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Science Advisory Report 2013/074

Science Advice on Offsetting Techniques for Managing the Productivity of Freshwater Fisheries

Summary

- This Science Advisory Report (SAR) summarizes a literature review of methods that have been used to increase fisheries productivity and which might be potential methods for offsetting serious harm to fish under the Fisheries Protection Provisions (FPP) of the *Fisheries Act* (2012).
- In general, this review and science advice focus on freshwater fisheries, given this has been the principal focus of the associated management program. Some consideration has also been given to estuarine, coastal and marine environments, however further work is required for these areas.
- The success of offsetting measures, as reviewed, varies widely depending on location, site-specific characteristics, species targeted, and environmental conditions. All methods reviewed have potential benefits and challenges with respect to their implementation.
- No single best approach for offsetting needed to maintain or increase fisheries productivity was apparent from the literature. Although limited, empirical data on the effectiveness of offsets varies widely. Statistical and modelling approaches and successful examples from other jurisdictions suggest that offsets should be larger than the area destroyed to counter-balance this uncertainty, and/or delay in becoming functional habitat.
- Methods that use data specific to the region or fisheries in question are more scientifically defensible.
- To promote the ongoing sustainability of CRA fisheries, offsets should be designed to increase the productivity of the fishery(ies) affected by the serious harm. In specific cases this may be modified by fisheries management objectives or other resource management considerations (e.g. species at risk, aquatic invasive species etc.).
- Monitoring and auditing are essential to determining the success of any offsetting program. Both compliance and effectiveness monitoring should be conducted. Previous science advice on monitoring the effectiveness of habitat compensation projects (DFO 2012) can provide guidance for monitoring of offsetting.
- Due to the inherent variability associated with offsetting, an adaptive management component should be included in offsetting programs.

This Science Advisory Report (SAR) is from the June 4-6, 2013 national peer review on “Science guidance for Fisheries Protection Policy”. Additional publications from this meeting will be posted on the [Fisheries and Oceans Canada \(DFO\) Science Advisory Schedule](#) as they become available.

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