



FORCE ENVIRONMENTAL EFFECTS MONITORING:

Response to “Appropriateness of Existing Monitoring Studies for the Fundy Tidal Energy Project and Considerations for Monitoring Commercial Scale Scenarios” [DFO, 2012]

Introduction:

The Government of Canada’s Department of Fisheries and Oceans (DFO) Maritimes Science Branch released its report *Appropriateness of Existing Monitoring Studies for the Fundy Tidal Energy Project and Considerations for Monitoring Commercial Scale Scenarios* in June 2012.

FORCE is grateful for DFO’s comments and advice regarding FORCE’s first Environmental Effects Monitoring (EEM) Report (2011). We offer the following comments in response, particularly as DFO’s report relates to the EEM activities undertaken in 2010 and 2011.

Note: FORCE’s first EEM Report was significantly related to the period of the deployed NSPI/OH turbine. The full 2011 EEM results will be covered in the second FORCE EEM report (available later in 2012).

Review of Specific Monitoring Studies

Appendix E: Lobster Surveys Final Report: A revised monitoring program using the BACI design was not implemented in 2011, rather after review, it was decided to try a new approach using the Fish Tracking infrastructure and VEMCO tags as an alternate approach. A description of the work completed in 2011 will be provided in the second EEM report. This lobster tagging study has continued in 2012 by Acadia University. The results will be analyzed by FORCE and reviewed by the Environmental Monitoring Advisory Committee (EMAC) this fall to determine whether to continue with this work or reconsider the BACI design or a traditional tagging approach.

Appendix H: Fish Surveys 2010 – Final Report: As noted there was some uncertainty related to the results of the 2010 fish surveys surveys, and based on this EMAC recommended that no further fish surveys using the echosounder/mid-water trawl method until feedback was provided from reviewers such as DFO. The comments provided by DFO have been forwarded to the study consultant for their review and recommendations regarding further data analysis. Based on the consultant’s feedback, and further review by EMAC and FORCE, a decision will be made regarding the value of undertaking further fish surveys to cover the months of November through May 2012/13.

Appendix I: FORCE Progress Report 2011 – Fish Tracking: In 2011, it was decided to focus on the Fish Tagging and Tracking study and a more detailed report on these studies will be provided in the second EEM Report.

Appendix J: Side Scan Sonar Survey Final Monitoring Report: Agreed and additional video and still imagery has and will be undertaken during future studies along the cable routes and specific berth sites during side scan and multi-beam surveys. Based on discussions with ROV suppliers and users, the use of ROVs in the project area is highly unlikely due to high currents and limited duration of slack tides.

Appendix K: Final Report – Suspended Sediment Monitoring, July 2010: FORCE did not undertake additional SPM work based on feedback from EMAC in 2011, and none are planned for 2012, except on an opportunistic basis. The “far-field” profiles maybe being address by academia and/or under OERA

funded programs, and these comments will be referred to the Fundy Energy Research Network (FERN) and Offshore Energy Research Association of Nova Scotia (OERA) for feedback.

Missing Monitoring Studies:

FORCE agrees with the comments; the reality is that there is no proven or commercially available monitoring technologies to measure fish or mammal interaction near turbines in high flow marine environments like FORCE's. In addition, without an operational turbine this makes it extremely difficult to assess the application of any existing or new monitoring technologies. FORCE will continue to pursue opportunities with others, such as the OERA to investigate these types of technologies.

Again we agree with DFO's comments regarding fish mortality and recognize the limitations, but at the time of the turbine deployment visual observation was one of the methods available to assess impacts. Even though the turbine was not operational, the GBS and turbine support structure were in place for over one year and there were no specific issues related to fish or mammals strikes or fishing gear entanglement with the unit.

In relation to option for gathering additional biological data, an EMAC Subcommittee has been formed to investigate the use of weir by-catch data to better define fish movements in the Passage area. In addition to EMAC members on this subcommittee, weir fishers have been invited to participate and it is hoped that a study will be underway in fall of 2012. To this end, FORCE has been in discussion with Acadia University to possibly co-fund a study on weir by-catch data, after consultation and agreement by the EMAC Subcommittee.

If DFO has any additional advice regarding the better definition of ecosystem baselines, FORCE would appreciate your guidance.

Future Considerations of a Commercial Scale Scenario

In regards to DFO's comments related to the Commercial Scale Scenarios, FORCE is not in a position to respond to these specifically as it is beyond the scope of the approved Project. However, we recognize that these are important questions that need to be addressed through a broader partnership among governments, industry and academia.

In certain areas we believe these research priorities are being supported by agencies such as the OERA. FORCE will continue to be involved these groups and where appropriate to support modeling and other studies that could be used to predict the impact of arrays or other scenarios.

In regard to the tidal gauge, FORCE is investigating the installation of a weather station at the Interpretative Centre in cooperation with NSCC and a FORCE consultant. We will ask them to investigate a method to measure tidal baseline and changes.

Finally, the concept of a formal peer review of the studies completed is an excellent suggestion and we will discuss internally to determine the best approach to achieve this review.

Conclusions

We agree with DFO's conclusions, and in particular FORCE is actively investigating ways to advance the assessment and application of monitoring methods to assess fish and mammal interactions and behavior with turbines.

Closing:

FORCE is thankful to DFO for providing feedback on our first EEM Report; their report is very useful and we will consider their advice and incorporate wherever possible in planning and developing future programs.

As mentioned above, the second EEM report covering the studies done in 2011 should be available later this year (2012).