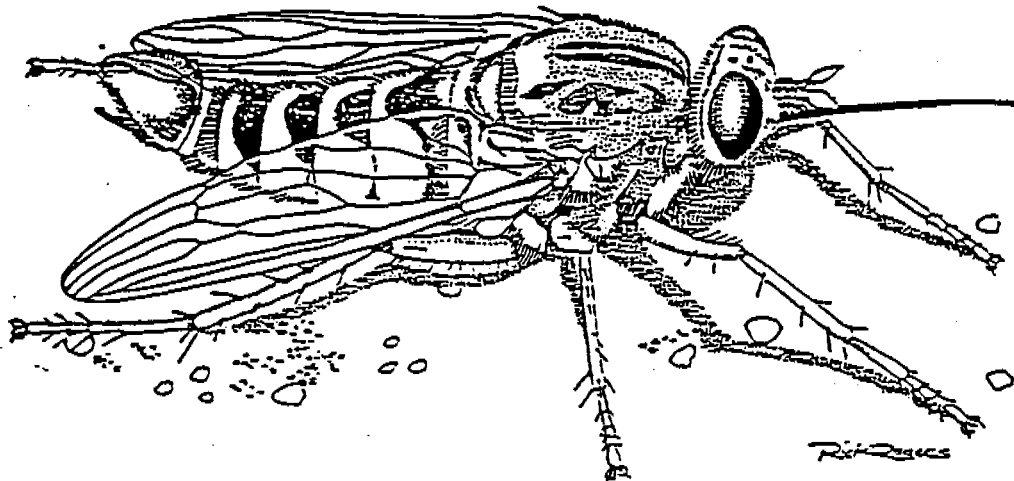


Interim General Survey Guidelines for the  
Delhi Sands Flower-loving Fly



The Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*) was listed as an endangered species in 1993 (58 Federal Register 49881). This animal is fully protected under the Endangered Species Act of 1973, as amended (Act). The insect is restricted (endemic) to the Colton Dunes (Delhi soils series), which cover approximately 40 square miles in San Bernardino and Riverside Counties, California. Recent studies indicate that over 97 percent of the area containing this soil type has been converted to agriculture, developed for urban or commercial uses, or otherwise adversely altered.

These guidelines are issued as guidance to section 10(a)(1)(A) permittees. A section 10(a)(1)(A) permit should be obtained prior to initiating any survey work. Failure to do so may result in violation(s) of section 9 of the Act.

- I. An adequate survey should be completed by a permitted biologist for the Delhi Sands flower-loving fly if the proposed project contains Delhi series soils and the site is located within the range of the animal. These guidelines should be followed for all surveys unless authorized by the U.S. Fish and Wildlife Service (Service) in writing.
  - a. A survey of the site should be conducted at least twice a week from August 1 to September 20 for a two year period.
  - b. The permittee should provide the Carlsbad Field Office with all of the following information in writing for each project site at least ten (10) working days prior to the anticipated start date of survey work:
    1. The precise location of the project site clearly delineated on an original 7.5 minute U.S. Geological Survey topographic map. The map should contain the project name, type of project by category (the categories are urban development, mitigation bank, or other [specify], and the estimated area acreage).

