

# HARDWARE STORE HERALD

Volume 13

News from the Wrangell Mountains Center

Winter 2012/13

**The Wrangell Mountains Center fosters understanding, appreciation, and stewardship of wildlands and mountain culture in Alaska through scientific and artistic inquiry in the Wrangell Mountains.**



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## WMC & Willow Creek Watershed Council Share Monitoring Efforts

The Willow Creek Watershed Consortium (WCWC) in Kenny Lake is getting technical assistance from the Wrangell Mountains Center in establishing and operating a long-term monitoring program. Barry Hecht, WMC Science Committee chair, has been establishing stream gages and monitoring wells which the WCWC monitors on a year-round basis. WCWC, led by long-time resident and former high-school biology teacher David Wellman, is now in its third year of measuring watershed hydrology and ecology in this complex watershed, a microcosm of landscape types seen in the Copper River Basin. Willow Creek rises on the slopes of Stuck Mountain, flows beneath the pipeline and the Richardson Highway and Edgerton Cutoff to the Tonsina River, south of central Kenny Lake. Vegetation, creek flow, and its salmon population have all discernibly changed during the lifetimes of older residents. The project aims to make straightforward and careful measurements which can be repeated within the next 50 years to allow residents to measure and

understand how streams, soils, springs, and lakes—and the biota they support—are evolving as climate and land-cover change.

The project involves collaborative assistance from the local National Resources Conservation Service (Arlene Rosenkranz), the Kenny Lake Soil and Water Conservation District (Doug Vollman), Kenny Lake high school students, volunteers, the WMC, Copper River Watershed Project, and UAF-Extension. The WMC assisted the WCWC in setting up two gauging stations and monitoring wells and the observation retrieval system, in addition to helping with measurement questions and data reduction. Now that the measurement network has been established, the challenge for 2013 will be to better understand the sources of springs which support salmon spawning in lower Willow Creek and then to identify how to track changes in flow over the coming decades. The WCWC records, including monthly meeting minutes, can be found at [WillowCreekWater.org](http://WillowCreekWater.org). ∞

## Porphyry Place Expansion Underway

By Jeremy Pataky

The WMC concluded our capital campaign successfully last winter with the purchase of the Ed LaChapelle and Meg Hunt property adjacent to our Old Hardware Store headquarters. While focusing on planned repairs and renovations for this first year, we were able to use some of the space for limited programming already this summer.

We started moving in right away, and held a volunteer work party and a yard sale at Porphyry Place during Memorial Day Weekend. The 2nd International Summer School in Glaciology used the main cabin as their lecture hall and the Hardware Store for meals and projects, a large-program test-drive that worked very well. We also employed the main building for a couple Summer Arts and Lectures Series events (the first one, Bob Anderson's talk on local glaciers, drew over 120 people) and a Solar Power and Battery Maintenance



Andy Aschmenden

Porphyry continues on page 9

## Director's Note

“Exactly what is the Wrangell Mountains Center’s vision for the future? What is your agenda?” asked a local year-round McCarthy resident point blank one night last summer. He seemed wary of what my answer might be. It’s no wonder that the future of the region is on people’s mind—change is no stranger to the Wrangells, but it seemed to quicken its pace over the last year. Just looking close to home around the Kennicott Valley, the year brought dramatic advances in telecommunications, significant improvements of the McCarthy Road, and changes in management at Wrangell-St. Elias National Park. New businesses opened and a new 5,000 foot runway appeared on the west side. A 21st century gold (or copper?) rush in the shape of new high-dollar jobs at Kennecott kept money flowing, and the McCarthy Lodge stayed open late into the fall. There’s even a local baby boom. The WMC itself took possession of new buildings and land while offering a widening array of programs.

What are we up to, and how does it fit into what’s happening in the valley? I was glad this concerned citizen, neighbor, and resident initiated a conversation, something that doesn’t happen enough in a place where impressions and assumptions can last for decades.

Organizational development and strategic thinking about how we will continue meeting our mission are topics at the forefront of many current conversations. One of the best exemplars of WMC values is our college program, now going into its 31st year, which inspires us to do what we can to sustain those wild qualities of the region that gave rise to that program in the first place, and to keep it alive and well alongside our younger programs, too.

The mountains of Wrangell-St. Elias are among the best places on earth to learn about change and instability in conditions far from equilibrium. The place affords opportunities for learning that is scientific, an inquiry into mechanisms: ecological succession and adaptation, energy and material transport, tectonics, rheology. It is also cultural, about the ways people live with rapid change and instability, and about the formation and conduct of communities in a place where nature demonstrates this power. And it is about wilderness, not only as a legislated land management category, but also wildness, what Thoreau called “the preservation of the world,” and about the experience of living consciously and intimately with the world. These experiences can train people to act effectively and live happily amidst complexity and uncertainty.

