



## ***General Habitat Suitability Evaluation***

### ***Ontario Ranch Business Park Off-Site Improvements***

***Site Location:***

City of Ontario  
County of San Bernardino  
Guasti 7.5-minute USGS Quadrangle Map

***Prepared for:***

Euclid Land Ventures LLC  
c/o Jeff Johnston  
REDA  
4450 MacArthur Blvd., Suite 100  
Newport Beach, California 92660

***Prepared by:***

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***Total Area Surveyed:***

± 1.6 miles

***Survey Conducted by:***

Scott Cameron  
Principal Biologist

***Survey Conducted On:***

November 30, 2019

***Report Date:***

December 15, 2019



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December 15, 2019

Euclid Land Ventures LLC  
c/o Jeff Johnston  
REDA  
4450 MacArthur Blvd., Suite 100  
Newport Beach, California 92660

**SUBJECT:** *Results of a General Habitat Suitability Evaluation, Ontario Ranch Business Park, Off-Site Improvements, City of Ontario, San Bernardino County, California*

Dear Jeff:

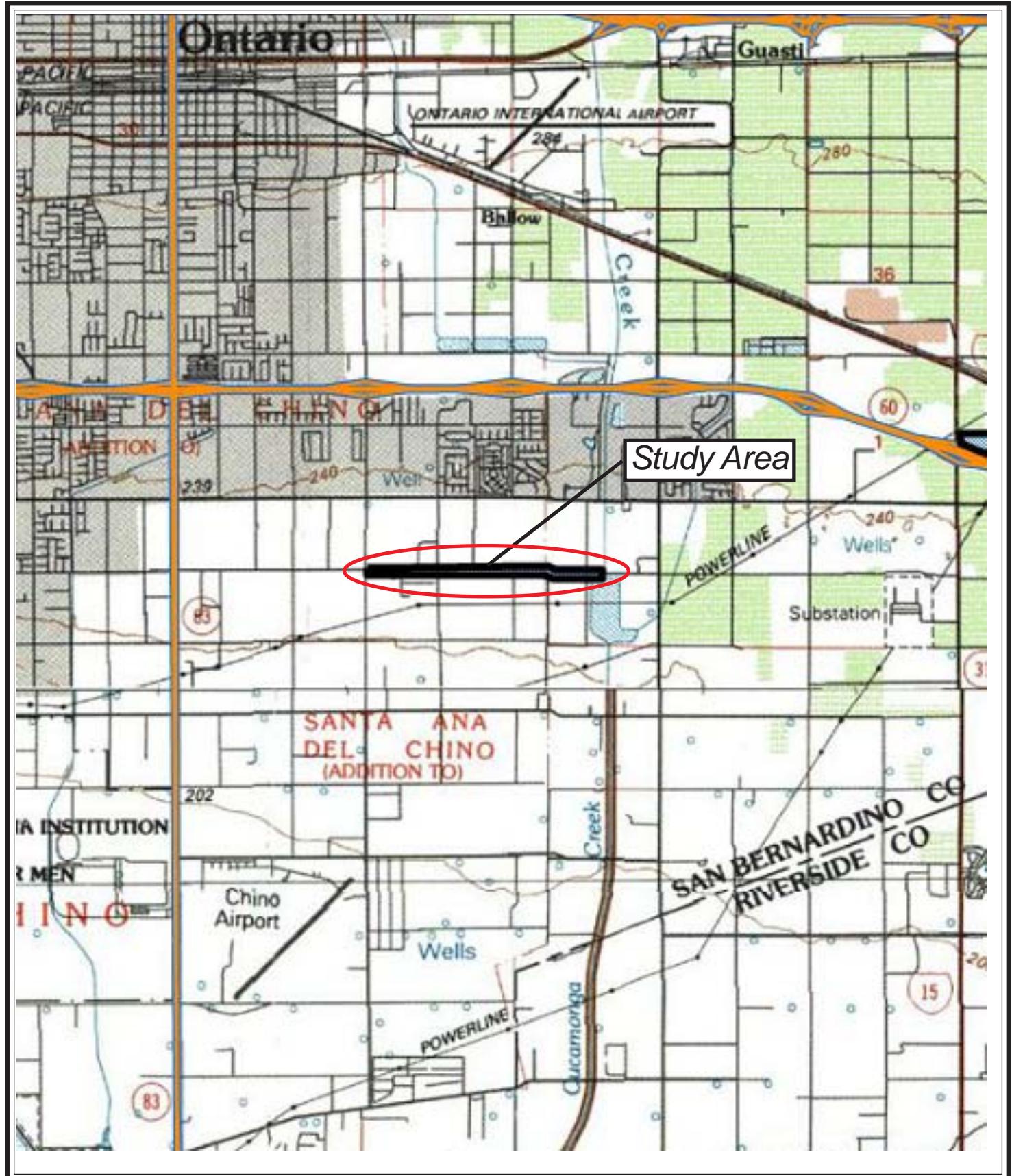
This letter report presents findings of a reconnaissance-level survey conducted to generally evaluate the suitability of a ±1.6 mile linear site (Ontario Ranch Business Park-herein site or study area) to support special-status biological resources with emphasis on the federally-listed endangered Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*-herein DSFF).

