

**Earth Science Week 2009
“Understanding Climate”**

Highlights and News Clippings

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Highlights and News Clippings from Earth Science Week 2009

Introduction

Held Oct. 11-17, 2009, the 12th annual Earth Science Week celebrated the timely theme “Understanding Climate.” Earth Science Week 2009, like past celebrations, promoted public and professional awareness of Earth science in education and society.

Each year, AGI organizes Earth Science Week as a service to member societies, with generous help from partners which provide funding, donate materials, organize events, and publicize the celebration. Major funding partners in 2009 included the United States Geological Survey (USGS), the American Association of Petroleum Geologists (AAPG) Foundation, the National Park Service, the National Aeronautics and Space Administration (NASA), the U.S. Department of Energy, ExxonMobil, and ESRI.

“Students and the general public need to understand the science of Earth’s climate system, above and beyond the sound bites of public debate,” says Ann E. Benbow, Ph.D., AGI’s Director of Education and Outreach, announcing the theme of the celebration. Earth Science Week 2009 provided educators, students, and interested citizens with the information, resources, and activities necessary for scientifically sound climate education.

Participation in Earth Science Week 2009 remained strong. People in all 50 states and in more than 18 countries participated in events and activities. Nearly 80,000 people visited the Earth Science Week website in 2009. In addition, more than 1,100 people nationwide actively participated in the program’s visual arts, essay, and photography contests.

Earth Science Week events ranged from educators teaching Earth science activities in their classrooms to open houses held at major USGS field stations. A detailed list of events can be found in Section 1. This list represents only events reported directly to AGI, so please notify Earth Science Week staff if your participation is not listed.

Additional events are highlighted in Section 2, which is a compilation of news releases and other items by members of the geoscience community. Each year, more people are introduced to Earth Science Week by reading or watching a news story in the media. This year, Internet, print, and broadcast media coverage of Earth Science Week reached a documented 40 million people. Section 2 contains examples of print and electronic media promoting Earth Science Week events, activities, resources, and materials. In addition, television news programs presented coverage of Earth Science Week on local stations in five states.

This report is designed to give an overview of the activities organized by AGI and other groups for Earth Science Week. We hope this information on 2009 events and publicity inspires you to develop your own activities next year. Please visit www.earthsciweek.org for event planning, materials, resources, and support. Contact Earth Science Week staff at info@earthsciweek.org for assistance in planning for Earth Science Week.

Section 1

Earth Science Week 2009 Summary of Activities

Overview

More than 40 million people gained a new awareness of the geosciences through the 12th annual Earth Science Week. That's how many people worldwide learned about Earth science through program promotions, education efforts, news media, and Internet coverage. The event celebrated the theme "Understanding Climate" by promoting scientific understanding of the long-term weather patterns that make up our climate.

Earth Science Week events ranged from individual teachers and classes conducting playground science projects to activities at major USGS field stations, NASA facilities, and national parks. Schools nationwide held activities for "No Child Left Inside" Day on October 13, encouraging students to explore climatology and other geoscience topics firsthand outdoors. And the first annual Women in the Geosciences Day, October 15, provided an opportunity for professional geoscientists to share the excitement of their careers with young women.

Internationally, students and others in Australia, Ethiopia, Puerto Rico, Saudi Arabia, Trinidad and Tobago, and the United Kingdom participated in events, explorations, and competitions for Earth Science Week. Shutterbugs in many additional countries entered the International Year of Planet Earth-Earth Science Week Photo Contest.

New Partnerships

Earth Science Week's success depends on the collaboration of key partners. In 2009, AGI forged partnerships with several organizations that helped the effort reach new audiences:

Association for Women Geoscientists

AWG, a new program partner, not only provided geoscience education materials for this year's kit, but also collaborated with AGI to launch the first annual Women in the Geosciences Day during Earth Science Week. AWG helped rally adult geoscientists to share with young women nationwide the excitement and rewards of careers in Earth science.

Earth Science Literacy Initiative

ESLI, a new partner funded by the National Science Foundation, gathered and codified the underlying understandings of the Earth sciences into a short brochure that was included in the Earth Science Week 2009 Toolkit. The framework is expected be influential in scientific, educational, and political settings.

ExxonMobil

A major new funder and partner, ExxonMobil generously supported the week's activities and educational materials. This energy-resource company is a longtime supporter of science and mathematics education.

Geology.com

Geology.com, a new Earth Science Week partner and promoter, provides a variety of geoscience materials including daily Earth science news, maps, an online dictionary of Earth science terms, and information on geoscience careers. Also on the website are resources for teachers, including links to lesson plans from major Earth science organizations such as the U.S. Geological Survey, GSA, and NASA.

Global Challenge Award

This nonprofit organization, which deals with geoscience issues ranging from climate change to energy, provided a flyer publicizing the initiative for the Earth Science Week 2009 Toolkit.

National Academy of Sciences

In 2009, the National Academy supported the theme of “Understanding Climate” by providing a publication entitled *Ecological Impacts of Climate Change* for distribution in the Earth Science Week Toolkit.

U.S. Department of Energy

DOE became a major funding partner in 2009, providing learning opportunities for geoscience teachers and students at all levels. The DOE Energy Efficiency and Renewable Energy site offers over 350 K-12 lesson plans online. DOE programs for K-12 teachers and college professors include support of the Albert Einstein Distinguished Educator Fellowship, in which selected teachers work for a year in a congressional office or federal agency to improve science education. The Einstein Fellowships are administered by the Triangle Coalition.

