



# Using Story to Build Stewardship

By David Tomeo

## Look! There's a Bird Track

"It was the most amazing thing I ever saw; I'm still processing it," exclaimed field course participant Cheryl Romantz. Three theropod tracks had just been discovered on a remote mountainside in Denali National Park and Preserve. The group of teachers and paleo-enthusiasts were giddy with excitement because of the fossil-rich area they had found. Being the first to see 65 million year old tracks created a 'fossil fever'. Amid the excitement of scrambling for photos someone in the group yelled, 'Look! There's a bird track right next to it!' The lighting had changed just enough for another discovery to appear right at their feet.

Stories like this inspire visitors and motivate educators to develop hands-on park explorations. Education planners throughout the world recognize the power of personal experience and the stories that sustain memories. These personal narratives help create the foundation for park stewardship. In Denali the dinosaur story continues to grow with each group that helps search for new fossil evidence.

Denali's dinosaur story began with Susi Tomsich in June 2005 at an outcrop at the base of Sable Mountain. Dr. Paul McCarthy's field geology group was mapping Sable Mountain; McCarthy stopped the group at the outcrop along Igloo Creek to highlight the significance of the Cantwell Formation and its late Cretaceous age (Tyrell and Sutherland 2006). With the group leaning against the

outcrop, McCarthy explained that fellow paleontologists felt confident that dinosaur evidence would someday be found in the sedimentary rock (Tyrell and Brease 2006). As he described the features they might find in the rock, Tomsich impulsively turned to look where her head had been resting. What she saw was unmistakable. She waited politely for McCarthy to finish his lecture and then blurted out the words that started the story – 'Like this one?' The distinctive three-toed cast was a theropod dinosaur and the start of Denali's fossil fever (Tyrell 2006).

Paleontology is just one of the unique courses in Denali that puts real science in the hands of teachers, youth, and park supporters. As a non-profit park partner, Alaska Geographic coordinates a wide variety of experiential education programs with the goal of fostering life-long stewardship for our public lands. Each time a participant makes a discovery, witnesses a rarely-seen natural event, or simply experiences the beauty and challenge of the Alaskan environment, Alaska Geographic furthers this goal. Communicating science is an important objective, yet it is the opportunity to cultivate personal stories that fulfill the stewardship mission.

## Stewardship Through Experience

Communication consultant Andy Goodman likes to remind people that 'nobody ever donates money or marches on Washington because of a bar graph'. With this in mind, Alaska Geographic champions public land stewardship by helping to develop deep connections with our Alaska public lands. These connections are often rooted in an inspiring individual, an intense experience, and the emotion evoked from those interactions. This leads to that final important step, the point at which the visitor becomes an invested steward of the environment.

Exceptional educators strive for this in the activities and stories they share, and they rarely use bar graphs.

In 2002, Alaska Geographic embarked on a new partnership with Denali National Park and Preserve. Traditionally providing only educational products, their mission was expanded to actively engage the public through experiential science education. Where they once provided books about grizzly bears, they now also provide field courses and guided walks exploring the many facets of *Ursus arctos*. These enhanced connections help Alaska Geographic develop a stronger constituency for our public lands.

## Using Story To Close The Science Gap

We live in an age where style can influence the public's perception of science (Olson 2009), and in the science education community there is great concern about the decline of scientific literacy (Mooney and Kirshenbaum 2009). In 1959, the chemist and novelist Charles Percy Snow delivered an influential lecture that outlined a societal separation he saw developing—a separation between two areas of human intellectual activity, 'the sciences' and 'the arts'. He went on to describe the separation between the scientists and the non-scientists as a 'gulf of incomprehension'.

Today the size of this gap is debatable, yet across the country in schools and professional conferences, educators are urgently reexamining the effectiveness of their methodology. Investigative writers such as Richard Louv and Michael Pollan are inspiring us to examine how modern society has separated our understanding of nature from our connection to it. Telling people about the importance of a balanced ecosystem is not enough. Educators must build bridges between a person's

**Figure 1.** Alaska Geographic instructor Larry Montague helps a seminar participant across a creek.

Alaska Geographic photograph



Photograph courtesy of Ron Karpilo

**Figure 2.** Repeat Photography seminar participants at a historic site in Denali: Hines Creek, July 8, 2012.



USGS photograph by S.H. Carhart

**Figure 3.** The Stephen Reid Capps Expedition (Capps is at back left) at a food cache they built along Hines Creek in Denali, July 4, 1919.

scientific and artistic intellect—described in some circles as a connection between the head and the heart.

The power of story helps build those bridges and interpretive rangers and teachers use a variety of tools to create compelling presentations and activities. A method championed by NPS interpreters is the use of ‘universal concepts’—emotions common to all humans. Describing recent arctic sea ice data may stimulate a learner’s science intellect, but when the presenter can relate this process to a universal concept, such as ‘safety’ or ‘home’, they build stronger bridges. The effective educator incorporates those emotional connections into their narrative. A learner’s emotions are provoked by the story of the relocation of the 2,000 year old village of Shishmaref due to the loss of arctic coastline (*Bronen 2010*). In his 2008 essay ‘Why Stories Matter’, Marshall Ganz speaks to the power of universal emotions by provoking our audience to ‘get the moral not just as a concept, but as a teaching of the heart’.

Even on Alaska Geographic’s short park excursions,

educators avoid spouting facts and statistics; instead they attempt to weave their own personal experiences with the powerful stories of historical and contemporary scientists of Denali. By including a personal narrative, educators give the audience a better understanding of their values and what inspires them to act. This is another way that visitors can be inspired and think in new ways.

### Research Fellows Give Us Stories

Science educators are not only eager for rich data, they also seek fresh stories. The young scientists supported by the Murie Science and Learning Center’s research fellowship are an excellent source for stories.

