



**MINISTRY OF FORESTS, LANDS, NATURAL RESOURCE OPERATIONS AND RURAL DEVELOPMENT**  
**POST-WILDFIRE RISK ANALYSIS – RECONNAISSANCE REPORT**

*NOTE: The results given on this form are preliminary in nature and are intended to be a warning of potential hazards and risks. It is not a final risk analysis and further work may alter the conclusions. Please contact the author for more information.*

<b>FIRE: Octopus Creek (N51800)</b>		<b>FIRE YEAR: 2021</b>	<b>DATE OF REPORT: November 3, 2021</b>		
<b>AUTHOR: Sarah Crookshanks</b>					
<b>REPORT PREPARED FOR: District Manager, Southeast Fire Centre</b>					
<b>FIRE SIZE, LOCATION, AND LAND STATUS: 22049 ha. Fire is located along the east shore of Arrow Lake south of Fauquier. Crown land, with a few parcels of private property near Taite Creek and Hutchison Creek.</b>					
<b>VALUES AT RISK: Applegrove Road, Private Property, Recreation Sites</b>					
<b>WATERSHEDS AFFECTED:</b>		<b>TOTAL AREA</b>	<b>AREA BURNED</b>	<b>BURN SEVERITY (% of watershed area)</b>	
Taite Creek		8791 ha	3978 (45%)	23% H, 12% M	
Octopus Creek		4616 ha	2291 (49%)	18% H, 23% M	
Van Houten Creek		4208 ha	2597 (62%)	36% H, 20% M	
Hutchison Creek		5919 ha	2056 (35%)	5% H, 19% M	
Gladstone Creek		3041 ha	1870 (61%)	28% H, 27% M	
<b>SUMMARY OF HAZARDS AND RISKS</b>				<b>HAZARD<sup>1</sup></b>	<b>RISK<sup>2</sup></b>
<p><u>Hazards:</u> The most significant hazards are debris floods, flooding and water quality impacts</p> <p><u>Risks:</u></p> <ol style="list-style-type: none"> <li>Risk of flooding on Taite Creek impacting Applegrove Road or Taite Creek Recreation Site</li> <li>Risk of a debris flood on Octopus Creek impacting Applegrove Road or Octopus Creek Recreation Site</li> <li>Risk of a debris flood on Octopus Creek impacting Octopus Hotsprings Recreation Site</li> <li>Risk of a debris flood on Gladstone Creek impacting Gladstone Recreation Site</li> <li>Risk of a debris flood on Van Houten Creek impacting Van Houten Recreation Site</li> <li>Risk of water quality impacts to surface domestic water use on sources along Applegrove Road</li> </ol>				M	M
				M	M
				M	H
				H	H
				H	H
				L	M
<p>1. Hazard = P(H), the probability of occurrence of a hazardous event</p> <p>2. Risk = Partial risk P(HA) = P(H) x the probability of it reaching or affecting an element at risk</p>					
<b>POTENTIAL MITIGATION AND FURTHER ACTIONS:</b>					
<ul style="list-style-type: none"> <li>Domestic surface water users on creeks that fall within the fire perimeter may want to consider additional water quality treatment measures.</li> <li>Recreation Sites and Trails BC may want to post information regarding post wildfire hazards at affected recreation sites depending on the site popularity and infrastructure</li> <li>Recreation Sites and Trails should consider closing Gladstone, Van Houten and Octopus Hotsprings Recreation Sites for at least the next 3 years due to high flood risk</li> <li>It is recommended that MFLNRORD regularly inspect and maintain Taite Creek and Octopus Creek bridges along Applegrove Road, particularly after significant rainstorms.</li> </ul>					
<b>COMMENTS:</b>					
<ul style="list-style-type: none"> <li>Octopus Creek wildfire resulted in large swaths of high burn severity in debris flood prone watersheds. However, the elements at risk within the watersheds are limited to recreation sites, road/bridges and several parcels of private property. No dwellings were identified to be at risk from post fire natural hazards.</li> </ul>					
<b>SIGNATURE:</b>			<b>ATTACHMENTS:</b>		
Original signed and sealed			See attached report, map and photos for further details.		

## **Octopus Creek Fire (N51800) 2021 – further details on the Post-Wildfire Risk Analysis**

The Octopus Creek fire began on July 11, 2021 and burned a large area on the east shore of Arrow Lake south of Fauquier. Most of the land is Crown land, with a handful of parcels of private land along Arrow Lake. Several dwellings along Applegrove Road were lost in the fire. An aerial overview was completed for this fire on October 1. No field work was undertaken, since the elements at risk from post-wildfire geohazards are limited to recreation sites, Applegrove Road and several parcels of private property. No dwellings were identified to be at risk from post fire natural hazards.

Burn severity mapping was produced for this fire in late September by regional geomatics staff, and it closely aligns with the provincially developed burn severity mapping released in late October. The aerial overview confirmed that the burn severity mapping is generally accurate.

Watershed morphometrics suggest that Octopus, Gladstone, Hutchison and Van Houten Creeks are all potentially susceptible to debris floods, whereas Taite Creek is more likely to be susceptible to clearwater flooding. Because of the large proportion of high burn severity in the Gladstone and Van Houten watersheds, those creeks are considered to have a high debris flood hazard.