U.S. Environmental Protection Agency

EPA became a program partner in 2009, offering a climate education website and additional resources for students and educators, including information and activities related to reducing greenhouse gas emissions.

Earth Science Week Toolkits

AGI distributed some 16,000 Earth Science Week Toolkits to teachers and geoscientists across the country in 2009. The number of AGI member societies requesting complimentary Earth Science Week Toolkits for distribution rose to 22 in 2009 from 21 the previous year. In addition, the number of state geological surveys requesting complimentary kits for distribution increased to 28 from 27 in 2008. As in past years, thousands of kits also were distributed through program partners including USGS, NASA, the National Park Service, and AAPG Student Chapters. Hundreds of kits were shipped free to geoscience department chairs at colleges and universities nationwide. Toolkits were shipped to program participants in all 50 states and several countries.

The 2009 toolkit featured AGI’s traditional Earth Science Week poster, bookmarks, and school-year calendar showcasing geoscience classroom investigations and important dates of Earth science events. A “Glaciers of the National Parks” poster, included in the toolkit, was produced by AGI for the National Park Service to continue this unique poster

series underscoring geoscience in the parks. Additional items created by AGI for the kit were flyers promoting the Earth Science Week contests, AGI Earth science education products and services, the *Visions of Earth* DVD series, *Earth* magazine, and the Edward C. Roy, Jr. Award for Excellence in K-8 Earth Science Teaching.

Also included were geoscience posters, flyers, electronic disks, bookmarks, and activities provided by AGI, USGS, NASA, NOAA, AAPG, the U.S. Department of Energy, the U.S. Fish & Wildlife Service, the U.S. Environmental Protection Agency, the National Park Service, the National Academy of Sciences, the Earth Science Literacy Initiative, the Consortium for Ocean Leadership, The Weather Channel, Incorporated Research Institutions for Seismology (IRIS), the National Weather Service, Environmental Systems Research Institute (ESRI), the Geological Society of America, Soil Science Society of America, the Association for Women Geoscientists, the Society of Petroleum Engineers, the Global Challenge Award, Rite in the Rain, the Association of Science-Technology Centers, the Association of American State Geologists, the National Earth Science Teachers Association, the Society of Exploration Geophysicists, and the National Stone, Sand & Gravel Association.

Web Resources

As in past years, the Earth Science Week website (www.earthsciweek.org) was updated regularly to reflect the new theme, contests, proclamations, events, and classroom activities for 2009. The home page received 78,169 hits in 2009, about 27 percent more than the 60,753 received in 2008. Within the site, the Earth Science Week contests page received 23,130 hits in 2009, roughly 56 percent more than in 2008. The planning page received 5,720 hits, about 45 percent more than in the previous year.

Several months prior to Earth Science Week, AGI launched the Earth Science Organizations (ESO) database to facilitate partnerships between educators and others in the Earth science community. Educators were invited to use this new online tool (www.earthsciweek.org/gpn) to identify potential geoscience partners nearby, access relevant information, network with colleagues, and invite them to collaborate during the October celebration. The ESO map pinpoints local contacts for AGI member societies, state geological surveys, facilities of agencies such as USGS and NASA, universities offering geology programs, parks, museums, and other Earth science groups. ESO provides the perfect starting point for planning field trips or classroom presentations led by local scientists, professors, employers, nonprofit representatives, environmental educators, and government leaders in the geosciences.

In addition to ESO, Earth Science Week has maintained the many online resources and tools on which users have come to rely. Participants hosting events for the public during Earth Science Week, for example, were invited to post details on “Events in Your Area” (www.earthsciweek.org/eventsnearyou/index.html), a webpage providing information on events taking place in each state. Another significant online resource is AGI’s “The Pulse of Earth Science” website (www.agiweb.org/education/statusreports). For each state, the website provides the most recent available data on teacher certification requirements and numbers teaching related subjects, relevant courses that middle and high school students

must take, K-12 enrollment levels in Earth science and related subjects, coverage of Earth science within state science standards, state assessment of students in Earth science, textbooks adopted and relevance to Earth science, and contact information for state education agencies. The website also offers guidance and links to additional resources for advocates who wish to take action.

Newsletter

The monthly Earth Science Week Update newsletter reached more than 5,900 teacher, student, and geoscientist subscribers in the past year, an increase of 37 percent from the previous year. This electronic newsletter kept planners and participants up-to-date on Earth Science Week planning at the national level, encouraged participation in local areas, and provided news on geoscience topics of interest to participants.

In 2009, the Earth Science Week Update also began regularly providing news and information on AGI member societies' educational programs and resources, along with those of Earth Science Week partners. Newly profiled organizations included the American Association of Petroleum Geologists, the Association of Environmental and Engineering Geologists, the U.S. Department of Energy, the Environmental Protection Agency, the Earth Science Literacy Initiative, the Geological Society of America, Geology.com, the North American Association for Environmental Education, the Society of Exploration Geophysicists, the Soil Science Society of America, USA Today, The Weather Channel, and the Young Earth Scientists for Society. In addition to highlighting worthwhile resources, these monthly updates reinforce the notion that geoscience education is a priority throughout the year, not only during one week each October.

