



## Kluane Lake Research Station

# NEWSLETTER

Issue #4

Summer 2010

Welcome to the fourth issue of the Kluane Lake Research Station Newsletter! It's been some time since the previous issue, but we have returned with a full issue and a commitment to not taking as long to generate the next one!

The last two years have been full of activity at KLRS. In addition to annual scientific research activities and field courses, research associated with the International Polar Year (IPY) was carried out by several investigators in 2007 and 2008. Then, in April 2009, the Federal Government awarded the Arctic Institute of North America \$3.4 million to upgrade the Kluane Research

**“We’d also appreciate hearing from anyone ... who has stories and photos to share from the last 50 years.”**

Station. This money comes from the Arctic Research Infrastructure Fund (ARIF), part of the Government’s strategy to strengthen the North by

investing in research, housing, and social and economic development.

ARIF funding will be used to increase sleeping and equipment storage space, rebuild laboratories, kitchen and dining facilities, and improve power generation at KLRS. In the words of AINA director Benoit Beauchamp, “this will allow us to address the needs of a whole new generation of researchers”.

The renovations and improvements are planned to be ready by summer 2011; in time for the 50<sup>th</sup> anniversary of KLRS. It was in 1961 that Walter Wood and a group of other AINA-based scientists established operations for the Icefield Ranges Research Project at the Silver City airstrip, effectively creating what would become the KLRS. In the years since, the Station has played host to some of the World’s most seminal studies in glaciology, paleoclimatology, alpine geomorphology, and northern ecology.

We are considering various ways of commemorating this milestone next

year and welcome any and all thoughts and ideas. The first step is simply to get in touch with others who have used the station in the past – either as students, assistants, researchers or staff. To this end, Sian Williams has set up a KLRS ‘family tree’ as a means to start tracing relationships among past Station users (see the KLRS-AINA tree at <http://www.geni.com/>). We’d also appreciate hearing from anyone who has ‘lost touch’ over the years with updates on your whereabouts, or from anyone who has stories and photos to share from the last 50 years.



*The old trail (foot path) above and along the lake shore in the foreground of a panorama scenic view of lake, mountains and sky - Kluane Lake, 1942.*

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# Revisiting the Work of Larry Price in the Ruby Range 40 Years Later

Ryan Danby, School of Environmental Studies and Department of Geography, Queen's University

“Price’s work represents some of the first research on alpine tundra ecology in southwest Yukon and therefore has the potential to act as a benchmark for evaluating vegetation change.”

A major scientific effort in arctic and alpine regions is currently focused on identifying and characterizing ecosystem change within the context of recent climate change. The existence of the Kluane Lake Research Station for nearly 50 years, as well as a host of scientific work in the region prior to its establishment, means that there are a number of data sets that have the potential to be used in studying and characterizing change in southwest Yukon. One such information source is the work of Dr. Larry Price, who conducted his Ph.D. research in the vicinity of the Gladstone Lakes in the Ruby Range in 1967 and 1968. The subject of his research was the development and movement of solifluction lobes – soil terraces that form on hillslopes underlain by permafrost. A component of this was the description of vegetation on these hillslopes and an examination of how it varies in relation to soil moisture,

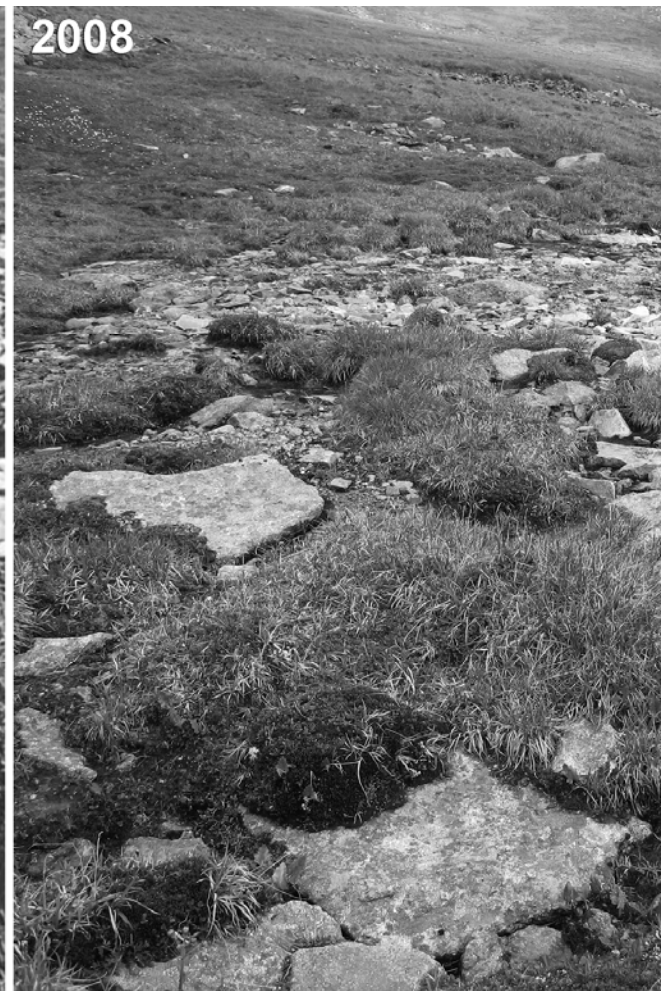
temperature, aspect and microtopography. In this regard, Price’s work represents some of the first research on alpine tundra ecology in southwest Yukon and therefore has the potential to act as a benchmark for evaluating vegetation change.

