



MURIE SCIENCE & LEARNING CENTER

“Sharing science from northern Alaska parks”

2014 Annual Report and Program Summary

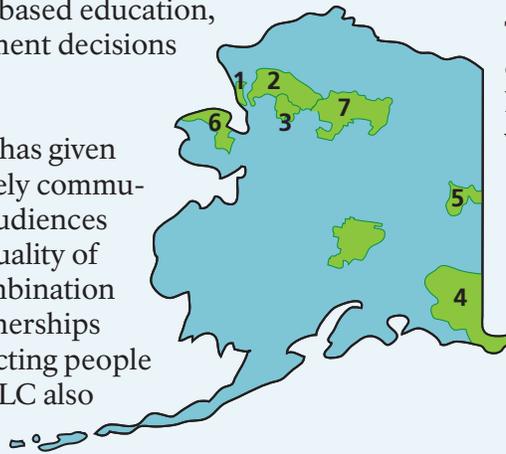
<http://www.nps.gov/rlc/murie>

Background

Located at the entrance to Denali National Park and Preserve, the Murie Science and Learning Center (MSLC) combines science, education, and partnerships to help protect areas of national significance. Although it is located in Denali, the MSLC works with seven other national parks and many partners to reach the goals of increasing research, science-based education, and science-informed management decisions for these special places.

Established in 2005, the MSLC has given Denali the capability to effectively communicate park research to broad audiences and increase the number and quality of research projects. A special combination of science, education, and partnerships has created new ways of connecting people to their national parks. The MSLC also supports the National Park Service mission by leveraging partnerships and collaborating to achieve fiscal efficiency in generating high-quality scientific information and products for park management and the public.

The MSLC consists of a primary partnership between the National Park Service and Alaska Geographic. For more than 50 years Alaska Geographic has been fostering stewardship for Alaska’s public lands through compelling publications, experiential education programs, and fantastic bookstores where all proceeds benefit Alaska’s public lands.



The MSLC serves Denali and seven other national parks across two NPS Inventory & Monitoring Networks. Partner parks include:

1. Cape Krusenstern National Monument
2. Noatak National Preserve
3. Kobuk Valley National Park
4. Wrangell-St. Elias National Park and Preserve
5. Yukon-Charley Rivers National Preserve
6. Bering Land Bridge National Preserve
7. Gates of the Arctic National Park and Preserve

The area covered by these parks represents more than 50 percent of the lands administered by the National Park Service nationwide.

Additional MSLC partners include the Denali Education Center, Doyon- ARAMARK Joint Venture, Denali Borough School District, University of Alaska, Upper Susitna Soil and Water Conservation District, and others.



Youth Programs

Denali Science School

New in 2014, Denali is offering multi-day in-park education programs for Alaskan fifth and sixth-grade classes. During the three-day program, classmates will be immersed in Denali's natural wonders through hands-on activities, hikes, and journeys into the park.

Denali Science School is instructed by skilled National Park Service and Alaska Geographic educators who work with teachers to enhance each school's curricula. Session itineraries vary depending on the group, but all sessions include a visit to the park's sled dog kennels, a fieldtrip into the park, and day and evening science and team-building activities.

In 2014, Denali Science School is being offered free of charge to participating school groups, including instruction, equipment, accommodations, and in-park travel. The individual school groups are responsible for the cost of transportation to and from the park, as well as the cost of on-site food service at the MSLC Dining Room.



Denali wildlife biologist teaches kids how to track wolves using radio telemetry. *NPS Photo*

Denali Intensives for local high school students

Week-long "Intensives" for all Denali Borough School District (DBSD) high school students will be offered by Denali National Park and Preserve employees in the fall of 2014. Students will explore how and why NPS works to preserve and protect Denali for the enjoyment of this and future generations. They will achieve a better understanding of themselves and the ways in which they are personally connected to public lands. Seven topics will be offered, each with one or more Park Service lead instructors working together with a local high school teacher. Topics include physical sciences, biological sciences, cultural and social sciences, building trades, trail design and construction, media, and visitor and resource protection.