National Contests

AGI held three national contests in connection with Earth Science Week for the eighth consecutive year. The contests were designed to encourage K-12 students, teachers, and the general public to get involved in the celebration by exploring artistic and academic applications of Earth science. The number of people submitting photos, art, and essays to the Earth Science Week contests this year rose by 41 percent from 2008. Each first-place winner received \$300 and a "Faces of Earth" DVD set. Entries submitted by winners and finalists were posted online.

Taylor Jae Scott of Portsmouth, New Hampshire, won first place in the visual arts contest with a collage comparing landscapes, average sea levels, wildlife, and other climate indicators in his area today and 100,000 years ago. Finalists were Chris Carchi, Axl Avenido, Alex Noyes, and Damon Perkins. Students in grades K-5 made two-dimensional artworks illustrating the theme "The Climate Where I Live." Shreyas Havaladar of Dix Hills, New York, won first place in the essay contest with his writing about the climate and changing seasons on Long Island. Finalists were Brendan Hawkins, Tyler Wagner, Jerica Wilden, and Shruthi Aravindan. Students in grades 6-9 wrote essays of up to 300 words addressing this year's theme, "Climate Connections." Michael Badding of East Amherst, New York, won first place in the photo contest, open to all ages, with his image of a chunk of melting ice recovered from a mountainous area.

Finalists were Alexandra Cichon, Joseph Maa, Ari Moskowitz, and Tanya Morgan. Submissions illustrated the theme “How Climate Shapes My World.”

International Connections

In addition to the traditional Earth Science Week contests, AGI again partnered with the organizers of International Year of Planet Earth (IYPE) to offer a joint IYPE-ESW 2009 Photo Contest, open to shutterbugs worldwide. The theme of the contest was “Exploring Earth Science Around the World.” For the second consecutive year, entrants were encouraged to submit photos that show people engaged in Earth science exploration in the natural environment of their part of the world. The number people submitting photos to the contest shot up 73 percent in 2009 from last year.

Amy Spaziani, a graduate student in Baton Rouge, Louisiana, won first place with her photo featuring a geology student examining soft sediment deformation during a field trip near the Guadalupe Mountains in west Texas. Spaziani received a prize of \$500, a “Faces of Earth” DVD set, and placement of her photo online. Cassidy Williams of Westland, Michigan, who came in second, received \$300. Daniel McGrath of Boulder, Colorado, who placed third, received \$100. Finalists were Edmund Nickless of London, England, and Kim Schmidt of San Diego, California.

As promoted through Earth Science Week, IYPE also offered 10 Earth science mini-programs (www.iype-usa.org/radio.htm) through National Public Radio’s “Earth and Sky,” available via both radio and the Internet through support from Earth Science Week partners USGS, NSF, and GSA. One IYPE program was devoted to climate, the theme of Earth Science Week 2009. Other topics covered in the series included resources, hazards, soil, oceans, and health. Each 90-second program was heard or downloaded by millions of people.

Further promoting international cooperation in the geosciences, the Young Earth Scientists for Society (YES) network, an association of geoscientists under age 35 representing geological societies worldwide, in collaboration with IYPE, organized an international conference for young earth scientists, policy makers, advisors and decision makers following Earth Science Week. Also promoted through Earth Science Week, the YES Congress, held in October 2009 in Beijing, China, was devoted to exploring issues of global climate, environment, and geological challenges and establishing an interdisciplinary global network to solve those challenges.

Earth Science Teacher Award

For the second consecutive year, AGI and the AGI Foundation also offered the Edward C. Roy, Jr. Award for Excellence in K-8 Earth Science Teaching. Stephen Houser, Jr., an Earth science educator from Charlotte, North Carolina, was named the 2009 recipient. Houser, who has taught grades 3-5 for most of his 34-year teaching career, is a North Carolina certified environmental educator who serves as a talent development teacher, instructing gifted and high-ability students in areas including Earth and planetary science.

Houser received a \$2,500 prize and an additional grant of \$1,000 to enable him to attend the Geological Society of America's Joint Meeting at the close of Earth Science Week to accept the award. Given annually, the award recognizes one classroom teacher from kindergarten to eighth grade for leadership and innovation in Earth science education. This award is named in honor of Dr. Edward C. Roy, Jr., a past president of AGI and strong supporter of Earth science education.

Events

To help gear up Washington, DC-area participants for Earth Science Week 2009, AGI offered an interactive talk titled "Earth Science in the Spotlight: Engaging the Public" in Arlington, Virginia, on October 6. As the news media have routinely sounded alarms about natural disasters, climate change, and the energy crisis, many people have wondered who can help the public make sense of these issues. AGI, an association of 46 member societies across the geosciences, has developed strategies to tap the expertise of professional geoscientists to improve education, promote public awareness, and inform policymakers. Ann Benbow, Ph.D., AGI's director of education and outreach, led a brief discussion, along with an exciting video and hands-on activities, to show participants how they could play a vital part. The event was part of the Cafe Scientifique speaker series of the Ballston Science and Technology Alliance/COPUS.

Also leading up to Earth Science Week, teachers were invited to help students become "citizen scientists" by taking part in an international research project. The Sun Shadows Project had requested help in studying the relationship between seasons and the length of shadows. Starting with a science experiment at James Monroe Middle School in Albuquerque, N.M., in October 2007, students hypothesized that their shadows would be longer in winter than in summer. The study had grown since then, using data from both of Earth's poles and many locations in between. Project organizers presented initial results at the American Geophysical Union's Annual Conference in 2008. Students nationwide were asked to measure shadows and submit findings online. Because the Sun Shadows Project offered a way to begin "understanding climate," 2009's Earth Science Week theme, the project also was featured as AGI's Earth Science Week Research Project.

