

## HOW GIS ENHANCES SCIENCE IN THE PARKS

A recent book from ESRI Press displays the myriad uses of geographic information systems (GIS) technology in the national parks. *Mapping the Future of America's National Parks: Stewardship through Geographic Information Systems*, edited by Mark Henry, an editor at ESRI Press, and Leslie Armstrong, former GIS Program manager at the National Park Service, is a big, elegant, sampler demonstrating the many kinds of maps that GIS has produced to illuminate a great variety of management issues in the national parks. Each example is treated with a paragraph of explanation, photos of the landscape or other relevant scenes in the park, and a sample of the maps created to address the desired objective.

For example, at Saratoga National Historical Park in New York, where American forces defeated the British in 1777, GIS maps have been developed to show visitors the movement of troops, events leading to the British surrender, and how features of the landscape determined the military strategies of both armies. GIS mapping thus enhanced the visitor experience, and it also played a role in helping the park to plan the restoration of key landscapes as they existed in 1777 and in selecting the best viewing areas for visitors.

A very different example shows nitrous oxide pollutants moving from Seattle through the Puget Sound basin and over Mount Ranier National Park. From a series of maps representing this movement during one typical summer day, GIS technicians made an impressive animation of the movement of the pollution that damages plant and marine life and degrades scenic vistas. This is the kind of natural



resource visualization that demonstrates the special capabilities, and the importance, of GIS technology.

To assist parks in remote Alaska, where Internet access may be problematic in some parks and GIS specialists may not be available on site, the National Park Service has created some relatively easy-to-use tools: NPS Theme Manager accesses more than 1,500 themes, or layers, for Alaska parks; AlaskaPak Toolkit is a collection of tools for novice users; NPS Firepak lets users create a standardized data set and map wildfire perimeters; and ArcView to Access Link sets up a live link between GIS maps and computer databases.

After perusing this book about all that GIS can do in the parks, some readers are likely to be thinking about how they could put such easy-to-use software to use in their own projects.

## Reference

Henry, M., and L. Armstrong, editors, in cooperation with the National Park Service. 2004. Mapping the future of America's national parks: Stewardship through Geographic Information Systems. ESRI Press, Redlands, California.

# MAPPING THE FUTURE OF AMERICA'S NATIONAL PARKS

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Geographic Information Systems

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