

High Mountain Glacial Watershed Program

Quarterly Newsletter



Issue 4

Building a Strong Community of Practice

The strength of our High Mountain Glacial Watershed Program Community of Practice is rooted in our diverse membership. Members range from anthropologists to hydrologists, covering a myriad of disciplines, but their work all addresses topics related to the high mountains. Geographically, our members hail from over 15 countries and work in all the major high mountains of the world, including the Hindu-Kush-Himalaya, Andes, Appalachia, Altai, and Alps mountains. This diversity lays the foundation for rich conversations and dialogue, bridging ideas between regions and disciplines. Our interdisciplinary approach is essential for successful high mountain projects because no single issue is confined to a lone field of study or location.

During our HMGWP international conferences, the strength of this diversity rises to the forefront. In September 2011, during our mobile workshop in Nepal's Khumbu region, HMGWP CoP members discussed both the hydrological and social issues related to risk management from the emerging threat of Imja Lake. This July, in Peru at the HMGWP's workshop "Managing Climate Change in High Mountain Glacial Watersheds: Promoting Social, Scientific, and Institutional Collaboration", we hope to replicate the same enthusiasm while providing a unique experience for CoP members to share their knowledge in peer-to-peer learning modules where CoP members will teach different tools and strategies that can be applied in high mountain work. Our fieldwork modules will be taught by the CoP members themselves and will cover a wide range of topics that include both technical and social science dimensions.

Perhaps more exciting, HMGWP CoP members are beginning to organize their own events outside of the formal HMGWP conferences. This winter, HMGWP CoP members organized sessions and panels at the American Anthropological Association (AAA) Meeting as well as the American Geophysical Union (AGU) Annual Meeting. This newsletter highlights the success of those meetings and other CoP members' recent accomplishments.

If you have any exciting news or stories about your work, please send them to us and we will include them in the next newsletter!

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Upcoming Events

- 2013 Association of American Geographers Meeting
(Los Angeles, April 9-13th)
- HMGWP CoP International Conference
(Huaraz, Peru, July 11-22nd)

The HMGWP CoP at the American Anthropological Association Meeting

By: Ornella Puschiasis

Upon the initial September 2011 Imja (Khumbu) Expedition, the subsequent Community of Practice (CoP) that was formed has been successful in creating an effective means for sharing knowledge in the high mountain community. The expedition to Khumbu brought several international scientists and experts together to exchange climate change knowledge and use Imja Lake as a backdrop for field-based discussions. The meetings in Kathmandu provided space for social science researchers Karsten Pærregaard (University of Copenhagen), Mattias Borg Rasmussen (University of Copenhagen), Pasang Yangjee Sherpa (Washington State University) and Ornella Puschiasis (Western Paris University) to interact and plan for collaboration.

During the American Anthropological Association (AAA) Meeting in San Francisco between the 14th and 18th of November, Karsten Pærregaard, brought together anthropology and geography scholars on a panel called: "Regional Crossings and Vertical Borders: Comparing Climate Change, Ecological Adaptation and Vertical Mobility in the Andes and the Himalayas". Three of the students: Mattias Borg Rasmussen (University of Copenhagen), Pasang Yangjee Sherpa (Washington State University) and Ornella Puschiasis (Western Paris University) had taken part in the 2011 Imja Lake Expedition.

The six papers discussed during the session and led by Ben Orlove, anthropologist at Columbia University, examined natural resource management, economic activities, family structure, social and political organization, migration practices, and state institutions in three Peruvian communities and three Nepali native communities. Each paper had a different perspective in analyzing how the communities use traditional strategies of adaptation and mobility to enhance their control over the ecological niches, exploit new natural resources, and invent alternative sources of income. The session detailed the common aspects of the ethnographies in Andes and Himalayas and showed the central differences between the regions. Furthermore, the panel focused on comparative issues between the Andean and Himalayan experiences and the importance of studying the particular problems that climate change cause for indigenous populations inhabiting mountains.

Through the AAA Meeting, professionals and stakeholders engaged in a dialogue across various regional, disciplinary, and national borders the panel contributed to not only a cross-regional anthropology of mountain ecology but also to a crossing of different regional engagements, providing a mix of disciplinary and cultural perspectives.

