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From / De: Ryan Galbraith
Senior Assessment Biologist
Oceans, Habitat and Enhancement Branch

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Subject / Object: **NATIONAL EVALUATION OF FISH HABITAT COMPENSATION TO ACHIEVE NO NET LOSS: FINAL PUBLICATIONS FOR CIRCULATION**

Please find attached the recently published results of a national evaluation program to assess the performance of compensation projects in achieving No Net Loss of fish habitat productivity, and recommended approaches to improving fish habitat management practices.

Overview

A national evaluation program was initiated by Fisheries and Oceans Canada (DFO) in 2000 to assess the performance of compensation projects across Canada in achieving No Net Loss (NNL) of fish habitat productivity. The results of the evaluation program are published in four primary articles (Harper and Quigley 2005a, 2005b; Quigley and Harper 2006a, 2006b). The program included four components; a literature review and a detailed file review (published late 2005), and a compliance audit and an effectiveness study (published March 2006).

- In the literature review, Harper and Quigley (2005a) compiled and reviewed all of the studies in the peer-reviewed and grey literature that have assessed habitat compensation projects, and analysed their information to determine success in achieving NNL.



Harper and Quigley (2005a)

- In the detailed file review, 124 authorizations for HADDs issued by DFO between 1994 and 1997 were collected and analysed. The study provided an indication of the types of projects that have been authorized, what habitats have been impacted, and what approaches have been used in selecting, monitoring and evaluating compensation sites (Harper and Quigley 2005b).



Harper and Quigley (2005b)

- In the compliance audit, 52 of the 124 habitat compensation projects were field-inspected to assess compliance with biological, physical, and chemical requirements in authorizations (Quigley and Harper 2006a).



Quigley and Harper (2006a)



- In the effectiveness study, 16 of the 52 projects examined in the compliance audit were quantitatively evaluated for achievement of NNL by comparing habitat productivity at treatment and reference sites (Quigley and Harper 2006b).

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Quigley and Harper
(2006b)

Results of the evaluation program

The evaluation program documented a variety of positive management practices relating to the authorization of HADDs and the implementation of effective habitat compensation. However, these evaluations also highlighted some challenges in file management and record keeping, proponent compliance with authorization requirements, the use of quantitative monitoring procedures, and in the effectiveness of compensatory habitat in balancing losses resulting from HADDs.

A DFO Technical Report (Quigley et al. 2006) provides a summary of the outcomes and recommendations of the evaluation program. The intent of this technical report is to provide an integrated summary of the evaluation program papers that will assist managers in improving upon habitat management approaches related to habitat compensation.

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TR2632 (Quigley et
al 2006)

One of the principal findings common to all components of the evaluation program was the need to improve the quality of monitoring programs and to learn from the findings of monitoring activities through adaptive management. In response, a Monitoring and Assessment Guidebook (Pearson et al. 2005), which included several case studies, was produced to provide guidance to DFO staff, industry, consultants, First Nations and ENGOs with respect to the principles to consider when designing monitoring programs for habitat compensation and restoration projects.

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Monitoring
Guidebook (Pearson et

Actions and response by DFO

DFO has taken action that addresses many of the findings and recommendations, including modernizing related aspects of the Habitat program and creating tools to improve program performance, such as;

- Changing/modernizing compliance (e.g. Habitat Compliance Modernization).
- Increased emphasis on and improved quality of monitoring (e.g. National Habitat Monitoring Framework and associated regional monitoring frameworks).
- Pacific Region Monitoring and Assessment Guidebook (Pearson et al 2005).
- Regional and national monitoring training programs (under development).
- Improving data capture, analysis and reporting (e.g. Program Activity Tracking of Habitat (PATH) database system).
- Streamlining of program actions allowing staff to concentrate effort on higher risk activities (e.g. Risk Management Framework).

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References

Results of the habitat compensation evaluation program:

- Harper, D.J., and Quigley, J.T. 2005a. A comparison of the areal extent of fish habitat gains and losses associated with selected compensation projects in Canada. *Fisheries* 30(2):18-25.
- Harper, D.J., and Quigley, J.T. 2005b. No net loss of fish habitat: a review and analysis of habitat compensation in Canada. *Environmental Management* 36(3): 343-355.
- Quigley, J.T., and Harper, D.J. 2006a. Compliance with Canada's Fisheries Act: a field audit of habitat compensation projects. *Environmental Management* 37(3): 336-350.
- Quigley, J.T., and Harper, D.J. 2006b. Effectiveness of fish habitat compensation in Canada in achieving no net loss. *Environmental Management* 37(3): 351-366.

Publications relating to DFO actions in response:

- Pearson, M.P., Quigley, J.T., Harper, D.J., and Galbraith, R.V. 2005. Monitoring and assessment of fish habitat compensation and stewardship projects: Study design, methodology and example case studies. *Can. Manuscr. Rep. Fish. Aquat. Sci.* 2729: xv + 124 p.
- Quigley, J.T., Harper, D.J., and Galbraith, R.V. 2006. Fish habitat compensation to achieve no net loss: review of past practices and proposed future directions. *Can. Tech. Rep. Fish. Aquat. Sci.* 2632: vi + 22p.

If you have any questions or require further information, please contact Ed Woo (604 666-2874, wooe@pac.dfo-mpo.gc.ca).

Sincerely,
Ryan Galbraith

Encl.

Distribution: Habitat Management Staff, Area Chiefs, RHQ Managers
Cc: OHEB Regional Director

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