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Monarch Butterflies Begin Spring Dispersal – Some Carry a Message

SAN LUIS OBISPO -- Monarch butterflies at western United States coastal wintering habitats have begun their annual dispersal and some of them carry a message from Cal Poly research team Dennis Frey and Shawna Stevens.

Frey and Stevens co-lead Project Monarch Alert. The research project, begun in 2002, studies fall migration, wintering activity and spring dispersal of monarchs in western North America . Frey is an ecologist and faculty member in the Biological Sciences Department at Cal Poly's College of Science and Mathematics and Stevens is a graduate student in the department.

“Most of our field work this season is being conducted in coastal San Luis Obispo and Monterey Counties , which are located approximately in the center of the Western wintering range,” Frey said.

The researchers have tagged several thousand individual butterflies with a unique identification code. The small tags include a toll-free telephone number to allow people who encounter dispersing monarchs to report their locations.

Before being released each butterfly is scored for its wing condition, fat level, parasite load and several other measures. Variation in dispersal performance is then related to butterfly condition.

One Western monarch, tagged in fall 2002, was found approximately 870 miles away, and across the Continental Divide, in a garden in Pueblo , CO in April 2003.

A primary goal of Project Monarch Alert is to provide information to guide conservation approaches for the monarch butterfly, including preservation of its wintering habitats and summer breeding grounds. The research program has already increased understanding of

the ecological processes that drive the patterns of monarch abundance over time and space. A unique feature of the research is that it is conducted at several scales that range from the smallest level, taking into account the variation of individuals, to a large or system-wide level for the entire Western population.

Since 2002, the research team has monitored 16 different habitats, throughout the butterflies' wintering period, in San Luis Obispo and Monterey Counties . Data from this intermediate scale, study indicates that monarch movement in winter months is limited almost exclusively between neighboring sites. Additionally, the researchers found that just a few days of weather that is unusually warmer and drier than normal can trigger the premature mass exodus of monarchs in January or early February.

This year, researchers have noticed a decline in the abundance of the Western monarch on California 's Central Coast .

“By early November we believed the population was about the same size as last season. But a few weeks later we discovered that abundance had declined. Project Monarch Alert site surveys from early January corroborate these findings. Data now indicates that abundance of the Western monarch on California 's Central Coast is slightly less than last season. The recent series of severe Pacific storms may account for part of the decline,” said Stevens

Their largest-scale study is a system-wide analysis of Western monarch population dynamics over the past eight years. Frey and Stevens have shown that the decline in Western monarch abundance is more likely related to extensive and severe drought conditions over their summer breeding grounds rather than the more popularly expressed idea that Western wintering grounds are rapidly degrading. They will present their study findings at a symposium on the biology and conservation of the monarch butterfly at the Pacific Branch meeting of the Entomological Society of America held March 2 at Asilomar Conference Grounds, Pacific Grove .

Some of their findings are currently published in Monarch Watch Updates online at www.monarchwatch.org/update/2004/0723.html#4

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