

Mountain Goat Guidelines for Adventure Tourism Tenures in the South Coast Region of British Columbia

Adopted and modified from the Skeena Region

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British Columbia Ministry of Forests, Lands, Natural Resource Operations, and Rural Development

Document Revision Information

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1.0	May 22, 2019	Initial Draft	D.A. Guertin, N. Bickerton
1.1	June 12, 2019	Update to Sections 2.0, 5.0, & 6.0	D.A. Guertin
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1.3	August 28, 2019	Update to Sections 2.0, 3.0, & 6.0	D.A. Guertin
1.4	October 10, 2019	Update to Section 6.0	D.A. Guertin
1.5	December 3, 2019	Update to Sections 1.0, 6.0 & Table 2	N. Bickerton, D.A. Guertin

1. Purpose

This document is intended to assist British Columbia (BC) Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) staff when reviewing and making decisions on adventure tourism tenures on Crown land in the South Coast Region (SCR) issued under the *Land Act*. It provides guidance and clarification on the strategies and requirements operators are to include in their Management Plan if operating in an area that is potentially occupied by mountain goats (*Oreamnos americanus*). The overarching goal of this guidance document is to promote consistent and transparent processes within the adventure tourism industry so that activities are conducted in a manner that does not compromise the current distribution of mountain goats, the sustainability of their populations, or the integrity of their habitats in the SCR. While these guidelines are primarily intended for adventure tourism tenures; they may be applied to any land tenure with the potential to impact mountain goats or their habitats (e.g., Commercial Film).

This document is primarily for internal use; however, this document, or sections thereof may be shared with proponents during the adjudication process, as necessary.

Note that this document is considered draft and some content may change based on the results of compliance and monitoring, new science, the development of innovative practices, and as new decisions on government policy or initiatives are made. FLNRORD will periodically review the guidelines so that they remain relevant and up to date.

2. Background

Mountain goats are a valued species in BC, viewed as an iconic symbol of rugged mountains and wilderness and valued by First Nations for social and economic purposes as well as recreational hunters. In BC, mountain goats are ranked S3 (Special Concern) and blue-listed (BC CDC 2018). The species has not been assessed at the national level (COSEWIC 2017). There are estimated 43,000-71,000 mountain goats in BC, with an estimated 1,600-2,900 mountain goats occurring in the SCR (FLNRORD 2019).

In 2010, the Province released the [Mountain Goat Management Plan](#) (MGMT 2010) that identifies a set of coordinated conservation activities and land use measures needed to ensure mountain goats are conserved in perpetuity. The management objectives for the species are:

- to effectively maintain suitable, connected mountain goat habitat;
- to mitigate threats to mountain goats; and
- to ensure opportunities for non-consumptive and consumptive use of mountain goats are sustainable.

Two ecotypes of mountain goat are generally recognized in BC ('coastal' and 'interior'), and both may occur in the SCR. Mountain goats generally stay close to escape terrain that is critical for predator avoidance at all times of the year (MGMT 2010). Steep rock cliffs are the main feature for escape terrain and it is the close proximity of forage and escape terrain that provides quality habitat for mountain goat (MGMT 2010). Winter is a critical season for mountain goats because of the limited availability of food resources, higher vulnerability to predators, and movement restrictions primarily due to the energetic costs of moving through deep snow (MGMT 2010). As such, high value winter ranges are crucial for animal survival (MGMT 2010). In coastal areas, mountain goats typically winter at moderate to lower elevations in forested habitats and movement within or on to winter ranges is typically in response to changing snow conditions (MGMT 2010). Interior populations winter in areas of generally drier and lower snowfalls at higher elevations (MGMT 2010). Winter ranges are typically occupied from November through April, although recent research on mountain goat movements in the SCR indicates that some goats remain within or near winter ranges year-round (C. Nietvelt, pers. comm. 2019) Natal areas used by females for parturition (birthing) and early rearing can also be considered sensitive habitat areas (MGMT 2010); these areas are typically occupied May 1 to July 15. Summer range is particularly important during the early rearing period and is typically associated with alpine and sub-alpine meadows that have rich forage and nearby escape terrain (MGMT 2010).

