



St. Marys River Remedial Action Plan

ONTARIO RAP OFFICE

2013 ANNUAL REPORT TO BPAC

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Prepared for: The St. Marys River Binational Public Advisory Council

Reporting Period: January 1 to December 31, 2013



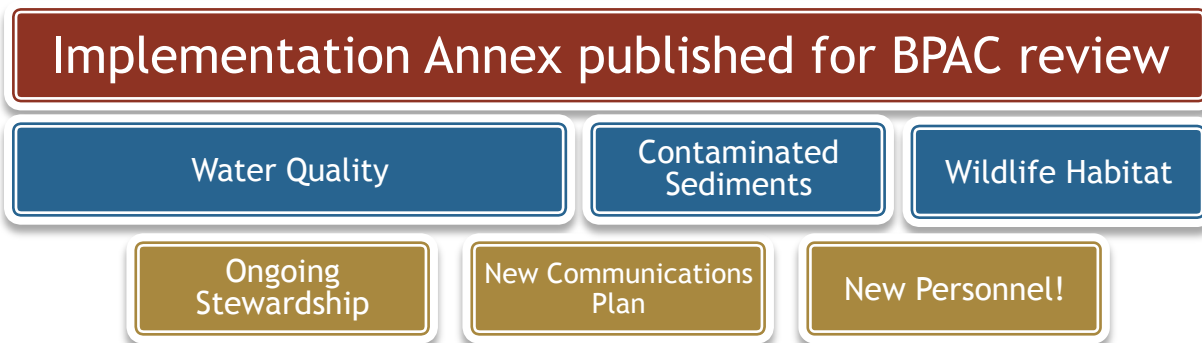
Research
\$\$\$\$\$ in
Action!



Major Accomplishments in 2013

A milestone achievement in 2013 was the production and circulation of the Remedial Action Plan Implementation Annex. BPAC is currently providing feedback and review of this important document that summarizes past, present and future actions for all BUIs as identified in the Stage 1 and Stage 2 Remedial Action Plans for the St. Marys River. In 2013, Environment Canada, the Ministry of the Environment, Algoma University and the Sault Ste. Marie Innovation Centre continued to support ongoing research projects including analysis of sediment quality, water quality, wildlife habitat, and habitat restoration within the Canadian portion of the AOC. Outcomes of this research will trigger a re-evaluation of the status of various outstanding Beneficial Use Impairments. Stewardship activities designed to enhance public awareness of aquatic ecosystem health and ways in which the public can maintain and improve the health of St. Marys River continue to be an important focus for BPAC, and will have direct spinoff benefits to maintenance of the aquatic system as it is

restored for future generations. Some major personnel changes also took place in 2013 and BPAC welcomed new members. Finally, the implementation of an updated communications strategy, including the launch of the RAP Facebook page and the updating of the Water Portal website, will ensure that achievements of BPAC and all RAP stakeholders remain front and centre in our community.



A. Implementation Annex - A Milestone document to review progress and clarify goals

In 2013, RAP Coordinator, Corrina Barrett, and the RAP Implementation Committee finalized a draft of our new Implementation Annex, a companion document to the Stage 2 Remedial Action Plan that summarizes all actions, past, present and future, that pertain to BUI status changes and eventual delisting of the AOC. This document is intended to serve as a roadmap to guide future actions, research activities and funding requirements and to clarify/maintain the focus of the RAP as we move forward. The preparation of the Annex served as an excellent tool to take stock of where we are in 2013. As indicated in the summary, 20 out of 57 required actions have already been completed or addressed. Other actions are underway, proposed for archiving (as a result of approved status changes and/or a decision that the actions lie outside of the scope of the RAP), or under review.

The final draft of the Implementation Annex was shared with BPAC in July 2013. Since that time, members of BPAC have had the opportunity to provide written review and comment and to share with all stakeholders their views on whether the Annex is on target. This period of review is ongoing, and, in light of the fact that it is a living document, Ms. Barrett has incorporated all comments received to date into a revised Annex that was again shared with BPAC in September 2013. A more detailed discussion of the updated language will take place at a scheduled BPAC meeting early in 2014, to ensure that all BPAC concerns have been adequately addressed. As research and RAP related activities continue in the coming months, the document will evolve to reflect current progress and will continue to serve as a tracking tool to monitor where we are now, and where we need to go to resolve all Beneficial Use impairments identified in the Stage 2 RAP report.

B. Personnel and Staffing:

RAP Supervisor, Dr. Paula Antunes, resigned from her position in April 2013 to take on a career as an aquatic ecotoxicologist with a consulting firm. Her considerable achievements in contributing to the RAP, and securing funding for crucial research projects within Canadian waters, have advanced project goals and are responsible

for significant progress on BUIs as reflected in the Implementation Annex. Dr. Antunes continues in her role as a BPAC member, and will provide subject matter expertise and informed opinion as we move forward.

