

Supplemental Submission for Fisheries Technical Hearings

Prosperity Mining Project – CEEA Panel Review

MiningWatch Canada

April 16, 2010

In preparation for the upcoming topic specific hearings on fish and fish habitat, MiningWatch Canada submits the attached documents and following summary comments relevant to our concerns about the destruction of the aquatic ecosystems in the Fish Lake watershed and Taseko's proposed habitat compensation plan.

These comments focus on the record of success of fish habitat compensation projects in Canada and the ability of DFO to demonstrate that such projects are meeting the required objectives of No Net Loss. Such contextual information is of vital importance to the Panel in order to weigh the degree of risk and the acceptability of the risks associated with attempting to compensate for the loss of the natural features and functions of the watershed. Judging these risks is, in turn, critical to determining whether or not the proposed project is likely to contribute to sustainable development and provide a net ecological and social benefit – an assessment required by the Guidelines for the EIS.

The proponent is asking the Canadian government to approve its mine project and the destruction of the Fish Lake watershed on the premise that the company can develop and implement a successful habitat compensation plan into the indefinite future. We submit that there is substantial evidence that the proposal has a high risk of failure on several different accounts including:

1. Fundamental inadequacies in the plan itself;
2. Poor track record of success for conventional, single-component compensation projects;
3. Greatly increased risks and uncertainties of success in implementing a multi-component compensation plan of this scale and complexity;
4. Inability of DFO to effectively monitor and enforce compliance with commitments at present and the decreasing resources available for future habitat management and protection activities.

The inadequacy of the plan is clearly a crucial element in evaluating the sustainability of the project. The failure of the plan to conceptually achieve the No Net Loss objective has been well documented in our previous submissions, as well as the DFO's March 12 submission.

Accordingly, we will only address points 2 to 5 in the present submission.

Our submission includes the following documents for the record, most are available online and urls are included with full references at the end of the document. Those not available online will be submitted as attachments.

1. Report of the Commissioner of the Environment and Sustainable Development - Spring 2009 (CESD 2009; online)
2. Assessment of Techniques for Rainbow Trout Transplanting and Habitat Management in British Columbia. Canadian Manuscript Report of Fisheries and Aquatic Sciences No. 2562 (Hartman and Miles 2001; online)
3. Habitat Compensation Case Study Analysis. Canadian Manuscript Report of Fisheries and Aquatic Sciences 2576. (Lange et al. 2001; online)
4. Compliance with Canada's Fisheries Act: A Field Audit of Habitat Compensation Projects. (Quigley and Harper 2006a; attached)
5. Effectiveness of Fish Habitat Compensation in Canada in Achieving No Net Loss (Quigley and Harper 2006b; attached)
6. Why Bartering Biodiversity Fails (Walker et al 2009; attached)

Below we summarize the key points of these documents and offer additional illustrative points from other sources.

The Poor Track Record for Conventional Compensation Projects

In evaluating the proposal to mitigate for the destruction of the Fish Lake watershed it is important to assess the risk associated with the plan's implementation in terms of both actual work completed and if implemented how likely the works perform as predicted. Insight into these questions can be gained by reviewing the success of existing compensation plans in achieving the basic objective of No Net Loss.

DFO, as explained below, does not have a reliable system for monitoring and documenting success. Nonetheless, a few studies are available, and we have submitted some of the most recent audits in our submission. All the documents we located that review the performance of habitat compensation projects in Canada generally report discouraging results. It should be noted that most, if not all, these projects are small in area compared to the project at hand, and are typically single-component projects being implemented within an existing functional ecosystem.

The following are some of the conclusions from these reviews.

“The results of evaluations of the success in the application of the *Fisheries Act* to prevent habitat loss in the face of development reveal a relatively low level of achievement”. (Bitwell et al. 2005)

“In almost all cases, actual compensation ratios were smaller than required compensation ratios.”

