

Daniels, J. C. 2005. Species Profile: *Cyclargus thomasi bethunebakeri*. In Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds). *Red List of Pollinator Insects of North America*. CD-ROM Version 1 (May 2005). Portland, OR: The Xerces Society for Invertebrate Conservation.

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***Cyclargus thomasi bethunebakeri* W. P Comstock & Huntington, 1943**  
**Miami Blue**  
**(Lycaenidae: Polyommatainae: Lampidini)**



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## SUMMARY

The Miami Blue is endemic to Florida. Ever-expanding urbanization and the associated loss of coastal habitat have all but eliminated the Miami Blue from the south Florida Mainland. In recent years, this alarming trend of decline has continued in the Florida Keys. Once abundant and widespread, the butterfly has become considerably more rare and now only occurs in a single small, isolated colony site within the boundaries of Bahia Honda State Park on Bahia Honda Key in the Lower Florida Keys.

### 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:	Candidate
USA – state status:	FL: Endangered

NatureServe:  
IUCN Red List:

G3G4T1  
N/A

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## SPECIES PROFILE

### DESCRIPTION

The Miami Blue is a small butterfly in the family Lycaenidae (gossamer-wings). Its wing span is ? to 1? inch (22 to 28 mm).

Adults are sexually dimorphic: on the upperside of their wings males are bright metallic blue, whereas females are primarily dark gray with blue scaling toward the wing bases and orange-capped black submarginal eyespots on each hindwing. Both sexes are gray below with a distinct wide white postmedian hindwing band and four black basal spots.

Mature larvae are highly variable and range in color from light green to maroon. Pupae are black or green.

### TAXONOMIC STATUS

*Cyclargus thomasi bethunebakeri* W. P. Comstock & Huntington, 1943. Previously, it has been assigned to the genus *Hemiargus*.

### LIFE HISTORY

Primarily a coastal species, the Miami Blue inhabits tropical coastal hammocks, scrub, and pine rocklands where it utilizes balloon vine (also called faux persil) (*Cardiospermum corindum*) and yellow nicker (*Caesalpinia bonduc*) as the primary larval hosts, and also possibly love in a puff (*Cardiospermum halicacabum*).

The species is multi-brooded with a short winter diapause period. Within the Bahia Honda colony, females deposit the small pale green eggs on the new, terminal growth of nicker and feed exposed on the host. For historic populations utilizing balloon vine, females would deposit the eggs on the developing fruit. Upon hatching, the larvae would burrow into the balloon and feed inside until maturity.

As with many lycaenid butterflies, the larvae are tended by ants (in this case, from the genus *Camponotus*), which protect the caterpillar from predators and parasitoids and harvest its sugar- and protein-rich secretions.

### DISTRIBUTION

Historically, little detailed and definitive information is available on the extent of the species' range within the state, although most experts agree that it once commonly occurred from the southern mainland (approximately Hillsborough to Monroe counties) south to Key West. Over the last few decades, the species' overall distribution and numerical abundance has been significantly reduced. The butterfly now only occurs in a single small, isolated colony site within the boundaries of Bahia Honda State Park on Bahia Honda Key in the Lower Florida Keys.

## **THREATS**

The major threat has been loss or fragmentation of habitat. Coastal regions of south Florida are under intense development pressure from ever-expanding urban areas and demand for recreation facilities. Mosquito control pesticides, applied from the air, are also a significant concern, not just for the decline in this butterfly but also as a limitation to its recovery and spread to previously occupied areas. For a butterfly with such a small population, collection of adults is a threat, too.

## **CONSERVATION STATUS**

In November 2002, the Florida Fish and Wildlife Conservation (FWC) received a petition for emergency listing of the Miami blue as an endangered species. Owing to Miami blue's recent decline and extremely tenuous current situation, by executive order the FWC listed the species as endangered on an emergency basis. The listing became permanent in November 2003 when the Commissioners approved the species management plan.

## **CONSERVATION NEEDS**

First and foremost, the known extant populations must be conserved. Their habitat should be managed to ensure adequate populations of larval hostplants and adverse actions, such as mosquito control spraying, should be avoided.

The McGuire Center for Lepidoptera Research at the University of Florida is currently conducting a highly successful captive rearing program. Beginning with no more than one hundred eggs collected from the Bahia Honda population in 2003, the program has reared more than a dozen generations and produced over nine thousand viable pupae. The first wild reintroductions were done in summer 2004. Despite this success, such *ex situ* conservation programs can only be supplemental to the protection and management of habitat.

## **RESEARCH NEEDS**

Continued status surveys are needed to identify and conserve additional remaining colonies. Studies of population biology and ecology, and research into additional life history information, the genetics of remaining populations, and population monitoring would be valuable.

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## **RESOURCES**

### **CONTACTS**

Florida Fish & Wildlife Conservation Commission: Ricardo Zambrano, Wildlife Biologist. Telephone: (561) 625-5122.

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

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