Earth Science Week 2009 officially kicked off on Sunday, October 11, with AGI's "Climate and Weather Day: An Earth Science Fair" at Baltimore's Maryland Science Center. In addition to the science center's many longstanding science offerings, special displays and hands-on activities highlighted the science of climatology. Presenters such as NASA, the National Weather Service, the National Park Service, the Maryland Geological Survey, the Association of Women Geoscientists, and AGI provided interactive demonstrations and handouts to hundreds of interested visitors.

One of the highlights of the previous year's Earth Science Week celebration was "No Child Left Inside" Day, an event that engaged some 500 Virginia students in outdoor learning activities and received coverage by news media from NBC to NPR. In 2009, students and educators nationwide were invited to take part on the Tuesday of Earth Science Week, October 13. AGI's new NCLI Day Guide provided everything needed to plan a local NCLI Day event. The free guide provided 10 outdoor activities that educators

could organize. Also included were recommendations for creating partnerships, planning logistics, reaching out to the local media, and following up in the classroom. Reports indicate that teachers and children across the country seized the opportunity to discover Earth science in their own neighborhoods.

The Association for Women Geoscientists (AWG), an AGI Member Society, collaborated with AGI to organize the first annual Women in the Geosciences Day on Thursday, October 15, during Earth Science Week 2009. The special day offered adult geoscience professionals a chance to share the excitement and advantages of their careers with women of all ages, especially those early in their education. Educators invited female geoscientists to speak in the classroom. Women geoscientists took their daughters to work, visited local schools, and volunteered at a science centers. And AWG worksheets were included in Earth Science Week Toolkit to promote the event.

Overlapping Earth Science Week, National Wildlife Refuge Week also was held October 11-17, 2009. The event celebrated the richness of the 550 units that make up America's National Wildlife Refuge System. The week focused on lands and waters where wildlife and habitats are under federal protection. Earth Science Week participants were urged to learn about the natural and cultural resources that are part of the conservation mission of the U.S. Fish and Wildlife Service. Refuge fact sheets were featured as part of the Earth Science Week 2009 Toolkit to promote awareness.

Resources

Leading up to Earth Science Week 2009, AGI's "Why Earth Science" video was made available for free viewing online on YouTube. The six-minute clip features eye-popping cinematography and computer-animation highlights from AGI's "Faces of Earth" mini-series, which aired on The Science Channel. The video, an alternate version of which recently won a bronze Telly Award, illustrates the importance of Earth science to students, parents, and education decisionmakers.

Earth Science Week participants also were encouraged to make use of *Visiting Geoscientists: An Outreach Guide for Geoscience Professionals*, a handbook recently co-produced by AGI and the American Association of Petroleum Geologists' Youth Education Activities committee. The publication is designed for professional Earth scientists such as geologists and geophysicists who visit schools and lead field trips, especially at the K-12 level, and wish to provide enrichment opportunities based on their education, experience, and firsthand knowledge of the workplace.

Official Proclamations

Once again, governors issued proclamations recognizing Earth Science Week 2009 in 18 states: Alaska, Arkansas, Delaware, Florida, Illinois, Louisiana, Missouri, Nevada, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, Utah, and Washington. Seven of these states have issued "perpetual proclamations," ensuring recognition of Earth Science Week every year.

Publicity and Media Coverage

AGI enlisted the support of a wide range of media in promoting awareness of Earth Science Week, resulting in unprecedented reach for promotional activities in 2009 and helping to lay a foundation for more coverage in years to come.

Internet

Earth Science Week was highlighted on dozens of Internet pages besides the official event site. Program partners USGS, AAPG, GSA, NASA, the National Park Service, ESRI, and Geology.com featured information promoting that organization's events and publicizing the celebration itself.

To celebrate Earth Science Week 2009, NASA created a series of six educational videos that aired online throughout the week, and were posted on YouTube as well as NASA's climate website. Viewers learned how the Earth's climate is changing, with regards to the oceans, water resources, the atmosphere, and the carbon cycle.

Earth Science Week was mentioned on over 200 websites this year and made a major appearance in the "geoblogosphere" including such blogs as Magma Cum Laude, Highly Allochthonous, and All My Faults Are Stress Related, each of which has several hundred readers. In addition, the Earth Science Week Facebook "fan" and "group" pages each served over 400 members.

Television

Earth Science Week was covered by television stations across the country, including: NBC 41 WGMT of Macon, Georgia; Fox 4 of Kansas City, Missouri; Fairfax County Public Schools Apple 21 TV of Fairfax, Virginia; and ABC 7 News of Washington, D.C., featuring an interview with Earth Science Week Manager Geoff Camphire.

Print Media

AGI distributed press releases to hundreds of newspapers, magazines, and other print media outlets. Many local and national publications ran items on Earth Science Week (for examples, see Section 2).