I visited the area of Price’s research in July 2008 as part of field work being conducted for the International Polar Year. I was accompanied by Saewan Koh (University of Alberta), our field assistant, Jade Laramie, and several graduate students from David Hik’s lab at the University of Alberta. The primary objective of the team was to ground-truth two satellite images of the area and collect ecological data for predictive vegetation and wildlife habitat mapping of the Kluane region. But Saewan and I went with an ancillary objective of assessing the potential for the site to act as a location for the monitoring of ecosystem change.

Left: Photo of the southeast facing slope taken July 4, 1967. Right: Photo from same location taken July 8, 2008. Solifluction lobes are clearly evident as wave-like features in each photograph. Coarse-scale vegetation structure and pattern has not changed.



Left: Photo of a stone stripe extending diagonally across the southeast-facing slope, taken by Larry Price in July, 1968. Right: Photo from the same vantage point taken July 15, 2008. Some subtle differences in the size and extent of grass and sedge tussocks are evident between the photos, but the slope remains very similar.



Left: Photo of a late snow melt area on the southeast-facing slope, taken July, 1968 (from Price 1974). Price painted a red line across the area to ascertain erosion extent and solifluction movement. The line is visible in the photo, starting in the circle on the large rock in the foreground. Right: Photo from the same vantage point, taken July 15, 2008. The painted line has largely worn away, though some remnants were observable in the field. Some subtle differences in vegetation are evident between the photos.

Price went on to teach at Portland State University in Oregon after completing his Ph.D. He revisited Kluane in 1972 and again in 1988, and retired several years ago. Fortunately, I was able to get in touch with him prior to our trip. I was not entirely sure of the site's location and he helped me locate it on a topographic map while giving me directions over the telephone!

Price's study design involved the establishment of a single transect on slopes facing north, east, southeast, and southwest. Plots were located along each transect at regular intervals and recordings of abundance, cover and frequency were made at the species level. Measurements of soil temperature and depth to active layer were also taken at points along the transect. We hoped to relocate these plots, resurvey the vegetation, and identify changes that may have occurred over the last 40 years.

We arrived at the site on the evening of July 7 and established camp. We set out on foot the next morning and quickly

**“I was not entirely sure of the site's location and he helped me locate it on a topographic map while giving me directions over the telephone!”**

found evidence of Price's work. This included several flexible polyethylene tubes that he had installed in the solifluction lobes in 1967 and 1968 (and that he had returned to examine in 1988) for use in measuring rates of surface movement and displacement. We also found a number of stone cairns and numerous painted rocks; however their meaning is unknown. We suspect some of the painted rocks were meant to act as visual markers in monitoring solifluction movement. We

had hoped that they marked the location of the vegetation transects. However they were clearly not arranged in a linear fashion and we still do not know their specific purpose.

After several days of surveying the site we were unable to locate the precise location of the original transects on any of the four slopes. We did establish our own vegetation plots on each slope, but we have no way of knowing how proximal they are to the originals. A comparison of species lists suggests that composition has not changed significantly in 40 years. The one notable exception to this, however, is the abundance of heather (*Cassiope tetragona*) on the north-facing slope. Price did not mention this ericaceous shrub when characterizing the slope's vegetation, and it was not present in any of his plots, despite the fact that it is common along the slope. In addition to his species composition work, Price





The north-facing slope sampled by Larry Price from 1967-1969 (photo taken July 15, 2008). Price does not mention the ericaceous shrub *Cassiope tetragona* when characterizing the vegetation, and it was not present in any of his plots, despite the fact that it is common along the slope. Were the original quadrats simply configured along a transect where the species was locally absent, or has the species significantly increased its abundance in the last 40 years? Without knowledge of the precise location of the plots it is impossible to say.

