

St. Marys River AOC BPAC Meeting Minutes

Place: CC202, Algoma University, Sault Ste. Marie, Ontario

When: Monday March 11, 2019
6:30 – 8:30 p.m.

Call to order/introductions

BPAC Members	Paula Antunes, Don Marles, Brian Wesolek, Jesse Wesolek, Aubrey Maccoux-LeDuc, Kristen Sherlock, Chris Graham, Klaas Oswald, Ron Prickett,
Agency Reps	Catherine Taddo (City), Ron Dorscht (MECP), Mark Chambers (ECCC), Dawn Talarico (MECP)
Guests	Roger Santiago (ECCC), Allison Glessner (Ramboll), Miranda Henning (Ramboll), Joanie McGuffin, Peter Greve

Approval of Last Meetings Minutes

- November 15, 2019 – Approved as presented

Business arising from previous minutes

- Will be discussed on March 27th, 2019

Presentations

- Sediment Management in the St. Marys River and updates to the Conceptual Site Model – presented by ECCC/Ramboll (Alison & Miranda) Mark Chambers & Roger Santiago from ECCC will be presenting with Ramboll
- Overview of the AOC – presented by March Chambers (ECCC)
 - The *Canada-US Great Lakes Water Quality Agreement* commits both countries to restore and maintain the chemical, physical and biological integrity of the Great Lakes Basin Ecosystem, including in specific “Areas of Concern”. These are locations on the Great Lakes where significant environmental impairment occurred because of historical activities at the local level. The St. Marys River is included.
 - Federal – Provincial coordination to restore, protect and conserve the Great Lakes has been established under a series of agreements since 1971. These agreements help implement major elements of the Canada-U.S agreement, and contribute to Ontario’s Great Lakes Strategy.
 - The latest COA was signed in December 2014, with 5-year commitments and actions. The COA goal pertaining to the St. Marys River AOC is to:
 - Make significant progress toward RAP implementation, environmental recovery and restoration of beneficial uses.
 - Included is a specific commitment to develop a contaminated sediment management strategy for the St. Marys River AOC.
 - The development a Contaminated Sediment Management Strategy is focused on the Canadian side of the AOC. Contaminated sediment in the St. Marys River AOC is historically linked to 4 Beneficial Use Impairments (BUIs):

- *Degradation of Benthos*
- *Fish Tumours*
- *Restrictions on Dredging* – the “St. Marys River Dredging Administrative Controls Document” was developed in 2016 and there has been significant progress toward reaching the delisting criteria for the *Restrictions on Dredging Activities* BUI.
- *Restrictions on Fish Consumption* - Ontario (MECP) is evaluating fish contaminant data for the AOC (collections were completed in 2014, 2015 and 2016) to assess the current status of the BUI, and preliminary results are positive. This will be shared in the coming months.
- The Stage 2 RAP report (2002) prioritized the following sites:
 - Algoma Slip – the boat slip was dredged in 1995 (11,470 m³), and 2006 (2,630 m³), and 2017 (10,906 m³) with goal of removing all material. Only 60% of the dredging campaign was completed in 2017 with the remainder to be dredged in 2019.
 - Slag Dump
 - Bellevue Marine Park area - after chemical and biological studies were completed in Bellevue Marine Park results showed contaminants were present east of the park, downstream from Topsail Island.
 - Lake George Channel
- There is also a large area associated with Transport Canada. Studies have been undertaken using the *Canada-Ontario Decision-making Framework for Evaluating Contaminated Sediment*, and ECCC will be meeting with Transport Canada to get on update on their activities, so that the findings can be incorporated into the Conceptual Site Model.
- The Sediment Management Strategy for the St. Marys River must consider the following as part of CSM development:
 - Have sources of contaminants of concern (i.e., risk drivers) been sufficiently controlled?
 - How do fate and transport processes affect the natural recovery of the system, currently and in the future, and how might they affect engineered remedial options?
 - Current or potential future risks due to contaminated sediments that require sediment management, and if so, which contaminants and receptors are the risk drivers?
 - Based on the understanding of source control, fate/transport processes and risk, what sediment management options would be most appropriate to address the identified risk drivers?
- St. Marys River Contaminated Sediment Management Strategy: Status Update – presented by Miranda & Alison (Ramboll)
 - A Conceptual Site Model (CSM) is a living document where information from various sources is compiled concerning sources of contaminants and exposure pathways, sediment characteristics, distribution of chemicals and risks posed by contaminated sediments.
 - The presentation will be focused on one priority area: East of Bellevue Marine Park (downstream of Topsail Island).
 - Sources and exposure pathways of contaminants include air deposition and watershed runoff, Algoma Steel, St. Marys Paper, wastewater treatment plants, former manufactured gas plant, Tannery Bay/Cannelton Site, urban runoff.
 - **BPAC comment:** Missing the old Chrome plant on the Canadian side of the river, which was just downstream of the St. Marys Paper.
 - **BPAC question:** How were chemicals chosen (for example salt)? Chemicals of concern in the St. Marys River AOC were identified in the Stage 1 and 2 RAP reports that were based on persistence, toxicity and tendency to cause risk. Salt dissolves in water and stays in the water column.
 - Sediment deposition rates are important because some of the risk management strategies that are available depend on the natural sedimentation to essentially cap without engineering – only

