



**Forest
Practices
Board**

Road Deactivation and Impacts to Fish Habitat near Kelowna

Complaint Investigation #17050

FPB/IRC/222

June 2019

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Board Commentary

This complaint investigation found poor road maintenance and deactivation practices that led to impacts to a fish stream. It is an example of why all licensees need to properly classify streams for fish habitat, consider potential significant weather events when designing road systems and have proper operating systems in place to avoid these kinds of mistakes, detect problems early and address them before more serious harm results.

Miscommunication and lack of follow-up by government's Compliance and Enforcement Branch (CEB) did not help to ensure the situation was dealt with in a timely manner, and subsequent errors in interpreting or applying the legal requirements did not instill public confidence that the legislation will be enforced appropriately or that licensees who contravene the legislation will be held accountable.

The requirement in the *Forest and Range Practices Act* (FRPA) to prevent damage to the environment was not correctly applied by CEB staff. The requirement was not enforced because CEB staff decided that weather conditions—specifically the amount of snowfall—led to the damage to the environment and were not reasonably foreseeable. However, the investigation found that CEB did not require supporting information from the licensee, nor did it have sufficient evidence to conclude that the amount of snow was not reasonably foreseeable.

Currently, there is no guidance for CEB staff on how to correctly consider weather-related effects when enforcing FRPA's requirement to prevent damage to the environment. This guidance may be particularly important given the effects of climate change including the increasing occurrence of flooding and extreme weather.

Accordingly, under section 131(2) of the *Forest and Range Practices Act*, the Board makes the following recommendation:

Government should prepare guidance for CEB staff on how to interpret and apply section 46 (1)(b) of FRPA, regarding unforeseen weather conditions leading to damage to the environment.

The Board requests a response from government by October 31, 2019.

Introduction

Complaint

On November 16, 2017, the Forest Practices Board received a complaint from a resident of Kelowna, BC. The complainant says that in July 2017, he observed damage to fish habitat on a forest road. He called the BC Natural Resource Violation Reporting (NRVR) line to complain and was told the matter would be forwarded to the Compliance and Enforcement Branch (CEB) of the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD). Four months later, he found out that his complaint had not been investigated. As a result, he filed this complaint with the Board.

During the Board's investigation, CEB did investigate his original complaint, however, the complainant still wants to know why it took so long for government to start investigating his complaint and whether a proper investigation was done. He also wants the forest licensee responsible for damaging fish habitat to be held accountable.

Background

In 2016, Sn'pink'tn Forestry Limited (the licensee) obtained a road permit on a non-status road (referred to as Barge Road), located southeast of Kelowna off the Dale Forest Service Road, to access planned cutblocks (see Figure 1). In early July 2017, following completion of harvesting activities, the licensee met with an excavator operator and gave verbal instructions about how the road should be deactivated, including keeping culverts in place at three crossings on streams.¹ For six other crossings on non-classified drainages, the culverts were to be removed and the channels re-established in a way that would allow vehicles to cross. The operator completed work on July 14, 2017, and the excavator was moved off-site shortly thereafter.

Later in July 2017, the complainant was riding his all-terrain vehicle (ATV) on Barge Road. He came to a stream crossing that was filled with dirt, enabling vehicles to cross the stream. He saw a metal culvert on the side of the road. Water was backed up at the upstream end of the crossing and immediately downstream of the crossing the complainant saw about six young fish swimming in a small pool of dirty water. Most of the stream channel downstream of the crossing was dry. Further along the same road, the complainant observed several other culverts that had been removed and dirt placed into the channel.

The complainant called the NRVR line several days later and communicated his observations to an agent. The complainant also offered to guide enforcement staff to the site.

¹ Under the *Forest and Range Practices Act*, a watercourse that meets specific criteria is referred to as a "stream." If the criteria are not met, it is generically referred to as a "non-classified drainage."

