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## News Background



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### **Lange's Metalmark Butterfly – Success in Small Packages**

A daring attempt to help a nearly-extinct butterfly that began last August has been successful beyond the most optimistic hopes, and now biologists are about to re-populate one of the species' few remaining habitats.

About 8:15 am on Friday, Aug. 29, 2008 (before the day's heat builds up) biologists from Moorpark College and The Urban Wildlands Group will join with U.S. Fish and Wildlife Service (Service) biologists to release about 30 endangered Lange's metalmark butterflies in the Antioch Dunes National Wildlife Refuge in the City of Antioch in eastern Contra Costa County. Biologists will also release some larvae that biologists hope will soon mate in their natural environment.

The only home to the Lange's metalmark butterfly is a few remnant sand dunes along the river in Antioch, preserved in the Refuge. Last year the population plummeted to 45 butterflies, from hundreds or thousands of animals less than a decade ago. In a desperate attempt to save the species, last August biologists carefully collected a few of the remaining Lange's metalmarks and placed them in two experienced breeding facilities. The Moorpark College site, operated in conjunction with Urban Wildlands, has produced 185 butterflies with that initial stock. Butterflies not released now will be used to increase the breeding population for release next year.

The breeding and release program is one-half of a joint project by the Refuge, the Service's Ecological Services program in Sacramento, Moorpark, Urban Wildlands and others to establish the captive-breeding program.

The other key component of the restoration is rejuvenation of naked stem buckwheat, a wispy plant that is the Lange's sole food supply.

The task facing the Refuge was how to save dune-dependent naked buckwheat, and the butterfly that depends on them, when the dynamic movement of sand dunes had dramatically diminished. The native plants need the shifting sand, steep banks and clear ground of naturally functioning dunes. But an increasingly thick invasive weed base stabilizes the soil, which in turn leads to the growth of more weeds. Vetch, the Refuge's worst culprit, covers the ground with a thick carpet, choking out the buckwheat.

Refuge managers are removing the non-native plants that crowd out the buckwheat, allowing the butterfly's food source to recover. Using controlled cattle grazing to eat the weeds last spring, Refuge biologists cleared major areas of exotic plants, allowing a good growth of buckwheat in some areas of the Refuge.

A similar two-pronged approach – habitat improvements and captive-breeding – has stabilized the population of the endangered Palos Verdes blue butterfly, a Southern California species once thought to be extinct. Efforts by the Defense Logistics Agency, Urban Wildlands, Moorpark, and the Service has helped in the recovery of this animal.

One of the first insects to be protected under the Endangered Species Act, the Lange's metalmark has been federally listed as endangered since 1976. It is a fragile, brightly colored butterfly in the Riodinidae (metalmark) family, with an adult wingspan up to 1 ½ inches.

Metalmark butterflies are named for the grey, or metallic-colored, outsides of their wings, which make them nearly invisible when their wings are closed. But when they are open, the top side of their wings are a colorful pattern of oranges and browns. The species is named for William H. Lange Jr., a young UC Berkeley entomology student and future UC Davis professor who first identified it in the 1930's.

Unlike some butterflies that can travel hundreds of miles, the Lange's is a home body that never ventures beyond the sand dunes along the southern bank of the San Joaquin River, at the western edge of the Sacramento-San Joaquin Delta. Now, with most of those dunes destroyed, the butterfly's only remaining habitat is on and near the Antioch Dunes National Wildlife Refuge.

Unlike many other butterflies that produce several generations in a year, Lange's metalmark breeds only one group of offspring per year. So each summer's tally of adult butterflies is a critical indicator of the species' condition. Unfortunately, Lange's numbers were declining for years. In 2006 biologists recorded only 45 adult Lange's, down from 2,342 in 1999.

Biologists have been encouraged this August, with 112 Lange's counted in surveys through Aug. 20. Late August through early September are normally peak seasons for the butterfly, so biologists are hoping to see continued increases, indicating that they are on the right track.

The 55-acre Refuge is a "biological island" of rare and exotic plants and insects, some found nowhere else. The Refuge was established in 1980 as a haven for the Lange's and two federally and State listed endangered plants, the Contra Costa wallflower and the Antioch Dunes evening primrose.

The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people. We are both a leader and trusted partner in fish and wildlife conservation, known for our scientific excellence, stewardship of lands and natural resources, dedicated professionals and commitment to public service. For more information on our work and the people who make it happen, visit [www.fws.gov](http://www.fws.gov).