

**RESTORING UNITED STATES AREAS OF CONCERN:
DELISTING PRINCIPLES AND GUIDELINES**

**Adopted by the
United States Policy Committee
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I. INTRODUCTION

Remedial Action Plans (RAPs) for Great Lakes Areas of Concern (AOCs) are perhaps the best example of community-based environmental protection in existence. Through a blend of public and private agencies and organizations, the RAPs continue to be a catalyst to advance the watershed approach for ecosystem remediation and restoration, and they continue to make progress towards the restoration and protection of the all of the forty-two remaining Great Lakes AOCs (see figure 1).

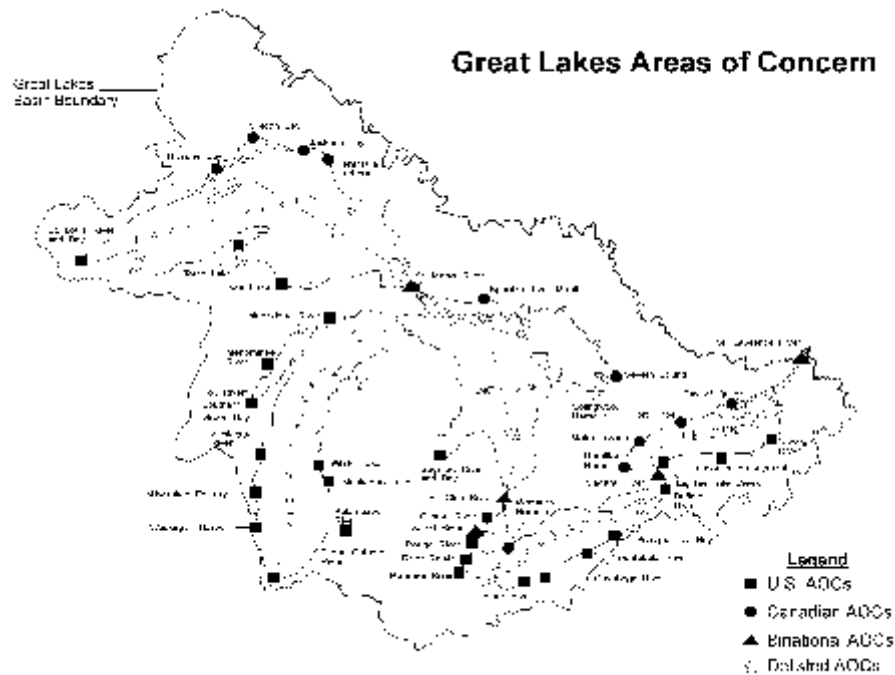


Fig. 1 Great Lakes Areas of Concern

The progress made in the RAP Program has led to the question of how and when to formally delist AOCs as the implementation of all recommended actions for restoring beneficial uses are completed, and as the uses are restored and maintained. The critical test for any such process and associated criteria is to insure that it is rigorous, scientifically defensible, and allows for full review and comment from interested and affected stakeholders. Acting on directions from the United States Policy Committee (USPC), USEPA’s Great Lakes National Program Office (GLNPO) convened the U.S. RAP Workgroup (comprised of representatives from the eight Great Lakes states and other U.S. federal agencies, with observers from the Canadian federal and provincial agencies and the International Joint Commission [IJC]), in order to draft these guidelines.

These guidelines offer various options for showing progress, maintaining momentum, and formal delisting, which a RAP Implementation Group (defined as the state agency responsible for the RAP program and the local public stakeholder group working with the state agency on the RAP) can use as guideposts and tools in their work. It is not envisioned that all parts of the guidelines will be applicable to all the AOCs; rather, those that suit the needs of a particular AOC can be adopted by the RAP Implementation Groups. There will be no sanctions imposed upon a State's RAP program based on which tools they may choose to use or not use.

Many important issues need to be addressed in order to achieve our shared goal of restoring and maintaining beneficial uses in the AOCs. We must be able to balance our collective desire to clean up and delist AOCs while maintaining the integrity of the RAP program and our role as environmental stewards. This is not meant to temper our push for delisting. Rather, we should view these questions as a sure sign that the U.S. RAP program is making significant progress, which makes the time ripe for addressing delisting related issues.

Appendix 1 provides brief background information on the genesis of the AOC program and Appendix 2 describes the drafting process for this document.

II. DELISTING PRINCIPLES

The following set of principles are intended to guide the restoration and maintenance of beneficial uses and the subsequent formal delisting in order to achieve a measure of consistency across the basin.

- < Specific goals and objectives should be established with measurable indicators to help measure progress and determine when RAPs can begin to consider delisting; these goals and objectives should be written in environmental rather than bureaucratic terms; and delisting targets should be locally derived and should include minimum requirements contained in Annex 2 sections 2, 3, and 4 of the Great Lakes Water Quality Agreement (GLWQA), and federal, state, and local jurisdictional agencies. The targets can change over time, but specificity is critical to insure program accountability and appropriate revisions. Targets should also include a temporal component, both in frequency and longevity of monitoring, to insure that success is achieved and maintained. It is crucial that the RAP process builds consensus among stakeholders on these locally derived restoration targets.

- < It is recognized and permissible to determine that a beneficial use cannot be fully restored and is therefore not expected to be restored, even though all remedial actions are to be implemented. This decision can be based on a combination of timeliness and reasonableness, and the rationale used should be clearly stated and

be fully supportable. Where full restoration may not be practical, partial restoration may be possible. For these areas, the impact of such a decision on the adjoining waters and associated management plans and targets (e.g., Lakewide Management Plans [LaMPs]) must be addressed. It should be noted that the IJC has recognized and addressed this issue. Their intent was to explicitly recognize that there may be some impaired uses that may not be fully restored for justifiable reasons, and that this should not prohibit the delisting of an AOC (please see Appendix 4).