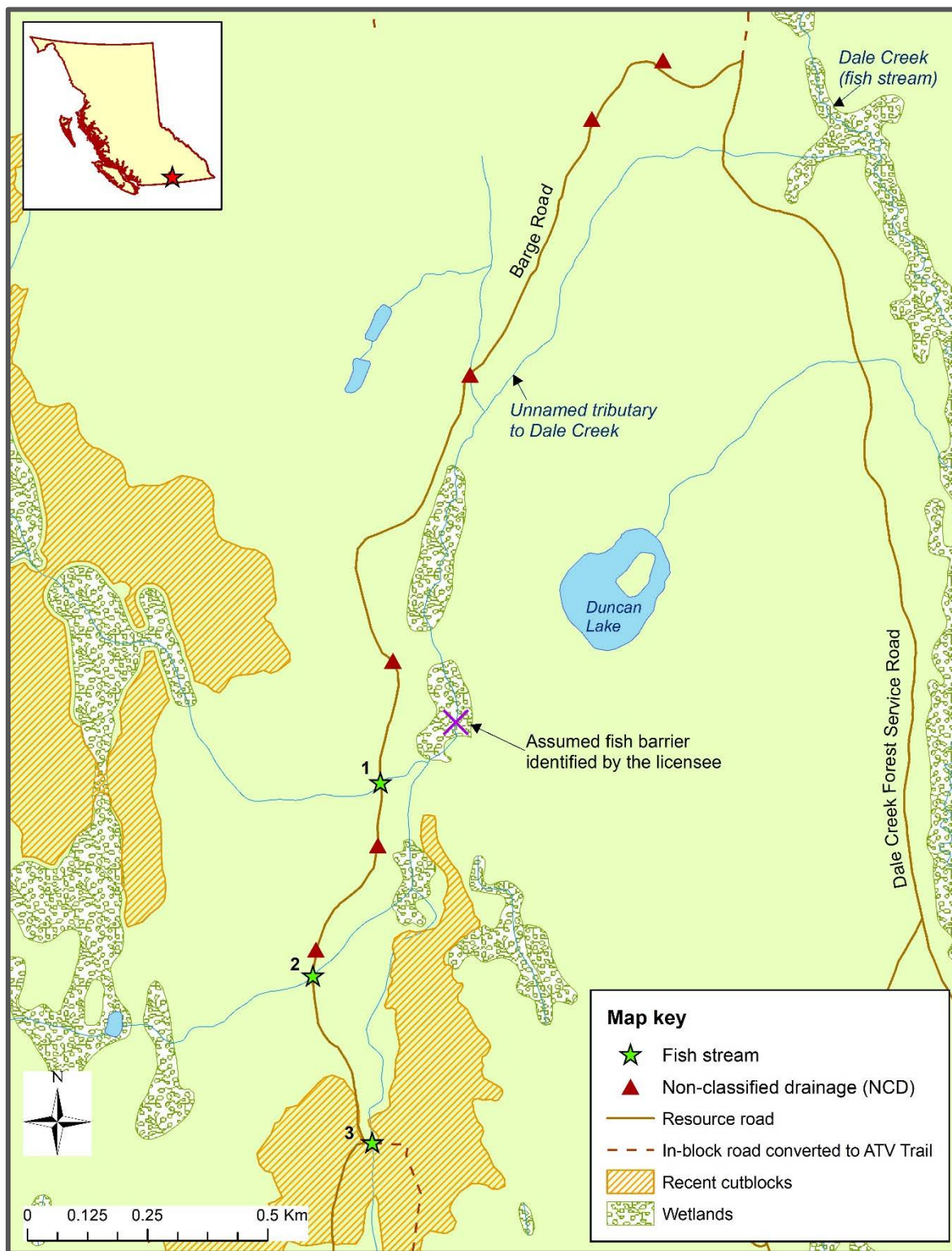


Figure 1. Location of Barge Road southeast of Kelowna, BC.

On September 12, 2017, the licensee returned to the site and saw that the culverts had been removed and dirt placed into the channels at the crossings. The licensee decided not to bring the excavator and operator back to fix the problem because the fire hazard rating for the area was high. The licensee decided to wait until the following spring freshet (2018) to remove the dirt from the crossings.

On November 1, 2017, the complainant called the NRVR line to ask if his complaint had been investigated. He learned that an investigation had not been started so he contacted the Board with his concerns. Board investigators immediately notified FLNRORD staff from the Okanagan-Shuswap Natural Resource District and from CEB about the complainant's observations. On November 15, 2017, the complainant submitted a formal complaint to the Board.

In order to address the complaint, the Board's investigation considered the following questions:

1. Did the licensee provide the required protection to water and fish habitat?
2. Was the CEB's enforcement appropriate?

The Board interviewed the licensee, CEB staff and the complainant. Investigators also conducted a site visit with the licensee in early June 2018.

Investigation Results

Did the licensee provide the required protection to water and fish habitat?

FRPA Requirements

The *Forest and Range Practices Act* (FRPA) and *Forest Planning and Practices Regulation* (FPPR) have requirements that apply to the protection of the environment, streams, fish habitat, fish passage and the natural flow of water around roads (see Table 1).

