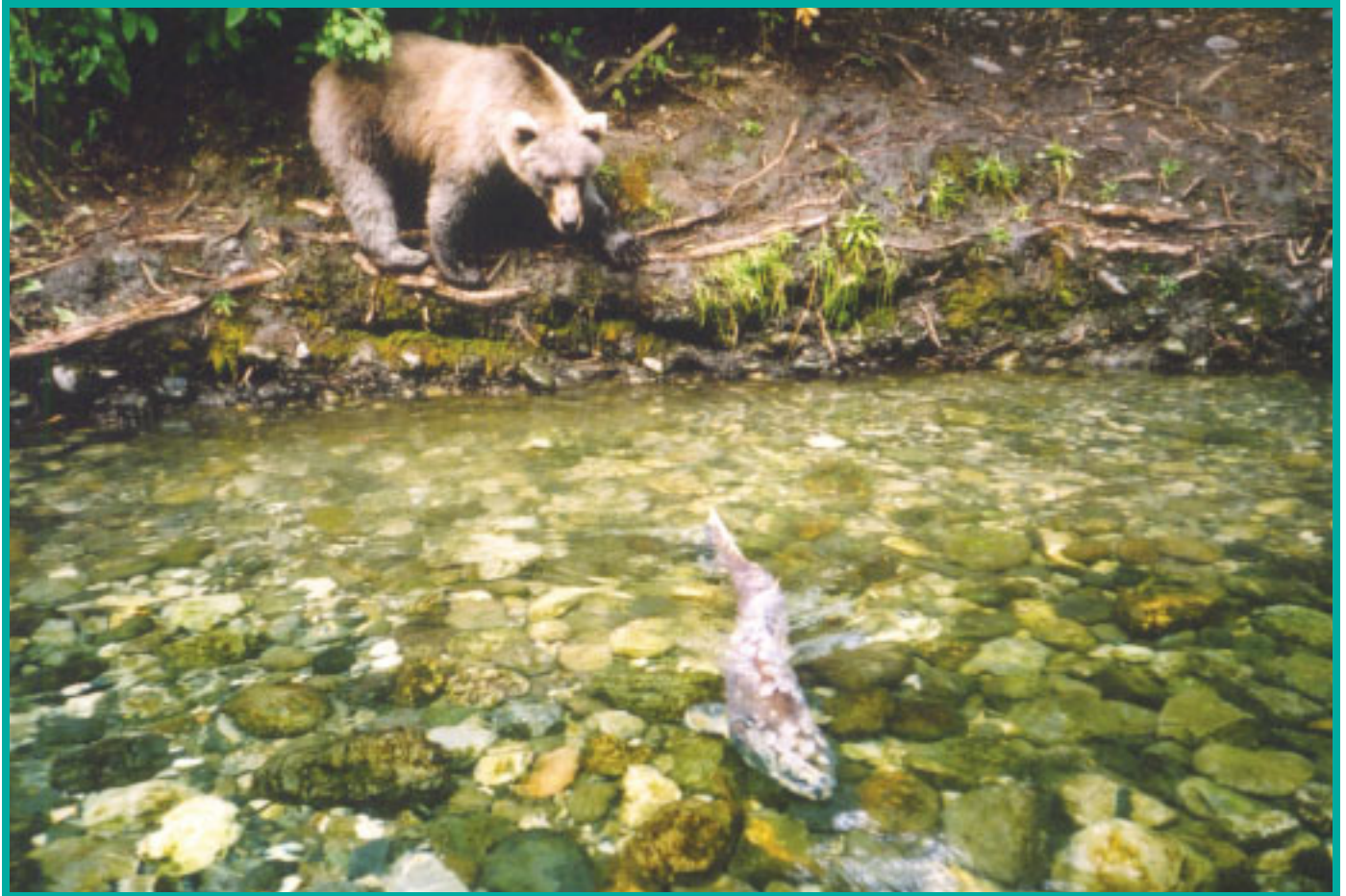


Protecting Fish/Protecting Mines

What is the real job of the Department of Fisheries and Oceans?



by Susan Isaac
MiningWatch Canada
June 2005

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Cover photo: Mark Connor

Ace, a female grizzly on the bank of the Nakina River in the Taku River watershed, eyeing up a salmon.



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Protecting Fish/Protecting Mines

What is the real job of the Department of Fisheries and Oceans?

Since its founding in 1999, MiningWatch Canada has researched and documented the environmental and social impacts of mines on the surrounding communities. We have been repeatedly dismayed by the extensive destruction of fish habitat associated with mine development:

- In Newfoundland and Labrador, the Voisey's Bay Nickel Company has received authorization to use a fish-bearing pond as a tailings disposal area. Fish have been relocated to a "fishless pond".
- In Northern B.C., a proposed 150 km. road to the Galore Creek mine would require 222 stream-crossings. There are fish present at 134 of these crossings. This project is still in the planning stages – will the mine receive approval for its preferred road location?
- Also in Northern B.C., the Tulsequah Chief mine is proposing to dig a 3 metre deep trench across much of the Tulsequah River floodplain to accommodate the mine effluent discharge system. This installation will transect fish habitat. DFO officials have recommended approval of this project, ignoring independent analysis suggesting

that the overall confidence in the proponent's aquatic science is low and the risk of habitat destruction and cumulative impacts high.

- In Northern Ontario, the proposed Victor Diamond Project would cause significant alteration of water levels and water flow in the Attawapiskat and Nayshkootayaow Rivers. The loss and alteration of fish habitat as result of mine dewatering is of concern to First Nations interests in the Attawapiskat River Basin.

These are mining projects that have been approved or are being considered by the Department of Fisheries and Oceans (DFO) – the federal agency mandated to manage and protect fish and fish habitat in inland waters. Through the use of "Fisheries Authorizations"¹, the Habitat Management Program at DFO is allowing mining companies to cause extensive "harmful alteration, disruption and destruction" (HADD) of fish habitat. "Letters of Advice" from DFO to the mine proponent aim to help mitigate the destruction of fish habitat, but are they being used as a mechanism to bypass the federal environmental assessment process and entrust the protection of the

MiningWatch Canada (MWC) is a pan-Canadian initiative supported by environmental, social justice, Aboriginal and labour organisations from across the country. It addresses the urgent need for a co-ordinated public interest response to the threats to public health, water and air quality, fish and wildlife habitat and community interests posed by irresponsible mineral policies and practices in Canada and around the world.

MiningWatch Canada is a direct response to industry and government failures to protect the public and the environment from destructive mining practices. Government's failure to protect fish habitat from mine development and the surrounding mine infrastructure is but one example of the free-hand of industry to mine at the expense of the environment.

1. Common term referring to Authorizations pursuant to S. 35(2) of the *Fisheries Act*. In this paper, references to Fisheries Authorizations mean Authorizations pursuant to S. 35(2) of the *Fisheries Act*.

environment (and fish habitat) to the proponent?

This paper raises a number of questions about the use of Authorizations pursuant to S. 35(2) of the *Fisheries Act* and Letters of Advice on mining projects and asks whether the Habitat Management Program's objective of "No Net Loss" is being achieved. It also looks ahead at changes proposed by the federal government to meet Smart Regulations objectives. We are concerned that this will lead to an increased loss of regulatory oversight and control by DFO of fish habitat. DFO has the mandate to protect fish and fish habitat. It must fulfill its mandate. Too much fish habitat is being lost in the pursuit of mine development.

This is very much a "work in progress". As we began to look into the impacts that mining has on fish and fish habitat in Canada and the level of regulatory oversight exercised by the Department of Fisheries and Oceans, we realized that there are numerous issues which need to be addressed: related to planning, scientific knowledge, environmental assessments, cumulative impacts, approaches to dealing with physical destruction of habitat (as opposed to chemical alteration), monitoring for long-term effects. Each of these areas could be the focus of a study in and of themselves. We see this overview paper as a starting point for stimulating debate and further research.

The Federal Fisheries Act

The Constitution Act of 1867 gave the federal government of Canada the responsibility and authority to manage and protect fish and fish habitat in inland waters. The *Fisheries Act* sets out the framework for that protection – but also authorizes the destruction of fish habitat, as set out in Section 35(2) of the *Act*.

Section 35 of the *Fisheries Act* states:

- (1) No person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat.
- (2) No person contravenes subsection (1) by causing the alteration, disruption or destruction of fish habitat by any means or under any conditions authorized by the Minister or under regulations made by the Governor in Council under this Act.

While on the one hand the *Fisheries Act* protects fish habitat from harmful alteration, disruption or destruction (HADD), on the other hand, HADD is

permitted with the authorization of the Minister. The circumstances in which Fisheries Authorizations (FAs) are issued for mining projects, measures taken by the Department of Fisheries and Oceans (DFO) to avoid issuing FAs, and the impacts of mining projects on fish habitat are the focus of this paper.

"No Net Loss" – DFO's policy objective for fish habitat

Under the federal *Fisheries Act*, "fish" includes (a) parts of fish, (b) shellfish, crustaceans, marine animals and any parts of shellfish, crustaceans or marine animals, and (c) the eggs, sperm, spawn, larvae, spat and juvenile stages of fish, shellfish, crustaceans and marine animals (Section 2). "Fish habitat" means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes (Section 34).

The government has set out its policy objectives, goals and strategies for the management of fish habitats in the *Policy for the Management of Fish Habitat*, which was tabled in Parliament in 1986 (available at http://www.dfo-mpo.gc.ca/canwaters-eauxcan/infocentre/legislation-lois/policies/fhm-policy/index_e.asp).

The policy objective for the management of fish habitats is a net gain of habitat for Canada's fisheries resources; specifically an increase in the natural productive capacity of habitats for the nation's fisheries resources to benefit present and future generations of Canadians. This policy is interpreted to apply to all threats to the productive capacity of fish habitats, including water pollution, acid rain, biological agents and any type of physical disruption.

The first goal of the policy is Fish Habitat Conservation – "maintaining the current productive capacity of fish habitats supporting Canada's fisheries resources, such that fish suitable for human consumption may be produced".

