



## CONVERSATION

## SAVING THE BLUE BUTTERFLY

In 1976, prospects for the El Segundo blue butterfly were so dire that the insect was placed on the endangered species list. Since then, community organizations and individuals have worked on restoring the butterfly's habitat in coastal dunes. But although preservation efforts have produced results, the blue butterfly's survival remains a concern.

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*A little-known natural treasure found just minutes from the LMU campus is the El Segundo blue butterfly. The species inhabits sand dune environments along the coast and has thrived in two of four nearby locations, including the El Segundo Blue Butterfly Preserve at the Airport Dunes, located just beyond the western edge of Los Angeles International Airport, and an eight-acre patch of dunes in the Ballona Wetlands. Preservation work and dune restoration by community and environmental organizations, including Friends of Ballona Wetlands, has been crucial to the butterfly's survival today. But in 1976, when its existence was in jeopardy, the El Segundo blue butterfly was added to the federal endangered species list, the first insect to receive such protection. We spoke with Lisa Fimiani, who is a Dan and Susan Gottlieb Environmental Leaders Fellow at the LMU Center for Urban Resilience (CUREs). She has volunteered and worked for three decades on environmental issues involving birds, insects and other wildlife in Southern California. She was executive director of Friends of Ballona Wetlands for seven years and was a board member of the Audubon California and the Los Angeles Audubon Society for 16 years. Fimiani was interviewed by Editor Joseph Wakelee-Lynch.*

## More About Blue Butterflies

*To learn more about the restoration work of Friends of Ballona Wetlands, go [here](#). Members of the public can join in community activities, including restoration projects as well as tours of the wetlands. A calendar of community activities is [here](#). In addition, The Bay Foundation, through Santa Monica Bay Restoration, also organizes [volunteer restoration projects](#) in both the Ballona Dunes and the Airport Dunes at LAX.*

### Why do the butterflies thrive in the El Segundo Blue Butterfly Preserve and in the Ballona Wetlands?

They thrive because the habitat is ideal: sandy soil and their host

plant, seacliff or dune buckwheat (*Eriogonum parvifolium*), grows there. What's interesting is that the butterflies do well in a monoculture of buckwheat, but they do even better in a plant palette that includes other species. California sunflower, California croton, branching phacelias, sun cups, sand verbena — these are some of the coastal dune plant species that provide diversity for many other butterflies to use when they need to drink nectar, reducing competition at the buckwheat. But the butterflies will end up back at their host plant when they need to procreate.

### **What is considered to be the natural range of the blue butterflies?**

The butterflies' natural range probably extended for some 30 miles along the Southern California coast, before human development reduced the sand dunes that comprise their environment.

### **Are there other butterfly species present, too?**

There are. The host plant of the El Segundo blues is buckwheat, but other butterflies also benefit from the nectar from the flowers: metalmarks and acumen, pygmy and marine blues, for example. There are about 15 other butterfly species that thrive in the dune habitat. There are also predators to the El Segundo blue. Crab and lynx spiders lay in wait on the buckwheat until the butterfly comes, and then it grabs the butterfly. Also, praying mantis and birds. The blue butterflies have a pretty harrowing existence; they have to watch out for predators during their short butterfly phase of their existence.

### **How short is that phase in the life of the blue butterfly?**

A maximum of seven to 10 days, sometimes 12, and then they die. Their entire life cycle, from pupa underground to an egg on the flowerheads of the buckwheat, to caterpillars that feed on the flowerheads and then pupate and return to the soil, the whole cycle lasts about a year.

### **How extensive is the dependency of the butterflies on the buckwheat?**

The butterflies live within 200 yards of their host plant for their entire lives. They live most of the time in the sand, or detritus, as pupa. Then in the spring there is a chemical change in the plant that goes down the root into the sand that tells the pupa it's time to become a caterpillar. So, they start climbing the bush of the buckwheat to get to the flowers, which are now blooming. The caterpillars then start turning into butterflies. Once they mate they lay eggs, and then they die.

So, the butterflies have to be very close to their host plants. Without this plant they would not survive. That includes the soil beneath the plant and the area around the plant. If there's too much disturbance, or if there's a pathway near a plant that's heavily treaded by humans, the butterflies will not survive. It is critical that these plants are protected because the butterfly in every form of its existence is near the

plant.

**Other butterflies migrate, but the El Segundo blue doesn't?**

That's what's unique about them: unlike the monarch butterfly, the blue butterfly doesn't migrate thousands of miles.

**Are there threats to the buckwheat itself?**

Yes: wind, animals, drought, people walking close by breaking off branches and trampling the pupa, dogs and cats, and changes in the soil composition. We're finding that the underground aquifers are shifting in the dunes, causing some areas to become dryer. For instance, there was an area where Arroyo willows were growing beautifully, and now they're dying off.

**Given what scientists tell us about the future impact of climate change, is there a threat in the form of rising sea waters to the kinds of coastal environments we're discussing?**

Absolutely. The dunes are in a precarious spot that could be overtaken by sea rise.

**The California Department of Fish and Wildlife is considering plans for the restoration of the Ballona Wetlands Ecological Reserve. A final Environment Impact Statement and Environmental Impact Report are expected in the first half of 2019. Are those plans a concern to you?**

We're concerned that when the state restores parts of the wetlands that they don't bring in too much salt water that they don't wipe out much of what we've accomplished in the Ballona dunes. They have to be careful. It's a big undertaking, and a lot of stakeholders — Heal the Bay, LMU's Center for Urban Resilience, The Trust for Public Land, The Friends of Ballona Wetlands, L.A. Audubon, Surfrider, Southbay, Los Angeles Waterkeeper, Trust for Public Land — they all weighed in on the plans during the public comment period and listed in their comments the pros and cons of each plan, based on their experts.

**What is the greatest threat to the blue butterflies now?**

Habitat loss. That's for all species globally: The No. 1 cause of decline for species is they lose their habitat. Humans are encroaching in so many wild areas that there is very little wild space left. One of the challenges for the Center for Urban Resilience is to study urban ecology in ways that we can help these species thrive in an urban setting. Surprisingly, we've found out in the past 20 years that pocket parks, or areas on campuses, in backyards, or in public parks, if restored with native plants indigenous to the area, will give species a lifeline they need to survive. Years ago, many biologists used to believe that huge swatches of area had to be restored for species to come back. But we're finding that's not true. Two aspects of wildlife we didn't anticipate is their tenacity to survive and their ability to adapt.