

High and Dry: An Investigation of Salmon-Habitat Destruction in British Columbia

INTRODUCTION

Wild Pacific Salmon are an integral part of our natural environment, our culture and our economy. One would think we would treat such an iconic species with respect. However, as we develop more land for residential and industrial purposes and extract more resources, we are steadily chipping away at the very foundation of the salmon's survival: their habitat, their home and native streams.

Habitat degradation and loss have already contributed to the decline of Pacific salmon in Canada and present a significant ongoing threat to their persistence. To date, more than 142 B.C. salmon stocks have gone extinct, and habitat loss is identified as a contributing cause. Another 620 are at high risk of extinction.

The government agency tasked with managing and protecting Pacific salmon is the federal Department of Fisheries and Oceans (DFO). The DFO has the mandate and the power in Canadian law to ensure the protection of fish habitat, but it also has the power to destroy it. Unfortunately, the federal *Fisheries Act* also allows the government to grant a ministerial permit to harmfully alter fish habitat, which it often does. The B.C. government's environmental regulatory agencies (Environment, Forestry) also have the authority to manage and protect fish habitat in all water bodies in the province, but especially in those areas that have been delegated to the province by way of a Memorandum of Understanding between DFO and the Province (in particular, water bodies that do not contain anadromous fishes like salmon and sea-going trout).

A 1994 B.C. Ministry of Environment report concluded that 485 salmon and trout streams, rivers and lakes throughout B.C. have suffered major losses in fish habitat due to industrial logging practices. The report estimated that remedying "a 50 year legacy of impacts" would take 10 to 20 years and cost between \$1 billion and \$4 billion. Further, a 1997 review of the health of fish streams in the Lower Fraser Valley found that 117 of 779 streams examined had been completely lost or destroyed due to development. Another 375 streams were classified as endangered and 181 were classified as threatened. Many these streams were, or are, salmon habitat. Things are not getting any better with time. Recent (2000, 2005) internal DFO audits have found that fish-habitat damage in B.C. is still ongoing and is widespread, particularly due to activities related to timber harvesting and urban and rural development. Even the Auditor General of Canada has chastised the DFO, several times, for failing to take the steps needed to protect salmon habitat.

Why is this allowed to happen?

The biggest problem is that over the past few decades government support for economic development has, more often than not, trumped fish-habitat protection, and instead of things getting better, it appears that things may get a lot worse.

Of particular concern are recent changes to the way government provides oversight with regard to fish-habitat protection. Essentially, the federal and provincial governments are withdrawing from their historical role of being the arbiter of traditional methods of fish-habitat protection, like fish-habitat impact assessment, monitoring and enforcement. Instead, they are placing the responsibility for habitat assessment and protection in the hands of the very people who are, most often, the reason for its destruction: land developers and resource-extraction industries.

DFO staff who once found themselves in the field assessing and monitoring land-development activities and their impacts on fish habitat are often being replaced by “qualified professionals” hired by developers under a new management regime called the Environmental Process Modernization Plan (EPMP). In turn, the department has, over the past few years, begun reducing its internal capacity to conduct these works by reducing the number of habitat-monitoring and enforcement staff and by slashing habitat-protection-program operating budgets.

Is this new approach to habitat management working? Based on our observations and experiences, we would argue that it isn't.

This report documents several instances where recent (2003 to 2006) industrial-development activities have taken their toll on salmon habitat. Our findings are based on field surveys of situations discovered by our investigators during random, routine field inspections and reports to the David Suzuki Foundation of potential violations of the federal *Fisheries Act* from private citizens and/or grassroots environmental organizations. We investigated, documented and herein describe the impacts, the likely causes and extent of the impacts and explain what happened when these infractions were reported to the DFO. We then detail the Department's response, including follow-ups, if any.

The end results are troubling.

Background

From January 2003 through June 2006, the David Suzuki Foundation conducted a series of investigations into reports of fish-habitat damage in B.C. marine and fresh waters. The purpose was to assess industrial compliance with the federal *Fisheries Act* under the Department of Fisheries and Oceans' new habitat-management regime, assess the response of the DFO when matters of concern were reported to them and follow up on DFO actions on these reports.

Under the *Fisheries Act*, the DFO is responsible for the protection of Canada's fish habitat. The *Act* proclaims that it is illegal to harmfully alter, disrupt or destroy fish habitat unless expressly authorized by the Minister of Fisheries and Oceans. The *Act* also states that no one is permitted to deposit a toxic substance into water containing fish.

Findings

We investigated nine instances where significant fish-habitat damage had been reported to have occurred or was occurring in regions throughout B.C., including the North

(Kalum Forest District), Haida Gwaii (also known as the Queen Charlotte Islands), coastal areas (the Broughton Archipelago), the Lower Mainland (in particular the District of Maple Ridge, the District of Surrey and the Fraser River near Agassiz) and Vancouver Island (NanOOSE Bay, Port Alberni).

We discovered potential *Fisheries Act* violations at every site. The DFO approved some of the activities leading to the habitat destruction under section 35(2) of the *Fisheries Act*, but not all.

In those cases where the DFO approved the works, approval was, more often than not, based on inadequate preliminary information supplied to the DFO by "qualified professionals" hired by the industry involved. During follow-up investigations we found that DFO staff investigating our reports were required, by policy, to accept such information at face value and not question its quality or thoroughness.

We also found that in some cases, DFO staff involved in assessing the reports we provided to them were severely restricted in their ability to respond to the situations due to staffing, budget or time constraints.

Either way, not one of the fish-habitat reports we submitted to the DFO led to much more than promises of follow-up. No enforcement actions were taken.

CASE FILES

Actions

All of the field-assessment findings discussed below were reported to the federal Department of Fisheries and Oceans and in some cases to provincial authorities. While the DFO in most cases acknowledged an awareness of the problems, little has been done to address the most serious violations. No enforcement actions have been taken and in most cases the offenders have been allowed to go about their business unimpeded by further regulatory oversight.

In one instance our findings were also reported to a local municipal government. That government took immediate and decisive steps to halt the ongoing fish-habitat destruction and implemented bylaws to prevent similar habitat loss in the future. Municipal officials also expressed exasperation that the DFO, in their opinion, was not doing its job and was leaving habitat protection up to others.

Although other agencies can take steps to enforce certain sections of the *Fisheries Act*, we believe it is imperative that the DFO conduct the requisite oversight to ensure the *Act* is being complied with and habitat is being protected. This includes conducting inspections, monitoring compliance with the terms and conditions of authorizations and, where non-compliance is an issue, taking enforcement measures to prevent further habitat loss and ensure future compliance. Unfortunately, this appears to be a challenge for the chronically under-funded department.

CASE #1: Sir Edmund Bay

This matter involves a finfish aquaculture operation situated in Sir Edmund Bay in the Broughton Archipelago. The site has been operational since at least 1989. At the time of this investigation the site was owned and operated by a Campbell River-based company called Heritage Salmon Limited.

The original Site Development/Management Plan (1987) for this operation called for six net pens within a tenure comprising 8.0 hectares, more or less, and indicated that the company would cultivate chinook and coho salmon. However, over time, and without seeking approval from provincial or federal regulatory agencies, the company expanded the operation to accommodate 12 net pens and instead of cultivating chinook and coho salmon, the company raised Atlantic salmon exclusively from the outset. By 1999 the company was deemed out of compliance with the terms and conditions of its operating permits, which specified adherence to the company's management plans.

Rather than hold the company accountable for its illegal expansion the Province encouraged the company to submit a new management plan, which it would then approve to bring the company into compliance with the regulations. In June 2000 the company submitted a new management plan calling for a much larger tenure (25 hectares) and

- 12 - 30m x 30m net pens
- 1 - 15m x 30m feed barge
- 1 - 15m x 15 m accommodation barge

The Ministry of Agriculture, Food and Fisheries (MAFF, now called Ministry of Agriculture and Lands) approved the plan in December 2002, despite concerns expressed by provincial environment-ministry officials of the day (Ministry of Environment Lands and Parks – MOELP, and Ministry of Land Water and Air protection – MWLAP), who felt that the site could not support an operation of this size without causing harm to the environment^{1,2}. They believed an operation of this size would generate too much waste

¹Letter dated January 2000 from B.C. Ministry of Environment, Lands and Parks Pollution Prevention Branch to B.C. Assets and Lands Corporation (BCALC)

²Letter dated February 2002 from B.C. Ministry of Environment, Lands and Parks Pollution Prevention Branch to BC Assets and Lands Corporation (BCALC) discussing pollution problems associated with Sir Edmund Bay fish farm. The letter stated:

*"This tenure is in a bay that has poor circulation. The surface currents are weak, only 2.4 cm/s. The Acoustic Doppler Currents Profile shows that the net pens are within a gyre, which results in accumulations of deposits of waste feed and faeces in close proximity to the net pens. This lack of flushing has resulted in **high sulphide levels and low redox potentials at 30 meters, and even extending to 100 meters. Other monitoring data confirms the anoxic conditions being caused by this operation. This information has been passed to the company. The existing management plan does not address Water Land and Air Protections requests to Heritage to correct the environmental problems.**"*

matter (uneaten food pellets and fish feces) and that this would foul the sea floor in the vicinity of the farm, harming fish habitat.