Denali Distance Learning

Denali National Park and Preserve is an environment of extreme temperatures, tall mountains, glacial landscapes, and more. As it is difficult, if not impossible, for many teachers and students to come to the park, Denali created new free, interactive, distance learning programs to help classes learn about this special place and enhance existing curricula.

Every winter, Park Service and Alaska Geographic educators teleport themselves via Skype into classrooms across the United States to present fun, standards-based science lessons. During the winter of 2013 – 2014, over 3,000 students in 24 states were reached through the three programs offered: *The Science of Sled Dogs* uses the Denali's sled dogs to teach concepts of physiological and behavioral adaptations; *Denali the High One* teaches concepts of plate tectonics, weather, and glacier dynamics using North America's tallest mountain as an enormous prop; and *Ask an Alaskan* allows students to ask whatever questions they have about surviving and thriving in Alaska. Teacher and student feedback has been overwhelmingly positive.

In 2014 – 15 MSLC will add one more program to the menu: Denali Dinosaurs, which will feature a mural recently installed in the MSLC that illustrates Denali during the cretaceous era. All curricula have written lessons and activities for teachers available for download on the Denali website.

Denali Days

National Park Service educators connect elementary students to Denali by teaching about park resources in local schools. During Denali Days, students explore current research being done in the park, and how curiosity leads scientists and students to better understand the world. Programs include an in-class component and a Denali visit when possible. Denali Days is offered in partnership with the Denali and Matanuska-Susitna Borough School Districts.

In 2013, Denali's Education Specialists went into classrooms locally and south as far as Wasilla to teach about plant germination and growth. In addition, local elementary students visited Denali for a day in April. These students participated in a phenology citizen science project during which they collected bud burst data for aspens. In 2014, Denali Days focuses on paleontology and the in-park field trip features a visit to the new dinosaur mural in the MSLC.



Denali Discovery Camp

Denali Discovery Camp provides children from the Denali area with quality learning experiences through hands-on adventures and fun in the park. Run as a partnership between NPS and Denali Education Center, the camp curricula engage participants in hands-on science activities as they learn about sub-arctic ecology, the national park mission, and preservation and protection of park resources. Depending on their ages, participants spend one to three nights in the park during camp week (June 16-20, 2014).

Denali Backcountry Adventures

Denali Backcountry Adventures (DBA) is a week-long backpacking trip for high school students interested in exploring Denali's vast wilderness. In 2013, to celebrate the 100th anniversary of the first summiting of Denali, students experienced first-hand what it takes to launch mountaineering expeditions on the highest mountain in North America. The students' expedition included flying to Base Camp for a day of one-on-one instruction from Denali mountaineering rangers; practicing the teamwork and technical skills needed to reach the highest places on earth; and assisting Denali mountaineering rangers as they launch a summit attempt from Wonder Lake. In its eleventh year, DBA is a partnership program between Park Service and Denali Education Center. In 2014, the camp will take place from June 2 - 7.



Discovery camp students imitate bears during a wildlife safety training. *NPS photo*