2. Names of all biologists and associated personnel with reference to their section 10(a) (1) (A) permit number.
- c. The survey should not be undertaken until written approval from the Service has been obtained.
- d. The entire site should be covered at a relatively slow pace with special care taken to avoid harassing any Delhi Sands flower-loving flies that are located. We recommend that areas of the site that contain Delhi series soils should be closely examined for adult animals and exuviae (pupal "skins"). No more than 50 acres should be surveyed by a single person per day. The surveys should be conducted between the 1000 hrs and 1400 hrs PDT. The weather conditions should include clear skies and winds of less than 5 miles per hour.
- e. Should the permittee determine that the Delhi sands flower-loving fly is present at a site, the Service should be notified within one (1) working day by telephone and within two (2) working days by letter.
- f. The permittee should provide the Carlsbad Field Office and the California Department of Fish and Game (Staff Zoologist, Department of Fish and Game, 1220 S Street, Sacramento, California 95814) with all of the following information in writing no more than thirty (30) calendar days after completing the last field visit of the season at each project site:
  1. The location of the project site clearly delineated on an original 7.5 minute U.S. Geological Survey topographic map. The precise project boundaries should be indicated on this map.
  2. Five color Kodachrome (or similar color photographic film) 35 mm slide of the project site; this is to include two slides from the standing position that portray the general landscape of the site (i.e., two photos from opposing axis of the site [e.g., north and south compass headings]); and three slides of representative areas within the site that were surveyed for the animal. The five photographic slides should not be copyrighted. The following information should be legibly written on each slide with permanent ink: project name, location of the project site (i.e., city or distance in miles to nearest city), precise location on the project site, direction from which photograph was taken, date photograph was taken, and name of photographer.
  3. A map at an adequate scale that indicates the precise location(s) where Delhi Sands flower-loving flies were

observed on the project site. The adequacy of this map will be by the sole determination of the Service.

4. A qualitative description of the Delhi Sands community present on site. A list of the plant species, reptiles, birds, mammals and mammal signs, and a general list of the invertebrates observed at the project. Species names of the invertebrates should be included when known.
5. A map delineating the plant communities present on the project site. This should be at the same scale as the map indicating the precise location(s) of the Delhi Sands flower-loving flies (see If3 above).
6. A complete description of the survey methods if the methods deviated from these guidelines. Note: Any such deviations must be approved by the Service before the surveys are conducted.
7. Other information collected during each field sample, including the dates of each field visit, the precise time the survey was initiated and terminated; the size of the habitats surveyed, the air temperature and weather conditions (e.g., sunny or overcast, wind speed, relative humidity, etc) at the start and end of each field visit.
8. Any other biological or other appropriate observations obtained during the survey.
9. Completed field forms utilized by the Natural Diversity Data Base of the California Department of Fish and Game.
10. High quality photocopies of the original field notes made during the survey.

II. Additional information, limitations, and caveats with respect to these survey guidelines are as follows:

- a. From time to time, specific circumstances may justify or necessitate revision of these survey guidelines on a case-by-case basis. At the discretion of the Service, such revisions may be allowable under these guidelines if: (1) the permittee explains to the Service in writing why revision of the guidelines are needed and justified; and (2) the Service concurs with such revision in writing.
- b. The Service reserves the right to reject Delhi Sands flower-loving fly surveys conducted under these protocols if: (1) specific methods described in Part I are not implemented as determined by the Service and prior written exception under Part II.a. has not been obtained; (2) survey methods used are inconsistent with these guidelines; (3) the permittee fails

to provide the Service with an adequate written report as described in Part I.f. within thirty calendar days of the last day of the field surveys; or (4) other information indicates that the survey is inadequate as determined by the Service.

- c. The permittee should consult with the California Department of Fish and Game (916/355-7097) to determine his/her responsibilities under the California Endangered Species Act and the California Fish and Game Code.

#### Service Contact

These guidelines were prepared by Chris Nagano and Jeff Newman, Carlsbad Field Office, U.S. Fish and Wildlife Service, 2730 Loker Avenue West, Carlsbad, California 92008. Please refer any questions on these guidelines to either of them at the above address or call (619) 431-9440.

#### Literature

Rogers, R. and R. Mattoni. 1993. Observations on the natural history and conservation biology of the giant flower-loving flies, *Rhaphiomidas* (Diptera: Apioceridae). *Dipterological Research* 4(1-2):21-34.

U.S. Fish and Wildlife Service. 1996. Draft Recovery plan for the Delhi Sands Flower-loving Fly. Endangered Species Program. Portland, OR.

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