**“It is my hope that further communication with Dr. Price will allow us to determine the precise location of his original transects and sampling locations and return to the site a second time.”**

published several photographs of the sites that act as useful records for examining vegetation change. I was able to relocate these photographic vantage points and my photographs are included here. Comparison of the photographs indicates that the coarse-scale structure and pattern of tundra vegetation (generally above 1600 m) has not changed. Photographs taken at a finer scale do indicate some change. In particular, graminoid cover appears to have increased slightly. However, the significance of this increase is unknown and the overall similarity between photographs is more compelling than the differences.

During the summers of 1967 and 1968 Price observed long-tailed jaegers (*Stercorarius longicaudus*) nesting on the southeast-facing slope. He found remains of a dead jaeger in 1972, but no nest. His observation remains the most southerly breeding location documented for the species. I had observed a pair of jaegers flying northeastward over the Kluane Lake Research Station in 2002 and again in 2007, so I was anxious to look for evidence of them. However, I saw no jaegers and found no breeding evidence at the study site or in any adjacent areas.

In total, we spent nine days at the site and successfully conducted a variety of IPY-related work. It is my hope that further communication with Dr. Price will allow us to determine the precise location of his original transects and sampling locations and return to the site a second time. The inability to precisely relocate historical vegetation plots is not uncommon. However, in the age of inexpensive GPS receivers, researchers today must remember to document the precise coordinates of their study sites. As illustrated here, someone else may want to find them again in 40 years!

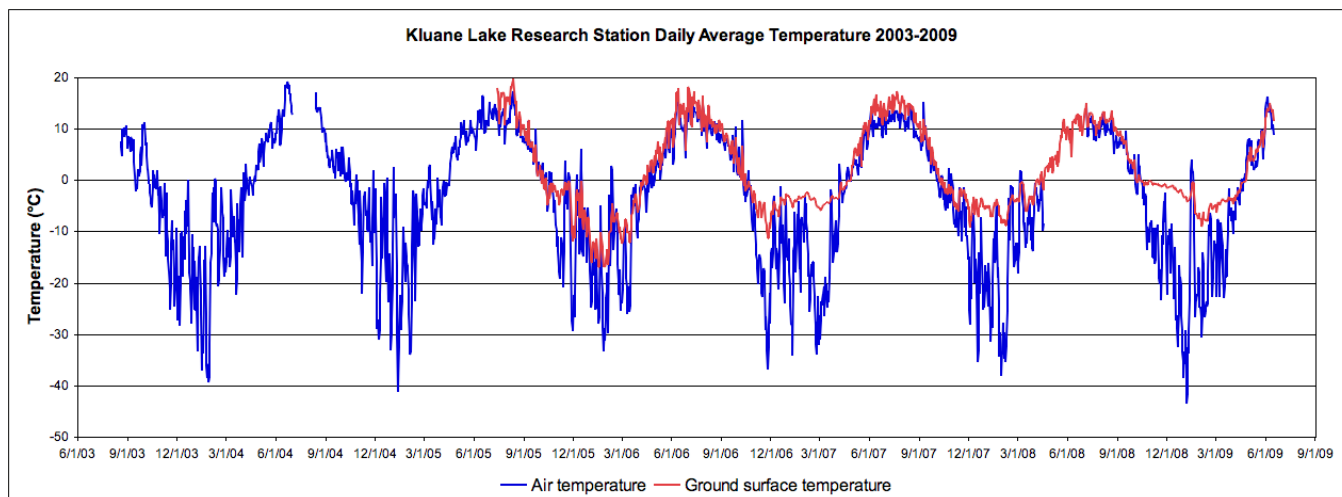
Saewan Koh (University of Alberta) sits beside one of several polyethylene tubes that we found. Originally installed by Dr. Larry Price in the late 1960s, these tubes are used to measure rates of downslope soil movement at different depths. Insert: one of many rocks painted with red symbols that were found scattered across the site. If their meaning can be determined then it might be possible to precisely relocate the vegetation plots established in 1967.