- < Delisting occurs when locally derived delisting targets have been met; supporting data and rationale are needed so that delisting can take place. Monitoring must be an integral part of any final RAP produced and should be site-specific. Under this scenario, AOCs should not be delisted unless there is actual monitoring data (not just monitoring activity underway) that supports delisting by showing that the relevant restoration targets have been met and maintained through some specified period. Restoration and maintenance of the beneficial uses once all activities are fully implemented should be based on site-specific conditions acceptable to the parties and stakeholders and reasonableness of achieving any further improvement.
- < RAPs can only address impairments caused by local sources; impacts from outside an AOC (either upstream, downstream, via air deposition, or from the open lake waters) which cause use impairments should not impinge on the ability to delist an AOC. Such use impairments could be categorized as “impaired - not due to local sources.” In order to delist, these types of impairments and their attendant sources may need to be “handed off” to a responsible party or other environmental projects or program areas and then checked on periodically (in compliance/enforcement this is called “resolved pending”). This applies in the case where all possible action has taken place in the AOC.

These programs and projects that go beyond the RAP scope include the LaMPs, the Great Lakes Binational Toxics Strategy, and other national, binational, and international programs which can address out-of-AOC sources of pollutants that are impacting the AOCs and causing beneficial use impairments. The RAP cannot address these sources; they need these programs to do this to insure that Governments will address the source of the impairment. Opportunities for entering into “Memoranda of Understanding” or similar vehicles would help to institutionalize the required follow-up activities.

- < Interim goals and additional tools (e.g. restoring and delisting individual beneficial uses, restoring and delisting subwatersheds, using the Recovery Stage concept - to be discussed later in this paper) may be needed to help maintain momentum and progress towards delisting. Again, we should strive for some consistency with minimal differences in setting up standards for interim goals or tools for describing

the process/progress, while still providing room for local conditions.

- < Requirements from regulatory programs may not have to be met in all cases before delisting can occur. Generally, the criteria used to designate an AOC are equally or more stringent than these programs. Delisting targets are based on restoration of beneficial uses. Other programs may have other targets based on the needs of the program. While the RAPs should coordinate to the maximum extent with other programs, delisting does not require that the goals of other environmental programs be met unless this is required to reach these goals in order to meet AOC delisting targets.
- < Given their unique status, different criteria and processes for the three binational AOCs shared by Michigan and Ontario (St. Marys River, St. Clair River, and the Detroit River) are being developed (see Appendix 3).
- < The U.S. and Canada can have separate domestic processes and criteria which may differ somewhat but are functionally equivalent. However, the major process steps and criteria measures should be as consistent as possible. The point to RAP stakeholders should be that in both the U.S. and Canada, special focus is placed on the restoration of the AOCs.
- < To the extent practicable, AOC delisting targets should mesh with Great Lakes Environmental Indicators being developed under the State of the Lake Ecosystem Conference (SOLEC) process.

III. DELISTING TARGETS

In order to move towards formal delisting, RAPs need delisting targets to gauge their success. While this document does not define explicit targets (beyond any articulated jurisdictional values incorporated here by reference), it does offer some criteria for target-setting below. The development of specific targets is a separate process, and is beyond the scope of this paper:

- Delisting targets should be premised on local goals and related environmental objectives for the watershed; they should be consistent with the applicable federal and state regulations, objectives, guidelines, standards and policies, when available, and the principles and objectives embodied in Annex 2 and supporting parts of the GLWQA.
- Delisting targets should have measurable indicators.

- Delisting targets should be developed and periodically reviewed on a site specific basis (allowing for flexibility in addressing local conditions) by the respective state agencies, in consultation with local stakeholder groups. This is particularly important if new information becomes available.

IV. TOOLS FOR RECOGNIZING PROGRESS AND MAINTAINING MOMENTUM

Annex 2, section 4(c) of the Agreement calls for the Parties to classify AOCs by their stage of restoration, progressing from the definition of the problems and causes, through the selection of remedial measures, to the implementation of remedial programs, the monitoring of recovery, and, when impaired beneficial uses are no longer impaired and the area restored, removal of its designation as an AOC.

Given the long time horizons for fully restoring some AOCs, classifying the RAPs according to implementation and monitoring of recovery affords the opportunity to recognize successes with local communities and strengthen the program basinwide. RAP participants should celebrate that all reasonable and practical efforts are being made to restore beneficial uses and to bring closure to the implementation phase. Formal recognition for this milestone gives credit to the effort, while still recognizing that a period of recovery may be required before delisting can occur. This requires agreement between the RAP Implementation Group and the community, and review and approval by USEPA, with time allowed for review and comment by the IJC. Using alternative models to gauge progress can help maintain enthusiasm and participation from all stakeholders involved in the RAP process.

Given this situation, these guidelines offer some tools for maintaining momentum. There are no doubt a variety of other methods which could be implemented to achieve this and RAP Implementation Groups are encouraged to develop new techniques and to share their success stories. The tools identified below are ones which have been piloted in the Canada-Ontario RAP program and which have had a positive influence on the RAP process. None of these tools are the “best;” what suits one AOC may not suit another.

Removing Beneficial Use Impairments

One way to maintain momentum towards full delisting is to remove use impairments as they are restored, and celebrating this as evidence of environmental improvement in an AOC. An AOC can remain formally listed without precluding the opportunity for public recognition that one or more of the original use impairments have been removed and the beneficial use has been restored. This idea has already been adopted in Canada. It upholds the goals of the RAP program (restoring beneficial uses), maintains momentum in

the RAP community, and provides important, useful, and easily understood yardsticks for measuring progress.