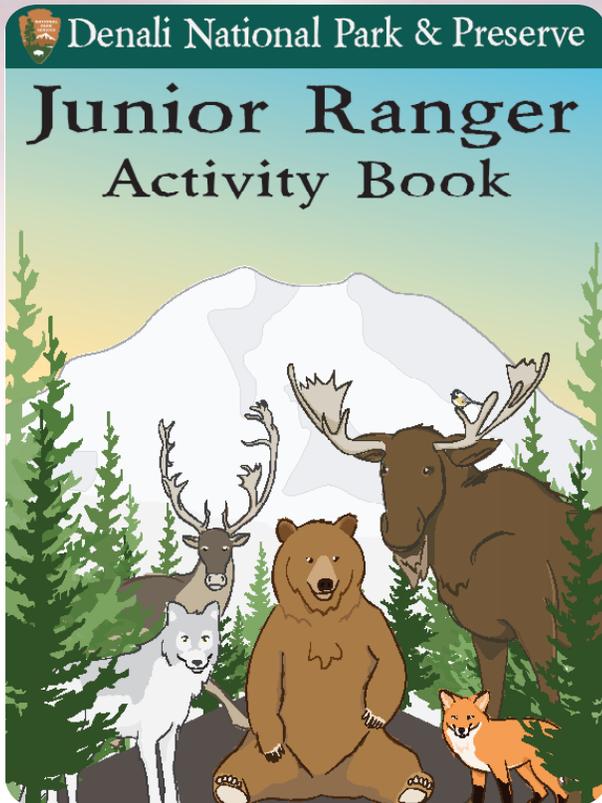
Denali-Susitna Exploration Camp

Exploration Camp offers high-school students from the Northern Susitna Valley the opportunity to explore the natural and cultural history of the Denali area. In 2013, NPS archaeologists led the students on a week-long excavation of a historic site in downtown Talkeetna, AK. At the end of camp, students demonstrated their new knowledge at a community show-and-tell presentation. In 2014, Exploration Camp students will come to Denali and get their hands dirty helping with a trail-building project. Denali-Susitna Exploration Camp is run by the Park Service in partnership with the Upper Susitna Soil and Water Conservation District.



Teen Stewardship Wilderness Expedition

In July, a diverse group of high school students from the Anchorage area will participate in a stewardship expedition with Alaska Geographic and NPS staff. On a ranger patrol, the teens will gather and process wilderness monitoring data related to backcountry use. To celebrate the 50th anniversary of the Wilderness Act, these teens will gain first-hand wilderness experience and learn about the challenges of managing Denali for present and future generations.



Denali's new Junior Ranger book teaches kids to learn about, explore, and protect Denali.

Field Courses for Teachers and Park Enthusiasts

The MSLC offers up to 24 field courses in Denali each summer. Alaska Geographic coordinates these active-learning, multi-day courses and most are based from the MSLC field camp, on the Teklanika River at Mile 29 of the Park Road. New course topics in 2014 include geohazards, wilderness packrafting, and mushrooms. Many park research staff members serve as content experts for the field courses. Some courses are specifically designed as 'teacher trainings', aiming to help educators bring park science into their classrooms. The MSLC and Alaska Geographic announce a teacher scholarship program each fall and provide financial assistance to more than 20 teachers, totaling up to \$10,000 each year. University credit is available for all field course through the University of Alaska.

Self-Guided Activities for Kids and Families

Park Service education rangers at the MSLC are responsible for overseeing the Junior Ranger and Discovery Pack programs for Denali National Park and Preserve. The Junior Ranger program allows visiting youth to explore Denali through a free activity guide while Discover Packs are backpacks full of interactive science activities that families can check out at no cost. There is a brand-new Junior Ranger book available in 2014 – make sure to check it out! The new book features climate change, park management, NPS careers, and many other resource topics.

By-Request Ranger Programs

Teachers who wish to bring their classes to Denali can request a special program from an MSLC Park Service education ranger. These programs include hikes and hands-on classroom activities and cover topics from winter adaptations to current park science.



Field course participants examine a small mammal jawbone. *Alaska Geographic Photo*

Day Programs

Windows into Wilderness Bus Tour

In its second year, this daily six-hour bus tour provides park visitors with a unique new park experience. Developed in partnership with the park concessionaire, Doyon-Aramark Joint Venture, this new park tour combines science and native Alaskan perspective.

A Side of Science: Lunchtime Presentations

Daily presentations and films in the MSLC classroom provide a regular educational service to Denali visitors. Alaska Geographic instructors give presentations and show films on subjects such as climate change and park wildlife studies.

Evening Speaker Series

Alaska Geographic hosts guest speakers at the MSLC throughout the summer. Guest speakers include park researchers, visiting researchers and conservationists, writers, artists, and adventure travelers. This free program is offered twice weekly in the MSLC classrooms, usually on Monday and Wednesday evenings at 7 pm.

