



Lower Colorado River  
Multi-Species Conservation Program  
Balancing Resource Use and Conservation

# MACNEILL'S SOOTYWING



**MacNeill's sootywing** is a small (wingspread 23 mm) skipper with dark-brown and black mottled wings. Skippers are butterflies with widely-spaced antennae that are usually hooked.

The historical range of MacNeill's sootywing was along 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 identified along the California side of the lower Colorado River below Parker Dam near Parker, Arizona. The current range of MacNeill's sootywing approximates the historical range.

MacNeill's sootywing populations have been detected by surveying the lower Colorado River. Major populations within the LCR MSCP project boundary have been observed at:

- Havasu National Wildlife Refuge (near Needles, CA)
- Cibola National Wildlife Refuge and surrounding areas (near Blythe, CA)
- Cibola Valley Wildlife and Conservation Area

Research results have determined that sootywings require dense stands of their host plant quail brush (*Atriplex lentiformis*) that are larger than 1.6 m in height, greater than 3.2% in leaf nitrogen content, and greater than 64% in plant water content. This requirement of high leaf water content is met from shallow groundwater or irrigation runoff.

Sootywings also require nectar-producing plants other than *Atriplex* for nectar, such as heliotrope and western purslane.

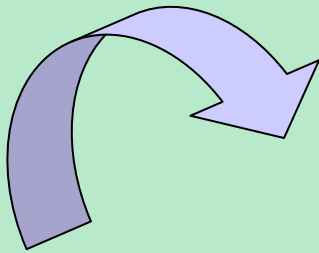


MacNeill's sootywings deposit white or red spherical eggs singly on quail brush leaves. Larvae undergo several molts before pupating, and larger larvae enclose themselves within leaf-folds secured with silk produced near the mouth. The insect pupates within the wrapped leaf. Several adult flights occur per year.

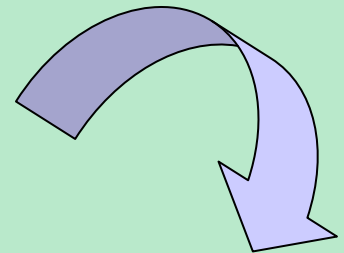
Larvae feed only on quail brush. Adults require nectar, not provided by quail brush, but obtained instead from flowers on a variety of plants including heliotrope.

The greatest historical cause of species decline likely was agricultural development and drying of habitat due to river channelization and lowered water tables. The greatest present threat likely is destruction of habitat for housing development.

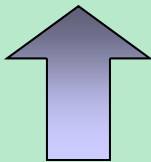
# LIFE CYCLE of MACNEILL'S SOOTYWING (*Hesperopsis graciellae*)



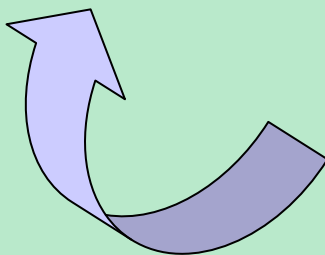
Eggs are laid on quail brush leaves.



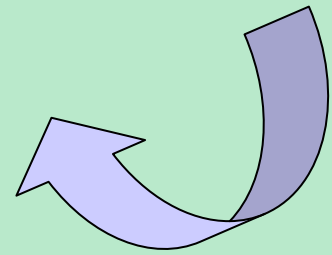
Once adults mate, they lay their eggs one at a time on quail brush leaves.



Adults feed on nectar from flowers such as heliotrope.



Each mature larva cuts and wraps a quail brush leaf around itself. Then it pupates within the wrapped leaf and overwinters as pupae.



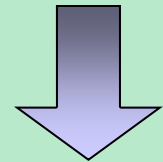
**DIET**

*Larvae feed only on quail brush.*

*Adults feed on a variety of flowers.*



Once they hatch, the larvae leave their egg case and feed on quail brush leaves.



The larvae will molt as they grow and develop into mature larvae.