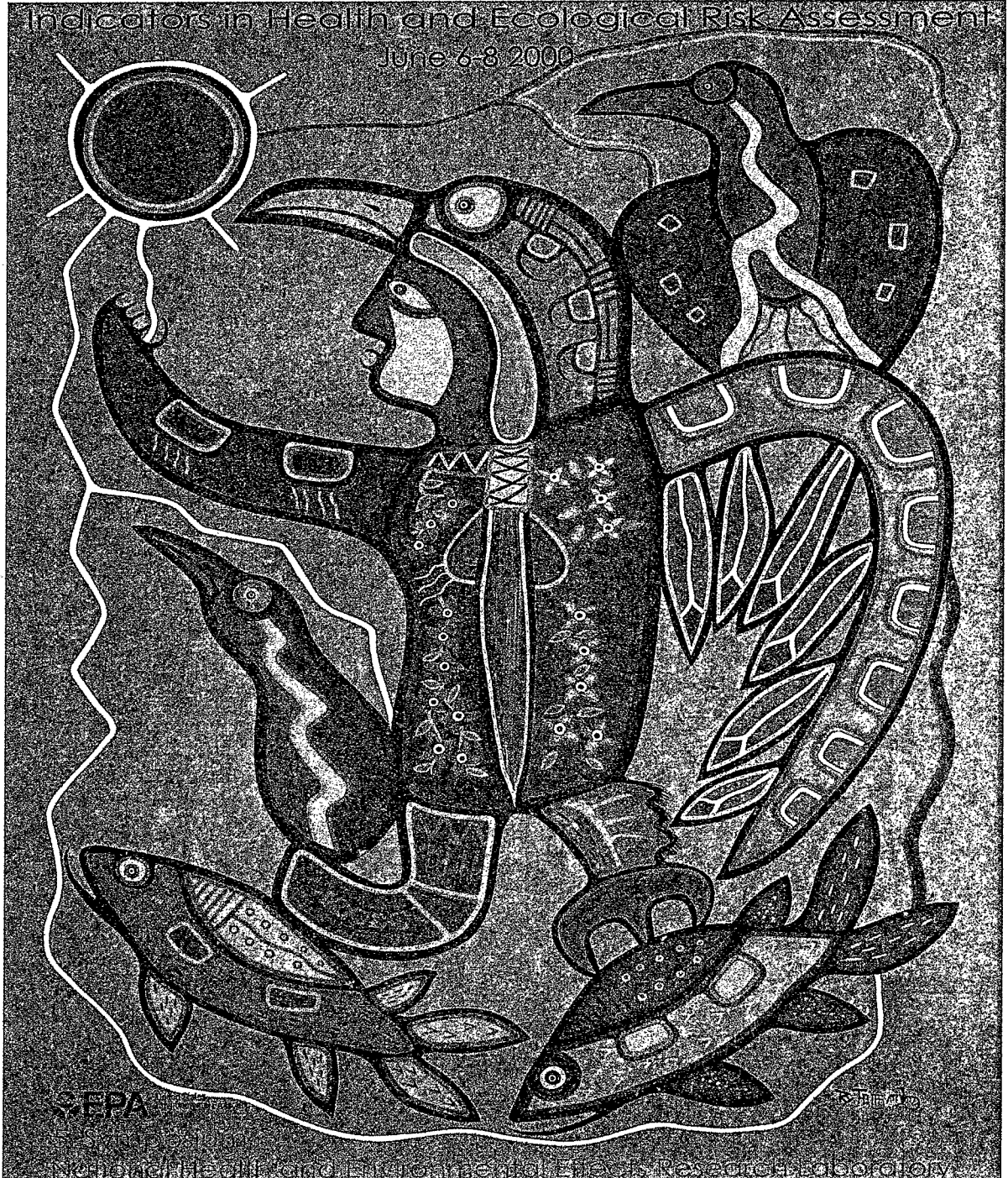


Indicators in Health and Ecological Risk Assessment

June 6-8 2000



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Research in Health and Environmental Sciences Research Laboratory

## INDICATORS IN HEALTH AND ECOLOGICAL RISK ASSESSMENT

Fifth Symposium of the U.S.  
Environmental Protection Agency  
National Health and Environmental  
Effects Research Laboratory (NHEERL)

*Sheraton Imperial Hotel, Research  
Triangle Park, NC, June 6-8, 2000*

The **Fifth NHEERL Symposium** will explore commonalities in selection, application, interpretation, and evaluation of indicators for human health and ecological condition. The Symposium will examine common indicator threads through presentations of stressor-based topical areas. To enhance interaction between risk assessors and managers with research scientists, invited speakers for each session will present a risk overview, a science overview, and a synthesis for improvement of approach, objectives, and performance of indicators.

