



File: ARCS-00975-05

August 31, 2022

Christine Armour, R.P.F.
Manager, Audits and Investigations
Forest Practices Board
P.O. Box 9905 Stn Prov Govt
Victoria, British Columbia
V8W 9R1

Dear Christine Armour, R.P.F.:

On behalf of the Ministry of Forests (the Ministry), I ask you to please accept this letter as a response to the Forest Practice Board's (the Board) recommendations in its report 'Audit of Range Planning and Practices Range Agreements – Range 077302 (grazing) and RAN077303 (hay) - Quesnel Natural Resource District', dated June 2022.

Forest Practices Board Recommendation:

1. The range tenure holders prevent further damage this grazing season (2022) to the stream and riparian area of Newa Creek by implementing measures/practices to limit grazing in this sensitive area.

The Ministry accepts this recommendation to limit grazing in the riparian area of Newa Creek. However, the Ministry has not classified this portion of Newa Creek as sensitive. The Ministry proposes that the Board omit the word 'sensitive' from the recommendation. To prevent further damage to the area, the range agreement holder has moved the livestock out of the area to a different location of the range to address this concern. Moving forward, the Ministry will monitor the area to ensure that grazing will be limited in the riparian area of Newa Creek.

Forest Practices Board Recommendation:

2. The range tenure holders work with the Ministry of Forests to develop a long-term plan to restore Newa Creek to a properly functioning condition.

The Ministry accepts this recommendation in part. It is challenging to attribute the damage to Newa Creek solely to the range agreement holder. Factors other than livestock grazing may be having an impact on the creek. It is not clear if stream assessments were carried out as part of the Board's audit process and so the condition of Newa Creek is not fully understood. Sloughing streambanks and areas of instability are likely the result of cumulative effects that have had an adverse effect on Newa Creek downstream of the Batnuni crossing. Remediation measures carried out by the range agreement holder alone may not restore Newa Creek because additional factors beyond the control of the range agreement holder, such as drought followed by heavy rainfall events and fire, which are exacerbated by climate change. The percentage of the watershed that is harvested, numerous roads bisecting Newa Creek, the degree in change of elevation, the southwest aspect, and the narrow creek morphology affects the amount and rate of spring runoff and the ability of the creek channel to withstand freshet.

The Newa Creek watershed is approximately 34 square kilometres, of which 53.5% has been disturbed by harvesting, fire, and nearby road systems. There is a difference in elevation of 210 metres from the top of the watershed to the Batnuni Road crossing. The topography consists of undulating terraces to the north and a steep hill that leads to the bottom of the watershed; comprised of southwest facing aspen sidehills and, conifer stands facing north and northeast.

The watershed is bordered by two major roads: the Comstock Forest Service Road (FSR) on the east side and the Miller FSR on the west side. Numerous roads branch off the Comstock FSR and laterally traverse the entire watershed. The lower portion of the watershed is a flat, benched, open, and grassy area with well-spaced aspen trees. This flat expanse appears to have been cultivated and seeded to domestic forage sometime in the past. It acts as a flood plain and there is evidence of grassed over course channels. The soils in this flat area exposed by the creek show loam and sandy loams with angular and or rounded bed material layers and are susceptible to erosion and contribute to low streambank stability.

Batnuni Road traverses the base of the watershed in an east-west direction. To cross the road, Newa Creek flows through a 1.7 x 2.1 metre culvert. Water flow is poorly deflected due to poor culvert alignment and less than 30 cm overburden covering the culvert. As a result, this may be causing streambank failure at the inlet and outlet of the culvert, promoting hydrologic erosion. The culvert outlet is elevated approximately 30 centimetres with cascading flow into a pool. The morphology of the creek is also a factor contributing to its condition. It is narrow and winding and cannot contain the current volume of water at freshet. Recent surveys by Ministry staff along the creek indicate that Newa Creek struggles to contain water in freshet as it changes course after passing through the culvert. This intense water flow in the form of a flash flood at freshet is derived from local observations. Flooding of the road in the spring, rutting of the road from water overflowing the culvert, water running down the ditches, and a complete rebuild of the road to the west of this floodplain area by a timber company four years ago all speak to the volume of spring water that cascades down this watershed. This was pointed out in the written response by the range agreement holder to the board's draft report.

