

A National Research Council report, "Protecting Visibility in National Parks and Wilderness Areas," found widespread air pollution across the country drastically diminishing visibility in even some of the most remote parklands. The report, cited in the Feb. 6, 1993 issue of *Science News*, calls current efforts to improve visibility inadequate, and in some cases "doomed to failure."

In the Western states, researchers found that people can see only half to two-thirds of the 230 km range that would be possible without pollution. In the east, average visibility is only one-fifth the natural range of 150 km. The vista-diminishing pollution comes from coal-burning power plants, diesel- and gasoline-fueled vehicles, residential and forest fires, and even livestock farms, the report states. It faults the EPA, Agriculture, and Interior for being slow to carry out responsibilities for accomplishing the goal of reducing haze in large national parks and wilderness areas, mandated by Congress in 1977.

"In particular," the *Science News* item notes, "it (the report) faults current efforts to improve visibility by targeting just individual polluters, a tactic the National Park Service used in a recent case involving a coal-burning power plant near Grand Canyon NP. The report calls instead for strategies that consider the various sources in a region that contribute to the haze."

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A "miracle grass," called vetiver--native to India--was given the nod by the National Research Council in an NRC report released in late January 1993 and reported in the February 6 issue of *Science News*. A tall stiff grass that grows into a dense hedge when planted in lines along the contours of slopes, vetiver can slow runoff and prevent soil from washing off slopes, the report said.

For centuries, vetiver's roots have provided an oil used to scent perfumes and soaps. It is grown in 70 countries, but few use it for erosion control. Worldwide, 20 billion tons of soil disappear each year--the equivalent of about 6 million hectares of arable land. Vetiver's stiff stems and leaves and deep roots enable it to function as a virtual dam, even when dormant, and it survives for decades. Thus far, it has not spread or become a pest as have other plants, such as kudzu, introduced to stop erosion.

The report cautions that only domesticated vetiver from South India, which produces no seeds and spreads by vegetative propagation, should be used. The NRC report suggests

that researchers evaluate whether this grass will prove useful as foliage along footpaths, railroads, and road cuts.

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"What We've Learned About GIS: One Park's Experience" is the title of an article by Chuck Raffkind, Hugh Devine, John Karish, and Patti Dienna, that will appear in a future issue of the George Wright Society's *Forum*. The article was prepared as an answer to the dozens of questions received by Colonial National Historical Park with regard to the park's implementation of a park-based PC GIS. It summarizes both the positive and negative experiences of the park over the past three years in developing data themes under cooperative agreements with NC/State/U, the College of William and Mary, VI Institute of Marine Science, and the U.S. Soil Conservation Service. It also describes park development of GIS Standard Operating Procedures to guide development of new geographic and database files, database management, data dictionary, and cartographic map output.

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"Through time and generations, certain patterns of thought and behavior have been accepted and developed into what can be termed a Western tradition of environmental thought and conservation," according to Arturo Gomez-Pompa and Andrea Kaus in their April 1992 *Bio-Science* article, "Taming the Wilderness Myth" (pp 271-9). But are these necessarily correct? "Scientific truth" is always subject to replacement by another "truth" in the light of new information that does not fit the old paradigm, say the authors, and they point to "equilibrium" and "climax" as two concepts that few ecologists defend today.

The concept of wilderness as "untouched" or "untamed" is seen as "mostly an urban perception," and the authors suggest that "we must learn how local inhabitants in rural areas understand their environment and must bring this vision into both the urban and rural classrooms." The fundamental challenge, they conclude, "is not to conserve the wilderness, but to tame the myth with an understanding that humans are not apart from nature."

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In the April 3, 1992 issue of *Science*, three authors who are with the Finnish Forest Research Institute in Helsinki look at the biomass and carbon budget of European forests from 1971 to 1990 and conclude that while severely polluted areas (such as found locally

in Montshegorsk in northwestern Russia) have suffered total tree death, moderate pollution may result in a general increase of forest resources. Their work points to fertilization effects that override the adverse effects "at least for the time being" in Austria, Finland, France, Germany, Sweden and Switzerland. "Biomass was built up in the 1970s and 1980s in European forests," they write. "If there has been similar development in other continents, biomass accumulation in nontropical forests can account for a large proportion of the estimated mismatch between sinks and sources of atmospheric carbon dioxide."

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The upper forest canopy as viewed from an atmospheric perspective is the subject of a *BioScience* article (Vol. 42:9, pp 664-70) by Geoffrey Parker, Alan Smith and Kevin Hogan. This primary interface between the atmosphere and the forest is a reservoir of biological diversity and understanding of it is far from adequate, according to the authors.

"Access to the Upper Forest Canopy with a Large Tower Crane" is the title of the report, in which they describe observations made from the canopy as suggesting a wide diversity of functional behaviors of overstory leaves and a complex upper canopy structure. The large tower crane from which they made their observations, installed in a forest, allows repeatable sampling in three dimensions, unprecedented control for observations, and experimentation within the canopy space of the forest.