## KLRS Air and Ground Temperatures, 2003-2009



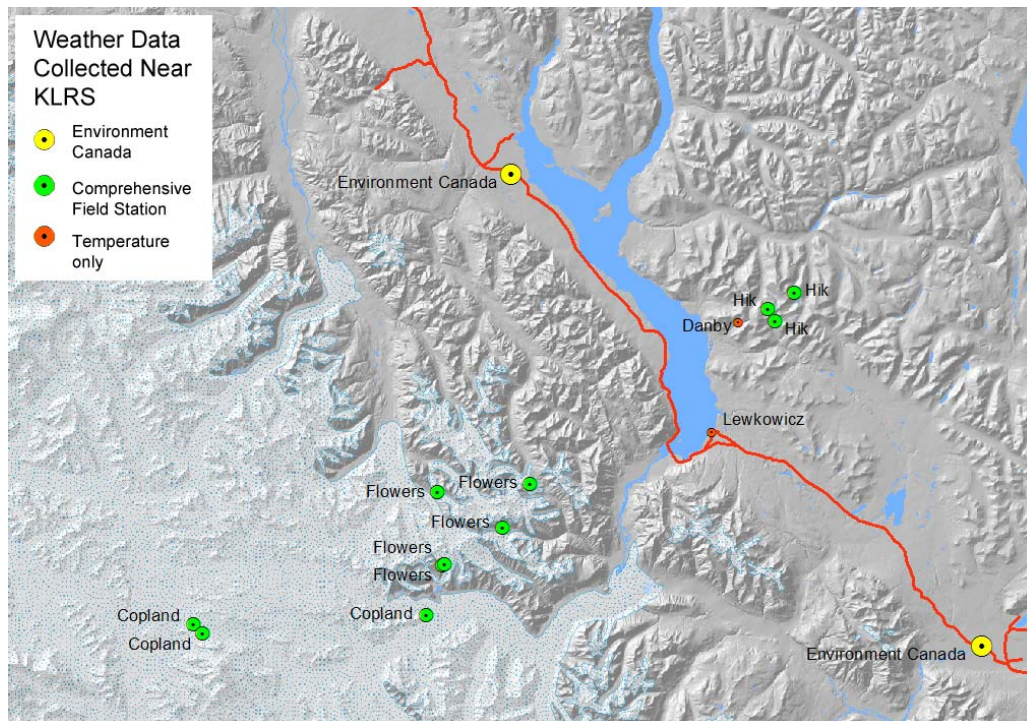
Toni Lewkowicz (Geography, University of Ottawa) has been collecting air temperatures on an hourly basis at KLRS since August 2003 as well as ground-surface temperatures since

2005. Data is collected using Onset Hobo data loggers located at the end of the Silver City airstrip. The above graph shows the entire data record as mean daily values. Toni also collected snow

depth data during 2005 using a vertical array of iButton data loggers. This data is available for anyone who would like to use it. For information please contact Toni at [alewkowi@uOttawa.ca](mailto:alewkowi@uOttawa.ca).

## Meteorological Stations in the Kluane Region

Meteorological data is an important variable in both geophysical and ecological studies. Many scientists in southwest Yukon have a need for such data and several researchers and government agencies are collecting this data. What is needed is a way to put people in touch with each other! Ryan Danby (Queen's University) has developed this preliminary map to illustrate the locations of meteorological stations and to identify who is operating them. Undoubtedly there are omissions and errors, so please contact Ryan with additions and corrections ([ryan.danby@queensu.ca](mailto:ryan.danby@queensu.ca)). The map will be updated for the next issue based on what is received.







## University of Ottawa Field Classes

Luke Copland, Department of Geography, University of Ottawa

The University of Ottawa has been running annual undergraduate field classes to Kluane Lake Research Station since 1973, and was pleased to offer GEG4001 ('Northern Field Research') again in summer 2009. Led by Dr. Luke Copland and assisted by Mr. Jean Bjornson, the class brought 12 students north for 3 weeks in July. The class introduces field methods and techniques in Physical Geography, and includes subjects such as glaciology, meteorology, hydrology and limnology.

The class started this year with a trip to the Icefield Discovery camp at the top of the Kaskawulsh Glacier for four days via ski plane. For most students this was their first time camping in snow, but by the end of the trip they were intimately familiar with it! Back-to-back snow pits were dug to a depth of 3.5 m to view the internal structure of the snowpack, shallow ice cores were drilled, and experiments were run to track meltwater percolation and to assess the impact of different materials on surface melt rates. The students also helped to install a new satellite-connected weather

station on a rock nunatak close to the Icefield Discovery camp. This weather station transmits data hourly which will help in understanding the climate of this region and assist in flight planning

for future trips to the Icefield Discovery camp and Mt. Logan. The data can be accessed on the web at: <http://tinyurl.com/mtlogan>.



