

SOLEC '98

Working toward a consensus on Great Lakes indicators

1. What are we trying to achieve for SOLEC 98 and beyond?

The Parties to the Great Lakes Water Quality Agreement (Canada and the United States) have an obligation to report on the state of the Great Lakes and on progress toward the goals of the Great Lakes Water Quality Agreement (GLWQA). The State of the Lakes Ecosystem Conference (SOLEC) was created to fulfil this obligation in part.

The first two SOLEC conferences reviewed the state of various components of the Great Lakes ecosystem through the use of indicators and a subjective assessment of "good," "fair," "improving," etc. These indicators were developed through the best judgement of the scientists involved. The Parties want to establish a consistent, easily understood suite of indicators that will objectively represent the state of major ecosystem components across all Great Lakes basins, on which they can report progress every two years, and upon which they can be assessed regarding achievement of the purpose of the Agreement. The acceptance and use of a core set of indicators will also drive data collection activities throughout the basin.

The SOLEC indicator list is meant as an umbrella or over arching set of indicators. These indicators will provide a general overview of conditions in the Lakes. In the geographic area indicators, it will be LaMP and RAP indicators that will most likely form the basis of the indicator set, supplemented with indicators from other sources such as GLFC, SOLEC 94 or 96, IJC etc. The acceptance of a core set of SOLEC indicators will in no way force the LaMPs to abandon their own indicators. The SOLEC organizers recognize that there are local needs with respect to indicators and that use of LaMP and RAP indicators fits well under the umbrella concept. SOLEC is looking for broad, system wide indicators, using LaMP indicators wherever appropriate at the local or Lake level.

SOLEC has targeted its first two conferences at "decision makers" in the basin. This has meant federal, state, and provincial government staff; municipal representatives including elected officials; Native Americans/First Nations; industry; and Environmental Non-Government Organizations. SOLEC 98 intends targeting these same decision makers, since these are the people who will need the information presented on indicators. It is these decision makers who should use the indicators in their jurisdictions to make decisions of an environmentally significant nature.

The SOLEC indicator list will be developed between now and Oct/98, will be discussed at the conference, then modified as necessary to produce an indicator list that is mutually acceptable to as many stakeholders as possible.

2. What is the difference between a goal, an objective and an indicator?

Major goals are the long-range visions we wish to achieve for the Great Lakes. The goals are influenced largely by a combination of society values and the stresses that have already imposed irreversible changes on the ecosystem. We can decide to use the Great Lakes, for example, as a garbage dump, as a fish farm, as a drinking water source, as a recreational area, as an ecological preserve for rare species, etc. Once we have achieved a consensus about compatible long-term goals, we can then set quantified objectives toward which we wish to measure progress. If we achieve all the objectives, we should also achieve the broader goals. To assess progress toward the objectives, we need to measure specific components of the ecosystem. We call those measures "indicators."

3. Why is a SOLEC Indicators List Important?

The demand for high quality, relevant data concerning the health of various components of the Great Lakes ecosystem has been escalating rapidly for the past decade or so. The U.S. and Canada have spent billions of dollars and uncounted hours attempting to reverse the effects of cultural eutrophication, toxic chemical pollution, over-fishing, habitat destruction, introduced species, etc. Environmental management agencies are being asked to demonstrate that past programs have been successful and that the success of future or continuing programs will be commensurate with the resources expended (financial and personnel time). At the same time, in both countries, the amount of taxpayers dollars being devoted to Great Lakes environment issues is decreasing. The demand for high quality data, while operating with limited resources, is forcing environmental and natural resource agencies to be more selective and more efficient in the collection and analysis of data.

The most efficient data collection efforts will be those that are cost-effective and relevant to multiple users. A understanding by stakeholders about what information is necessary and sufficient to characterize the state of Great Lakes ecosystem health through the use of indicators, and to measure progress toward ecosystem goals would facilitate efficient monitoring and reporting programs.

