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Conservation and Environmentalism *An Encyclopedia*

Editor
Robert Paehlke

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(where he stressed fights against air and water pollution).

Earth Day, the story goes, grew out of Nelson's idea to hold environmental "teach-ins" like those used to protest the war in Vietnam. Nelson enlisted the support of Pete McCloskey, a Republican Representative from California, got office space with the public interest group Common Cause, hired law school student Denis Hayes as an organizer, and set about raising funds for a day of environmental education and activism. Interest in Earth Day spread quickly, and the magnitude and impact of the event, held on April 22, 1970, surpassed its planners' wildest dreams.

Nelson's Senate career ended when he was defeated for reelection in the Reagan landslide of 1980. Since 1981 he has served as legal counsel and associate executive chairman of the Wilderness Society, which in 1990 presented Nelson with its Ansel Adams award and established a scholarship fund in his name to finance awards for excellence in environmental law and public policy, natural resource studies, and environmental journalism.

Continued by J. Bosso (with Steven Sharobem)

Further Readings

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See also ADAMS, ANSEL; EARTH DAY; WILDERNESS SOCIETY

NEPA

See NATIONAL ENVIRONMENTAL POLICY ACT (U.S.)

New Forestry

New Forestry (NF) is a term coined in the late 1980s by scientists and U.S. Forest Service (USFS) managers working at the H.J. Andrews Experimental Forest in Oregon. In a 1989 paper discussing the origins of NF, Jerry Franklin wrote, "Is there an alternative to the stark choice between tree farms and total preservation? . . . My associates and I in the Andrews Ecosystem Research Group believe that an alternative does exist, and we call it the 'New Forestry.' We view the new approach as a kinder and gentler forestry that better accom-

modates ecological values, while allowing for the extraction of commodities."

NF differs from tree farming in at least three ways. One is its focus on complex ecosystems rather than just commercially valuable trees, including maintaining: a) the proper balance of habitats, hence viable populations of indigenous species; b) the full range of natural processes; and c) the capacity of ecosystems and individuals for defense and self-repair. In NF harvest of wood and other marketable commodities is a secondary objective that must be consistent with conserving indigenous species and overall ecosystem health in perpetuity.

The fact that many of the processes important to species and ecosystem health play out over large areas leads to a second distinguishing characteristic of NF: its focus on managing landscapes and whole regions rather than just individual forest stands. A third distinguishing characteristic is the explicit recognition that different forest types may require different management approaches, from which it follows that NF, rather than being a single technique, becomes a process of understanding the natural structures and rhythms that characterize a given forest type, and designing management practices that protect or, where necessary, restore those.

To better understand NF it is necessary to understand "old forestry," and to do this it is useful to briefly review the history of forestry over the past 150 years. At least some of the approaches utilized in NF are not new at all, but rather date to earlier practices that were largely supplanted by what, for lack of a better term, is best described as "industrial" forestry (though it has been widely utilized by government agencies as well as forest industries). Industrial forestry, which originated in Germany during the mid-1800s, essentially views the forest as a factory for producing wood, much as the modern farm is a factory for producing food. At the time of its inception the forests of central Europe were greatly degraded from centuries of uncontrolled cutting. German foresters adopted industrial forestry as a means of rejuvenating their forests while at the same time putting the practice of forestry on a solid business basis. Only the fastest growing and most commercially valuable trees were grown, and these were managed according to economic criteria that maximized income. Plochman describes the resulting management: "The deciduous high forests were converted by seeding and planting into softwood monocultures. Rota-

tions were shortened, natural regeneration was replaced by plantations, and old forms of silviculture, like single-tree selection, replaced by clearcutting."

Industrial forestry was not widely adopted on public lands in the United States until the late 1940s. It was opposed by Gifford Pinchot, the first chief of the USFS, who in 1898 wrote: "A serious check to the progress of forestry was the general praise given to the European methods of forest management and the frequent, strenuous, and utterly impractical advice to apply them to the forests of North America." This does not mean, however, that forests of the United States were managed ecologically. Much of the logging done in the nineteenth and early twentieth centuries was accompanied by no management whatsoever: to use the old but apt phrase, it was cut and run. By the end of the nineteenth century few of the original forests remained in the United States east of the Mississippi and north of the Ohio rivers; cutover land had converted largely to scrubby trees and brush. Roughly one-half of the original old-growth Douglas-fir in western Oregon and Washington had been cut by the mid-1930s, and more than one-half of cutover lands was either non-stocked or poorly stocked with trees.

