



# **International Long Term Ecological Research (ILTER) Network: Past, Present, and Future Opportunities**

Jim Gosz, University of Idaho  
&

Kristin Vanderbilt, Ph.D.  
Co-chair, US ILTER Committee  
Department of Biology  
University of New Mexico



# ILTER: A Network of Networks

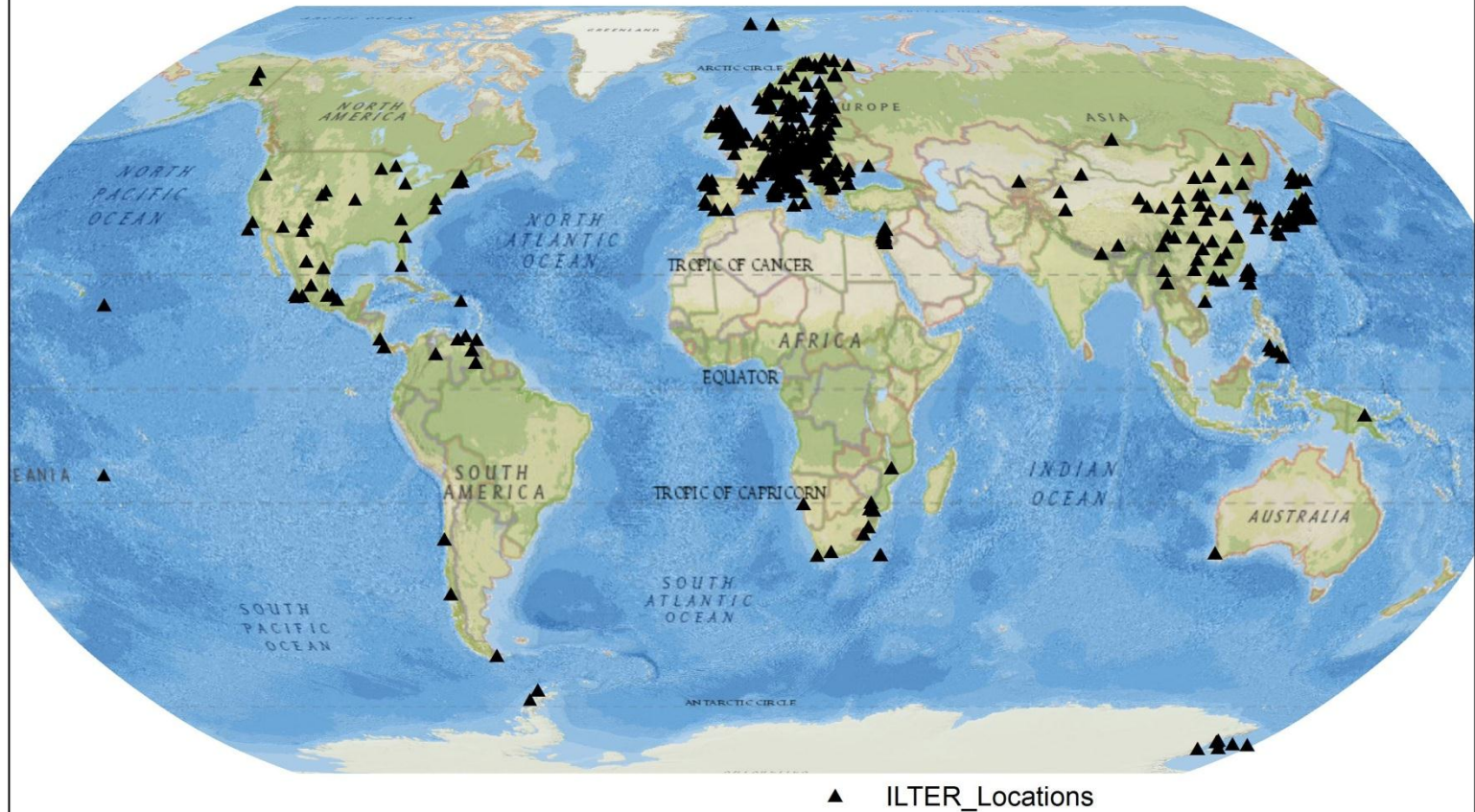


Figure: John Porter



# US LTER Network...

- During 1990s, NSF supported LTER scientists to reach out to colleagues around the world to catalyze development of LTER Networks in other countries
- NSF had strong relationships with the National Academy of Science in most member countries
- Key INT program officers: Bonnie Thompson, Harold Stolberg, William Chang, Sonia Ortega, Osman Shinaishin, Alexandra Stepanian, Edward Murdy, Pierre Perrolle