We visited the site on January 23, 2003, and found that the company had 24 fully stocked net pens on site, not 12. The operations also included two feed barges, two accommodation barges (in essence two completely separate farm structures situated side-by-side), several (approximately eight) floating smolt pens, and two smaller floats or rafts (one containing circular pens and another holding mort bins). This was directly contrary to the company's newly approved aquaculture management plan, which had only been approved only a month earlier.

Based on the concerns about this site expressed by MOELP/MWLAP prior to site approval, and based on those ministries' findings that the site was already highly degraded by past fish-farming activities³ and that a farm of the approved size would result in further habitat damage, we concluded that fish habitat was being harmfully altered, disrupted or destroyed in Sir Edmund Bay in contravention of section 35(1) of the federal *Fisheries Act*. Further, we believed that because the company had again illegally expanded (doubled) the size of its operation over and above what was approved in its management plan and by design doubled the amount of waste output causing increased harm to fish habitat, the company had blatantly ignored the law.

Actions Taken

In February 2003, we sent a letter to the DFO's area chief, regulatory affairs, advising him of a possible contravention of the federal *Fisheries Act* at Sir Edmund Bay and requesting that he investigate the matter and this operation with the view to laying charges under the *Fisheries Act* for harmful alteration, disruption or destruction of fish habit. We also asked that the DFO seriously consider investigating the apparent involvement of the Province in this matter (approval contrary to the advice of its own environment experts).

Shortly after we sent our letter, senior Pacific Region DFO staff advised us that their entire marine-monitoring and enforcement team had been disbanded, their boats pulled out of the water and their budget slashed. We were advised that the site and situation may not have been investigated properly as a result and that all future investigations of this nature were compromised due to a lack of resources. We were also advised that the federal government was moving toward putting the onus of monitoring for benthic impacts around fish farms in the hands of the companies that operate those farms.

It has been more than three years since this matter was brought to the attention of the DFO. To date, no punitive actions have been taken against the company or the Province. Instead, the DFO advised us that no charges would be laid because they could not determine that the company had harmfully altered fish habitat. This despite the fact that a

We cannot support the production level requested in this management plan..."

³ B.C. Ministry of Environment report entitled "A Preliminary Review of Chemical and Physical Data for Y2000 Interim Monitoring Program. July 2001"

rigorous investigation undertaken jointly by DFO and the B.C. Environment Ministry in 2000 had concluded that the site had been severely degraded as a result of the operation.

In fact, we have learned that instead of sanctioning the company for illegally expanding the size of its operations, the DFO and the Province began taking steps to permit the ongoing destruction of fish habitat by issuing a section 35(2) authorization (ministerial permission to harm fish habitat) and are considering allowing the company to triple its production from its approved 2002 levels.

CASE # 2: Stokes Pit/Latimer Pond and Little Campbell River in Surrey

On July 12, 2005, the Fraser Valley Conservation Coalition contacted the David Suzuki Foundation and advised us that land-development activities were taking place in Surrey in an area known as Stokes Pit, a former gravel-mining operation in the watershed of the Little Campbell River, an important salmon and trout stream. The Coalition alleged that these activities were having adverse impacts on fish habitats and rare and endangered species such as the red-legged frog, Pacific water shrew, painted turtles and great blue herons.

The land was owned by the City of Surrey.

Planned developments included expansion of an existing gravel pit and land clearing to accommodate an industrial business-park complex, affecting about 750 hectares (1,855 acres). Construction-related activities also included active dewatering of an aquifer known as the Brookwood-Fernridge Aquifer. Lowering of the water table was apparently deemed necessary because much of the site was wetted year-round.

Our investigator first visited the site on July 13, 2005. At that time, on-site development led to the draining of a small lake known as Latimer Pond (aka Stokes Pit) on the northern end of the property. For years this had been a popular family fishing hole. The lake level was so low our investigator could, and did, walk across the lake bottom.

The southeast corner of the property had several small streams that were tributary to the Little Campbell River. One significant creek (one to two metres wide) that was home to hundreds of juvenile salmon (coho) and some trout (steelhead) fry had been stripped of its riparian vegetation and there were numerous points of entry for silt and sediment running off the cleared property around it.

A second smaller stream that was tributary to this creek and that would have been accessible to fish was completely blocked off by a huge mound of dirt placed into the channel to form a vehicle crossing with no culvert.

The entire length of the streambed through this particular reach of stream was coated with a layer of fine sand and silt up to 45 centimetres deep in some places, causing the stream to become shallower than it normally would have been and filling in pools that fish

would have occupied. Silt barriers (black plastic sheets mounted on wooden stakes) had been placed along approximately 75 metres of stream channel in a futile effort to prevent the stream banks (which comprised loose, disturbed soils) from eroding into the creek. Several of these barriers had collapsed or been buried by sediments that had washed into the stream from surrounding cleared lands. A silt barrier had also been placed on land to prevent surface runoff from entering the creek, but that barrier was also ineffective. The barrier was flattened, lying sideways and was almost invisible because it was buried by silt and sand. Large concrete blocks had been placed on the shoulder of the road at a stream crossing in another futile effort to prevent erosion of the road shoulder into the creek, but these concrete blocks were being undermined by surface water flow and were perched precariously and seemed ready to fall into the creek at any time. Two culverts under the road crossing were half buried in silt and the upstream side of the culverts was blocked with branches and debris, preventing flow from adequately passing through the pipes.

There was no question at the time that harmful alteration of fish habitat had occurred in this stream, including removal of riparian vegetation and infilling of the creek with sediment from land clearing. It was also evident that silt introductions to the creek would be ongoing until the cleared land around the stream had either been replanted or paved.

Apparently the FVCC and local citizens had previously advised Fisheries and Oceans Canada of this situation but DFO thought that the property owner (City of Surrey) was taking all the steps it could to protect this creek. As such, no enforcement action was taken against the landowner.

Over the following month, repeat site investigations revealed several of the smaller fish-bearing channels on the site and their associated wetlands (which were ideal coho salmon-rearing areas) were diverted or buried and one significant channel had dried up completely due to the groundwater dewatering. In all, about 600 linear metres (2,000 feet) of stream and associated riparian vegetation and several hundred square metres of adjoining wetland habitat had been harmfully altered. During a predevelopment assessment, a consultant had classified much of the stream and wetland habitat as Class A fish habitat⁴.

Our investigator considered this to be a great fact situation for filing a private prosecution against the City of Surrey for harmful alteration of fish habitat and/or deposit of a deleterious substance. Further, our investigator determined that in 15 years of doing this kind of work he had never witnessed such significant loss of fish habitat associated with any one development.

Actions Taken

The violations were reported twice over a period of two weeks to the DFO via their "Observe, Record and Report" telephone hotline. A request was specifically made for someone to call back and acknowledge the call and provide a case update and incident-

⁴ Dillon Consulting Limited. April 1999 "Overview Aquatic Bioinventory of Campbell Heights, City of Surrey BC". Prepared for City of Surrey Engineering Department.

reporting number. No one ever called back and there was no evidence of any follow-up by DFO.

Eventually, in September 2005, our investigator contacted the DFO's Lower Fraser Region, Oceans and Habitat Enhancement Branch, based in New Westminster, and requested follow-up on the Campbell Heights Business Park issue and its impacts on fish habitat. A request was also made to examine documents submitted to the DFO by the project proponent as part of the environmental screening of the project undertaken pursuant to the *Canadian Environmental Assessment Act* (CEAA). Under the *Act*, screening was required because fish habitat was going to be destroyed and the project proponent had requested a Section 35(2) authorization under the *Fisheries Act*. A request was also made for a joint field inspection with the DFO official responsible for conducting the environmental screening and approving the project on behalf of DFO.