The Guiding Principle to achieve this first goal is "no net loss" whereby the Department strives "to balance unavoidable habitat losses with habitat replacement on a project-by-project basis so that further reductions to Canada's fisheries resources due to habitat loss or damage may be prevented". However, this objective is intended as a guide, "not to be interpreted as a statutory requirement to be met at



Gregor Beck

Sampling fish.

all costs and in all circumstances”². The policy continues that “(p)rofessional judgment and common sense applied in an informed, cooperative environment by personnel experienced in habitat management, combined with supportive research, will achieve no net loss of productive capacity in the majority of cases”. As will be elaborated below, common sense is in the eye of the beholder (the public may not have the same common sense as the mining proponent or the fisheries officer), solid research does not exist for all environments where fish habitat is damaged by mining projects in Canada and there is not agreement about what costs and circumstances justify habitat loss (if any losses are ever to be justified).

Considering habitat impacts on a project-by-project basis is a short-sighted approach to protecting Canada’s fisheries resources. What is the cumulative impact of isolated incremental developments on a watershed, on an eco-system and on fish habitat? This is a particular concern in remote areas where mining developments are accelerating – and the creation of infrastructure for one mine encourages further mine development. At what stage are the down-stream impacts on a species’ survival and productive capacity considered? DFO acknowledges this limitation in its *Policy for the Management of Fish Habitat* – and states that it is working with other agencies and other levels of government to implement integrated resource management procedures on an ecosystem

basis. An assessment of the proposed Tulsequah Chief mine in northern B.C. indicates that more work is needed to address this limitation:

“The cumulative effects assessment for fish and wildlife is non-existent. Allowing isolated incremental development without a full assessment of impacts, economic and cultural sustainability, ecological risk assessment, watershed effects of the road, encouragement of additional development in watershed (sic), and no mitigation proposed for habitat destruction and wildlife impacts constitutes the default of DFO, EC [Environment Canada] and Provincial statutory responsibilities.”³

All habitat is not created equal

DFO’s perception is that “all habitat is not created equal”. DFO considers the social, cultural and economic value of the habitat in assessing the level of protection given to fish habitat. How this is determined and who makes the judgment are sources of disagreement and conflict for communities in which fish habitat is threatened by mining development.

Fisheries departments in different regions use different “classification” systems in determining how to respond to a project that would affect fish habitat.

A Fisheries Officer in Ontario gave the classification of habitat as:

- Type 1 – critical fish habitat, destruction would have critical impact on productive impact
- Type 2 – general all purpose habitat
- Type 3 – very unproductive habitat, includes man-made habitat – e.g. concrete channels where fish are living

The Yukon Placer Authorization regulation describes five stream classifications:

- Type I – Salmonid⁴ Spawning Streams
- Type II – Salmonid Rearing Streams
- Type III – Streams with fish having significant use by First Nations, commercial, sport or domestic fisheries or contributing to biological diversity

2. Policy for the Management of Fish Habitat, p.7.

3. Letter from Amy Crook, Center for Science in Public Participation, to Herb Klassen, DFO Vancouver. July 15, 2004. Accessed at: <http://www.riverswithoutborders.org/Reports/CSP2%20comments.pdf>

4. The salmonid family includes trout, salmon, and char species.



Jamie Kneen

Contaminated fish habitat downstream from the abandoned Deloro Mine, Ontario.

- Type IV – Streams with no fish or streams with fish having no significant use by First Nations, commercial, sport or domestic fisheries or not contributing to biological diversity
- Type V – Other Streams

Fish habitat with a lower classification may not be considered as needing compensation when a project is undertaken. At Musselwhite Mine in northern Ontario, one fish-bearing lake was drained to create a tailings dam. A new wetland was created upstream from the mine as compensation for the lost lake. Monitoring has shown that there are pike, yellow perch, silver redhorse sucker and common white sucker in the new habitat. However, a wetland between the lake that was drained and neighbouring Lake Zeemel was not considered in the Environmental Assessment. Lake Zeemel is included on Schedule V of the Ontario Fisheries Regulations as a Fish Sanctuary with a year-round exclusion on fishing in its waters. The dam of the tailings pond is over the area where the wetland had been. In the past, during the spring, this wetland contained fish that were moving between the lakes and the river system. The wetland was part of the ecosystem – lost now under the tailings dam. The community feels that not all habitat was considered during the planning of the mine.

Later in this paper, similar concerns expressed by Innu of Labrador are described. Not all habitat was considered in the planning of INCO's Voisey's Bay Nickel project. The Innu negotiated a separate agreement with INCO, outside the parameters of the *Fisheries Act*, for what was classified as Type IV habitat.

"Sensitivity of habitat" is one axis on the Risk Matrix that is proposed for determining the residual effects of any proposed work or undertaking in the Environmental Process Modernization Plan that DFO recently launched. The sensitivity of fish and fish habitat is assessed as highly sensitive, moderately sensitive or low sensitivity – taking into account such factors as species, flow and thermal regime. The EPMP is discussed later in this paper.

Relocate, redesign, mitigate, compensate

In dealing with a project where the destruction of fish habitat may occur or where the existing habitat's productive capacity cannot be maintained as a result of the works, DFO has an hierarchical approach in dealing with the habitat to be affected. This hierarchy is presented in order:

- relocation – attempt to move the project of impact away from the habitat area

- redesign – try to design the project so the areas of impact are the least intrusive possible
- mitigation – undertake the project so the damages are neutralized as a result of implementation or construction approaches
- compensation – the policy states that this option should only be used when all others cannot be implemented. It is not an option for critical habitats or the release of deleterious substances. Compensation of impacts has a hierarchical option list:
 - i. create or increase the productive capacity of like-for-like habitat in the same ecological unit;
 - ii. create or increase the productive capacity of unlike habitat in the same ecological unit;
 - iii. create or increase the productive capacity in a different ecological unit;
 - iv. as a last resort, use artificial production techniques to maintain a stock of fish, deferred compensation or restoration of chemically contaminated sites;
 - v. financial compensation – although it is stated that habitat compensation does not include financial compensation, in the case of the Ekati diamond mine, financial compensation was accepted. Information on how this was calculated is provided below.

Implementing the Policy

The conservation and protection of fish habitat is the mandate of the Fish Habitat Management Programme (HMP), a division of the Department of Fisheries and Oceans (DFO). Some of the core activities of the programme include a review of works and proposals for adherence to the requirements of the Fisheries Act, the issuance of mitigation advice, and authorization and enforcement activities for compliance with legislation and policies.⁵ While HMP is responsible for the protection of fish habitat, there is no mandatory obligation in the *Fisheries Act* for proponents of development proposals (such as mines and the surrounding infrastructure) to approach DFO concerning their projects. As noted in DFO's 2002-2003 Annual Report: "However, to ensure that they are not in violation of the *Fisheries Act*, proponents voluntarily refer information about their projects to

determine if proposed development projects are in compliance with the habitat protection provisions of the *Fisheries Act*." With no obligation for proponents to contact DFO about their project, they could go ahead and work at their own peril. If they destroy habitat, they would be liable to prosecution. There is no mechanism to stop people from destroying fish habitat – except the threat of prosecution if caught. DFO uses a range of non-regulatory tools to ensure the conservation and protection of fish habitat such as public education, development of guides, integrated resource planning, etc.

However, proponents **do** approach DFO with their projects. In 2003/2004, DFO received 13,234 referrals, of which 496 were for mining projects (3.7%). Responding to referrals has in fact become the focus of the Habitat Management Programme, which is putting its resources into the front-end of a project – providing guidelines; giving letters of advice; reviewing Environmental Impact Statements; providing advice on relocation, redesign or mitigation measures; negotiating with the proponent; directing people away from causing HADD; pushing them away from causing harm. It involves a lot of desk work with the objective of getting the proponent to minimize impact of the project on fish habitat.

This "front-end work" is between the proponent and DFO staff. It does not include a mechanism for public consultation and input into the design of a project which might result in the destruction of fish habitat. A DFO Project Officer can review a proposal and, based on his/her own assessment, come to the conclusion that fish habitat will not be affected.

The "front-end work" includes a range of activities from answering enquiries by phone to providing "Letters of Advice". In 2003-2004, DFO provided advice to 8,548 proponents and others (others includes federal, provincial and territorial permitting agencies). Letters of advice list mitigation techniques to be used on the project and advise the proponent that if the advice is adhered to, an HADD will not occur and an authorization pursuant to S. 35(2) of the *Fisheries Act* will not be necessary.

An example of an activity for which a Letter of Advice might be provided would be the clearing of land. Clearing land (as an activity) does not in itself

5. *Fish habitat is everyone's business, Canada's fish habitat management programme*. G.A. Goodchild in *Fisheries Management and Ecology*, 2004, 11, 277-281.

destroy fish habitat but run-off from cleared land could enter fish habitat and destroy habitat. Silt fences would be a mitigation measure to prevent silt from entering the fish habitat and could be recommended in a Letter of Advice. The regional offices of DFO have issued a number of guidelines for various construction activities to avoid the destruction of fish habitat (available at http://www.dfo-mpo.gc.ca/canwaters-eauxcan/infocentre/guidelines-conseils/index_e.asp).

Martha Kostuch of the Friends of the Oldman River reviewed 1,400 Letters of Advice issued in June 2004, received through an Access to Information request. Her analysis revealed that while many of the letters are quite good and provide good suggestions for mitigation measures to avoid the destruction of fish habitat, some went beyond what is allowed by the law and “authorized” the alteration, disruption or destruction of fish habitat and proposed compensation measures to replace the lost habitat. Section 35(2)

Table 1a : Summary of Habitat Referrals Fiscal Year 2003-2004 ⁶

REGION	Work Categories				
	Aquaculture	Forestry	Instream Works	Land Use	Mining
Newfoundland & Labrador	18	14	136	206	31
Maritimes	20	72	252	40	1
Gulf	41	15	209	8	7
Quebec	9	0	41	13	6
Central & Arctic	2	40	1,234	246	199
Pacific	32	488	658	898	252
TOTAL	122	629	2,530	1,411	496

Table 1b : Summary of Habitat Referrals Fiscal Year 2003-2004

REGION	Work Categories				
	Oil & Gas	Roads	Shoreline Works	Water Mgmt	Other*
Newfoundland & Labrador	4	317	344	1	72
Maritimes	22	376	361	1	52
Gulf	1	164	188	2	20
Quebec	8	30	104	51	25
Central & Arctic	981	1,381	1,467	277	314
Pacific	27	437	669	137	213
TOTAL	1,043	2,705	3,133	469	696

6. DFO 2003-2004 Annual Report to Parliament, sourced at http://www.dfo-mpo.gc.ca/canwaters-eauxcan/infocentre/publications/reports-rapports/ann03/part2_e.asp#21 (June 13, 2005)

of the *Fisheries Act* should have been applied to these projects. Since Section 35(2) is a trigger under the *Canadian Environmental Assessment Act*, these projects should have been subjected to an Environmental Assessment.

