

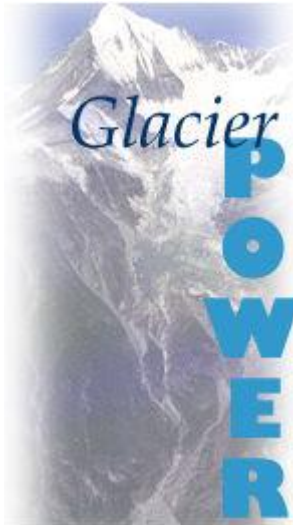


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Glacier Power [1]



by Rachel Hauser
Published in 1997

Ice worms and a woolly mammoth teach elementary school students the physics of glaciers. Arctic animals past and present appear in Glacier Power, a CD-ROM-based series of lessons and activities for middle school children. Released at the end of 1997, the CD-ROM and Teacher's Guide represent the Alaska SAR Facility's first foray into the realm of educational products.

Donna Sandberg, leader of the Alaska Synthetic Aperture Radar (SAR) Facility's educational outreach effort, wanted to increase awareness of the Alaska SAR Facility's data archives. She also wanted to make the data more accessible to a wider audience. Generating enthusiasm for science in a grade school audience seemed a natural choice to ensure future data users.

"I suggested looking at the SAR facility data commonly used to supplement scientific research, either sea ice, glacier, volcano, flood or earthquakes data. The Fairbanks school district showed us what they had in terms of glacier information in the old curriculum. It amounted to about two paragraphs, which is interesting

considering we live in an region with thousands of glaciers," said Sandberg. "Glaciers are well studied at the University of Alaska, consequently we have a lot of data in our database from ongoing research."

At the middle school level using raw data would not work because of its complexity, said Sandberg. Sandberg was tasked with creating a means of helping students understand glacier dynamics while also making learning interesting and fun. She tried to achieve this by including an interactive element in the design of the activities.

Glacier Power lessons encourage students to answer questions about what they have learned after reading selected modules. Students can access woolly mammoth and ice worm study partners if they need help with glacier vocabulary or if they become stumped by a question. Cartoon characters and a theme that fashions students into glacier detectives carry them through Glacier Power activities.



Exciting new glacier curriculum developed with SAR data.

- [About ASF](#) [2]

Feedback



World-renowned glaciologists, local scientists, teachers and students, as well as Fairbanks' artists, contributed photographs and drawings found in the text.

"A University of Alaska-Fairbanks professor provided slides from his climb to the top of Mount McKinley along with photos of glaciers around the state," Sandberg said. "When I would ask people for input or help and the answer was always 'yes'."

Sandberg asked Fairbanks teachers to critique the project throughout each step of the process. "Teachers are very honest people. They said, 'Why did you do this?', 'That doesn't work', or 'We like this'," said Sandberg. The Fairbanks school district helped by providing teachers with the additional release time they needed to review Glacier Power.

To gauge the reaction to the prototype, Sandberg demonstrated the materials at education and science conferences.

"We have had positive reactions and feedback wherever we have presented Glacier Power," Sandberg said. "We first presented at an education initiative session of the International Geoscience and Remote Sensing Symposium in the fall of 1996, where Glacier Power was so well received that people who saw it told the director of the Satellites and Education Conference in Pennsylvania that she had to invite us. At this second conference, the audience consisted almost entirely of teachers and we had a great time."

After these positive responses, NASA requested that Glacier Power join a review by professional educators in September 1997. Sandberg sent the prototype off to NASA's Mission to Planet Earth (MTPE) education specialists. Product approval meant Glacier Power would be distributed at various NASA-related education workshops that provide teachers with materials to increase awareness and understanding of NASA's scientific research and technology accomplishments.

Glacier Power successfully underwent a peer review of all materials, said Sandberg. In October 1997 NASA officials approved Glacier Power and produced 15,000 CD-ROMs by December 1997. The CD-ROMs have been distributed to teachers and classrooms nationwide.

Sandberg is already contemplating the next step.

"I've been looking at materials relating to earthquakes or volcanoes and Earth movement. A big advantage for Glacier Power was the dearth of glacier material available to teachers. The same is not true for volcanoes," she said. Sandberg plans to review existing educational materials to determine how the Alaska SAR Facility might further supplement current curriculum with remote sensing and SAR information.

"We may or may not create Volcano Power, but we can certainly create something to enhance the available material and include satellite remote sensing in typical middle or secondary Earth science instruction," said Sandberg.

Comment(s)

To order the CD-ROM: Contact the Alaska Satellite Facility's User Services Office at asf@eos.nasa.gov [3].

Images courtesy of the Alaska Satellite Facility DAAC, Dr. Juerg Alean, and Dr. Michael Hambrey

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