In addition, AGI staff wrote articles for the National Science Teachers Association's *NSTA Reports* magazine and the National Earth Science Teacher Association's *The Earth Scientist* magazine. The articles highlighted Earth Science Week activities and theme. Major news organizations such as *The Washington Post* and *The Huffington Post* published articles highlighting Earth Science Week. Local news organizations such as the *Grand Canyon National Park Examiner*, the *WCF Courier* of Cedar Falls, Iowa, and the *Murfreesboro Post* of Murfreesboro, Tennessee, also covered Earth Science Week news and events.

Some 50,000 copies of the Earth Science Week 2009 poster, featuring a geoscience learning activity in addition to promotional content, were distributed as inserts in publications carrying articles about the event, such as *The Earth Scientist*, *GSA Today*, *AAPG Explorer*, and AGI's own *Earth* magazine.

Professional Evaluation of Earth Science Week 2009: Key Outcomes

Following the event, AGI secured an independent contractor, PS International, to complete a formal evaluation of Earth Science Week 2009, as it has in past years. Some 5,200 program participants were invited to participate in a survey in the closing months of 2009, with valid responses up 23 percent from the previous year.

Results were overwhelmingly positive. Comparing participation the previous year and plans for the next year, 92 percent of survey respondents said they anticipate either increasing participation or no change. Forty-four percent said they're increasing participation. "Each year new teachers are introduced to ESW and add to the numbers from previous years," commented one respondent. "My kids love these studies," said another. Some respondents noted strong participation despite widespread budget cuts.

A large majority of participants (86 percent) said Earth Science Week offers opportunities for teaching and promoting Earth science that they wouldn't have otherwise. Earth Science Week "keeps my curriculum current," said one. Similarly, 91 percent said program resources and activities are very or somewhat important to educating students and others about geoscience. "Educators frequently ask for the packets and are pleased with resources provided," a respondent remarked. "I am glad to have a one stop shop site to find what I need to teach about ESW," said another individual.

Most respondents rated Earth Science Week and related resources as highly useful. The share rating the program's overall usefulness as "excellent" or "good" rose significantly, to 81 percent in 2009 from 77 percent in 2008. Only 1 percent rated overall usefulness as poor in 2009. When respondents were asked to rate nearly 20 key items from the Earth Science Week 2009 Toolkit and the Earth Science Week Website, all were rated "very useful" or "useful" by between 98 percent and 77 percent of participants.

Participants said they were more active than ever during Earth Science Week. Eighty-one percent of respondents said they conducted a major Earth Science Week activity. Moreover, many participants reported specific activities that were highly "active." For example, 68 percent reported activities categorized as "more active" (e.g., lesson plans and kit distribution) or "most active" (e.g., outside lessons, field trips, contests, and teacher workshops).

Asked how Earth Science Week might be improved, 36 percent of respondents advocated additional materials and activities. Another 21 percent recommended increased collaboration among stakeholders, such as state and national partners. Additional suggestions included increasing communications and promotions.

Earth Science Week Sponsors

United States Geological Survey
American Association of Petroleum Geologists Foundation
National Aeronautics and Space Administration
U.S. Department of Energy
ExxonMobil
National Park Service
ESRI: Environmental Systems Research Institute

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Consortium for Ocean Leadership
Earth Science Literacy Initiative
Fish & Wildlife Service
Geological Society of America
Incorporated Research Institutions for Seismology
International Year of Planet Earth
National Academies of Science
National Oceanographic and Atmospheric Administration
National Earth Science Teachers Association
National Science Teachers Association
National Weather Service
Rite in the Rain
Society of Exploration Geophysicists
Soil Science Society of America
USA Today
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
The Weather Channel

Earth Science Week 2009 Events and Activities by State

Alabama

- The Alabama Geological Survey distributed 50 Earth Science Week Toolkits to educators.

Alaska

- The Alaska Geological Society sponsored two events for Earth Science Week. An activity titled “Understanding Our Climate” included hands-on activities presented by Jana DaSilva Lage of the Alaska Geological Society. Another activity, titled “The Arctic is a Changing Environment,” encouraged young people to learn about the arctic food web.
- The governor of Alaska issued a perpetual proclamation of Earth Science Week.
- PolarTREC offered a live, online event titled “How We Know What We Know: Looking at Climate Change through Polar Science,” on October 16, 2009. This special live event celebrating Earth Science Week, with polar researchers Dr. Julie Brigham-Grette and Dr. Ross Powell and PolarTREC teacher Tim Martin, discussed climate research conducted in the Arctic and Antarctica through sediment coring.

Arizona

- Grand Canyon National Park held multiple events celebrating Earth Science Week 2009. Activities included special ranger programs, including a daily fossil walk and a geology walk, Earth science evening programs featuring topics related to the climate and geology of the Grand Canyon, a “No Child Left Inside Day” event on October 13, a Desert View Drive geology field trip led by George Billingsley who spent his career studying the geology of the Grand Canyon, a Mapping of the Canyon exhibit, and a Climate Friendly Parks program in celebration of this year’s Earth Science Week theme, “Understanding Climate.”

Arkansas

- The Arkansas Geological Survey distributed 50 Earth Science Week 2009 Toolkits to educators in the state.
- The governor declared October 11-17, 2009, to be Earth Science Week.

California

- The Chabot Space and Science Center in Oakland celebrated Earth Science Week by sponsoring events focused on the geosciences and climate. Some activities included a climate walk around Redwood forest, panning for gold, a recycling game, a “design a wind turbine” activity, a solar car activity, rock and mineral identification, and a display of meteorites.

