

The habitat improvement will help many other species in the Keys besides the butterflies, including migrating birds, according to Emmel and wildlife officials. Songbirds flying south to the tropics for the winter use the Keys as a "staging area" to store up on nutrients for the long flight across open water, while birds returning north in the spring to breed rely on the Keys to recuperate, Emmel said. The butterfly project will help ensure the birds have the natural habitat they need, he said.

The Schaus was nearly extinct in 1984, when Emmel counted just 70 adults. His findings prompted the U. S. Fish and Wildlife Service to list the butterfly as endangered. Emmel spent much of the 1980's tracing the butterfly's plight to two pesticides, Baytex and Dibron, used to combat mosquitoes, findings that spurred a moratorium on Baytex and tight regulation of Dibron. The population began recovering, only to undergo a nearly catastrophic collapse because of Hurricane Andrew in 1992. Fortunately, a UF captive breeding pro-

gram launched before Andrew augmented the 17 post-hurricane male butterflies left in the wild.

Today, following the introduction of 2,000 butterflies, the annual wild population consists of 1,000 to 1,200 adults located in 13 sites stretching from southern Dade County to the middle keys in Monroe County. Urban developments and a lack of habitat, however, separate these sites, preventing the butterflies from reaching each other to mate. Because the butterflies stem from a small population of ancestors, the separation could result in a dangerous lack of genetic diversity, Emmel said. The isolation of the butterflies also makes them more vulnerable to hurricanes or other disasters, he said.

Researchers decided the solution was to connect several of the colonies using recreated hardwood hammock habitat on two major golf courses as well as adjacent public lands. The golf courses, Sombrero Country Club on Marathon Key and Cheeca Lodge on Islamorada Key, agreed to the

project, and researchers began transforming the roughs into native habitat in September 1999. So far, they've planted 300 fire bush plants and 630 pentas plants to serve as adult nectar sources, and 1,500 wild lime trees currently are being grown for the project, Emmel said. The wild limes are particularly important because they are the natural host of the butterfly's caterpillars, he said.

Emmel said the researchers are coupling the habitat improvements on the golf courses with similar improvements on public lands, including planting 500 lime trees on an old federal military site in Key Largo during the past two years. Last spring researchers were overjoyed to discover dozens of Schaus eggs on the trees, he said.

"The Schaus Swallowtail is a flagship species for the whole idea of restoring the Keys to something like they once were," Emmel said.

SHELLY FOY

USGA Green Section Florida Region

2000 Florida Green Photo Contest

Category 1 - Wildlife on the Course: includes mammals, birds, reptiles, amphibians.

Category 2 - Course Landscape: Formal Plantings: includes annuals, shrubs, trees, entrance and tee signs.

Category 3 - Course Landscape: Native Plantings: includes aquatic vegetation, grasses, shrubs, trees and wildflowers.

Category 4 - Scenic Hole Layout Shots: includes sunrises, sunsets, frosts, storms and any other golf hole view.

Prizes

- 1st Place (\$100) and 2nd Place (\$50) in each category.
- Editor's Choice-Best Overall Photo - \$100.
- All winning entries published in the Fall 2000 issue.



2000 Photo contest - Category 1 — Wildlife Down Under. Kangaroos on #17 green, Joondalup Resort, Perth, Western Australia. Photo by Ed Fatica. And we thought armadillos were bad!

Easy Rules

1. Color prints or slides. Only one entry per category.
2. Photo must be taken on an FGCSA member's course. Photo must be taken by an FGCSA member or a member of his staff.
3. Attach a label to the back of the print

or slide which identifies the category, course and photographer. DO NOT WRITE DIRECTLY ON THE BACK OF THE PRINT. Each photo shall be attached to a sheet of 8.5 x 11 lined paper. Line up the photo with the vertical and horizontal lines to square the photo on the page. Attach the print to the paper using a loop of masking tape on the back of the photo. Slides must be easily removable for viewing. 4. A caption identifying the category, course and photographer should be typed or printed on the sheet of paper below the print or slide.

5. Judging will be done by a panel of FGCSA members not participating in the contest.
6. Mail entries in a bend proof package to: Joel D. Jackson, 6780 Tamarind Circle, Orlando 32819. No entries accepted postmarked after August 1, 2000.