



# Preapproved Routine Impact Assessment Ordinance Detonation

Mt Revelstoke & Glacier national parks  
IAA 2019

Preapproved Routine Impact Assessments (PRIA) are pre-determined environmental management and mitigation measures for a defined class of routine, repetitive projects or activities with well understood and predictable effects. Approved PRIAs are an acceptable Impact Assessment pathway as they fulfill Parks Canada's obligations as a manager of federal lands under the *Impact Assessment Act* (IAA). This document replaces BMP 04.00 Ordinance Detonation (February 2015).

## **Scope of Application:**

This PRIA includes (not limited to):

Detonation of unexploded ordinances by winter avalanche control personnel, visitor safety and their subcontractors.

## **Conditions and Exceptions:**

This PRIA does not apply under the following exceptions/conditions:

No exceptions. Controlled detonation required for ordinances that do not detonate during winter avalanche control. The Workers Compensation Act in British Columbia governs the certification of blasters and the handling, storage, transportation and use of explosives within the jurisdiction of the Workers Compensation Board of BC. Part 21.77(2) states that "*no attempt must be made to remove an unexploded charge and no other work may take place within the blasting area, until the misfired charge has been successfully detonated*".

## **Approved geographic areas of application:**

This PRIA may be used in:

Mount Revelstoke & Glacier national parks, including Rogers Pass National Historic Site.

## **Valued Components and Effects Analysis**

Aquatic ecosystems (including lakes, rivers and surrounding riparian zones)

- Seismic Impacts - Explosives create seismic waves when they are detonated; the location of explosives can impact fish.
- Shrapnel may deposit in streams.

Terrestrial vegetation

- Destruction of Whitebark pine seedlings and /or saplings

Terrestrial wildlife

- Species of concern: Goats\* and Caribou\*\*;
- Noise and/or movement of machinery and aircraft;

- Seismic, noise disturbance from explosives;
- Injury or stress due to helicopter use in close proximity;
- Injury from shrapnel.

\* Mountain goats prefer areas with steep, rugged terrain in close proximity to cliffs, particularly south and/or west-facing slopes; talus slopes; travel and escape routes (White et al, 2012).

\* Goats may be disturbed by activities up to 1.5km away during the spring natal period (Price and Daust, 2005).

\*\*Caribou are usually associated with more gentle alpine and sub-alpine terrain, as well as treed areas in the ESSF and ICH. Caribou do not hide under cliffs and escape terrain as mountain goats do.

**Soils**

- Potential soil contamination.

**Visitor experience**

- Noise disturbance;
- Restricted access to certain areas of the parks;
- Danger to the public, injury or harm.

**Cultural resources**

- No anticipated adverse effects, however, the Detonation team will be supplied with the CRM site map to identify any potential conflicts/impacts.

**Indirect effects to aboriginal and non-aboriginal peoples**

- No anticipated adverse effects.

**Mitigation Measures**

Table 1: Environmental Timing Windows Table

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Fish	AVOID INSTREAM WORK					Least risk window for work in and around freshwater, June 01 – Sept 01 – SPECIES DEPENDANT				AVOID INSTREAM WORK		
Birds	Reduced risk for harm to birds		AVOID VEGETATION REMOVAL Bird Nesting Period: April 01 – August 31					Reduced risk for harm to birds				
Bats	Bat in Hibernacula		Bats Nursing Pups					Reduced risk for harm to bats: Sept 01 – Nov 15			Bat in Hibernacula	

**Schedule**

- 1) Conduct detonation from August through October. Conduct threat assessment for detonation outside of this time frame.
- 2) Avoid detonation during winter months, spring and early summer during goat natal cycles.

**Area Search**

- 3) Search target areas for people, wildlife, or nearby streams up to 1.5 km away with a helicopter.  
\*Note: goats are difficult to see when lying down.
- 4) Search can begin on the ground with a spotting scope, and/or in the air via helicopter, depending on the project locations and vantage points.
- 5) Where visibility with a spotting scope is limited, a search should be conducted from the air, at least a 1000m elevation above ground level.