Table 1. FRPA's requirements related to the protection of stream crossings and fish habitat.

SUBJECT	LEGISLATION & SECTION	REQUIREMENT (paraphrased)
Damage to the environment	46 FRPA	Carry out forest and range practices in a manner that prevents damage to the environment as defined in s. 3 FPPR.
Natural surface drainage patterns	39 FPPR	Maintain natural surface drainage patterns during and after construction.
Stream crossings	55(1) FPPR	Protect the stream bank and stream channel above and below the crossing and mitigate disturbance to the stream channel at the crossing.
Fish passage	56(1) FPPR	Ensure that activities do not have a material adverse effect on fish passage.
Protection of fish habitat	57 FPPR	Conduct activities at a time and in a manner that are unlikely to harm fish or destroy, damage or harmfully alter fish habitat.
Road maintenance	79(6)(b) FPPR	Ensure the drainage systems of the road are functional.

Licensee's Activities

Protection of fish habitat and fish passage

To determine the appropriate stream crossing structures and riparian management zones, the licensee examined fish inventory information (available on iMapBC) and found that no information was available for the unnamed tributary to Dale Creek in the area of the licensee's road and cutblocks. However, the licensee found that rainbow trout are known to occur in Dale Creek, near the confluence of the unnamed tributary, and observed fish in that area.

The licensee classified streams and assessed fish presence or absence using a decision matrix—referred to as a local area agreement (LAA)—approved for use under the old Forest Practices Code for stream channels less than 1.5 metres wide.ⁱ A central part of the LAA is the presence of a permanent barrier to upstream fish movement consisting of either a vertical drop (e.g., rock falls) or a non-continuous channel bed with no connection to downstream fish habitat (additional parameters such as residual pool depth and channel widths also apply upstream of the barrier).

The licensee identified a barrier—a non-continuous channel bed—within a wetland, and therefore assessed all stream reaches and tributaries upstream of the barrier as non-fish streams (see Figure 1 for location of assumed fish barrier identified by the licensee). As a result, the licensee determined it was not required to provide fish passage at stream crossings on roads or reserve zones adjacent to streams within cutblocks. The licensee documented the decision, but did not take photos of the barrier or record field measurements of residual pool depths.

During the Board's site assessment, both the licensee and investigators observed that no barrier exists within the wetland (see Figure 2). The licensee suggested it may have been altered during high water flows, but agreed there is no permanent barrier to fish movement. Board investigators also walked the length of two tributary streams to their confluence at the wetland and determined that the low gradient streams, with moderate quality rainbow trout habitat, were fully accessible to fish. This is consistent with the complainant's reported observation of fish. The licensee told investigators it had observed fish during an earlier site visit in May 2018. A further six crossings along Barge Road were examined by investigators and determined to be non-classified drainages with no connection to downstream fish habitat.

At the two tributary streams (fish-stream crossings #1 and #2 in Figure 1), investigators found a minor amount of residual impact to fish habitat resulting from the placement of dirt in the stream channel.



Figure 2. Location where barrier to fish movement was identified by the licensee. Board investigators found no barrier to fish movement at this location.

At the main stream crossing (fish-stream crossing #3 in Figure 1), a significant amount of damage to fish habitat was evident for a minimum of 100 metres downstream of the crossing. When compared to the moderate quality of fish habitat immediately upstream of the crossing, the fish habitat downstream of the crossing is no longer functional. Residual pools and the channel bed have been filled with sediment, affecting cover, overwintering and spawning habitat (see Figures 3 and 4).



Figure 3. Damaged fish habitat at the main stream crossing.



Figure 4. Damaged fish habitat 50 metres downstream of the main stream crossing.

Investigators determined two sources of sediment that caused damage to fish habitat. One source was the deposit of sediment that likely occurred when the culvert was removed and soil was placed into the channel. The second and more significant source of sediment was from an access trail that continues beyond the stream crossing. The licensee modified approximately 180 metres of this access trail (part of which is a road permit road and part is an in-block road) to provide ATV access for replanting (see location of ATV trail on Figure 1). The ATV trail did not have any drainage structures (e.g., water bars) to maintain natural surface drainage patterns. A significant amount of erosion is evident on the trail and it is sloped directly towards fish-stream crossing #3.

In addition to causing damage to fish habitat, the deposition of sediment from both sources occurred outside of the window of least risk for rainbow troutⁱⁱ and may have directly harmed fish.

