

# Scientific Research in the Mono Basin

*News from the Mono Basin Field Station and Beyond*

From as early as 1863, when the Brewer Party passed through the Mono Basin, to the 1976 Ecological Study that helped found the Mono Lake Committee, scientific research has provided deeper insights into the workings of the Mono Basin ecosystem. It is this foundation of research that can support informed decision making, and eventually, sound policy. In this and future issues of the *Newsletter*, the Scientific Research in the Mono Basin column will provide you with a smattering of current research projects in the area. We draw from the Mono Basin Clearinghouse ([www.monobasinresearch.org](http://www.monobasinresearch.org)) and from word around town. (After all, it's hard to miss the gaggles of researchers that descend on Lee Vining with binoculars, radio telemetry antennae, clipboards, and grungy Carharts in tow). As we approached researchers for current project descriptions, we were overwhelmed by what we came up with. Instead of listing all of them, we have chosen to highlight a few projects in each issue, grouping them within some of the Clearinghouse's main research categories. Additionally, each column will feature one longer project description, allowing the researchers to tell a little more of their story.

## **Geology**

**Project Title:** Migration rates of dunes in the Mono Lake dune field.

**By:** Lori K. Fenton Post  
Doctorate Research Associate  
Arizona State University's  
Department of Geological  
Sciences.

**Description:** Spatial and temporal variations in the Mono Lake dune field indicate possible shifts in wind circulation patterns driven by climate fluctuations.

## **International**

**Project Title:** Golondrinas de las Americas

**By:** Cornell University, PRBO Conservation Science, Mono County High School students.

**Project Description:** Sites along Lee Vining and Parker Creeks are being developed for nest-box studies of breeding Tree and Violet-green Swallows, as part of a pan-Hemispheric study of these and other cavity-nesting swallows. The study monitors basic breeding biology and reproductive success and conducts hypothesis-testing research in behavioral ecology and organismal biology.

### **Also in This Issue ...**

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## White-crowned Sparrow Studies

*Tom Hahn, University of California Davis*

Our work on Mountain White-crowned Sparrows (*Zonotrichia leucophrys oriantha*) at Tioga Pass extends a long-term field study begun in the 1960s by Martin L. Morton of

Occidental College. Despite Morton's comprehensive ecophysiological and behavioral studies, there still remain many unexplored features of Mountain White-crowned Sparrow biology. My collaborator Creagh Breuner (University of Texas at Austin) and I are currently investigating how the white-crowns, just back from their wintering grounds in Mexico, cope with the May snowstorms that frequently occur along the Sierra crest.

May storms can be life threatening, increasing the costs of thermoregulation while concealing sources of food for ground feeding birds. However, the steepness of the eastern Sierra escarpment permits sparrows to escape bad weather in the high country via short flights downslope. Using radio telemetry, we have confirmed that the Tioga Pass white-crowns regularly and repeatedly move down to lower elevation refuges in Lee Vining Canyon and the Mono Basin during poor weather.

Individual sparrows vary dramatically in their propensity to engage in this facultative altitudinal migration behavior, with some departing for lower elevation at the first whiff of bad weather, and others successfully riding out the high country storms. We are particularly interested in the roles that body condition (especially fat stores that can temporarily sustain birds when food is inaccessible) and hormonal physiology (which orchestrates appropriate behavioral and physiological responses to environmental stressors) play in regulating the sparrows' facultative altitudinal migration behavior.



COURTESY OF TOM HAHN

## **Economics**

**Project title:** Economic impacts of the 3rd Annual Mono Basin Bird Chautauqua: A survey and analysis of local businesses and participants.

**By:** River Gates and Lisa Cutting, PRBO Conservation Science and Mono Lake Committee

**Description:** Mono Basin businesses and Chautauqua participants will be surveyed to evaluate the economic benefits of the Mono Basin Bird Chautauqua.

## **Restoration**

**Project Title:** Mono Lake Waterfowl Population Monitoring

**By:** Debbie House, Watershed Resources Specialist, Los Angeles Department of Water and Power

**Project Description:** Conducting long-term monitoring of waterfowl populations in order to determine the response of waterfowl populations to changes in the lake level of Mono Lake. This monitoring includes summer breeding surveys at Mono Lake, and fall aerial surveys of Mono Lake, Bridgeport Reservoir, and Crowley Reservoir. ❖

*Compiled by Sacha Heath of PRBO Conservation Science and Arya Degenhardt. This fall you may find them flying eastward, or wearing shin guards, respectively.*