I’ll share one more thought, written before I was born and long before I came to the Wrangells, that has something to do with those elusive questions about what



Nathaniel Wilder

it means to call McCarthy home in an era when everything is changing around us. Jay Hammond was Governor of Alaska during construction of the Trans-Alaska Pipeline System; he oversaw the creation of the Permanent Fund. Incidentally, he happened to be one of the survivors of a rafting accident on the Tana River in Wrangell-St. Elias National Park that killed three people. When he came into office, he invited Robert Weeden to serve as his planning director. Weeden was a close friend of Dick Cooley, who helped found the Environmental Studies Department at UC Santa Cruz in 1970, as well as the WMC’s own college field course. In his book, *Alaska: Promises to Keep*, published in 1978, Weeden wrote:

No one can read letters to editors of Alaskan newspapers, listen to the congressional debates about new parks for Alaska, or examine Alaskan opinion surveys without coming to the conclusion that wildness is a highly valued Alaskan asset. By “wildness” I mean a general characteristic of landscapes, complex in its derivation but easily recognized once experienced, which can pervade and dominate sparsely inhabited as well as unsettled places. I do not mean only Wilderness, a very specific statutory land designation designed to describe the commercially forgotten nooks and crannies of long-settled states. Scattered cabins and villages do not mar wild country in the Alaskan context as long as the habitations and inhabitants are spiritually as well as economically connected with the landscape. Commercial and even industrial activities can sometimes be carried out without grossly assaulting wildness, though at some threshold point (admittedly a subjective one) the palpable disruptions of air clarity, water purity, soil stability, silence, and vegetation mosaics destroy that character.

Though a great many conversations could be sparked by this passage, and hopefully will, a couple threads seem relevant to last summer’s neighborly questions. Of course Weeden correctly distinguishes Wilderness from wildness, and wisely notes that people – with our structures, businesses, guns, stories, chainsaws, and money – are not necessarily problematic or antithetical to wildness. Indeed, people have always been a part of the land, and our most profound senses of place are often shaped through culture, with its objects and legacies. This is acutely clear in Alaska, including in the Wrangells.

The taste of wildness—and the sense and fact of personal freedom that come with it—is a large part of the appeal of the Wrangells for me and for many people in the area, I think. Many others are glad to imagine a place

like it exists, but would never want to actually live in it. What does Weeden mean, exactly, when he talks about “habitations and inhabitants” being “spiritually as well as economically connected with the landscape”? Where would Weeden, from his own subjectivity, place the present-day Wrangell-St. Elias region and its 23 subsistence resident zone communities in relation to that threshold?

Perhaps one indicator of local wildness is the fact that nearly everyone would imagine that threshold point differently (or reject the idea outright). The Wrangells do not grow a cultural monocrop and hopefully never will. My hope for the Kennicott Valley itself is that the residents – all of them, McCarthy Area Council members, and not; WMC supporters, and not; seasonal residents and year-round residents – will care for those wild qualities and for each other. In an era of change, what are these qualities of place that people will not abide losing? Hopefully the WMC plays a positive role in helping us individually identify what’s important about the place, recognizing this is the first step toward protecting our own local wildness. ∞

*Jeremy Pataky*



Jeremy Pataky



*Top: Governor’s Award-winning artist Bill Brody explains his work and creative process, as well as some new finished and unfinished paintings done in the Wrangell-St. Elias backcountry, in a WMC public presentation at Porphyry Place. Below: A glaciology lecture by Dr. Bob Anderson packs the house in our first public lecture in the new space.*



## Another Successful Year of Programs

By Eleanor Jensen

The 2012 season at the WMC was full and rewarding. Both returning and inaugural programs filled up the summer calendar and each was successful, providing mission-relevant education to visitors and locals. The season started with a gardening workshop taught by Robin Underwood in May and was followed by the 10-day International Summer School in Glaciology program, offered in partnership with UAF. The 30th Alaska Wildlands Studies program brought together a talented staff to provide a field-based curriculum to undergraduate students in the Wrangell Mountains. New programs included Michelle McAfee’s Songwriting Workshop, the Plein Air Painting Workshop taught by Linda Lyons, and the Creative Cloth Workshop taught by board member Maria Shell. Each of these workshops was creatively engaging for both instructors and participants and produced remarkable results. Two other residential programs begun in 2011 were Kristin Link’s Natural History Field Sketching and Journaling Workshop and the Wrangell Mountains Poetry Workshop, taught by Dan Beachy-Quick. These workshops continued this year to provide a stimulating and thoughtful space for participating artists and writers.