Students Nathan Fidler and Mari Stausland making river measurements on Silver Creek, July 2009



After leaving the glacier, the students worked out of Kluane Lake Research Station for two weeks, making daily trips to observe local features such as rock glaciers, permafrost, landslides and

**“For most students this was their first time camping in snow, but by the end of the trip they were intimately familiar with it!”**

eskers. They also made detailed measurements of alpine river dynamics in nearby Silver Creek, and recovered lake sediment cores from Jenny Lake to investigate and reconstruct climate changes in the Kluane region over the past 2000+ years. The students also worked in pairs on personal projects as diverse as surging glaciers and past changes in the water levels of Kluane Lake. They gave talks about their project results shortly before leaving the research station, and finished back

home by writing them up into formal term papers.

The end of this year's course was marked by a trip to Haines, Alaska, which provided an opportunity to explore the tundra environment in the Haines Summit area before plunging into the dense coastal rainforest on the Alaskan side. Swims in the Pacific Ocean and watching bears catch salmon made a pleasant end to another successful field trip.



*The University of Ottawa field class at Jenny Lake, July 2009*

## **Theory and Practice of Ecosystem Management: Kluane Region Yukon Field Course, Wilfrid Laurier University**

**D**r. Scott Slocombe, professor in the Department of Geography and Environmental Studies at Wilfrid Laurier University, also offers a four week intensive field course in June every couple of years. The focus of the course is to develop understanding of the theory and practice of ecosystem-based, or integrated, management of wildlife, protected areas, development, and cultural heritage. The course pays particular attention to exploring the biophysical landscape, the mechanisms and processes of resource management, and

the complex network of governments, agencies and non-governmental organizations that play a role in the region through meetings with individuals from many different groups. The landscape and its characteristics are also explored through day and overnight trips into the backcountry and to relevant research sites. The approach is multi- and trans-disciplinary, including ideas and knowledge from ecology, physical geography, glaciology, geography and environmental studies, law and policy, anthropology, and other social sciences.

The course moves between Whitehorse, Haines Junction and the Kluane Research Station as needed. Students read and discuss a core text and selected readings, and engage in short analytic pieces of writing, undertake a more major research project, and complete an ongoing, reflective journal while on the course. Participants in the course often make up a multidisciplinary group, with students from biology, geography, anthropology, and sociology among other disciplines. Contact Scott Slocombe ([sslocomb@wlu.ca](mailto:sslocomb@wlu.ca)) for more information.

# The Kluane Lake Research Station Bibliography

Ross Goodwin, Arctic Institute of North America, University of Calgary

“KLRS researchers are encouraged to report their new publications, as well as any older publications that are missing from the bibliography.”

The Kluane Lake Research Station (KLRS) Bibliography now describes 862 publications, an increase of 300 publications since the last issue of the *KLRS Newsletter*. The bibliography is a searchable database maintained by the Arctic Institute of North America's Arctic Science and Technology Information System (ASTIS) and available at <http://www.aina.ucalgary.ca/scripts/minisa.dll/144/klrs?DIRECTSEARCH>.

During the past two years, in addition to adding recent publications to the bibliography, ASTIS has added almost all of the publications of the High Altitude Physiology Study and many of the publications of the Icefield Ranges Research Project. We estimate that the bibliography's coverage of biology and high altitude physiology publications is now 90% complete, but its coverage of earth science publications is only 50% complete.

Menus allow you to easily search the bibliography by project or publication type. For example, the bibliography currently describes 187 publications

from the Kluane Boreal Forest Ecosystem Project and 48 publications from the Kluane Red Squirrel Project. The bibliography describes 474 peer-reviewed journal papers and 98 graduate theses. These two menus can be used together to find out how many journal papers or theses have been produced by a particular project. There are now 379 records in the bibliography that have URL or DOI links to PDF files.

KLRS researchers are encouraged to report their new publications, as well as any older publications that are missing from the bibliography. To report publications, please send ASTIS whatever is easiest for you: DOIs, URLs, PDFs, citations, photocopies or originals.

KLRS researchers may also be interested in the Yukon Biodiversity Database at <http://www.aina.ucalgary.ca/yb>, which describes more than 6100 publications and research projects about the biology of the Yukon and the Beaufort Sea.

**KLUANE LAKE RESEARCH STATION BIBLIOGRAPHY**

Your search will find records that satisfy **all** the conditions you specify.

Words in **Title or Abstract**

**Subject Code**

**Author**

**Year**

**Project**

**Publication Type**

The Kluane Lake Research Station Bibliography, a subset of the [ASTIS database](#), describes 860 publications that have resulted from research conducted from the Arctic Institute of North America's [Kluane Lake Research Station \(KLRS\)](#). Coverage of biology and high altitude physiology publications is approximately 90% complete. Coverage of earth science publications is approximately 50% complete.