Dr. Martha Scott, of Algoma University, took over the role of RAP Supervisor in June 2013. Dr. Scott, a physiological ecologist with expertise in environmental impact assessment, restoration and mitigation, is delighted to partner with Corrina Barrett, RAP Coordinator, and with Environment Canada and Ministry of the Environment, to provide management services and peer review on behalf of the University Administration.

As outlined in a subsequent section of this Annual Report, a new research project on water quality within the Canadian portion of the AOC was funded in 2013 by EC and the MOE. Two field technicians/research associates have so far participated in this project. Lorelei Premo, BPAC Canadian Vice Chair, was retained by Algoma University to provide reconnaissance and field sampling services during Year 1 of the three-year water quality assessment. Following Lorelei's departure, Carrie Ginou, who has a background in aquatic ecotoxicology and extensive sampling experience, took over as field technician. Carrie is in the process of preparing a Year 1 technical report summarizing the results of a pilot sampling project to confirm the locations of intensive sampling to take place in 2014/2015 and 2015/2016. Ms. Ginou will make a presentation to BPAC early in 2014 to discuss early results and incorporate feedback from BPAC.

C. Ongoing Research in Support of Future BUI Status Evaluations:

Several projects were the focus of research in 2013. All of the research has direct implications to Beneficial Use Impairments identified in the Stage 1 and Stage 2 RAP documents.

- Research continued on issues of sediment quality and past contamination, with active involvement of the Sediment Management Technical Team;
- A new project on water quality within the Canadian waters of the AOC began in the Fall , and will conclude in 2015/2016. This project has implications for the Aesthetics and Eutrophication/Undesirable Algae BUIs;
- Environment Canada's research on wildlife deformities and reproductive health, focusing on colonial water birds, was concluded in 2013 and presented to BPAC in June. Results from additional chemical analyses will be shared with BPAC in 2014;
- Environment Canada hired a firm to undertake a physical, ecological and economic feasibility study of creating new, or restoring existing, rapids within the Canadian portion of the AOC. This project relates to BUIs associated with fish habitat and populations;
- Ms. Barrett undertook additional research in support of the Beach Closures BUI, and obtained important data, from as far back as 2001, from Algoma Public Health. Ms. Barrett will present her findings to BPAC at a meeting in 2014; and
- Historical information on previous restoration of the Bar River (tree planting and spawning substrate rehabilitation) was obtained from the OMNR, and biologists with Environment Canada's Canadian Wildlife Service visited the Bar River in July to assess current conditions. The findings were shared with the BPAC Executive.
- In June, Environment Canada shared the results of its commissioned-report on the potential hazards to the river associated with spills from shipping vessels. A copy was sent to the BPAC Executive to be distributed to all members. Based on a decade of reported cases [from 2001 to 2011] captured by the Canadian Coast Guard, the number of incidents within the St. Marys River is fairly low, particularly when compared to the Great Lakes overall.

Details of the above research projects are available in the Bimonthly Reports provided to BPAC in 2013, and are also summarized below, along with photo documentation of some of the activities.

Water Quality at Selected Sites in the Canadian Waters

With financial support from Environment Canada and the Ministry of the Environment, Algoma University is undertaking biweekly water sampling at 5 locations in the St. Marys River over a three-year period (September 2013 - March 2016), which will provide the data needed to assess and potentially re-designate the Degradation of Aesthetics and Eutrophication/Undesirable Algae Beneficial Use Impairments. Year 1 was comprised of study setup, site reconnaissance, collection of background information and a dry run of the water sampling protocols and safety/emergency response plans. The second and third years of the study will include 24 sampling periods at each of five sites that represent typical conditions (depths, habitat use) within the AOC, and fully represent the geographical extents of the AOC.

Ms. Barrett and Ms. Premo undertook field reconnaissance on November 9th and 10th to determine the most appropriate sites for sampling. They visited and took pictures at 10 sites, as well as recording key features and land uses around each site. They carried out preliminary field sampling on November 16th and 17th to sample the 5 sites (Gros Cap, Topsail Island, Bells Point, Echo Bay bridge, and W.I. Park) that had been chosen from the previous week's reconnaissance. Three sets of samples were taken at each site, in addition to field notes, photos, and GPS coordinates. Below are some pictures of the sampling:



Photographs of Richard's Landing sampling site taken November 16, 2013

New Evidence Concerning SMR Sediments

The Sediment Management Technical Team held meetings in January, May, and November to discuss updates on fieldwork carried out by Mr. Hans Biberhofer and his team at EC, and Dr. Bommanna Krishnappan's (SSMIC) preliminary modeling results for calculated water flow patterns and suspended sediment deposition for the area east of Bellevue Marine Park. In addition to reviewing Dr. Krishnappan's draft report, the group was informed that the fieldwork component of the study was extended to include one complete year. The group will reconvene in early 2014 to discuss next steps.



Photograph on the left depicts the positioning of the in situ flume for sediment stability experiments. Photograph on the right depicts the recovering of the bottom mounted sediment traps for sediment stability experiments. Photo credits: Johann (Hans) Biberhofer, Environment Canada.