### ***Introduction***

The study area is regionally located in San Bernardino County, California (**Plate 1**). Specifically, the project site is located in the City of Ontario (City) along a ±1.6 mile portion of Chino Avenue. The site occurs on the "Guasti" USGS 7.5-minute topographic map (**Plate 2**). **Plate 3** aerially illustrates the site vicinity. Projects proposed in the area that contain potentially suitable habitat to support sensitive biological resources such as the DSFF must demonstrate to reviewing agencies that potential project-related impacts to sensitive biological resources are avoided or minimized. In order to meet the environmental documentation and review requirements, potentially occurring sensitive biological resources must be addressed to demonstrate the applicant's conformance to California Environmental Quality Act (CEQA) and the federal Endangered Species Act (ESA) of 1973, as amended. As such, this report is intended to provide biological information to the applicant and reviewing agencies in support of the environmental review process.

As a federally listed endangered species, the DSFF is protected under the ESA. As such, federal law prohibits "take" of listed species. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct. In some cases, habitat modification can constitute prohibitive "take". A section 10(a) permit is required for projects where a determination of "take" is likely to occur during a proposed non-federal activity. If the project were to require a federal permit (e.g., USACE 404 permit), the federal agency issuing the permit would consult with the FWS to determine how the action may affect the DSFF under Section 7 of the Act.

The U.S. Fish and Wildlife Service (FWS) routinely reviews environmental documentation for proposed development projects in the area, and as such, would recommend that any impacts to sensitive biological resources be adequately addressed and mitigated pursuant to the ESA and CEQA. Due to the inherent limitations of unseasonal or habitat-based data, definitive conclusions regarding the actual presence or absence of DSFF or other special-status species cannot be made in this evaluation, although these limitations do not affect our conclusion that the property does not contain suitable habitat for the DSFF. Accordingly, this report is intended to provide the applicant with general information relative to the potential occurrence of DSFF and other special-status species based solely on the nature and condition of habitat present.