The DFO official agreed to allow our investigator to review the CEAA screening documents and agreed to a joint site inspection.

Our investigator went to the DFO's offices in New Westminster to review the CEAA screening documents. One of those documents was a list of information and materials requested of the proponent so that DFO could adequately review the project for impacts related to fish and fish habitat. The project proponent was required to, in part, submit a detailed fish-habitat assessment report for DFO's consideration. As it turned out, the proponent's environmental consultants had submitted only a brief and incomplete summary of fish habitat of about one-third of a page describing the fish-habitat features on the site.

The DFO accepted the material as submitted and did not request any more detail, even though more detail was in the possession of the proponent⁵. An earlier, pre-development report prepared for the City of Surrey by another environmental consulting firm had assessed much of the fish habitat on site to be Class A fish habitat according to criteria adopted by the City for classification of stream habitats. That contractor called for an even more detailed site investigation for fish-habitat values before development took

⁵ Our investigator had previously discovered that a more detailed, and fairly thorough and comprehensive, pre-development assessment of fish habitat on the proposed development site had been undertaken years earlier, in 1999, by Dillon Consulting for the City of Surrey. However, this information was not given to DFO as part of the CEAA screening process. This particular report recommended that no development take place in key areas because of fish-habitat concerns. It identified the overall site as being:

"...an important source of clear cool baseflows which originate from groundwater discharge from the site."

and,

"It is expected that this function is of very high significance to the fisheries values of the Little Campbell River."

The report further called for a more detailed site investigation before development took place. This did not happen. Instead, virtually all of the fish streams on site were ruined by construction and de-watering of the site's aquifer.

place. This did not happen. Instead, virtually all the on-site fish habitat was ruined by construction and dewatering of the site's aquifer.

When our investigator made the DFO official aware of the earlier report on fish habitat commissioned by the City, the DFO official indicated he was somewhat surprised and dismayed that the information was available but had not been submitted for consideration during the CEAA review.

Immediately following the document review, our investigator and the DFO official conducted a joint field investigation of the site. Our investigator pointed out the former locations of streams and watercourses on the site that were not mapped by the proponent's consultants and that had been destroyed. The official expressed concern that the proponent may have misled him about the quantity and value of fish habitat. Our investigator also directed the official's attention to a stream that had been previously identified by the predevelopment consultants retained by the City as Class A fish habitat but that was now dry because the proponent had dewatered the site by lowering the water table in pumping down the aquifer. The official acknowledged at the time that, to his knowledge, this was not an approved alteration of fish habitat.

Our investigator indicated that the proponent was likely in violation of its Section 35(2) permit and the *Fisheries Act*. The official said he would investigate the matter further. During the on-site our investigator asked the official why he did not seek more detailed information on fish habitat on the site as initially requested for the CEAA screening process and prior to giving approval. He replied that he was more concerned about site drainage and stormwater control than fish habitat. As it turned out, the DFO official who conducted the environmental screening and approved the works was not a biologist but an engineer.

After the on-site, the official requested that our investigator hold off on considering a private prosecution to allow him to investigate further.

Since then, the official claims to have concluded his investigation. In an e-mail received on July 13, 2006, the official wrote:

"I have checked into the issues raised and found:

- 1. The 20th Avenue channel (the one that was dewatered) was in fact included in the Authorization but works have not yet been completed to re-water it.*
- 2. The condition and presence of some of the other minor channels on the site cannot be sufficiently determined to undertake any further action.*
- 3. Latimer Lake has refilled. Any action on the dewatering would be the responsibility of MoE since it is landlocked.*

Although it is clear that there were and are problems with the site, I don't believe that there are the requisite elements for Crown approving charges and undertaking a prosecution. I intend to ensure that deficiencies are addressed through the Authorization that the City signed."

Essentially, what is being said is that, from DFO's point of view, the matter is largely resolved.

We have determined that, as a result of DFO's failure to ensure an adequate assessment of predevelopment on-site fish habitat as required and as requested for the CEAA review process (the fish-habitat assessment submitted was very cursory at best and limited in scope), and because DFO placed a strong reliance on "qualified professionals" hired by the City to ensure fish habitat was identified and protected, a significant amount of fish habitat has been lost and once-functional habitat, which could become functional again if flows were restored, remains unviable more than a year later. We view the latter as a failure of DFO to ensure that the Section 35(2) permittee be required to meet its obligations under the permit in a timely fashion.

Clearly, this is a case of over-reliance by DFO officials on inadequate and somewhat misleading information supplied to the DFO by qualified professionals retained by the developer. Further it speaks to DFO's practice of not using capable biologists and investigators trained in fish-habitat identification and impact assessment to conduct project environmental reviews/screenings and instead using engineers, who are more concerned with things like storm-water and drainage control.

CASE #3: Sheila Creek, Queen Charlotte Islands (Block 220 – N 53°29' 455'', W 132° 23' 253'')

This case involved an investigation of stream damage associated with a logging operation on Haida Gwaii (Queen Charlotte Islands). This particular cut block exhibited the most glaring example of stream mismanagement associated with timber-harvesting activities that we witnessed during a July 2005 field investigation of logging operations on the Queen Charlottes.

Cut block 220 contained at least three small, low-gradient tributary streams that were impacted by timber harvesting and road-building activities. All three streams were directly tributary to a larger stream immediately downstream of the cut block that had been identified on the logging company's most up-to-date forest-development plan maps as an S2 fish-bearing stream⁶ and by default should have been treated as fish-bearing streams themselves⁷. Two of the smaller on-block streams had been clear-cut. One was

⁶ Under the *Forest Practices Code Act* of B.C. an S2 stream is a fish-bearing stream >5 metres and < 20 metres wide.

⁷ Under legislation in effect and/or pending at the time this block was logged (*Forest Practices Code of British Columbia Act, Forest and Range Practices Act*), these streams should have been classified, by

left with a partially intact riparian zone but suffered severe channel infilling from debris related to road construction and, quite possibly, road failure.

The first of the two smaller impacted streams was just inside the block boundary. Downslope of the block access road, the entire length of this stream had been clear-cut. The channel for approximately 20 metres was partially filled in with debris from road building and ditch erosion. In addition, logging debris (branches, tops of trees) lay within the channel and along the stream banks. Field investigators determined that this stream was a continuously flowing stream that was directly tributary to what the company had identified pre-logging as a known fish-bearing stream and did not contain any barriers to upstream fish movement.

A second stream was situated approximately 75 metres inside the cut block. Although the riparian zone on this stream, both upstream and downstream, was relatively intact (except for the block access-road crossing point), the streambed was very heavily aggraded with coarse sediments from upstream road erosion and, quite possibly, due to the apparent collapse of a culvert on another road situated approximately 100 metres upstream and further upslope⁸. The channel was so heavily aggraded with sediment that there was no longer any water visible in the channel above or below the road crossing within Block 220 (this even though the stream was clearly flowing above the cut block). Virtually the entire stream channel between the upper road (Sheila 14 access road) and the unnamed S2 stream downstream was impacted in this way.

We estimated that due to the aggradation of the streambed in Stream 2, approximately 450 square metres of potential fish habitat was lost in this stream.

The third affected stream originated as a spring in the northwest corner of the cut block and flowed northeast. This stream appeared to be ephemeral in nature and on that basis was likely properly classified as an S6, non-fish-bearing stream. However, given that it was of low gradient and directly tributary to an identified fish-bearing stream less than 100 metres downstream, it should have been treated as a fish stream, as this stream could have served as seasonal fish habitat. The entire section of stream within the cut block was clear-cut.

Actions taken:

We reported all of the above incidents of stream mismanagement, by telephone, to the Queen Charlotte City branch of the DFO on or about August 8, 2005. As it turned out, the regular habitat-protection officer for the Queen Charlottes was away on a one-year leave of absence. Other staff had temporarily replaced him, and the office was in transition at the time of our initial call, so we were advised to wait a few weeks until the new staff

default, as S3 (fish-bearing) streams based on gradient, stream width and the fact that they were directly tributary to an S2 (fish-bearing) stream and there were no barriers to upstream fish migration.