CoP Member Highlights

Ornella Puschiasis is a French PhD student in Geography working on the issue of climate change and socio-environmental dynamics, with a focus on the availability, management and perception of water in the High Khumbu region (Sagarmatha National Park, North-East Nepal). Ornella's studies hope to better understand the landscape and the intimate human-environment relations through the lens of water and an analysis of hydrological systems. She focuses on the local perception of water usage and practices in the Khumbu area and is trying to understand the inter-linkages between climatic and non-climatic drivers of change in a high mountain area. Ornella started her thesis in March 2010 and spent a year and half of fieldwork mostly in the Khumbu area, mainly in Pangboche village.



Ornella Puschiasis during a community consultation, 2011. Photo provided by Ms. Puschiasis

Karsten Paerregaard is professor in Anthropology at the Department of Global Studies, University of Gothenburg. His current research is focused on climate change, water scarcity and environmental migration in Peru and his publications include *Linking Separate Worlds. Urban Migrants and Rural Lives in Peru*, Oxford: Berg (1997), *Peruvians Dispersed. A Global Ethnography of Migration*, Lanham: Lexington Books (2008) and *The Question of Integration. Immigration, Exclusion and the Danish Welfare State*, Cambridge: Cambridge Scholars (2011). He also has a book manuscript currently under review (Stanford University Press) titled *Return to Sender. The Moral Economy of Peru's Migrant Remittances*.



Mattias Borg in the field. Photo provided by Mr. Borg.

Mattias Borg Rasmussen recently defended his PhD dissertation at the Department of Anthropology, University of Copenhagen. Entitled 'Prisms of Water: Abandonment and the art of being governed in the Peruvian Andes', it explores the ways in which water inflects political and ecological relations in the highlands of Ancash, Peru. He will now begin as a post doc at the Department of Food and Resource Economics, University of Copenhagen. The project is entitled 'Politics of Property: Territoriality, governance, and citizenship in highland Peru'.



Karsten Paerregaard in the field. Photo provided by Dr. Paerregaard.

Association of American Geographers Photo Contest Winners

The Association of American Geographers (AAG) hosts an annual photo contest for its members. This year, two HMGWP CoP members were selected as "Honorable Mentions" in the single photo and photo story categories. With their permission, we are reprinting their images and captions here. Congratulations, Jeff La Freniere and Alton Byers!



Alton Byers with "Khumjung Village, Nepal"

Chimborazo

All photos and commentary by: Jeff La Freniere



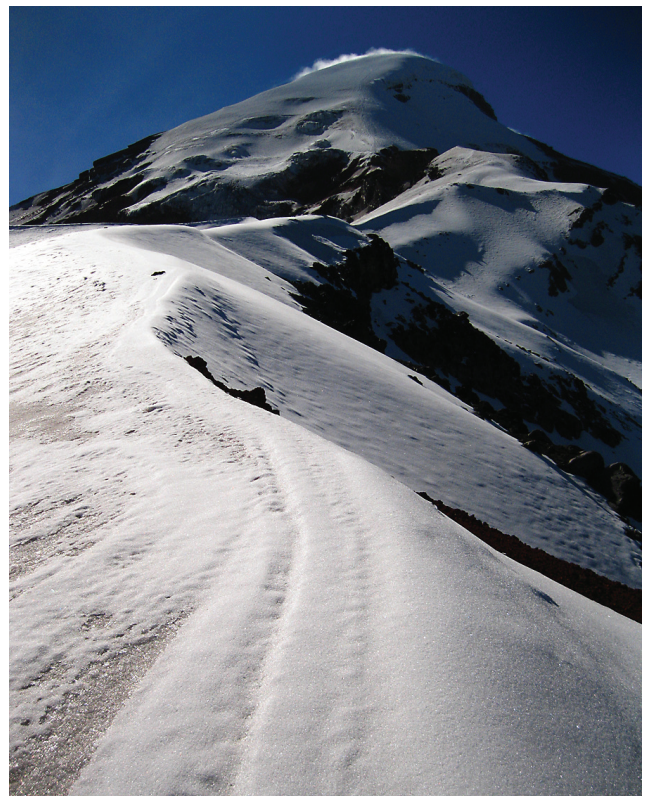
Volcán Chimborazo is a towering presence - both physically and culturally - in the Andes of Central Ecuador