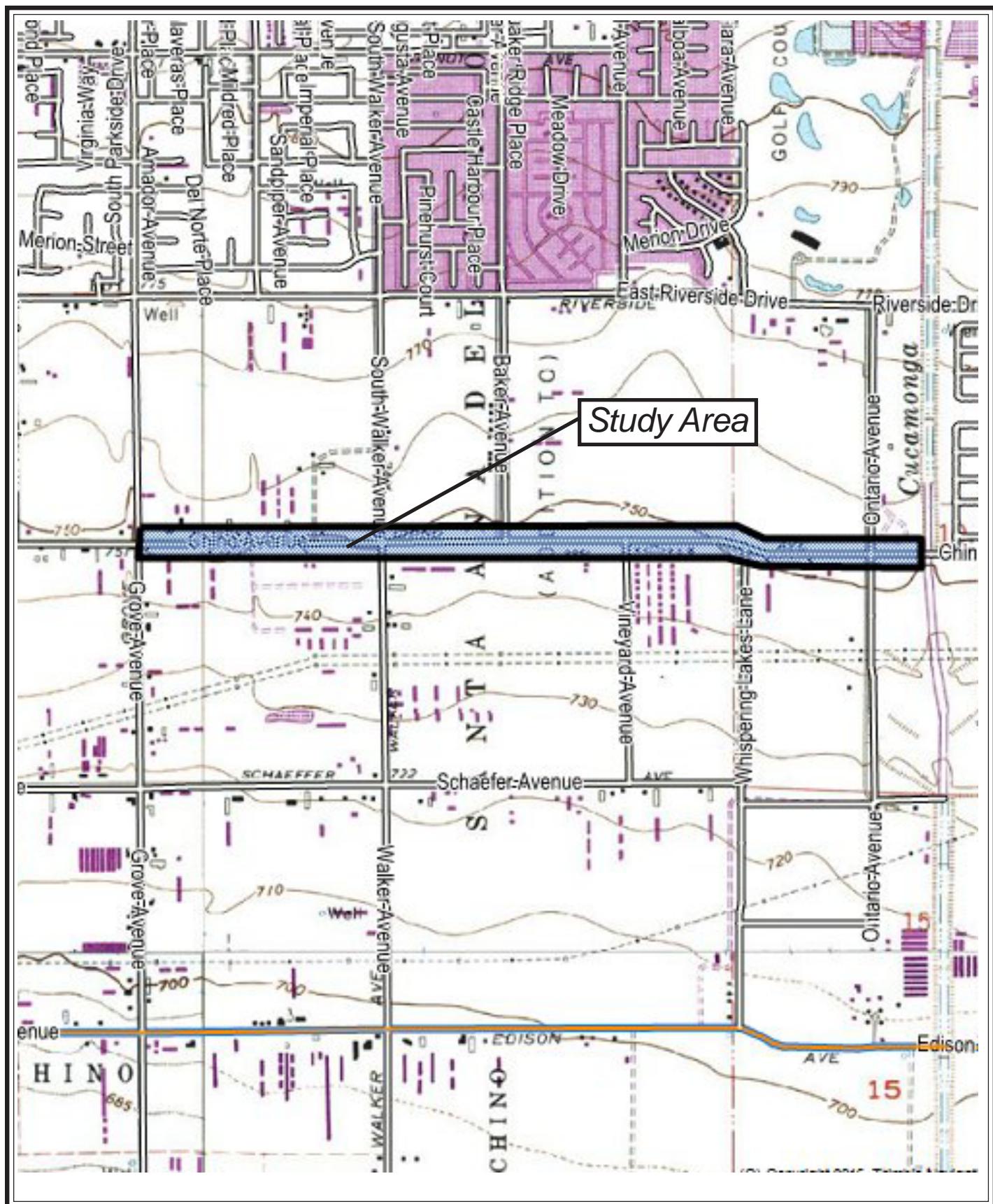
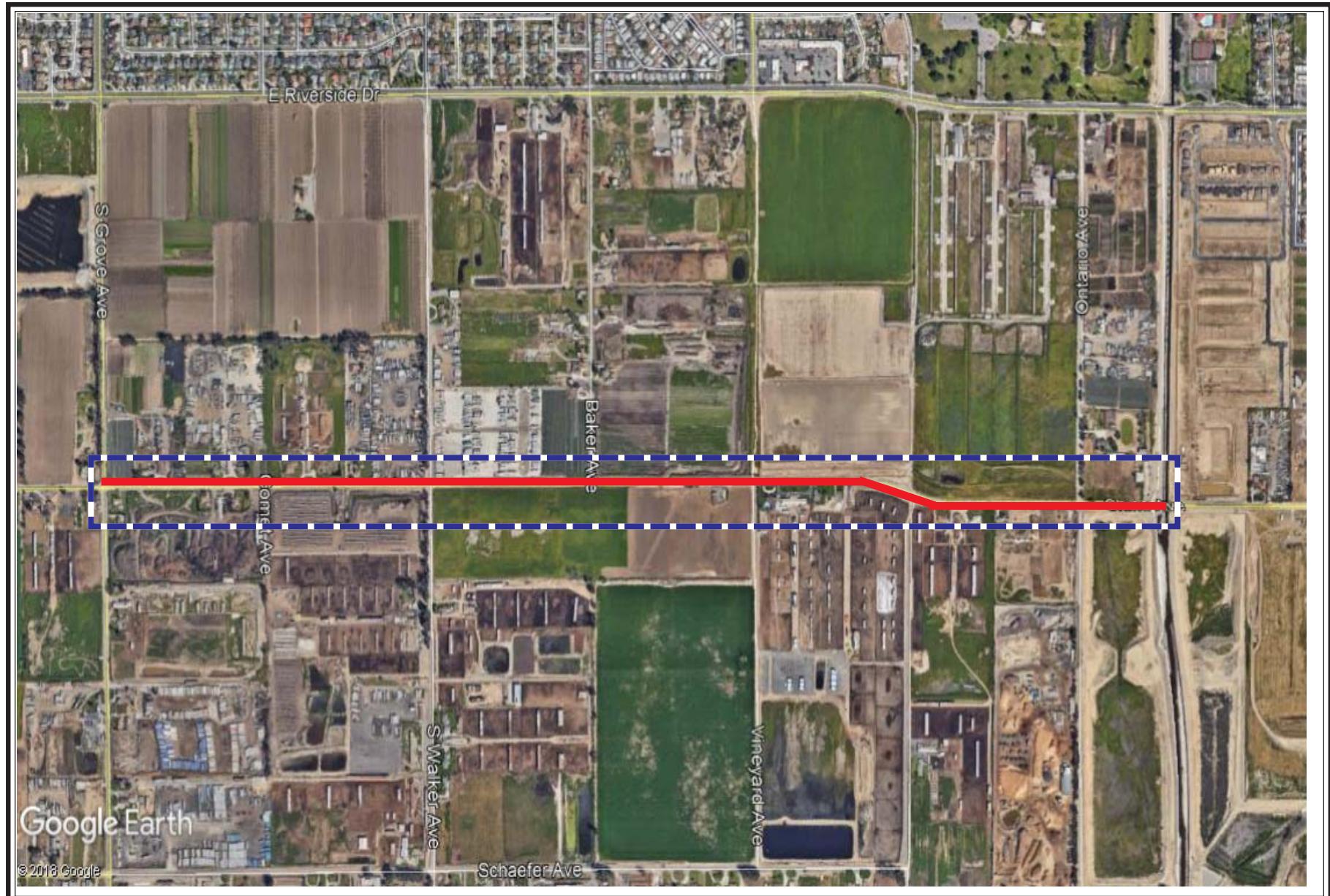


