Work Task C7: Survey and Habitat Characterization for MacNeill's Sootywing

FY05 Estimate	FY05 Actual	Cumulative Accomplishment Through FY05	FY06 Approved Estimate	FY07 Proposed Estimate	FY08 Proposed Estimate	FY09 Proposed Estimate
$0	$0	$0	$150,000	$160,000	$160,000	$80,000

Contact: Bill Wiesenborn, (702) 293-8699

Start Date: FY06 **Expected Duration:** FY09

Long-Term Goal: Species research

Conservation Measures: MNSW1 and MNSW2

Location: Floodplain of entire lower Colorado River, dependent on permission by landowners

Purpose: Survey the butterfly's distribution along the lower Colorado River and determine its habitat requirements.

Connections with Other Work Tasks (past and future): Results of this study will be used in future Work Tasks to create habitat for MacNeill's sootywing under Work Tasks detailed in Section E.

Project Description: The species' historical range included the lower Colorado River and near the river along its tributaries in southeastern California, western Arizona, southern Nevada, and southern Utah. The species was first described along the California side of the Parker Strip.

Surveys will be conducted for the insect and its host plant (*Quailbush*) within the LCR MSCP boundaries (historical floodplain of LCR from upstream end of Lake Mead to SIB). Surveys will record GPS coordinates of surveyed stands of *Quailbush* and estimate the plant's area. *MacNeill's sootywing skipper* will be detected as eggs, larvae, pupae, or adults on host plants and as adults on nearby nectar sources. Surveys will be conducted April to October when adults are intermittently present (two to three generations occur per season). Sootywings will be digitally photographed and their GPS coordinates recorded. Densities, recorded as individuals of each life stage per plant or plant area (m^2), will be estimated.

The species habitat requirements will be determined concurrent with surveys by measuring site factors affecting sootywing presence or absence and density. Listed below are possible site factors:

1. Plant water content (estimated by weighing, drying and reweighing branches).
2. Availability of nearby nectar sources (distances, amounts, species).
3. Area of *Quailbush* stand.

4. Plant genome (native plant or U.S. Department of Agriculture National Resources. Conservation Service (USDA-NRCS) revegetation variety).
5. Elevation.
6. Latitude.

FY05 Accomplishments: This is a new start in FY06.

FY06 Activities: Monthly surveys are being conducted for the butterfly, its eggs, and larvae between Interstate 10 and the north end of Imperial NWR, with a focus on the levee and bankline areas along the river and Cibola NWR. Concurrent investigations include adult behaviors, identifying nectar sources, examining relationships between plant, water and content, nitrogen contents, butterfly occurrence, and examining the species' predators and parasites.

Proposed FY07 Activities: Research to determine the species' habitat requirements will continue; and surveys of either the northern part of the river (from Lake Mead to Parker Dam) or the southern part of the river (from Imperial NWR to Mexico) will be conducted.

Pertinent Reports: Study plan available upon request