Requirements for the Removal of a Beneficial Use Impairment

Removal of a beneficial use impairment can occur under any of these scenarios:

- A delisting target has been met through remedial actions which confirms that the beneficial use has been restored.
- It can be demonstrated that the beneficial use impairment is due to natural rather than human causes.
- It can be demonstrated that the impairment is not limited to the local geographic extent, but rather is typical of lakewide, region-wide, or area-wide conditions (under this situation, the beneficial use may not have been originally needed to be recognized as impaired).
- The impairment is caused by sources outside the AOC. The impairment is not restored but the impairment classification can be removed or changed to “impaired-not due to local sources”. Responsibility for addressing “out of AOC” sources is given to another party (i.e., LaMPs).

Procedures for the Removal of a Beneficial Use Impairment

(The following steps are based on the *Compendium of Position Papers - A Four Agency Framework of Roles and Responsibilities for the Implementation of the Detroit River, St. Claire River, and St. Marys River Areas of Concern Shared Remedial Action Plans*, USEPA, EC, MDEQ, OMOE, February 2, 2000).

1. **Recommendation for Restoration:** The RAP Implementation Group recommends a change of status in one or more beneficial use impairments to USEPA. The recommendation should be accompanied by documentation and data to substantiate that delisting targets have been met, permitting the status to change.
2. **Decision on Restoration:** USEPA will issue a decision whether or not to support the recommendation within 90 days, allowing for public review and comment. If USEPA supports the recommendation, they will send an official statement of concurrence to the RAP Implementation Group and to the IJC. If USEPA does not support the recommendation and/or decides that it needs further study, it will meet with the RAP Implementation Group to explain its decision and to resolve the issue(s) in a timely manner.
3. **Celebration of Achievement:** When a beneficial use is restored, the RAP Implementation Group will then issue a public notice to acknowledge this milestone.

Restoration of Subwatersheds

For AOCs which are defined as a watershed comprised of a number of subwatersheds, there may be instances where all beneficial uses are restored for a particular subwatershed. In this instance, if a RAP group chooses, it could follow the steps listed above in “Procedures for the Removal of a Use Impairment” and include in the “Recommendation of Removal” a statement requesting the delisting of a subwatershed since all its beneficial uses have been restored. The approval process and ensuing celebratory activities would mirror the rest of the process.

Recovery Stage Redesignation

Interim steps may help to highlight progress made restoring AOCs. Some have suggested an interim period of recovery and recommended a new phase for AOCs called “Recovery Stage.” During this post implementation period, the AOC ecosystem is responding to actions taken. A decision to designate an AOC as being in recovery stage should be site-specific and flexible enough to respond to new needs based on monitoring data. In each of these instances, the question arises as to how to report that no further active intervention is needed, and that a period of recovery is required to fully achieve the delisting targets. We must also assure that this does not create an easy out; strategies to achieve the delisting targets for each use impairment must have supporting data and rationale. The Canadian RAP program has some well-defined operating principles which are offered here as a guidelines for the U.S. delisting effort:

- All reasonable and practical implementation has occurred to address the sources of environmental degradation with present day tools.
- Commitments to a monitoring plan and program are in place to measure progress towards environmental restoration and a mechanism is established to report systematically to the public at a predefined frequency.
- The severity of the impairments will influence the rate of recovery. The time scale for recovery of the AOC ecosystem is agreed upon by the RAP Implementation Group, with the agreement that this decision can be revised based on the system’s response to remedial measures as indicated by an active post-remedial monitoring program.
- The RAP Implementation Group and local public are satisfied with current conditions and the natural recovery strategy.
- Entering recovery stage must be accompanied by a commitment of governments or

other partners to maintain their responsibilities. Governments will continue to undertake environmental improvements as part of their mandates, beyond the needs of the RAPs.

- A pollution prevention or other maintenance plan is in place to reduce the risk of future degradation, and to insure that recovery can proceed.
- A process is in place to respond to future development pressures and emerging technologies such that environmental recovery is sustainable and further intervention can take place if warranted. This will also allow for the identification of emerging issues in the AOC.

To the extent that the U.S. and Canadian processes resemble and complement each other, the stronger each of the Parties positions will be when presenting delisting requests to the public and to the IJC. Once a decision has been made to request a designation of being in recovery stage, the following process should begin:

Process to Recognize AOC is in Recovery Stage

1. The RAP Implementation Group details implemented actions, provides a rationale recognizing an AOC as being in recovery stage (the rationale would explain that actions to date are sufficient for this recognition), provides rationale for no further intervention, and proposes a monitoring plan to track recovery.
2. Once concurrence with the monitoring requirements and commitments are made, the RAP Implementation Group notifies USEPA and the IJC that they will designate the AOC as being completely implemented and in recovery stage, pending USEPA approval.
3. USEPA reviews and either approves the request within 60 days, or meets with the RAP Implementation Group to resolve issues, leading to USEPA approval.
4. USEPA notifies the responsible State agency, the RAP Implementation Group, and the IJC of their approval.
5. The responsible State agencies reports to USEPA and the IJC on a biennial basis on progress toward delisting targets. Based on the monitoring results, there could be a need to implement further action(s).

V. MONITORING: GAUGING SUCCESS

Monitoring data is crucial to support redesignating AOCs being in recovery stage,

delisting individual use impairments, and for formal delisting of the entire AOC. Sufficient monitoring is required to insure that delisting targets have been met and maintained (over an agreed-upon timeframe). Monitoring plans should be developed for each AOC with periodic reporting out of findings.