In cases where the proponent determines that relocation, redesign or other avoidance measures are not feasible or practicable and the destruction of fish habitat is likely to occur, it is required to apply to DFO for a Fisheries Authorization (FA), as required under Section 35(2) of the *Fisheries Act*.

If issued, an FA contains legally enforceable conditions which require specific mitigation, compensation and monitoring activities. If conditions are not followed, the proponent may be found in violation of Section 35 of the *Act* and subject to fines or risk of imprisonment. In 2003/2004, there were 27 convic-

tions under Section 35(1) of the *Fisheries Act*. In cases where a fish habitat is destroyed WITHOUT it having been authorized by DFO, it is much more difficult to prosecute as DFO would have to legally prove that habitat was lost, using scientific proof that habitat was lost. However, DFO has prosecuted in cases where no authorization was issued and has had a relatively high rate of success.

The Canadian Environmental Assessment Act

The requirement to issue an Authorization pursuant to S. 35(2) of the *Fisheries Act* is a “trigger” under the *Canadian Environmental Assessment Act*. The federal environmental assessment process is applied whenever a federal authority has a specified decision-making responsibility in relation to a project – including

From A “Letter of Advice”

“I have reviewed the information package that you provided and I have also made a first hand inspection of the site earlier in September. I have the following comments. They are in relation to the *Fisheries Act*.

All works are of a relatively minor nature when if [sic] comes to the *Fisheries Act* in that they are repairs to an existing structure and therefore only require a “Letter of Advice” from the Department of Fisheries and Oceans. This is not a trigger under the *Canadian Environmental Assessment Act* and therefore does not require an environmental screening be carried out under the *Act* or that other federal departments get involved. Letters of advice do have mitigation measures associated with them to ensure a harmful alteration, disruption or destruction (HADD) of fish habitat does not occur. The Ontario Ministry of Natural Resources provides advice on any in-water work restrictions to protect fish.

.... Our “Blasting Guidelines” provide very clear advice on how to mitigate any effects on fish and fish habitat under these circumstances. These have been reviewed by the proponent’s blasting contractors and I have been assured that any potential problems will be mitigated, blasts will be

monitored to ensure the guidelines are adhered to and there will be not effects to both fish and fish habitat.”

...In summary all activities by (*name of proponent*) from a *Fisheries Act* point of view are of a minor nature and any potential impacts can be mitigated. I can understand the concerns of the citizens in the area with having this type of activity in the bay. However my feeling is that the proposal does not need to be subject to the *Environmental Assessment Act*.⁷

7. Letter from DFO, Sault Ste. Marie to Ontario Ministry of the Environment re Superior Aggregates Trap Rock Proposal – Michipicoten Harbour. September 25, 2003. Superior Aggregates Company (a subsidiary of Carlo Companies, based in the United States) retains the surface rights including sand, gravel and mineral rights on the 1000 acre property on the Lake Superior shoreline. This area has been designated as part of the Great Lakes Heritage Coast and thus targeted for environmental protection and eco-tourism. The proposed undertaking involves quarrying, blasting, crushing, washing and stockpiling of aggregate at a location on the shores of Lake Superior in Michipicoten Harbour near the Town of Wawa. The quarry site is bounded by the Michipicoten First Nation. Area residents are concerned that unmitigated development may potentially threaten lake water quality, air quality, fish and wildlife habitat, drinking water sources, future potential use of the Bay as a destination for adventure tourism, and enjoying the quiet use of their residential property. A Proposal to designate Superior Aggregates Company’s proposed trap rock quarry near Wawa, Ontario by regulation under the *Environmental Assessment Act* received 5734 comments – 4600 in favour of an *Environmental Assessment*. The Ontario Minister of the Environment determined that a designation regulation will not be made; the project will not be subject to an *Environmental Assessment*. Concerns will be addressed through the licencing and permitting process.

A Conviction Under Section 35(2)

A *Fisheries Act* authorization was issued for the Kemess South Mine, operated by Royal Oak Mines Inc., on condition that Royal Oak complete a comprehensive Fish Habitat Compensation Plan; however, a substantial portion of the plan was not implemented. Attempts by DFO to work with the company to have the habitat compensation completed were unsuccessful. Royal Oak was notified that it was in default of the compensation agreement and, following a 16-month-long investigation, was charged with 13 counts under the *Fisheries Act* habitat sections. Royal Oak filed for bankruptcy in 1999, and is now currently operated by Kemess Mines Inc. The receiver has worked with DFO to bring the mine into compliance with the *Fisheries Act* authorization. Most of the large capital portions of the compensation plan have now been completed. Monitoring the effectiveness of the work, the overall fisheries condition at the site, and adjusting the plan as needed, will continue for the life of the mine. In January 2001, Royal Oak pleaded guilty to depositing a deleterious substance (sediment) into fish-bearing waters, and was fined \$100,000.

— Reported in DFO's 2000-2001 *Annual Report to Parliament*.
Source: http://www.dfo-mpo.gc.ca/canwaters-eauxcan/infocentre/publications/reports-rapports/ann00/annex7_e.asp

Cut to the Present Day

Northgate Exploration is now the owner of Kemess Mines. The Mining Land Use Committee of the B.C. Wildlife Federation states that: "Northgate have proved to be good manager of the mine and certainly more environmentally conscious and open than its predecessor." But there are concerns about Northgate's expansion plans. An Environmental Assessment has been triggered for Kemess North. A major concern for First Nations affected by the mine expansion is the proposed use of Amazay (or Duncan Lake) for tailings disposal. Provincial officials have been lobbying DFO to support the destruction of the lake; B.C. Minister of Energy & Mines, Richard Neufeld, lobbied his federal counterpart responsible for fisheries and oceans to provide the necessary agreement allowing for destruction of Amazay (Duncan Lake). This is consistent with a statement from the B.C. Minister of State for Mining, Pat Bell, who in January 2005 had said he doesn't see any other alternative to using the lake: "It's definitely the logical choice", he said.

where a federal authority provides a license, permit or an approval that enables a project to be carried out that is listed in the Law List Regulations. Section 35(2) is included in the Law List Regulations; thus the requirement for a federal Environmental Assessment if a project is expected to cause HADD and DFO is approached for authorization to harmfully alter, disrupt or destroy fish habitat.

The purpose of environmental assessment is to:

- minimize or avoid adverse environmental effects before they occur
- incorporate environmental factors into decision-making
- identify possible environmental effects
- propose measures to mitigate adverse effects
- predict whether there will be significant adverse environmental effects, even after the mitigation is implemented.

The "decision-making" purpose of environmental assessment is a source of great frustration for the general public that is concerned about the environmental impacts of large-scale developments, such as resource extraction projects. For the public and many stakeholders, part of the decision-making process should be whether the project proceeds, not merely what mitigation or compensation measures are applied.

It is clear that a decision to "issue a permit or licence, grant an approval or take any other action for the purpose of enabling the project to be carried in whole or in part", such as issuing an authorization under S. 35(2) cannot be made until a decision has been issued as a result of an Environmental Assessment. This is stated clearly in the assessment of the Commission for Environmental Cooperation of North America in the *Factual Record: Oldman River II Submission*⁸: "(a) CEAA assessment determines

whether a project is likely to result in significant adverse environmental effects, taking into account any mitigation measures considered appropriate, and if so, whether such effects are justifiable in the circumstances. If they are not, a federal authority such as MFO (*sic*) cannot take any action, such as issuing an authorization under 35(2), that would allow the project to be carried out in whole or in part.”

What is less clear is whether and how a decision can be made that a project (in its entirety) should not be carried out as a result of the findings of an Environmental Assessment. This frustration was clearly expressed during the CEAA Five-year Review process in 2000. Kevin Head of the Innu Nation expressed concern about the predictability of Environmental Assessments. He reported the comments of a participant who had attended community workshops in Davis Inlet and Sheshatshiu, “Why should we go with the environmental assessment when the decision is already there? When a report comes out there are always problems.” Another participant said “If we understand the impacts of the mine, even if we express our views, the mine will go ahead anyway.” These community members were speaking about their experience with the EA of the Voisey’s Bay Nickel mine (see case study below). A source from DFO indicates that the “inherent value of EA should be viewed largely as a planning process; rarely does it function as a project refusal mechanism!”

Given that one of the purposes of environmental assessment is to propose measures to mitigate adverse effects, there is a question about what information is available and considered when DFO makes its decision based on an EA. Mitigation measures do not appear to be actually considered during the EA process, contrary to the stated purpose for an EA. Looking at the case of Tulsequah Chief, there’s acknowledgement that mitigation and compensation measures will be required – but DFO “anticipates reviewing detailed design plans... in support of a federal *Fisheries Act* authorization at a later stage of review”.⁹ The elements of a Mitigation and Compensation Plan are listed as needing to be completed before a Section 35(2) Authorization is given.

But then the Screening Decision states that “Fisheries and Oceans Canada, on behalf of DFO and TC, have determined that with the implementation of the proposed mitigation measures the project is not likely to cause significant adverse environmental effects”.

So the question is: are mitigation measures proposed during the EA process? Or just an acknowledgement that something needs to be done – and that will be dealt with during the permitting stage? It appears that those doing the EA are making a decision based on the promise that the proponent will develop and implement effective mitigation measures at the permitting stage.