(Quigley and Harper 2006a)

“Noncompliance with HADD (harmful alteration, disruption or destruction of fish habitat) and compensation areas contributed to substantial losses of habitat. The prevalence and magnitude of larger HADD areas and smaller compensatory works far exceeded the gains in fish habitat due to authorisations with smaller HADD areas or larger compensation. Habitat loss as a result of improperly installed or designed compensatory structures (e.g., perched culverts, impassable weirs, dry channels) was also considerable. In many cases, these habitat losses exceeded the original HADD that necessitated the compensation habitat.” (Quigley and Harper 2006a)

“We found that although success improved with artificial [compensation] ratios of 2:1, a substantial proportion of compensation projects still did not achieve NNL” (Quigley and Harper 2006b)

“Compensation science and institutional approaches need to improve in Canada if the conservation policy of NNL of habitat productivity is to be met, as evidenced by the compensation projects assessed in this study, of which only 37% achieved this goal.” (Quigley and Harper 2006b)

“...compensation ratios are dramatically reduced in projects with HADD areas greater than 30,000 m² [3 ha], suggesting that the ability to apply ‘No Net Loss’ is very difficult in large projects.” (Lange et al 2001)

In the Pacific Region, almost a quarter of examined compensation projects were considered to be poor or failures. (Lange et al. 2001)

The above quotes speak to compensation projects in general, however Hartman and Miles (2001) provide some specific comments on a variety of types of habitat improvements or creation for rainbow trout. One might expect that, given the extensive body of research on rainbow trout, compensation projects would typically be highly successful. Unfortunately, this was not the case for several of the different classes of projects that were reviewed.

The authors reviewed the success of six lakes created for rainbow trout habitat. While habitat managers reported that one of the projects had limited success, three had moderate success and two were outstanding successes, the authors provided several important qualifications to the reported “successes”. The definition of success used by the managers varied greatly and included “put and take” fisheries that were not self sustaining, lakes that needed ongoing interventions at spawning areas, and a lake (Trojan Pond at Highland Valley) with fish too contaminated with copper to eat. The findings were further qualified by the authors finding that there was insufficient information about long-term viability or productivity of the trout populations to project the qualified successes into the future.

Taseko’s proposed fish habitat compensation plan is dependent on the performance of a number of components functioning in concert, including the success of an artificial spawning channel.

Hartman and Miles (2001) had this to say about the success rate of creating spawning channels for rainbow trout.

“Our analyses indicate that less than half of the spawning or spawning/rearing channel projects were successful. In addition, many successful sites required either pumps to provide a water supply or regular maintenance to ensure gravel quality. For this reason, many of the constructed channels are not self-sustaining and on-going maintenance funding is required.”

and

“The documented success rates for spawning/rearing channels and ecologically effective diversion channels are a concern as most projects have been recently constructed. Longer term success rates are therefore expected to be even lower than the documented 38% to 43% and additional research will be required to determine and quantify the factors which contributed to failure or success.”

Increased Complexity Leads to Increased Risks and Uncertainties

What Taseko is proposing is not a simple single-component compensation plan that is typical of the approved fish habitat compensation projects included in the above reviews. What is being proposed here is the reconstruction of an entire aquatic ecosystem, complete with water delivery systems, retention ponds for control, spawning habitat, a new lake for over-wintering and supporting fish populations, tributary fish-bearing streams, a variety of fish-supporting riparian habitats, wetlands, and so forth. As such, the proposed compensation plan is larger in scale and more complex than the majority of compensation plans that have been approved in Canada. In fact, after reviewing a key documents on large scale fish habitat compensation (Bitwell et al . 2005, Hartman and Miles 2001, Lange et al. 2001, Packman et al. 2006) we have found no Canadian example of a successfully implemented plan to compensate for such a large area of highly valued, productive and complex freshwater ecosystems as the current proposal by Taseko. Other major compensation projects have not attempted the whole-scale re-establishment of self-contained aquatic ecosystems, particularly those with a flourishing sustainable (and exploitable) fishery.

“The behaviour of natural systems is characterized by complexity and uncertainty” (Hartman and Miles 2001) and as shown in Figure 1 the degree and uncertainty and likelihood of failure increase as the scale and complexity of a habitat compensation plan increases (Birtwell et al. 2005, Hartman and Miles 2001, Lange 2001).