Monitoring should also serve the needs of “in place” programs. When these two needs overlap, the RAP monitoring plan can achieve an economy of scale by accessing program related data which is already being collected. Such programs could include, but are not limited to: permit monitoring, utility and municipality monitoring, supplemental monitoring obtained through legal settlements, and environmental quality monitoring conducted by citizens, industry, government agencies and academic institutions.

The sufficient time period for monitoring to insure restoration will vary depending on the AOC. But some models do exist. In the case of Collingwood Harbour, Ontario, the only AOC to be formally delisted, three years of monitoring data was used to show that environmental conditions remained improved and that the restoration of beneficial uses was maintained. The U.S. Superfund Program has monitoring requirements for site clean-ups which may offer examples.

As part of the monitoring strategy, a continuous improvement process to re-examine cleanup targets and consider additional responses should be implemented, based on monitoring results and new technologies.

At a minimum, monitoring commitments need to be in place with an emphasis on local, municipal, and state cooperation. Any monitoring regime must be supported by the RAP Implementation Group, and should report out regularly to insure that levels of protection are being maintained.

VI. PROCESS TO COMPLETE FORMAL DELISTING OF AN AOC

When all beneficial uses have been restored and monitoring has shown that the restoration targets have been maintained, the RAP Implementation Group can initiate the process of formally delisting the AOC, in coordination with USEPA. The sequence of the process may vary based on differences in State RAP programs:

1. Preparation of a draft Final Remedial Action Plan Report

A Final RAP Report (Stage 3 RAP) is produced when *“monitoring indicates that identified beneficial uses have been restored based on...an evaluation of remedial measure implementation and effectiveness; and the surveillance and monitoring process...(that has) track(ed) the effectiveness of the measures and the confirmation of the restoration of uses”*

[GLWQA Annex 2, 4.(d)(iii)]. The RAP Implementation Group in consultation with USEPA, will coordinate preparation of the draft final RAP Report, including content and policy review, technical review and informal consultation with IJC staff and state agency staff. The RAP Implementation Group in consultation with USEPA, will be responsible for identifying additional data needs, resolving policy and technical issues, and overseeing revisions to the draft report.

2. Local Recommendation for Delisting

Within 30 days of completing the draft Final RAP Report, the RAP Implementation Group will submit a letter of recommendation to delist the AOC to the appropriate USEPA Regional Administrator.

3. State Agency Consultation

The USEPA will consult with the director of the appropriate state environmental agency on the draft Final RAP Report and on the recommendation to delist the AOC. The state agency will respond within 60 days and revisions will be incorporated by the RAP Implementation Group and USEPA, as appropriate.

4. International Joint Commission Great Lakes Office Consultation

Concurrent with step 3, the USEPA will consult with the Director of the IJC Great Lakes Regional Office on the draft Final RAP Report and the recommendation to d-list the AOC. The regional office will respond within 60 days and revisions will be incorporated by the RAP Implementation Group and USEPA, as appropriate.

5. Public Consultation

The RAP Implementation Group, in consultation with the USEPA, then holds a public meeting to formally present the draft Final RAP Report to the public and stakeholders for review and comment. The public comment period will be 60 days and revisions will be incorporated by the RAP Implementation Group and USEPA, as appropriate.

6. Final Remedial Action Plan Report

Taking state agency, IJC Great Lakes Regional Office, and public comments into account, the RAP Implementation Group, in consultation with USEPA, will prepare a Final RAP Report. The report will be prepared within 60 days. A summary of comments and responses will also be produced.

7. USEPA Transmittal

The USEPA Regional Administrator sends the Final RAP Report and a letter recommending AOC delisting to the U.S. Department of State and the relevant state director of environmental programs as well as appropriate Canadian federal and provincial agencies.

8. Delisting

The United States Secretary of State officially removes the water body from the list of Areas of Concern within 30 days of receipt of the Final RAP Report.

9. IJC Transmittal

Formal notice of delisting and the Final RAP Report and supporting letter is transmitted to the IJC by the United States Secretary of State within 10 days of formal delisting.

10. Celebration of Achievement

The USEPA will coordinate with the RAP Implementation Group and all stakeholders to announce and celebrate de-listing of the AOC.

There are a variety of state requirements which may also influence the final formal delisting process. Ideally, the process should be sufficiently robust to accommodate any differences. Additionally, a different process is envisioned for the binational AOCs shared by Michigan and Ontario which calls for a higher level of IJC involvement (see appendix 5). All of the processes allow for a thorough evaluation of the merits of the delisting request and lay out a reasonable chain of events to achieve the goal of formal delisting. It is anticipated that the delisting process should take no more than six months. Both processes may benefit from a formal review after the first delisting process is completed, and then on a periodic basis thereafter.

VII. CONCLUSION

This paper offers guidelines for numerous issues involved in defining a RAP delisting process for U.S. AOCs. It is entirely possible that such a process may have to allow for modifications and alterations to allow for differences in state RAP programs as well as for the levels of environmental impacts which exist in individual AOCs. This is acceptable; no sanctions will be imposed upon a State's RAP program based on which tools they may choose to use or not use. Whichever process and whatever modifications are chosen should be sufficiently rigorous to address the environmental needs of the AOC and the objectives of the GLWQA, and should be able to meet the delisting principles and guidelines outlined in this paper.

REFERENCES

List/Delist Criteria for Great Lakes Areas of Concern, International Joint Commission, March/April, 1991.

Recognizing Areas of Concern that have Completed RAP Implementation, Canada-Ontario Agreement RAP Steering Committee, Approved January 1999 COA Review Committee.