Update on Wildlife and Habitat in the AOC

The 2-year EC project to assess wildlife deformities and reproductive health (by looking at population trends and health effects in common terns and herring gulls) was completed in 2013. Mr. Doug Crump (EC) presented the study results at the June BPAC meeting and told BPAC there is little evidence of impaired reproduction or deformities in colonial water birds attributable to local contaminant effects within the AOC.

EC completed Year 3 fieldwork for its 5-year assessment of wildlife populations and habitat within the AOC. The study is examining the state of marsh birds and amphibians (as indicator species) and coastal marshes in 8 AOC and 4 non-AOC reference sites to assess the current state of the Loss of Fish & Wildlife Habitat and Degradation of Fish/Wildlife Populations BUIs.

EC hired a firm to undertake a study on the physical, ecological and economic feasibility of creating new or augmenting existing rapids areas in the St. Marys River. The study results (expected March 2015) will support future discussions with the RAP Implementation Committee and BPAC regarding the prospect of creating and/or restoring rapids habitat in the AOC.

EC also hired a contractor to determine to what extent agriculture may be negatively impacting the water quality of the St. Marys River. With support from government and non-government agencies, it will involve an examination of the current nature, density and scope of Ontario-based agricultural activities and the associated water quality impacts. The appraisal of the amount and type of agricultural activities around the river today - and the associated environmental impacts - will provide current information needed to make an informed decision about what to do going forward with respect to agricultural non-point sources of pollution. The project will be completed before Spring 2014.

D. Ongoing Stewardship and Public Outreach

To reach out to young children within the community, Ms. Barrett and Dr. Antunes organized the 2nd annual St. Marys River school-wide colouring and essay contest. The theme for the contest was "A Healthier Future for the St. Marys River". Ms. Barrett visited each class at Anna McCrea P.S. and spoke to the students about the

current conditions of the river, what the damaging effects of household and industrial pollutants are and how we as individuals may help to ensure that the river stays healthy. Overall, this public outreach initiative was highly successful, as many teachers incorporated the St. Marys River into their curriculum for the entire week, and Ms. Barrett was invited back for 2014.

Ms. Barrett taught children about water sustainability at the BPAC's Kids Day (a precursor to the Environmental Summit). About 50 grade 5 students from a local elementary school visited LSSU where they learnt about watersheds and the impacts humans can have if they are not conscience of the choices they make in their daily lives.

She also manned a booth at the 2013 Children's Source Water Festival (hosted by the SSMRCA). Over 600 elementary school students in Grades 2 - 5 attended the festival. Ms. Barrett was in charge of asking each child to pledge to become a Water Steward, while teaching them the importance of protecting their source water, and reviewing things that they can do at home to minimize their daily water consumption.

Outreach materials related to the St. Marys River RAP (including the RAP fact sheet, BPAC handouts, and Water Portal Bookmarks) were handed out at the BPAC Environmental Summit, Coverland Electric and LSSU Aqua Lab Open House, and the Kensington Conservancy / CAFC's Green Expo. Attendees at these events were also engaged in discussions about the St. Marys River RAP and were encouraged to join BPAC.



Photograph on the left shows Ms. Barrett's booth where she taught children about Water Science. Photograph on the right shows Ms. Barrett participating in the Green Expo.

Ms. Barrett prepared and presented the presentation entitled "Binational Multi-stakeholder Cooperation and Engagement in the Decision Making Process and Remedial Actions for the St. Marys River Area of Concern" at IAGLR 2013. Her presentation was well received and sparked a group discussion on Tribal involvement in the RAP process, as well as different ways to engage community members in environmental initiatives.

E. Our Communications Plan gets a Facelift

Ms. Barrett, Mrs. Michelle McChristie (MOE), Dr. Scott, and Ms. Heather Hawthorne (Communications Advisor) worked together on revamping the St. Marys River Remedial Action Plan Communications Strategy. Ms. Barrett updated the plan by developing a mini-strategy for each of one major theme (the Implementation Annex) and 3 minor themes (fish/wildlife populations, contaminated sediments, and water quality) for focus on during the 2013/2104 fiscal year. The new plan included the development of a Facebook page, a biyearly newsletter, and informational "cheat sheets" relating to the 3 minor themes.



A screen shot of the St. Marys River RAP Facebook page. Can be viewed at www.facebook.com/pages/St-Marys-River-Remedial-Action-Plan.

Looking Ahead to 2014

The focus for 2014 will be to finalize both the Implementation Annex and the delisting criteria for the BUIs affecting the AOC. Effort will be put into ensuring that those actions that are currently needed/outstanding are addressed. In addition, the Sediment Management Technical Team will begin its assessment of sediment management options to determine next steps for sediment management. Work will continue on water quality sampling and wildlife/habitat assessment projects. BPAC continues to play a vital role in all of these activities and to provide leadership of great value to the RAP process.