The placement of soil within the channel at the three stream crossings caused a complete (i.e., material) blockage to upstream fish passage. However, investigators determined that the blockage did not likely have an adverse effect on fish passage. Photos provided by the complainant show that one of the three streams was nearly dry in mid-July when the soil was deposited. In the four months that the soil remained in the channels, a relatively small amount of water backed-up at the inlets to the crossings but not enough to breach the road. With these very low to dry stream flow conditions, it is unlikely that fish were freely moving within the stream channels. Therefore, it is unlikely that fish passage would have been adversely affected.

Natural surface drainage patterns, stream crossings and maintenance

The licensee acknowledged that the removal of culverts and placement of dirt within the channel at nine crossings (three fish-stream crossings and six non-classified drainages) prevented the natural surface flow of water. In the same way, the infill of the nine channels did not ensure functional

drainage systems on the road. For the three crossings on fish-streams, the licensee did not mitigate disturbance to the stream channel.

Investigators also determined that a portion of an in-block road—which extends off the licensee’s road held under a road permit²—is being used by the licensee to provide ATV access for silviculture purposes. The in-block road (referred to hereafter as the ATV trail) was constructed by the licensee in a manner that caused natural surface drainage patterns to be intercepted and directed onto a portion of road permit road then into the main fish-stream crossing (see Figures 5, 6 and 7). It is likely that this diversion of water, and resulting deposition of sediment into the fish-stream, was the major contributing factor to the significant damage to fish habitat at that site.



Figure 5. After harvesting, the licensee converted an in-block road to an ATV trail to provide access for replanting. During the 2018 snowmelt, this trail intercepted surface flows (see arrows) which were directed towards the main stream crossing.

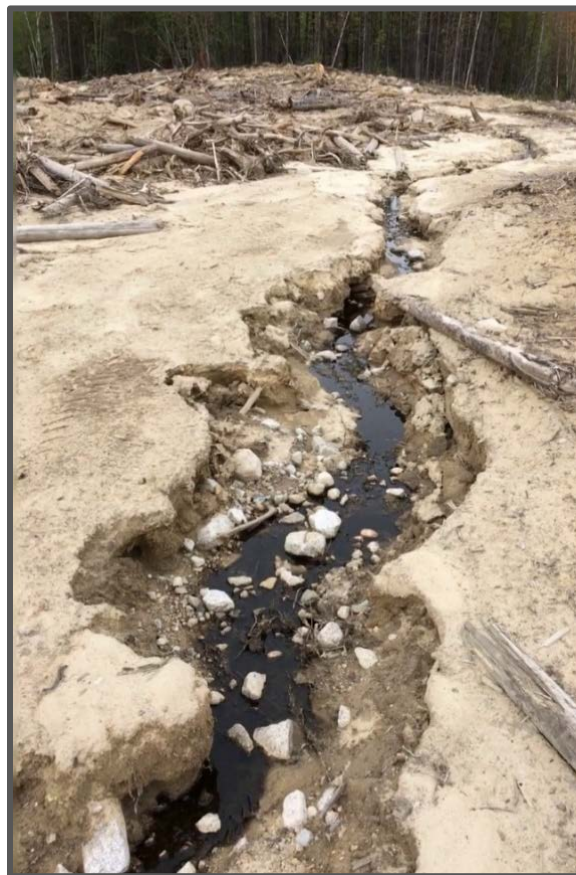


Figure 6. Significant soil erosion about 100 metres upslope of the main stream crossing.



Figure 7. Photo shows where the sediment from the eroded ATV trail enters the main stream. The silt fence was put in place by the licensee during the removal of dirt in November 2017, and it was not installed to address sediment from the ATV trail.

² The road permit road continues approximately 100 metres east of fish-stream crossing #3 (see Figure 1).

Findings

The Board found that the licensee did not provide the required protection for stream channels and fish habitat. Specifically, the licensee did not:

- correctly assess fish presence or absence;
- conduct activities in a time and in a manner that was unlikely to cause harm to fish or fish habitat (section 57 of the FPPR) or mitigate disturbance to the stream channel (section 55(1) of the FPPR); or
- maintain natural surface drainage patterns (section 39(1) of the FPPR) or ensure functional drainage structures on roads (section 79(6)(b) of the FPPR).

The Board recognizes the licensee took steps to remove dirt from the nine crossings once it was notified by the Board of the situation. The licensee has subsequently advised the Board that it has restored natural surface drainage patterns along the ATV trail.

Was the CEB's enforcement appropriate?

