

Work Task F6: Monitoring MacNeill's Sootywing in Habitat Creation Sites

FY09 Estimates	FY09 Actual	Cumulative Accomplishment Through FY09	FY10 Approved Estimate	FY11 Proposed Estimate	FY12 Proposed Estimate	FY13 Proposed Estimate
\$10,000	\$17,076.49	\$17,076.49	\$50,000	\$70,000	\$70,000	\$70,000

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Start Date: FY09

Expected Duration: FY55

Long-term Goal: Post-development monitoring for MacNeill's sootywing.

Conservation Measures: MNSW2

Location: Habitat-creation sites, initially Palo Verde Ecological Restoration Site and Cibola Valley Wildlife Conservation Area.

Purpose: The purpose of this work task is to monitor vegetation, plant-quality, and populations of MacNeill's sootywing in habitat created for the species.

Connections with Other Work Tasks (past and future): Habitat requirements are being determined in Survey and Habitat Characterization for MacNeill's Sootywing (C7). Work task F6 will be phased in when C7 is completed during FY09-10.

Project Description: Preliminary results obtained from work accomplished under work task C7 have determined that sootywings require host plants (*Atriplex lentiformis*) that are larger than 1.6 m in height, greater than 64% in plant water content, and greater than 3.2% in leaf nitrogen content. Sootywings also require plants other than *A. lentiformis* for nectar (e.g., *Heliotropium curassavicum* [Boraginaceae] and *Sesuvium verrucosum* [Aizoaceae]). These attributes will need to be monitored in created habitat. Monitoring host-plant water content is especially critical, as it will be driven by the timing and amounts of irrigation. Utilization of new habitat by sootywings also will need to be surveyed. This work task will need to allow for additional determinations (i.e., adaptive management) of habitat needs if created habitat fails to become colonized.

Previous Activities: None. This is a new start for FY09.

FY09 Activities: In spring 2009, we began monitoring populations of sootywings at one restoration plot at CVCA and at one restoration plot at PVER. Rapid growth of vegetation planted during March 2009 required monitoring three additional plots at

CVCA and one additional plot at PVER beginning in summer. Restoration plots were monitored every two to three weeks during April-September. At CVCA, sootywings were well established at one 58-acre plot, weakly established at two plots, and absent at one plot. Sootywings were near absent or absent at both plots at PVER.

FY10 Activities: The following seven restoration plots, totaling 197 acres, will be monitored for sootywings every two to three weeks during late April to late September:

<u>CVCA Plots</u>	<u>Acreage</u>	<u>PVER Plots</u>	<u>Acreage</u>
Phase 2	8	Phase 5	18
Phase 4 (west)	58	Phase 3	6
Phase 4 (east)	90	Phase 4	11
Phase 3	6		

Proposed FY11 Activities: The plots listed above will continue to be monitored. Additional plots will be monitored as they are planted during FY10-11. Activities during this fiscal year also will begin examining causes of different sootywing abundances among restorations sites. Potential causes include: 1) host-plant size and water content, 2) nectar sources, and 3) plot size and isolation in relation to sootywing dispersal. Other factors such as predation or parasitization may need to be examined if created habitat fails to become sufficiently colonized.

Pertinent Reports: The 2009 Annual Report for Monitoring MacNeill's Sootywing in Habitat Creation Sites will be posted to the LCR MSCP web site.

Pratt, G. F., and W. D. Wiesenborn. 2009. MacNeill's sootywing (*Hesperopsis graciellae*) (Lepidoptera: HesperIIDae) behaviors observed along transects. Proceedings of the Entomological Society of Washington 111:698-707.