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Draft De-listing United States Great Lakes Areas of Concern, R. Eberhardt, MDEQ, November 17, 2000.

If You Don't Measure It, You Won't Manage It! Measuring and Celebrating Incremental Progress in Restoring and Maintaining the Great Lakes. Based on a Public Meeting on October 22, 1997 in Thunder Bay, Ontario. Co-sponsored by: Lake Superior Programs Office, Ontario Ministry of Environment and Energy, Environment Canada, Great Lakes Water Quality Board of the International Joint Commission, 1998.

Appendix 1: Timeline for the Creation of AOCs

It is informative to briefly examine the process by which we have arrived at the present list of 42 AOCs. The rationale for this is that delisting an AOC should be the opposite reason for originally listing them (although, additional use impairments may have been identified after an AOC was officially listed).

1. Since 1973, the IJC's Water Quality Board (WQB) annually identified specific areas, such as harbors, river mouths, and connecting channels, which had serious water pollution problems. [The WQB, comprised of federal, state, provincial, and tribal agency members, serving in their personal and professional capacity, is designated the principal advisor to the Commission for water quality within the Great Lakes System]
2. In 1974, they identified 23 sites in the upper and 46 sites in the lower lakes. Termed "problem areas", these were geographical locations in the boundary waters where one or more of the general or specific water quality objectives in the 1972 GLWQA or jurisdictional standards or criteria were not being met.
3. In 1978, the WQB began using new water quality criteria based on new specific objectives for toxics.
4. With the 1978 Revisions to the Agreement, Agreement objectives, along with jurisdictional standards, criteria, and guidelines provided the basis for review and evaluation of problem areas. This provided an ecosystem perspective to the evaluation. Review guidelines were based on the violation of Agreement objectives or jurisdictional values; the magnitude, persistence and geographic extent of violation, and the age of the data. Further considerations included: which uses are impacted, whether the violation is related to current discharges, and whether there are any transboundary implications. Coupled with professional judgment, the WQB created two categories for problem areas: A = severe impairments, B = may be impaired.
5. In their 1981 Report to the IJC Commissioners, the WQB reported on "problem areas" which were further defined as any locality where Agreement objectives were exceeded or desired water uses could not be achieved. The WQB noted it lacked a consistent assessment of the problems and usually relied only on water quality data. Therefore, the WQB established 39 problem areas based on environmental quality data (sediments, biota and water) and agreed to evaluate these areas with uniform criteria.
6. Through 1981, the WQB identified and deleted problem areas, often offered and described by the eight Great Lakes States, the U.S. federal government, and Canadian federal and provincial agencies.

7. In the WQB's 1985 Report, up to 42 problem areas in the U.S. and Canada were categorized by the jurisdictions. The jurisdictions agreed to prepare RAPs, all expected by the end of 1986. The RAPs would also describe surveillance and monitoring to be carried out to track effectiveness. If it is deemed not feasible to restore all uses, then the RAP will identify the quality and uses which could be achieved. New criteria for assessment were also developed.
8. Subsequent to the WQB's 1985 report, the 1987 Protocol to the GLWQA formalized the establishment of RAPs for Areas of Concern. Restoration of beneficial uses within the AOCs was stated as the primary mission of RAPs, with their development seen as an essential step in restoring the integrity of the Great Lakes Basin Ecosystem. The Protocol laid out a process for reviewing RAPs, with an extended submission schedule into the 1990s. It also called on the WQB to develop common set of listing and delisting criteria.
9. In 1989, the WQB established a review process and developed listing/delisting criteria for existing and future AOCs.
10. In 1991, Presque Isle Bay, PA was identified as the 43rd Great Lakes AOC.
11. In November 1994, Collingwood Harbour AOC, located in Ontario, Canada, became the first and only AOC to date to be formally delisted.

The 1987 Protocol to the Great Lakes Water Quality Agreement (GLWQA) formalized the establishment of RAPs. For the most part, RAPs have been following the GLWQA three stage process: Stage 1 includes problem definition and identification of causes of environmental degradation; Stage 2 identifies goals and actions to restore beneficial uses, and; Stage 3 requires confirmation of the effectiveness of those actions and the restoration of the beneficial uses.

While the GLWQA has described progress in the context of the complete restoration of beneficial uses and delisting, these are insufficient measures of the current accomplishments and successes of RAPs. Incremental gains in environmental quality are not recognized through these types of performance indicators, and certainly do not take place in such a linear manner. Rather, elements of all three stages may be occurring at any one time, depending on the severity of a given use impairment. With the benefit of hindsight, it is clear that the initial RAP concept did not fully anticipate the complexities of these cleanups, be they the very real transaction costs of involving all stakeholders, or the pervasive problem of contaminated sediments and the multitude of dredging and disposal issues which they raise.

In addition, the RAP stages, which have been our traditional way of measuring RAP

progress, do not always accurately reflect all the good work and the real on the ground environmental improvement that is taking place throughout the Great Lakes Basin. Environmental recovery is in progress, yet a focus on the three stages of RAPs as identified in the GLWQA may fail to see it as such for some AOCs. This situation argues for the creation and adoption of formal methods which recognize major incremental steps made in the AOCs toward the ultimate goal of delisting. A stepwise approach to implementation is being used across the basin; however, celebrating these achievements has been hampered by a focus on completely restoring beneficial uses and delisting AOCs. It is important to communicate that environmental restoration is achieved incrementally. This enables potential partners to recognize that RAPs have accomplished a great deal since their inception.