⁸ Close inspection of the Sheila 14 access road crossing of this stream in the upper portion of the block revealed massive amounts of road material and "stringer" logs lying in the channel. (Note: Stringer logs are logs used to span a crossing. They are laid horizontally across the abutment logs or bridge footings). This was indicative of massive road failure, possibly due to a plugged culvert.

arrived. We made subsequent telephone calls and left messages (August 24 and September 29) but no one returned our calls.

In October 2005, our investigator finally spoke with the acting habitat biologist, DFO habitat-management program, Queen Charlotte City office. This DFO official had actually conducted an on-site inspection of the above cut block in response to our earlier telephoned reports. He acknowledged to our investigator that there was no doubt that the extent of the damage to the on-block streams would have constituted harmful alteration of fish habitat had there been evidence to show these streams or the stream they flowed into were indeed fish habitat. Our investigator advised the official that the five-year logging development plan for the Sheila Creek drainage clearly indicated that the main stream immediately downstream of the cut block, into which the on-site streams flowed, was classified by the logging company as an S2 fish-bearing stream.

The official informed our investigator that, while this was once the case, just prior to logging the block the company had apparently reclassified the stream as a non-fish-bearing stream. Our investigator asked what the basis was for this reclassification, and the official replied that the company representatives said the company had conducted a new fish-habitat assessment just prior to logging.

Our investigator questioned the validity of such a rapid fish-habitat assessment and reminded the official that a valid fish-stream assessment would have had to have been conducted over four separate times during the year and that a one-off assessment was not a valid assessment; therefore, the company should have relied on the default provisions of the stream-classification guidelines. The official acknowledged this.

When asked how he knew that a new assessment had actually been done, the official replied that the company said one had been done. Our investigator then asked the official if he had actually seen and reviewed the new fish-habitat assessment and the official replied that he had not.

When asked why he did not ask to see the assessment, the official responded that, under the new policy, DFO allows the company to rely on qualified experts to do the work, and the official had to assume that a qualified expert did the work. When asked again why he did not ask to see the assessment to verify its existence and accuracy, the official replied that policy prevents him from doing that. He said he had to assume the work was done and done right, and that in asking to see the document he would be questioning the company's professional integrity, which he did not feel he should do.

Based on the evidence gathered during our field investigation, it was clear, even to DFO field staff, that fish habitat may have been harmfully altered in this case. However, it is also clear that DFO habitat staff were being prevented from actively and thoroughly investigating the situation because policy would not allow the investigator to gain access to, or even question, the company's fish-habitat re-assessment.

We are concerned that DFO habitat staff have been directed by their superiors to rely too much on the quality and professionalism of the work of “qualified professionals” hired by a company with vested interests in harvesting riparian timber.

CASE #4: Chist Creek

Chist Creek is tributary to the North Kitimat River just south of Terrace. The stream is home to chum, coho and chinook salmon and to rainbow and bull trout. Upon entering this watershed on May 12, 2005, our investigators encountered a West Fraser Timber Company Ltd. road-building crew exiting the watershed. Apparently, they were there to repair road failures. They advised our investigators that a significant landslide had occurred on the road near Km 15, making the road impassable.

Our investigators travelled the road to Km 14, at which point the road became impassable, so they parked their vehicle and walked the remainder of the way. At Km 15 they observed a massive landslide off the downslope side of the road that deposited approximately 2,500 to 3,000 cubic metres of slide material (rocks, trees, sand) directly into the north branch of Chist Creek. The road at this location was built on a very steep side slope and it was evident that it was built using side-casting⁹. More than half of the road surface had fallen away over a distance of approximately 25 metres, along with the entire side slope below it. The cause of the slide appeared to be uncontrolled ditch water flowing onto the road surface. At the time of our inspection, a small watercourse was flowing onto the road surface due to a culvert being plugged by material that had ravelled off the cut slope above the road. The roadbed was saturated with water and it was evident that the stream flow had undermined a portion of the road causing the road to give way.

Our investigators were unable to determine directly whether the affected branch of Chist Creek contained fish but were later advised by local DFO staff that it was highly likely that the section of stream contained bull trout. (Direct access to the stream to conduct fish sampling at this location was prohibitive due to steep gully sidewalls and canyon features.) Apparently, salmon were prevented from accessing this stream reach due to a series of cataracts and falls further downstream, near the confluence of this stream and the main stem of Chist Creek.

Approximately 300 metres further down the road, our investigators encountered a second smaller slide off the side of the road that also deposited material (approximately 500 cubic metres) into the stream below. This slide also originated on the downslope side of the road at a pullout.

At Km 16, a fairly new bridge crossing had been constructed (likely within the year prior to the time of inspection). The ditch line on the approaches to the bridge on both sides

⁹ Side-casting is a method of road construction that entails taking the material that is gouged out of the hillside to form the road bed and placing that material on the downslope side of the road bed. This method of road construction was once common in B.C., even in steep areas, but the practice was essentially banned in the early 1990s because it led to increased potential for landslides.

was filled with loose material (primarily mud and sand) that was being eroded away by ditch water and being transported to and deposited into the creek. Although the Licensee (West Fraser) had taken some steps to prevent these sediments from entering the creek by placing vinyl barriers in the ditch line, the efforts were ineffective and futile as the barriers were overwhelmed by the sheer amount of material moving through the ditches.

On the south side of the bridge, the road cut slope was very steep and unstable and material was ravelling down the face and falling directly into the creek. Standing and wind-thrown trees were lying on the headscarp of this slope and they were being undermined due to loose sandy material falling away from the slope face. It was evident that this was placing added weight on the top of the slope and that they too would soon fall into the creek. It is unlikely that this slope could be stabilized in its current state and that this would be a constant source of sediment input into the stream. Slope grooming and re-contouring (to reduce gradient) would be required to mitigate this problem.

Actions Taken

The major landslides and the problems at the bridge at Km 16 were immediately reported to the local DFO field office in Terrace on May 12, 2005. We advised DFO staff that West Fraser crews were working on the road at Km 15 using heavy equipment to repair the slide and that it was imperative that someone get out to Chist Creek as soon as possible to see what was transpiring on this road and to assess the likely causes of road failure. It was also evident that in repairing the road, significant amounts of new material would fall into the creek below if care were not taken.

Four days later, on May 16, we received a call from one of DFO's habitat technicians in Terrace. He wanted to know more about the situation. We filled him in on the details and asked if he, or anyone else from DFO, had yet attended the site to follow up on our report. The official advised us that no one from DFO had been to the site and that neither he nor any of the other Terrace staff could get up to Chist Creek for at least a week due to other commitments, specifically community-relations projects. The official advised that he would notify the Ministry of Forests about the situation and ask them to follow up on our report.

On June 17, 2005, more than a month later, we followed up with the official, and he advised us again that no one from DFO had yet been to Chist Creek to examine the situation we had reported. He did say, however, that he had reported the matter to MoF compliance and enforcement and that they were "rigorously pursuing the matter." He then asked if anyone from MoF had been in touch with us, and we advised him that no one had contacted us. The official then said that he would forward to us contact information for the relevant MoF staff.

Later that day, R. J. Wilson, compliance and enforcement officer, Ministry of Forests, Terrace District office, advised us by e-mail that the problems at Chist Creek had been fully investigated on May 18, 2005. Wilson further advised us that during his inspection he did not see anything that he did not expect to see and that no corrective measures were ordered. He also confirmed that the major road failure at Km 15 was the result of heavy

rains, plugged culverts and poor road-construction practices that included side casting, a practice banned under the old B.C. Forest Practices Code in the mid '90s.

To date, no charges or fines were laid in these matters. DFO field staff never did get out to investigate the situation.

This is clearly a case where local DFO field offices are under-staffed and incapable of responding to critical habitat issues in a timely fashion. Failure to respond immediately to situations such as this one severely hampers DFO's ability to gather the intelligence and facts it needs to take appropriate corrective or enforcement actions where fish habitat is being compromised.

CASE # 5: Anweiler Creek

Our investigators were encouraged to investigate logging-road maintenance issues and practices in the Anweiler Creek Drainage by an agent for the federal Crown who was concerned that fish habitat in Anweiler Creek was being harmed and nothing was being done to stop it.

Anweiler Creek is a major tributary to the Big Cedar River approximately 60 kilometres north of Terrace. The stream is home to chinook, coho, sockeye and steelhead, among other species of fish. The area formed part of Tree Farm Licence #1 and had been extensively logged, resulting in a large network of intersecting logging roads. At the time of our inspection no active logging had taken place in this watershed for the previous two or three years. However, road maintenance was severely lacking.