works if sources are controlled. Krishnappen (2013) model depicts that summer has highest amount of deposition and lower deposition in winter months.

- **BPAC comment:** High water levels in the last 2 years have created more flow and movement of sediments as compared to the last decade.
- **Why is the loading higher in the summer months?**
- Sediment substrate consists mainly of mud (ie. Very fine grained) in this area.
- Sediment stability investigation concluded that under a range of flow conditions, contaminated sediment deposits are stable below 5cm. There was no evidence of ice scour in the area.
- Sediment sampling data collected from 2007-2018.
 - Using copper concentrations as a comparative example:
 - **BPAC question:** 10cm depth does not seem like a very large amount to be sampling? This is the biologically active zone for benthic organisms.
 - The most recent sediments (top 2 cm) have lower concentrations so it appears that there may be lower concentrations as compared to older sediments. There are a couple of outliers however.
 - The CSM will include all the contaminants to show changes over time. The framework to bring it all together. This is an example of what will be included.
 - Copper and Benzo(a)pyrene were used an example.
 - Anchors could be to blame for some of the anomalies seen. A disturbance of some sort seems to be to blame in these areas.
 - Most recently laid down sediment is cleaner than the older more contaminated sediment.
 - Sediment-related risks to benthic invertebrates
 - Appear to be the most sensitive receptors
 - 2018 BEAST results are forthcoming but there does appear to be localised impacts to benthic organisms.
 - Sediment-related risks to fish
 - ECCC has sampled white suckers from St. Marys River to assess liver tumour prevalence: 1985-90 (>9%), 2009 (>10%) and 2015 (6%).
 - **BPAC question:** Will there be another study? Every 6 years so around 2021.
 - 2016 fathead minnow toxicity tests: 10 of 11 sediments had no impact on survival, hatching, time to hatch, deformities, or growth, with the exception of the Algoma Steel boat slip.
 - Sediment-related risks to wildlife
 - 2011-2012 study of breeding colonies of herring gulls and common terns within AOC
 - Contaminants not adversely impacting reproductive success
 - Embryonic viability high within gull and tern colonies in AOC
 - Little evidence of impaired reproduction or deformities in gull or tern populations
 - 2013-2014 assessment of embryonic deformities in herring gull and common tern eggs.
 - Frequency of deformities comparable between AOC colonies and downstream reference colonies.
 - Sediment-related risks to human health
 - Quantitative risk assessment has not been conducted
 - Risks appear low due to low bioaccumulation potential of primary contaminants
 - Direct contact with environmental media from recreation (sailing, kayaking) most likely human exposure pathway

- Anecdotal evidence indicates oil-contaminated floating material no longer present in river.
- Thus, human health concerns need not be a driving factor in sediment management strategy
- Summary of current understanding:
 - Benthic invertebrate community impairment is significant in localized areas East of Bellevue Marine Park
 - Overall health of fish population within AOC has improved and only marginally exceeds target
 - Wildlife and human health are not risks drivers
 - There may be ongoing sources of contaminants within the AOC.

BPAC: Potential of continuous sources of contamination (i.e. from upstream contaminated areas such as the Purvis Marine).

- ECCC will be discussing with Transport Canada what they are doing (what sampling and testing have they been doing?). It will be incorporating in the Conceptual Site Model.

Algoma Steel will be participating in a Legacy Environmental Action Plan (LEAP). As part of this program they will be performing a hydrogeological investigation by installing monitoring wells. The purpose is to discover whether there are any ongoing sources of contamination in the area.

BPAC: If we don't know if there is an on-going source of contamination would it be better postpone creating a management plan until we know for sure?

- We can start to look at management planning at the same time because if we do this sequentially it will take much longer to solve the problem.

Memberships

- For new members, applications must be received & prospective members present for confirmation – standard procedure.

Public Comments

- None

BPAC Elections

- Nominations for a U.S. Chair, CAN Vice Chair, and U.S. Vice
 - TBD at next meeting
 - Kristen Sherlock (CAN Vice Chair)
 - Aubrey Maccoux-LeDuc (U.S. Vice Chair)

Next Meeting

- March 27, 2019