

**Indicators and Information Strategy Team
Meeting Summary
April 28-29, 2005, Traverse City, MI**

The Indicators and Information Strategy Team (I&I ST) of the Great Lakes Regional Collaboration (GLRC) met in Traverse City, Michigan on April 28-29, 2005 to discuss:

- The overall GLRC Strategy development process;
- Feedback on the draft I&I ST report;
- Priorities for recommended actions to address indicators and information-related issues in the Great Lakes restoration effort;
- Update on land-use and land-cover mapping efforts for the Great Lakes region; and
- Next steps for the I&I Strategy Team.

Overview of the Great Lakes Regional Collaboration Strategy Development Process

Roger Gauthier, one of the co-chairs of the I&I Strategy Team, began the meeting with an overview of the GLRC Strategy development process and the feedback that the GLRC Executive Committee provided to all the Strategy Teams regarding the Strategy Team reports. The overall timeline for the GLRC process includes the following activities:

- May 27: Revised draft reports from the Strategy Teams are due to the Executive Committee.
- May 28-July 6 (specific dates TBD): The Executive Committee will prepare a draft Strategy for restoration of the Great Lakes ecosystem based on the reports from the Strategy Teams; Strategy Teams will have an opportunity to review the full draft document.
- July 7-8: The draft Strategy will be released at Summit I in Duluth, MN for public review.
- July-August (specific dates TBD): There will be five public Town Hall meetings about the draft Strategy. At least one person from each Strategy Team is encouraged to attend each meeting.
- September-December: The Executive Committee and Strategy Teams will meet again on October 6-7 in Rochester, NY. The draft Strategy will be revised based on comments received during the public involvement process and will be finalized by Summit II on December 12.

Executive Committee Feedback on All the Strategy Team Reports

Prior to the I&I ST meeting on April 28, the GLRC Executive Committee met with the co-chairs from all eight Strategy Teams to provide feedback and additional guidance on the five-page summary reports from the Teams. I&I ST co-chairs Roger Gauthier and Steve Brandt summarized the highlights of this discussion, as follows.

- Short-Term Focus for Recommended Actions (3-5 years): The Executive Committee encouraged Strategy Teams to think discretely about recommended actions, especially those that can be completed in the short term (3-5 years) as a step toward a longer term goal (desired state).
- Realism in Resource Needs for Recommended Actions: Although clear, specific guidance on funding levels was not provided by the Executive Committee, Strategy Teams should consider existing resource commitments (currently funded programs) as well as what could be accomplished with a realistic increase in funding to implement the recommended actions. Funding should be shared by federal and non-federal entities.
- Requirements for Cost-Benefit Assessments: The Executive Committee requested information on the costs and benefits of Strategy Team recommendations. The co-chairs noted that it will be

difficult to quantify the benefits of making the right decisions due to better information, although some studies on benefits have been done (e.g., on Great Lakes observing systems).

- **Consolidation and Prioritization of Recommended Actions:** The Executive Committee has asked each Strategy Team to identify its five highest priority actions (in ranked order) for the summary five-page reports. Additional recommended actions can be included in appendices to the reports. Ten of the recommended actions from all the Strategy Teams will be included in the executive summary for the draft GLRC Strategy. Given the need to focus on the top five highest priorities, the I&I ST co-chairs suggested that each of the I&I workgroups identify its top priority (or two priorities) to move forward in the five-page report from the I&I ST.
- **Ecosystem Approach:** The Executive Committee and Strategy Team co-chairs also identified the need to use an ecosystem approach for the GLRC Strategy; however, a clear path forward for doing this was not identified. Steve Brandt suggested that the I&I ST could potentially share ideas for an ecosystem approach based on the Team's recommendations for decision support.

Comments on the I&I Strategy Team Draft Summary Report

I&I Strategy Team members discussed comments on the draft summary report (8 pages, plus appendices) prepared for the Traverse City meeting according to the topics covered by I&I Workgroups (indicators and monitoring, communications, research, data and information management, and decision support). The I&I ST also suggested the need to coordinate with other Strategy Teams on their recommendations related to communications, research, and monitoring.

General Comments and Suggestions on the I&I ST Report

- Write in plain language, using active voice and fewer words.
- Adaptive management is a core concept that is missing from the report.

Guidelines for Revisions to Recommended Actions

- Recommended actions should be action-oriented, feasible, realistic, and, for the top priority actions, in the 3-5 year time frame. (Longer term recommendations can be in the appendices.)
- Recommended actions should be designed to make significant progress toward the "desired state" for indicators and information supporting restoration of the Great Lakes ecosystem.
- Recommended actions should identify 1) the year when the action would be completed, 2) the lead entity for the action, 3) any participating or partnering organizations, and 4) estimated costs.