The WMC organized another year of Summer Arts and Lectures Series (SALS) events, Mountain Arts for Youth (MAY) activities, and nature walks this past season. The SALS offered a full line-up of diverse presentations and events. Some highlights included: the “Historical and Current Perspectives on Wrangell-St. Elias National Park & Preserve” panel discussion; presentations by Anchorage Museum curator Julie Decker, fire ecologist Jennifer Barnes, artist and Governor’s Award for the Arts recipient Bill Brody, wilderness athlete Luc Mehl; and an incredible Community Word Jam in August. Margot Higgins kicked it off with a lecture on phenology and the National Phenology Network. MAY activities engaged area youth and included a long-standing annual favorite, Kris Gregory’s block-printing workshop. The WMC partnered with the McCarthy-Kennicott Historical Museum for a second year to offer “Kids Making History”, a one-day program led by Maria Shell. Board member Barry Hecht’s regional knowledge was a memorable component of the WMC nature walks, as well.

We look forward to the next season in 2013 as we work to offer place-based education in McCarthy and the Wrangell Mountains. Please check our website, [www.wrangells.org](http://www.wrangells.org), for current information on programming in the coming months. ∞

## The 2nd Intl. Summer School in Glaciology

adapted from a report by Alexandra Giese and Gunter Leguy

Nestled at the end of a long dirt road, 61 miles from the nearest gas station in the town of Chitina and a day's drive from Fairbanks, lies McCarthy, Alaska. A vestige of the early 20th century copper boom in up-valley Kennicott, McCarthy possesses the character of a former era while simultaneously reemerging as a center for both tourism and natural science education.

The Wrangell Mountains Center (WMC), based out of McCarthy's Old Hardware Store, exemplifies sustainable living at its best: the water comes from a surface spring, what minimal electricity is used comes from solar panels, the restrooms are outhouses, the vegetables and herbs are from the garden out back, and all prepared meals are vegetarian.... On June 10, 2012, our group of 36 scientists from all over the world descended upon McCarthy for the second WMC-hosted International Summer School in Glaciology.

The summer school is an intensive, nine-day course drawing 27 glaciology graduate students from the U.S., Argentina, Australia, Austria, Belgium, Brazil, Canada, Denmark, France, Germany, and the United Kingdom. Only 15 of the 27 students were from U.S. institutions. The nine instructors\* are prominent figures in the field and hailed mostly from University of Alaska at Fairbanks (the organizing university) but also from CU Boulder, Clark University, and University of Manchester, U.K. The course goal was to provide students with a "comprehensive overview of the physics of glaciers and current research frontiers in glaciology" through formal lectures, group work, advised projects, and interactions with scientists researching a diverse range of glaciological questions....

...The glaciological topics covered during the course ranged from the remote sensing of glaciers through satellite data to climate change impacts on glaciers, and from ice sheet modeling to research frontiers in the field. After four hours of class, we ate lunch and, on most days, spent several afternoon hours completing exercises to reinforce the morning's teaching. To introduce a research component into the course, all of the instructors advised student projects they had carefully designed to fit the nine-day time constraint while still posing significant scientific questions. They worked closely with groups of two or three students who expressed topic preferences—ranging from surface energy balance to inverse modeling—prior to the start of the course.

Perhaps even more valuable than the formal curriculum, however, were the interactions with instructors who took more



Andy Aschwanden

than a week out of their busy schedules to live with and teach graduate students. They didn't show up, lecture, and then leave. Instead, they sat in the Old Hardware Store with us when we were working on our exercises and projects, ready to answer questions or offer suggestions. They ate with us, some camped with us, and they socialized with us in the evenings, often around a bonfire, engrossed in conversations that inevitably—but organically—returned to science.

In addition to direct contact with esteemed and engaging faculty, we had formal opportunities to connect with our fellow students on an academic level. We were required to bring a poster summarizing our graduate research and, on one of the first days, we had a poster session during which we learned about our future colleagues' work, practiced communicating about our own work, and shared feedback.