Photo Credit:  
Katriina O'Kane [www.katriinaokane.com](http://www.katriinaokane.com)



# Recent Publications and Theses

The following papers (published 2008 and 2009) present the results of research conducted in whole or in part at KLRS:

- Bonnaventure, PP; Lewkowicz, AG. 2008. Mountain permafrost probability mapping using the BTS method in two climatically dissimilar locations, northwest Canada. *CANADIAN JOURNAL OF EARTH SCIENCES*, 45 (4): 443-455.
- Boonstra, R; Desantis, L; Krebs, CJ; Hik, DS. 2008. Climate and nutrient influences on the growth of white spruce trees in the boreal forests of the Yukon. *CLIMATE RESEARCH*, 36 (2): 123-130.
- Brahney, J; Clague, JJ; Menounos, B; Edwards, T. 2008. Geochemical reconstruction of late Holocene drainage and mixing in Kluane Lake, Yukon Territory. *JOURNAL OF PALEOLIMNOLOGY*, 40 (1): 489-505.
- Brahney, J; Clague, JJ; Menounos, B; Edwards, T. 2008. Timing and cause of water level fluctuations in Kluane Lake, Yukon Territory, over the past 5000 years. *QUATERNARY RESEARCH*, 70 (2): 213-227.
- Bunbury, J; Gajewski, K. 2008. Does a one point sample adequately characterize the lake environment for paleoenvironmental calibration studies? *JOURNAL OF PALEOLIMNOLOGY*, 39 (4): 511-531.
- Bunbury, J; Gajewski, K. 2009. Postglacial climates inferred from a lake at treeline, southwest Yukon Territory, Canada. *QUATERNARY SCIENCE REVIEWS*, 28 (3-4): 354-369 (Sp. Iss).
- Bunbury, J; Gajewski, K. 2009. Variations in the depth and thickness of the White River Ash in lakes of the southwest Yukon. In: *YUKON EXPLORATION AND GEOLOGY 2008*, L.H. Weston, L.R. Blackburn and L.L. Lewis (eds.), Yukon Geological Survey, pp. 77-84.
- Crookshanks, S; Gilbert, R. 2008. Continuous, diurnally fluctuating turbidity currents in Kluane Lake, Yukon Territory. *CANADIAN JOURNAL OF EARTH SCIENCES*, 45 (10): 1123-1138.
- Field, RD; Moore, GWK; Holdsworth, G; Schmidt, GA. 2010. A GCM-based analysis of circulation controls on delta 180 in the southwest Yukon, Canada: implications for climate reconstruction in the region. *GEOPHYSICAL RESEARCH LETTERS*, 37 (5): Art. No. L05706.
- Gilbert, R; Crookshanks, S. 2009. Sediment waves in a modern high-energy glacialacustrine environment. *SEDIMENTOLOGY*, 56 (3): 645-659.
- Holdsworth, G. 2008. Interpreting H<sub>2</sub>O isotope variations in high-altitude ice cores using a cyclone model. *JOURNAL OF GEOPHYSICAL RESEARCH-ATMOSPHERES*, 113 (D8): Art. No. D08103.
- Hudson, JMG; Morrison, SF; Hik, DS. 2008. Effects of leaf size on forage selection by collared pikas, *Ochotona collaris*. *ARCTIC ANTARCTIC AND ALPINE RESEARCH*, 40 (3): 481-486.
- Kavanaugh, JL. 2009. Exploring glacier dynamics with subglacial water pressure pulses: Evidence for self-organized criticality? *JOURNAL OF GEOPHYSICAL RESEARCH-EARTH SURFACE*, 114: Art. No. F01021.
- Krebs, CJ; Boonstra, R; Cowcill, K; Kenney, AJ. 2009. Climatic determinants of berry crops in the boreal forest of the southwestern Yukon. *BOTANY*, 87 (4): 401-408.
- Krebs, CJ; Carrier, P; Boutin, S; Boonstra, R.; Hofer, E. 2008. Mushroom crops in relation to weather in the southwestern Yukon. *BOTANY*, 86 (12): 1497-1502.
- Krebs, CJ; Cowcill, K; Boonstra, R; Kenney, AJ. 2010. Do changes in berry crops drive fluctuations in small rodents in the southwestern Yukon? *JOURNAL OF MAMMALOGY*, 91 (2): 500-509.
- Lipovsky, P; Evans, S; Clague, J; Hopkinson, C; Couture, R; Bobrowsky, P; Ekstrom, G; Demuth, M; Delaney, K; Roberts, N; Clarke, G; Schaeffer, A. 2008. The July 2007 rock and ice avalanches at Mount Steele, St. Elias Mountains, Yukon, Canada. *LANDSLIDES*, 5 (4): 445-455.
- Mitchell, MGE; Cahill, JF; Hik, DS. 2009. Plant interactions are unimportant in a subarctic-alpine plant community. *ECOLOGY*, 90(9): 2360-2367.
- Morrison, SF; Hik, DS. 2008. When? Where? And for how long?: Census design considerations for an alpine Lagomorph, the collared pika (*Ochotona collaris*). In P. Alves, N. Ferrand, & K. Hacklander (eds.), *LAGOMORPH BIOLOGY: EVOLUTION, ECOLOGY AND CONSERVATION*. Springer, pp 102-114.
- Morrison, SF; Pelchat, G; Donahue, A; Hik, DS. 2009. Influence of food hoarding behavior on the over-winter survival of pikas in strongly seasonal environments. *OECOLOGIA*, 159 (1): 107-116.
- Nouvet, S; Wilson, S; Martin, K. 2008. Breeding records of the surfbird, wandering tattler, American golden plover and upland sandpiper in the southwest Yukon Territory. *WESTERN BIRDS* 39 (1): 22-30.
- Osterberg, E; Mayewski, P; Kreutz, K; Fisher, D; Handley, M; Sneed, S; Zdanowicz, C; Zheng, J; Demuth, M; Waskiewicz, M; Bourgeois, J. 2008. Ice core record of rising lead pollution in the North Pacific atmosphere. *GEOPHYSICAL RESEARCH LETTERS*, 35 (5): Art. No. L05810.
- Peros, M; Gajewski, K; Viau, A. 2008. Continental-scale tree population response to rapid climate change, competition and disturbance. *GLOBAL ECOLOGY AND BIOGEOGRAPHY* 17: 658-669.