plate 2

## Site Vicinity

Ontario Ranch Business Park



— Study Area

plate 3

**Regional Aerial**  
Ontario Ranch Business Park

December 2019

## **Selected Species Overview**

The FWS listed the DSFF as an endangered species on September 23, 1993. This species is only known to occur in association with Delhi sand deposits (USFWS 1997), primarily on twelve disjunct sites within a radius of about eight miles in the cities of Colton, Rialto, and Fontana in southwestern San Bernardino and northwestern Riverside counties. However, recent survey data (1997-03) indicates that DSFF occur in low numbers in Ontario, and also in sub-optimal habitat conditions. The DSFF is restricted to the Colton Dunes, which covers approximately 40 square miles. More than 95 percent of the formerly known habitat has been converted to human uses or severely affected by human activities, rendering it apparently unsuitable for occupation by the species (Smith 1993, USFWS 1997 in Kingsley 1996).

### **General Habitat Characteristics**

Areas containing sandy substrates with a sparse cover of perennial shrubs and other vegetation constitute the primary habitat requirements for *Rhaphiomidas* flies (USFWS 1997). Potential habitat for the DSFF is typically defined as areas comprised of sandy soil (Delhi series) in open areas commonly dominated by three indicator plant species: California buckwheat (*Eriogonum fasciculatum*), California croton (*Croton californica*), and telegraph weed (*Heterotheca grandiflora*). Annual bur-sage (*Ambrosia acanthicarpa*), Rancher's fireweed (*Amsinckia menziesii*), autumn vinegar weed (*Lessingia glandulifera*), sapphire eriastrum (*Eriastrum sapphirinum*), primrose (*Oenothera* sp.), and Thurber's buckwheat (*Eriogonum thurberi*) are also commonly present at occupied DSFF sites. In addition, insect indicator species such as *Apiocera* and *Nemomydas* are also typically associated with occupied DSFF habitat. It is also important to note that the presence or absence of indicator species does not determine presence/absence of DSFF. Rather, these indicator species exhibit a strong correlation to habitats occupied by DSFF. A gradient of habitat suitability exists for DSFF, composed of varying degrees of both natural and artificial conditions.

### **Federal DSF Recovery Units / Core Reserves**

Subregional areas encompassing smaller areas known to be inhabited by the DSFF or encompassing areas that contain restorable habitat for the DSFF have been grouped into three Recovery Units (RUs) by the FWS based on geographic proximity, similarity of habitat, and potential genetic exchange (FWS 1997). The subject site is located within an area designated as the Ontario RU. The Ontario RU historically contained the largest block of the Colton Dunes; however, most lands in this RU have been converted to agriculture, or developed for commercial and residential projects (USFWS 1997). The Ontario RU contains several areas that currently support DSFF, and additional areas have been proposed for restoration in the DSFF Recovery Plan. The occupied and/or potentially restorable habitat in the RUs includes only those areas that, at a minimum, contain Delhi Series soils. Further, RUs do not include residential and commercial development, or areas that have been otherwise permanently altered by human actions (FWS 1997). DSFF will continue to exist in the Ontario RU only with land conservation, a cessation of current habitat-degrading land management practices and recreational uses, and/or a restoration or natural reversion of ecologically damaged lands back to an ecological community typical of Delhi sands formations.