Whilenotspecifically a "fieldcourse," the summerschool also had designated time for exploring the nearby glaciers. Some student projects involved fieldwork (e.g. photogrammetric or radar measurements of the ice), and the group also devoted one and a half days to exploring the Kennicott Glacier and its tributary, the Root Glacier. Bob Anderson of CU Boulder

conducts much of his research on how the Kennicott Glacier responds to the evolving hydrologic system in the glacier, including the rapid drainage of the side-glacier Hidden Creek Lake. He gave us tours on the ice and around the sediment at its terminus. In another lake basin beside the glacier, located a few hours' hike over the ice, he downloaded his water pressure gauge and his time-lapse video of lake level fluctuations from May to the present. He also showed us the gauges anchored to the Kennicott River bridge at the terminus, which record the river stage over the season including the flood when the ice-dammed Hidden Creek Lake outbursts.

Of course, we did some exploring, too. Many of us took our first steps on glacier ice, but for the first-timers and seasoned glacier travelers alike, the surroundings were awe-inspiring. The melt-fed rivers, medial moraines, moulins, icefall, supraglacial lakes, and surrounding cliffs left all of us speechless. The highlight of the day on the ice was the discovery of a winding canyon of ice in the middle of the glacier. With our crampons on, we were able to explore this narrow passage, melted by a supraglacial stream, and marvel at its incomparable blue color.

When Bob Anderson gave a public lecture for the WMC's Summer Arts and Lectures Series, he began by reflecting on why scientists study glaciers. Yes, they're

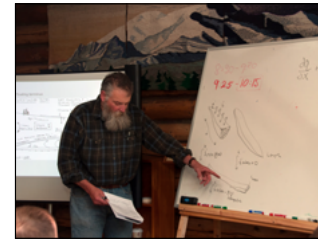
important for understanding and predicting the effects of climate change. Yes, they affect water and agricultural resources. But most of all, we study them because they're cool.

Our nine days in McCarthy proved to be productive and formative ones. The connections we made with fellow scientists from across the globe and the opportunity to marvel, collectively, at the breathtaking beauty of the bodies of ice we all study renewed our dedication to understanding their characteristics and the role they play on Earth. ∞

\* Students would like to thank the instructors for their time, dedication, and advising: Regine Hoek (principal organizer; University of Alaska Fairbanks), Andy Aschwanden (UAF), Ed Bueler (UAF), Mark Fahnestock (UAF), Martin Truffer (UAF), Bob Anderson (University of Colorado at Boulder), Roger Braithwaite (University of Manchester, U.K.), Alex Gardner (Clark University), and Tad Pfeffer (University of Colorado at Boulder). Generous funding from the following sponsors supported the course and substantially subsidized student tuition: NASA, International Glaciological Society, College of Natural Sciences and Mathematics, University of Alaska Fairbanks, Geophysical Institute, and International Union of Geodesy and Geophysics/International Association of Cryospheric Sciences. These organizations made our experience possible, and we hope that the International Summer School in Glaciology will reconvene for many years to come, providing future graduate students with the same opportunity to interact with peers and senior glaciologists in an intimate setting.



Andy Aschwanden



Big thanks to outgoing board Treasurer Thea Agnew Bembem! She served since 2006 and will be missed. And welcome aboard to new board member, Margot Higgins. Having taught in the Wildlands Studies program and served as the interim Executive Director for the WMC in 2006, Margot is a PhD candidate at UC Berkeley and a fellow for the George Melendez Wright Society and the Murie Science and Learning Center. As a part of her larger dissertation research which examines how the ANILCA legislation has played out in Wrangell-St. Elias National Park and Preserve, Margot has been documenting the phenological observations of park residents in relation to shifting climate patterns. Margot is also assisting the NPS with setting up a system for park visitors and residents to keep track of observations related to changing climate conditions in the park through the National Phenology Network ([www.usanpn.org](http://www.usanpn.org)). We're glad to have her on the board! ∞

**Wanted: New Board Members!** We seek dedicated individuals willing to actively work to fulfill the WMC mission in an exciting time of new growth and opportunity. The board position description and application are available on our website at [www.wrangells.org](http://www.wrangells.org). Applications may be submitted by email or mail any time. We will review applications on a rolling basis by January 1, March 1, and September 1. We are especially looking for members with financial, organizational management, or scientific expertise, as well as people based in the Copper Basin. Questions? Contact WMC Development Committee Chair, Maria Shell, at 907-375-8931 or [mariashell14@gmail.com](mailto:mariashell14@gmail.com) or any existing board member.

## AWS Alum Returns to the Wrangells

by Kalila Feineman

Determining the influence of past events on one's life trajectory is not a scientific process. My assessments of the Alaska Wildlands Studies program's effect on me are neither objective nor particularly clear. There can be no doubt that AWS has had a major influence on me. I have never participated in a program so successful at using the outdoors as a classroom and laboratory for personal growth and exploration. I have never participated in a program so successful at creating meaningful, lasting connections between students and the natural world.

