CIRMOUNT: Consortium for Integrated Climate Research in Western Mountains


C.Millar/Sierra Nevada, CA

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CIRMOUNT is a collaborative and interdisciplinary research consortium dedicated to understanding climate variability and effects of climate on western North American mountain ecosystems and resources. Participation is open to all interested scientists and natural resource managers.

CIRMOUNT seeks to improve knowledge of high-elevation climate systems and to integrate knowledge of mountain ecosystem response to climate into natural-resource management and policy.


NPS, Alaska Range, Denali National Park, AK

ABSTRACT

Escalating demands on western North American (WNA) mountain ecosystems have increasingly stressed natural resources and rural-community capacities, cascading to issues of national concern. Although WNA has long been a focus for climate- and climate-related environmental research, efforts remained disciplinary and poorly integrated, hindering interpretation into policy and management. An interdisciplinary science initiative has emerged as the Consortium for Integrated Climate Research in Western Mountains (CIRMOUNT) whose primary goals are to improve knowledge of high-elevation climate systems and to better integrate ecosystem response into natural-resource policy in WNA. Six action-oriented, product-driven CIRMOUNT Work Groups have formed to address specific CIRMOUNT goals. They include: Mountain Climate Network; Mountain-Based Hydrologic Observatories; North American GLORIA (Global Observation Research Initiative in Alpine Environments); Mountain Ecosystem Responses to Climate; International Relations; and Paleoclimatic Archives for Resource Management. CIRMOUNT regularly sponsors the MTNCLIM conferences, held biennially at rotating locations in Western North America, as well as a technical session at the American Geophysical Union annual meeting every December in San Francisco, CA, USA. CIRMOUNT is on the web at http://www.fs.fed.us/psw/cirmount/

CIRMOUNT's specific goals are advanced through six task-oriented, product-driven Work Groups:

1. MOUNTAIN CLIMATE NETWORK WORK GROUP

Goal: Support implementation of a strategic network of long-term high-elevation climate monitoring stations in western North America and integrated analysis of mountain climate data

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C.Millar, White Mountains, CA

Understanding of high-elevation climate is hampered by the paucity of mountain weather stations. Severe conditions challenge the installation and maintenance of such stations, but a network is developing, and several stations have real-time, public internet access to conditions.

2. MOUNTAIN-BASED HYDROLOGIC OBSERVATORIES WORK GROUP

Goal: Develop a consistent and strategic network of mountain observatories for monitoring and research on surface-water including snow, ground water, and hydroclimatic interactions

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C.Millar, Sierra Nevada, CA

The Hydrologic Observatories Group works within the context of the ongoing NSF initiative from the Consortium for the Advancement of Hydrologic Science (CUAHSI) to develop two high-elevation hydrologic observatories as testbeds for long-term measurements and hydrologic characterization.

3. PALEOCLIMATIC ARCHIVES FOR RESOURCE MANAGEMENT WORK GROUP

Goal: Improve access and applicability of paleoclimatic and paleoecological data to users including natural-resource scientists and land and water managers

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C.Millar, Wassuk Range, NV

Historic data provide key references to extreme events as well as to natural ranges of variability. Application in resource management has been hampered by lack of applied examples. The Paleoclimatic Archives Group specifically seeks to develop a spatially focused network of hydroclimate reconstructions to aid water managers in planning hydrologic response to climate change.

4. NORTH AMERICAN GLORIA WORK GROUP

Goal: Promote coordinated and integrated monitoring of alpine plant response to climate change in Western North America using the international GLORIA (Global Observation Research Initiative in Alpine Areas) protocol and additional research approaches

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Dan Fagre, USGS, Glacier National Park, W. Glacier, MT, dan_fagre@usgs.gov

Whereas GLORIA target regions have been installed in mountain areas worldwide, North America had not been represented in early efforts. Through the support of CIRMOUNT's GLORIA Group, four target regions (each as a multi-summit station) have now been installed, in the Northern Rocky Mtns (Montana), Sierra Nevada (California), and two in the White Mtns (California). Five new target regions are planned for the coming year.


K.Holzer, Glacier National Park, MT

5. MOUNTAIN ECOSYSTEM RESPONSES TO CLIMATE WORK GROUP

Goal: Promote scientific understanding about responses of ecosystems to climate change, specifically to incorporate this information in land and water resource planning and conservation

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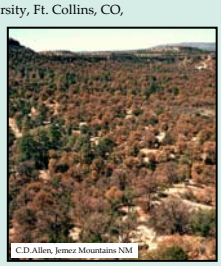
Natural resource professionals urgently need detailed information on how to manage wildlands and waters under changing climates. The Ecosystem Response Group focuses on available science information related to elevational-gradient studies, disturbance processes (fire, insects, flood), and scale issues, and interprets these within the context of specific planning projects and resource areas.


C.D.Allen, Jemez Mountains NM

6. INTERNATIONAL RELATIONS WORK GROUP

Goal: Promote and link the work of CIRMOUNT to related mountain-climate programs at the international scale, including the Mountain Research Initiative, GLOCHAMORE (Global Change in Mountain Regions), and MIREN (Mountain Invasion Research Network)

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CIRMOUNT is endorsed by the international Mountain Research Initiative as a pilot regional consortium, and is developing a partnership with Russian scientists for comparative regional studies. CIRMOUNT is also working collaboratively to promote the new international research program, MIREN, in its effort to investigate connections between climate change and invasion of mountain ecosystems.


C.Millar, Berner Oberland, Switzerland

CIRMOUNT Meetings

Biennial MTNCLIM Conferences
MTNCLIM 2006
September 19-22, 2006
Timberline Lodge, Mt. Hood, Oregon, USA

Technical Sessions at the American Geophysical Union annual meeting
EXTREME EVENTS IN WESTERN MOUNTAIN CLIMATE, ECOSYSTEMS, AND RESOURCES
December 5-9, 2005
San Francisco, California, USA

For further information contact Connie Millar, cmillar@fs.fed.us

CIRMOUNT website
http://www.fs.fed.us/psw/cirmount/

CIRMOUNT COORDINATING GROUP

Co-Chair: Henry F. Diaz, NOAA, CDC
Co-Chair: Constance I. Millar, USFS, PSW Research
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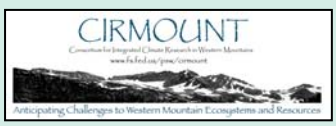

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