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### Agenda

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#### PLENARY SESSION

**Tuesday June 6, 2000 9:00 a.m.**

\* **Welcome** *Dr. Lawrence Reiter, Director, National Health and Environmental Effects Research Laboratory (NHEERL)*

\* **Opening Remarks: The Role of Indicators in Health and Ecosystem Management** *Dr. William Fisher, Chair, Fifth Symposium Organizing Committee, U.S. EPA, NHEERL*

\* **Risk Assessment Overview for Health and Ecology** *To Be Announced*

\* **Great Lakes SOLEC Program: Indicators for Public Health and Ecology** *Dr. Paul Bertram, U.S. EPA, Great Lakes National Program Office*

\* **Ecological Indicator Evaluation Guidelines** *Laura Jackson, U.S. EPA, NHEERL*

#### SYMPOSIUM SESSIONS

**Tuesday June 6, 2000 1:00 p.m. –**

**Thursday June 8, 2000 Noon**

1. Endocrine Disrupting Chemicals
2. Persistent Bioaccumulating Toxicants
3. Ambient Ozone—Understanding Ozone Toxicology and Improving Risk Management Strategies
4. Understanding and Managing Effects of Global Atmospheric Change
5. Indicators for Effects and Predictions of Harmful Algal Blooms
6. Health and Integrity of Coastal Communities

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### Session Descriptions and Featured Presentations

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#### Indicators of Toxic Effects for Endocrine Disrupting Chemicals (EDCs)

A broad range and growing number of xenobiotic chemicals disrupt endocrine function and lead to reproductive and developmental dysfunction. EPA is participating in a national effort (EDSTAC) to develop, validate, and standardize a battery of protocols for the identification of EDCs. The session will examine mammalian and fish reproduction to compare individual vs. population indicators of effect, characterize comparable and multiple mechanisms of toxicity, and elaborate the use of effects indicators to identify toxicants and their sources.

#### Presenters

*Dr. Glen Van Der Kraak, University of Guelph, Ontario*

*Dr. D. Stewart Irvine, Centre for Reproductive Biology, Edinburgh, UK*

*Dr. Claude Hughes, Cedars-Sinai Medical Center*

#### Risk Assessment Indicators for Persistent Bioaccumulating Toxicants (PBTs)

A diverse group of long-lasting, highly toxic contaminants are associated with cancer and a variety of neural, reproductive, and developmental abnormalities in humans,

fish, and wildlife. The session will identify scientific needs for determining fate, deposition, bioaccumulation, ecological toxicity, and health effects of PBTs through examination of indicators for mercury and PCBs.

**Presenters**

*Dr. Michael Meyer, Wisconsin Department of Natural Resources*  
*Dr. Philippe Grandjean, Odense University, Denmark*  
*Dr. Ake Bergmen, Stockholm University, Sweden*

**Ambient Ozone - Toxicology and Risk Management Strategies**

Ozone is a ubiquitous pollutant that elicits a diversity of plant and animal responses. Recent modeling efforts have attempted to improve estimates of exposure and dose, as well as prediction of plant and human responses. The session will identify limitations of our current scientific knowledge and will emphasize key issues underlying risk assessment and resource management.

**Presenters**

*Dr. Edward Postlethwait, University of Texas, Galveston*  
*Dr. William McDonnell, U.S. EPA, NHEERL*  
*Dr. George Taylor, George Mason University*

**Understanding and Managing Effects of Global Atmospheric Change**

Increases in ultraviolet irradiation, global climate change and flux of reactive atmospheric nitrogen have created atmospheric variability at regional and global scales. The session will examine biotic responses in both terrestrial (e.g., forest) and coastal marine (coral reefs and estuaries) ecosystems.

**Presenters**

*Dr. Michael Mann, University of Virginia*  
*Dr. Richard T. Barber, Duke University*  
*Dr. Grace Brush, Johns Hopkins University*

*Dr. Jonathan Patz, Johns Hopkins School of Hygiene and Public Health*  
*Dr. Terry Yates, University of New Mexico*

**Indicators for Effects and Predictions of Harmful Algal Blooms**

A growing number of microbial bloom events—including dinoflagellates, diatoms, bacteria and cyanobacteria—have created public health issues for drinking water, seafood consumption, and recreation, as well as disease and mortality for fish, shellfish, and marine mammals. The session will examine indicators for adverse effects and for environmental factors that trigger blooms and toxin production.

**Presenters**

*Dr. Daniel Roelke, Texas A&M University*  
*Dr. Alfred Hanson, University of Rhode Island*  
*Dr. John Walsh, University of South Florida*  
*Dr. Wayne Carmichael, Wright State University*

**Health and Integrity of Coastal Communities**

Unrelenting growth of coastal populations reduces the quality and quantity of coastal resources and, ultimately, threatens both ecological integrity and public health. The session will review indicators for chemical contamination, microbial pathogens, and nutrient enrichment in coastal systems, and will examine concepts that incorporate human health as an element of coastal community integrity.

**Presenters**

*Dr. Scott Nixon, University of Rhode Island*  
*Dr. Mark Tamplin, USDA*  
*Dr. Jeff Steevens, U.S. Army Corps of Engineers*  
*Dr. Paul Bertram, U.S. EPA*  
*Dr. Benjamin Sherman, University of New Hampshire*

To obtain further information and to register for the Fifth NHEERL Symposium, visit <http://www.lcgnet.com/epasymposium>. If you have any questions regarding the symposium, please contact Tina Pensare at 703-351-7738

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NHEERL, Environmental Research Center (MD-73)  
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