ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Invertebrate Abstract **Element Code: IIODO61150**
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Sympetrum signiferum*
COMMON NAME: Mexican Meadowfly; Spot-winged Meadow Hawk
SYNONYMS:
FAMILY: Libellulidae

AUTHOR, PLACE OF PUBLICATION: Robert A. Cannings and Rosser W. Garrison. 1991. Annals of the Entomological Society of America, 84(5):474-479.

TYPE LOCALITY: Holotype male: Mexico, Durango, El Salto, pond 4.4 mi NE, 29 August 1965, D.R. Paulson. Allotype female: same data.

TYPE SPECIMEN: Florida State Collection of Arthropods, Florida Department of Agriculture and Consumer Services, Gainesville, Florida.

TAXONOMIC UNIQUENESS: *S. signiferum* is named for its characteristic feature, the dark brown triangular spot at the base of the hindwing. Combined with the orange basal wash anteriorly, these wing markings are unique in the genus - thus, *signiferum* (Latin): bearing marks, signs, or flags.

DESCRIPTION: General color pale yellow-brown on thorax, orange on abdomen. Typical *Sympetrum* proportions; variable in size, but predominantly in the medium-large size range for *Sympetrum.* Basic structure typical of genus (Walker & Corbet 1975, Tai 1967). Measurements in millimeters: total length 38.8 (1.5 in); abdomen (including appendages), 26.1; hindwing 30.6; metafemur 6.2; head width 6.2; frons width 3.4. (Brock and Prchal 2001).

AIDS TO IDENTIFICATION: A medium-sized dragonfly with a triangular brown spot at the base of each hindwing. Juvenile adults yellow. Males become red.

ILLUSTRATIONS: Color photos by Sandy Upson copyright 2000 (in Brock and Prchal 2001)

TOTAL RANGE: Southeastern Arizona in USA, and Durango and Nayarit in Mexico. It will probably be found in Sonora, Mexico with further investigations.

RANGE WITHIN ARIZONA: Cochise and Santa Cruz counties, including Leslie Canyon, and the west side of the Huachuca Mountains just above 6000 feet down to the headwaters of the Santa Cruz River at roughly 4700 feet (Upson 2000).

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Flight period: late-August through mid-November in Leslie Canyon, peaking in early October.

REPRODUCTION: For breeding, it favors the occasional sluggish pools of several feet in depth interrupting clear-water streams of slow to moderate flow. These pools present shallow margins with abundant, soft tissue, emergent vegetation. Ovipositing is carried out in tandem, with the male providing the up and down "sewing machine" flight as the female, at times submerged to perhaps half her body length, is dangled in and out of the

very shallow water amidst the vegetation at the pool's edge. At Leslie Canyon, a lushly riparian, closed-canopy type habitat dominated by Arizona ash and willows, it oviposits in water perhaps two inches deep while sheltered among immature Bidens plants growing from 0 to 6 inches above the surface of the water. Many of the larvae later attach themselves to these same small plants as they prepare for emergence as adults. (Upson 2000).

FOOD HABITS: Both larvae and adults are predaceous, feeding largely on other insects.

HABITAT: Slow flowing creeks, vegetated stream pools. According to Upson (2000), "Habitat preferences in Arizona seem to contrast with those ("grassy pond in a pasture..., muddy river, choked with water plants...") cited by Cannings and Garrison (1991) for Mexico. For breeding, it favors the occasional sluggish pools of several feet in depth interrupting clear-water streams of slow to moderate flow. At Leslie Canyon, a lushly riparian, closed-canopy type habitat dominated with Arizona ash and willows, was used. The Huachuca Mountains' western drainages present a pine-oak, and oak-juniper woodlands habitat, and offer a slightly more open canopy also to the liking of *signiferum*. They share this breeding habitat with *Aeshna persephone*."

ELEVATION: In Arizona, 4,700-6,000 feet (1434-1830 m) (Sandy Upson).

PLANT COMMUNITY: Herbaceous wetlands.

POPULATION TRENDS: This species was not described until 1991 although the first specimen had been collected in Durango, Mexico in 1965. At the time of description, only one specimen was known from the U.S. Since then, many have been collected in southeastern Arizona. Populations are still being discovered. These should be monitored to determine stability of populations. (Brock and Prchal 2001)

Per Upson (2000), "Although *S. signiferum* remained largely unknown until 1999, it is not because it is rare, but rather local in occurrence and because its flight period peaks in early October, a month after the monsoons have usually stopped and odonatists have gone home and denned up for the winter."

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: None
OTHER STATUS: Forest Service Sensitive (USDA, FS Region 3 1999)

MANAGEMENT FACTORS:

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Continue searching for this species in suitable habitat. Monitor populations and management of hydrology.

LAND MANAGEMENT/OWNERSHIP: Audubon Research Ranch, and possibly others.

SOURCES OF FURTHER INFORMATION

LITERATURE CITATIONS:

Brock, J., and S. Prchal. 2001. Sensitive Insect Species of the Coronado National Forest. A Training Project by Sonoran Arthropod Studies Institute, Tucson, AZ.

Cannings, R.A. and R.W. Garrison. 1991. Sympetrum signiferum, a New Species of Dragonfly (Odonata: Libellulidae) from Western Mexico. Annuls of the Entomological Society of America, 84(5): 474-479.
Garrison, Rosser. Personal correspondence to J. Brock, including his with Sandy Upson.
Upson, S. *in* Argia: the News Journal of the Dragonfly Society of the Americas. 15 December 2000. Vol. 12; No. 4; pp. 4-6.
USDA, Forest Service, Region 3. 1999. Regional Foresters Sensitive Species List.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

Rosser W. Garrison, Office of the Los Angeles County Agricultural Commissioner, 3400 LA Madera Ave., El Monte, CA 91732 (e-mail: rosser@acwm.co.la.ca.us).
Sandy Upson, PO Box 1453 Bisbee, AZ, 85603 (email: sandyupson@excite.com)

ADDITIONAL INFORMATION:

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