4. What progress has already been made?

Several attempts are being made to identify goals, objectives and indicators for parts of the Great Lakes ecosystem. Some of major activities have been completed or are in progress by the following groups:

- **Lakewide Management Plans**
- **International Joint Commission**
- **Great Lakes Fishery Commission**
- **SOLEC 94 and SOLEC 96**

5. Why haven't these activities been coordinated before?

With so many administrative jurisdictions having authority over parts of the Great Lakes, a series of conflicting objectives and competing agendas have arisen. There exist conflicting opinions about long-term goals for the Great Lakes (e.g., should self-sustaining food webs be maintained, or should the put-and-take sport fishery be optimized?) and about the most useful ecosystem features to monitor. Various jurisdictions have competing purposes (e.g., enforcement, nutrient reductions, ecosystem maintenance, fishery enhancement), competing time scales (e.g., short term needs to identify ecosystem responses to management action but long-term ecosystem goals), and competing space scales (e.g., embayments, tributaries, wetlands, watersheds, lake sub-basins, whole-lake basins, air sheds, etc.).

6. Why should there be agreement on indicators?

With a mutual understanding of the indicators to be monitored, government agencies can more efficiently allocate resources to data collection, evaluation and reporting. Common databases would provide easier access to relevant supporting data, and the relative strengths of the agencies could be utilized to improve the timeliness and quality of the data collection.

The IJC has a responsibility to evaluate progress toward achieving the goals and objectives of the GLWQA. A set of indicators that is relevant to both the IJC and the Parties will prevent a dilution of monitoring effort for competing purposes, and will foster cooperation between the Parties and the IJC for the common good of the Great Lakes ecosystem. Data will be collected for pre-determined applications, and they will be available on a timely basis. This system of a core set of indicators will be flexible enough to expand to take into account new emerging issues.

During the process of selecting the indicators, non-governmental stakeholders will provide advice on what measures would be useful and interesting to measure and report. Access by NGO's to environmental data should be easier, and the data should be more timely and more relevant to a wide variety of stakeholders. Results of government programs for environmental protection and restoration (or lack thereof) would be easier to identify.

Achieving consensus on a set of core indicators does not mean that individual programs and jurisdictions can not maintain their own unique indicators. Individual user groups may need to retain certain indicators or other data requirements that are not shared by other groups. The SOLEC process will not attempt to impose a uniform set of indicators onto all user groups, nor will the SOLEC process discourage new indicator development work. However, the SOLEC indicators list is expected to provide the basis for future monitoring and data gathering efforts at a broad scale, by the Parties, and for reporting through future SOLEC events. SOLEC could provide a high profile forum for presentation of reports on progress based on these indicators.

The release of a SOLEC list of core indicators at the same time as a set of LaMP indicators does not pose a problem because the SOLEC list should contain those indicators from the LaMP that are relevant to basin wide issues.

7. What would a SOLEC Indicators List look like?

A *SOLEC Indicators List* could be a compilation and distillation of indicators required or proposed by Great Lakes stakeholders based on an electronic, searchable database of indicators. Each indicator will be associated with a number of "attributes" such as *user group, geographic component (i.e., open water, nearshore, terrestrial, coastal wetlands, etc.), human health, lake basin, ecosystem objective being supported, quantified end point or desired state, data availability, implications for environmental management, etc.* A retrieval of indicators associated with, say, "Lake Erie Coastal Nearshore" will provide a list of indicators relevant to this area for SOLEC reporting. The database will also consist of a master list of all indicators developed in the Great Lakes basin from which the SOLEC indicator list will be derived.

8. Suggested structure for SOLEC 98 Indicators List

A. By SOLEC Geographic Element for each Lake

- Nearshore waters
- Open waters
- Coastal wetlands
- Land by the Lakes*

* The terrestrial component will only cover those ecoregions directly affected by the Lakes themselves, i.e. the land by the lakes. However land use will cover land further away from the lakes as impacts on the land here often negatively impact the lakes.

LaMP and RAP indicators will be addressed under the above SOLEC geographic areas in the following categories:

- Aquatic communities
- Habitat
- Wildlife

Pressure and stress indicators will be included when appropriate:

- Contaminants
- Nutrients
- Socio-economic
- Land use
- Non-native species

B. Basin-wide Issues and Indicators

- Human Health

- Stewardship and sustainability
- Socio-economic viability; socio-economic viability
- Air issues (to be addressed as human health concerns or as long range transport of contaminants)

9. How will the SOLEC Indicator List be Developed?

Seven groups will be established and will be lead by experts in the respective fields:

- Offshore waters;
- Nearshore waters;
- Coastal wetlands;
- Land by the Lakes;
- Human health;
- Stewardship; and
- Socio-economics/Land use.

Membership on these groups consist of volunteers from government as well as recently retired academics, PLUS hired writers/coordinators. The people involved in indicator development in the LaMPs and RAPs would be an integral part of this process.