

# Notes from Abroad

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## Drinking wine in the name of science

By Heidi Bailey

**A**T A SMALL FAMILY-OWNED winery on the Greek island of Lesbos, Dr. Nickolas Zouros tells a small group of earth scientists why drinking wine will make them better communicators.

The wine is not meant to loosen the scientists' tongues, but rather to demonstrate a way of showing visitors how their everyday lives are touched by geology. The wine is made from grapes, the grapes are grown in soil, and the soil is a reflection of local

geology (figs. 1 and 2). Connections like this—between science and culture—are at the heart of a new type of tourist destination known as a “geopark.”

### The geopark phenomenon

A geopark is a regional partnership of local people and land managers working to promote the geological and cultural heritage of an area through education

and sustainable tourism. Dr. Zouros is the director of the Lesbos Petrified Forest Geopark in Greece and a founding member of the international geopark network. He is guiding a field trip for a group of earth scientists who have come from Spain, Poland, Italy, Portugal, Germany, France, Greece, the United Kingdom, and the United States.

The students are here to experience, discuss, and share techniques for communicating earth science concepts to the pub-

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**Figures 1 and 2.** The owner of the Lesvos winery holds a piece of gypsum (calcium carbonate), a constituent of the soil that gives the wine from his vineyard (left) a distinct character.

lic. Perhaps the most innovative technique they learn is how to link the geologic story of a place to the cultural heritage of its people.

Today the students have abandoned their notebooks and pencils to join Dr. Zouros in experiencing the Lesvos Petrified Forest Geopark firsthand (fig. 3, next page). Along with tasting wine, they visit art museums, savor traditional Greek dishes, sample spoon sweets and ouzo liquor, shop for souvenirs, explore a religious monastery and a Turkish fort, stroll along a volcanic beach, listen to tales from Greek mythology, and while away the afternoons in coffee shops.

On this field trip, the students are experiencing what most tourists are looking for in a vacation: relaxation, culture, adventure, and subtle learning experiences. By first enticing visitors with food, wine, art, and architecture, the geopark can engage people in developing an appreciation for the role of science in everyday life.

During their visit, geopark guests discover that the minerals in soil infuse wines with distinctive flavors, a quality known as *terroir*. They see how landscapes have inspired centuries of artists. They realize that the stone walls of monasteries and forts are responsible for preserving

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history. They find out how geological processes define the borders of countries and contribute to the growth of cultures. For perhaps the first time, visitors see that earth science touches every aspect of their lives.

Geopark guests leave with an understanding that culture and science are forever intertwined. They may not remember rock types or the terms for geological processes, but they carry away the wonder of Earth's heritage. The next time they enjoy a glass of wine, perhaps they will speculate on the minerals that give the wine a distinct quality. The geopark experience is now part of their life experience.

Geopark guests are as diverse as the geology of an area, and the European Geoparks Network, of which the Lesvos Geopark is a member, excels at offering experiences that fit the interests of a variety of visitors. A geopark is a designation similar in concept to a national heritage area, and covers a large region that is home to many smaller parks, protected areas, and local communities. These places are linked thematically to create a unified destination image that centers on striking geology and living culture.

The most appealing aspect of the geopark model is the inclusion of local people as an integral part of the equation. The initiative not only protects and manages geological resources but also spurs sustainable economic development in surrounding areas.

## **Economic impacts of geoparks**

A major part of the geopark initiative's mission is to work with local residents on improving their living conditions and the quality of their environment. While preservation and conservation programs often exclude the needs of the people living in an area, a geopark seeks to balance both.

The ultimate goal of a geopark is to offer solutions to several pressing issues. First, people in small communities often suffer economic losses when traditional industries like mining and agriculture decline. This creates a need for alternative economic development strategies in rural areas.

Second, locals and visitors alike may not recognize the impact of earth science on the existence of ecosystems and the development of cultures. This creates a need for inventive education and interpretive techniques.

Finally, geologic sites and landforms are often ignored or appreciated only for their shape or aesthetic appeal. The names and histories of geological objects may be limited to colloquialisms and mythological tales. Without an understanding of earth science, many people do not see the importance of conserving geologic resources. People accustomed to protecting flourishing plants and charismatic animals may be uninspired by inanimate rocks.

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A geopark draws attention to these undervalued places. This, in turn, raises awareness about geodiversity, encourages tourism in rural areas, and builds partnerships between land managers and local people. Since its inception in 2000, the European Geoparks Network has grown in size and popularity and is now inspiring other nations to create their own geoparks.

Worldwide interest in the program prompted UNESCO (the United Nations Educational, Scientific, and Cultural Organization) to form a Global Geoparks Network in 2004. Today, 64 sites in 19 countries are linked under this global umbrella and more are joining each year. The United States is among the nations considering membership.