Indicators, Monitoring, and Observation

- The Team discussed the differences between observation and monitoring, and noted that it could be helpful to include a glossary of terms as part of the I&I ST's report.
- Participants discussed whether the recommended actions should reference specific bills introduced in Congress, such as a bill for EPA to develop a Great Lakes indicator system. There was concern that many bills are piecemeal and never see the light of day; however, there is also a need provide clear messages to Congress and other entities regarding actions that should be taken.
- One participant noted that EPA has authorization for implementing the SOLEC indicators for the Great Lakes, but it has not received full funding.
- One participant suggested focusing the indicator and monitoring recommendations on evaluating whether the threats to the Great Lakes ecosystem are changing and whether protection and restoration strategies are successful. Co-chair Steve Brandt recommended asking the other

Strategy Teams to identify the key forcing measures (threat/pressure) and consequence measures (health and ecological impacts) relevant to their issue areas.

- Numerical targets are helpful to have and communicate with indicators, so that users know how conditions compare to the desired state for the ecosystem (e.g., to answer whether we are on the 50-yard line or the 1-yard line).
- Examples of what to monitor and how (e.g., a local and a lake-wide example) could be included in the appendix to illustrate how the I&I ST's recommendations could be applied.
- One recommendation could be to implement the recommendations from the President's response to the Oceans Council report.
- Roger Gauthier, Charlie Peters, Paul Horvatin, Glenn Warren, and Rich Greenwood are on the new monitoring workgroup, and will consider changes to the monitoring recommendations.

Communications

- Some participants commented that the communications recommendations may be too broad, encompassing so much that they lose their meaning. The emphasis for the I&I ST as stated in the GLRC Framework document is on strengthening decision support systems. Another way to focus the recommendations is on I&I needs that pertain to the other seven issue areas.
- Participants noted that making the information understandable is key to successful communications; messages should be conveyed succinctly and in graphic format. Models for conveying information to decision makers and other users suggested include Consumer Reports, 401(k) statements, Dow Jones, and a "weather page" for the environment.
- Key messages from other Strategy Teams could be added to the appendix for the I&I ST report.
- The communications recommendations should be revised to narrow their focus and to reflect the new guidance for recommended actions (e.g., timeline, cost, entity, action-able, realistic).

Research

- Recommendations on the need for ecosystem-based, predictive research were added to the summary report, since the original draft from the workgroup did not have recommendations. Team members did not think that research should be limited only to predictive research, so the draft text and diagram in the report will be revised to address that concern.
- The Council of Great Lakes Research Managers has already developed a research coordination strategy for the Great Lakes. The proposed strategy has a budget of ~\$120,000 per year, including only \$20,000 for staff. The Council's draft report will be shared with I&I Strategy Team members.
- Participants commented that there are useful models for research coordination. Many of the lakes have organizations that examine research and monitoring (e.g., the Lake Erie Millennium Group, lake and LaMP committees, etc.).
- Participants discussed issues related to relying on the International Joint Commission as an organization for research coordination, since it has an oversight role established by legislation and its scope is limited to water quality. It might be better for the IJC Research Council to be co-equal partners with the Great Lakes Fisheries Commission, for example.
- The Team thought that if the recommendations address a high enough level of government, it could be possible to coordinate research funding. Currently, different federal agencies operate their own research programs, and there is no coordinated research entity for the Great Lakes.

- A Great Lakes Research Office has already been authorized under the Clean Water Act. One recommended action could be to fully fund that Office. Participants thought that it might be easier to get additional funding for a separate entity rather than to influence an agency's budget.
- One gap in the text on research in the report is the role of universities. The research workgroup will work on describing issues and recommended actions that pertain to universities.
- There is little text in the draft report on the need to validate models and to link models that address different topics. Some text will be added to the report to address this.

Data and Information Management

- There is no political will to require certain methods for data collection (e.g., to tie those requirements to the distribution of funding to states).
- In EPA's National Environmental Information Exchange Network, the model to promote data sharing agreements and common protocols is to distribute grants to entities to set up the information management systems that enable the Exchange Network to function. The GeoSmart program in Canada has also funded small entities to set up infrastructure and conduct training.
- There is a distinction between data and information; it would be a huge effort to share all data that are collected. Participants asked whether these recommendations should focus on the other seven issue areas of the GLRC.
- The Great Lakes Information Network (GLIN) is where people would look for this information; however, one problem with GLIN is sustainability. It might be better for GLIN, especially if it's expanded, to be a stand-alone organization, rather than something supported by other programs.
- The search function is a critical component of a regional information management system.
- The data and information management text in the report is weakest in terms of a vision and how to advance that (e.g., in 3-5 years).
- The recommendations should be clearer about funding for the long term, but also should state what building blocks could be established to get to the vision for Great Lakes I&I activities.