Currently, there are 791 mountain goat winter range polygons established in the SCR, which are distributed throughout the Sunshine Coast, Sea to Sky, and Chilliwack Natural Resource Districts. Of the 791 winter range polygons, 448 have been confirmed to be occupied by mountain goats during the winter period and 343 have not been surveyed for occupancy. There are no protected natal areas in the SCR; however, natal areas are often spatially associated with winter range (MGMT 2010). Summer foraging habitat has not been spatially defined for the SCR. Inventory and research efforts are ongoing in the SCR to address knowledge gaps related to mountain goat ecology and habitat use.

3. Issue

Mountain goats are sensitive to human disturbance and have been shown to modify their space use in response to human activities (Côté 1996, Côté et al. 2013, Richard and Côté

2016)¹. Activities associated with backcountry tourism have the potential to adversely impact mountain goats and their habitats, and the level of concern may vary depending on the type of activity, location, time of year, and frequency. Examples of activities of concern include heli-recreation (heli-skiing, heli-biking, heli-hiking, heli-sightseeing), hiking, mountain climbing, ski touring, and motorized recreation (snowmobiling and snow-biking). In this context, mitigating human disturbance in areas inhabited by mountain goats is important for ensuring sustainable mountain goat populations.

FLNRORD is particularly concerned about the potential impacts of helicopter disturbance on mountain goats in the SCR, especially helicopters operating within 1,500 m of high-value mountain goat habitats such as winter ranges, natal areas, and summer foraging habitat. Some mountain goat winter ranges in the SCR have been spatially mapped², whereas investigations into natal areas and summer ranges are planned.

4. Commercial Backcountry Recreation Guidelines

In 2000, the Provincial Government recognized the need for province-wide commercial backcountry recreation guidelines to address concerns with disturbance to wildlife and to be consistent in evaluating backcountry recreation proposals. In 2002, the Province released the “*Interim Guidelines for Mitigating Impacts of Commercial Backcountry Recreation on Wildlife in British Columbia*.” This original set of guidelines was replaced by the “[Wildlife Guidelines for Backcountry Tourism/Commercial Recreation in British Columbia](#)” (hereafter Wildlife Guidelines) in 2006. The intent of the Wildlife Guidelines is to assist adventure tourism operators and Provincial Government staff in protecting wildlife and wildlife habitat while supporting adventure tourism in BC. FLNRORD reserves the right to amend the Provincial Wildlife Guidelines or these SCR guidelines should new scientific or site specific knowledge warrant.

5. Managing for Mountain Goats

Adventure tourism activities may have wide-ranging impacts and/or localized site impacts. Operations with motorized access and activities that impact the larger landscape are considered wide-ranging impacts. These operations are likely to have greater impacts on mountain goat populations and their habitats compared to non-motorized activities. Facilities that occupy space on the land and change the landscape are considered to have localized site impacts. Such facilities include (but are not limited to) roads, ski runs, snowcat trails, hiking trails, cabins, heli-pads, fuel caches, emergency shelters and parking lots. The establishment of facilities in mountain goat habitat may be incompatible with habitat objectives or may require detailed mitigation strategies.

[Adventure Tourism Policy](#) (2015) requires a Management Plan to be completed with an AT application. In reviewing the applicant's proposal, the Decision Maker must be satisfied that the Management Plan excludes or addresses areas of significant environmental issues. Thus, a complete Management Plan will include a detailed impact assessment that identifies potential adverse effects to wildlife and wildlife habitat potentially occurring in the operating area as a result of all proposed activities. If it has been determined that mountain goats have the potential

¹ See Sections 2.9.4 of the provincial [Mountain Goat Management Plan](#) (MGMT 2010) for a detailed review of the responses of mountain goats to different anthropogenic disturbance types.

² See [provincial Ungulate Winter Range website](#).

to occur in the proposed operating area, proponents are expected to assess the potential direct and indirect impacts to mountain goats and their habitat as a result of the proposed activities. The assessment must be informed by current scientific literature and consistent with relevant government guidance (e.g., Wildlife Guidelines, provincial Mountain Goat Management Plan) and [Strategic Land and Resource Plans](#) (e.g., Sea-to-Sky Land and Resource Management Plan). The impact assessment must be signed by a qualified Registered Professional Biologist (RPBio) in BC³ with technical expertise in mountain goat ecology and behaviour.