## Geoparks and the United States

Currently, representatives of the National Park Service (NPS), Bureau of Land Management, U.S. Geological Survey, and Geological Society of America are discussing the possibility of the United States joining the Global Geoparks Network.

“We are gathering information on what it would take for the U.S. to join,” says Wesley Hill, international secretariat for the Geological Society of America. “This initiative is important because it identifies, links, and recognizes geoheritage sites under one global program. It offers an opportunity to bring together federal and state land management agencies along

with scientific experts, nongovernmental organizations, industry, and local people to strengthen earth science conservation, education, and tourism.”

In the United States, earth sciences have largely taken a backseat to biological sciences. While “ecotourism” is now a familiar term in the travel industry, geologic tourism (or geotourism) is still relatively unknown. The public has largely viewed geologic features as static backdrops to the plants, animals, and people that live among them.

Geoparks can be an important first step in encouraging people to view geologic sites as dynamic interconnected landscapes similar to ecosystems, habitat corridors,

**Figure 3 (left).** Earth scientists gather at Lesvos Petrified Forest in Greece to learn about the role of geoparks in highlighting connections between an area's geology and its culture.

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and watersheds. In addition to public lands, these areas may include mines, farms, businesses, private fossil sites, historic buildings, and other cultural sites that are tied to the geological story of the area.

“Many sites with great geologic significance are larger than a single park,” says Lindsay McClelland of the NPS Geologic Resources Division. “The National Park Service may manage only a small part of the geologically significant area.”

“The National Park Service is currently assessing its participation in a U.S. geoparks program,” McClelland continued. “Questions from NPS managers include the need for geoparks if the National Park Service is already participating in the [UNESCO] World Heritage Program; the amount of work, including administrative burden required for the process; public opinion; benefits of geopark designation; and demonstration of socioeconomic impacts, such as increased visitation.”

In answer to these questions, supporters say the geopark initiative offers a welcome alternative to the World Heritage Program, which operates under strict guidelines that generally exclude multiple-use lands such as those managed by the Bureau of Land Management and the U.S. Forest Service, and awards status only to those areas with outstanding universal value, requiring documentation of international significance. Geopark designations could include a combination of lands managed by the National Park Service and multiple-use agencies to encompass most or all of a nationally significant geologic area. In addition, the intent is for geoparks to be created at the local level and administered

by collaborative partnerships rather than by NPS personnel. Socioeconomic impact studies and visitor surveys are being conducted at existing geoparks and the results are forthcoming.

In the meantime, staff from the National Park Service and Geological Society of America are drafting a set of guidelines should the United States choose to join the initiative. In addition, supporters are talking one on one with people who may ultimately benefit from the program: land managers, small-business owners, and local communities.

An example of an NPS site that might benefit from inclusion in a geopark is Florissant Fossil Beds National Monument in Colorado. “We are a small monument located within a large region of geologic significance,” says Superintendent Keith Payne. “Our site is already part of the Gold Belt Scenic Byway partnership, which is active in promoting geologic and historic tourism. We are considering the geopark initiative as a way to bring international recognition to this area. We don't want to create something new that requires a lot of time and resources. We are interested in enhancing a wonderful partnership that already exists between numerous public and private sites that are connected by a similar geology.”

The power of the geoparks initiative is that it draws attention to places that are relatively undiscovered as tourist destinations. The geopark designation is particularly well suited for smaller parks and monuments such as Florissant Fossil Beds that lack the celebrity status of sites like the Grand Canyon. Geoparks have the potential to draw new visitors in two important ways. First, they will attract international tourists who have visited other sites within the Global Geopark Network. Second, by offering cultural programs, they can attract visitors who may not initially think they are interested in geology or science.

“Many sites in the National Park System do a great job interpreting geology in the context of American culture,” says Jim Wood of the NPS Geologic Resources Division. “Several sites interpret gold rushes, including the Klondike Gold Rush in Seattle and Alaska. Other sites, such as Alibates Flint Quarries National Monument in Texas, interpret the connection between American Indian life and geology. Geologic sites such as Scotts Bluff in Nebraska served as signposts to early explorers and frontier people. There is a strong focus on linking history and geology throughout the national parks. The geopark initiative adds to this idea by also linking geology to the cultural value of modern landscapes.”

In a geopark, it is not just public land managers that bear the responsibility of protecting and interpreting natural resources. Instead, local businesses—like the winery in Greece—play an important role in earth science education by intertwining geology and culture. For as Dr. Zouros explains to his students while they are drinking their wine, “Geoparks are not just about rocks—they are mainly about people.”

## For more information

To learn more about the Global Geoparks Network, visit [www.globalgeopark.org](http://www.globalgeopark.org). To find out more about U.S. involvement in the initiative, e-mail [WHill@geosociety.org](mailto:WHill@geosociety.org).

## About the author

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