

Wolf's Eye



Isle Royale & Keweenaw Parks Association

November 2011

Isle Royale's Dramatic Lake-Level Changes in Prehistory

by Rolf Peterson

Imagine camping on the shoreline of a shallow Lake Superior bay and then getting up in the morning to find that there is no water to be seen, anywhere. You may remember a comical staging of this scene in Bill Mason's film, *The Rise and Fall of the Great Lakes*. But as it turns out, this might be exactly what happened to Paleoindians living 9,300 years ago. And it may have happened more than once. A recent paper in

the journal *Science* by a research team led by Shi-Yong Yu at the University of Minnesota-Duluth's Large Lake Observatory (Yu et al. 2010), led me on an enjoyable excursion into the natural history of Isle Royale, to the island's earliest appearance when the mile-thick Laurentide glacier retreated northeast for the last time.

As the ice sheet melted, fresh water poured into the North Atlantic via several outlets, profoundly influencing

climate around the world. Weather patterns are greatly affected by an "ocean conveyor," currents which connect all the world's oceans and move heat across the planet along with water. In the North Atlantic, vertical and horizontal currents cause cold, dense water in northern latitudes to sink, and they also bring warm surface water north from tropical latitudes (the Gulf Stream is a small component). If a large amount of fresh water enters the

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Keweenaw National Historical Park Opens Calumet Visitor Center

Keweenaw National Historical Park (NHP) celebrated the opening of the Calumet Visitor Center on Thursday, October 27, with Senator Carl Levin (D-Michigan) and National Park Service Midwest Regional Director Mike Reynolds performing the honors.

The Calumet Visitor Center is the first NPS-operated visitor facility at Keweenaw National Historical Park, which celebrated its nineteenth anniversary on October 27, as well. "The opening of this wonderful facility represents a major milestone for the park," Keweenaw NHP Superintendent Mike Pflaum noted, "and it will be a treasure for the entire community for decades to come." Visitor services have previously been provided by the park's nineteen non-Federal Keweenaw Heritage Site partners, who will continue providing those valuable services for visitors to the Copper Country.

Grand Opening events included the ribbon cutting, with more than 500 in attendance. In his remarks, Sen. Levin observed that the facility is a remarkable asset and a fitting tribute to the Copper Country community that

mounted a grassroots effort to establish this unique partnership-based national park.

"This is the story of immigrant families," said NPS Regional Director Reynolds. Sen. Levin added, "The visitor center tells the story of a place and a people that changed the world. This was America in miniature."

Following the ribbon cutting, nearly 200 people attended a moving

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Calumet Township Supervisor Paul Lehto (l) and Keweenaw National Historical Park Superintendent Mike Pflaum (r) watch Sen. Carl Levin and National Park Service Midwest Regional Director Mike Reynolds cut the ribbon at the ceremony opening the new Calumet Visitor Center. Photo: Kurt Hauglie/©Daily Mining Gazette

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ceremony where nine people became naturalized American citizens. IRKPA donated gift bags that included a National Park Service passport book and Keweenaw mementos.



Naturalized citizens pose with (from right) Senator Carl Levin and Judge Timothy Greeley on the third floor Lodge Room stage at Keweenaw NHP's Calumet Visitor Center following the park's first naturalization ceremony. NPS Photo/Ryan Holt

The historic occasion was also celebrated with a pasty lunch by the Lodge of the Eastern Star/Trillium and free trolley tours of the Calumet National

Historic Landmark District provided by the National Park Service and the Red Jacket Trolley Company. Two of the park's Keweenaw Heritage Site partners offered free tours at the Keweenaw Heritage Center at St. Anne's and the Calumet Theatre, and an evening event featured the film premier of *Risk and Resilience*.

An invitational Donor's Reception was held Wednesday evening to honor those that donated or loaned artifacts, documents, and historic photos for the permanent exhibit, "Risk and Resilience: Life in a Copper Mining Community." The two-floor exhibit features more than 400 artifacts and archival materials that connect residents and visitors with the rich heritage of Upper Michigan's Copper Country.

The National Parks of Lake Superior Foundation sponsored a Historians

Symposium Friday morning. The event brought historians back to Keweenaw NHP from around the country and Canada that had originally met in a round table discussion to refine the thematic elements of the exhibit and ensure historical accuracy of the stories to be told.

The festivities concluded Friday evening with a celebratory "1920 period" dinner that IRKPA hosted for park partners who made the facility a reality, including the Keweenaw NHP Advisory Commission, the park's three former superintendents, the current staff, several of the park's founders, construction and exhibit contractors, and key supporters. "I thought there were some very moving moments and I felt privileged to be a part of the ceremonies," said Commission Chair Kim Hoagland. "I am in awe of the magnitude of the event."