Decision Support – Overall Conceptual Framework

- The I&I ST discussed the diagram of I&I activities included in the draft I&I ST summary report and how to convey a vision for how I&I activities (research, communications, etc.) support decision-making for the Great Lakes restoration effort.
- The National Monitoring Council has a "wheel" that illustrates the relationship of data quality objectives, protocols, information management, and reporting. This is one model that could be looked at for the I&I vision.
- I&I ST members are encouraged to submit additional suggestions for an I&I conceptual model.

Priorities for Indicators and Information Recommendations

Although the group recognized that the recommendations would need to be revised based upon the discussions at the meeting, individual I&I ST members identified their highest priorities for action based on the 24 recommendations included in the draft report of April 22, 2005 (see notes on these priorities at the end of this summary). Many participants suggested different ways of combining the recommended actions, since many of them are similar and related. As an alternative to identifying one high-priority action for each of the I&I ST workgroups, some participants suggested grouping the recommended actions into the following categories:

- Collaboration and Administration

- Information Management
- Technology
- Science and Research
- Communications

The I&I ST co-chairs asked each of the I&I workgroups to revise their recommendations and to identify their top one or two highest priorities for action within 3-5 years. Once the set of recommendations has been revised, the Strategy Team may look to additional ways to group the actions, such as the above suggestions, to eliminate any unnecessary redundancies or overlaps.

Great Lakes Land Cover and Land Use Mapping Discussion

Roger Gauthier gave an update on a Great Lakes Regional Data Exchange meeting that occurred on April 27, 2005 in Chicago, IL. The focus of the meeting was on mapping regional information on land use and land cover. There were presentations on different regional land use/cover mapping efforts, and discussion topics at the meeting included classification schemes, acquisition requirements, and information exchange opportunities. Participants at the Chicago meeting recognized the need for repeatable and repetitive information on land use and land cover delivered in a consistent, yet flexible format for evaluating changes over time and forecasting potential changes.

- Mr. Gauthier proposed that the recommendations that emerged from the Chicago workshop—in particular, for funding the next phase of the C-CAP program and for implementing the wetlands consortium recommendations to improve regional information on wetlands changes—were ones that should be considered in the GLRC effort.
- The I&I ST liaisons to the Habitat/Species and Sustainable Development (Land Use Group) Strategy Teams agreed to flesh out these potential recommendations and share them with those Strategy Teams for their consideration.

Next Steps

- Additional comments on the I&I Strategy Team summary report and suggestions for a revised conceptual diagram for I&I activities are due to David Merkey by Friday, May 6.
- Workgroups will revise all of their recommended actions based on the guidelines discussed at the meeting and will identify the top 1 or 2 priority actions to include in the I&I ST five-page summary report by Friday, May 6.
- The communications workgroup will coordinate with other Strategy Teams on their communications recommendations and key messages (the key messages could be included in the I&I ST appendices).
- The I&I ST liaisons to the Habitat/Species and Sustainable Development Strategy Teams will suggest potential recommendations regarding land use and land cover information to those Strategy Teams.
- The I&I Strategy Team co-chairs and staff will revise the five-page summary by Thursday, May 12.
- Workgroups will revise the full text of their reports by Friday, May 13.
- The full document (five-page summary plus appendices for the working group reports) will be sent to entire Team for comments around Friday, May 13.
- Comments on the revised summary report and appendices will be due Wednesday, May 18.
- The I&I Strategy Team co-chairs and staff will revise the report based on comments and will distribute it to the Executive Committee by Friday, May 27.

Appendix – Notes on Highest Priority Actions and Combinations Identified in the Meeting

The highest priorities for recommended actions identified by individual I&I ST members were as follows. (The numbers refer to the recommended actions in the 4/22/05 draft report; suggestions are sorted roughly according to the order of the items in the draft.)

- Combo of #1, #23, and #24 (decision support process linking monitoring, observations, indicator development, and research that builds from current efforts), expanded so monitoring and indicators are linked to specific threats and strategies to address the threats
- #2 (indicator teams to identify additional indicators)
- Combo of #2, #4, #5, #8, #10, and #11 (indicator improvements and a supporting system for monitoring and sharing information on key threats and consequences)
- Combo of #3 and #4 (relational database and on-line system for indicators)
- #5 (monitoring and observation coordination through International Coastal Observing Effort), but the recommendation may be too broad as it is stated
- #7 (implementation of Great Lakes Observing System [GLOS] under Global Earth Observation System of Systems [GEOSS])
- #8 (common observations and common protocols for data collection and reporting), but change “protocols” to “framework”
- #9 (regional information exchange network), encompassing detailed actions of #3, #4, #10, #11, and #17
- Combo of #9, #13, #22, and #24 (information exchange and research that builds on current efforts)
- #14 (GL Research Managers recommendations), expanded based on the discussion
- Combo of #14 and #20 (GL Research Managers recommendations & ecosystem research)
- #15 (communications workgroup), adding oversight for creation and implementation