Sections 36 & 42 – the exceptions to the rule

While DFO is legally responsible to Parliament for all sections of the *Fisheries Act*, Environment Canada (EC) administers those aspects of the *Act* in sections 36 and 42 dealing with the control of pollutants affecting fish as set out in a Memorandum of Understanding between DFO and EC. As with Section 35, the *Act* both protects fish (in this case from having deleterious substances of any type being deposited into water frequented by fish) **and** authorizes deleterious substances and total suspended solids to be deposited, as set out in regulations. The Metal Mining Effluent Regulations (MMER) (<http://www.ec.gc.ca/nopp/docs/regs/mmer/en/index.cfm>) set out the conditions under which the owner or operator of a mine may deposit deleterious substances and total suspended solids (TSS) into water frequented by fish.

In addition to setting out the authorized limits of nine (and only nine) deleterious substances and TSS, the regulations include a schedule of permitted “Tailings Impoundments Areas (TIA)” – water bodies (i.e. lakes) where the deposit of tailings is authorized – basically the loss of fish habitat by smothering associated with tailings. There are currently five lakes listed on Schedule 2 of the MMER. For a lake to be authorized to be used for tailings deposit, the approval of the Governor in Council is required. As this is a trigger under CEAA (listed on the Law List), an Environmental Assessment is required before a TIA

8. http://www.cec.org/files/pdf/sem/97-6-FFR_en.pdf

9. CEAA Screening – Supplemental Report. Redfern Resources Ltd’s Proposed Tulsequah Chief Mine project in Northwestern BC. Prepared by Fisheries and Oceans Canada. December 3, 2004.



Aerial view of compound and tailings, Prairie Creek Mine, NWT.

is approved. There are currently six or seven mining projects under development that would likely be requested to be listed on Schedule 2 – i.e. use a water body frequented by fish for the disposal of tailings. Each time one (or more) of these projects is added to Schedule 2, the MMER would need to be amended, with approval from the Governor in Council and Cabinet.

Changes to the MMER are currently being considered, including the requirement for a compensation plan for habitat lost as a result of dumping tailings into a lake or stream. This change is not expected before September 2006, although pressure is being exerted on the Environment Canada to accelerate the process.

Tailing Impoundment Area – a project in development

Aur Resources is developing a copper-zinc property in central Newfoundland – the Duck Pond project – which is planned as a 1,500 tonne per day mining/milling complex. The Tailings Management Area for the mine comprises Trout Pond, a part of the Trout Pond watershed, and a portion of the tributary to Gill's Pond Brook. The TMA would require dams at both the north and south ends of Trout Pond for tailings placement and water cover management. A small dam will be required on the tributary to Gill's Pond Brook to form a sedimentation basin for treated effluent from the tailing pond. The Environmental Effects Assessment determined that there are brook trout and Atlantic Salmon in these water bodies but nevertheless concludes that the residual environmental effects on water quality and fish and fish habitat are evaluated as minor (not significant).

Aur Resources is asking to have its tailings system included under Schedule 2 of the MMER. This would entail amending the MMER – requiring approval from the Governor in Council and Cabinet. Aur Resources is pressuring Environment Canada for approval of the TIA so it can commence operations in 2006. However, the recommendation to include the Duck Pond project on Schedule 2 would come from DFO. EC is expecting a Letter of Instruction from DFO to have this TIA added to Schedule 2. It would be the Minister of Fisheries and Oceans who would submit the changes to the MMER

to Cabinet for approval.

Aur Resources may have a financial incentive to start operations by June 30, 2006 – if commercial production does not commence by June 30, it is required to pay an annual advance royalty payment of \$150,000 to Norex (Noranda Mining and Exploration Inc.), from whom Aur acquired the property in 1999.

DFO's 2002 Annual Report stated that “during 2002-2003, consultations between the new proponent, Aur Resources Inc., and DFO resulted in the finalization of the quantity and quality of fish habitat that would be impacted i.e. 28 units (2,800 m²) of spawning and rearing riverine habitat and 29 hectares of lacustrine habitat equivalent units.” Aur's HADD compensation plan received approval from DFO in February 2005 – it expects to receive the Certificate of Authorization to proceed with the HADD before the third quarter of 2005.

No Net Loss – are we meeting the objective?

For each project or undertaking for which an Authorization pursuant to S. 35(2) is issued, two sets of data are needed to determine if DFO's policy objective of “No Net Loss” is being achieved – how much habitat was lost as a result of the project and how much habitat has been created through the compensation plan. This assumes that we know enough about the affected fish habitat to make these judgments in the first place, that adequate baseline data exists about the status of habitat prior to the commencement of the project, that comparative data is available to track the

impact of the compensation plan, and that a monitoring mechanism is in place and being followed. Research by DFO indicates that in most cases, there aren't baseline studies against which to monitor. It is therefore difficult to do either effectiveness monitoring – as there are no reference sites to check out – or comparison monitoring to assess habitat status before/after the project is in place.

DFO is currently undertaking a major review of compensation compliance and the effectiveness of monitoring programs to achieve the conservation goal of no net loss of productive capacity of fish habitat in Canada. The first of several papers to be published based on this research appears in the February 2005 issue of *Fisheries*¹⁰. An analysis of 10 studies published between 1986 and 2002 revealed that in the 103 compensation projects reviewed, 493,205 m² of fish habitat was restored to offset habitat impacts totaling 1,142,648 m². More than a third of the compensation projects assessed by the 10 studies were determined NOT to have achieved “no net loss (NNL)”. This review of past studies by DFO concludes that: “It is clearly difficult to achieve NNL when replacing only a fraction of the habitat lost on a project-by-project basis”. The authors of the review continue: “This should be cause for concern as these results stem from only 4% of the total number of projects that have been authorized under the Fisheries Act.” Most of the compensation projects assessed were the result of impacts to estuarine and riverine in-channel habitats, primarily related to forestry and urban development activities. There is no indication whether any mining



Don Blake

Stream crossing, Voisey's Bay.

projects were included in the study sample.

Findings from this first segment of DFO's research into compensation monitoring shows that:

- half of the compensation projects assessed had compensation areas that were smaller than the HADD areas;
- of the 103 projects assessed, post-construction monitoring of the compensatory habitat was required for 52 of the projects. The mean duration of the monitoring period was 3.6 years. Harper and Quigley's article in *Fisheries* cites research from three other sources which indicates that most compensatory habitats will require 5 to 20 years of monitoring before their long-term functionality and sustainability can be ascertained;
- in the cases where compensation projects were deemed to have achieved no net loss, this assess-

Sample of a Monitoring Program requirement:¹¹

“BHP shall set up a monitoring system satisfactory to DFO in order to assess the effectiveness of the Stream Habitat Compensation Program, and more particularly, every open water season for a period of 10 years will perform the following:

- a) assess the physical stability of the created habitat by using aerial photography and/or ground surveys;
- b) conduct biological evaluations to determine the success of fish habitat structures;
- c) provide DFO with a full written report, including all relevant documents, data and photographs by December 31 of that year.”

11. Fish Habitat Compensation Agreement between DFO and BHP Diamonds Inc. dated December 17, 1996. Available at <http://www.monitoringagency.net/website/key%20documents/Fish%20Habitat%20Compensation%20Agreement.pdf>

10. A Comparison of the areal extent of fish habitat gains and losses associated with selected compensation projects in Canada, Harper, D. J. and Quigley, J.T. February 2005. Vol. 30 No 2. Available at <http://www.fisheries.org/html/fisheries/F3002/F3002p18-25.pdf>

As part of the Ekati Diamond Project, BHP Billiton is conducting open pit and underground mining of kimberlite pipes. The Project will directly affect 12 lakes within the claims block. Six lakes (Panda, Misery, Koala, Fox I, Alexis and Leslie) will be dewatered to gain access to and exploit the underlying kimberlite pipes, one (Airstrip) is to be dewatered to get aggregates for construction, four (Long, Brandy, Willy and Nancy) will be filled with process plant tails and one (West Panda) will be covered by a waste rock dump. In addition, a number of interconnecting and head water streams associated with the above lakes will be diverted.¹²

Ekati is one case in which financial compensation was accepted for the loss of lake habitats. The proponent initially proposed building a dam across Paul Lake, thereby raising the water level. This would have been compensation for the loss of Leslie Lake. However, a fisheries biologist advised that the new habitat would result in an increased level of mercury in the fish. The alternative, which forms part of the Fish Habitat Compensation Agreement, is that the proponent, BHP Billiton, provide DFO with \$1.5 million (subsequently increased to \$2 million) over five years for habitat development and research. The amount was calculated based on the anticipated cost of building a dam across Paul Lake – reported in *Hypothetical Lake Replacement/Habitat Enhancement at Paul Lake, 1996*. It doesn't relate in any way to being able to compensate for the loss of the lake habitats – since no one had any idea what the loss of fish habitat would be.

A member of the Independent Environmental Monitoring Agency feels that the money has been “pissed away”. Some money has been used to examine the situation at Stark Lake (near Lutsel K'e) and for Métis to do a study of Peerless Lake near Yellowknife. The rest of money has gone to consulting companies for lake restoration work. There was no community consultation on compensation measures – the IEMA member's feeling is that the communities would have preferred it if the funds had been given to the communities, rather than being frittered away for supposed habitat restoration.

The acceptance of the Panda Diversion Channel

(PDC) as compensation for the loss of stream habitat was circumstantial. As the channel was about the same length as streams that were being lost, DFO agreed to accept the PDC as compensation. As with the loss of lake habitat, there was no calculation on how much stream habitat was being lost – the knowledge didn't (and doesn't) exist.

In considering the impact of the mine on fish habitat, the downstream and long-term impacts were not considered. While there is a compensation monitoring plan in place, it doesn't consider what it will be like in 25 years when the mine is being closed and the impact of water flow on fish habitat when the pits are being refilled.