Now: Office of International Science and Engineering



# International Summit in Estes Park, CO (1993)

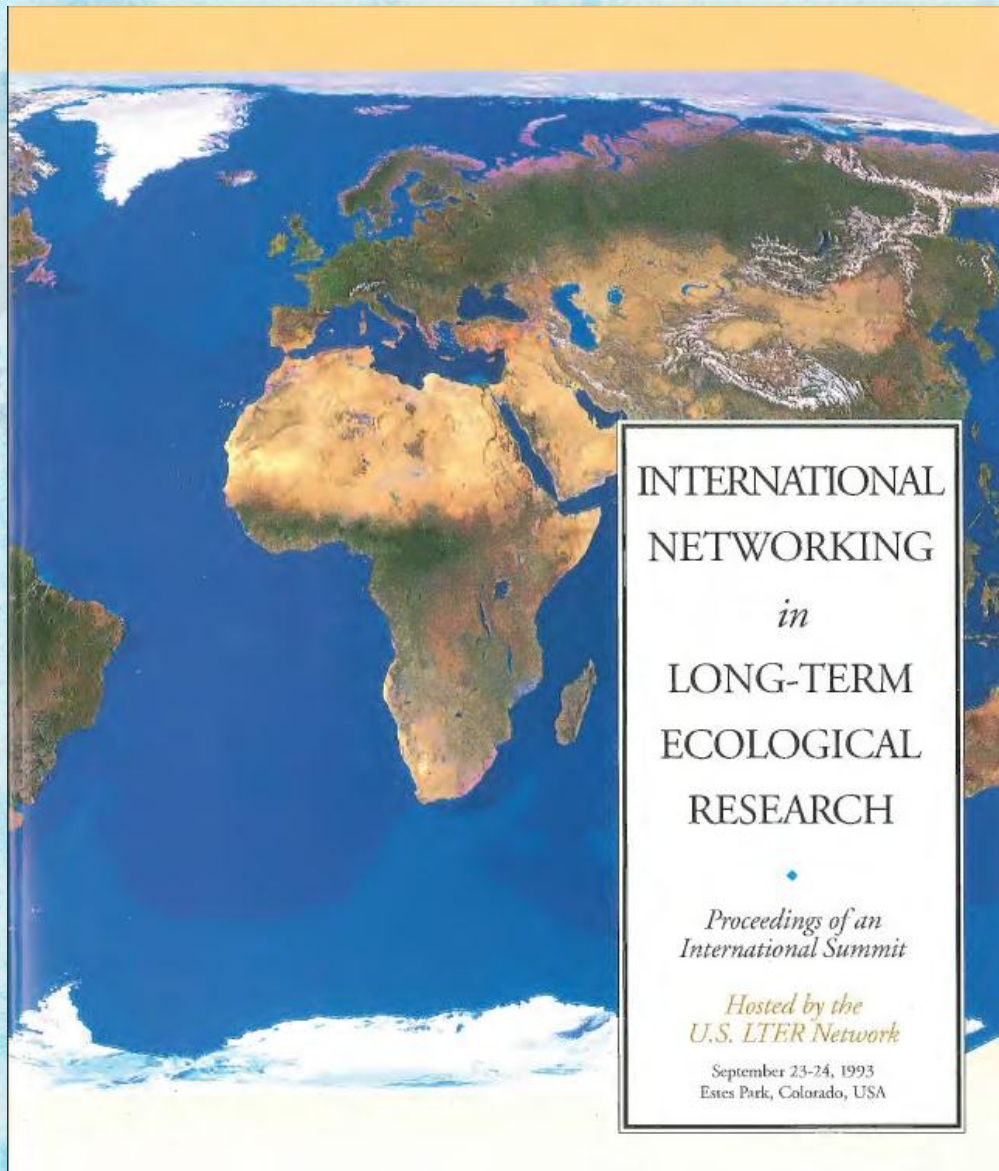


1993 -39 scientists and administrators representing 16 countries participated in this meeting hosted by US LTER



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**1994**

***LTER Network Office  
Publication #17***



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# The ILTER is...