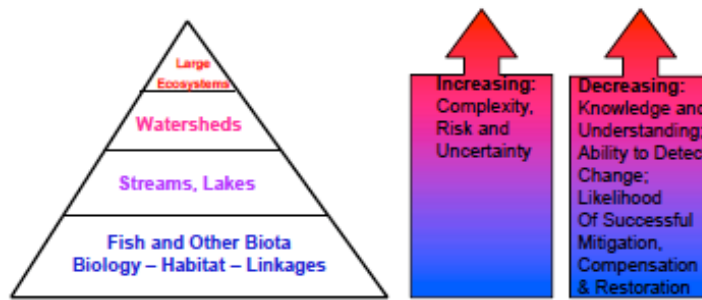


Figure 1. Increasing degrees of risk and uncertainty at increasing scales of habitat compensation (after Bitwell et al. 2005)

Unlike most habitat compensation activities that address smaller areas of specific fish habitat, this project contemplates the destruction of 117.6 ha of lake habitats and 6.4 ha of stream habitats plus adjacent riparian areas. The watershed currently function as an integrated unit that provides multiple services and among many other resource values, the maintenance of a productive rainbow trout population. Replacing the multiple functions of the watershed (even just from a fish perspective) requires the layering of many different ecological features and functions including supply of water with appropriate chemical and thermal characteristics, spawning beds, a food supply and appropriate shelter for various life stages. If any one of these functions fails, the entire compensation project fails.

While the proponent believes there is a high degree of certainty about the effectiveness of its proposal, the evidence suggest otherwise. Trying to recreate the interconnected functionality of the lakes, and streams of the Fish Lake watershed takes this proposal well into a high degree of high speculation and overwhelming odds against success.

The attached report *Why Bartering Biodiversity Fails* casts a worrisome doubt over the prospects of success for any compensation project, regardless of how robust the compensation plan is. This is not only because of ecological failure from design deficiencies, but because of biased institutional behaviour and political forces that ultimately favour development over protection goals when biodiversity is on the bartering block. The abstract says it all:

“Viable trading requires simple, measurable, and interchangeable commodities, but the currencies, restrictions, and oversight needed to protect complex, difficult-to-measure, and noninterchangeable resources like biodiversity are costly and intractable. These safeguards compromise trading viability and benefit neither traders nor regulatory officials. Political theory predicts that (1) biodiversity protection interests will fail to counter motivations for officials to resist and relax safeguards to facilitate exchanges and resource development at cost to biodiversity, and (2) trading is more vulnerable than pure administrative mechanisms to institutional dynamics that undermine environmental protection. Delivery of no net loss or net gain through biodiversity trading is thus administratively improbable and technically unrealistic. Their proliferation without

credible solutions suggests biodiversity offset programs are successful “symbolic policies,” potentially obscuring biodiversity loss and dissipating impetus for action.” (Walker et al. 2009)

The Problem of Monitoring and Enforcement

The next issue relating to ultimate success of a compensation project that needs examination is the issue of follow-up by the regulator. If this project were to be approved and a fish habitat compensation plan were to be implemented, how effective is the monitoring and enforcement of the conditions of the plan likely to be? Will there be a viable mechanism in place to track and document the outcome, and to take action if compliance is not being achieved? Sadly, the answer is probably not.

The authors of the reviews cited above noted the limited and insufficient nature of monitoring and enforcement as a key contributor to the lack of success in achieving No Net Loss and in their inability to adequately determine the success of compensation projects.

The reasons for these difficulties are made clear in the Commissioner of the Environment and Sustainable Development’s (CESD) 2009 audit of DFO habitat management. The results are profoundly disturbing since they imply that it is unlikely that the federal government will be able to determine whether or not this project is implemented as approved and whether the approved measures were adequate. Conclusions of the audit included:

- DFO has little of the documentation required by departmental policy that is necessary to track and evaluate impacts on fish habitat and compensation projects.
- While proponents are normally required to carry out project monitoring activities, and the Department may monitor projects directly or rely on monitoring by the proponent, the CESD audit found that the Department does not have a risk-based approach to monitoring proponents’ compliance with the terms and conditions of ministerial authorizations and letters of advice. It found that proponents had carried out the required monitoring in only 6 of 16 (38 percent) sample items involving ministerial authorizations, and 1 of 30 sample items involving letters of advice. Further, the Department directly monitored the proponent’s compliance in only one of the cases reviewed, but there was no documentation found to show that the Department had followed up or evaluated the effectiveness of its decisions—that is, whether implementing the conditions of the ministerial authorizations or letters of advice had resulted in no net loss of habitat.
- The Department does not have a systematic approach to monitoring proponents’ compliance with the conditions of its project approvals. Nor does it evaluate whether its decisions on mitigating measures and compensation are effective in meeting the no net loss principle. As a result, projects may be causing damage to habitat beyond the amount authorized, and mitigating measures and compensation may not be effective