Custom Education Programming

As part of our mission, the MSLC can coordinate a variety of custom educational programs for visiting science and education groups. In addition to the below activities, we also offer guided hikes, multi-day courses, staff trainings, educational materials and facility rentals. Inquiries about custom education programming should be directed to the MSLC at (907)683-6432.

Murie Excursion: Chartered Science Buses

This Alaska Geographic-led program provides visiting education groups with a customized science education experience in Denali. Participants learn about different habitats, take a short walk, participate in hands-on activities, and travel by bus to varying destinations in the park. Proceeds from this program support the Murie Science and Learning Center operations.

Welcome to Denali Dinner Presentation

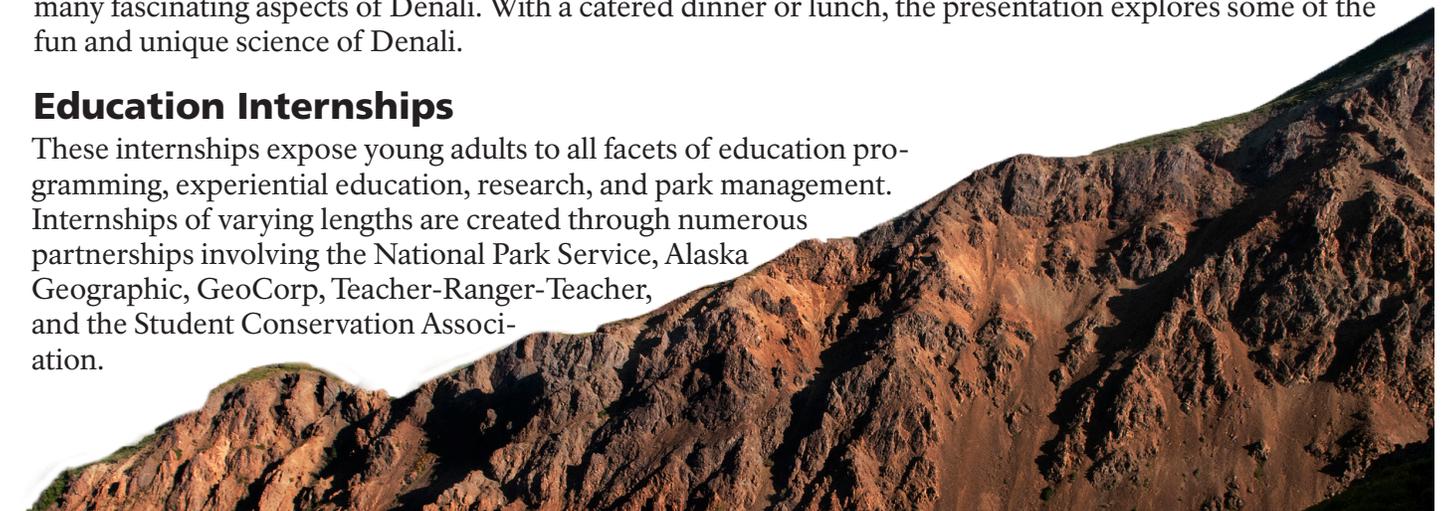
This lively introduction to Denali prepares visiting groups for a richer park experience by bringing to light many fascinating aspects of Denali. With a catered dinner or lunch, the presentation explores some of the fun and unique science of Denali.

Education Internships

These internships expose young adults to all facets of education programming, experiential education, research, and park management. Internships of varying lengths are created through numerous partnerships involving the National Park Service, Alaska Geographic, GeoCorp, Teacher-Ranger-Teacher, and the Student Conservation Association.



Visitors learn about radio tracking during a custom education program. NPS photo.





Research fellow and assistant take repeat photographs to track landscape change. Karpilo photo.

MSLC Fellowships and Grants

Murie Science and Learning Center Program of Research Fellowships

2014 is the ninth year that the MSLC has provided research fellowships to graduate students and other researchers conducting research in Alaska's northern parks. The purpose of the fellowships is to fill gaps in NPS' ecological and cultural understanding of Alaska's parks in an effort to improve park management. Funding for the research fellowships is provided by Alaska Geographic and the Denali Education Center.

