reinforced her commitment to protecting park resources. "It also made me see that I can make a difference and be a part of something larger than myself."

Kaloko-Honokōhau, a small historical park increasingly surrounded by development, is only 1,160 acres (470 ha) in size. However, it is home to numerous cultural and natural resources, including a unique ecosystem of anchialine (brackish water) pools, a pristine coral reef system, two fishponds, and many marine and terrestrial species (11 of which are listed as threatened or endangered). Sallie plays an instrumental and varied role in protecting these resources. "We're a small park, so I have to wear more than just the marine ecologist hat. My job has evolved into anything and everything that has to do with land-sea interactions that may affect water resources."

A marine research specialist, Sallie has built a highly effective coral reef program that analyzes and monitors groundwater flowing into the coastal environment. Native Hawaiian science students are involved in the program as interns, a partnership that is important for the park. Sallie's work has also focused on developing a program to remove invasive algae from park waters, and instituting a long-term monitoring program to assess green sea turtle health. Her proposals for water quality projects consistently compete well for funding and have been used as models on the national level. She has also contributed scientific research on a broad range of water ecology topics and has developed a network of partnerships with universities, government agencies, and nonprofits to expand park research and preservation efforts.

"My job has evolved into anything and everything that has to do with land-sea interactions that may affect water resources."

Sallie is passionate about protecting and enhancing park resources, even when the obstacles seem overwhelming. "Management policies tell us to, when appropriate, go outside park boundaries to work with our neighbors in order to protect the resources. That's certainly being done here. It would have been easy to say, 'Oh well, gosh, there's development coming in. What are we going to do?'" Instead, she has focused on doing her day-to-day job. "It's hard to drive down the road and see the bulldozers and know what's coming. But it's motivating for all of us here to see that we can do our job and protect the [park] resources." ■

—Kristina Woodall, Associate Editor, *Natural Resource Year in Review*, contractor to the National Park Service

"Tromping around on glaciers": A profile of research ecologist Dan Fagre

DAN FAGRE HAS CAUSED A CHANGE of thinking at Glacier National Park, Montana. This USGS ecologist has helped park staff and resource managers around the world view mountain ecosystems more dynamically and recognize the impacts of climate change on natural resources. As stated in his nomination for the 2004 Director's Award for Natural Resource Research, "Dan has demonstrated vision and innovation in guiding the development of powerful new tools and capabilities for understanding the structure and function of mountain ecosystems and has been instrumental in applying these capabilities to new problems of national and international significance."

Dan received this prestigious NPS award for his research, which encompasses ecosystem modeling, changes in tree line (alpine ecotones), snow modeling, snow chemistry, and glacier-climate dynamics. He says the breadth of his research is "a sign of somebody out of control," but his results attest to a systematic, integrated way of thinking that reveals connections on a global scale. Indeed, researchers from around the world consider the model that Dan formulated at Glacier National Park—one of the longest-running, global-change research programs in a national park—worthy of emulation on an international scale. This research program is an innovative integration of glaciology, plant succession, climatology, and other disciplines to explicitly examine the influence of climatic change on an entire mountain ecosystem. It involves numerous collaborators and yields accessible and relevant information that can help managers and the public make informed decisions. In addition, his research provides baseline data that underpin the NPS Inventory and Monitoring Program.

The most immediate and direct application of Dan's research is the use of climate and snowpack information for both predicting conditions and scheduling work on the opening of the Going-to-the-Sun Road, an alpine highway that crosses the Continental Divide in Glacier National Park. This enables the maintenance division to work more safely and efficiently: staff does not start plowing the road until after maximum snow accumulation has occurred or until after the peak of avalanche hazards has passed. The avalanche research helps to improve long-range planning of operations and understanding of the many ecological effects of frequent snow avalanches.

Dan considers himself to be on an intellectual adventure that is contributing to scientific and public understanding of mountain ecosystems.

In addition to his scientific achievements, the Intermountain Regional Office selected Dan as a regional contender for the national award because of "his ability to 'outreach' to park staff and visitors." Indeed, the public has seen Dan on CNN, Fox News, ABC, NBC, and in documentaries on the Discovery, Travel, and National Geographic Channels. "Frankly," Dan says, "the main way that this has occurred is being willing to take the time to talk with the media." He goes on to say that not all scientists are willing to do this because the scientific community often does not value such efforts and some scientists fear being misquoted. However, Dan believes that the opportunity to convey science in an enthusiastic way outweighs the risks. In short, he holds that "science can be a very exciting story to tell."

One such story links the Pacific Decadal Oscillation—a 20- to 30-year climate cycle that influences snowpack—with hydrology, formation of avalanche chutes, habitat creation for grizzlies, plant succession, nutrient transfer to rivers, and effect on aquatic invertebrates. No wonder Dan sometimes feels "all over the map." Yet these types of connections are the reason he first started "tromping around on glaciers." His interest in finding and explaining connections leads to documenting the relationships and responses between the mountain ecosystem of Glacier National Park and other similar systems throughout the globe.

Dan considers himself to be on an intellectual adventure that is contributing to scientific and public understanding of mountain ecosystems. He feels privileged and content to be the global climate change research coordinator at the Glacier Field Station of the USGS Northern Rocky Mountain Science Center. According to his nominators, during his 14 years in this capacity Dan has "developed a program and a presence that the park cannot live without." ■

—Katie KellerLynn, Associate Editor, *Natural Resource Year in Review*, under cooperative agreement with the National Park Service

Dan Fagre, research ecologist, Glacier National Park, Montana.