- The audit could not determine whether the Department is following the Compliance and Enforcement Policy. There was no evidence of what, if any, actions the Department had taken to inspect or investigate alleged violations or what enforcement actions it had taken.
- The Department's ongoing challenges in collecting data and selecting habitat indicators means that it still does not know whether it is progressing toward the Habitat Policy's long-term objective of a net gain in fish habitat.

One of the explanations for the poor performance of DFO in monitoring and enforcement is an insufficient and decreasing amount of dedicated resources. The CESD audit found that:

- Between 2003 and 2007 Conservation and Protection fishery officers time spent on habitat-related enforcement matters decreased from 6.4 percent to 3.3 percent of total time.
- The total number of full-time equivalent staff in the Habitat Management Program had decreased from 460 to 430.

With the deficiencies identified by the CESD it is worrying that the current spending estimates for Habitat Management Program identify a further 22% reduction of planned spending from 2009-2010 to 2012-2013.(DFO 2010). This risks exacerbating existing problems.

Conclusion

Given the poor track record of relatively simple compensation projects, the scale and complexity of the proposed compensation project and the risks and uncertainty that these create, and the poor performance of DFO in monitoring and enforcing approvals, we are left with little confidence that the proposed plan can be successful – even if it were conceptually sound – which it is not. Without a viable mitigation for the extensive negative effects that would occur to the aquatic ecosystems of the Fish Lake Watershed, the proposal for the Prosperity gold-copper mine can not be considered sustainable or to provide a net ecological benefit. For this reason and those we have raised in earlier submissions, we once again urge the panel to recommend that the project not be approved.

References

Bitwell, I.K. , S.C. Samis and N.Y. Khan. 2005. Commentary on the Management of Fish Habitat in Northern Canada: Information Requirements and Policy Considerations Regarding Diamond, Oil Sands and Placer Mining – Summary Report. Canadian Manuscript Report of Fisheries and Aquatic Sciences No. 2607.

<http://www.dfo-mpo.gc.ca/Library/321848.pdf>

Commissioner of the Environment and Sustainable Development. 2009. Report of the Commissioner of the Environment and Sustainable Development—Spring 2009, Chapter 1 Protecting Fish Habitat.

http://www.oag-bvg.gc.ca/internet/English/parl_cesd_200905_01_e_32511.html

DFO. 2010. Report on Plans and Priorities 2010-2011.

<http://www.tbs-sct.gc.ca/rpp/2010-2011/inst/dfo/dfo01-eng.asp>

Hartman, G. and M. Miles. 2001. Assessment of Techniques for Rainbow Trout Transplanting and Habitat Management in British Columbia. Canadian Manuscript Report of Fisheries and Aquatic Sciences No. 2562

<http://www.dfo-mpo.gc.ca/Library/260288.pdf>

Lange, M., B.C. Cudmore-Vokey, and C.K. Minns. 2001. Habitat Compensation Case Study Analysis. Canadian Manuscript Report of Fisheries and Aquatic Sciences 2576.

<http://www.dfo-mpo.gc.ca/Library/260971.pdf>

Packman, G.A., D.J. Harper, S.C. Samis and D. Lampi. 2006. Review of Methodologies for Estimating Changes in Productive Capacity from Whole-lake/Stream Destruction and Related Compensation Projects. Can. Tech. Rep. Fish. Aquat. Sci. 2664

<http://www.dfo-mpo.gc.ca/Library/332915.pdf>

Quigley, J.T. and D.J. Harper. 2006a. Compliance with Canada's Fisheries Act: A Field Audit of Habitat Compensation Projects. *Environmental Management* 37(3): 336–350.

Quigley, J.T. and D.J. Harper. 2006b. Effectiveness of Fish Habitat Compensation in Canada in Achieving No Net Loss. *Environmental Management* 37(3): 351–366.

Walker, Susan, Ann Brower, R.T. Theo Stephens, & W. Lee. Why Bartering Biodiversity Fails. *Conservation Letters* 2 (2009) 149-157.