CEB Investigation of the Road Deactivation

On July 24, 2017, the complainant called the NRVR line and also submitted information to support his complaint, including photographs obtained at several locations on Barge Road. The photos showed stream crossings filled with dirt and one photo showed rainbow trout in a pool of water. The NRVR line received the complaint, and it was immediately forwarded to the CEB regional manager's 'dashboard' (the system used by CEB to manage incoming complaints). The case file was placed on the dashboard of the natural resource officer (NRO) supervisor in the Vernon field unit. However, the file was not clearly identified as involving a potential impact to fish. As a result, it was not flagged as a high priority for action.

The NRO supervisor happened to be away on assignment to assist with the extreme forest fire situation elsewhere in the province and was then away from work on leave. Although other supervisors assisted with his workload while he was away, when he returned to his office in mid-September, over 100 complaint files were backlogged on his dashboard and had to be prioritized for action, in addition to his regular duties. The complainant's file was not immediately actioned because it had not been identified as a priority.

When the complainant contacted the NRVR line the second time in early November, CEB staff were alerted and assigned the file a high priority due to the possible impact to fish. It was at that time that the Vernon NRO supervisor realized that the location of the complaint was actually in the Penticton field unit. The file was then assigned to an NRO in that field unit to commence an investigation.

On November 15, CEB staff carried out a field inspection, which occurred during snowy conditions. CEB staff observed culverts on the side of the road and that dirt had been placed in the channels at the crossings. At some of those crossings, CEB staff observed water backing up at the upstream end against the dirt in the channel, but the water was not flowing over the road). CEB staff encountered the licensee on the road to the site, at which time the licensee acknowledged that its instructions to the operator regarding road deactivation had not been followed. The licensee also told CEB staff that it was plowing snow from the Dale Forest Service Road and Barge Road in order to bring equipment to the site to remove the dirt from the crossings. CEB did not ask the licensee about when it first observed that the crossings had been improperly deactivated or whether it reported the situation to FLNRORD.

In late November 2017, the CEB regional manager sent the licensee a notice of investigation, indicating that the removal of culverts and filled-in drainage areas may not be maintaining natural drainage as required under section 79(6)(b) of the FPPR. In addition to conducting the site inspection, CEB staff contacted the complainant, gathered evidence, including known fish distribution, and interviewed the licensee on two separate occasions.

CEB staff talked to the licensee and FLNRORD fisheries staff about the presence of fish in Dale Creek and whether the LAA was an accepted and legitimate process under FRPA to determine fish absence. However, despite the apparent contradiction between the complainant's observation of fish and the licensee determining there were no fish, CEB staff did not investigate the possibility that the licensee erred in applying the LAA. Having accepted the results of the licensee assessment, CEB staff did not investigate whether damage to fish habitat or impediments to fish passage had occurred.

In March 2018, the regional manager of CEB notified the licensee that its investigation was closed and issued the licensee a notice of contravention (a compliance action) for failing to ensure that the drainage structures of the road were functional.³ The rationale for not taking enforcement action was not provided.

Findings

CEB did not respond to the complaint about the filled-in road crossings in a timely manner, however, there were extenuating circumstances that led to the delay. Once the complaint was brought to the attention of the correct CEB staff, the response was quick and appropriate.

However, CEB did not consider all relevant factors in its investigation. Specifically, CEB did not consider that the licensee erred in its determination that all the streams were non-fish bearing, despite having reliable information from the complainant that fish were observed at one of the crossings. CEB also failed to consider that the licensee observed the improperly deactivated road on September 12, 2017, but did not take action to fix the problem. CEB did not consider whether damage to fish habitat or impediments to fish passage had resulted.

³ A notice of contravention is given when an official finds that a contravention has occurred and the official believes that the party or parties responsible should be given a written notice of the contravention for their records but no formal action needs to be taken.

CEB Investigation of the ATV Trail and Damage to Fish Habitat

After Board investigators conducted their June 2018 site assessment, they interviewed CEB staff from the Penticton field unit. Prompted by information from the Board investigation, CEB opened a new inspection file for a portion of the road permit road and in-block road used as an ATV trail. CEB conducted a site assessment in late June 2018, along with a FLNRORD senior fish biologist. According to CEB, the fish biologist found that damage to fish habitat did occur at fish-stream crossing #3 and planned to send a letter to the licensee documenting the damage to fish habitat and how it may have violated the federal *Fisheries Act*. The CEB considered the letter as an appropriate response to their investigation. However, CEB did not confirm the letter was sent because the licensee informed them the ATV trail was now fully deactivated.