Under the *Environmental Agreement* negotiated in 1997 between the Government of Canada, the government of the Northwest Territories, and BHPB Diamonds Inc., the Independent Environmental Monitoring Agency was established to monitor the environmental management activities of BHP Billiton Inc. and of the government regulators and to work with the company and the regulators to help address issues identified by their Aboriginal members. The Agency publishes an Annual Report, both as a technical report and a Plain English version. Documentation is available on the Agency's website at <http://www.monitoringagency.net/>.

The Agency's reports have tracked fish productivity and survival in the PDC since its construction in 1997. In its most recent report (2003-2004), it determined that: “The channel continues to provide spawning and rearing fish habitat for arctic grayling at levels approaching those of the natural streams in the Ekati region. Not yet evident to us is the survival rate of grayling fry that over-winter in Kodiak Lake after rearing in the channel.” The report also notes an issue of egg survival rate – the fecundity of Kodiak Lake and PDC spawners was lower than that of grayling populations elsewhere in northwestern Canada, Montana and Washington State. The existence of baseline data and the Independent Environmental Monitoring Agency ensure that monitoring does happen – and the impacts can be assessed. Unfortunately, most mines do not have access to such information and monitoring capacity.

12. Authorization for Works or Undertakings Affecting Fish Habitat, issued to BHP Minerals. January 7, 1997. Available at <http://www.monitoringagency.net/website/key%20documents/Fisheries%20Authorization.pdf>

ment was based on qualitative file reviews and compliance assessments; few were based on the quantification of the net change in productive capacity. DFO concludes that this lack of quantitative studies is a cause for concern, as it “unquestionably constrains DFO’s ability to adaptively manage its habitat management program”.

- There is a lack of scientific studies examining the effectiveness of habitat compensation measures and habitat management decisions taken to conserve fish habitat.

Field workers with DFO contacted for this paper reported that a monitoring plan is a required part of each Fisheries Authorization. However, the results of DFO’s own research contradict this statement – as noted above. As well, other research being undertaken by DFO shows that only 43% of proponents are compliant in submitting monitoring reports. Of the mining projects reviewed in another phase of DFO’s research (6 of 124 projects reviewed), there was fairly high compliance with proponents providing quantitative monitoring reports.

There is no set ratio used for determining how much habitat needs to be created to compensate for the loss of habitat. The location of the habitat, type of fish whose habitat is being affected, and the lag time required for the compensatory habitat to become functional, are factors that are considered in setting the gain:loss ratio. For example, since brook stickleback can live in almost any habitat, a 1:1 compensation should guarantee no net loss. However, since there is less knowledge about brook trout and the type of habitat they require to survive and be productive, a higher ratio of compensation (2:1, 4:1, or even up to 10:1) would be required in a compensation plan. By creating more habitat than was lost, there is the expectation that somewhere in the new habitat brook trout will be able to survive and be productive. However, without quantitative data over an extended period of time to assess the effectiveness of habitat compensation, it is impossible to determine whether these measures are being successful. Harper and Quigley recommend: “Given our findings and the uncertainties associated with measuring productive capacity, resource managers should consider adopting a precautionary approach and increasing minimum required ratios to 2:1 to increase the likelihood that

NNL of productive capacity will be achieved.”

For northern Canada, the location of significant mining exploration and exploitation, the science doesn’t yet exist for determining how to meet the no net loss objective. DFO is currently undertaking a study to fill the void about fish habitat and fish productivity in a northern environment in order to have better science on which to base decisions for diamonds, oil sands, and placer mining. It recognizes that it doesn’t have the same level of knowledge about fish habitat in the north as it has for southern Canada, that there is still much to know about the biology of Canada’s north, the implications of climate and habitat change to aquatic organisms, and the appropriateness and adequacy of compensation restoration and development activities. The research will be available later in 2005. DFO hopes the report will draw attention to the deficiencies in its understanding of the ecology of certain organisms and thereby help guide research and assist habitat management. Despite the lack of understanding, authorizations pursuant to S. 35(2) are still being issued, mines are going into production, and habitat is being lost.

Stream-crossings

Before you even reach a mine site, there are significant opportunities for fish habitat to be altered and destroyed. To gain access to the mine, roads are constructed resulting in numerous stream and river-crossings with the potential to cause significant impact on fish habitat.

The proposed 150 km road to the Galore Creek (Novagold Resources Inc.) gold-silver-copper project in Northwestern British Columbia would require 222 stream-crossings. At 134 of these crossings, there are fish present. The proposed road would parallel the Stikine and Iskut Rivers and would cross the streams and rivers flowing into the Stikine. The Stikine is a mainstem spawning ground – i.e. salmon spawn in the gravels of the river (not in the head lakes).

Redfern Resources, the owner of the proposed Tulsequah Chief project, a zinc-copper-silver-gold mine in Northwestern British Columbia, has included a 162 km mine access road in its plans. According to its Environmental Impact and Mitigation Plan, the road includes 69 stream crossings. Their maps identify 268 culverts or bridges in total along the preferred road route, which includes sites that may not be



Don Blake

Stream crossing, Voisey's Bay.

defined as streams but require a structure to pass water at some times of the year.¹³

The results of a DFO study, *No Net Loss of Fish Habitat: An Audit of Forest Road Crossings of Fish-bearing Streams in British Columbia, 1996-1999*¹⁴, do not bode well for fish habitat impacted by mining roads. The study was undertaken to determine if “no net loss” was being achieved by applying the *Forest Practices Code of British Columbia* and more specifically the draft *Stream-crossing Guide for Fish Streams*. A total of 46 stream crossings were audited – 12 corrugated metal pipes (CMPs), 16 log culverts (LCs), 12 bridges and 6 deactivation crossings. Impacts on fish habitat included loss of stream habitat due to encroachment, loss of benthic habitat due to sediment inundation or non-embedded corrugated metal pipes, loss of riparian habitat due to the crossing structure, loss of riparian habitat due to the road and right-of-way, or loss of potential up-stream habitat due to an impassable crossing. The results showed an average total loss of habitat of 708.5 m² for CMPs, 414.2 m² for LCs, 575.4 m² for bridges and 352.5 m² for deactivated crossings. Four of the CMP crossings were impassable resulting in a 6 km loss of potential up-stream habitat. The study notes that in some cases, the improperly implemented sediment control techniques had the potential to cause more damage to fish habitat than if none were applied at all.

The study concluded: “Knowledge of the impacts of stream crossings on fish habitat are well established, as are the best management practices to mitigate these impacts. Despite this knowledge, there is a

continued lack of compliance with fish habitat protection legislation and policy with regards to stream crossings. ... No Net Loss of fish habitat cannot be achieved with current stream crossing practices. A greater degree of fish habitat protection must be achieved on post-FPC stream-crossings, underscoring the need for significantly increased monitoring and maintenance of stream crossings and enforcement of environmental legislation.”

As follow-up to this study, the *Fish-stream Crossing Guidebook* (<http://www.dfo-mpo.gc.ca/Library/266115.pdf>) was updated and published in 2002. The B.C. Ministry of Energy and Mines and DFO were part of the multi-agency steering committee that prepared the guide. The guidebook provides users with “technical, statutory reference and process guidance for selecting and designing fish-stream crossings on forest roads (as well as mineral and petroleum access roads) that should (1) avoid harming fish and fish habitat and (2) provide fish passage at stream crossing sites.” It outlines a decision-making matrix for selecting the type of new installations acceptable for fish-stream crossings, considering habitat type (critical, important, marginal) and stream gradient. It also defines the conditions under which installation can proceed without agency approval or authorization. It remains to be seen how effectively mining proponents use the guidebook in their road construction activities.

But even with “Best Management Practices” in place, problems can arise if risks are not adequately or correctly assessed, if baseline fisheries resources are not properly determined, or if correct mitigation measures are not selected. A review of the adequacy of the assessment of fisheries impacts of the proposed access road to the Tulsequah Chief Project by an independent fisheries biologist came to a very different conclusion than did the proponent, Redfern Resources, and subsequently DFO.

13. *Review of the Proposed Tulsequah Chief Mine Access Road – fisheries issues*. Prepared by Ecofish for the Transboundary Watershed Alliance. October 21, 2004.

14. Available at <http://www.dfo-mpo.gc.ca/Library/247265.pdf>



Mark Connor

Shazah Slough, Taku River watershed.

Until May 20, 2005, Redfern Resources Inc., a Vancouver based junior mining company, was actively working to re-open the Tulsequah Chief mine, a zinc-copper-silver-gold mine in North-western British Columbia. The project has been put on hold, due to preliminary results from a feasibility study which showed high construction and operating costs and a reduced mineral resource estimate.

The project has been the source of considerable opposition from the Taku River Tlingit First Nation and environmental organizations. A major source of concern is the impact of a 162 km access road into the heart of the Taku watershed wilderness which would adversely affect fish and wildlife habitat as well as traditional land use by the Tlingits. Politicians, fishers and environmentalists in Alaska have also raised concerns about the transboundary impacts of the project on rivers and fish habitat in Alaska. Upon hearing of the delay of the project, Representative Beth Kerttula (Democrat-Juneau) said she would look into the renewed possibility of an international accord to undertake joint studies and planning in the Taku so that any developments

protect its key values. A report in a Juneau newspaper states that “so far, Canadian officials have rebuffed invitations from U.S. officials to initiate those discussions”.

While project development is temporarily on hold, the company is hoping to obtain Federal go-ahead in order to seek the necessary permits to operate the mine, when and if it decides to recommence operations. DFO officials put forth a recommendation that the mine be approved in early 2005, stating that “with the implementation of the proposed mitigation measures, the project is not likely to cause significant adverse environmental effects”. That recommendation was rejected by over 99% of respondents during the public comment period during the Environmental Assessment process. The decision on the EA remains stalled within DFO.

