

“Management Decisions for use in the Ocean Health Index for the S.W. Bay of Fundy”

Since 2014, BoFEP has been working on preparing an Ocean Health Index (OHI) score for the Marine Resources Planning Area (MRPA) in SouthWest New Brunswick, an area that goes from the Maine/Canada border to the Marine Protected Area in Musquash. In September a workshop was held in St. Andrews led by Scott Kidd, the BoFEP OHI Project Coordinator. Ten people attended; NGO's, members of the Native Communities, Scientist, Government and BoFEP members.

The purposes of the workshop were to:

- Present BoFEP's findings to date.
- Discuss the OHI and provide background on what ecosystem management decisions are captured by the OHI methodology and how we can use OHI to predict impacts of near-future management decisions/choices.
- Discuss and prioritize possible ecosystem management decisions/choices that could be hypothesized in the OHI score for the MRPA.

One of the advantages of the OHI is that once a score has been developed, inputs, i.e., values for indicators such as biodiversity, into the score can be easily changed and a new score developed. The changes in indicator scores could reflect outcomes of real or hypothetical management decisions, such as increasing the amount of marine protected area in the MRPA.

Discussion on the OHI scores calculated to date was the following:

Food Provision- Fisheries:

Participants had concern that the preliminary score does not reflect reality and suggested that the data be looked at on a decade by decade basis. Herring should be removed from the score until the TAC was established.

For future scenarios, participants wanted BoFEP to look at what would happen if there was a catastrophe, eg. oil spill, and changes to abundance of lobster from climate change or to past “normal”. There were strong concerns about raising MSY to improve the score.

Aquaculture:

For future scenarios, participants wanted BoFEP to look at what would happen if different species were farmed, eg. scallops.

Iconic species:

The group recommended that BoFEP use COSEWIC vs. SARA conservation status for the iconic species. For future scenarios for both “Iconic Species” and “Special Places” sub-goals, the group recommended that changes in amount of protected area (eg. presence/absence of EBSAs) be included.

The group wondered how the impacts of a disaster might change the status of an iconic species,.

Biodiversity:

The group recommended that COSEWIC listings be used for conservation status. They also recommended that marine birds be included in the score, not just fish and marine mammals.

Livelihoods and Economies:

NB scored a 100 because how OHI compares to Canada and other developed countries to the rest of The world. All participants strongly encouraged BoFEP to do something to “NBize” this score to reflect reality of economics of region vs. rest of NB and/or Canada.

For a future scenario, BoFEP was asked to look impacts of disaster, eg. oil spill, that might decimate economy/availability of work.

Clean Waters:

There was little comment as this continues to be a work in progress.

Aboriginal information is missing. It was recognized by participants that the BoFEP work to date on the OHI does not incorporate TEK. This is acknowledged as a shortcoming--- the OHI methodology does not provide for this.

The final report will discuss this issue and provide concrete recommendations for how this might be addressed in future iterations of OHI score for the MRPA/Bay of Fundy.

OHI goal scores are calculated in the following manner:

$$\text{Goal Score} = (\text{Present Status} + \text{Likely Future Status})/2$$

$$\text{Likely Future Status} = \text{Present Status} \times \{1 + (0.67 \times \text{Trend}) + 0.33 \times (\text{Resilience} - \text{Pressures})\}$$

OHI goal's *future status* is made up in part of that goal's response to *resilience* and *pressure measures*:

Pressures is "the sum of the ecological and social pressures that negatively affect scores for a goal".

Resilience is "the sum of the ecological factors and social initiatives (policies, laws, etc.) that can positively affect scores for a goal by reducing or eliminating pressures".

Each part (or dimension) of a goal score, e.g., present status, requires data from a number of indicators, which BoFEP has been collecting.

The final report of this Environment Canada funded project will be available in April on the BoFEP website.