

Plenary Sessions

Excerpt from "Managing for Ecosystem Health, International Congress on Ecosystem Health, Abstracts". 1999. ICEH. Report No. 24. University of California Division of Agriculture and Natural Resources, Genetic Resources Conservation Program, Davis CA USA. 108 p.

TOWARDS ECO-RESPONSIBILITY: THE NEED FOR NEW EDUCATION, NEW TECHNOLOGIES, NEW TEAMS AND NEW ECONOMICS

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We have lived through the Century of Science. We discovered the rules of matter and energy and a host of discoveries allowed the population to grow from a little over one billion 1900 to the present six billion. As Sir Crispin Tickell so eloquently stated "It would be nice – to think that the solutions to some of our present problems could be drawn from past experience, but in this case the past is a poor guide to the future. Our current situation is unique." The new science also led to our unique powers of observation from galaxies to genetic molecules, and to our powers of destruction and as the Worldwatch Institute stressed in their report, State of the World, 1995, in the period 1900-95 we killed 110 million people! Our technologies have changed the planet, air pollution, soil erosion, water pollution and climate etc. Our life support systems and our quality of life depend on components such as food, water, energy, materials and waste management. Specific question I will consider include:

- Can we produce clean energy for 10 billion humans?
- Can we stop soil deterioration?
- Can we provide adequate clean water?
- Can we reduce wastes?

If one examines the state of people it is clear that quality education is the key to quality of life. We must have universal literacy, numeracy and science. And the rich must assist the poor nations or else we live with continuous catastrophes of all types and scales. We must develop new, truly sustainable technologies, but to do this we must develop systems which integrate knowledge from all sectors of society. For example, to produce food security we require biologists of all types, ecologists, soil scientists, climatologists, sociologists, educators at all levels and ECONOMISTS with a view longer than the next election. From my recent experience nations like Europe and Japan lead the world. They have accepted limits to growth and they have reduced waste production of all types. Their biodiversity is rising again. I very much agree with Brown and Flavin of the Worldwatch Institute (1999), "We need a new moral compass to guide us into the twenty first century—a compass grounded in the principles of meeting human need sustainably".

TOWARD NEW MEASUREMENTS OF ECOSYSTEM HEALTH

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The trajectory of modern environmental policy begins with Earth Day, 1970 and continues through a plethora of laws, State and Federal, which embrace sectorial solutions. The federal Endangered Species Act of 1973, and its state counterparts, are the most notable examples of the single species, single site approach. While the ESA and others of the laws which were enacted during the period immediately following

Earth Day have helped to address media specific problems, there is growing awareness that such tools are inadequate to the challenges of ecosystem management. Recent evaluations of landscape-scale ecosystem management (e.g., Dialog on Ecosystem Management, Keystone Center) conclude, in fact, that current laws and policies may be a hindrance to integrated resource management in places like southern California (coastal sage scrub), San Francisco Bay-Delta Estuary, and the Florida Everglades. The author argues that this experience, buttressed by more recent conclusions of conservation biologists, requires development of an "institutional ecosystem" which corresponds more closely to functioning of natural systems than does the current policy framework. Its elements would include additional research on interaction of species and their habitat; legal, policy and administrative mechanisms for resources and land use planning on a regional scale; improved tools for adaptive management; and more reliable measures of ecosystem health. With regard to measures of ecosystem health, the author will describe his participation in the "State of the Nation's Ecosystems" project of the Heinz Center for Science, Economics and the Environment, and its prospects for development of a prototype report, covering croplands, forests, and ocean and coastal areas. In addition, he will discuss the implications for improved environmental policy of an "institutional ecosystem" of the kind he recommends, enabling the United States to address its most intractable environmental issues.

LONG-TERM ECOSYSTEM STUDIES AND THEIR POLITICAL IMPLICATIONS: LESSONS TO BE LEARNED FROM THE LAKE TAHOE EXPERIENCE

Charles R. Goldman

Director, Tahoe Research Group, Professor, Department of Environmental Science and Policy, University of California, Davis • USA

Abstract not available

ENVIRONMENTAL HEALTH RESEARCH CHALLENGES

Kenneth Olden

Director, National Institute of Environmental Health Sciences • USA

Abstract not available

FORESTS IN CRISIS—A THREAT TO A HEALTHY PLANET

Ola Ullsten

Co-chair, World Commission on Forests and Sustainable Development

Abstract not available

PROTECTING OUR PLANET, SECURING OUR FUTURE: LINKAGES AMONG GLOBAL ENVIRONMENTAL ISSUES AND HUMAN NEEDS

Robert T. Watson

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Abstract not available