The Wildlife Guidelines form the foundation for addressing potential conflicts with wildlife and their habitats within an adventure tourism operator's Management Plan. They list the results that are to be achieved to address wildlife values in a Management Plan, along with the desired behaviours (i.e., specific practices) that are designed to meet those results. The desired behaviours are precautionary "defaults" that operators are to follow, unless alternative strategies are approved by FLNRORD biologists. Operators are responsible for understanding the guidelines relevant to their activities. The operator's Management Plan must provide details on the behaviours to be used to achieve the intended results of the Wildlife Guidelines and ensure/confirm the on-going success of the strategies. Table 1 summarizes the intended results for mountain goats for aerial-related recreation, motorized recreation, and non-motorized recreation during the winter and snow-free periods.

To achieve the intended results for mountain goats as described in the Wildlife Guidelines, adventure tourism operators must:

- Adhere to all desired behaviours for the particular activity or activities that they are authorized to undertake or are applying for.
 - a. If this is the case operators must include a statement within their management plan that: *"The Wildlife Guidelines, as amended from time to time, will be followed/ adhered to when carrying out activities authorized by the Crown land tenure."*

or

- Propose alternative strategies to achieve the intended result through a Wildlife Mitigation Strategy in their Management Plan.
 - a. If this is the case, the Management Plan must include a statement to the effect that: *"The Wildlife Guidelines will be adhered to when carrying out activities, except where an alternative strategy has been approved."*

An alternative strategy must be approved by a FLNRORD Regional Biologist for all specified results if the operator decides not to adopt any of the desired behaviours listed in the Wildlife Guidelines for their activities.

Alternative strategies must:

- Describe activities that will achieve the specified result, such as:
 - a. Altering trails.
 - b. Altering travel/access routes.
 - c. Altering drop-off and pick-up locations.

³ The [BC College of Applied Biology Code of Ethics](#) includes the obligation to "undertake assignments...only in areas in which they are competent", and to "ensure they meet a professional standard of care by practicing applied biology with.... due diligence". In this case, it is expected that the qualified professionals will have expertise in the ecology, physiology, and conservation of mountain goats, and experience in their inventory and impact assessment. Applying the guidelines and principles in this document, in combination with their professional judgment, will help to ensure that professionals meet standards of care and ensures due diligence, which includes expending the appropriate level of effort and consulting with experts. Professionals that do not meet the standard of care are subject to complaints filed by other members of the College, and the possibility of disciplinary action by the College if these complaints are found to have merit.

- d. Altering flight paths.
- e. Altering fuel cache locations.
- Describe a monitoring and adaptive management framework to track progress and ensure desired results are being met.
- Be signed by an RPBio.

Table 1. Results to be achieved for Mountain Goats in Adventure Tourism Management Plans (from 2006 Wildlife Guidelines)

Activity	Definition	Result (Winter Period)	Result (Snow-free Period)
Aerial-related Recreation	<ul style="list-style-type: none"> • Includes the portion of any recreation activity that involves the use of helicopters or fixed-wing aircraft. 	<ul style="list-style-type: none"> • Minimize physiological or behavioural disruption of mountain goats. • Continuous occupation of mountain goat winter ranges. • Minimize physiological or behavioural disruption of mountain goat during the critical calving period. • Continued occupation by mountain goat of critical calving habitat. 	<ul style="list-style-type: none"> • Same as winter period.
Motorized Recreation	<ul style="list-style-type: none"> • <i>Winter</i>: Includes all motorized vehicles intended or used for travel on snow. • <i>Snow-free</i>: Includes motorized vehicles intended for use off public roadways during the snow-free season, including 'quads', 4x4 trucks, sport utility vehicles and trail bikes. 	<ul style="list-style-type: none"> • Minimize physiological and behavioural disruption. • Minimize changes in habitat use. • Minimize physiological or behavioural disruption of mountain goats on winter ranges. • Continuous occupation of mountain goat winter ranges. 	<ul style="list-style-type: none"> • Minimize physiological and behavioural disruption. • Minimize changes in habitat use. • Minimize physiological or behavioural disruption of mountain goats during critical calving period. • Continuous occupation by mountain goat of critical calving habitat.
Non-motorized Recreation	<ul style="list-style-type: none"> • <i>Winter</i>: Includes skiing, snowshoeing or other mechanized or non-mechanized¹ methods of traveling on snow in the backcountry. • <i>Snow-free</i>: Includes hiking, mountain-biking, horse-back riding, camping or other mechanized or non-mechanized¹ recreational activity in the backcountry that occurs during the snow-free season. 	<ul style="list-style-type: none"> • Minimize physiological and behavioural disruption. • Minimize changes in habitat use resulting from activities. • Minimize physiological or behavioural disruption of mountain goats on winter ranges. • Continuous occupation of mountain goat winter ranges. 	<ul style="list-style-type: none"> • Protect mountain goat calving sites. • Minimize physiological and behavioural disruption. • Minimize changes in habitat use resulting from activities.