Appendix 2: Document Drafting Process

The question of how to accelerate the Remedial Action Plan process and restoring beneficial uses in order to spur formal delisting was raised at the May 3, 2000 U.S. Policy Committee (USPC) Meeting. The Committee members called for the re-establishment of the State/USEPA RAP Workgroup, and asked the Workgroup to initiate discussions regarding the development of RAP delisting criteria and associated processes. The USPC also re-emphasized that delisting should not be the goal of the RAP process; rather, the goal and focus should be to restore and maintain beneficial uses.

The State/EPA RAP Workgroup convened on June 20, 2000 and was attended by all eight Great Lakes States, the U.S. Environmental Protection Agency, the Corps of Engineers, and the U.S. Fish and Wildlife Service as well as observers from Environment Canada, the Ontario Ministry of the Environment, and the International Joint Commission (IJC). Given its expanded membership, it is now referred to as the U.S. RAP Workgroup or, the Workgroup.

Much of the discussion at this meeting centered on existing suggested delisting criteria from the IJC and from the Province of Ontario as well as drafts being circulated by the Four Agency Agreement body working on the binational Areas of Concern (AOCs) shared by Michigan and Ontario. Many issues were raised including: the definition of criteria; when criteria have been met; when to formally delist a RAP; how much monitoring data is sufficient; and how to maintain momentum toward delisting at some future date through the use of alternatives. These include: Areas of Recovery (this designation is used in Canada where AOCs are recognized as Areas of Recovery but they are not officially designated as such); delisting individual use impairments as they are restored; and/or delisting subwatersheds.

There was much enthusiasm for these discussions which illustrated that significant environmental progress has been made in AOCs and that RAP practitioners are giving serious consideration as to how to formally delist AOCs as beneficial uses are restored. The group pointed out the need for guidelines from USEPA which they could, in turn, review and comment on, leading to a Workgroup-endorsed product for USPC consideration.

USEPA's Great Lakes National Program Office (GLNPO) agreed to produce a first draft which raised issues which needed to be further explored as well as some guidelines which could be used in defining the process and criteria. Based on Workgroup member comments, GLNPO produced a second draft for review.

The Workgroup reconvened in Chicago, IL on 2/27/01 to further refine and discuss the paper, in advance of presenting it at the May 29-30, 2001 BEC meeting and rolling it out at

a public workshop which was held on June 22-23, 2001 in Toledo, Ohio. The paper was released for public comment via the internet and comments were taken until July 15, 2001. Subsequently, the paper was redrafted based on comments received.

After review and anticipated approval by the U.S. Policy Committee at their December 6, 2001 meeting, the paper will be presented to the International Joint Commission and publicly released by the end of calendar year 2001.

Appendix 3: Four Agency Framework Suggested Delisting Guidelines and Criteria

From: *Compendium of Position Papers - A Four Agency Framework of Roles and Responsibilities for the Implementation of the Detroit River, St. Claire River, and St. Marys River Areas of Concern Shared Remedial Action Plans*, USEPA, EC, MDEQ, OMOE, February 2, 2000)

The Four Agency Framework for the St. Marys, St. Clair and Detroit Rivers has already spent a substantial amount of resources on developing guidelines. It provides a binationally approved model and touchstones which could be readily adapted to the U.S. domestic situation. The following principles are to be applied in the development and evaluation of these criteria:

1. Delisting criteria should be developed and periodically reviewed on a site specific basis by the respective federal, state, and provincial agencies, in conjunction with the public and stakeholders.
2. Delisting criteria should be premised on:
 - < locally defined usage goals and related environmental objectives for the water body containing the AOC;
 - < applicable federal, provincial or state regulations, objectives, guidelines, standards and policies; and
 - < the principles and objectives embodied in Annex 2 and supporting parts of the GLWQA.
3. Delisting criteria should be based on measurable indicators (e.g., numeric concentrations of a particular pollutant within the AOC) wherever possible.
4. Delisting of a particular impairment in an AOC can occur if it can be demonstrated that the impairment is not solely local geographic extent, but is typical of lake wide conditions. Such delisting would be contingent on evidence that sources within the AOC are controlled.
5. Delisting of a particular impairment can also occur when it is demonstrated that the impairment is due to natural rather than human causes (to be clarified with the IJC in the context of the GLWQA Annex 2 Review).

These guidelines and associated draft criteria (which follow) provide a reasoned approach to RAP delisting and should be given full consideration in the completion of a final U.S. RAP delisting process.

Restrictions on Fish and Wildlife Consumption

Based upon appropriate assessment programs monitoring and reporting for suite of most at risk chemicals and consumption guidelines based on the suite: consumption advisories, based on the most current and restrictive guidelines. Re-establishment of a commercial fishery.

Tainting of Fish and Wildlife Flavor

Re-establishment of a commercial fishery.

Degradation of Fish and Wildlife Populations

Re-establishment of breeding populations of target species, such as eagles, otter/mink/muskrat, whitefish.
Attainment of biodiversity benchmark for Detroit River (to be determined).
Full utilization of clean habitat.

Fish Tumors or Other Deformities

No more incidence than unimpaired areas elsewhere in Great Lakes basin.

Bird or Animal Deformities or Reproduction Problems

No more incidence than unimpaired areas elsewhere in the Great Lakes basin, or upon comparison with upstream (head of St. Clair River) / downstream populations.

Degradation of Benthos

No more incidence than unimpaired areas elsewhere in the Great Lakes basin, or upon comparison with upstream (head of St. Clair River) / downstream populations.

Restrictions on Dredging Activities

Detroit River sediments meet most restrictive dredging guidelines.

Eutrophication or Undesirable Algae

No increase to IJC established target loadings for P to Detroit River. If increased volume of discharge, corresponding reduction in concentration must be demonstrated.