- 6) Begin search with a helicopter in advance of deployment of UXO team; allow time for hazing and to set up spotting scope on the ground to monitor animal(s), if identified.
- 7) If wildlife is encountered, select hazing option below. If area is clear, conduct detonation of ordinance.

### **Hazing**

- 8) Leave the area and wait for the wildlife to leave;
- 9) If wildlife doesn't leave the area, use people/deployment team presence (noise, movement etc.) to dissuade wildlife from the area **only if** a safe escape route for the animal exists that directs the animal AWAY from the blast location. Ideally the goats will move out of the area with the arrival of the team. If the goats remain in the area, people on the ground can move to sight line of the goats and this should cause the goats to move out of the area.
- 10) If people are unable to move the goats, use a helicopter to push the animals from the site, **only if** appropriate escape routes exist. Helicopter hazing will be limited to adult goats only (no kids), within no greater than 500 m of the goat(s). Chase time will be limited to no more than 10 minutes, or until goats reach escape and/or cliff terrain, when they will typically move no further.

### **Monitoring**

- 11) Dedicate one team member to monitor and record wildlife activity (use field notebook).
- 12) If there are multiple locations, determine if one monitor is sufficient for both locations, or if a second monitor with spotting scope is required.
- 13) Monitor wildlife activity from a designated safe point with spotting scope.
- 14) Begin monitoring with spotting scope (maximum 2 hours before anticipated time of detonation- ungulates, particularly goats can be difficult to identify in a short amount of time, as they can blend in with the natural environment).
- 15) Scan blast area from a designated safe point, to identify animal behavior during blasting activity (i.e. an animal running from the blast, lying down, minor or major movement or injury).

### **Reporting**

- 16) Report locations of any identified wildlife in the area to the project lead immediately.
- 17) Record before, during and post response of animals to detonation activity.
- 18) Record the number of detonations and the location annually.
  - Submit annual monitoring report to IA Scientist that includes the number and location of detonations and wildlife observations, if any.

### **Approval**

Original approved and signed by Nicholas Irving, Field Unit Superintendent, June 5, 2015.

## References:

Mount Revelstoke, Glacier, Rogers Pass Management Plan, 2010.

British Columbia Ministry of Environment. (2006). *GUIDELINES FOR MANAGING IMPACTS FROM MINING EXPLORATION ON WILDLIFE & HABITAT*. BMP series, Peace Region, B.C.

Cote, S. (1996). Mountain Goat Responses to Helicopter Disturbance. *Wildlife Society Bulletin, Vol. 24, No. 4 (Winter, 1996)*, pp. 681-685. Allen Press. Retrieved September 04, 2013 from <http://www.dfg.ca.gov/wildlife/nongame/GEWG/docs/Cote2010.pdf>

D'Arcy, M. (2010, March). Timber Harvesting Practices and Mountain Goat Habitat in the Babine Watershed – GIS Mapping & Analyses (Project 2008–3). McElhanney Consulting Services Ltd, Smithers, BC. Retrieved Sept 04, 2013 from <http://www.babinetrust.ca/DocumentsBWMT/BWMTReports/2008-3GoatHabitatReportMar-09.pdf>

Price, K. and D. Daust. 2005. Babine Watershed Monitoring Framework. Unpubl. Prepared for Babine Monitoring trust Governance Design Group.

White, K., Gregovich, D., Pendleton, G., Barten, N., Scott, R., Crupi, A., & Larsen, D. (2012). Mountain goat population monitoring neat the Kensington Mine, Alaska. Annual wildlife Resarch Report: Alaska. Department of Fish and Game, Juneau, AK, USA. Retrieved September 04, 2013 from <http://dnr.alaska.gov/mlw/mining/largemine/kensington/pdf/3goat2012.pdf>