Potentially suitable habitats remaining in the Ontario RU are highly fragmented, and as such, the establishment of a permanent long-term reserve in this RU is currently unresolved. While many degraded sites are currently unsuitable to support DSFF, DSFF have been recorded on certain properties that have been heavily disturbed in the past (e.g., previously graded and/or scraped sites where a cessation of disturbance-related land uses have occurred such that a degree of natural conditions now occur). Accordingly, DSFF may persist on, or disperse to, certain properties that have not been exposed to recurring and/or recent land disturbances. These previously disturbed properties may be important for future preservation of the species in the region. In addition, individual DSFF have been recorded in areas generally considered unsuitable to support this taxon, and with no apparent connectivity to occupied DSFF habitats.



Additional data will be needed on reproduction and mortality rates, dispersal, and habitat variables before further refinement of RU boundaries, development of alternative RU preserve designs, and analyses of population can be made (FWS 1997). Until such data is obtained, the highest priority will be to protect existing populations of the DSFF (FWS 1997). To achieve downlisting, areas containing occupied and/or restorable habitat and dispersal corridors need to be evaluated relative to the extent of distribution patterns necessary to support secure populations. Sites to be protected should be selected based on habitat needs of adults and larvae, and willingness of landowners to participate in recovery efforts (FWS 1997). Several "Core Reserve Areas" have been initially identified by the FWS, but to our knowledge, the actual extent of the proposed reserve areas has not been finalized.

### ***Focused DSFF Survey Guidelines***

The FWS prepared Presence/Absence Survey Guidelines for the DSFF in December 1996 (FWS 1996), with revisions in April 2004. In general, the guidelines maintain that in order to more fully determine the presence or absence of DSFF such that the results are acceptable to the FWS, a survey following these guidelines must be conducted. The guidelines require that surveys be conducted in all areas containing Delhi sands twice weekly (two days per week) during the single annual flight period from July 1 to September 20. However, at the discretion of the FWS, survey guidelines may be modified depending upon individual site circumstances (e.g., highly degraded sites that don't support constituent elements of potential DSFF habitat or early seasonal emergence periods). During the environmental review process, recommendations to perform focused DSFF surveys are evaluated by reviewing agencies on a site-by-site basis.

## ***Methodology***

### ***Literature Search***

Documentation pertinent to the biological resources in the vicinity of the site was reviewed and analyzed. Information reviewed included: (1) the Federal Register listing package for the federally listed endangered DSFF; (2) literature pertaining to habitat requirements of DSFF and other special-status species; (3) the California Natural Diversity Data Base (CNDDB 2019) information regarding sensitive species potentially occurring on the site for the "Guasti" USGS 7.5-minute quadrangle map, and (4) review of any available reports from the general vicinity of the site.

### ***2019 Habitat-Suitability Evaluation***

Ecological Sciences conducted a reconnaissance-level field survey ( $\pm 100$  foot buffer) on the subject site to evaluate potential habitat for DSFF on November 30, 2019. The survey was conducted by Scott Cameron, Principal Biologist of Ecological Sciences, Inc. Ecological Sciences biologists have observed numerous DSFF in the field since 1995, and have extensive experience conducting both focused surveys and habitat evaluations for this sensitive taxon. Ecological Sciences is well versed with the biotic characteristics of a range of habitats occupied by DSFF, as well as other sensitive wildlife species potentially occurring in the area. The linear site was examined on foot (transects) and by vehicle along areas proposed for development. As mentioned, the primary objective of the field visit was to generally evaluate the site's potential to support DSFF. Dominant plant species and other habitat characteristics present at the site were identified to assess the overall habitat value. Weather conditions included relatively clear skies, 0-2 breezes, and ambient temperatures of 54-57 °F.

### ***Existing Biological Environment***

The subject site is generally characterized as a highly disturbed agricultural areas under various forms of development. Active farms and related infrastructure (sheds, corrals, etc.), feeding preparation areas, detention basins, ruderal pastureland, debris dumping areas, equipment storage areas, and cultivated crops are present. Much of the open pasture areas are exposed to routine discing activities. Manure, associated with ongoing agricultural operations, is present throughout the dairy and pasture areas. The



study area is located along existing asphalt/dirt roadways. Single-family residences and commercial development are also present within the study area. Surrounding land uses include areas similar to the subject site such as agricultural, rural residential, and commercial.