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A surprising new database of the climatic history of the arid Southwest is described in the March 27, 1992 issue of *Science*: a stand of centuries old Douglas-fir trees recently discovered in the lava fields of El Malpais National Monument in western NM. One of these trees (dubbed "1062") is the oldest accurately dated living member of that species and is deemed by dendrochronologists to have sprouted 4 years before William the Conqueror invaded England in 1066.

The sites is protected both from fire and from competitors by the lava fields that surround it and may well spur dendrochronologists to search other lava flows--such as those in Oregon, Idaho, and California--for old trees. Ecologists will be encouraged to probe for the secrets of the trees' survival in what is for most plants a very hostile environment.

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Restoration Ecology, "the first complete scientific journal for restoration ecologists," is a new, peer-reviewed quarterly journal, published for the Society for Ecological Restoration by Blackwell Scientific Publications, Inc. The journal will not distinguish between basic and applied research, and encourages all contributors to consider both the practical and the more fundamental implications of their work. The editors encourage submission of manuscripts that emphasize an holistic approach and that deal with the highest level of biological integration--the human ecosystem. The editor is William A. Niering, Botany Dept., Connecticut College, New London, CT 06320. To subscribe or request a sample issue, contact Blackwell Scientific Publications, Journal Fulfillment, 238 Main St., Cambridge, MA 02142

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Jared Diamond, who teaches physiology at UCLA Medical School and practices conservation biology in Indonesian New Guinea, asks a tough question--"Must We Shoot Deer to Save Nature?"--in the August 1992 issue of **Natural History**. "Alas," he answers himself, "nature can't manage most nature reserves without our help." His article stems from "a magically beautiful, but painfully upsetting day in Fontenelle Forest near Omaha," where the author found nothing but mature oak, hickories and lindens. "I saw no seedlings," he writes...a sight that was "like visiting an apparently thriving country and suddenly realizing it was inhabited mainly by old people, and that most of the infants and children had died."

Fontenelle exemplifies the paradox underlying a bitter policy dispute; the paradox being that the twin goals of noninterference

with nature and of preserving pristine natural habitats are incompatible. He considers the case of Yellowstone: whether to bring in wolves and outrage neighboring ranchers, or outrage the public by "culling" elk and bison. Diamond admits he is happy not to have to explain to the public why they can't pick flowers in a reserve where deer are shot. Managing for biodiversity is a goal with many problems left to be solved.

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The entire matter of conflict of interest in science--especially with regard to reviewing articles in refereed journals--is considered in the July 31, 1992 issue of **Science**. The editor, Daniel E. Koshland, Jr., describes the policy improvements **Science** will use henceforth to "improve our previous procedures." He adds, "One of the problems of conflict of interest is the degree of sanctimoniousness attached to it." Koshland vows to be "aware of intellectual as well as financial and social conflicts," and reports that **Science** is "adapting guidelines that have been used by the National Science Foundation over a number of years.

A special section addresses several facets of "conflict of interest," including the potential financial conflicts at the cutting-edge areas of biology (by Marcia Barinaga) and the much older and more pervasive form--"intellectual conflicts of interest" (by Eliot Marshall), in which a researcher's overriding investment in a particular hypothesis can lead either to boon or disaster.

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A 91-page document, richly informative about the 500 years of environmental change since Columbus "discovered America" is

available from its author, Richard L. Cunningham, Chief of Interpretation for the NPS Western Region. In *The Biological Impacts of 1942: Some Interpretive Thoughts*, Cunningham describes the native people of the West Indies, the decimation of the Indians, early biological impacts, a history of extinctions and endangered species, introduced animals and other organisms, biohistories of Haiti and Jamaica, threats to the Caribbean terrestrial and marine environments, and how all this "applies to my park," (with suggested topics, outlines, and slide show sources for developing your own park's program.)

In his Conclusions, Cunningham writes: "Columbus did not discover a 'New World'. Instead he found another old world with cultural and biological riches different from but as rich as those from the Europe he left. Columbus linked these two worlds into a common heritage that is still evolving. ... The continuing legacy of the Columbus event is not just historical, not just cultural, it is and will always be biological."

The Columbus paper, and another by Cunningham, *The Biological diversity of Food Plants: Some Interpretive Thoughts*, (52 pages), may be had by contacting Cunningham at NPS Western Regional headquarters, 600 Harrison St., Suite 600, San Francisco, CA 94107; (415)744-3910.

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On Feb. 23, 1993, President Clinton announced the nomination of George T. Frampton, Jr., to serve as Asst. Sec. of the Interior for Fish and Wildlife and Parks. Frampton has been president of The Wilderness Society since 1986. Prior to that, Frampton was a partner in the Washington, D.C. law firm of Rogovin, Huge & Lenzner.

From 1973-75, he served as Assistant Special Prosecutor on the Watergate Special Prosecution Force and was a member of the team that conducted the grand jury investigation and trial of the Watergate Cover-Up case against President Nixon's chief aides.