- a global network of research sites located in a wide array of ecosystems
- a network of scientists engaged in long-term, site-based ecological and socioeconomic research
- a platform for understanding environmental change across the globe
- ILTER is an actual organized International Network of long-term research sites (that is a legal entity with governance structure, standing committees, dues paying members) whose scientists are conducting cross-site research initiatives



# Chinese Ecosystem Research Network (CERN)





中文

## CHINESE ECOSYSTEM RESEARCH NETWORK

Home | About CERN | Stations | Centers | Activities | Research | Data Center | Publication | People

### NEWS

**MORE** ➔

	The 15th ILTER Coordinating Committee Meeting 2007, Beijing	2007-08-14
	Program for International Conference on Long-Term Ecological Research	2007-08-14
	320,000-sq-km Land Threatened by Desertification in China	2007-06-19
	China launched national climate change program	2007-06-19

### RESEARCH

**MORE** ➔

NEW!!!! Leaf traits and associated ecosystem characteristics across subtropical and timberline forest in the Gongga Mountains, eastern Tibetan Plateau

NEW!!!! Root biomass along subtropical to alpine gradients: global implication from Tibetan transect studies

A coupled model of photosynthesis-transpiration based on the stomatal behavior for maize (*Zea mays* L.) grown in the field

Study on Carbon Budget in Terrestrial and Marginal Sea Ecosystems of China

### MEETING

**MORE** ➔

Program for ILTER Science Conference, 20-21 August, 2007, Beijing, China



Jiaozhouwan

**Jump to** ➔

### ABOUT CERN.

CERN consists of 36 field research stations for various ecosystems, including agriculture, forestry, grassland and waterbody, five disciplinary centers and one synthesis center.

[more>>](#)

Select The Site ▼

 **CHINA FLUX**

**Data Center**

Keywords:

Category:



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LOCATION OF SAEON'S NATIONAL OFFICE AND SIX NODES



# US LTER/NSF Supported Many Interactions with other ILTER Members

- Scientist exchanges
- Student exchanges
- ILTER Regional meetings and workshops
- ILTER Annual Coordinating Committee Meetings
- US LTER All Scientist Meetings



# 1991: US – China Exchange



*Photo by Beryl Leach/NAS*

**Jim Gosz, ILTER  
Chair (1995 – 2002)**



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# Reciprocal Scientist Exchanges

- Czech Republic, Hungary, Poland -- 1995
- Portugal, Spain – 1996
- Venezuela -- 1996
- Southern Africa – 1999
- Taiwan



*Kellogg Biological Station Researchers at Yui-Lin Experiment Station, Taiwan 2006*

*Photo: Andrew Corbin*



*Sumava National Park, Czech Republic*

*Photo: Jim Gosz*



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**Japanese and Taiwanese students  
visited HJ Andrews LTER, 1997**



