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A framework for assessing fisheries productivity for the Fisheries Protection Program

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Abstract

Regulatory decisions made by the Minister of Fisheries and Oceans about projects, works, or activities that have the potential to affect fish or fish habitat may need to consider the effects on the productivity of fish that are part of commercial, recreational or Aboriginal fisheries. Assessment of productivity changes will inform the four considerations listed in section 6 of the *Fisheries Act* (2012). A framework for assessing changes in fisheries productivity resulting from projects is described. This framework uses components of productivity, which are the vital rates and life processes needed for fish to complete their life cycle. The impacts of a project on fish habitat or the mortality of fish are identified using existing Pathways of Effects (POEs). For projects that affect the quantity or quality of habitat (or cause the death of fish) in the project vicinity, components of fisheries productivity are analyzed using a life cycle approach (reproduction, growth, survival, migration). Qualitative and quantitative metrics for each component of productivity are tabulated. For projects considered likely to result in ecosystem transformations, productivity assessments are conducted at the population or ecosystem scale. Density-dependent processes can be incorporated into productivity assessments, but detailed information on the biology of the species and a population model will be required. Examples are provided to illustrate how the approach can vary depending on the scale of the project, the fisheries resources that are affected and the information available for the assessment.

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