At Km 3 in the Anweiler Creek Drainage, our investigators encountered a significant road sideslope failure that resulted in the deposit of approximately 100 cubic metres of silt and sand and rocks into a stream that is directly tributary to Anweiler creek. Large rocks that had fallen onto the road from a steep cut slope on the upslope side of the road triggered this failure.

At approximately Km 4.5, there was a steep, unstable cut slope. Silt and debris ravelling down the slope had filled the ditch line and was washing down onto the road surface, flowing down the road onto the deck of a bridge spanning Anweiler Creek. This material was then being washed off the bridge deck and deposited into the creek below.

Beyond the bridge crossing at Km 4.5, the road surface was littered with debris from road-cut slope failures for at least two kilometres. Virtually every culvert between the bridge crossing and Km 6 was plugged with debris. The road was impassable to vehicles beyond Km 6 due to debris on the road surface (rocks, logs, broken trees). At Km 6, a large section of the downslope side of the road had given way and deposited several hundred cubic metres of dirt, rocks and broken trees directly into Anweiler Creek. It appeared that logs and debris falling onto the road surface from the upslope side of the road and a plugged culvert that directed ditch water onto the road's surface, causing it to

erode away, triggered this slide. All along the road between Kms 5 and 6 tension cracks were developing in the road surface, indicating that the road could give way at other locations at any time. Almost every culvert was plugged with debris. This section of road is along an extremely steep side slope (more than 80 per cent), and Anweiler Creek runs along the toe of the slope and is thus threatened by further road failures.

All of the above road-maintenance issues were causing harm to fish habitat in Anweiler Creek, mainly through the introduction of tonnes of silt

Actions Taken

All of the above issues were reported to both the DFO and the B.C. Ministry of Forests on May 11, 2005. DFO staff advised us that they were unable to attend these sites due to other commitments and would pass our concerns on to the Ministry of Forests. MoF subsequently advised Foundation staff in July 2005 that an action plan was being developed to deal with all the identified road problems in the Big Cedar River drainage, including Anweiler Creek. However, during a second visit to the site in September 2005, we saw no evidence that any major work had yet been undertaken.

A follow-up e-mail discussion with one of the local Fisheries and Oceans contacts revealed that, as of mid-July 2006, one year later, the promised action plan had not yet been developed.

This is clearly a case where local DFO field offices are under-staffed and incapable of responding to critical habitat issues in a timely fashion. Further, it is clear the provincial MoF also dropped the ball and that expected cooperation between federal and provincial agencies on matters related to habitat protection are not working as anticipated

CASE #6: Millionaire Creek

This issue relates to a property development known as Silver Valley, in the Millionaire Creek watershed in the District of Maple Ridge. Millionaire Creek is tributary to the Alouette River and is a known salmon-bearing stream. At the time of writing, the Silver Valley site was being developed for housing. At completion, the development was to cover 43 hectares of land.

The District of Maple Ridge was touting the Silver Valley development as “an emerging showcase of low-impact environmentally friendly housing”. The City’s Official Community Plan for the area¹⁰ contained a set of guiding principles that were to form the foundation upon which all planning for the area was based. The first guiding principle was “Environment First”.

At the time of our investigation, part of the Silver Valley development had already been completed. However, a portion of the development was under construction in February 2006.

¹⁰http://www.mapleridge.ca/assets/Default/Planning/OCP/pdfs/10.3_silver_valley_section.pdf

Foundation staff visited this site on Friday, January 13, 2006, in response to complaints from local citizens that heavy surface runoff laden with sediment from cleared plots of land under development was entering local rivers and creeks and harming fish habitat, and that this had been going on for some time with the full knowledge of, but inaction on the part of, the DFO.

Approximately 10 homes out of a planned total of about 50 for this stage of development were under construction at the time of inspection. However, virtually all of the land on which the remaining houses were to be built had been cleared of its natural foliage and overburden and consisted of bare topsoil that was largely unseeded and prone to erosion from wind and water. There were no obvious drainage structures (storm drains, drainage tiles, lot-by-lot pits, etc.) on these cleared lots, although some hay-bale barriers had been constructed in an attempt to control surface-water flow off the cleared portions of land.

The site had three "storm water retention ponds" two of which, on January 13, were half to two-thirds filled with silt-laden water. The water in these ponds was mostly captured surface water, which had flowed over the bare soil on the cleared lots and had picked up a lot of fine silt. The configuration and function of the ponds only allowed for very short periods of retention before the untreated water was discharged through subsurface drainpipes directly to Millionaire Creek and North Millionaire Creek.

While Foundation staff were on-site it was raining steadily. Water was observed to be running off the cleared lots in rills and channels, causing significant erosion of the topsoil. In one location uncontrolled surface-water flow had severely undermined the footings of one of the buildings under construction. Several cubic metres of soil around the home's foundation had been washed away.

Attempts had been made by the developer to direct some of the storm flow running over the cleared land into the storm-water retention ponds through the use of strategically placed hay-bale barriers. However, while this may have reduced the erosive force of the water flowing over the exposed soils somewhat, it did little to minimize the amount of silt that was being carried into the storm ponds.

As mentioned above, the discharge from two of these storm-water retention ponds entered directly into Millionaire Creek. (One drains to main Millionaire downstream of the site and the other to North Millionaire to the west of the site.) On January 13, discharge from both of these ponds was significant and was the colour of coffee with a healthy dose of cream. A local resident advised our investigator that this sort of discharge had been occurring regularly due to extended periods of rain over several weeks and, as such, there had been a virtually constant influx of silt from this development site into Millionaire Creek, a known fish-bearing stream. Local residents had reported this repeatedly to both the DFO and local municipal-government officials. However, no action was taken by either level of government to abate the problem.

In addition to the above, most of the storm drains on the roads throughout the development were blocked with sand and silt that had flowed off nearby cleared lots, thereby plugging the drains. This was causing sheets of water to flow down the road, off the road and onto even more cleared land, resulting in even more erosion. This was occurring despite the fact that company personnel were working on-site. Adequate storm-water management practices would dictate that there would be a plan in place to ensure that whenever these drains are blocked they are cleaned out immediately.

Stronger measures could have been taken to protect fish habitat in Millionaire Creek and the Alouette River downstream. Such measures could have included the seeding all of the exposed soils. Also, rather than allowing the silt-laden water to discharge from the storm-water retention ponds without any treatment, discharge should have been closed off and pumper trucks used to pump the silt-laden water out of the storm-water retention ponds and disposed of in a manner that would not impact on fish habitat.

A follow-up visit to the site on February 4, 2006, showed that, despite repeated reports of the problems noted above to government officials, nothing had changed: silt-laden water was still flowing out of the headwall that drains one of the storm-water retention ponds and into Millionaire Creek; storm-water laden with silt was still flowing off cleared lots, past hay-bale retention barriers and onto the road; and silt-laden storm water was entering a storm drain that likely ultimately drained to the creeks.

One of the main issues that arose during the course of this investigation was that the developer was supposed to have a “qualified environmental professional” on contract to monitor the site for storm-water problems and to protect fish habitat. However, it became clear from our observations that no one was monitoring or addressing the situation. At no time during our investigations did we see anyone resembling an environmental monitor.

Another significant issue involved an adjacent 10-hectare (25 acres) property. This second site was also slated for development and also sat within the Millionaire Creek drainage. The area was undeveloped at the time of our inspection. However, it had been logged and “roads”, which were actually only bladed trails (constructed by a bulldozer or grader), crossed the property. There are no ditches or culverts in place on these “roads” and several springs and creeks that flow down the hillside above the property were flowing onto and down the “road” surfaces and off the road shoulders, causing erosion and carrying sediments down the slope to East Millionaire Creek.

If these roads were logging roads, the builders would have faced severe repercussions from regulatory agencies (specifically the B.C. Ministry of Environment and Ministry of Forests) for improper road construction, maintenance and drainage. However, in this case neither they nor the DFO did anything to deal with the situation despite the fact that fish habitat was being affected.

Actions Taken

On February 14, 2006, a letter detailing our findings in relation to these two developments was sent to the DFO's Oceans, Habitat and Enhancement Branch, Lower

Fraser Region. The letter asked that DFO look into the issues raised as soon as possible to prevent further damage to fish habitat. The letter was cc'd to the local municipal government.