In 2006 the center began offering research fellowships to support small yet important research questions pertaining to Denali. The initial effort was funded through an education program of a nonprofit park partner, the Denali Education Center. In 2007, with Alaska Geographic’s support, the program was expanded

to all eight partner parks of the Murie Science and Learning Center. To date, more than \$200,000 has been awarded through 54 fellowships in eight park units.

The fellowship program is unique because it is funded entirely by education programs of non-profit park partners. While participants on guided hikes learn about current science, they simultaneously support new research efforts—creating a positive feedback loop.

### The Capps-Karpilo Story

In 2011, Ron Karpilo of Colorado State University set out to retrace portions of the 1916 and 1919 USGS expeditions of Stephen Reid Capps. Karpilo aimed to retake many photographs from those early expeditions. Repeated images such as these offer botanists, glaciologists, and geographers a unique view into the past and an examination of the change that has occurred (*Molnia et al. 2007*).

In addition to the historic images, Karpilo also rediscovered a treasure trove of journals and log books from



Alaska Geographic photograph

Figure 4. Seminar participant Bruce Curtis-McLane experiences the hardships of field science in Denali.



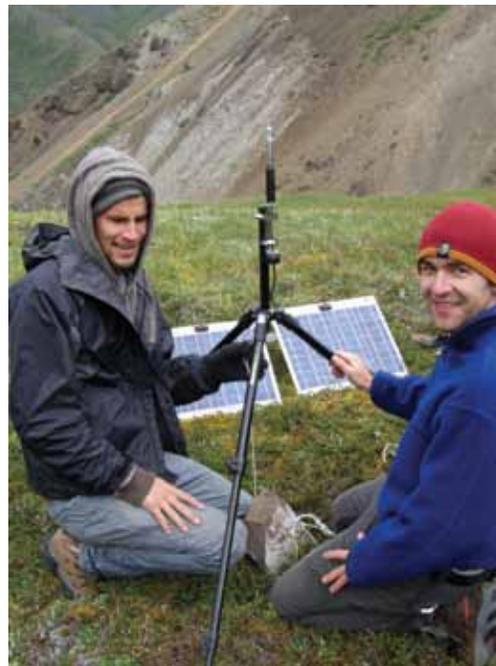
Alaska Geographic photograph

Figure 5. Wildlife biologist Bridget Borg shares stories with seminar participants.



Alaska Geographic photograph

Figure 6. (Left) Seminar participants explore wolf habitat with wildlife biologist Bridget Borg.



Alaska Geographic photograph

Figure 7. (Middle) Seminar participants help deploy a sound monitoring station in Denali.



Alaska Geographic photograph

Figure 8. (Right) Seminar participant Doris Ivory collects paleontological data in Denali.



Photograph courtesy of Ron Karpilo

Figure 9. Seminar participant and school teacher Nicole Flynn finds the location of a 1962 photograph of the Teklanika River valley.



Alaska Geographic photograph

Figure 10. A science seminar participant takes measurements of a large dinosaur track.



Alaska Geographic photograph

Figure 11. The Murie Science and Learning Center facility in Denali.



Photograph courtesy of Ron Karpilo

Figure 12. Seminar participant Paula Davis (left) looks for landmarks with Lacy Karpilo at a repeat image site in Denali.

Capps' Denali explorations. In these, Karpilo gleaned some fascinating first-person accounts from the early travelers. Combining those accounts with his own experiences in the park gave Karpilo a compelling story to tell.

Because of the ties between research and education at the center, Karpilo's project easily adapted into a multi-day course the following summer. Using the Capps story as the theme, a group of teachers and park enthusiasts explored the changes taking place in ancient lake beds, alpine vistas, and cultural sites throughout Denali. This course connected the public directly with a researcher and offered them a place in this unique story of change and history.

### Research and Outreach in Kobuk Valley National Park

The fellowship program has made contributions to Alaska's northern parks as well. The 2010 fellow, Shelby Anderson, set out to locate natural clay sources in Kobuk Valley National Park. By comparing these source locations with pottery remains at known archeology sites, Anderson examined the movement of ancient pottery throughout the region as an indicator of early social networks.

In addition to giving presentations in Kotzebue and producing fact sheets about her work, Anderson made valuable connections with local residents in the park. Through interviews with long-time residents along the Kobuk River, Anderson helped strengthen an appreciation for past and present subsistence in the park, as well as an appreciation for the study of our ancient cultures.

### A Facility of Support

Acting as a springboard into Denali, the Murie Science and Learning Center was designed to assist visiting researchers by providing much needed office space, internet access, and bed space. Having visiting researchers working in proximity to science educators has excellent benefits. When guest researchers overlap with an education group at the field camp, there is often excellent synergy—even a landscape painting

course will benefit from an evening with a group of ornithologists. Multidisciplinary groups such as this help build bridges between scientific and artistic thinking.

### Closing the Gap

Visitors are attracted to our parks for a variety of reasons. They may be hoping to encounter wildlife, experience wilderness, or simply check-off another item on their bucket list. Science educators honor the visitor's desires yet also strive to build lasting connections with the land and an understanding of the science behind the scenery. The Murie Science and Learning Center, through Alaska Geographic's programs, is seeing success in the combined use of current science, hands-on education, and personal narrative. Using the important lessons of Freeman Tilden and Marshall Ganz, they build compelling educational experiences. Having these education programs financially support research efforts further expands their effectiveness, and it is acknowledged in the praise received from past participants. This praise tells Alaska Geographic that they are on the right path. Through the development of park stewardship, they are closing the scientific gap and bringing the head a little closer to the heart.



Figure 13. Seminar participants Alex Lee (left) and Kevin Clement connecting with the mosses of Denali.

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