- Pinard, JP; Benoit, R; Wilson, JD. 2009. Mesoscale Wind Climate Modelling in Steep Mountains ATMOSPHERE-OCEAN, 47 (1): 63-78.
- Post, E; Forchhammer, MC; Bret-Harte, Ms; Callaghan, TV; Christensen, TR; Elberling, B; Fox, AD; Gilg, O; Hik, DS; Hove, TT; Ims, RA; Jeppesen, E; Klein, DR; Madsen, j; McGuire, AD; Rysgaard, S; Schindler, DE; Stirling, I; Tamstorf, MP; Tyler, NJC; van der Wal, R; Welker, J; Wookey, PA; Schmidt, NM; Aastrup, P. 2009. Ecological dynamics across the Arctic associated with recent climate change. SCIENCE, 325 (5946): 1355-1358.
- Sanborn, P. 2010. Topographically controlled grassland soils in the Boreal Cordillera ecozone, northwestern Canada. CANADIAN JOURNAL OF SOIL SCIENCE, 90: 89-101.
- Secombe-Hett, P; Turkington, R. 2008. Summer diet selection of snowshoe hares: a test of nutritional hypotheses. OIKOS, 117 (12): 1874-1884.
- Sharam, G; Turkington, R. 2009. Secondary defense responses of white spruce (*Picea glauca*) to changes in herbivory and soil nutrient levels. ECOSCIENCE 16:258-264.
- Treberg, MA; Edwards, K; Turkington, R. 2010. Voles are attracted to fertilizer in field experiments. ARCTIC, ANTARCTIC, AND ALPINE RESEARCH, 42 (1):113-116.
- Treberg, MA; Turkington, R. 2008. How to grow, propagate and kill some of the native plants in the Kluane region, southwestern Yukon. DAVIDSONIA, 19:42-53.
- Trefry, SA; Hik, DS. 2009. Eavesdropping on the neighbourhood: collared pika (*Ochotona collaris*) responses to playback calls of conspecifics and heterospecifics. ETHOLOGY, 115 (10): 928-938.
- Viau, A; Gajewski, K; Sawada, M; Bunbury, J. 2008. Low- and High-frequency climate variability in Beringia during the past 25,000 years. CANADIAN JOURNAL OF EARTH SCIENCES 45: 1435-1453.
- Weir, JN; Morrison, SE; Hik, DS. 2008. Linking foraging behavior to population density: An assessment of GMM models for Dall sheep. ECOLOGICAL MODELLING, 211 (3-4): 396-402.
- Wilson, S; Martin, K. 2008. Breeding habitat selection of sympatric White-tailed, Rock and Willow Ptarmigan in the southern Yukon Territory, Canada. JOURNAL OF ORNITHOLOGY, 149 (4): 629-637.
- Wong, MML; Fedy, BC; Wilson, S; Martin, KM. 2009. Adoption in Rock and White-tailed Ptarmigan. WILSON JOURNAL OF ORNITHOLOGY, 121 (3): 638-641.
- Youngblut, D; Luckman, B. 2008. Maximum June-July temperatures in the southwest Yukon over the last 300 years reconstructed from tree rings. DENDROCHRONOLOGIA, 25 (3): 153-166.
- Zgurski, JM; Davis, CS; Hik, DS. 2009. Isolation and characterization of microsatellite loci for the collared pika (*Ochotona collaris*) and their cross-amplification in five other *Ochotona* species. MOLECULAR ECOLOGY RESOURCES, 9 (3): 867-871.
- The following students recently completed their Master's or Doctoral theses based on research conducted in whole or in part on work conducted while at KLRS. Congratulations!**
- Crookshanks, Sarah. 2008. *High-energy sedimentary processes in Kluane Lake, Yukon Territory*. M.Sc. thesis, Queen's University, Kingston, ON. (Supervisor: Robert Gilbert)
- De Paoli, Laetitia. 2009. *Dynamics of a small surge-type glacier, St. Elias Mountains, Yukon Territory, Canada: characterization of basal motion using 1-D geophysical inversion*. M.Sc. thesis, Simon Fraser University. (Supervisor: Gwenn Flowers)
- Gilbert, Ben. 2008. *Notes on species coexistence, invasion and ecosystem function*. Ph.D. Thesis, University of British Columbia. (Supervisor: Roy Turkington)
- Marshall, Carolyn. 2008. *Effects of plant functional group removal on the soil microbial community diversity and composition*. M.Sc. thesis, University of British Columbia. (Supervisor: Roy Turkington)
- Trefry, Sarah. 2008. *Collared pika (*Ochotona collaris*) vocalizations: evolutionary and ecological considerations*. M.Sc. thesis, University of Alberta. (Supervisor: David Hik)
- Wheler, Brett. 2009. *Glacier melt modelling in the Donjek Range, St. Elias Mountains, Yukon Territory*. M.Sc. thesis, Simon Fraser University. (Supervisor: Gwenn Flowers)
- Wilson, Scott. 2008. *Influence of environmental variation on habitat selection, life history strategies and population dynamics of sympatric ptarmigan in the southern Yukon Territory*. Ph.D. dissertation, University of British Columbia. (Supervisor: Kathy Martin)