Restrictions on Drinking Water Consumption, or Taste and Odor Problems

Densities of disease causing organisms or concentrations of hazardous or toxic chemicals or radioactive substances do not exceed human health objectives, standards or guidelines.

Beach Closings

Water safe for full body contact (bacteria) by most restrictive standards.

Degradation of Aesthetics

The river/shore is devoid of objectionable deposits; no visible oil sheen. Combined Sewer Overflows (CSOs) no longer occur; all sewers are separate. A decline in the number of spills and complaints reported.

Added Cost to Agriculture or Industry

Referred to Public sub-group to confirm with survey that use remains unimpaired

Degradation of Phytoplankton and Zooplankton Populations

To confirm not impaired ceriodaphnia study (monthly for ice-free period) should reveal survival of young above control numbers.

Loss of Fish and Wildlife Habitat

No further habitat loss. Habitat goals to be established by Ecosystem sub-group.

Appendix 4: IJC Delisting Guidelines and Criteria

There are a number of recommendations which have been made regarding RAP delisting criteria. A review of the IJC's view on this issue is instructive. It seeks to provide for the flexibility required by local situations, and it recognizes that it may not be possible to fully restore all beneficial uses. Listed below is a summary of the IJC 1991 Delisting Guidelines. These were drafted with the input of a variety of stakeholders over many months and can serve as a starting point for a new round of discussions as we attempt to reach consensus on RAP delisting criteria.

The IJC has identified the obvious need to use "common sense" in the application of these delisting guidelines since may not be possible to fully restore some uses because of natural factors (e.g. sedimentation) or social or economic factors (e.g. the necessity to dredge navigational channels may preclude fully restoring the benthic community). In these special cases, the IJC requests that the RAP Workgroups provide in a RAP delisting document the practical reasons why the impaired uses cannot be fully restored.

The IJC's intent is to explicitly recognize that there may be some impaired uses that may not be fully restored for justifiable reasons, and that this should not prohibit the possible delisting of an AOC following Party/Jurisdiction submission and IJC review of a RAP delisting document.

The IJC also recognized that there will undoubtedly be a need to revise these guidelines in the future based on the development of new indicators and standards, and new protocols for application of these guidelines.

The IJC proposes to use these criteria in its evaluation of requests for formal RAP delisting. As part of the IJC's overall responsibility to review and evaluate the adequacy of RAPs, the IJC will make recommendations to the Parties regarding whether or not data and information presented in a RAP delisting document confirm restoration of impaired beneficial uses. Specifically, once the Party (or Parties) submits the document, the IJC will perform its independent review and determine whether or not:

- the delisting guidelines have been met for the use impairments identified (implicit in problem definition is use of all available state, provincial, and federal standards, criteria and guidelines, and Great Lakes Water Quality Agreement objectives as indirect evidence of use impairment);
- the existing site specific goals in the RAP relative to the 14 use impairments have been addressed; the level and extent of remediation is consistent with the corresponding lakewide management plan; and
- the results of implementation of the RAP represent an important step toward virtual

elimination of persistent toxic substances.

If the answers to each of the above are yes, the IJC would recommend delisting the AOC. Conversely, if the answers to any of the questions are no, the IJC would recommend revision of the RAP.

DELISTING CRITERIA

Restrictions on Fish and Wildlife Consumption

When contaminant levels in fish and wildlife populations do not exceed current standards, objectives or guidelines, and no public health advisories are in effect for human consumption of fish or wildlife. Contaminant levels in fish and wildlife must not be due to contaminant input from the watershed.

Rationale: Accounts for jurisdictional; and federal standards; emphasizes local watershed sources.

Tainting of Fish and Wildlife Flavor

When survey results confirm no tainting of fish or wildlife flavor.

Rationale: Sensitive to ambient water quality standards for tainting substances; emphasizes survey results.

Degraded Fish and Wildlife Populations

When environmental conditions support healthy, self-sustaining communities of desired fish and wildlife at predetermined levels of abundance that would be expected from the amount and quality of suitable physical, chemical and biological habitat present. An effort must be made to insure that fish and wildlife objectives for Areas of Concern are consistent with Great Lakes ecosystem objectives and Great Lakes Fishery Commission fish community goals. Further, in the absence of community structure data, this use will be considered restored when fish and wildlife bioassays confirm no significant toxicity from water column or sediment contaminants.

Rationale: Emphasizes fish and wildlife management program goals; consistent with Agreement and Great Lakes Fishery Commission goals; accounts for toxicity bioassays.

Fish Tumors or Other Deformities

When the incidence rates of fish tumors or other deformities do not exceed rates at unimpacted control sites and when survey data confirm the absence of neoplastic or preneoplastic liver tumors in bullheads or suckers.

Rationale: Consistent with expert opinion on tumors; acknowledges background incidence rates.

Bird or Animal Deformities or Reproductive Problems

When the incidence rates of deformities (e.g. crossbill syndrome) or reproductive problem

s (e.g. eggshell thinning) in sentinel wildlife species do not exceed background levels in inland control populations.

Rationale: Emphasizes confirmation through survey data; makes necessary control comparisons.

Degradation of Benthos

When the benthic macroinvertebrate community structure does not significantly diverge from unimpacted control sites of comparable physical and chemical characteristics.

Further, in the absence of community structure data, this use will be considered restored when toxicity of sediment associated contaminants is not significantly higher than controls.

Rationale: Accounts for community structure and composition; recognizes sediment toxicity; uses appropriate control sites.

Restrictions on Dredging Activities

When contaminants in sediments do not exceed standards, criteria, or guidelines such that there are restrictions on dredging or disposal activities.

Rationale: Accounts for jurisdictional and federal standards; emphasizes dredging and disposal activities.