The recreation sites along the east shore of Arrow Lakes are located on the creek fans and are susceptible to post fire flooding hazards. Gladstone, Van Houten and Octopus Hotsprings Recreation Sites are not listed on the public government website, though they are listed as active on the publicly available spatial dataset. I would recommend posting information regarding post wildfire hazards at the recreation sites, depending on their popularity and infrastructure. The province has developed a brochure and sign on post-fire hazards that can be used for public communication. I would also recommend closing Gladstone, Octopus Hotsprings and Van Houten Recreation Sites for at least the next 3 years due the high flood hazard. The risk is higher at sites with overnight use, which should be considered when deciding on closures.

Applegrove Road is susceptible to flood damage where it crosses the Taite Creek and Octopus Creek fans. MFLNRORD should inspect and maintain the bridges regularly at these crossings. Domestic surface water users on creeks that fall within the fire perimeter may want to consider additional water quality treatment measures.

The private lot at the mouth of Hutchison Creek does not appear to have any structures or buildings. Local government confirmed that they are unaware of any dwelling on this lot. Therefore, it is assumed that the land is unoccupied and the water licence on Hutchison Creek is not currently in use.

Sarah Crookshanks, P.Geo.  
November 3, 2021

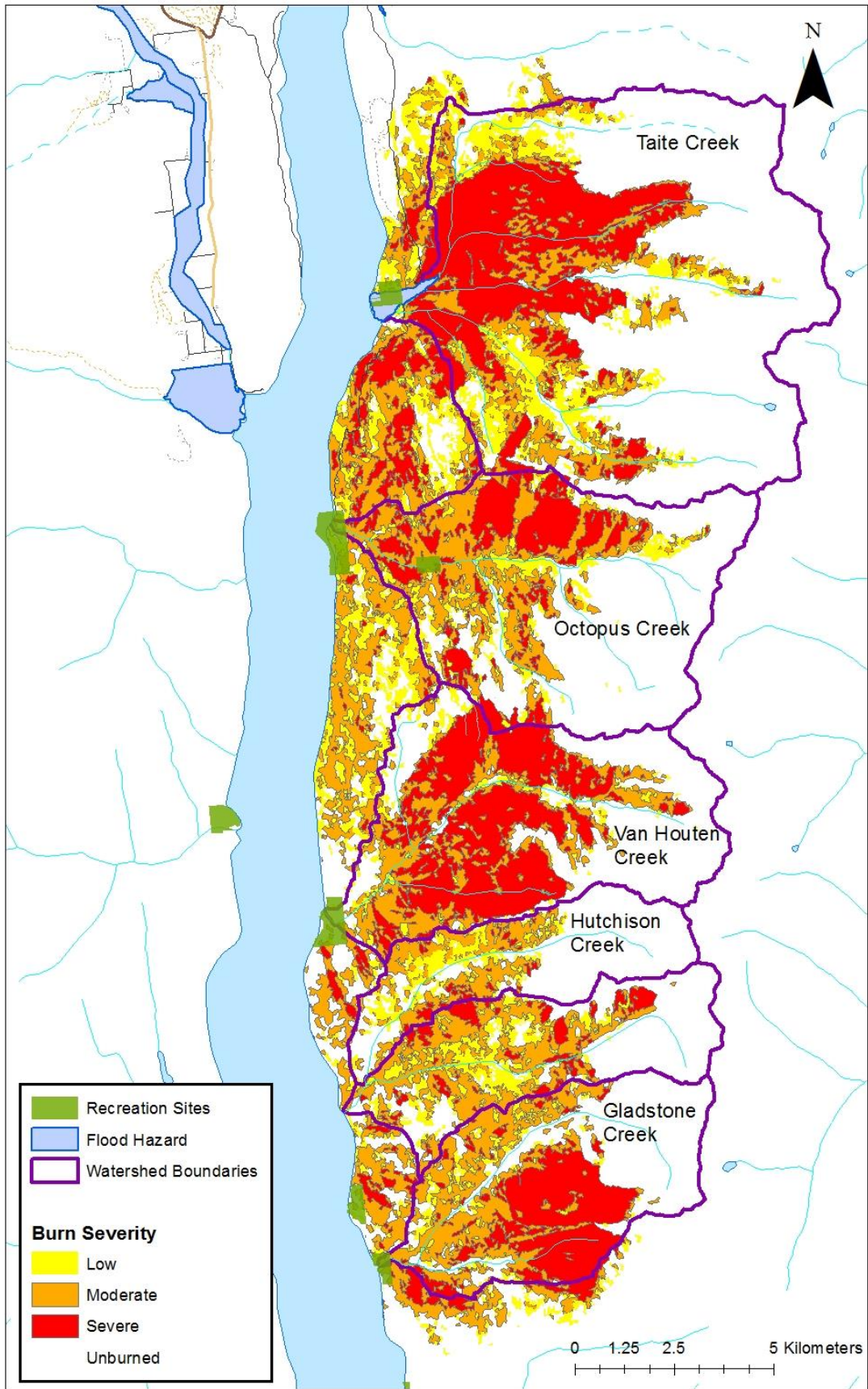






Photo 1. High burn severity in Van Houten Creek watershed.



Photo 2. Lower slopes of Taite Creek watershed.





Photo 4. Gladstone Creek.