DFO's response left something to be desired. Rather than investigate the situation, the DFO told us in a letter that it had been advised of several instances where local industries and land developers were not acting responsibly when it came to protecting fish habitat. In response, DFO sent a generic letter, in the form of an "Inspector's Direction", to all of the offending industries requesting that they prepare storm-water management and/or pollution-abatement plans and submit them to DFO for consideration.

Repeated requests for information concerning whether these Inspector's Direction reports were ever submitted and/or whether there had been compliance follow-up by DFO went unanswered.

The local municipal government, on the other hand, took immediate measures to mitigate the damage that was being done. Pumper trucks were brought in to drain the silt-laden ponds and the contaminated water was taken away for proper disposal. In addition, the local government introduced a new stream-protection bylaw designed to prevent similar damage to other streams within municipal boundaries.

Clearly, this is a situation where the DFO lacks the capacity and/or will to conduct field investigations in response to citizen concerns and is relying on industry to do the right thing absent agency oversight. The new Environmental Process Modernization Plan places the onus for fish-habitat protection squarely on the shoulders of the project proponents and their consultants, who are to be deemed "qualified professionals". Less emphasis is placed on enforcement and more on education, but without the staff, or a plan, to actually get out in the field and monitor progress, this method of fish-habitat management is doomed to failure. A watched industry is a responsible industry.

CASE #7: Private Land Logging, Beaufort Mountain Range, Port Alberni

A logging company, TimberWest Forest Corp., has been logging extensive portions of the west-facing slopes of the Beaufort Mountain Range near Port Alberni. Nestled at the foot of the slopes are two unincorporated rural communities, Cherry Creek and Beaver Creek. Both communities draw their drinking water from the streams that drain the Beaufort slopes. Both communities are actively engaged in fish and fish-habitat enhancement projects in an effort to restore, or at least maintain, local salmon stocks. Most of the streams that drain the Beaufort slopes are fish-bearing in their lower reaches, along the valley floor, and are tributary to the world famous Stamp River. The river and streams support significant runs of chinook, coho and sockeye salmon and steelhead trout.

TimberWest's massive steep clear-cuts on the Beaufort Range, coupled with inadequate road-building practices¹¹ and often undersized and improperly installed culverts, resulted in several road washouts following several lengthy, but not particularly abnormal rainstorms (according to local residents) that occurred in late December 2005 to early January 2006 and again in the latter part of 2006 and early 2007. These road washouts caused mudflows across properties downslope of the logging, resulting, in some cases, in significant property damage and massive silt and sediment inputs to fish-bearing streams. Excess stream flows and erosion resulted in the first ever boil-water advisory for the Beaver Creek Water Improvement District. In addition, heavy siltation at a local fish hatchery (McLean's Mill Hatchery) led to massive salmon-fry mortality. The heavy silt inputs also likely caused significant damage to wild-salmon spawning beds. Long-time local residents now fear that due to changing water-flow regimes as a result of upslope logging, the stream reaches below the clear-cuts will dry up completely for the first time since the area was settled.

Our investigators visited the site of one of the most significant road washouts on the Beauforts in January 2006 and again in April 2007. Several road washouts were noted on a cutblock known as Block T141. In January 2006, a significant culvert failure on the lower block road in this cut block resulted in excess flows in one stream that caused significant property damage to a farmer's land downslope of the cut block and resulted in hundreds of cubic metres of silt and sand being deposited into a fish-bearing stream named Woodward Creek. The local DFO habitat-fishery officer also investigated the deposit of silt into the creek.

At the time of our investigation the road washout that caused most of the damage was being repaired but a site inspection led our investigator to believe that insufficient or undersized culverts and a culvert failure were the likely cause of the washout. Our investigator witnessed two stream channels/watercourses that were not culverted, as required under standard coastal road-building practices, and evidence of heavy sediment buildup upslope of the culver that was being replaced. He concluded that excess water flows (from having three watercourses channelled into one), ditch and road-surface erosion and some channel scour resulted in excess sediment buildup on the upstream of the failed culvert that likely plugged the culvert and forced water onto the road surface. When the culvert blew out, a massive rush of water and sediment downslope likely caused most of the damage to property downstream.

Many of our investigator's observations were subsequently confirmed in the findings of a report prepared by separate investigators retained by the Private Managed Forest Land Council of B.C., who were pressured to investigate the situation following expressed outrage over the flooding events from the local populace.

A subsequent field inspection conducted in April 2007 revealed that several more culverts had blown out on Block T141 over the preceding winter, leading to significant

¹¹ Following a parallel investigation undertaken by the Private Managed Forest Land Council of B.C., the licensee, TimberWest, was fined \$30,000 in May 2006 for improper culvert installation.

deposits of silt, sand and debris onto the floor of the valley below. At least two more streams had “blown out”. Other citizens had been to the same locations over the preceding two months¹² and it was evident to our investigator that the logging company responsible for these roads had done little to repair the damage during that time.

Actions Taken

Following the January 2006 inspection, our investigator contacted the local DFO habitat-fishery officer to report his findings based on the on-site inspection and to find out what DFO’s position was in relation to TimberWest’s activities, especially regarding the entrainment of massive amounts of sediment into Woodward Creek. The DFO official reported that, following his investigation, he had concluded that no enforcement action would be taken against TimberWest for its activities on the Beauforts as it could not be established that any aspect of their operations, or any activity on their part, actually resulted in the uncontrolled stream flows that impacted in Woodward Creek.

Following a determination by the Private Managed Forest Land Council that TimberWest had improperly installed four culverts on Block T141 and that the resulting culverts had been installed in a manner that did not minimize soil erosion and that did not prevent excavated soil from entering directly into a stream, our investigator called DFO again to see if these findings had any bearing on DFO’s determinations in the issue.

DFO informed us that the matter had been turned over to the Department’s habitat-management branch and was no longer an enforcement issue. Policy dictated that such matters would be better dealt with through “Inspector Directions”.

We have subsequently learned that the DFO has determined that there was no need for an area habitat-enforcement coordinator and that the person holding this position has been relieved of his duties and re-assigned to matters related solely to dealing with enforcement of commercial fisheries. All future matters related to habitat alteration were to be dealt with by a single habitat official in a central location far removed from Port Alberni. That official would have limited capability to respond to reports of habitat destruction in a timely fashion. In the event that a report of any potential habitat violation was received, the official would have to call the local or regional offices dealing with fisheries enforcement matters and request assistance that, we have been informed, would only be granted if a local DFO fishery officer were free to respond and gather evidence.

CASE #8: Fraser Gravel

In March 2006, our biologists attended a site on the Fraser River where gravel extraction was taking place. The Big Bar/Ferry Island gravel-extraction project commenced on or about March 1, 2006, and ran through to March 15, 2006.

¹² Photos and video are available upon request. In addition, this site and situation were profiled on the CBC National News in April 2007.

The company mining the gravel built a “causeway”, or road, across a major channel of the Fraser River to access a large, mid-river alluvial island known as Big Bar. Jutting 90 degrees from the bank, the causeway had a damming effect on the river’s flow in the channel. On March 3, just two days into the operation, water levels downstream of the causeway were approximately 1.5 metres lower than the water level upstream of the crossing. As a consequence, potentially millions of salmon eggs and fry/alevins lying in downstream salmon redds were left high and dry.

In a situation where redds become dewatered naturally and gradually over time, juvenile salmon that are far enough along in their development will still have the chance to emerge from the gravels and survive desiccation, but that was not the case in this instance. However, as mentioned above, the redds in question were exposed within hours and remained exposed for a considerable period of time. After the causeway was removed, the flows in the side channel were sufficient to cover almost all of the exposed redds, despite the fact that the river’s natural water levels had not increased.

Despite being informed of these activities very early on in the process, DFO failed to take steps to prevent the demise of these fish.

The matter of the exposed redds was brought to DFO’s attention on March 6, 2006, when a local citizen, Frank Kwak, reported the matter to fisheries officers in the Chilliwack field office. As proof of what was going on, Mr. Kwak brought in samples of dead alevins that he had dug out of the exposed redds. DFO staff said they were aware of the situation but in order for something to be done Mr. Kwak should send a letter to the department’s Pacific regional director. No investigation was undertaken. Mr. Kwak sent an e-mail to Paul Sprout, acting regional director, on March 8.