The assessment that the project “is not likely to cause significant adverse environmental effects” is also greatly at odds with studies completed by independent scientists. Ecofish Resources Ltd. was contracted by the Transboundary Watershed Alliance to examine the proponent’s work and DFO correspondence to determine whether the impacts of the

access road of the proposed Tulsequah Chief mine had been properly identified and addressed within the context of the *Fisheries Act*¹⁵. Their report concludes that “adequate baseline data have not been collected, the impact assessment and mitigation measures are inadequate, and that as designed this project is likely to lead to Harmful Alteration, Disruption or Destruction (HADD) of fish habitat and Fisheries Act violations impacting an important, shared commercial and subsistence fishery.”¹⁶ Their field visit indicated that “the road design plan is not consistent with the Fish Stream Crossing Guide used in British Columbia.... In 2 of 3 sites we examined, a HADD of fish habitat is likely. ... Not only are stream crossing prescriptions in some cases incorrect, the proximity of the road to the stream channel and channel slope indicates that there is a high risk of sediment pollution and impacts on fish habitat.”

At one site examined, Ecofish’s inspection confirmed the moderate value fish habitat, as identified by the proponent, and agreed that the bridge crossing proposed for the site appeared appropriate. However, the risk of accidents and failure to maintain the road or sediment controls properly had not been considered in a manner that integrates the potential risk with those of other hydraulically connected sites. At a second site examined by Ecofish, no examination or quantification of fish habitat had been done by the proponent. Ecofish concluded that the construction of a 1200 mm diameter culvert, as proposed for this stream-crossing, would result in the destruction of fish habitat.

Ecofish raised concerns about the cumulative effect on fish habitat of 253 culverts and 15 bridges along the 162 km road – specifically the effect that sedimentation at multiple hydraulically connected stream crossings may have on downstream aquatic habitats. They also noted that no risk assessment of the impact of extreme events (such as an earthquake) or accidents had been completed. Based on their assessment and analysis of habitat quality which showed that excellent habitat is present and their assessment that the proposed road design

poses significant risk of impact to aquatic habitat, Ecofish concluded that there are significant potential impacts. This contrasts starkly with the impact assessment of the proponent who concluded there will be no net loss and residual impacts will be negligible.

DFO’s conclusion concurred with that of the mine proponent in the CEAA Screening – Supplemental Report (December 3, 2004).

“For the purpose of this EA, DFO found that, after taking into account the implementation of proposed mitigation measures appropriate to the project, any environmental effects which were:

- low magnitude;
- short duration and frequency;
- confined to the vicinity of the Project, and
- reversible;

are not likely to be significant... Therefore, DFO has determined that there are no cumulative environmental effects.”

In the Supplemental Report, DFO concludes that the residual effects of fish passage at stream crossings are “0 – None – no environmental effects are anticipated”. The discussion for this VEC (Valued Ecosystem Component) states:

“Redfern has clarified that they would apply Fish Stream Crossing Guidebook (Forest Practices Code, March 2002) to road crossings of all fish streams, with the assumption that all streams are fish-bearing unless demonstrated otherwise.

Analysis: DFO anticipates that review of detailed crossing designs needed at an authorization stage of review would confirm that DFO’s fish passage and habitat objectives would be met at stream crossings. This would also meet Pacific Salmon Treaty obligations in this regard.”

As noted above, following the Fish Stream Crossing Guideline might meet the objectives *IF* risks are adequately or correctly assessed, *IF* baseline fisheries resources are properly determined, and *IF* correct mitigation measures are selected. But based on an assessment by an independent fisheries biologist, these conditions do not exist for this project. DFO has come to its conclusion based on

15. See also *Environmental Effects of a Mining Road through the Traditional Territory of the Taku River Tlingit First Nation: A critique of proposed management plans for a new mining road*. David B. Botkin, Ray Demarchi, Dale Frost, Anne Gunn, David Marmorek, Denis O’Gorman, Shawn Riley. Accessed at <http://www.fw.msu.edu/people/riley/Final%20Redfern%20Report.pdf>.

16. Letter from ECOfish Research Ltd. to the Transboundary Watershed Alliance, October 21, 2004. Available at <http://www.riverswithoutborders.org/Reports/Tulsequah%20Chiefs%20-%20Ecofish.pdf>.

faulty information, on general plans, and on trust that the proponent will do the right thing when it develops its detailed plans. These detailed plans would be reviewed at the permitting stage where there is little opportunity for stakeholder scrutiny.

DFO takes a similar approach regarding the fish habitat impacts from installation of a mine effluent discharge system and the infilling of the Tulsequah River floodplain habitat for the construction of a causeway. Redfern's preferred discharge systems could entail "trenching 3 m deep across much of the Tulsequah River floodplain. As this would transect fish habitat, DFO's Policy for the Management of Fish Habitat would apply, as would its principle of No Net Loss of fish habitat. If a HADD was anticipated during construction, then offsetting habitat compensation would be required under a *Fisheries Act* authorization. Potential compensation likely could be developed in the Tulsequah system, with details to be developed at a subsequent stage of review. ... DFO anticipates reviewing detailed design plans." The Residual Effects of this intervention are assessed as "1 – Low – environmental effects are mitigated such as there are no residual effects and therefore not significant". It is explained that "the determination of the rating was based on the careful examination of the mitigation proposed and best professional judgment of the efficacy of the proposed mitigation measures."

If DFO hasn't yet seen the design plans and

doesn't yet know whether habitat will be altered or destroyed, how did it come to the conclusion that the discharge system would have low residual environmental effects?

The proposed causeway also has a Residual Effects assessment of 1 (Low). The assessments states that DFO is confident that impacts of fish habitat associated with the causeway construction can be mitigated.

It is curious that DFO has come to the conclusion that the proposed Tulsequah Chief mine has no cumulative environmental effects when at the beginning of 2004, it was waiting to hear from Redfern Resources regarding 115 substantive, outstanding, federal environmental concerns. As stated in a letter from Peter Stoffer, M.P. to the Honourable Geoff Regan, Minister of Fisheries on January 12, 2005: "I have no indication that anything changed since you made your astute appraisal of the road route back in February, except the position taken by your officials". There is concern that DFO's environmental assessment process was influenced by high-level lobbying¹⁷. In May 2004, a former DFO deputy minister met several high-level DFO officials on behalf of Redfern Resources. After this meeting, "things changed dramatically and suddenly the DFO shifted its position on a number of key aspects of the assessments and allowed it to go forward in a very accelerated way".¹⁸

17. "Fisheries Minister Regan urged to kill B.C. gold mine plan", *The Hill Times*, Monday March 14 – March 20, 2005.

18. David MacKinnon, Transboundary Watershed Alliance, quoted in *The Hill Times*, op cit.

Case Study – Voisey’s Bay Nickel Company

In September 1993, the Voisey’s Bay nickel deposit was discovered on the eastern edge of a vast expanse of northern wilderness, 350 km north of Happy Valley-Goose Bay in Labrador. In 1996, Inco Ltd. acquired the rights to the Voisey’s Bay property. Voisey’s Bay Nickel Company (VBNC) is a wholly-owned subsidiary of Inco Ltd. and is responsible for developing the Voisey’s Bay project. VBNC proposes to mine nickel, together with some copper and cobalt; process the ore in a mill on site to produce concentrates; and transport the concentrate by ship to another location.

In February 1996, Daniel Ashini, Director of Innu Rights and Environment expressed concern that the project was moving too fast for the people who it is affecting most. “We don’t believe that the company has enough baseline data or has a clear enough picture of how the whole project will proceed to ensure that fish and wildlife will not be negatively affected by the proposed infrastructure. In fact, we believe that the proposed road and airstrip will result in significant harm to fish and fish habitat, and because of this, we argue that this proposal should trigger the Canadian Environmental Assessment Act.” He argued that the proposed infrastructure was designed to get the mine off the ground as soon as possible with as little interference from government as possible. The proposed airstrip was shorter than what would be needed for the mine, but because of the impacts that the larger airstrip will have on fish habitat, the company made it a bit shorter in an attempt to avoid triggering the federal EA process.

However, an EA was triggered. In January 1997, the federal and provincial governments, the Labrador Inuit Association (LIA) and the Innu Nation signed a memorandum of understanding (MOU) setting out how the environmental effects of the proposed Voisey’s Bay Mine and Mill Project would be reviewed. The Department of Fisheries and Oceans was the lead agency for the EA, which was required due to “the harmful alteration, disruption or destruction of fish habitat by means of draining or altering the water levels of a water body that require the authorization of the Minister of Fisheries and Oceans under subsection 35(2) of the Fisheries Act or authorization under regulations made by the Governor in Council under that Act”.

A five-person panel was established to carry out the review. Public meetings were held in the spring of 1997 and the late fall of 1998. The Panel presented its report on April 1, 1999 and concluded that the Project be allowed to go ahead, as long as the other recommendations in the report were made part of the conditions of approval.

Concerning fish habitat, the Panel determined that the Project would affect many streams and lakes close to the site through the construction of the two tailings basins, extraction of water for the mill, and the need to divert or alter streamflows. Other influences would include stream crossings, erosion and sedimentation, and dust.

The Panel concluded that VBNC’s proposed mitigation measures should adequately protect fish habitat in Reid Brook. If monitoring results showed unpredicted effects, the Panel believed that VBNC could and should take additional measures. The Panel was concerned, however, about the possibility that more fish habitat could be affected than predicted if VBNC was not able to maintain at least minimum flows of water in all streams affected by the Project. The Panel also did not receive any information about how VBNC would replace the fish habitat that would be destroyed by the construction of the tailings basins.

The Panel recommended that VBNC prepare a fish habitat protection report with details on all mitigation measures, and that DFO provide opportunities for the public to comment on VBNC’s habitat replacement proposals. Other recommendations addressed preparation of a special environmental protection plan for Reid Brook, the way in which DFO should apply the no net loss policy to this Project, and monitoring and related studies in Reid Brook and the wider Kogluktokoluk-Ikadlivik-Reid Brook system.

Compensation Plan

The Impact Benefit Agreement (IBA) signed by the Innu Nation and the Labrador Inuit Association with VBNC required community consultation in the development of the compensation plan for the loss of fish habitat. As well, within Newfoundland and Labrador, public consultation is a requirement prior to DFO approving/accepting a compensation plan. Despite this provincial requirement, there is a

feeling in the community that without the consultation requirement set out in the IBA, the community would NOT have been consulted. There was a perception in the community that there was a sense of panic and urgency in getting the compensation plan in place.