If I learned anything that summer, it was the value of creating space. There were signs of it everywhere. The landscape created space for us to explore and expand. I had never been to such a giant playground. The faculty created space for us to delve deeper into our own personal responses to the landscape. Thanks to some incredible teachers and mentors, I began to understand the diversity of ways that humans can connect with nature, all of them valuable. And I was given the space to learn that writing was a particularly powerful way for me to explore the internal landscape and forge a relationship with the natural world.

It has been 17 years since I attended the Alaska Wildlands Studies program. Today, I work as an environmental educator, charged with connecting people to the outdoors. As I navigate a school system increasingly focused on pre-determined standards, and a field (environmental education) bent on maintaining relevancy within a standards-based system, I am under constant pressure to tailor my programs to the priorities of teachers, administrators, and policy-makers. The visceral experience of actually exploring and expanding students' personal connections to nature should not be marginalized. The quality and depth of my experience in the AWS program helps me remain dedicated to providing students with the opportunity to experience nature's lessons first-hand, the way I did so many years ago in the Wrangell Mountains. Time has proven to me that these are the lessons that last. ∞

## WMC Publishes Bear Safety Pamphlet

By Jeremy Pataky

The Wrangell Mountains Center published an educational bear safety pamphlet in partnership with the McCarthy Area Council, the independent McCarthy Bear Committee, and Wrangell-St. Elias National Park and Preserve for distribution in and around McCarthy. The project was launched after the McCarthy Bear Committee determined that the community could benefit from heightened education targeting area visitors about camping and living in bear habitat. With artwork by local artist Kristin Link, language by the independent McCarthy Bear Committee, including Mark Vail and Lilly Goodman-Allright, and layout and design by Jeremy Pataky and Kristin Link, the full-color, tri-fold brochure is meant to supplement information that the National Park Service primarily distributes in Kennecott at the Visitor Center during business hours. With messaging local in flavor and more readily available at early points of visitor contact (campgrounds, McCarthy businesses, et cetera), we hope that the brochure will help minimize the food-conditioning of bears in the Kennicott Valley and thus make the area safer for everyone. ∞

## Pick.Click.Give. Picks Up

**Pick.  
Click.  
Give.**

56 individual Alaskans gave portions of their Permanent Fund Dividend totaling \$3,931 directly to the Wrangell Mountains Center through the Pick.Click.Give. Permanent Fund Charitable Contributions Program in 2012. That total is up from the \$2,675 received the year before! Big thanks are due

to this year's donors, including the 16 people who gave anonymously. Our youngest donor this year was 12 years old. One repeat donor gave \$650 this year, and said that since his own financial needs were taken care of, he felt like sharing his dividend with organizations working on behalf of Alaska. We thank everyone who shared part of their dividend with the WMC. The program provides a safe, secure and easy way for Alaskans to donate to the WMC and keep our educational mission alive. Please remember the Wrangell Mountains Center when filing time comes around again this year, Alaskans! If you did not designate a portion of your dividend this year or if you are out of state or new to Alaska and would like to give a secure, online donation, please visit our website: [www.wrangells.org](http://www.wrangells.org). Thanks for your support. ∞



## Field Sketching in the Wrangells

by Kristin Link

In mid-July nine curious souls convened at the Old Hardware Store in McCarthy for three days of field sketching and exploration. Participants ranged in experience and skill level, and each person brought an inquisitive, open mind and the readiness to share with each other and try new techniques. Most people agreed that among their favorite exercises was a focused observational leaf drawing exercise and creating a memory map that illustrated sights and sounds from a walk around the Hardware Store. We also had the chance to study some of the WMC's natural history collection (cool bones and rocks!), talk about painting landscapes, hike up McCarthy Creek, and—my personal highlight—receive a brief lecture by geologist Barry Hecht on how a scientist uses drawing in his field notes. Thanks to the workshop participants for sharing their work and ideas with each other and to the HWS staff for making delicious food and providing excellent support.

When I wasn't teaching, I had my own field sketching adventures last summer. Inspired by my artist-in-residence experience in the Gates of the Arctic National Park in August 2011, I applied for and received a Rasmuson grant to conduct my own artist residency in Wrangell-St. Elias National Park. My sketchbook, paints, and I spent time exploring the backcountry from Glacier Creek, to Bremner, to Upper Martin Creek and beyond. As an artist-naturalist, I try to find and tell the story that each unique place has to share with me during my visit. The work is personal and intimate, while also informative about the plants and animals I see. My fieldwork from the summer will be on display at the Alaska State Museum in Juneau from November 2, 2012 through January 12, 2013. Learn more about my artwork and current projects at [www.kristinillustration.com](http://www.kristinillustration.com). ∞



Watch our website for details on Kristin's August 20-24, 2013 workshop.