¹ Definitions of mechanized and non-mechanized as defined in the Adventure Tourism Policy (2015).

- Mechanized refers to guided adventure tourism activities where mechanized or motorized transport of clients (e.g., snowmobiles, motorcycles, all-terrain vehicles, etc.) is an integral part of the recreation experience offered to the clients.
- Non-mechanized refers to self-propelled adventure tourism activities such as ski-touring, hiking, mountaineering, mountain biking, etc. In addition, vehicles that use motorized propulsion only intermittently for control or safety purposes and pedal bikes are also considered non-mechanized.

6. Tenuring Process and Operator Commitments

It is the intent of FLNRORD to achieve the objectives outlined in the Wildlife Guidelines through a collaborative approach to environmental stewardship with adventure tourism operators. Since

the identification and inventory of high-value mountain goat habitats is incomplete, additional commitments may be requested from proponents who are proposing to operate in proximity to areas with the potential to be occupied by goats the SCR.

There are various types of tenures available for adventure tourism operators which provide different levels of authorizations. The type of authorization, term of tenure and level of impact to particular species will guide reviewers in determining what (if any) additional requirements maybe required in an application. Table 2 summarizes the suggested requirements and provides guidance for determining when additional information requests may be made. These requirements are further described in the sub-sections below.

Table 2. Summary of Adventure Tourism Tenure Application Review Process and Requirements for Approval (with emphasis on Mountain Goat)

Land Act Process Stage	Description of Allowable Activities for Particular Authorization	Potential Additional Requirements
Application Review Stage	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Provide a Management Plan that includes a detailed assessment of potential impacts to mountain goat and their habitats. This should include strategies to achieve the results listed in the Wildlife Guidelines. • Remove all proposed non-motorized adventure tourism activities within UWRs and 100 m buffer from boundary. This includes routes for skiing, snowshoeing, hiking, biking, and water-related activities (e.g., paddleboard, kayak, etc.). • Remove all proposed motorized adventure tourism activities within UWRs and 500 m buffer from boundary. • Remove all proposed facilities within UWRs and 1,500 m buffer from boundary (e.g., lodge, warming huts, fuel cache, repeater towers, etc.). • Remove all proposed helicopter landing sites within UWRs and 1,500 m buffer from boundary (e.g., drop-off and pick-up zones, staging areas, etc.). • Identify proposed flight paths a minimum of 1,500 m horizontal separation and 500 m vertical separation from UWRs. • Develop a Wildlife Mitigation Strategy within the Management Plan (if applicable). *See Section 6.1 for additional information. • Additional Management Plan commitments for heli-supported activities (if applicable). *See Section 6.2 for additional information.
Short Term Licence (for investigative purposes)	<ul style="list-style-type: none"> • Proposal conceptually accepted. • No adventure tourism activities will be conducted. • Additional investigative activities accepted (with approval from Regional Biologist) to determine suitability of area for proposed activities. 	<ul style="list-style-type: none"> • Conduct mountain goat surveys where baseline inventory data is outdated and/or where proposed activities overlap with high-value habitats. These requirements will be determined in conjunction with input from a Regional Biologist and a data sharing agreement must be established. *See Section 6.3 for additional information.
Extensive Use Licence and/or Intensive Use Licence	<ul style="list-style-type: none"> • Proposal accepted. • All approved activities consistent with Management Plan and Wildlife Mitigation Strategy (if applicable) allowed. 	<ul style="list-style-type: none"> • Site specific requirements where direct overlap with areas of mountain goat occurrence or high-value habitats is unavoidable. These requirements will be determined in conjunction with input from a Regional Biologist. • Conduct follow-up inventory and annual monitoring surveys to monitor population trends, distribution, and habitat occupancy prior to start of the season. These requirements will be determined in conjunction with input from a Regional Biologist and a data sharing agreement must be established. *See Section 6.3 for additional information. • Flight tracking and reporting of activities; evaluation of flight paths and monitoring report; review and refinement of management plan and mitigation strategies (if necessary). *See Section 6.4 for additional information.

