

**The Future of the Former Irving Whale Site:
A Discussion on Further Remediation*****The issue***

Approximately 150 kg of polychlorinated biphenyl (PCB) are believed to be remaining in the sediments at the former Irving Whale site. The Irving Whale, successfully lifted in the summer of 1996, originally contained 7500 kg of PCBs. Remediation activities conducted at the site immediately following the lift recovered approximately 220 kg of PCBs, in addition to the 1590 kg recovered during the following clean-up operations of the barge. The remaining 5,700 kg, thought to have been lost during the sinking of the Irving Whale in 1970, likely dispersed over time to become part of the global environment, and therefore are not recoverable.

The sediments of the entire Gulf ecosystem are estimated to contain 25,000 kg of PCB, with annual inputs of an estimated 400-500 kg from run-off and atmospheric deposition. Therefore, the 150 kg of remaining PCBs represents less than 1% of the total PCBs currently estimated to be in the sediments of the Gulf ecosystem.

Actions to address the problem

In late January 1998, a Steering Group was created to determine the next steps in deciding whether or not further remediation was required to deal with the PCB-impacted sediments in the area where the Irving Whale rested for more than 25 years.

Environment Canada chaired the group, with participation from Fisheries and Oceans, Public Works and Government Services Canada and Transport Canada. It was decided to also continue the important role of the Public Advisory Committees (PACs) from the Magdalen Islands and the Prince Edward Island and two representatives from each group were invited to participate in the work of the Steering Group.

This Steering Group was integrally involved in the development and the approval of the Terms of Reference for an independent study to evaluate the potential remediation options for the site and also assisted in guiding the consultant during this study. PAC members' perspectives and concerns were incorporated throughout the process of creating the report and were considered in the final decision-making process.

In March 1998, Jacques Whitford Environment Limited (JWEL) was retained to carry out the study. After several reviews by the Steering Group, the final report was completed in late November and distributed to the Steering Group members and the full Public Advisory Committees in early December for review.

The Report

The options evaluation report compares three options: 1. no further remediation (but with long-term monitoring), 2. capping or 3. dredging. The report describes each option and evaluates the technical merits, possible limitations, estimated costs, the environmental and health risks/benefits and other criteria.

The first option would involve annual monitoring costing approximately \$60,000. The other two options, costing \$5.5-12.4 million for capping and \$19-24.5 million for dredging, would likely recuperate only about 70% of the contaminated sediments and could possibly even add to the dispersion of PCBs.

The report also provides an update to previous risk assessments based on the sampling of sediment and marine organisms done at the former Irving Whale site by the Department of Fisheries and Oceans and Environment Canada in 1996 and 1997. The revised assessment suggests that the site poses *no risk* to snow crab populations, human health or to the Gulf's ecosystem. The study does suggest that there may be some risk to individual sediment-dwelling organisms (in scientific terms known as "benthic biota") located at the footprint, however, this appears to have no effect on organisms at the community level.

1998 Crab, Sediment and Bio-diversity Assessment Results

The snow crab PCB results for the June survey indicate that, even within the fisheries exclusion zone, all crab meat samples were well within the health consumption guidelines (2 parts per million PCB). In fact, in all but one sample, PCB concentrations were non-detectable. Only two of 10 crab digestive gland samples collected from individual crabs right at the footprint station were equal to, or slightly exceeded the guideline (2.0 and 2.7 ppm).

The analysis and interpretation of the 1998 sediment results suggest that the PCBs continue to disperse, decreasing the size of high-concentration areas, with an apparent doubling in the area of lower concentrations.

An assessment of the diversity of sediment-dwelling organisms indicates that, while the community at the footprint appears slightly different than the reference sites, it is healthy.

Fisheries and Oceans has decided to take a precautionary approach in addressing the status of the fishing exclusion zone, and intends to retain the existing closure at this time. However, the size and the need for the exclusion zone will be reevaluated each year based on the results of the long-term monitoring at the site.

The Decision-making Process

This decision is based on the results of the independent options evaluation study, biota and sediment sampling data and a number of other factors, including feedback from the Public Advisory Committees, local Members of Parliament, provincial Ministers, provincial agencies and other stakeholders such as the crab fishers associations.

****NOTE: the executive summary of the Option Evaluation report and a matrix of the options evaluation is available upon request.***

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