## Community Swallow Monitoring Project

By Alexandra Rose

As many of you know, I've been monitoring the swallows that breed at Long Lake since Cliff Collins passed away in 2005. McCarthy has long been home to its own population of breeding swallows—there are both Tree and Violet-green swallows that breed here. You can find them nesting in the birdhouse “condos” above the Saloon and Ma Johnson's, on the side of the Wrangell Mountains Center buildings, in other peoples' birdhouses around town, and in cracks and crevices in old siding all the way up to Kennicott. But few of these locations are ideal for studying the birds because they're hard to reach and many of the boxes can't be opened up easily. So, last summer, I had a 4th of July work party at Porphyry Place to build 30 swallow nest boxes that Tamara Harper and I have hung up around McCarthy.

The motivation for putting these nest boxes up is to start a community swallow monitoring project. I would like to recruit volunteers of all ages to help me follow the breeding behavior of the birds—counting eggs, chicks, and following how those chicks grow and survive. Just like Cliff Collins did at Long Lake, I plan

to band adults and chicks so that we can see what happens to them year after year. A recent study on tree swallows and patterns in nest box occupancy suggests that tree swallow populations are declining, especially in the eastern portion of their range. Unfortunately, this pattern also seems to hold for the birds at Long Lake. Gathering data on McCarthy swallows will help us understand how widespread this decline is, and will give us lots of other useful data that we can use to answer various questions. All nesting data we collect will be contributed to a nationwide database via the Cornell Lab of Ornithology's NestWatch project. Science aside, it will be a fun way to interact with some of McCarthy's most-loved summer residents, our swallows. Please contact me at [Alexandraprose@gmail.com](mailto:Alexandraprose@gmail.com) if you're interested in participating or learning more. ∞



Jeremy Pataky



Bruce Lyon



## Artist Residency Program Develops

by Eleanor Jensen

Maine-native Greta Ault Van Campen was a visiting artist at the WMC this past summer. Alaska was the final state in her “Greta Paints America” project, in which she created work in all 50 states in about one year. Her intention was to use the act of painting to look closely and honestly at her surroundings, and to paint a portrait of the country. Greta worked mostly outside during her mid-summer visit and contributed both sketches and complete paintings to the WMC. She also instructed a watercolor session with the WMC's college students and presented artwork from her other travels. Greta engaged in the place and community, and it was a mutually rewarding experience for her and the WMC. Her “Painting America” work is currently on exhibit at Dowling Walsh Gallery in Maine.

Greta's experience at the WMC was an example of how beneficial it can be to provide time and space for the creation of new work and the exploration of ideas. The WMC is making progress in establishing a formal residency program where committed individuals from all disciplines can research, collaborate, and develop their



Jeremy Pataky

work. We began upgrading two live/work spaces at Porphyry Place this past season and plan for them to be available for residency use soon. We are researching funding and partnership possibilities, and are currently working on a program design that has both front-country and back-country components in partnership with the Park, using Porphyry Place and Bremner Mine.

In addition, I received partial funding from the Alaska State Council on the Arts to participate in the Alliance of Artists Communities (AAC) annual conference in Kansas City, MO this fall. The AAC is a national and international association that provides resources for residency programs and advocates the role that artists play in strong communities. The conference was informative and inspiring to me—both as a WMC representative and as an artist. As we move forward in the residency process, we build upon the talents and contributions of those who have supported it in the past and those who will continue to be involved in this endeavor. Stay tuned for developments as we pursue this exciting component of organizational and program growth at the WMC. ∞

*Join the team! Stay tuned to our website and Facebook page for upcoming job announcements at the Wrangell Mountains Center.*

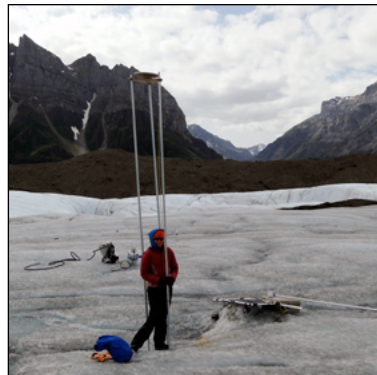
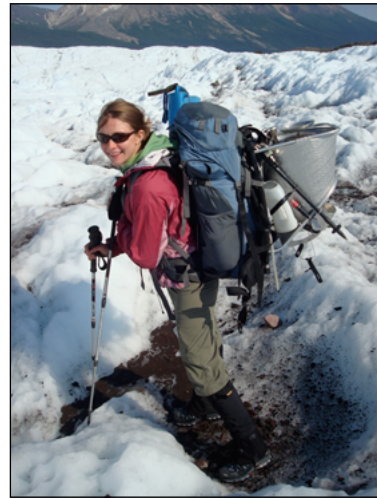
## Conduit