The matter was again brought forward to DFO by a reporter from CBC TV on March 9 when he went to interview Jim Wild, area director, Lower Fraser, about the issue. After being shown the video, Mr. Wild apparently issued a verbal stop-work order, and a portion of the “causeway” was dug up and culverts were installed. However, the measures taken were inadequate and too late in coming.

It took DFO more than a week to take action after they were first advised of the situation regarding the stranded redds. They chose to study the situation rather than deal with it in a timely fashion. The fish and eggs in those redds were already dead by the time the stop-work order was issued. In addition, the culverts that were installed following this order were entirely ineffective in raising downstream water levels. They were installed in a location where water flow through them was minimal at best. Further, they were installed without any oversight from DFO officials.

Subsequent media reports indicated that the contractor who built the causeway chose to build the crossing contrary to the design plans that were approved by DFO and Transport Canada. These plans called for a bridge to be installed in the causeway. It is clear from the events that transpired that DFO knew this took place but did nothing to rectify the

situation. In fact, DFO staff now say that they approved the change in design. However, we can find no proof of this.

Actions taken

After this issue first came to light, we attempted to obtain documents related to the review and approval of this operation from the DFO via the Canadian Environmental Assessment Agency registry. However, instead of being open and transparent about the matter, DFO chose to withhold the documents from public scrutiny for more than a month. Once received, the documents revealed that the Big Bar gravel-operation incident was only the tip of the iceberg. Apparently, a similar operation was undertaken in 2004 at or near Big Bar wherein the same gravel bar, on which our investigators witnessed the exposed redds, was scalped and around 75,000 cubic metres of gravel were removed. Pink salmon redds would have been present in the river in 2004. We wonder what happened to those redds. Similar “causeway” type works were also conducted in at least two other locations at around the same time.

What is extremely troubling about the 2004 gravel extraction at Big Bar is that a Section 35(2) authorization was issued by DFO but no environmental screening of the project was undertaken, even though one was required under law (pursuant to the Canadian Environmental Assessment Act). Dale Paterson, area chief, habitat enhancement for the Lower Fraser, confirmed this. Other documents obtained through freedom-of-information requests also clearly show that the Province of B.C. was pushing DFO (and transport Canada) to approve gravel extractions on the Fraser without the necessary environmental work being done and was even contemplating having operators go into the river to extract gravel without DFO approval.

DFO’s public position is that the situation was not as dire as had been portrayed. They argued that many, if not all, of these redds would have been dewatered anyway due to naturally dropping river levels. Granted, water levels in the Fraser River were dropping naturally during the period in question (March 3 to 9), but this drop in river levels occurred gradually, over a period of several weeks. The drop in water levels in the side channel below the river crossing occurred within a matter of hours after the causeway was completed and remained far lower than would have otherwise been the case had the causeway not been built for more than a week (March 1 through March 15).

To be fair, our complaints resulted in the DFO conducting a rather lengthy investigation into this matter to determine what went wrong. A subsequent report issued by the DFO¹³ concluded that there was a significant fish kill resulting from the construction of the causeway and that, in future, substantial efforts must be taken to avoid such a reoccurrence. There were significant failures in inter-agency (provincial and federal) communication, a failure by DFO to provide clear guidance to the proponent and its contractors on environmental matters and an over-reliance placed on information supplied by the proponent regarding whether or not a bridge should be installed. A series

¹³ “A Review of Access Issues Associated with Lower Fraser River Gravel Extraction Operations”: Prepared by the Lower Fraser River Gravel Review Team, September 2006

of recommendations was advanced in an attempt to prevent similar occurrences. Many of these recommendations have yet to be implemented. No charges were ever laid in the matter despite the fact that potentially millions of fish may have died as a result.

Clearly this is another case where DFO oversight was lacking and too much reliance was placed on industry and its qualified professionals to do the right thing.

CASE #9: House building in Nanoose Bay Tidal Estuary

In May 2006 a resident of Nanoose Bay on Vancouver Island contacted us to report that a land developer was in the process of depositing tonnes of rock and sand in an estuary for the purposes of constructing a base on which to build a bed-and-breakfast facility. The fill, upon which the house was to be built, was being deposited within the tidal flood zone of the estuary, thereby directly affecting fish habitat. In addition, two nearby salmon streams were at risk of being impacted.

The concerned resident asked for advice about how to deal with this matter. It was his position that such development should not be undertaken in a tidal estuary area. We agreed. We advised him to contact the local office of the DFO about the situation, as the unauthorized placing of fill in a tidal estuary would be a contravention of the federal *Fisheries Act*, to wit, the section dealing with harmful alteration of fish habitat. We advised the resident to request that DFO intervene in the matter and attempt to determine whether DFO had a hand in allowing this to proceed, and whether a Section 35(2) permit (authorization to harmfully alter fish habitat) had been applied for, or even issued. We also suggested that the resident ask DFO to invoke section 37 of the *Fisheries Act*, which allows the DFO to proactively request plans and specifications from anyone proposing an activity that might harm fish habitat, so that an informed decision could be made as to the extent of habitat loss. In addition this would also allow DFO to suggest changes to the project to prevent habitat loss or even stop the project from proceeding.

At the time of the call (June 2006) the developer had only deposited around 100 cubic metres of fill in the estuary. Over the next few months the amount of fill placed in the estuary increased substantially to several thousand cubic metres while the DFO twiddled its thumbs.

In addition, two adjacent salmon-bearing streams were known to support juvenile salmon, and those fish were known to exit the streams on the high tide, feed in the estuary marsh, and return to their home streams when the tide receded. There was concern that these two streams, and the fish in them, may also be adversely impacted by the project.

The DFO knew about this project but failed to do anything to prevent this damage to fish habitat. They were first advised of the situation in May 2006 and repeatedly asked to intervene over the next six months. However, the only action taken by the DFO was to ask the developer to conduct a fish-habitat assessment to determine the amount and kind

of fish habitat that was being destroyed so that there was something to compare to in possible future discussions concerning possible construction of compensatory habitat. This request for a habitat assessment was made in June 2006. The assessment should have only taken a matter of weeks to complete. However, as of May 2007, this request had not yet been complied with and the development went on to completion.

In June 2006, the Regional District of Nanaimo (RDN) was provided with an environmental assessment of the subject property, conducted by Streamline Environmental Consulting Ltd.¹⁴. A copy of this document was obtained through an FOI request.

The consultant examined the property and assessed the impact of development and concluded that the development adversely impacts on relatively rare, highly sensitive marine estuarine marsh habitat and recommended that the house be moved and the area impacted restored.

This study was done early enough in the project to effect change and was made available to the RDN after the matter was first brought to the attention of both the DFO and the RDN by concerned members of the public, but the RDN apparently did not follow up on the consultant's recommendations. Instead, it let the project proceed.

When first advised of the matter by the concerned resident, local DFO officials claimed that they did not even know that the development was taking place in a tidal area. In fact, they were not convinced the area in question was even flooded by the tides until the concerned resident provided them with photographic proof of this. Even with this proof in hand the DFO has done little to rectify the situation.

Actions Taken

Our investigator contacted a senior DFO official at the Nanaimo regional office in early September 2006 to report the matter independently of the original complainant and to find out what, if anything, the DFO was doing about the situation. The official excuse was that the DFO has a memorandum of understanding with the Regional District of Nanaimo that allows for a one-stop development-permitting process. Under the MOU, any proposed developments that will likely have an impact on fish habitat are to be referred to DFO for consideration. They say this one slipped through the cracks.

We asked the senior DFO official why the DFO did not intervene immediately when first notified of this matter (back in April 2006) and try to stop the work and get the issue resolved. He could not provide any answers. The official was asked if the DFO is, or was, planning to do anything about the situation. We were initially told that another DFO official close to the file had taken some steps in that he apparently issued the proponent an Inspector's Direction in May 2006 prohibiting any further deposit of material on-site that was likely to enter fish habitat. But later, in October 2006, the same senior official advised us that no IDs were ever issued in this matter. In addition, the official informed

¹⁴ Letter report dated June 23, 2006, entitled "Property Assessment: 2991 Northwest Bay Road, Nanaimo" prepared by Streamline Environmental Consulting Ltd. for the Regional District of Nanaimo.

us that in June 2006 the DFO had also apparently asked the project proponent to undertake a professional assessment of the amount and quality of the fish habitat that was being impacted and prepare a plan to show how he was going to compensate for the loss.

