BUILDING BRIDGES BETWEEN SCIENCE & SOCIETY
IN THE SAN JUAN MOUNTAIN REGION
MARCIE DEMMY BIDWELL | MOUNTAIN STUDIES INSTITUTE
Science: It’s studying environmental issues like airborne mercury & climate change. It’s supporting researchers who come to the San Juans from across North America.

Outreach & Education: It’s sharing information and skills in conferences and training workshops. It’s seminars and field trips for locals, visitors & students.

On-the Ground Projects: It’s community projects like trails & revitalization. It’s restoration of damaged fen wetlands.

Collaboration: It’s innovative partnerships and stakeholder involvement.

www.mountainstudies.org
Water & Snow

Ecosystems & Biodiversity

Community & Land Use Transitions

Climate Variability & Change

Air Quality
“We are volcanoes. When we women offer our experience as our truth, as human truth, all the maps change. There are new mountains.”

Ursula K. LeGuin
SILVERTON & DURANGO, SOUTHWEST COLORADO

where the Rocky Mountains dive into the Southwestern desert
WHY THE SAN JUAN MOUNTAIN REGION?

- Broad diversity of ecosystems
- Unique ecological systems
- Rapid demographic change
- Rapid economic change
- Conflicting economic trends

Really interesting science
MINING LEGACY- 1500 ABANDONED MINES
NEW WEST: CHALLENGES & OPPORTUNITIES
RESEARCH TO INFORM MANAGEMENT
Preliminary Result: Prevalence of young water and strong hydrologic connections across the Northern San Juan Basin system, reinforced by geochemical indicators, suggest risk of hydrologic disturbance by CBM development where the Fruitland Outcrop nears the surface.
Mercury in precipitation, lake sediment cores, lake biota, and wetland songbirds

MSI’s results motivated the SJPLC to install a long-term Mercury Deposition Network sampler

Back-trajectory analysis of storm tracks that bring mercury to SW Colorado (ongoing)
RESTORING RARE & UNIQUE ECOSYSTEMS

Fen Wetland Assessment, Restoration & Education

- Fen Assessment completed
- Restoration of several fens, including Chattanooga begun
- Wetland outreach booklet & 5 workshops
SOLVING LEGACY PROBLEMS
Mineland Re-Vegetation & Carbon Storage Project

MSI, San Juan Public Lands (USFS/BLM), and U. Colorado & Fort Lewis College

- Experimental study to test the success of using biochar for re-vegetation of damaged soils (abandoned mine lands, gas well pads, recreation misuse)
- MSI & SJPLC is working on making biochar from local fuels project thinnings
EXPLORING CLIMATE VARIABILITY & CHANGE
Climate Change Science & Adaptation Planning

- Conferences and workshops bringing together scientists and managers,
- Downscaled climate projections and climate change assessments underway
- Carbon storage inventory & policy analysis

MSI, U. Colorado-Boulder, and San Juan Public Lands (USFS/BLM),

MTNCLIM Climate Conference & Managers Workshop
Global Observation Research Initiative in Alpine Environments

GLORIA NETWORK

www.gloria.ac.at
Steltzer et al. (2009)
Proceedings of the National Academy of Sciences
NATURAL RESOURCE MANAGEMENT INTERNSHIPS
INVOLVING COMMUNITIES
Climate Change Assessment for the San Juan Mountain Regions, Southwestern Colorado, USA: A Review of Scientific Research

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Prepared in Cooperation with
The San Juan Public Lands Center: USDA Forest Service – San Juan National Forest and USDOI Bureau of Land Management

Mountain Studies Institute for the San Juan Public Lands Center

Research Review for Resource Planning
STAKEHOLDER OUTREACH & INVOLVEMENT

- Translated to Spanish
- Developing AQ Website

- Developing land owners manuals for conservation and protection of wetlands
CITIZEN SCIENCE MONITORING PROGRAMS

PikaNET: Volunteer Monitoring Network for the American Pika

- MSI, CU Boulder, San Juan Public Lands, CSU and other partners

- MSI helped fund CU pika research
- Collaborative program born to recruit volunteers to fill data gaps
- Combines research and education
- Workshops started this summer!
MY WATER COMES FROM THE MOUNTAINS

My Water Comes From the San Juan Mountains

by Tiffany Fourment, Koren Nydick, Gary Gianniny, and Mary Ann Goff

illustrated by Dorothy Emerling
THANK YOU & ACKNOWLEDGEMENTS

- San Juan Public Lands/National Forest
- Mountain Studies Institute www.mountainstudies.org
- Fort Lewis College www.fortlewis.edu
- University of Colorado Boulder www.sjc.colorado.edu
Welcome to Mountain Studies Institute

The Mountain Studies Institute is an independent not-for-profit mountain research and education center established in 2002 in Silverton, CO. MSI develops science that people can use to address environmental issues facing the San Juan Mountains. We conduct and facilitate research, provide educational opportunities and internships, and conduct environmental monitoring. We connect scientists and stakeholders across the San Juan Mountain region to go beyond scientific inquiry to the meaningful application of knowledge that makes a difference for the quality of the environment.

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