by Blair Hensen

We were setting up the first work site when the first shift happened. The sound sent shivers as swift as the ice splitting beneath our feet. The ice was moving, cracking, and breaking with us. Billy Armstrong and I were traveling along the Kennicott Glacier to re-drill GPS monuments into the ice to measure the glacier's velocity. The alien-looking probes were now sticking out twelve feet from the ice surface, indicating how much had melted since May, when the monuments were installed. Armstrong, a PhD candidate at the University of Colorado-Boulder, is part of a team led by professor and researcher Bob Anderson studying the relationship between sub-glacial hydrology and basal sliding on the Kennicott Glacier. As an intern at the Wrangell Mountains Center, I helped Billy carry gear and re-drill the team's GPS monuments so I could learn more about the research being done in the area.

This trip was my first overnight on a glacier and my first significant amount of time spent with ice. The goal was to make it to four of the team's sites, each about two miles apart, and reset everything for the rest of the season. When we got to the first site our socks were drenched from the river crossings it took to get there, and the katabatic winds were sending shivers through my five layers designed to keep weather and water out. Upon arrival, Billy recorded the battery charge and melt distance while I set up the steam drill and helped remove the metal poles from the frozen ice. Billy and I took turns drilling multiple twenty-foot holes into the ice, and he explained the gear to my non-science brain.

At each site the team is measuring the ice surface velocity, or daily ice surface movement, with ultra-sonic sensors that measure surface melt and temperature. The equipment is run by solar panels attached to PVC pipe drilled into the ice. In addition, five water pressure loggers, or transducers, placed at Hidden Creek, Jumbo Creek, in a moulin, at Erie Lake, and at the Kennicott outlet stream measure pressure, temperature, and water level fluctuations. These instruments allow the team



*Billy Armstrong*

gather "ground truthing" evidence for how glaciers dispose of melt water. Little did Billy and I know that we would be collecting a new kind of "ground truthing" mid-way through the first drill.

A loud sound startled us, instantly followed by unidentified rushes of water. I looked at Billy for consolation hoping this was typical glacier behavior, but his eyes told me he had not felt or heard this kind of cracking before. The sound was unlike any I had heard before, almost like paper ripping; it had a plastic-y quality to it, and it kept happening, followed by quick sounds of rushing water. We started to suspect that the nearby Hidden Creek Lake was draining.

Hidden Creek is dammed by the Kennicott Glacier and forms a lake that bursts every year in mid-summer, a phenomenon recorded for over a hundred years. This glacial lake flood is called a jökulhlaup, an Icelandic term meaning glacier leap or outburst flood.

The Hidden Creek Lake outburst flood increases the ice velocity on the Kennicott Glacier to about ten feet a day, a dramatic increase over its usual one to two feet a day seen throughout the rest of the melt season. Once the dam bursts, it is only a matter of hours before locals gather at the Kennicott River footbridge far down the valley near McCarthy to celebrate in awe as the water wall crashes in, erodes the banks, and rises about fifteen feet in twelve hours.

When Billy and I started the trip, we had no way of knowing when the dam was going to crack or if it definitely had while we were working. All we could do was gather surface suppositions based on the ice's behavior. On the second and final night, Billy and I grabbed our ice axes and started making our way towards Hidden Creek. We made it to a spot where we could see and hear massive icebergs crashing and falling into each other. The sound reverberated off the valley walls. The lake had drained. Billy and I may have missed the flood party back in town and some velocity measurements at one GPS site, but the reality is that variables are always changing and, in Billy's words, "field work is messy." ∞

*Porphyry continued from page 1*

Symposium with Marvin Kuentzel, owner of Renewable Energy Systems and adjunct professor at UAF, in partnership with Wrangell Mountain Air. We also made ample use of the garden and greenhouse throughout the summer, (not to mention the washing machine, which runs off of solar power.) After a summer of projects and limited use, we also celebrated the new space and thanked the community for the support with a well-attended fall potluck in the main building.

