

***Heraclides aristodemus ponceanus* (Schaus), 1911**
Schaus Swallowtail
(Papilionidae: Papilioninae: Papilionini)



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SUMMARY

The Schaus Swallowtail was listed as a threatened species in 1976 due to the decline of its tropical hardwood hammock habitat, mosquito control practices, and over collecting. Following continued population losses, the butterfly's status was changed to endangered in 1984. Since then, several hurricanes, in particular Andrew in 1992 and Georges in 1998, severely damaged Schaus habitat, and butterfly numbers plummeted as low as a few dozen.

CONSERVATION STATUS

Xerces Red List Status: Critically Imperiled

Other Rankings:

Canada – Species at Risk Act:	N/A
Canada – provincial status:	N/A
Mexico:	N/A
USA – Endangered Species Act:	Endangered
USA – state status:	FL: Endangered
NatureServe:	G3G4T1
IUCN Red List:	N/A

SPECIES PROFILE

DESCRIPTION

The Schaus Swallowtail is a member of the family Papilionidae. This large (wingspan 3¼-3¾"), dark brown butterfly closely resembles the Giant Swallowtail (*Papilio cresphontes*), but the tails are solid dark brown with a yellow border and the yellow wing band is narrower. The ventral hindwing has a distinct, broad rust-colored band bordered distally with blue. The sexes are similar but males have yellow-tipped antennae.

TAXONOMIC STATUS

Heraclides (= *Papilio*) *aristodemus ponceanus* (Schaus) 1911. Schaus (1911) originally considered it a full species (*Papilio ponceana*), but it was placed as a subspecies of *aristodemus*—an Antillean species that varies geographically—by Barnes and McDunnough (1917), where it has remained. Some researchers believe Schaus Swallowtail may be a full species (Emmel 1986a) although this will require further molecular studies to confirm. In recent decades the generic usage has varied. Traditionally, all North American swallowtails were placed in the genus *Papilio* but were recently split between three genera. *Papilio aristodemus* was transferred to the genus *Heraclides* Hübner 1819.

LIFE HISTORY

The butterfly occurs exclusively in subtropical dry forests (hardwood hammocks) including areas that were formerly cleared and farmed, but have since regrown.

Adults fly between mid-April and mid-July, with May and June being the main months of activity. Adults feed on the nectar from blossoms of guava (*Psidium guajava*), wild tamarind, and cheese shrub (*Morinda royoc*). The larval hostplants are the shrubs torchwood (*Amyris elemifera*) and wild lime (*Xanthoxylum fagara*). Female adults lay eggs on the upper side of tender, new leaves—usually only one egg per leaf—the only parts of the plants on which young larvae feed. Only fifth instar larvae have been observed feeding on older leaves.

DISTRIBUTION

The Schaus Swallowtail butterfly's distribution is limited to tropical hardwood hammocks and is concentrated in the insular portions of Miami-Dade and Monroe counties. The historic range of Schaus Swallowtail was from the south Miami area (where the type specimen was captured in 1898) down to Lower Matecumbe Key. It was last recorded on the mainland in 1924, and its range has now shrunk to the upper Florida Keys, where it is only found from Key Biscayne Park to northern Key Largo and Upper Matecumbe Key.

THREATS

The principle threats facing Schaus Swallowtail are habitat loss due to development, pesticide use (particularly for mosquito abatement), and extreme climatic events such as hurricanes and freezes. Survival of this butterfly with such a small population will also be affected by collecting.

CONSERVATION STATUS

In 1996 and 1997, following three years of reintroductions and several years with normal rainy seasons, a population high point of 1,200 to 1,400 Schaus Swallowtail butterflies was reached. This has not been reached since due to the continuing severe drought that began in 1998 in south Florida. The results of 2002 field census data estimated the population to be between 190-230 adults.

The Schaus Swallowtail was listed as a federal endangered species on August 31, 1984 (*Federal Register* 49:34501-34504), a reclassification of its status after several years of population declines following its listing as threatened in April 28, 1976 (*Federal Register* 41:17736-17740).

Recovery Plan: *A Multi species Recovery Plan for South Florida (Revision, May 18, 1999)*.

Critical habitat: None designated.

The State of Florida lists the Schaus Swallowtail as endangered under state statute.

CONSERVATION NEEDS

According to the U.S. Fish & Wildlife Service's Recovery Team, recovery actions for the butterfly should focus on acquiring additional hardwood hammock habitat and protecting those areas and existing hammock from development. In addition, habitat improvement, through the planting of hundreds of wildlime trees, is being conducted within selected colonies on Key Largo.

Considerable involvement of private landowners has already occurred. In September 2001, the U.S. Fish and Wildlife Service and Cheeca Lodge, located on Florida's Matecumbe Key, signed a safe harbor agreement to benefit the Schaus Swallowtail. The 27-acre golf resort will team with the University of Florida's McGuire Center for Lepidoptera Research to create habitat for the endangered butterfly. This work was supported by a \$55,000 grant from the U.S. Golf Association/National Fish and Wildlife Foundation Wildlife Links program. The USFWS is encouraging other Florida landowners to enter safe harbor agreements on behalf of the Schaus Swallowtail butterfly. Additional successful cooperative restoration and environmental education programs at both the Crocodile National Wildlife Refuge and the Key Largo Anglers Club within critical habitat areas on the northern end of Key Largo have resulted in the planting of over 1,500 native larval host and adult nectar sources to date.

The university of Florida has had an active captive rearing program for several years, and both propagation and reintroduction efforts to date have been quite successful. The captive colony was started in May-June 1992, prior to the hurricane, when about one hundred eggs were obtained from wild females briefly caged on Elliott Key in Biscayne National Park. This highly fortuitous timing allowed for the successful captive production of thirty-one diapausing pupae by July 1993, and the first successful mating of captive adults (via hand-pairing) in March 1993. Eggs produced from these captive females were increased by additional eggs brought from Adams Key in Biscayne National Park in June

1993 and produced forty-nine healthy pupae,. In spring 1995, the first reintroduction efforts were initiated. A total of 764 pupae were released in seven sites, from the Deering Estate in south Miami on the mainland to Key Largo. Despite heavy predation by migrating warblers, successful adult emergence and subsequent reproduction was identified at all sites, and represented the first time since 1924 that the Schaus Swallowtail was found on the South Florida mainland. The subsequent 1996 and 1997 releases of 500 and 209 adult butterflies enhanced existing population numbers and established, directly or indirectly (via local movements), six additional colonies in the Upper to Middle Keys.

RESEARCH NEEDS

Scientists from the McGuire Center for Lepidoptera Research at the University of Florida continue to annually monitor Schaus Swallowtail population at all known south Florida colony sites.

RESOURCES

CONTACTS

U.S. Fish & Wildlife Service: Lee Andrews, South Florida Ecological Services Field Office, 1875 Century Boulevard, Atlanta, GA 30345. Telephone: (404) 679-7217.

University of Florida: Jaret C. Daniels, Ph.D., Assistant Director for Research, McGuire Center for Lepidoptera Research, Gainesville, FL 32611. Telephone: (352) 392-5894.

Environmental Defense: Michael Bean, 875 Connecticut Avenue, NW, Suite 600, Washington, DC 20009. Telephone: (202) 387-3500.

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