This perception was, in fact, true. During the development of the Fisheries Habitat Compensation (FHC) Agreement, DFO, VBNC, Innu Nation and the Labrador Inuit Association recognized that there was insufficient time to undertake meaningful consultation of the compensation plan with aboriginal communities. Consequently DFO incorporated a “Consultation” clause as Section I of the FHC Agreement to ensure that VBNC undertook consultation with the LIA and the Innu Nation regarding the fish habitat compensation program. The “Consultation” clause also ensured that the fish habitat compensation plan negotiated between DFO and VBNC may be subject to change and amendment after review by the Innu Nation and LIA.

A draft compensation plan was presented in March 2003 for community consultation, two months after discussions began with DFO. The company concluded the fish habitat compensation agreement with DFO for the use of Headwater Pond as a tailings disposal site and for stream diversions in July 2003. The Letter of Authorization from the Department of Fisheries and Oceans in 2003 require the relocation of fish from Headwater Pond to a fishless pond and stream enhancement project in Reid Brook. The company also received 14 Letters of Advice from DFO in 2003 – concerning stream diversions, culvert installations, sewage outfall, permanent wharf construction. The community signed onto the compensation plan in the spring of 2004 and implementation began in August 2004.

It is questionable how effective the “consultation” clause has been in providing input from the

two First Nations groups. Staff at Innu Nation indicate that the community still has several concerns about the company’s compensation plan. They are skeptical that the relocated fish will be able to survive in a “fishless pond”. There must be a reason why there were no fish in the pond in the first place!

While DFO had similar concerns, the relocation of fish was allowed in the FHC Agreement. In negotiating the FHC Agreement, DFO directed VBNC to illustrate Pond 61’s ability to maintain a fish population by undertaking various baseline studies including but not limited to a benthic invertebrate study, a primary productivity study and a water quality survey. Further, VBNC was advised that approval to transfer Headwater Pond fish into Pond 61 would not be granted should the results of these baseline studies conclude that Pond 61 could not sustain a viable fish population. Despite the community’s concerns, the company started relocating the fish in August 2004. Was the FHC Agreement in fact subject to change and amendment to reflect First Nations’ concerns? What negotiating power did they have in dealing with DFO and the company?

The community was also concerned that only Types I - III habitat was considered for compensation. Type IV (see definition – box) was not proposed for compensation. The community questioned how these streams fit within a larger ecosystem and what impact their alteration or destruction would have on the productive capacity of fish. The Innu Nation and the company have signed a separate agreement, outside the DFO Fisheries Authorization, concerning the destruction of 400 metres of Type IV habitat created by the construction of a new airstrip.

In the compensation plan, VBNC proposed creating new Types I-III habitat out of unaffected Type IV habitat, an engineered solution. It proposed

Type IV Habitat – compensation not needed?

In Newfoundland and Labrador, Type IV habitat is characterized by steady currents < 0.15 m/s, depths variable, often 1 m or greater, substrates comprised of soft sediments (i.e., sand or silt) and aquatic macrophytes often present; poor salmonid rearing habitat, no spawning capability, but provides shelter and feeding habitat for larger, older salmonids.

changing stream bed types, putting in logs to recreate pools, etc. in order to create new habitat that would support fish spawning and rearing. The community wondered why Type IV habitat, which wasn't being affected by the mine, should be altered. The perception was "if it's not broke, don't fix it" – don't play around with yet more fish habitat. Innu Nation and Labrador Inuit suggested that money be spent on a fisheries survey research project, involving Innu and Inuit fisheries guardians. This sugges-

tion was not supported by DFO, although VBNC supported it. The final agreement was to restore degraded fish habitat in areas of Labrador used by the Innu Nation and the Labrador Inuit Association. Community contacts indicate this includes areas near forestry roads and military bases where habitat had been damaged/degraded by previous developments, with the objective of making this habitat more productive. Work will begin on this rehabilitation in summer 2005.

The Way Ahead

Smart Regs & Environmental Process Modernization

In undertaking this research, we have identified a high level of frustration with DFO's management of fish habitat and its application of the "No Net Loss" policy. Based on the case studies examined in this paper, we have shown that guidelines (as a stand-alone regulatory mechanism) are not effective if not properly

followed; that insufficient monitoring has been done to determine whether the objective of "no net loss" has been achieved; and that decisions are being made without thorough scientific knowledge.

There is frustration that DFO is not following the intent of the Environmental Assessment process. There is an excessive reliance on Letters of Advice, some of which are clearly a means to avoid triggering an Environmental Assessment. Where an EA is triggered, there are examples of project splitting



Stream crossing, Voisey's Bay.

and restrictive scoping determinations. Mitigation and compensation measures are considered at the permitting stage – after a decision has been made through Environmental Assessment. Independent biologists' review of mining companies' environmental reviews raise serious questions about the reliability of informa-

tion that DFO is using in making its determinations and recommendations during the EA process.

Changes are needed at DFO to improve regulatory oversight, to ensure that regulations are followed, and to ensure that decisions are based on sound scientific knowledge. But the changes being proposed in line with the federal government's "Smart Regulations" initiative will only exacerbate the problems we have identified.

"The ideal case of regulation is that science provides reliable assessment of harms and benefits and we can then make a rational choice about what values we are willing to trade off for others (eg. health and economic benefits) or what measures will ensure there is no risk to certain values. In the real world, regulatory science rarely provides this kind of certainty: uncertainties of various kinds are endemic to risk assessments, and regulators often have to decide before there are time or resources to reduce these uncertainties... Every regulatory decision under uncertainty will be precautionary about some of the conflicting values and non-precautionary about others. The question is: Which values deserve pre-cautionary treatment?... To which set of values should a regulatory agency give precautionary treatment?..." (Dr. Conrad G. Brunk, presentation to *The Precautionary Principle and Canada's Approach to Risk*, Ottawa, May 9, 2005)

The Smart Regulation initiative

“Ottawa is making sweeping changes to the way it regulates Canadian business to help firms compete at home and abroad in the face of lagging productivity growth, rapid scientific advances and emerging global juggernauts such as China.” (Treasury Board President Reg Alcock, March 24, 2005).

This change in how the federal government regulates industry raises five serious concerns:

- The “Smart Regulations” use a “risk assessment model” to allocate resources to protect human health and the environment.
- The needs of Canadian business to be internationally competitive trump the need for social and environmental protection.
- The focus on “new ways of doing things” detracts from the crying need for regulation and enforcement of existing laws.
- Smart regulations rely heavily on voluntary measures from industry.
- They continue to assume that there will be no money available to expand compliance initiatives, and to reduce budgetary allotments for regulation and compliance.

After two years of study by the External Advisory Committee on Smart Regulation (EACSR), a report was released by Treasury Board President Reg Alcock on March 24, 2005. It made 40 recommendations.¹⁹ The Plan intends to streamline the regulatory approval process to harmonize standards with the United States, to speed up regulatory approval processes and to achieve “long-term environmental sustainability by fully integrating environmental performance with competitiveness, innovation and investment cycles.”

At the heart of the Plan is a triage system for all regulation which will use a “risk assessment” to divide regulation into low, medium and high risk categories and effectively deregulate the low risk items. This is particularly troubling when we recognize that: 1) most risk assessments are theoretical models that depend on thresholds set by political decisions (the

lead on this critique is the Canadian Health Coalition <http://www.healthcoalition.ca/pp.html>) and 2) voluntary measures have been shown never to work unless there is a regulatory backstop.

In the Report from the EACSR, the Fisheries Department is singled out for “Introducing Smart Regulation to the Habitat Management Program”. The report says that “In the context of its 2003 programs and expenditures review, the department initiated a review of the Habitat Management Program in order to achieve a better balance between environmental and socio-economic considerations and increase the predictability and timeliness of decision-making. A plan is now underway to modernize the HMP’s environmental processes so that the program can focus resources on regulatory activities that provide the greatest value in reducing risks to fish habitat, reduce the burden on industry and enable re-investment in innovative approaches to meet its mandate.” (p. 110, EACSR, September 2004, *Smart Regulation: a Regulatory Strategy for the Canada*).

DFO has been promoting its Environmental Process Modernization Plan (EPMP) in a series of presentations across the country – including a presentation to the Mining Association of Canada in November 2004. The introductory slide indicates that DFO has launched the EPMP “to contribute to more efficient and effective delivery of its regulatory responsibilities, and to contribute to the federal Smart Regulation Strategy”.²⁰ The Minister of Fisheries and Oceans states the department is “committed to ensuring that the habitat that sustains fish populations of value to Canadians is protected, while making it easier for our clients to advance projects through regulatory review processes.”²¹ Some of the changes being proposed may be in response to the perception of the Minerals and Metals Sector of NRCAN which identifies Fisheries and Oceans “No net loss policy” as being part of the costly, lengthy and uncertain Canadian regulatory process which is retarding investment in Canada.²²

Central to the EPMP is the use of a Risk

19. The report is available at <http://www.regulation.gc.ca/default.asp?Language=E&Page=report> on the Treasury Board website.

20. From DFO Presentation to NRCAN, January 10, 2005.

21. A Message from Canada’s Minister of Fisheries and Oceans, Report on Plans and Priorities for 2005-2006. http://www.tbs-sct.gc.ca/est-pre/20052006/FO-PO/FO-POr5601_e.asp

22. PowerPoint Presentation, *Optimizing the benefits to all regions of Canada from its global mining and metals industry*. Minerals and Metals Sector (MMD), NRCAN. June 2004. Obtained through an Access to Information request. Interestingly, the final slide with the “*The Way Forward*” was exempted pursuant to sections 21(1)(a), (b) and (c) of the ATI Act.

Management Framework which is comprised of two key components:

- Pathways of Effects for determining effects on fish habitat as a result of any given work or undertaking.
- Risk Matrix which assesses the severity of the effects of an activity and habitat sensitivity, and defines management tools to protect fish habitat.

The rationale for this approach was elaborated during the launch of the Implementation Plan for Smart Regulations on March 24, 2005. Reg Alcock, President of the Treasury Board stated that DFO

“is taking significant steps to reduce the amount of red tape relating to the protection of fish habitats. There will be less regulation for low-risk initiatives – such as building docks in areas where the risk to fish habitat is low. But there will be greater scrutiny for projects that pose greater risk.