Jake Wilkens worked full time on Porphyry Place projects all summer and accomplished a great deal. He built a large deck behind the main cabin; lifted and finished the small studio and added a new covered deck; conducted dozens of maintenance projects (like repairing roof leaks and painting); and built an interior wall separating the workshop from the stairs leading to the second-story studio. He familiarized himself and others with the electrical and utility systems, and installed



## 30th Anniversary of the College Program

by WMC Staff

2012 marked the 30th anniversary of our college field course. 16 upper division undergraduates from throughout the U.S. studied and traveled in the Wrangell Mountains for seven weeks. The WMC worked with Thrive Consulting Group this year to produce two short videos featuring the program, which are available on the Wrangell Mountains Center YouTube page.

The Wrangells are as well-suited to this unique field course as they were thirty years ago. With glaciers flowing from 16,000 foot peaks, canyons deeper than Yosemite, and spruce-forested valleys, our study area is in the middle of the world's largest international complex of protected wilderness lands. Glaciation, volcanism, erosion and ecological succession are exposed and active, making it an ideal natural laboratory in which to study Alaska's landscape of extremes.

Our interdisciplinary studies focus on understanding geophysical, biological and cultural change in this rapidly evolving setting. By the end of the summer, students gain a firsthand knowledge of the natural history of a complex wilderness and an enriched appreciation of the continuity of life in the north. Go online and get a peek at our 2012 program: <http://www.youtube.com/user/WrangellMountains>. ∞

a new heater in the upstairs studio space. Earl Rider from Alaska Premier Closets installed a wall bed upstairs, as well, which helps transform that beautiful space into a live-work studio for visiting artists, writers, and scientists; that work will be complimented by cabinetry and a kitchenette to be completed this spring. We also began doing some simple landscaping and began preparations for a gravity drip irrigation system for the gardens, and much, much more. Huge thanks and respect goes out to Jake for his tireless work ethic and competency.

Even during this initial phase-in period, we already wonder how we managed to do so much for so long without this additional space. Watch for more and more activity in and around the new addition to our campus as the upgrades continue, and big thanks, again, to the diverse donors who made the Porphyry Place expansion possible. ∞

## The Wrangell Mountain Archive

By Nabil Kashyap

Last August after a spectacular workshop with poet Dan Beachy-Quick, I had the opportunity to stick around the Hardware Store for a few days—not to go into the backcountry but to root through unmarked WMC boxes and to talk with folks in and around town. Why spend the last few days of summer in the dusty recesses of the Great Room and the library instead of playing outside? I was busy conducting a preliminary assessment for a proposed digital archive to house the Hardware Store's trove of print and electronic records. This first step, supported in part by the Phi Kappa Phi Honor Society, involved describing what and how much "stuff" is in the Hardware Store. It also involved interviewing people about what kind of information they would like to access about the valley in terms of community history, natural history and scientific research.

We had begun talking about the archive last year as a vehicle to organize, preserve and make accessible the data generated by the Long Term Monitoring Project. But the archive also has the potential to include digitized documents and other media created by and about the Hardware Store, McCarthy and the Kennicott Valley. Because of all the different formats of information floating around in different locations, an electronic resource makes the most sense. Datasets, oral interviews, field journals, photographs, artwork—with a digital archive, we could bring all of it together under one (virtual) roof. There is a lot of exciting work ahead, so stay tuned. ∞

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Heartfelt thanks to our 2012 staff: Allison Sayer, Kitchen Manager; Joe Donohue, Facilities Manager; Blair Hensen, "JP" Powell, Stacy Schutts, Interns; Jake Wilkens, Capital Projects Manager; Eleanor Jensen, Program Associate, and Jeremy Pataky, Executive Director. Big thanks, as well, to Aryle Butler, Rebekah Helkenn, Bobby Palmer, Aria Thomases, and Lindsey Wilkens. Your hard work made all the difference.



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**Watch our website for details on  
our 2013 program lineup, which will include:**

- Birding Workshop with Carol McIntyre (May 31-June 3)
- People & Parks Conference with Margot Higgins (June 6-8)
- Wrangell Mountains Songwriting Workshop with Michelle McAfee & Robin Child (June 13-16)
- Family Music Camp with Mary Schallert (July 12-15)
- Alaska Wildlands Studies field course (June 22-August 10)
- Kids Making History program (July 3)
- Creative Cloth Workshop with Maria Shell (July 19-24)
- Plein Air Painting with Linda Infante Lyons (August 20-24)
- Natural History Field Sketching and Journaling with Kristin Link (August 20-24)
- Writing on the River with Nancy Cook, Sherry Simpson, and Derick Burleson (July 27-Aug 1)
- Introduction to Lichen Identification (August 16-18)
- Tall Tales Storytelling Contest & Silent Auction (Aug 31)
- Mountain Arts for Youth Series
- Summer Arts and Lectures Series
- and **much more**



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