

**Terms of Reference  
National Open Workshop**

Validation of Four End-Points Represented in the Pathways of Effects Diagrams

Holiday Inn Toronto Airport-East, Toronto, Ontario  
September 7-8, 2005

Chairperson: Jake Rice

**Background**

The Pathways of Effects (PoE) Diagrams, developed by the Department of Fisheries and Oceans' (DFO) Habitat Management staff, outline diagrammatically the "cause and effect relationships" of a land-based or in-water activity on the aquatic environment. A total of 21 PoEs have been developed to date. The Habitat Management Directorate's intention is that DFO habitat biologists and proponents would use these PoEs to assess the potential effects that may result from any given project, which could include a combination of several activities (i.e. a culvert installation could include the placement of material in water, excavation, and riparian removal). A proponent could then develop mitigation plans using the PoE diagrams, designing their projects to avoid the negative effects of a given activity (where possible).

The PoEs were developed using expert knowledge. However, a detailed literature review has not been completed and is required to determine if the PoEs are scientifically sound and complete. The literature review of the PoE diagrams proceeded through a 'bottom-up' approach that focused on the end effects or end points and the linkages at the lower levels of the diagrams. Given that there are 21 PoE diagrams with several end points associated with each diagram, it was decided to review the following four end points as the first in a series of reviews:

Change in habitat structure and cover;  
Change in sediment concentrations;  
Change in water temperature; and,  
Change in dissolved oxygen concentrations.

**Objectives**

The scientists at the meeting will examine the literature review papers, with the intention of testing the scientific validity of the lower linkages and end points chosen for this review. The outcome of the meeting will be scientific advice to Habitat Management on the acceptability of the four end points and lower linkages where they occur in the Pathways of Effects Diagrams.

The specific questions to be answered are:

- Are the four end points and the lower linkages depicted in Pathway of Effects Diagrams validated by available scientific literature?
- What conclusions can be drawn from the literature with regard to the scope of the linkages? For instance, can we characterize the conditions under which a linkage is expressed vs. conditions where it does not apply?

**Output of the meeting**

The minutes of the meeting will be documented via a CSAS Proceeding report. The key conclusions (scientific information/advice) will be documented in point form from the meeting and could be included in the Proceeding report or could serve as a basis for the relevant sections of other CSAS publications.

**Participants**

The participants will include scientists from DFO and academia, as well as representatives from DFO Science HQ, Habitat HQ. The number of participants will not exceed 25.