The renewed Habitat Management Program enables Minister Regan and his department to review major projects more expeditiously and in a way that will improve consistency in decision-making. This means more predictability for the public - and greater protection for the environment.”²³

As part of this initiative, the federal government is continuing to harmonize environmental assessment with the provinces and devolving responsibilities to the territories. Its chosen partner for this initiative is the British Columbia government. The new “BC Mining Plan” released in January 2005 brags that it has removed 300 regulatory protections affecting mines since they took office. It has also eliminated the Ministry of the Environment.

In the past few months, we have begun to understand what this will mean in terms of the future of the protection of fish in Canada, and are very disturbed. At least two mining projects – Red Chris in B.C. and Duck Pond in Newfoundland – which will take fish habitat for tailings disposal – have received only a screening level environmental assessment from DFO. The decision to subject the Red Chris Gold/Copper mine to a screening level environmental assessment contradicts what DFO reported to Parliament in its

2003-2004 Annual Report (released in the second quarter of 2005). In that report, Red Chris was included as one of four large gold/copper open pit mines in B.C. that would be subject to a Comprehensive Study level review under CEEA. The report to Parliament noted that the key issues related to acid rock waste management and the footprint impacts of the tailings impoundments areas on fisheries resources. What has changed since DFO prepared its report to Parliament? What is the rationale for splitting the project – and thus avoiding a comprehensive study? This is another example of DFO’s insistence on “regulating to its mandate”, even when this means splitting the tailings pond from the mine to avoid a comprehensive study. Is this how DFO expects to “review major projects more expeditiously” within the renewed Habitat Management Program

The Environmental Process Modernization Plan assumes a great deal of industry self-regulation. Setting up partnerships with industry is part of the implementation plan. DFO has signed a partnership agreement with Natural Resource Industry Associations.²⁴ The Terms of Reference include provisions to establish a steering committee to identify areas of common interest, challenges and issues; define priorities for collaboration and develop an annual workplan and budget.

This increase of industry self-regulation assumes that project proponents make the proper assessment of the sensitivity of fish and fish habitat and the potential negative effect of their project. For low risk activities, proponents would be required to follow guidelines or best management practices. Class authorizations or regulations would be developed for moderate risk activities – i.e. essentially providing “pre-authorization” to destroy fish habitat provided the proponent implements standard techniques to reduce impacts. DFO would only continue to review high risk projects on a case by case basis – projects in more sensitive habitat with commercially valuable fish where higher impact works are proposed.

This model has numerous flaws:

- It assumes that the proponent properly assesses the sensitivity of fish habitat that will be impacted

23. Accessed at http://www.tbs-sct.gc.ca/media/ps-dp/2005/0324_e.asp

24. See http://www.dfo-mpo.gc.ca/canwaters-eauxcan/habitat/partners-partenaires/nria/nria_e.asp

by the project – at each location where habitat will be affected. In two cases where independent fisheries biologists reviewed the proponents’ environmental studies for major mine developments, the independent biologists noted significant deficiencies in the proponent’s assessment.

As noted in the Tulsequah Chief case study, the proponent had not undertaken an examination or quantification of fish habitat at one of three sites studied. How many other sites had not been assessed? The author of the report concludes that “the confidence in baseline studies is confirmed to be low given the project proponent’s failure to identify spawning habitat”.

MacDonald Environmental Sciences Ltd.’s review of the *Comprehensive Environmental Study Assessment (CESA)* for the Victor Diamond Project in northern Ontario concludes that “the baseline fisheries data are considered to be inadequate”. Several areas of concern are noted:

- spawning and early rearing habitats are only rarely identified.
- Migration patterns of various fish species are not clearly described.
- Several species of fish known to utilize habitats within the watershed are not identified at all or simply generically identified.

What regulatory overview exists in the proposed Risk Matrix framework to ensure that fish habitat is properly assessed and proponents cannot undertake activities based on a false assessment of the sensitivity of fish habitat?

- It assumes that Best Management Practices or the “standard techniques” defined in a Class Authorization are properly followed. As noted in the review of the Stream-Crossing Guide, despite knowledge of effective techniques and the existence of the guidelines, there was a lack of compliance. Can we assume there will be better compliance in the future? Can we assume that the mining industry will regulate itself to meet the standards put in place?
- It requires effective monitoring and follow-up.

Although DFO has stated it wants to expand its monitoring capacity, its track record is not promising. Additional staff resources (and budget) will be required. And the problem with monitoring is that it’s “after the fact” – if proponents haven’t followed the guidelines, or if they have incorrectly assessed the fish habitat affected by the project, by the time monitoring is done habitat has been destroyed – and it becomes a legal issue of proving who was responsible and what caused the destruction.²⁵

DFO cites the Yukon Placer Authorization (YPA) as an example of Risk Management in practice. In May 2005 (as this report was being finalized), the Yukon Placer Implementation Steering Committee and the Yukon Placer Working Committee released its final report to the Minister of Fisheries and Oceans, *An Integrated Regulatory Regime for Yukon Placer Mining*.²⁶ The report is the result of two years’ work, following an announcement in December 2002 that DFO would phase in changes to the way it regulates Yukon placer mining to better protect fish and fish habitat. The regulatory regime aims to balance “conservation of fish and fish habitat and a sustainable placer mining industry”. It will “eliminate risk in highly sensitive habitats, but tolerate more risk in habitats of lower sensitivity.”

Using a Risk Management Framework, the proposed regulatory regime sets out allowable activities related to stream channel diversions, instream works, water acquisition and water quality objectives/sediment discharge standards – within a grid framework that maps potential risk against habitat sensitivity. The degree of required management intervention increases as you move toward the high risk/high sensitivity quadrant of the framework.

This new regime is to be place by 2007. Watershed authorizations, based on a standardized 35(2) authorization form, will be prepared for each of the designated watersheds. Watershed authorizations are “seen as an effective way to manage the potential cumulative effects of reductions in habitat productive capacity, while ensuring that regulators and placer miners have

25. According to leaked documents sent to Martha Kostuch, Vice-President of the Friends of the Oldman River, DFO has secretly developed plans to reduce staffing levels – and thereby reducing protection of fish habitat. The “Modernizing Compliance Initiative” would cut 80 Fishery Officer and 42 Habitat Management positions; to be offset by the creation of 40 new Habitat Stewardship and Monitoring Officers positions. This step is contrary to the recommendation contained in the Interim Report of the Standing Senate Committee on Fish Habitat which states: “It would be a serious mistake if the Department’s fish habitat program were to be adversely affected by an internal reallocation. Moreover, the Committee strongly believes that the DFO needs additional funding”.

26. Available at http://www.emr.gov.yk.ca/mining/yukon_placer_regime_final_report.pdf.

clear standards and conditions from which to make decisions and design operations, respectively.” Are the designers of this new regulatory regime assuming that “reductions in habitat productive capacity” will occur due to placer mining and that these reductions need to be managed? But even where miners can’t meet the terms and conditions of the watershed authorization, they can still apply for a specific 35(2) authorization under the *Fisheries Act*. Thus site-specific permission (through a Fisheries Authorization or Letter of Advice) may be allowed for high risk activities in highly sensitive fish habitat for stream channel diversions, instream work or water acquisition.

One of the components of the new regime is an adaptive management approach – “an important tool to address the uncertainties inherent in regulating the placer industry to achieve no net loss of habitat productivity. Through adaptive management, habitat conservation and protection measures can be adjusted over time.” This sounds like good protection for fish habitat – but “before any change is made, the implications for existing licensed placer operations must be carefully examined. Modifications of the regulatory regime are to be implemented in a manner that is fair and understandable to industry.” Where does the protection of fish habitat fit into this equation?

We will continue with analysis of the new regime for Yukon Placer mining as implementation protocols and standards are rolled out over the coming months.

A retired DFO biologist raises a cautionary note about using the YPA as a model for habitat protection in a Letter to the Editor (*The Richmond Review*, November 11, 2004)²⁷:

“DFO has promoted the big lie that their past regulations have not worked. In fact few regulations have ever been passed by DFO to protect fish habitat.

An exception was a politically driven regulation passed over a decade ago to protect Yukon placer miners from the Fisheries Act. It was drawn up and administered by a joint DFO-industry committee. This is the model DFO now wants to use across Canada.

Each year Yukon streams are destroyed by placer miners looking for gold. These streams will be lost for many generations. Is this the

model Canadians want to protect our environment? Are we not smart enough to know that we cannot allow the wolf to guard the sheep?

When government gets into bed with industry to protect the environment one should be highly suspect! When this same government has no vision, little will, is undergoing staff cuts and has few resources, one should be alarmed!”

We are indeed alarmed! Canadians need to sit up and pay attention to the serious ramifications of the Smart Regulation initiative. We need better regulations – and action on the regulations already in place – NOT “smart” regulations. The federal Department of Fisheries and Oceans must put the protection of fish and fish habitat above concessions to the mining industry that allow mines to go ahead despite serious harmful alteration, dislocation and destruction of fish habitat.

We recommend:

1. that DFO act on its regulatory responsibilities to protect fish and fish habitat. DFO must:

- stop expanding the scope of Letters of Advice as a means to avoid triggering an Environmental Assessment;
- stop allowing fish bearing waters being used as Tailings Impoundment Areas and including additional TIAs in Schedule 2 of the Metal Mining Effluent Regulations;
- ensure that decisions on mitigation are made through the EA process NOT through the permitting process;
- scope projects so that the EA reviews the entire project, not individual components;
- not depend on voluntary compliance of guidelines and “Best Management Practices” by mining companies;

2. that DFO put in place adequate measures and capacity to monitor adherence to conditions in permits and Fisheries Authorizations;

3. that DFO increase its capacity to monitor mitigation measures and compensation plans. DFO must have the capacity to investigate Fisheries Act violations.

27. <http://www.yourlibrary.ca/community/richmondreview/archive/RR20041111/yourview.html>