CEB considered whether section 39 of the FPPR (requirement to maintain natural surface drainage patterns) had been contravened and CEB determined that the section was not applicable because the road did not cross any streams or gullies. However, in the Board's view, the requirement does not limit the obligation for a licensee to maintain drainage patterns only on streams and gullies, but also includes rainfall and snowmelt that is intercepted by a road.

CEB also considered whether the licensee's practices resulted in damage to the environment, which is prohibited by section 46 of FRPA. The licensee told CEB that there was a significant and unexpected amount of snowfall in the area during the winter of 2017/2018. In the spring, the snowmelt was intercepted by the ATV trail, causing erosion of the trail and deposition into the stream. CEB attempted to verify the licensee's claim about the amount of snow in 2017/18, but did not request specific data on the actual snow depths relative to other years. CEB also did not look into the licensee's practices for managing risk of snowmelt on roads causing erosion into streams under normal snowfall conditions.

CEB decided that the licensee could not have foreseen the amount of snowfall and subsequent snowmelt that ultimately resulted in the damage to fish habitat. In the end, CEB found no contraventions and CEB closed its investigation of the ATV trail in November 2018.

Findings

CEB erred in its interpretation of FRPA's requirement to maintain natural surface drainage patterns. The requirement does not limit the obligation for a licensee to maintain drainage patterns only to streams and gullies, but also includes drainage of rainfall and snowmelt that is intercepted by a road. Providing drainage for water on roads is standard forest industry practice.

In considering whether the licensee complied with FRPA's requirement to prevent damage to the environment, CEB did not require the licensee to provide information to support its claim. Nonetheless, CEB determined that the amount of snowfall and subsequent snowmelt was not reasonably foreseeable based on very limited snowfall information. Also, CEB did not adequately investigate whether the licensee knew or could reasonably be expected to know that its practices could result in damage to the environment given the snow conditions that winter.

Conclusions

This investigation examined a complaint from a resident of Kelowna, BC, about damage to fish habitat in the Barge Road area of the Dale Forest Service Road. The complainant had called the NRVF line and four months later learned that his concerns had not been investigated. As a result, he complained to the Board about the damage to fish habitat and the poor enforcement by government.

To address the complainant's concerns, the investigation considered the following questions:

Did the licensee provide the required protection to water and fish habitat?

The Board concludes that the licensee did not provide FRPA's required protection for stream channels and fish habitat. The placement of dirt into channels at nine crossings did not maintain natural surface drainage patterns. At three of the nine crossings, the licensee did not mitigate disturbance to stream channels or conduct its activities in a way that protects fish and fish habitat. At one of those three crossings, the licensee's activities caused significant damage to fish habitat.

Was the CEB's enforcement appropriate?

The Board concludes that the delay in CEB's response to the complainant's call to the NRVF line was unfortunate, but there were mitigating factors that contributed to the delay. Once the complainant followed up his initial complaint, the response time was reasonable and appropriate.

The Board concludes that CEB's investigation and subsequent lack of enforcement action in relation to the placement of soil into the stream channels and damage to fish habitat from the ATV trail were not appropriate. CEB did not appropriately consider that the licensee erred in its determination that all stream crossings were non-fish bearing or that the licensee was aware that soil was placed into the channels but did not take any action for almost two months. Also, in relation to erosion of the ATV trail and subsequent significant damage to fish habitat, CEB erred in its interpretation or application of FRPA's requirements to maintain natural surface drainage patterns and requirements to prevent damage to the environment.

ENDNOTES

ⁱ Ministry of Forests, 2003. Penticton Forest District LAA Text (April 2003).

ⁱⁱ For each species of fish in a region, FLNRORD has established instream work windows of least risk to fish. For rainbow trout in the Okanagan—which includes the Barge Road area—the window of least risk extends from July 22 to October 31. The beginning of the window (July 22) occurs after rainbow trout have spawned and subsequently hatched with a buffer of several weeks to enable development to the fry stage. For rainbow trout, which spawn in the spring, the period prior to the start of the window (July 22) is the most sensitive time in the life cycle of rainbow trout. The end of the window (October 31) coincides with increasingly colder water stream temperatures and a corresponding decrease in the metabolism of fish. In these colder waters, the metabolism of the fish will decrease and they are more vulnerable to stressors such as higher sedimentation levels. The Okanagan work windows are available at: <https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-licensing-rights/working-around-water/regional-terms-conditions-timing-windows/okanagan-timing-windows>



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