Newa Creek has been an area of intensive grazing for approximately 100 years. There is shade, water, forage, and unlimited access for the livestock. Streambank failures in this area of the creek increase the access to the creek for the livestock, compounding the problem. The range agreement holder has agreed to remove their livestock from the area to allow for revegetation of the affected streambank.

Ministry staff also recently carried out preliminary observations on creek water assessments. The presence of juvenile rainbow trout, mayflies, damsel fly nymphs, stone fly larva, and caddisfly casings indicate that water quality is not substandard. There are sections of stream channel that are heavily brushed in, inhibiting livestock access, and protecting stream integrity.

In response to the grazing pressure on this portion of the creek, the Ministry of Forests is considering the following:

- A choice between two optimal locations where a cattle guard could be installed east of the Newa Creek area on the Batnuni Road. The livestock could then be moved out of the area on a rotational grazing system. However, altering the grazing system will not solely address regrowth of the shrubs to a beneficial state as the harsh freshet events and funnelling of water constantly erode the streambanks during freshet. Chances for vegetation to establish and provide long term streambank stability is limited.
- Fencing has been considered, but due to the tendency of the area to flood, the fence would likely be removed by the water and debris, and a fence may adversely affect wildlife access.
- Debris fencing and piling along the streambanks of the creek have also been considered. This is a practice the Quesnel District has used in other locations. In this case, because of the ample evidence that the creek has changed its course and cut new channels many times in the past, location of debris fencing would be difficult to judge and at high risk for removal by the freshet.
- Planting of willow whips, alder, and other shrubs is a remediation measure, but until the hydrology changes, these plantings would likely not hold. Plantings could be located well back from the streambanks to increase the chance of establishment, but time would be needed to stabilize streambanks immediately adjacent to the creek.

The Ministry will observe the 2023 spring freshet to determine which of the above mitigation measures might be successful. The Ministry will carry out stream assessments and rangeland health assessments where resources allow.

In conclusion, Newa Creek may remain compromised because of the factors listed. The Batnuni Road that traverses the bottom of this watershed is a Ministry of Transportation and Infrastructure road, and it is their responsibility to determine the appropriateness of their road structure. The topography and aspect are also fixed features, so snowmelt and runoff will also continue to contribute to the flow of Newa Creek. The narrow stream morphology does not appear

to be equipped for the volume of spring water. Once the cutblocks regenerate in the watershed, some water volume may be abated. Future deactivation of roads may reduce water flow.

The range agreement holder will be asked to implement mitigation measures to reduce livestock use of this area and will work to restore vegetation along the streambank where possible. To instruct the range agreement holder to wholly remedy these issues is not likely fully achievable as they are one component of a cumulation of forces, both natural and manmade, that are responsible for the current condition of the creek.

Forest Practices Board Recommendation:

3. The Ministry of Forests ensure this range tenure holder meets the legal requirements of FRPA in a timely manner.

The Ministry accepts this recommendation. The range agreement holder has a Range Planning and Practices Regulation, Section 3 exemption from a range use plan for the 2022 grazing season while a replacement plan is being developed. The range agreement holder is working with the Ministry by removing livestock from season-long grazing in this area and there will be measures in the range use plan to mitigate grazing in the Newa Creek area.

The *Forest and Range Practices Act*, Section 52 infraction was reported on the Natural Resource Violation Reporting Line. The reporting number for this suspected violation is 189604.

If you have any questions, please feel free to reach me.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Ian Hannah', with a long horizontal flourish extending to the right.

Ian Hannah, R.P.F.
District Manager
Quesnel Natural Resource District