**US LTER Grad Students Visit LTER  
Sites in Taiwan and China, 1998**



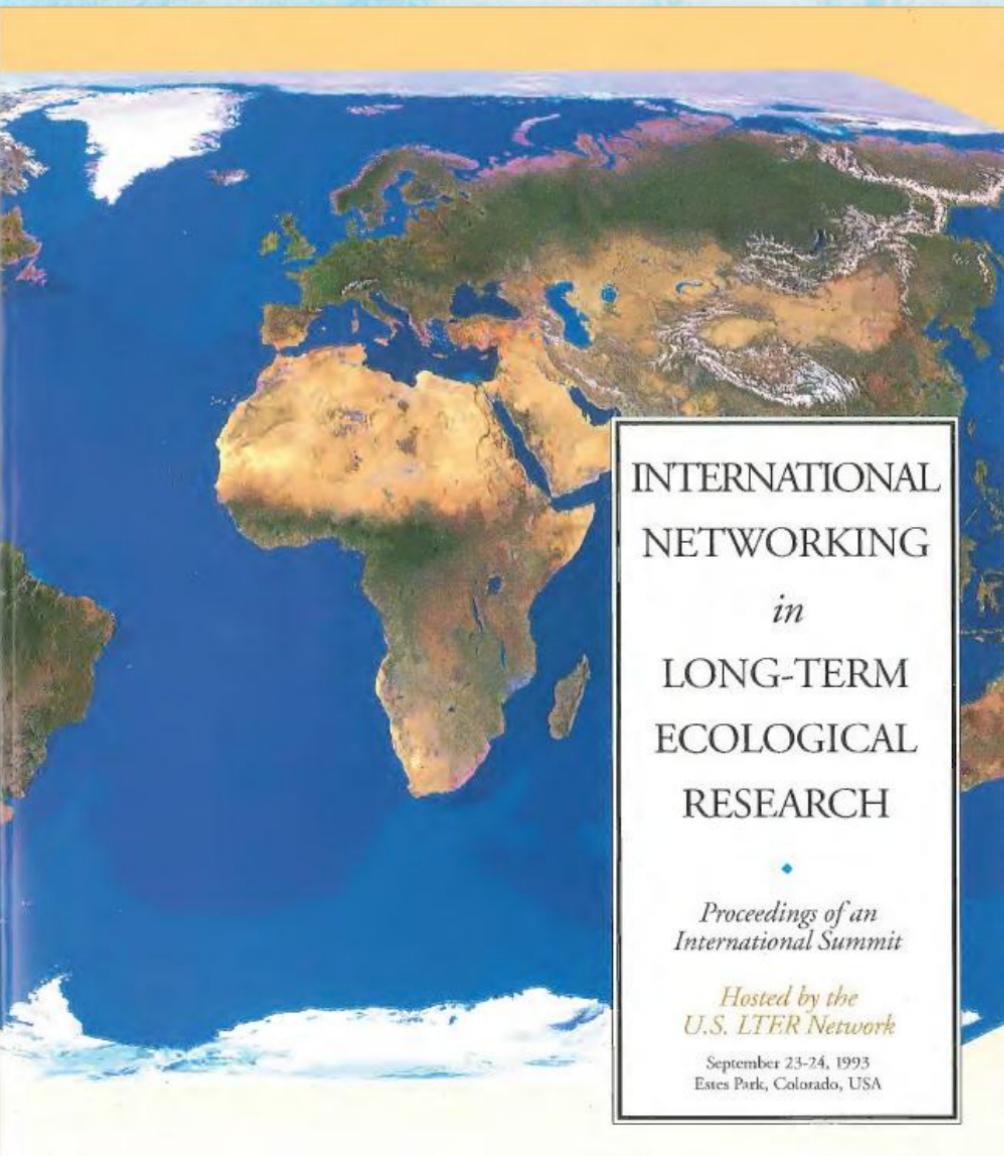


## NSF and US LTER invested substantially in the ILTER during past 20 years



### US Returns on Investment:

- Membership in ILTER provides research and education opportunities all over the world for LTER scientists and students
- Mechanism to access long-term data from a wider variety of ecosystems
- Mechanism to bring new programs in to US
- ILTER membership means participation in a global network that is like no other



INTERNATIONAL  
NETWORKING  
*in*  
LONG-TERM  
ECOLOGICAL  
RESEARCH

*Proceedings of an  
International Summit*

*Hosted by the  
U.S. LTER Network*

September 23-24, 1993  
Estes Park, Colorado, USA

***LTER Network Office new publication:***

***on:***

***Results from Prior Support;***

***US – International Research Projects***

***Other inter-country collaborative research***

***Networking challenges***

***Roles of other country governments***



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# “Cooperation in Long Term Ecological Research in Central and Eastern Europe”, 1999: Co-organized by Kate Lajtha, HJA LTER



Photo: <http://harvardforest.fas.harvard.edu>



Detritus Input and Removal Treatments (DIRT) Project  
replicated in Síkfőkút Forest LTER Site, Hungary in 2000



Photo: Lina DiGregorio



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**Mark Williams (Niwot LTER):** Establishing the International Mountain LTER Network

**Byron Adams (McMurdo Dry Valleys LTER):** The McMurdo Dry Valleys Terrestrial Observation Network: An International Effort to Coordinate Management, and Environmental Stewardship

**Tiffany Troxler (Florida Coastal Everglades LTER):** A Focus on Tropical Systems: ILTER Research Highlights from the Florida Coastal Everglades (FCE)

**William Bowman, Jill Baron (Niwot LTER):** Nitrogen deposition and alpine ecosystem function: Niwot Ridge, Rocky Mountain and Glacier National Parks, and the Western Tatra Mountains of Slovakia.