6.1. Additional Requirements for Heli-supported Activities

The following requirements must be included in all heli-supported adventure tourism Management Plans (i.e., heli-skiing, heli-biking, heli-hiking, heli-sightseeing) to minimize disturbance to mountain goat and their habitats. These requirements are consistent with those implemented in other regions of BC where heli-supported adventure tourism operations occur in proximity to high-value mountain goat habitats (i.e., Skeena Region). These criteria may be updated as new information on species distribution, habitat requirements, and avoidance behaviour becomes available and new areas of high-value habitat are identified and/or mapped.

- The location of non-motorized travel routes for heli-supported activities (e.g., skiing, snowshoeing, hiking, biking, etc.) must be approved by FLNRORD. Minimum separation distances from high value habitats (e.g., winter range) have been standardized to 100 m (year-round) as per the Wildlife Guidelines. The operator is to ensure that travel is restricted to established routes only to make human use of areas as predictable as possible. Annual addition or modification of travel routes must be done through a modification process and may trigger a new application.
- As per the Wildlife Guidelines, under no circumstances is 'flight-seeing' of wildlife (including mountain goats) to occur.
- The location of flight paths to, from, and within the tenure area must be approved by FLNRORD. Operators should identify and maintain use of regular and predictable patterns and distribution of flights.
- Minimum flight separation distances from high-value mountain goat habitats (e.g., winter range) have been standardized to 1,500 m horizontal separation and 500 m vertical separation (year-round) as per the Wildlife Guidelines. The use of geographic barriers to separate a flight path from high-value habitat must be approved by FLNRORD.
- The location of helicopter landing sites (e.g., fuel cache, drop-off and pick-up zones, staging areas, etc.) within a tenure area must be approved by FLNRORD. Minimum separation distances from high-value habitats (e.g., winter range) have been standardized to 1,500 m as per the Wildlife Guidelines.
- Helicopters with a high blade vortex interaction such as Bell 204s, 205s, 212s and 214s are not advisable for adventure tourism activities within the SCR given prevalence of mountain goat winter and non-winter habitats throughout the region. If such helicopters are to be used, then a minimum 2,000 m horizontal distance to goat winter range is to apply, regardless of vertical separation or terrain masking.
- The operator is to ensure that the pre-season training for guides and pilots includes operational awareness of the Wildlife Guidelines, the proponent's Management Plan and Wildlife Mitigation Strategy, and any government permit conditions.

6.2. Surveys

Where recent data does not exist, surveys may be required to collect population inventory data in the goat population units that overlap the proposed tenure area as well as evidence of

occupancy of high-value mountain goat habitats in the proposed tenure area. Since surveys can be invasive and cause disturbance to goats, the costs and benefits of conducting surveys must be weighed carefully and all options to avoid disturbance to high-value habitats are to be considered before proceeding. Low risk activities (e.g., infrequent trips to summer range) may not require surveys; however, activities proposed within or in close proximity to areas with a high likelihood of goat presence (e.g., winter range, natal areas, summer foraging areas) may require periodic population inventory surveys as well as annual monitoring surveys of high-value habitats to assess population trends, distribution, and habitat occupancy over time. The requirement for inventory and monitoring surveys will be determined in consultation with a FLNRORD Regional Biologist and will primarily be based on the type and frequency of activity proposed, an analysis of current information and past survey results, and the status of the local goat population.