Behind the Scenes @IRKPA.org

IRKPA had a very busy October preparing to open our new sales area at the Calumet Visitor Center. A committee of IRKPA staff and volunteers met numerous times with Keweenaw National Historical Park staff over the summer and fall to plan the retail space, select new sales items, and determine our role in the grand opening week events. Committee members included Anita Campbell, Susan Martin, Ed and Liz Sheridan, Bob Marr, Marilyn Cooper, Nancy Leonard, Danielle Savelle, Lauren Rastello, and Kristine Bradof.

IRKPA volunteered to host a 1920 "period" dinner to celebrate the grand opening of the Calumet Visitor Center in the historic Union Building. The event also commemorated a 25th anniversary dinner held in 1920 for the Free and Accepted Masons Lodge 271 in the same room. More than 70 people took part in the festivities. The KNHP Advisory Commission sponsored a wine and punch social before the meal, and a number of speakers, including the park's four past and present superintendents, offered remarks. KNHP staff member



IRKPA President Ron Eckoff, Calumet Village President Tony Bausano, and KNHP Superintendent Mike Pflaum stand in front of the stage during the 1920 period dinner in the Union Building. Photos by Bob Guiliani.

Brandon Sexton provided a keynote with insights from his master's research at Michigan Tech on fraternal organizations, specifically the Masons.

Interested board and committee members gathered Saturday morning before the October board meeting to tour the Quincy smelter site directly across from Isle Royale National Park headquarters in Houghton. Leading the tour were KNHP Management Assistant Tom Baker and Superintendent Mike Pflaum, along with Franklin Township

Treasurer and Quincy Smelter Association volunteer Judy Counts.

We were impressed by the site itself and by the progress made this year to stabilize many of the remaining structures in the Quincy Smelting Works, which operated from 1898 to 1971 and is the most complete 19th century copper smelter complex left in the world. One option under consideration for adaptive reuse of the site is the relocation of Isle Royale headquarters and a possible joint visitor center for both national parks.



IRKPA members tour the Quincy smelter site.

If you haven't renewed your membership for 2012, now's the time!

Lake-level change, from p. 1

North Atlantic, ocean circulation can be disrupted, and weather on a global scale may change in just a few years. The first emergence of Isle Royale occurred at just such a period of rapid climate change.

As the planet slowly warmed at the end of the Pleistocene, there was a sudden global change in climate that was detected in ice cores, ocean sediments, and remains of ancient pollen. Northern latitudes became much colder and dryer, while the tropics became warmer and wetter. This period became known as the Younger Dryas, or YD (named for a species in the rose family that thrived in cold weather). Scientists have now shown that the YD began as glacial Lake Agassiz suddenly flowed down a new outlet, the present-day Mackenzie River (Murton 2010), affecting the circulation of the North Atlantic and triggering an abrupt change in climate. For the next 1,300 years, northern latitudes were plunged into the very cold YD period, and the giant Laurentide ice sheet, which had already retreated north of Lake Superior, readvanced to once again cover the entire Lake Superior basin. When the Earth's climate reversed once more, about 11,500 years ago, and resumed its earlier pattern of warming, the ice sheet again began to retreat. It moved downhill, because the Earth's crust had been depressed for tens of thousands

of years by the weight of the ice. Melt-water lakes formed in the depressions next to the ice sheet, and these lakes sometimes drained catastrophically as new outlets opened to the ocean.

The largest of these lakes, Lake Agassiz, was to empty successively through at least six different outlets, including one that drained with great force into Lake Superior north of Isle Royale, through Black Bay and Nipigon Bay, leaving telltale, deep channels carved into bedrock on the bottom of these bays (Gary 2009).

We have trouble imagining the huge amounts of water involved, but something like 175 Niagara Falls poured into the lake north of Isle Royale. Yu and his coauthors, studying a more recent outflow event, speculated that a sudden outflow from Lake Superior, caused by the breaching of a natural dam at its east end, might have lasted for a full year. By careful carbon-dating of sediments at the bottom of small lakes on both the north and south shores of Lake Superior, they measured a drop of 45 meters in the lake level. Their study focused on another "cold event" that followed the Younger Dryas but was much less dramatic, when a burst of fresh water again poured into the North Atlantic, and the Earth's climate experienced another disruption that lasted for more than a century.

How did the water level change at Isle Royale during this turbulent period? When I stopped by Dr. Yu's office in Duluth to ask him that very question, I found out the answer is complicated, because the relative levels of land and water both changed at the same time, often in different directions. Dr. Yu suspects that the level of Lake Superior 9,300 years ago would have been considerably lower than it is today, so evidence of rapid drainage would probably be on the submerged shoreline of Isle Royale. Perhaps more will be learned about this period through detailed mapping of the underwater portions of Isle Royale National Park, an effort begun in 2010 by Lara Hutto of the National Park Service Inventory and Monitoring Program.