Its glaciers are the most visible component of a hydrologic system that provides essential water for the agrarian households on its lower flanks



The mountain's glaciers are rapidly retreating as the regional climate changes to one of warming temperatures and more variable precipitation. Locals are very aware of these changes and they voice concern about the transitions they see occurring on the mountain, where once white slopes are now growing increasingly bare. They say, "when we were young there was more snow and ice on the mountain. We need water to survive. What will happen ten years from now?" As a geographer trained to recognize the tightly interwoven character of human and natural systems, I am using my expertise to help answer that question. Chimborazo is a challenging research environment, with its high altitude and frequently poor weather



Chimborazo is also a tremendously satisfying research environment, with its warm and generous people and spectacular landscapes





In the end, this work will not alter the climatic changes the people of Chimborazo are facing, but it will, hopefully, reduce a little of their uncertainty and give them the information they need to make informed water management decisions for the future

American Geophysical Union Conference Session a Great Success!

The American Geophysical Union held its annual Fall Meeting in San Francisco, California during the week of December 3-7th. The HMGWP hosted both a poster session and an oral session at the meeting. The poster session, "Climate Change in Mountain Environments" took place on Monday, December 3rd, and the oral session, "Water Supply in Glacierized Mountain Watersheds: Monitoring Hydrologic Transitions and Assessing Vulnerability in a Changing Climate", was on Friday, December 7th. Abstracts from the poster session are available on the AGU website here: <http://fallmeeting.agu.org/2012/scientific-program/>

Throughout the conference, HMGWP CoP members presented results from their research in high mountains around the world and had the opportunity to discuss new ideas, research questions, and potential collaboration. An informal HMGWP CoP Happy Hour provided an ideal atmosphere to continue conversations started at the oral and poster sessions. Thank you to all who attended!

Lessons from the Bhutanese Experience Managing Glacial Lakes

From 5-7 December 2012, Dr. Alton Byers, HMGWP Co-Manager, attended the International GLOF (Glacial Lake Outburst Flood) Conference in Bhutan that was hosted by UNDP Bhutan. The goal of the conference was to provide a platform for sharing lessons from the Bhutanese experience and to serve as a scientific forum for knowledge exchange and technical cooperation among stakeholders in enhancing our understanding and approaches in managing climate change-induced GLOF risks and vulnerabilities. Ten HMGWP CoP members from the Hindu Kush Himalaya, Japan, and Andes were invited; however, only Dr. Byers was able to attend.

Byers made a presentation entitled, "An Introduction to the HMGWP: Community-based glacial lake risk reduction in the Sagarthma (Everest) National Park, Nepal" and chaired two sessions: "Perspectives on Regional and Global Information Sharing and Cooperation" and "Recommendations on GLOF risk mitigation (structural and non-structural measures) and information sharing". The latter of which resulted in a list of best practices that was adopted by the workshop as part of the concluding summary report. In addition, the 2011 and 2012 Imja Lake Expedition videos were screened for participants. You can view at the HMGWP Adaptation Partnership Website (www.adaptationpartnership.org).

In addition to two days of presentations, a field-trip to a GLOF early warning system control room at the Flood Warning Site Office at Wangchue was conducted. The conference and field-trip allowed participants to learn more about the Bhutanese experience in managing dangerous glacial lakes. In particular, the Thorthorni glacial lake project provided a wealth of knowledge and lessons that can be applied in other regions of the Himalayas and the world. The Thorthorni glacial lake project has been particularly well documented and offers a wealth of experience and lessons learned in Himalayan glacial lake lowering methods, community consultations, and community-based disaster risk management that will be of great value to the HMGWP. At the same time, the Bhutanese were quick to acknowledge the many challenges encountered in the project's implementation, from the lack of attention to worker health that led to several altitude-related deaths, logistical and transportation difficulties, development of an early warning system that currently has few funding options for continued operation beyond 2014, building trust among local people, and managing 400 poorly outfitted workers at the lake site.

Perhaps equally exciting, many participants from South Asia attended the conference and have since joined the HMGWP Community of Practice in the hopes of using this platform as an opportunity for knowledge-sharing. Several of these new CoP members will participate in this summer's HMGWP CoP International Workshop to be held in Huaraz, Peru.

Research Highlights

HMGWP CoP members have been busy publishing many articles and reports of interest to the HMGWP. See the article information and links below for further details.