Photo Credit: Gilbert Ludwig, <http://ambientscapes.smugmug.com/>

## David Hik Elected as president of IASC

Kluane Lake Research Station User Committee Chairperson, David Hik, University of Alberta, was elected as president of the International Arctic Science Committee (IASC). Congratulations David!

## Icefields of Dreams, Canadian Geographic

The Kluane Lake Research Station was featured in the January/February edition of Canadian Geographic. The entire magazine was devoted to Northern stories, well worth a look! <http://www.canadiangeographic.ca/magazine/jf10/default.asp>

## SCANNET includes Kluane Lake

SCANNET, a network of terrestrial field bases, research station managers and user groups that are collaborating to improve comparative observations and access to information on Environmental Change in the North, now includes Kluane Research Station as one of its sites. Visit: <http://www.scannet.nu/content/blogcategory/63/169>

## IPY Oslo Science Conference 2010

*Oslo, Norway, June 8-12, 2010*

The International Polar Year Oslo Science Conference will be held June 8th to June 12th, 2010. Research from several KLRS projects will be presented at the conference. To see more information, visit: <http://ipy-osc.no>

A follow-up IPY conference, "From Knowledge to Action", will be held in Montreal April 22-27, 2012. For more information, visit: <http://www.ainc-inac.gc.ca/ai/mr/nr/sd2009/23301-eng.asp>

## Conference in Understanding Circumpolar Ecosystems in a Changing World

*Edmonton, Alberta, November 3-6, 2010*

The University of Alberta is hosting a conference examining the outcomes of the International Polar Year. The topics of the conference will surround current and future structure, diversity, and functioning of the circumpolar region, discuss climate-disturbance interactions in the circumpolar region, and examine ecological, economic, and social conditions that are influenced by disturbance. To find out more visit: <http://www.eas.ualberta.ca/ipy>



## Kluane Lake Research Station

# NEWSLETTER

### MAIN OFFICE

The Arctic Institute of North America  
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