Colorado

- The Friends of Dinosaur Ridge celebrated Earth Science Week on October 10, 2009. An open house format included expert guides stationed along the famous Dinosaur Ridge trail. Over 60 geologists and paleontologists tended ridge stations

- and special booths where they presented rock and fossil identification, map reading, water testing, caving, geologic time, volcanoes, earthquakes, and Earth science careers. The research team at Dinosaur Ridge showed preliminary findings from two new discoveries on Dinosaur Ridge, a new dinosaur track site and a large crocodile track site. In keeping with this year's "climate" theme, a dendrochronologist, or tree-ring expert, explained how tree rings can provide clues to past local climate change. Hands-on activities for younger kids included a dinosaur dig, Stegosaurus branding and sieving for microfossils.
- USGS geologist Pete Modreski sponsored an Earth Science Week geology and nature hike to North Table Mountain in Golden.
 - Daniel McGrath of Boulder became the 2009 IYPE-ESW Photography Contest third-place winner.

Connecticut

- The University of Connecticut's Geosciences Department celebrated Earth Science Week with several activities, including a geode-breaking table, Earth science movie showings, and free rock and mineral identifications.
- The Connecticut Geological Survey distributed 50 Earth Science Week Toolkits to educators statewide.

Delaware

- The Delaware Geological Survey distributed 50 Earth Science Week 2009 Toolkits to educators across the state.
- The governor declared October 11-17, 2009, to be Earth Science Week.

District of Columbia

- Residents of Washington, DC entered the 2009 Earth Science Week contests.

Florida

- To celebrate Earth Science Week, the Florida Geological Survey held its annual Open House on October 14, 2009. Partnering with Florida State University, representatives offered tours of the Antarctic Marine Geology Research Facility and the Meteorology Department. On the university campus a variety of activities were offered, including a drill rig outdoors with a geologist to explain how it works and talk about core samples displayed along with it. Geologists were available to identify "mystery rocks" brought in by guests. The conference room was converted to a lab for the day with microscopes and samples for guests, along with geologists to assist and answer questions. For the youngest guests, there were coloring sheets emphasizing prehistoric life in Florida and Play Dough and shells to show one way fossils can be formed. Activities were presented by USGS scientists, the state Department of Environmental Protection's Office of Education and Outreach, and a climatologist who gave demonstrations of rain gauges.
- The Florida Department of Environmental Protection Southeast District participated in Earth Science Week 2009. On October 13, the agency's outreach program gave presentations on "Global Warming and Climate Change" to over 150 sixth-graders at Glades Middle School in Miramar.

- Somerset Academy Charter School in Pembroke Pines celebrated Earth Science Week for the first time in 2009. Students performed research on climate, prepared projects about climate and geoscience topics, and presented their projects to the staff and students. Somerset Academy also welcomed NOAA's Robert Ebaugh, who presented an excellent conference on "Understanding Climate and Weather in South Florida."
- The governor of Florida declared October 11-17, 2009, to be Earth Science Week.

Georgia

- The Georgia chapter of the Soil and Water Conservation Society celebrated Earth Science Week in conjunction with its annual meeting. The theme of this year's meeting was "Climate and Conservation: Planning for our Future." A full day of programming was planned around three courses within the themes of conservation design and construction, alternative energy, and water conservation.

Hawaii

- Residents of Hawaii entered the 2009 Earth Science Week contests.

Idaho

- Craters of the Moon National Monument and Preserve welcomed 16 attendees to its Earth Science Week special Saturday program, which took an in-depth look at the Great Rift, the best developed volcanic rift on the Eastern Snake River Plain. The six-hour program started with a PowerPoint presentation, followed by two hikes into the park to study the Great Rift.
- The Idaho Geological Survey distributed 50 Earth Science Week Toolkits to educators in the state.

Illinois

- The Illinois Geological Survey distributed 50 Earth Science Week Toolkits to educators statewide.
- The governor of Illinois declared October 11-17, 2009, to be Earth Science Week.

Indiana

- The Indiana Geological Survey distributed 50 kits to educators in the state.

Iowa

- The Iowa Geological and Water Survey distributed 50 Earth Science Week kits.

Kansas

- The Kansas Geological Survey distributed 50 Earth Science Week Toolkits to educators throughout the state.

Kentucky

- The Kentucky Geological Survey distributed 50 Earth Science Week 2009 Toolkits to educators throughout the state.

Louisiana

- In honor of Earth Science Week, the Geology Club and Department of Geology and Geophysics at Louisiana State University held their second annual Rock Star Lagniappe Poster Contest.
- The governor declared October 11-17, 2009, to be Earth Science Week.
- Amy Spaziani of Baton Rouge won the 2009 IYPE-ESW Photography Contest.
- The Louisiana Geological Survey distributed 50 Earth Science Week Toolkits to educators throughout the state.

Maine

- The Maine Geological Survey distributed 50 Earth Science Week kits to educators across the state.