The end of World War II triggered an explosion in economic activity and domestic building, and consequently a large increase in the demand for wood in industrialized countries. The USFS responded by embracing the techniques of European forestry, as did the forestry colleges that were the training grounds for future generations of foresters (at the time, industrial techniques were called the "new forestry"). In the decades that followed, technology added some new twists, such as fertilizers, herbicides, and genetic selection for fast growing trees. Many countries, particularly in the tropics and southern temperate zones, cleared native forests and planted plantations of fast growing non-native trees.

At the same time that foresters in the United States and elsewhere were embracing the techniques of industrial forestry the changing social landscape within industrialized countries was making these techniques less acceptable to the public. Increasing urbanization was producing a populace for whom wildlands were less important as a source of commodities than they were for other values, such as recreation and spirituality. One of the first places that the social backlash against industrial forestry appeared was Germany, the country that gave it

birth. There, social concerns were accompanied by the realization on the part of foresters that industrial forestry as they were practicing it was neither economically nor ecologically sound: fully one-third of the total harvest in Germany was unplanned (i.e., harvested before rotation age) because plantations were being killed by winds, ice, or insects. By the early 1960s, Germans were abandoning industrial forestry for their own brand of NF, which included restoring the full complement of native trees, partial cutting, long rotations, and concentration on high value wood products rather than high quantity.

During the late 1960s controversy erupted in the United States over clearcutting of national forests leading Congress to pass in 1976 the National Forest Management Act (NFMA), which required the USFS to develop plans in consultation with the public. NFMA, however, did little to alter the basic orientation of the USFS toward the primacy of timber production on public lands.

Opposition to industrial forestry continued to build in the United States and other timber-producing countries through the 1970s and 1980s, including not only urban people, but rural as well: peasants in India were hugging trees to keep them from being cut; indigenous people in Canada were barricading logging roads. As in Germany, scientific evidence was also accumulating that industrial forestry, widely applied, had created significant ecological problems in the United States Pacific Northwest. The most dramatic of the scientific issues related to species that required old-growth forests or other habitats that were not maintained in industrial forests.

During the late 1980s and early 1990s two old-growth dependent birds—the northern spotted owl and the marbled murrelet—were granted protection under the Endangered Species Act (ESA), as were several breeding populations (stocks) of salmon, whose numbers had diminished due to a combination of dams on the Columbia river system and degradation of stream habitat due to logging and grazing. Numerous other species of mammals, fish, and amphibians, as of 1995, are considered by biologists to be at risk because of habitat degradation. Other scientific issues emerged during this same period. The standard practice of dispersing clearcuts throughout a matrix of older forests, once thought to benefit wildlife, had led to excessive roading and fragmentation of remaining older forest into isolated blocks that

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were at risk to fire and wind. Moreover, growing evidence indicated that large dead wood and noncommercial plant species—things that had no place in industrial forestry—performed important functions within forest ecosystems.

It is from this cauldron of social and scientific issues that NF emerged as an approach to restoring balance between commodity production, protection of long-term forest health, and maintenance of the full range of values provided by forests. As of 1995 NF was still evolving, along with its share of skeptics and critics, as well as proponents. The chief of the USFS announced in 1992 that the agency would institute "ecosystem management" and the Bureau of Land Management issued a similar declaration in 1994; however, it remains to be seen how these policy changes will be translated into practice. After years of fighting the USFS, many environmentalists and biologists view NF as just another attempt by the agency to disguise a continued focus on timber production. At the same time, however, there is a growing grass roots movement within the USFS and the U.S. Bureau of Land Management away from timber primacy, toward ecosystem and landscape management. Where this will lead is uncertain, but at this point it seems likely that, as in Germany, industrial forestry on public lands in the United States will eventually become a thing of the past.

David A. Perry

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See also BUREAU OF LAND MANAGEMENT; CLEARCUT; FOREST SERVICE (U.S.); FORESTRY; HISTORY OF; OLD GROWTH FORESTS

New Zealand: Anti-Nuclear Foreign Policy

The origins of New Zealand's nuclear free policies are threefold: growing public support that first emerged in the 1960s, clear political commitments from the 1972-1975 and 1984-1987 Labour governments, and the strong personal convictions of their respective leaders—prime ministers Norman Kirk and David Lange. The genesis of the policies occurred in 1962 with an Australian Labour party suggestion that the Antarctica nuclear weapon free (NWF) zone be extended to the Southern Hemisphere. Church-based peace groups in New Zealand influenced by the British Ban the Bomb movement, supported this with a large petition. Trade Union pickets also began to oppose U.S. warship visits.

The first genuinely popular peace movement, however, emerged only with U.S. intervention in Vietnam. Large-scale public mobilization against the war eventually resulted in the small contingent of New Zealand troops being withdrawn by the 1972 Labour government. Kirk built on this sentiment and stated that no nuclear powered warships would enter New Zealand's waters.

