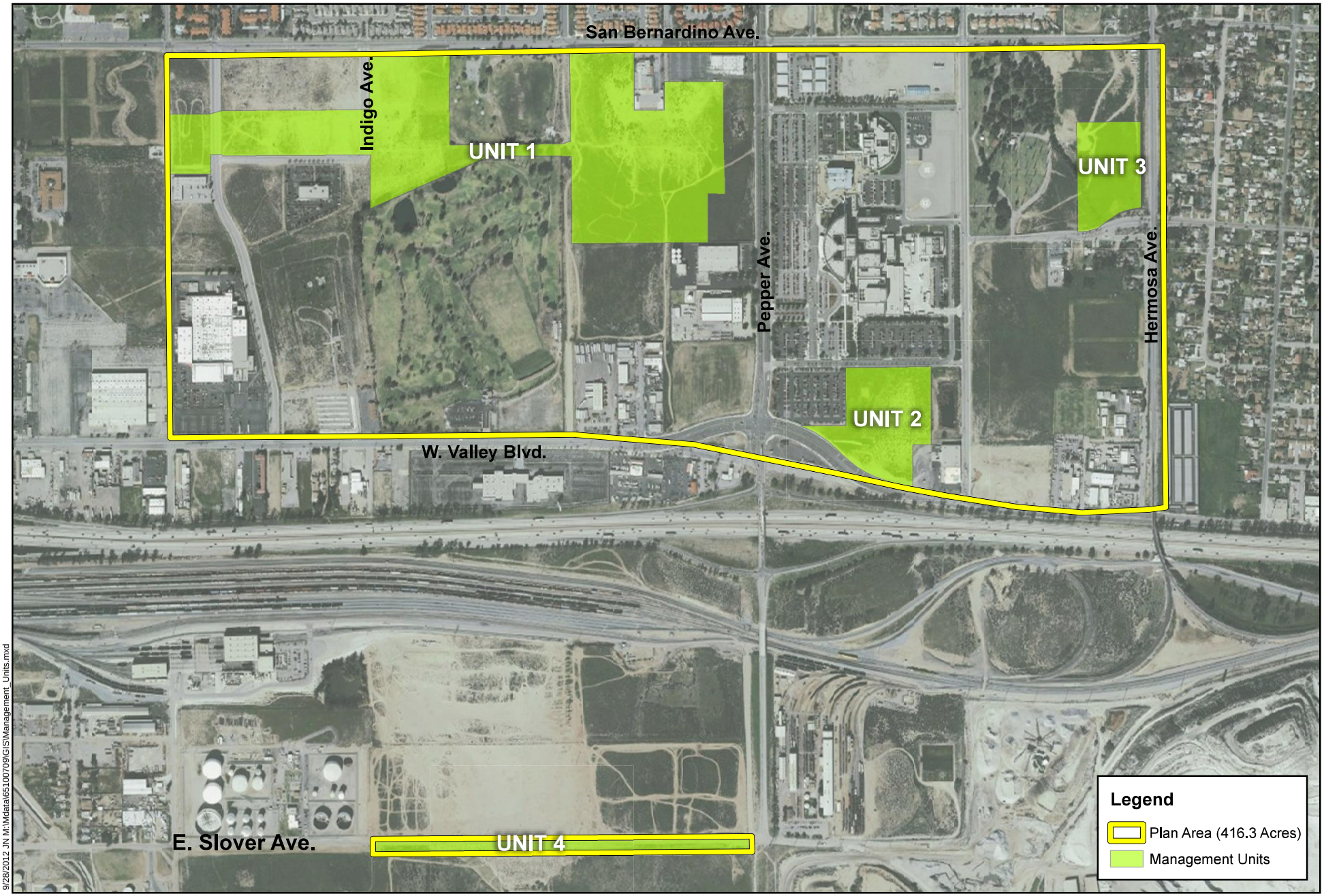
Task 2: A qualified biological monitor will be present to ensure that trash removal operations will not compromise the conservation value of the conserved habitat.

Site Management Goal 4: Implement adaptive management, as required, based on the results of the preceding management actions, ongoing conservation and management of DSF lands nearby and in the surrounding region, changes in the understanding of DSF ecology, and other relevant factors.

Task 1: An annual work plan will be prepared to address ongoing management actions as well as any identified adaptive management action needed to as a corrective measure.

West Valley HCP Area
Delhi Sands Flower-loving Fly (DSF) Preserve Management Plan
Management Task and Activity Summary

Management Task	Management Activities
Vegetation Management	• Remove native shrubs if cover exceeds 50% • Plant native shrubs (seeds or potted seedlings) if cover is less than 20%; use local source for collection of propagules • Remove non-native species if cover exceeds 20%. Use herbicide in areas of dense non-native cover, removal by hand where native cover is mixed with non-native • Remove and properly dispose of plant material that has been trimmed, treated with herbicide, pulled, or otherwise eradicated
DSF Surveys	• Abbreviated DSF survey every 3 years by USFWS-qualified biologist, prepare report for file and submit to USFWS and the City of Colton if requested • If no evidence of DSF, conduct annual focused surveys until DSF presence revalidated (advise USFWS if DSF not present after 3 consecutive years)
Habitat Enhancement	• Create flyways to mimic natural conditions
Monitoring	• Vegetation transects - monitor native and non-native vegetation, with conservation area or management unit, to determine changes in vegetation year-to-year; set permanent transect locations within each management unit to allow repetitive sampling each year • Set permanent photo points including all vegetation transects and vantage points; take photos from each point annually • 2 monitoring visits per year plus 2 follow-up visits per year, as-needed, to verify implementation of any corrective measures • Prepare report for file and submit to USFWS and the City of Colton
Trespass Control	• Install signage designating conservation areas as DSF habitat (repair/replace signage as needed) • Install and maintain fencing along each conservation area or management unit. Repair/replace fencing and signs as needed. • Patrol as part of monitoring visits to maintain security
Debris and Trash Cleanup	• Organic debris removal annually as part of vegetation management • Trash removal annually (by hand or machine depending on volume), have qualified monitor present to minimize impacts to DSF habitat
Management Planning	• Prepare an annual management plan every year.



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RBF CONSULTING A Baker Company

0 500 1,000 2,000 Feet

Source:US Fish and Wildlife, EnviroPlus Consulting, ESRI World Imagery Basemap

DELHI SANDS FLOWER-LOVING FLY PRESERVE MANAGEMENT PLAN

Management Units

Exhibit 1