Maryland

- AGI's Jason Betzner visited High Bridge Elementary School in Bowie for Career Day, where over 150 students were introduced to various Earth science careers. Betzner gave a presentation on the rock cycle while engaging students in hands-on inquiry. Students were given rocks and asked to identify each rock as igneous, sedimentary, or metamorphic and explain why they chose their answers. Teachers were provided with Earth Science Week posters, bookmarks with the geologic timescale, and a "Why Earth Science?" DVD.
- Earth Science Week 2009 began on October 11 with "Climate and Weather Day: An Earth Science Fair" from 12 noon to 2 p.m. at Baltimore's Maryland Science Center. In addition to the science center's many longstanding science offerings, special displays highlighted the science of climatology. Presenters such as NASA, the National Weather Service, the National Park Service, the Maryland Geological Survey, the Association of Women Geoscientists, and AGI provided hands-on, interactive demonstrations and handouts.

Massachusetts

- The Museum of Science in Boston kicked off Earth Science Week 2009 on October 11 with feature presentations by climate scientists from Harvard, Boston University, and MIT. Related activities and demonstrations were held throughout the day. There were also live presentations about climate change later in the week.

Michigan

- Westland's Cassidy Williams placed second in the 2009 IYPE-ESW Photography Contest.

Minnesota

- The Minnesota Geological Survey distributed 50 kits to educators in the state.

Mississippi

- Environmental Education in Mississippi promoted Earth Science Week on its website (www.eeinmississippi.org).

Missouri

- The Missouri Geological Survey distributed 50 Earth Science Week 2009 Toolkits to educators throughout the state.
- The Missouri governor declared October 11-17, 2009, to be Earth Science Week.

Montana

- National Wildlife Refuge Week and Earth Science Week coincided in a major public-awareness effort. Montana's 30 wildlife refuges participated.

Nebraska

- The Nebraska Geological Survey distributed 50 kits to educators statewide.

Nevada

- The governor of Nevada issued a perpetual proclamation of Earth Science Week.
- The Nevada Geological Survey distributed 50 Earth Science Week Toolkits to educators throughout the state.

New Hampshire

- Taylor Jae Scott of Portsmouth won the Earth Science Week Visual Arts Contest.
- The New Hampshire Geological Survey distributed 50 Earth Science Week Toolkits to educators throughout the state.

New Jersey

- The governor declared October 11-17, 2009, to be Earth Science Week.
- The New Jersey Geological Survey distributed 50 kits to educators.

New Mexico

- Earth Science Week Toolkits were distributed as part of USGS outreach for an intensive, nine-day environmental education program organized by the National Hispanic Environmental Council, a nonprofit organization based in the Washington, D.C. area (see www.nheec.org for details).
- The governor declared October 11-17, 2009, to be Earth Science Week.

New York

- Michael Badding of East Amherst won the Earth Science Week 2009 Photography Contest.
- Dix Hills' Shreyas Havaladar won the Earth Science Week Essay Contest.
- The New York Geological Survey distributed 50 Earth Science Week Toolkits to educators throughout the state.

North Carolina

- Tim Martin, a PolarTREC teacher, presented a talk about climate research and the El'gygytgyn drilling project, an IPY/NSF-sponsored climate study, at the Piedmont Plateau Sierra Club.

North Dakota

- The governor issued a perpetual proclamation of Earth Science Week.

Ohio

- The Ohio Department of Natural Resources-Division of Geological Survey sponsored several Earth Science Week events. The survey provided information to help citizens conduct self-guided walking tours to learn about the geology of public squares of Cincinnati, Cleveland, and Columbus. To help Ohioans plan geologic field trips, the survey offered its Compilation of Planning Resources for Geologic Field Trips in Ohio, listing locations by geologic age and feature type. Survey staff members were at Highbanks Park to answer questions and provide information on Ohio geology, topography, environment, and other geoscience topics. A walking tour in Columbus offered a geological perspective on the Ohio statehouse and its building stones. The Cleveland Geological Society sponsored an educational event at the Cleveland Museum of Natural History. The Center of Science and Industry hosted activities to help children and parents learn about identifying backyard items from fossils and rocks to plants, animals, and weather patterns. Dayton's Boonshoft Museum of Discovery invited visitors to take part in Earth Science Week events encouraging citizens to explore the natural world.
- The Ohio governor declared October 11-17, 2009, to be Earth Science Week.

Oklahoma

- The governor issued a perpetual proclamation of Earth Science Week.

Oregon

- In celebration of Earth Science Week, the Oregon Department of Geology and mineral industries released four new state geology field trip guides to the public.
- Residents of Oregon entered the 2009 Earth Science Week contests.
- Earth Science Week culminated in 6,000 geoscientists from around the world meeting in Portland for the Geological Society of America 2009 Conference.

Pennsylvania

- The Pennsylvania Geological Survey distributed 50 Earth Science Week Toolkits to educators across the state.

Rhode Island

- National Wildlife Refuge Week and Earth Science Week coincided in a major public-awareness effort. Rhode Island's six wildlife refuges participated.

South Carolina

- The South Carolina Geological Survey distributed 50 kits to educators statewide.

South Dakota

- The Kirby Science Discovery Center in the Washington Pavilion of Arts and Science celebrated Earth Science Week with special events, including CineDome movies that related to geoscience, such as *Ring of Fire*, *Everest*, *Amazon*,

Shackleton's Antarctic Adventure, and *Coral Reef*. Earth science demonstrations throughout the week focused on earthquakes, volcanoes, meteorology, rocks and minerals, erosion, oceanography, and fossils. A coloring contest for fifth-graders and younger children was also held.

Tennessee

- The Tennessee Geological Survey distributed 50 kits to educators in the state.
- The governor declared October 11-17, 2009, to be Earth Science Week.