### **Vegetation**

The ruderal/disturbed areas support mostly invasive, non-native annual species. Dense non-native grasses generally covers on-site irrigated pasturelands and manure spreading areas. Cattle feeding areas were barren ground covered in manure and mud. Ruderal plants recorded on site included non-native grasses and weedy species such as foxtail chess (*Bromus madritensis* spp. *rubens*), ripgut grass (*Bromus diandrus*), Bermuda grass (*Cynodon dactylon*), Mediterranean grass (*Schismus barbatus*), filaree (*Erodium* sp.), Lamb's quarter's (*Chenopodium album*), milk thistle (*Silybum marianum*), Russian thistle (*Salsola tragus*), golden crownbeard (*Verbesina encelioides*), puncture vine (*Tribulus terrestris*), black mustard (*Brassica nigra*), cheeseweed (*Malva parviflora*), pigweed (*Chenopodium* sp.), gum tree windrows (*Eucalyptus* sp.), salt cedar (*Tamarix* sp.), and Mexican fan palm (*Washingtonia robusta*). Native plant was recorded on site included common sunflower (*Helianthus annuus*), Jimsonweed (*Datura wrightii*), and rough cocklebur (*Xanthium strumarium*). **Plates 4a-4b** provides site photographs from various and representative locations along the study area.

### **General Soils Analysis / Soil Conservation Map Review**

A review of soil maps prepared for the area by the Natural Resource Conservation Service (NRCS 2019) indicate that the subject site is located within an area mapped as containing Delhi fine sand (Db), Hilmar loamy fine sand (Hr), and Tujunga loamy sand (TuB). Various long-standing anthropogenic site disturbances such as agriculture have significantly altered the site's mapped surface soil characteristics. A general soils analysis was conducted due to the close association of DSFF to mostly open, sandy friable soils. **Plate 5** illustrates site vicinity soils.

### **Discussion**

DSFF have relatively narrow habitat requirements that are determined by appropriate plant species and open sand as defining characteristics (Kingsley 1996). It has long been established that a gradient of suitability exists composed of varying degrees of natural and artificial conditions. Observations such as the DSFFs apparent avoidance of dense (both native and non-native) vegetation (>75% coverage) or general avoidance of vegetation that is sparse or not present at all (<5% coverage) appear to suggest that DSFF generally select habitats with a combination of some vegetation, including several species of plants, and some open space with bare sand (Kiyani 1996). The presence of Delhi soils appears to be the most determinative factor of whether an area can provide suitable DSFF habitat. Delhi sands constitute the primary component of a complex ecosystem. A variety of microhabitat characteristics generally constitute potential DSFF habitat (e.g., Delhi soils, vegetation composition, soil chemistry, topography, percent vegetative cover, frequency of non-native plant species, exposure to disturbances, etc.).

While the aforementioned microhabitat conditions are considered optimal/essential to support DSFF, DSFF sometimes occur in areas not typically considered suitable for this taxon. Although individual DSFF have been recorded from sites supporting mostly ruderal, non-native vegetation, most known DSFF-occupied sites contain areas, or are adjacent to areas, of relatively undisturbed exposed patches of friable, sandy soils in association with selected native plant species. History of DSFF colony sites indicates that previously disturbed (by grading, certain types of agriculture, etc.) Delhi sands formations may revert over a few years (through erosion, aeolian processes, fossorial animal activity, and natural vegetative succession) back to conditions capable of supporting DSFF populations. However, these natural processes are dependent upon a cessation of disturbance-related land uses, which prevent the natural reestablishment of a more characteristic Delhi sand community (associated with potential DSFF habitat).