Recent Related Publications

Paleoglaciological Basis for Long-Term Forecasting of Glacial and Climatic Changes as Factors of Eurasia High Mountains Cryodynamics, Shatravin VI, Tien Shan High Mountain Research Center, Kyrgyz Republic, available at: HMGWP Adaptation Partnership Website

Garrard, R et al. 2012. An Ever-Changing Place: interpreting landscape change in Sagarmatha National Park, Nepal; re-photographic survey and encounter. *eco.mont* 4/2: 49-55. The article can be downloaded from Dr. Garrard's website dedicated to the project: <http://www.environmental-management-21.com/publications>

Garrard, R et al. 2012. Depicting community perspectives: repeat photography and participatory research as tools for assessing environmental services in Sagarmatha National Park. *eco.mont* 4/2: 21-32. The article can be downloaded from Dr. Garrard's website dedicated to the project: <http://www.environmental-management-21.com/publications>

"Contemporary human impacts on subalpine and alpine ecosystems of the Hinku valley, Makalu-Barun National Park, Nepal," by Alton Byers, accepted for publication on 19 March 2013 by *Himalaya: The Journal of the Association for Nepal and Himalayan Studies*.

"Glacial Lakes of the Hinku and Hongu Valleys, Makalu-Barun National Park and Buffer Zone, Nepal", by Alton Byers, Daene McKinney, Marcelo Somos, Teiji Watanabe, and Damodar Lamosil, accepted for publication by *Natural Hazards* on 20 March, 2013

The Nature of Everest, by Alton Byers. In: *The Lure of Everest*. Washington, DC: National Geographic Society, March 2013.

Mountains: Human and Physical Dimensions, edited by Martin Price, Alton Byers, Don Friend, and Thomas Kohler. University of California Press at Berkeley. Publication date: September 2013.

Discover Magazine, "An Interview with Alton Byers," forthcoming in May 2013.

Recent HMGWP Reports

Ground Penetrating Radar Survey for Risk Reduction at Imja Lake, Nepal, by Marcelo Somos-Valenzuela, Daene C. McKinney, Alton C. Byers, Katalyn Voss, Jefferson Moss, James C. McKinney (submitted as a deliverable last quarter, awaiting comments from Engility)

Bathymetric survey of Imja Lake, Nepal in 2012, by Marcelo A. Somos-Valenzuela, Daene C. McKinney, Alton Byers, and David Rounce (submitted as a deliverable this quarter)

Local Adaptation Programme of Action (LAPA) Framework by Alton Byers, Ang Rita Sherpa, Phurba Sherpa, Brian Peniston, and Dambar Thapa (submitted as a deliverable this quarter)

Safety Measures in Dangerous Glacial Lakes in the Cordillera Blanca, Peru by Cesar Portocarrero (submitted as a deliverable this quarter—a decision needs to be made regarding final editing, formatting, and publication of the document in time for the July Peru workshop)

Research at Huascarán National Park, by Daene McKinney, Rachel Chisolm, Marcelo Somos-Valenzuela (submitted as deliverable this quarter. Document includes reporting of GPR investigations of Arteson Glacier and Pastoruri Glacier in Peru in July 2012).

Guide to the Cordillera Blanca/ Gui Cordillera Blanca (in Spanish), translation completed for improved access to knowledge about watersheds and high mountain ecosystems (submitted as a deliverable this quarter)

Percepciones Catac and Percepciones Quillcay by Cristina Giraud and TMI Peru staff – summary of risk perception studies completed in Catac and Quillcay watersheds (submitted as a deliverable this quarter)

Definición de necesidades by Oliver Gonzales – summary of the public investment work to date and strategy to ensure private investment projects are completed by Ancash municipalities (submitted as a deliverable this quarter)

Triptico Quillcay and Triptico by TMI Peru staff – pamphlets regarding watersheds and risk of a GLOF in Quillcay (submitted as a deliverable this quarter)

Forthcoming Presentations

NGS Live!, 6 May 2013, “The Call of Everest,” Alton Byers with Conrad Anker, Mark Jenkins, Emily Harrington, National Geographic Society, Explorers Hall

Foreign Service Institute, 9 May 2013, Alton Byers on “An Introduction to the High Mountain Glacial Watershed Program.”