

Global Observations from Mono's Watershed

by Kimberly Rollins

In the very near future climate change data specifically from the Eastern Sierra and the Mono Basin will be available for scientists studying the impacts of climate change on mountain environments. By the end of August 2004 the Sierra Nevada and White Mountain target regions for the Global Observation Research Initiative in Alpine Environments, or GLORIA, were completed.

GLORIA is an international initiative headquartered in Vienna, Austria, to study the impacts of climate change specifically in alpine environments around the world. The idea for the program blossomed in 1996 and GLORIA projects have been established in mountain areas around the globe. Besides the two target regions in California, the only other area in North America is in Glacier National Park.

The project uses a “multi-summit approach”, which establishes a baseline for comparing differences in species and vegetation and to allow for comparison of potential loss or change of biodiversity due to climate change worldwide.

The Sierra Nevada target region includes three summits near Dunderberg Peak and one summit along the Sierra Crest north of Tioga Pass. The international protocol prescribes specific types of sites for selection of summits, which start at the tree line and move up to higher elevations. The teams working to install GLORIA, which included professionals and volunteers, installed temperature data loggers and used grids divided into 100 sections to meticulously analyze the

biodiversity of each section. The projects also require thorough photo documentation, and will be the baseline for continuous studies that will occur in five-year intervals. Other GLORIA summits in the White Mountain target area include White Mountain Peak, Mount Barcroft, McAfee RNA and Sagehen Summit.

The GLORIA sites were chosen to geographically complement several new high-elevation long-term climate monitoring sites. Last year, two web-accessible, realtime weather stations were established in the White Mountain target area at White Mountain (www.wrcc.dri.edu/weather/wmntn.html) and Barcroft Station (www.wrcc.dri.edu/weather/barc.html); this October installation of a similar web-accessible station will be completed on Mount Warren.

These stations measure air temperature, relative humidity, precipitation, solar radiation, barometric pressure, snow depth, average wind speeds, gust wind speeds, and wind direction.

Erin Brandt who is an Intern Naturalist for the Mono Lake Committee and volunteered on the Dunderberg GLORIA installation said, “It’s great that we’ll be able to get such important data about climate change with such minimal impact. I’m glad I had the opportunity to help install the station—it was fun and I learned a lot.”

Connie Millar, USFS Research Scientist and GLORIA Project Leader, gave a presentation that included the GLORIA project at this year’s Mono Basin Bird Chautauqua. “We are very proud to have established these important global-monitoring sites in the Eastern Sierra and White Mountains,” said Millar.

The Sierra Nevada sites are extremely important for the GLORIA project, and the information gathered should also be useful for understanding how climate change is affecting the Mono Basin.

If you are interested in more information on the GLORIA project, see www.gloria.ac.at/res/gloria_home/ or contact Dr. Millar at cmillar@fs.fed.us. ❖

Kim Rollins is the Committee’s Naturalist Intern. She and fellow intern Alison Young are getting ready for an adventure in Baja this fall!



Dr. Ann Dennis, GLORIA Field Project Manager and Mono Lake Committee Intern Erin Brandt setting up for biodiversity measurements on Dunderberg.

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GLORIA stations focus on the top 10-meter elevation zones of select summits. Biodiversity is measured with non-permanent devices using non-manipulative survey techniques, which provide essential data for scientists studying global climate change.