View to north



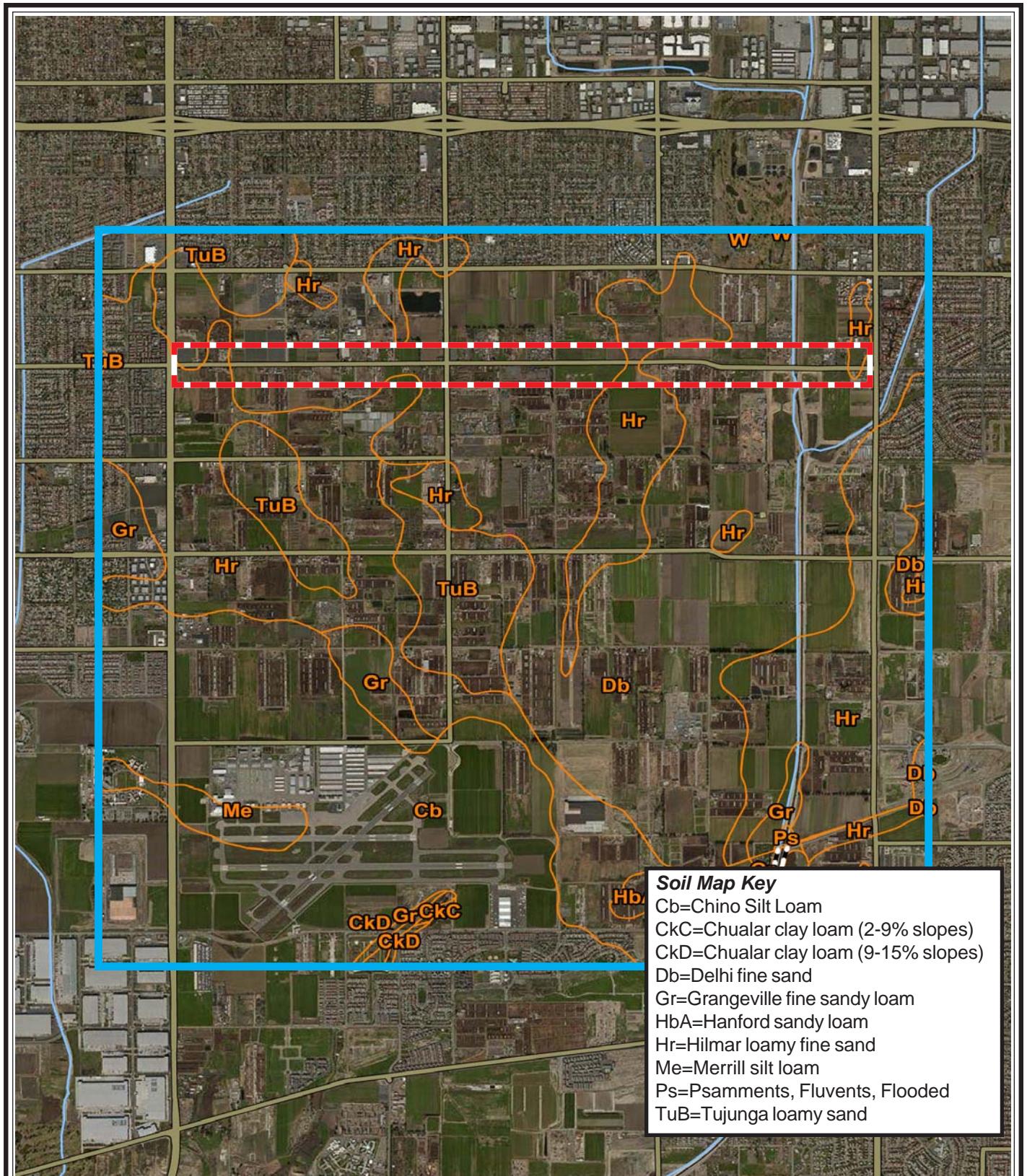
View to south



View to south



View to north



Source: Natural Resources Conservation Service (NRCS-website accessed December 2019)



- - - = Study Area  
 — = Extent of Soil Analysis

plate 5

## Regional Soils

Ontario Ranch Business Park

December 2019

Absent changes in existing land uses, or implementation of an extensive revegetation/restoration effort, the establishment of a more characteristic Delhi sand community (associated with potential DSFF habitat) within the study area would be prevented due to deleterious changes in soil chemistry and/or recurring soil disturbances associated with long standing and routine dairy/agricultural operations. Approaches to habitat restoration would vary from simple, relatively inexpensive, and predictably successful (in cases of enhancing partially occupied sites that are weed overgrown) to complex, costly, and unpredictable (in cases of manured or imported fill sites). Disruption of substrate is deleterious to DSFF habitat because it destroys the cryptoflora crust, which is important to resisting microorganisms and maintaining ecosystem integrity (Belnap 1994 *in* FWS 1997). Similarly, the presence of extensive amounts of manure greatly reduces or eliminates the potential use of the site by DSFF. The presence of manure degrades potential DSFF habitat, as manure smothers animals, plants, and habitat where it is dumped (FWS 1997). According to the DSFF Recovery Plan (FWS 1997), manure also provides high levels of nutrients for invasive exotic plants such as those recorded in dense coverages on the site. Moreover, restoration of manured sites, although possible, is of the lowest priority according to the DSFF Recovery Plan (FWS 1997). There exists, in our opinion, no possibility of DSFF to occur within the subject study area or on such habitats as exemplified by this site, and were DSFF introduced to the study area in its current condition, DSFF would not become established or persist on site.

There is no connectivity to the subject site from the nearest known (to us) DSFF population ( $\pm$ 4-5 miles northeast of the site) due to the presence of existing development that entirely surrounds the site. While this species likely has the capability of dispersing over relatively large distances of seemingly unsuitable habitats under certain circumstances, it would be reasonable to assume (based on our current knowledge of the species) that the likelihood of DSFF dispersing to the subject site from the nearest known off-site occupied (or historically occupied) site would be extremely low despite the fact that variables such as the length, width, and structural characteristics of dispersal corridors are not fully understood. Accordingly, the subject site would not be considered a viable property for preservation or restoration due to current land use, absence of suitable habitat, geographic location, isolation from undeveloped areas or areas supporting DSFF populations, and surrounding land uses which have long since fragmented potential DSFF habitat in the area.