Murie Science and Learning Center Science Education Microgrants

Each year the MSLC awards microgrants (generally under \$5,000) to individuals or groups who wish to further the Center's goal of promoting science-based education and outreach in Alaska's northern parks. NPS educators and researchers, as well as partners affiliated with the eight MSLC partner parks, are encouraged to apply. Successful projects from 2013 included a Fairbanks community initiative to educate students about the environment by turning trash into art, and a project where high school students from Anchorage and Shishmaref used videography to educate the public about the status of yellow-billed loons in Bering Land Bridge National Preserve.



Researcher-in-Residence Program.

From 2012 - 2015 the Park Service is hosting a Researcher-in-Residence Program through the MSLC. This program is designed to increase opportunities for researchers to work in the park and for visitors to learn about current park science.

In 2012, Denali funded the first of three Researchers. Dr. Jessica Rykken, an entomologist from Harvard University, spent two months conducting bee and flower fly collections in Denali. Jessica taught a day-long field seminar for local families and gave one public and one internal presentation on her research. She performed outreach in the lobby of the MSLC and invited park staff to help sort insects by order. She also created a fact sheet and outreach materials for distribution on the park website. In 2014 Jessica will come back to Denali to host a Bug Bioblitz in late July.

In 2013, science illustrator Karen Carr created a large mural for the MSLC depicting Denali during the Cretaceous period when dinosaurs roamed the landscape. The mural is as accurate a depiction of Denali 70 million years ago as current science allows. Visit the Murie Science and Learning Center to see the mural in person and learn more about the ancient, intact ecosystem preserved within Denali National Park and Preserve.

In 2015, Link Olson will study whether the park's small mammals are displaying morphological changes that can be connected to climate change. Dr. Olson is the Curator of Mammals at the University of Alaska.

Facilities for Guest Researchers and Visiting Education Groups

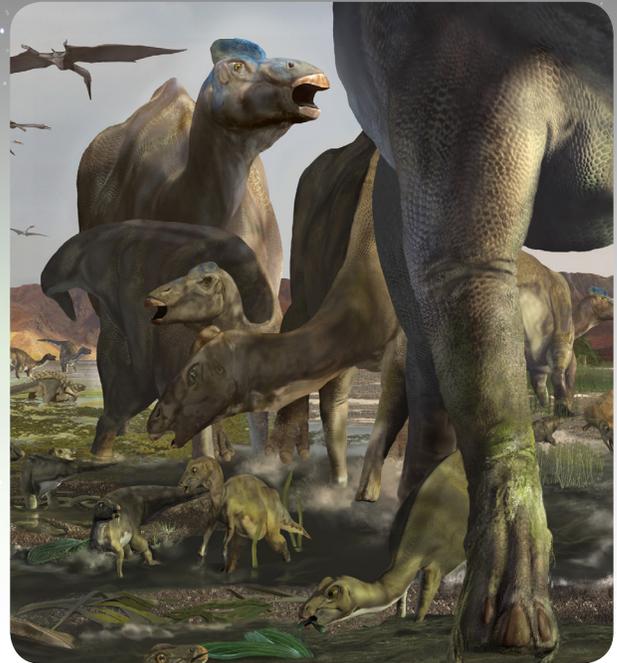
The Murie Science and Learning Center has four facilities available for use by guest researchers and visiting education groups:

The MSLC Visitor Facility provides a classroom, exhibit area, and office space for education staff and guest researchers. Researchers are encouraged to host educational programs and events in these spaces. Internet access and videoconferencing technology is available for use by guest researchers.

The MSLC Dining Hall provides meals for guest researchers and visiting education groups.

The MSLC Field Camp is located at the Teklanika River (Mile 29) and consists of six tent cabins (24 beds), a yurt, and a food and equipment storage shed.

The MSLC Yurt, located near the MSLC Dining Hall, provides housing for guest researchers and educators.



The MSLC Cretaceous Mural, created by science illustrator Karen Carr, was installed in 2014.