Opposition was also growing to French atmospheric nuclear tests in the South Pacific. The Labour governments of Australia and New Zealand jointly petitioned the International Court of Justice at the Hague seeking an interim injunction against the tests. This was followed in 1973 by a New Zealand navy frigate being sent into the test zone with a cabinet minister on board. In 1974 France moved its tests underground. A NWF zone for the South Pacific was proposed by Kirk in 1975 and endorsed by the United Nations (UN) General Assembly.

The resumption of U.S. ship visits by the 1976 national government saw growing public opposition. Peace squadrons—flotillas of small boats—were formed to hinder the entry of warships into ports. The environmental movement also opposed ship visits and organized a huge petition against nuclear power in 1976. The technology became politically unacceptable.

During the early 1980s peace groups flourished (300 existed) and targeted local authorities requesting that they become NWF zones. By 1983 half the population was living in such zones and Labour pledged to make New Zealand nuclear free. All major political parties except the ruling national party supported this stance. Labour became government in 1984. Polls indicated that 56 percent of New

bile in urban planning and in the quality of urban life.

John H. Perkins teaches biology and the history of environment and technology at Evergreen State College in Olympia, Washington. He is the author of numerous articles, chapters, and reviews on a wide variety of agricultural policy and environmental protection issues, including the book *Insects, Experts, and the Insecticide Crisis: The Quest for New Pest Management Strategies* (1982).

Patricia E. Perkins is an assistant professor on the Faculty of Environmental Studies at York University in Toronto, Ontario. She was formerly a policy coordinator for the Ontario government on trade and environment issues; her current research focuses on sustainability and trade.

David A. Perry is a professor of ecosystem studies in the Department of Forest Science at Oregon State University in Corvallis, Oregon. He has written extensively on forest policies and practices, especially as regards the Pacific Northwest, and his publications include *Maintaining the Long-term Productivity of Pacific Northwest Ecosystems* (1989).

Sherry L. Pettigrew actively promotes large carnivore conservation through awareness and conservation programs. She is the coauthor of *Wild Hunters: Predators in Peril* (1991) and can be reached through Second Wind Services, R.R. # 3, Cookstown, Ontario.

Cassandra Phillips is Antarctic and Cetacean Officer for the World Wide Fund (WWF) for Nature (United Kingdom). She has much experience in conservation matters and regularly attends meetings of the International Whaling Commission on behalf of WWF.

John C. Pierce teaches in the Department of Political Science at Washington State University in Pullman, Washington. He has published several articles on postmaterialism as a trend in public opinion and is coauthor of *Political Knowledge and Environmental Politics in Japan and the United States* (1989).

David N. Pimentel teaches in the Department of Entomology in the College of Agriculture and Life Sciences at Cornell University in Ithaca,

New York. A leading researcher on pesticides, agriculture, and the environment, his recent publications include *Food and Natural Resources* (1989) and the three-volume *Handbook of Pest Management in Agriculture* (2nd ed., 1990).

Nicholas Polunin, a botanist and graduate of Oxford, Yale, and Harvard universities, is the founding editor of several major publications including the journal *Environmental Conservation*, published in Geneva, Switzerland. As author and editor of some thirteen books on environmental subjects with some emphasis on Arctic settings, and as one of the leading environmentalists in the world, he has received awards and recognitions from the United Nations Secretary-General, UNEP, and from governments and organizations in many countries including India, the United States, China, the former Soviet Union, and the Netherlands.

William O. Pruitt, Jr. is a professor in the zoology department at the University of Manitoba in Winnipeg, Manitoba. He has a broad expertise in conservation biology with a research emphasis on northern forested and tundra habitats and species, especially the woodland caribou.

Christine Pryde is a policy analyst with the Non-Smokers' Rights Association (NSRA), a pioneering Canadian environmental health organization based in Toronto, Ontario. NSRA has developed an international reputation for its successful advocacy of legislative approaches to tobacco control including high taxation policies, precedent-setting warnings on tobacco packages, and the banning of tobacco advertising through the *Tobacco Products Control Act*. NSRA is located at 344 Bloor Street West, Toronto, Ontario, M5S 3A7.

Philip R. Pryde teaches in the geography department at California State University in San Diego, California. His central research interest is in environmental policy in the former Soviet Union, and he is the author of *Environmental Management in the Soviet Union* (1991); he is also the coeditor of *San Diego: An Introduction to the Region* (1984).

Robert Michael Pyle is a leading expert on the conservation of butterflies and in 1971 founded the Xerces Society, an organization dedicated to