Aside from these steps being taken, no other action was being contemplated by the DFO.

Our investigator inquired as to the status of the DFO-requested fish-habitat-impact assessment report and was advised by the senior official that the person in charge of the file would get back to us with that information. That was on September 9, 2006. By October 3, 2006, we had not heard anything more from the DFO, so we sent a follow-up e-mail to the senior official contacted in September reminding him that he had committed to have someone call us regarding a pending habitat-impact report. We then advised the senior official of the existence of a consultant's report prepared for the District of Nanaimo that recommended early on in the project that the project should be modified due to unacceptable environmental consequences but that still nothing had been done.

On October 6, 2006, we received an e-mail from the DFO official in charge of the file, advising us that the requested habitat-assessment report was still pending and that he had only received a copy of the consultant's report to the RDN on October 3, 2006, nearly four months after it was submitted and the issue was reported and made public. We asked again in November 2006, and in February, March and May 2007 about the status of the pending fish-habitat assessment, and the response was always the same. The developer had still not submitted anything to DFO.

Meanwhile the development proceeded unabated.

The DFO (via the Department's estuary biologist – who has conduct of this file) also claimed early on in the process that they had no knowledge or proof that the area in question was actually flooded by the tide. They didn't even admit this was possible until a local resident took photos showing the area does get flooded and sent them to DFO, and now they acknowledge that it is indeed tidal habitat.

In August we received a copy of a letter, penned under the signature of federal Fisheries and Oceans Minister Loyola Hearn, thanking this citizen for providing DFO with proof that the area was flooded by tides and claiming that the DFO did not know the area was flooded by tides because such flooding only occurs during really high tides, which only happens at night.

We believe that the DFO has not properly handled this file. Even when apprised of this situation in its early stages, the agency did not take appropriate action to review the matter or take steps to prevent the damage from occurring. The meagre steps that were taken (a request that the proponent conduct an assessment of the amount of fish habitat impacted) have thus far not resulted in compliance on the part of the proponent. Additionally, the fact that the RDN did not involve DFO in the issue when it first came to their attention and also withheld crucial information concerning the impacts of the development on sensitive marine habitat and did not take action to correct the situation is

unconscionable and perhaps legally wrong. The fact that this development has been allowed to proceed unhindered in the way that it has is unacceptable.

RESULTS

Through these investigations we arrived at three major conclusions.

First, existing DFO staff are severely limited by budget and/or time constraints in their ability to respond to matters related to habitat destruction and loss. There are far too few inspectors and/or enforcement officers to adequately do the job.

Second, within the framework of the new DFO habitat-management regime, the EPMP, too much reliance is being placed on information supplied by project proponents and their qualified environmental professionals to DFO for project-approval purposes and the DFO lacks the capacity both in terms of numbers and qualifications of people to review the information for its quality and accuracy. Further, DFO policy appears to be that DFO staff should accept this information at face value and not question the findings.

Third, with the exception of the Fraser River gravel-extraction case, not one of the fish-habitat damage reports we submitted to the DFO led to anything more than promises of follow-up. No enforcement actions were taken by DFO in any of these matters. This concerns us greatly as our investigations covered only a sample of habitat-damage incidents, and by extrapolation we assume that many other incidents of habitat damage are similarly left unattended to by DFO or the responsible agency in the provincial government.

OUR RECOMMENDATIONS

In light of our investigations we conclude that a much more rigorous and comprehensive system of enforcement for fish-habitat protection should be established.

We recommend that the DFO invest significantly more resources into programs that ensure the *Fisheries Act* is being complied with and that habitat is being protected. This should include hiring more inspection and enforcement staff, conducting routine, random site inspections, monitoring permit compliance and taking enforcement measures to prevent further habitat loss and ensure future compliance. The challenge in realizing these recommendations is the serious under-funding within DFO's enforcement division and the lack of will to use enforcement as a deterrent.

As things stand now, instead of placing a greater emphasis on enforcement, DFO is reducing its capability in that regard both in terms of personnel and budget. While it is difficult to determine the level of effort being expended by DFO inspections/enforcement staff in terms of the number of actual site inspections being conducted in any given year,

it is possible to map the trend in overall enforcement by looking at the number of enforcement actions taken year over year.

By law, the DFO must report its level of enforcement activity to Parliament annually¹⁵ and they have been doing so since 2002¹⁶. It is clear from the numbers in these reports (Table 1) that the overall trend in enforcement activity is downward and in recent years the decline has been rather precipitous. There were 95 fewer enforcement actions taken in fiscal 2005/2006 compared to fiscal 2003/2003. One could argue that this is a result of better compliance by industry when working in and around fish habitat, but that is simply not the case. It is a result of policy (EPMP) and the direction the Department is taking with respect to fish-habitat management. The shift in emphasis is toward industry self-regulation with less DFO oversight.

FISCAL YEAR	WARNINGS ISSUED	CHARGES LAID	TOTAL
2005 - 2006	24	1	25
2004 - 2005	30	15	45
2003 - 2004	93	8	101
2002 - 2003	110	10	120

Table 1. Summary of DFO Habitat Enforcement Activities year over year since fiscal year 2002/2003 (the earliest year for which data is readily available)

To deal with the chronic under-funding of the enforcement division and to adequately staff the enforcement branch, DFO should consider devoting at least 25 per cent of its operating budget to enforcement instead of the mere four per cent (nationally¹⁷) currently allotted. Also DFO needs to get personnel out into the field. Our experience has shown that by simply going out and randomly inspecting work sites, it is easy to find instances where fish habitats are being compromised. We recommend the formation of regionally based, mobile (by land, sea and air) “strike force” teams that can deploy at will and conduct spot investigations over a broad range of industrial activities and have the capability to take immediate corrective action to prevent further damage to fish habitat whenever it is found to be occurring.

The results of the investigations highlighted in this report support and confirm the need for change. The David Suzuki Foundation has been pressing for change and has presented

¹⁵ Section 42.1 of the *Fisheries Act* requires the Minister of Fisheries and Oceans to table an annual report to Parliament on the administration and enforcement of the fish-habitat protection and pollution-prevention provisions.

¹⁶ Annual report on the administration and enforcement of the Fisheries Act for the fiscal years 2002/2003 thru 2005/2006 can be found on the internet (http://www.dfo-mpo.gc.ca/oceans-habitat/habitat/measuring-mesures/reports-rapports/index_e.asp)

¹⁷ Treasury Board of Canada: Report on Plans and Priorities 2006-2007, Fisheries and Oceans Canada (on the web at http://www.tbs-sct.gc.ca/rpp/0607/fo-po/fo-po01_e.asp#Section_1)

arguments for change in previous reports on fish-habitat conservation. In October 2006 the Foundation published a report titled "*The Will to Protect*", which offers a range of solutions that the DFO and the provincial government(s) could pursue to provide better protection of our fish and fish habitat. The solutions, in part, include:

1. Improve habitat-protection policies and regulations by:

- Clarifying responsibilities of relevant provincial and federal agencies
- Establishing enforceable conservation objectives
- Requiring project proponents to provide accurate information on fish habitat and mitigation
- Making those who destroy habitat pay for recovery
- Establishing comprehensive streamside protection and protected areas
- Implementing a formal audit process for self-regulating industries
- Making it easier to hold those who harm fish habitat accountable

2. Get DFO officials out of the office and into the field by:

- Increasing resources for habitat enforcement
- Establishing mobile regional task-force groups to enforce habitat-protection laws

(The full version of the "Will to Protect" report can be viewed at http://www.davidsuzuki.org/files/Oceans/DSF-Will_to_Protect-72.pdf.)

In summary, the David Suzuki Foundation suggests that unless DFO modifies its new habitat-management plan and accepts a greater and more active role regarding its responsibility for salmon-habitat conservation and protection, we will continue to see more unique populations of salmon slide into reduced levels of abundance and, in the worst cases, go extinct. The clock is ticking and more and more salmon habitat is degraded every year. We encourage all governments to take the issue of salmon-habitat protection more seriously.

We encourage all those who care about the future of our wild-salmon resource to use this report to present arguments to your municipal, regional, provincial and federal government representatives and call on them for more investment and action on habitat protection in the streams and rivers near to you.

More information about salmon conservation can be found on our website at www.davidsuzuki.org.

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