Gary, J.L. 2009. Characterizing the discharge features of glacial Lake Agassiz during the post-Marquette period using marine seismic-reflection methods. M.S. Thesis, University of Minnesota. 79 pages.

Murton, J.B., M.D. Bateman, S.R. Dallimore, J.T. Teller, and Z. Yang. 2010. Identification of Younger Dryas outburst flood path from Lake Agassiz to the Arctic Ocean. *Nature* 464:740-743.

Yu, S.Y., S.M. Colman, T.V. Lowell, G.A. Milne, T.G. Fisher, A. Breckenridge, M. Boyd and J.T. Teller. 2010. Freshwater outburst from Lake Superior as a trigger for the cold event 9300 years ago. *Science* 328:1262-1266.

Volunteer Opportunities: Historic Building Stabilization Service Trips on Isle Royale

Once again, in summer 2012, teams of volunteers will be needed for historic preservation and stabilization of buildings that support Isle Royale National Park's Artist-in-Residence Program. The projects will take place in Tobin Harbor on the northeast end of Isle Royale from June 12-20 or June 19-27, 2012.

Desired skills include painting, roofing, carpentry, window glazing, cooking, and willing general labor. Volunteers must fill out an application, donate \$100 (tax deductible) toward building materi-

als and other project expenses, and pay \$150 to cover their food costs for each nine-day service trip. Volunteers bring their own tents, sleeping gear, clothing, and personal items. The National Park Service provides round trip transportation to Isle Royale via the *Ranger III* and waives the national park day-use fee.

Last summer's crews made improvements to the Dassler cabin, sleeping cabin, privy, and boat house; the Stack-Wolbrink cabin and "Wee Hoose"; the Siefert cabin; the former Tobin Harbor

post office; and the Edisen Fishery's log sleeping cabin. Over nineteen days in 2011, fifteen volunteers completed 844 hours of service benefiting the Artists in Residence, Isle Royale National Park, and advocates of historic preservation.

If you are interested in volunteering for a June 2012 service trip or want to learn more, contact leader John Dunn at jdadunn@gmail.com for an application and more information.



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Last Chance: Michigan Community Foundation Tax Credit!

This December is the last chance for Michigan residents to support IRKPA's endowment before the Michigan Community Foundation Charitable Tax Credit expires! Through Dec. 31, single Michigan income tax filers who contribute up to \$200 (\$400 for joint filers) receive a 50% credit (e.g., \$100 for a \$200 donation). Donate by check or online to the Keweenaw Community Foundation and specify the Isle Royale & Keweenaw Parks Association fund. Planned giving options & Michigan Business Tax credits are also available. See <http://keweenaw-community-foundation.org/giving.html>, call 906-482-9673, or email via the form at <http://keweenaw-community-foundation.org/contact.html>. In 2010 and 2011, \$8,500 in endowment earnings have helped support IRKPA's operations.

Call for 2012 Artist-in-Residence Applications

Professional visual and performing artists, writers, and composers are invited to apply for Isle Royale National Park's 2012 Artist-in-Residence Program, cosponsored by IRKPA and the Copper Country Community Arts Council. All art forms are acceptable except those that manipulate or disturb the park's fragile environment.

Selected artists will have use of a canoe and rustic cabin during two- to three-week residencies from mid-June through early September. A panel of professionals from a variety of art disciplines and a park representative will select the artists based

on artistic integrity, ability to live in a wilderness environment, willingness to donate a finished piece of artwork inspired by the island, and the artist's ability to relate and interpret the park through their medium.

Applications must be postmarked by February 16, 2012. The National Park Service will notify artists of their acceptance by May 1. For more information or an application packet, contact Artist-in-Residence Program, Isle Royale National Park, 800 E. Lakeshore Dr., Houghton, MI 49931-1869, call 906-482-0984 or email ISRO_parkinfo@nps.gov.

Oops! Due to a printer software compatibility glitch, the expiration dates printed on the October *Wolf's Eye* were off by four years (e.g., 2011 printed as 2007). Sorry!

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IRKPA is the nonprofit membership organization that assists Isle Royale National Park and Keweenaw National Historical Park by publishing and selling educational materials for park visitors. Gifts, bequests, memorials, and memberships are U.S. tax deductible.

Membership Categories

Individual \$25	Household \$35
Supporting \$50	Sustaining \$100
Patron \$250	Life \$1,200*

*may be paid in four annual installments

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