**Deb Peters (JRN LTER)** described her participation in a U.S.-Hungary project involving comparisons of grasslands at NSB.

**Scott Collins (SEV LTER)** comparing fire, climate and herbivore effects on tallgrass prairie in North America and mesic Savanna grassland in Kruger National Park, South Africa

Instaar.colorado.edu



News.byu.edu



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# Information Management Training (Capacity Building)



1993 – 5 Chinese Ecological Research Network (CERN) data managers attended 12-week course at Seville LTER to learn basic concepts of information management



On the sidelines of the 2013 LTER mini-symposium at NSF in February, the U.S. LTER and France's Zone Atelier (ZA-France) networks signed a MoU committing the two networks to share knowledge and skills through collaboration among sites and scientists.

IM Workshop, Lake Taihu LTER, China, 2008



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# 2002 ILTER All Scientists Meeting



**Changing of the guard!**

**and the celebration!**



# 2002: Time for an ILTER Organizational Change

- ILTER was an extremely successful effort to share the philosophy of LTER around the world and to support establishment of national networks
- By 2002, ILTER was a collection of individual LTER Networks with an umbrella committee that met annually
- ILTER, with NSF support, restructured in order to realize the goal of doing network-scale research



# Restructuring the ILTER

- NSF supported consultants to prepare ILTER Strategic Plan
- Hen-Biau King (Taiwan) Chaired ILTER network
- Patrick Bourgeron and Steve Hamburg chaired US ILTER Committee

**PATRICK BOURGERON**



**HEN-BIAU KING**



*Photo: John Vande Castle*

**STEVE HAMBURG**



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# ILTER Strategic Plan 2006: Staffing and Governance

- Executive Committee
- Coordinating Committee
- Science Committee
- Public Policy
- Fundraising and Marketing
- Information Management



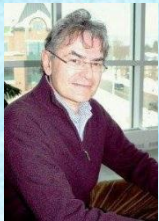
# ILTER Funding: Dues

- Member Dues and In-Kind Contributions
  - \$10K/year paid by US LTER
  - ILTER Budget is very small
- Seed money for IM improvements and ILTER research efforts



# ILTER Science and Programs Committee

- ILTER-wide Research Initiatives



- *“Interactions between Ecosystem Services, the dynamic behavior (thresholds/tipping points) of the ecosystems delivering these services, and their restoration potential: Impact of culture on ES perception (stakeholders’ non-economic valuation) and their use” – led by Patrick Bourgeron (US LTER, Chair ILTER Science Committee)*



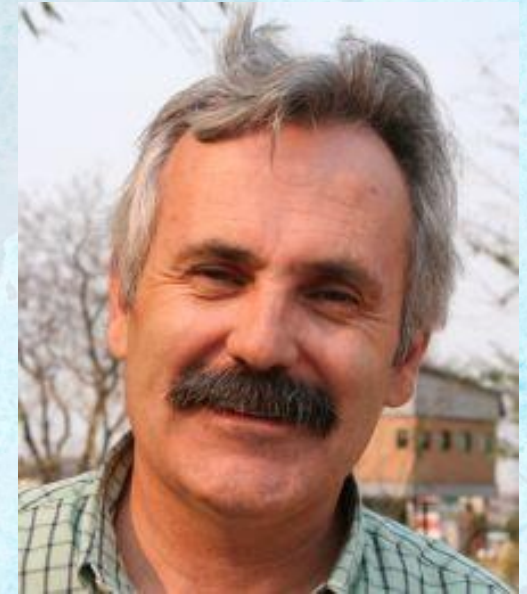
- *“Socio-biogeochemistry of nitrogen cascades and interactions” by Hideaki Shibata (JaLTER)*



- *“Ecosystem based local-scale impacts and adaptation practices in relation to global change drivers” by Martin Forsius (FinLTSER)*



# ILTER Future



Manuel Maass (LTER Mexico) – ILTER Chair as of  
September 2012



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## My Biased example:

**Research Coordination Network (RCN-SEES)**

**U of Idaho, U Montana, Washington State U**

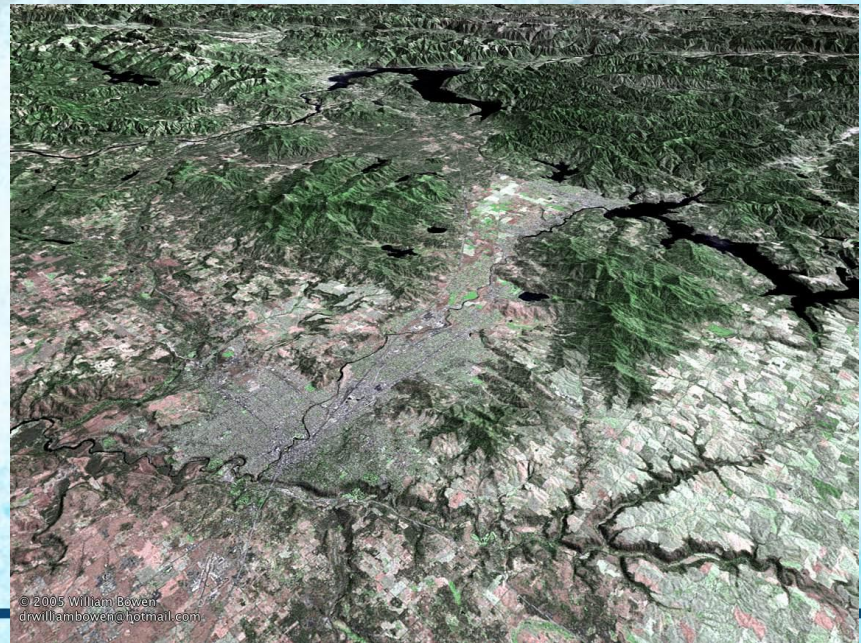
Mountain-valley environments that have been, or are in the process of in-migration, urbanization, and exurbanization are complex landscapes characterized by steep biophysical gradients and socioeconomic transitions, i.e., complex coupled human-natural systems. The RCN-SEES award addresses the overarching question: **How can we reduce the vulnerability of natural and human systems in complex mountain landscapes through national and international research partnerships?**



The main objectives of the Complex Mountain Landscapes RCN model development are threefold:

- 1) **Facilitate coordination, integration, and syntheses for existing programs and studies regionally and internationally;**
- 2) **Design collaborative interactive research, education, and governance projects with partners for the region and with other regions of the world; and**
- 3) **Create partnerships linking new informatics to produce linked, scalable models and methods that will help inform management decisions and better link non-governmental and governmental constituents who affect the resilience of these mountain systems.**

**Mark Williams (Niwot LTER):** Establishing the International Mountain LTER Network



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**Austria**

Sonnblick Observatory  
Institute for Mountain Research:  
Man and Environment (IGF)

**Canada**

Univ of Calgary, AB  
Univ of Lethbridge, AB  
Univ of Northern British Columbia

**Ecuador**

La Universidad Catolica de Loja,  
Universidad Technica Particular de Loja

**France**

National Center for Scientific Research (CNRS)  
Institute National de Recherches en Sciences  
et Technologies pour l'Environnement  
et l'Agriculture  
Centre Grenoble, Research Unit Mountain  
Ecosystems

**Germany**

Univ Berlin. Institute of Freshwater Ecology  
and Inland Fisheries

**Italy**

Universita degli Studi di Torino

**Japan**

Univ of Hokkaido

**Mexico**

Univ de Guadalajara  
Universidad National Autonoma d Mexico (UNAM)  
Center for Ecosystem Research, Morelia Campus

**Nepal**

Center for Molecular Dynamics

**Russia**

Russian Academy of Sciences, Institute of Geography

**Slovakia**

Slovak Academy of Sciences, Institute of Landscape Ecology

**Spain**

Univ of Granada

**Switzerland**

Swiss Inst of Technology  
Global Mountain Biodiversity Assessment—DIVERSITAS  
Mountain LTER Network

**United Kingdom**

Centre for Ecology & Hydrology

*Plus whatever Mark Williams and Patrick Bourgeron stir up!*



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# Thank you Kristin!

- Organizing Committee: Evelyn Gaiser (FCE), John Vande Castle (LNO), Dan Childers (CAP), Jeb Barrett (MCM)
- Memories and photos: Jim Gosz (SEV), Fred Swanson (HJA), James Brunt (LNO), John Vande Castle (LNO), Leanne Yanabu (LNO), Robert Waide (LNO)