Eutrophication or Undesirable Algae

When there are no persistent water quality problems (e.g. dissolved oxygen depletion of bottom waters, nuisance algal blooms or accumulation decreased water clarity, etc.) attributed to cultural eutrophication.

Rationale: Consistent with Annex 3 or the Agreement; accounts for persistence of problems.

Restrictions Drinking Water Consumption Taste/odor Problems

For treated drinking water supplies: 1) when densities of disease causing organisms or concentrations of hazardous or toxic chemicals or radioactive substances do not exceed human health objectives, standards or guidelines; 2) when taste and odor problems are absent; and 3) when treatment needed to make raw water suitable for drinking does not exceed the standard treatment used in comparable portions of the Great Lakes which are not degraded (i.e. settling, coagulation, disinfection).

Rationale: Consistency with the Agreement; accounts for jurisdictional standards; practical; sensitive to increased cost as a measure of impairment.

Beach Closings

When waters, which are commonly used for total body contact or partial body contact recreation, do not exceed standards, objectives, or guidelines for such use.

Rationale: Accounts for use of waters; sensitive to jurisdictional standards; addresses water contact recreation; consistent with the Agreement.

Degradation of Aesthetics

When the waters are devoid of any substance which produces a persistent objectionable deposit, unnatural color or turbidity, or unnatural odor (e.g. oil slick, surface scum).

Rationale: Emphasizes aesthetics in water, accounts for persistence.

Added Costs to Agriculture or Industry

When there are no additional costs required to treat the water prior to use for agricultural purposes (i.e. including, but not limited to, livestock watering, irrigation and crop spraying) and industrial purposes (i.e. intended for commercial or industrial applications and noncontact food processing).

Rationale: Sensitive to increased cost and measure of impairment.

Degradation of Phytoplankton and Zooplankton Populations

When phytoplankton and zooplankton community structure does not significantly diverge from unimpacted control sites of comparable physical and chemical characteristics. Further, in the absence of community structure data, this use will be considered restored when phytoplankton and zooplankton bioassays confirm no significant toxicity in ambient waters.

Rationale: Accounts for community structure and composition; recognizes water column toxicity; uses appropriate control sites.

Loss of Fish and Wildlife Habitat

When the amount and quality of physical, chemical, and biological habitat required to meet fish and wildlife management goals have been achieved and protected.

Rationale: Emphasizes fish and wildlife management program goals; emphasizes water component of Boundary Waters.

Appendix 5: Four Agency Framework Delisting Process

From: *Compendium of Position Papers - A Four Agency Framework of Roles and Responsibilities for the Implementation of the Detroit River, St. Claire River, and St. Marys River Areas of Concern Shared Remedial Action Plans*, USEPA, EC, MDEQ, OMOE, February 2, 2000)

The ultimate goal for a RAP is to restore and protect beneficial uses in an AOC. Delisting of an AOC would occur when all the individual delisting targets/criteria have been met.

The GLWQA states that the Parties *“in cooperation...with the Commission shall designate Areas of Concern.”* The “Four Parties” interpret the term “cooperate” to mean that the parties, while ultimately responsible for listing (and delisting), will seek input from the International Joint Commission (IJC) on any recommendation to delist an AOC.

A final RAP Report would be produced and submitted to the IJC for review and comment when *“monitoring indicates that identified beneficial uses have been restored based on...an evaluation of remedial measure implementation and effectiveness; and the surveillance and monitoring process...(that has) track(ed) the effectiveness of the measures and the confirmation of the restoration of uses”*[GLWQA Annex 2, 4.(d)(iii)].

The process for delisting an AOC will be initiated by the local implementation committee when all the delisting criteria have been met. The Four Agencies will then oversee the preparation of a Final RAP Report and coordinate the delisting process. The following steps will be undertaken to delist an AOC:

1. Recommendation for Delisting – The Lead Agencies and the RAP Implementation , working in consultation with the public and stakeholders, submit a recommendation to delist an AOC and a Draft Final RAP Report to the Four Agency Working Group.
2. Four Agency Review – The Four Agency Working Group coordinates review of draft final RAP Report, including content and policy review, technical review and informal consultation with IJC staff. Working with the local RAP implementation committee(s), the Working Group will also be responsible for identifying additional data needs, resolving policy issues, and overseeing revisions to the report.
3. Public Consultation – The local RAP implementation committee in consultation with the Working Group then formally presents the Revised Final RAP Report for review and comment to the public and stakeholders. After considering comments, the Lead Agencies in consultation with the local RAP implementation committee(s) prepares the Final RAP Report.

4. IJC Great Lakes Office Consultation – The Four Agency Management Committee consults with the Director of the IJC Great Lakes Regional Office on the final RAP Report and the recommendation to delist.
5. Four Agency Approval – The Four Agencies send letters recommending the AOC delisting to the United States State Department and the Canadian Department of Foreign Affairs.
6. IJC Input – The final RAP report is transmitted by the offices of the United States Secretary of State and the Canadian Minister of Foreign Affairs to the IJC for review and comment.
7. Delisting – The United States Secretary of State and the Canadian Minister of Foreign Affairs officially remove the affected water body from the list of AOCs.

While the above process addresses binational reviews and approvals for the upper connecting channel RAPs, there is not a similar specific process for recognizing recovery status or delisting on the Niagara River or the St. Lawrence River. Although binational AOCs, the RAPs for these areas have been developed and implemented separately. The St. Lawrence River Cornwall and Massena AOCs produced a joint goal statement and problem statement (Stage 1 evaluation) and agreed to continue to produce joint products at major milestones in the RAP process. The binational process on the Niagara River is restricted to the Niagara River Toxics Management Plan.