

## ENDANGERED BUTTERFLIES COME BACK!

And now for an environmental story with a happy ending: three separate species of Florida butterflies that were near extinction are on the rebound, including the rare and magnificently colored Schaus Swallowtail.

"It's possible for even a critically endangered species to spring back if people are sensitive to its environment," said Thomas C. Emmel, a professor of zoology at the University of Florida.

The three species—each found only in Florida—are the Schaus Swallowtail, which ranges from Miami to Key West; the Sweadner's Hairstreak, found only around Saint Augustine; and the Florida Atala butterfly of South Florida.

Emmel said the iridescent blue-black Florida Atala butterfly was pronounced dead and extinct in the 1960s. "But apparently a small population hung on in Key Biscayne



Atala

State Park," he said. The Atala feeds on coontie, a native cycad that once was common in much of Florida, but has been cleared extensively in South Florida to make way for development.

The Atala survived because people planted ornamental cycads, such as sago palms, and the larvae of the Atala adapted to feeding on them instead of the coontie. "From a tiny nucleus of butterflies in Key Biscayne, it came back, and now it ranges out across the mainland," Emmel said.



Schaus Swallowtail

The story of the Schaus Swallowtail's comeback is similar. Under a 1984 grant from the U.S. Fish and Wildlife Service, Emmel and a team of students surveyed Elliott Key, the north portion of Key Largo, and some of the other smaller islands in Biscayne Bay for the showy, large, yellow and brown swallowtails. In 1984, Emmel estimated that their total population was less than 70, and only one butterfly was found on Key Largo.

"This immediately caused an uproar because there's been a lot of pressure to continue the development of northern Key Largo," said Emmel.

Pro-development forces argued

that since it takes two to tango, why worry about the effects of development when there's only one butterfly left? Emmel countered that finding only one butterfly did not necessarily mean there aren't others lurking in the dense undergrowth.

But he also admits he was discouraged at the time. "I thought with a population that low, it probably would become extinct, and we were considering a captive breeding program," he said.

Emmel says four factors influenced the decline of the Schaus Swallowtail: pesticides, hurricanes washing over the low-lying keys, capture by butterfly collectors, and habitat clearing. "It feeds on two trees—torchwood and wild lime, and since both are considered underbrush, they're the first plants to go whenever an area is developed," he said.

But during a 1985 survey under a grant from the Florida Game and Fresh Water Fish Commission's Non-game Wildlife Section, Emmel was surprised to find 40 swallowtails on Key Largo alone, and an overall population increase of ten-fold. This year, Emmel found 70 Schaus Swallowtails on Key Largo, and its overall population had climbed to about 1,000.

"The butterfly is making a remarkable comeback," he said. "The resurgence on Key Largo may be due in part to Monroe County agreeing not to spray for mosquitoes on northern Key Largo at the request of the U.S. Fish and Wildlife Service. But another part was by the sheer happenstance of construction being halted on Key Largo because of a water shortage."

The fate of the Sweadner's Hairstreak, which relies on red cedars for food, is less certain. As the area from Saint Augustine lighthouse to Anastasia State Park was developed, cedars disappeared. Two stands of cedars, one at the lighthouse and one at the park, sustain the butterfly. "Today, the butterfly hangs on by a toenail, but as long as those cedars aren't cleared, it's got a pretty good chance."

• David Bailey, U. of F.

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