Texas

- The University of Texas at El Paso and the Department of Geological Sciences celebrated Earth Science Week with a free barbeque and lectures on local geology and the history of the Rio Grande. Ongoing geological and environmental science demonstrations also were offered.
- Since the inception of Earth Science Week, geoscientists in Austin have spread the word about the impact Earth scientists make in our daily lives. This year, they held their 10th annual career fair for 350 middle school students at the Commons Conference Center at the University of Texas's Pickle Campus. Dr. Scott Tinker, state geologist and director of the Bureau of Economic Geology, gave the opening ceremony presentation on climate change. Students had the chance to learn about careers in petroleum geology, paleontology, hydrology, hydrogeology, meteorology, geodesy, robotics, environmental science, sustainable energy resources, engineering, and Earth science education. More than 60 Earth science volunteers participated as career presenters, exhibitors, and tour guides.

Utah

- The governor of Utah declared October 11-17, 2009, to be Earth Science Week.
- The Utah Geological Survey celebrated Earth Science Week with an open house that included activities such as a stream trailer, a paleontology lab, panning for gold, mineral identification, and a "rock talk."

Vermont

- The Vermont Geological Survey's annual Earth Science Week festivities included Geologists-in-the-Parks, a quarry open house at OMYA's Middlebury site, a poster contest, and other local events hosted by the society, North Branch Nature Center, and Vermont colleges and universities. The open house included activities such as examining large trucks used for quarrying, learning about rocks and minerals, adding artwork to a 24-foot mural, scavenger hunts, a marble-sculpting demonstration, and refreshments. Also, winners of the Vermont Earth Science Week poster contest were announced.

Virginia

- AGI's Jason Betzner visited Nature Camp in Vesuvius to give an evening program on Earth science careers. The presentation was given to 92 students entering eighth and ninth grade. The presentation included an interactive

PowerPoint on seven geoscience careers, which tied into the theme of “Understanding Climate.”

Washington

- The governor declared October 11-17, 2009, to be Earth Science Week.
- The Washington Division of Geology and Natural Resources distributed 50 Earth Science Week 2009 Toolkits to educators throughout the state.

West Virginia

- National Wildlife Refuge Week and Earth Science Week coincided in a major public-awareness effort. Both of West Virginia’s wildlife refuges participated.

Wisconsin

- Environmental Education in Wisconsin promoted Earth Science Week on its website (www.eeinwisconsin.org).

Wyoming

- Geology Day was held at Bighorn Canyon. Organizers explained that the beautiful scenery of Bighorn Canyon National Recreation Area is the result of various geological processes.

International Events

Argentina

- Residents of Argentina participated in the 2009 IYPE-ESW photography contest.

Australia

- Geoscience Australia held its annual Geologi short film competition, which was open to all school-aged Australian students. The theme was “Earth science in everyday life.” Geoscience Australia also held its annual “Open Day” at the national headquarters in Canberra, New South Wales. Activities included science and career displays, rock identification, panning for gold, sieving for sapphires, science talks, and other children’s programs.
- Residents of Australia participated in the 2009 IYPE-ESW Photography Contest.

Bangladesh

- Residents of Bangladesh participated in the 2009 IYPE-ESW Photography Contest.

Bulgaria

- Residents of Bulgaria participated in the 2009 IYPE-ESW Photography Contest.

Burma (Myanmar)

- Residents of Burma participated in the 2009 IYPE-ESW Photography Contest.

Canada

- Residents of Canada participated in the 2009 IYPE-ESW Photography Contest.

Columbia

- Residents of Columbia participated in the 2009 IYPE-ESW Photography Contest.

Egypt

- Residents of Egypt participated in the 2009 IYPE-ESW Photography Contest.

Ethiopia

- Ethiopians participated in Earth Science Week by organizing an open lecture on paleo-anthropology and climate for students and interested persons at the Earth Sciences Department of Addis Ababa University.

Hungary

- Residents of Hungary participated in the 2009 IYPE-ESW Photography Contest.

India

- Residents of India participated in the 2009 IYPE-ESW Photography Contest.

Iran

- Residents of Iran participated in the 2009 IYPE-ESW Photography Contest.

Malaysia

- Residents of Malaysia participated in the 2009 IYPE-ESW Photography Contest.

Mexico

- Residents of Mexico participated in the 2009 IYPE-ESW Photography Contest.

Saudi Arabia

- The Society of Petroleum Engineers at King Fahd University of Petroleum and Minerals held a photo contest and a presentation concerning the recent hurricane in Saudi Arabia.

Trinidad and Tobago

- The Seismic Research Centre and the University of the West Indies held events for Earth Science Week 2009. Their Earth Science Week theme was “Tsunamis and Other Coastal Hazards,” which promoted scientific understanding and safety knowledge for residents in the Eastern Caribbean. All secondary schools within Trinidad and Tobago were invited to participate in activities such as workshops and field trips, “Ask a Geoscientist,” and a tsunami safety competition.

Turkey

- Residents of Turkey participated in the 2009 IYPE-ESW Photography Contest.

United Kingdom

- The Earth Science Education Unit at Keele University held Earth Science Week events for local schoolchildren, including presentations and lessons on the rock cycle, plate tectonics, the atmosphere, and Earth science in the classroom.
- Residents of the United Kingdom participated in the 2009 IYPE-ESW Photography Contest.