Point source data and maps of mountain goat observations and high-value habitats are available for some areas of the SCR. This work is ongoing and is continually being updated. A Mountain Goat Stewardship Baseline Objective Tool (SBOT) is currently under development, which when complete, will provide a webmap location where this information can be easily viewed. Proponents must contact an appropriate FLNRORD Regional Biologist to determine what information is available, how it can be accessed, and what partnership arrangements can be made for obtaining and sharing raw data files. **Survey costs are the responsibility of the proponent or tenure holder if current mountain goat inventory and habitat occupancy data are not available.**

A FLNRORD Regional Biologist will assist proponents and operators with mountain goat survey planning if such activities are determined to be appropriate. Where possible, surveys will be coordinated with FLNRORD annual goat surveys to minimize disturbance to the local goat population. All surveys must conform to accepted government protocols and standards (i.e., RISC Standards) and a data sharing agreement must be established between FLNRORD and the operator so that results can be incorporated into the appropriate provincial databases. Population inventory surveys will be conducted by FLNRORD to ensure survey methodology remains consistent with past effort and results are seamlessly integrated into provincial databases. In this case, the proponent or tenure holder may: 1) provide a financial contribution to be used by FLNRORD to charter a suitable helicopter for the survey, or 2) provide a suitable helicopter as in-kind support for the FLNRORD survey team. Habitat occupancy and monitoring surveys must be led by a qualified RPBio with technical expertise in mountain goat ecology and behaviour and extensive mountain goat aerial survey experience. A FLNRORD Regional Biologist may participate in habitat occupancy surveys, if available. Survey results may lead to operational restrictions and the requirement to modify proposals or existing Management Plans.

6.3. Monitoring and Reporting for Heli-supported Activities

The following monitoring and reporting requirements are in addition to Annual Diligent Use reporting requirements as per Adventure Tourism Policy.

According to the Wildlife Guidelines, monitoring and feed-back systems should be developed in order to show due diligence with respect to minimizing disturbance. Real time helicopter flight data are to be recorded using a global positioning system (GPS) and kept by the operator. The GPS flight data must be captured every 2 to 5 seconds, recorded in the Universal Transverse Mercator (UTM) coordinate system, and provide elevation in metric units (metres).

Flight data is to be reviewed by a qualified RPBio with technical expertise in mountain goat ecology and behaviour and a signed report must be submitted to FLNRORD SCR post-season (see deadlines below) with the following information:

- Deviations from the Management Plan or Wildlife Mitigation Strategy (if any).
- Rationale for deviations.
- Recommendations for enhanced compliance with the Management Plan or Wildlife Mitigation Strategy.
- A record of all mountain goats incidentally observed during operations and their approximate location.

Flight lines for each operating helicopter on each operating day must also be submitted to FLNRORD with the report. Flight lines must be saved and submitted in GPS exchange format (.gpx). Individual .gpx files must be named according to the helicopter registration mark (call letters) and date (e.g., CXXXX_DDMMYY). Files must be submitted to FLNRORD in a single zipped file with folders for each operating day and each operating helicopter (see file storage path below).

- AT_TENURE.zip ► DDMMYY (*folder*) ► CXXXX (*sub-folder*) ► CXXXX_DDMMYY.gpx

The summary report and flight data, in addition to new information on mountain goat distribution and occupancy, habitat requirements, and avoidance behaviour may be used to modify or amend an operator's Management Plan or Wildlife Mitigation Strategy over time.

Deadlines for report and data submissions are:

- June 1 – For activities completed during the winter period (November 1 to April 30).
- December 1 – For activities completed during the non-winter period (May 1 to October 31).

7. References

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Reviewed by	Initials	Date
SC DRM	SB	April 16, 2019
DSQ DM	DS	January 21, 2019
DSC DM	DL	January 11, 2019
DCK DM	MP	January 14, 2019
Manager, Authorizations	DM	December 7, 2018
Terrestrial Wildlife SH	JM	November 27, 2018
Habitat Manager; Wildlife and Habitat Branch	SG	November 7, 2018
Authors	DAG, NB	October 31, 2018