## **Conclusion**

Based on results of the November 2019 habitat suitability evaluation, existing conditions present within the study area are not consistent with those known or expected to support DSFF. No exposed natural or semi-natural open areas with unconsolidated wind-worked granitic soils or dunes are present. Exposure to intensive and recurring substrate disturbances (e.g. active dairy operations, rural residential, commercial, agriculture activities) have substantial negative effects on potential DSFF habitat and prevents potentially suitable DSFF microhabitat conditions from developing. Substrate conditions are not consistent with those most often correlated with potential DSFF habitat and no DSFF plant associations are present on site.

Under current conditions, the site would generally be considered prohibitive to DSFF occupation. The underlying soil environment appears to be the most definitive factor of whether an area could potentially support DSFF. Accordingly, the quality of Delhi soils present within the study area was rated for its potential to support DSFF. The areas mapped as Delhi soils were visually inspected and rated based on a scale of 1 to 5, with 5 being the best quality and most suitable habitat in the biologist's judgment:

1. Soils dominated by heavy deposits of alluvial material including coarse sands and gravels with little or no Delhi sands and evidence of soil compaction. *Unsuitable*.
2. Delhi sands are present but the soil characteristics include a predominance of alluvial materials (Tujunga Soils). *Very Low Quality*.
3. Although not clean, sufficient Delhi sands are present to prevent soil compaction. Some sandy soils exposed on the surface due to fossorial animal activity. *Low Quality*.



4. Abundant clean Delhi sands with little or no alluvial material or Tujunga soils present. Moderate abundance of exposed sands on the soil surface. Low vegetative cover. Evidence of moderate degree of fossorial animal activity by vertebrates and invertebrates. *Moderate Quality*
5. Sand dune habitat with clean Delhi sands. High abundance of exposed sands on the soil surface. Low vegetative cover. Evidence (soil surface often gives under foot) of high degree of fossorial animal activity by vertebrates and invertebrates. *High Quality*

Based on the above ratings and existing site conditions, the study area would be considered *Unsuitable* for DSFF. In view of the site's highly disturbed and isolated condition, exposure to extensive and recurring surface disturbances, and analyses of correlative habitat information from a wide range (e.g., relatively disturbed to more natural habitats) of occupied DSFF habitats in the region, the subject site does not contain habitat suitable to support or sustain a viable DSFF population. Therefore, no impacts to DSFF are expected and no mitigation is required for less than significant impacts under CEQA.

During the DSFF habitat evaluation, the potential presence of other potentially occurring special-status resources were also generally evaluated. Based on the degraded nature of habitats present along Chino Avenue, no additional special-status species are expected to occur. A pre-construction survey would likely be required by reviewing agencies (namely for nesting birds) prior to construction depending on seasonal timing of construction.

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Φ

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological survey, and that the facts, statements, and information presented herein are true and correct to the best of my knowledge and belief.

Sincerely,

Ecological Sciences, Inc.



Scott D. Cameron  
Principal Biologist



## **References**

- California Natural Diversity Data Base (CNDDB). 2019. Online Reports for the "Guasti" and "Ontario" USGS 7.5-minute quadrangle maps.
- Kingsley, Kenneth J. 1996. Behavior of the Delhi Sands Flower-Loving Fly (Diptera: Mydidae), a Little Known Endangered Species. Ann. Entomol. Soc. Am. 89(6): 883-891.
- Natural Resource Conservation Service (NRCS). 2019. Custom Soil Resource Report for San Bernardino County, Southwestern Part, California. U.S. United States Department of Agriculture. NRCS website accessed September 2018.
- U.S. Fish and Wildlife Service. 1993. Endangered and Threatened Wildlife and Plants: Determination of Endangered Status for the Delhi Sands Flower-loving Fly. U.S. Department of Interior. Federal Register, 58 (183): 49881-49887.
- U.S. Fish and Wildlife Service. 1996. Interim General Survey Guidelines for the Delhi Sands Flower-loving Fly. December 30.
- U.S. Fish and Wildlife Service (FWS). 1997. Delhi sands Flower-loving Fly (*Rhaphiomidas terminatus abdominalis*) Recovery Plan. U.S. Fish and Wildlife Service, Portland, OR. 51 pp.
- U.S. Fish and Wildlife Service. 2004. General Survey Guidelines for the Delhi Sands Flower-loving Fly. April 30.

