

Evaluation of a Trial Program for Paragliding in Jasper National Park

June 2018



Cover

Whistlers Mountain, Jasper National Park of Canada

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1.0 Background

In 2006, Parks Canada began to assess a suite of recreational activities, including paragliding and hang gliding, at a national level. The Minister of the Environment approved national guidelines for the suite of activities in September 2010. The *National Parks of Canada Aircraft Access Regulations* were amended in 2013 to exclude paragliding and hang gliding from their provisions, paving the way for individual parks to determine the management approach to this activity. In spring 2015, Jasper National Park released guidelines for paragliding and hang gliding and for the other nationally-approved activities.

Parks Canada began a trial program for paragliding and hang gliding in Jasper National Park in May 2015. The intent of the trial program is articulated in the *Guidelines for New Recreational Activities in Jasper National Park* (Appendix 1, p. 1):

As this is a new recreational activity and peer reviewed research on its impacts indicate that they can be more significant for alpine ungulates than existing activities, Parks Canada will be cautious in its approach and initially permit this activity on a two-year trial basis for personal use only (i.e. no commercial or special events permitted). During this time, pilots flying in Jasper will collect and report data on their activities to HPAC, who will provide it annually to Parks Canada. The data will provide Parks Canada with information on the nature and frequency of flights, will allow Parks Canada to evaluate the potential impacts associated with these activities, and will assist both organizations in providing better information to pilots interested in flying in the park in future.

In addition to the guidelines approved in spring 2015, Parks Canada and the Hang Gliding and Paragliding Association of Canada (HPAC) worked together to develop best practices for flying in Jasper National Park. Two main products resulted from that process: a map identifying areas where launching and landing are not permitted (e.g. on or adjacent to major roadways) and a best management practices document with additional recommendations to minimize the potential environmental and visitor impacts of flying in the park (e.g. if wildlife are observed, fly away from the area immediately). Parks Canada and HPAC posted this information on their websites (<https://www.pc.gc.ca/en/pn-np/ab/jasper/activ/activ-experience/ete-summer/parapente-paragliding>; <http://hpac.ca/pub/?pid=389>). The best management practices document met Parks Canada's environmental impact analysis requirements under the *Parks Canada Interim Directive on Implementation of the Canadian Environmental Assessment Act 2012*.

Whistlers Mountain was identified early on as a potential launch location. A commercial tramway operates on the northern slopes of the mountain, making it easy to access to launch sites further up the mountain.

The first flights in the park took place on May 9, 2015. Members of HPAC's Executive, other association members and the president of the American organization for paragliding and hang gliding participated in the inaugural flights. At that time, several additional guidelines, intended to minimize the risk of conflicts with the Jasper SkyTram's operation and other clients, were identified in conversation with the SkyTram's general manager.

HPAC posted the additional guidelines on their website:

- Proof of (full or temporary) HPAC membership must be shown at the Ticket Booth (Membership in foreign associations will not be accepted).
- Sky tram cables and tram cars will have a 1000' (300m) clearance at all times; passing over the cable to reach an LZ must be done over the mid-station if the pilot is not 1000' (300m) above any portion of the tram system
- No fly-by at the upper tram station
- Hang gliders cannot be accommodated in the SkyTram due to their oversize for the enclosed cabin¹

Parks Canada asked HPAC to provide data on launch and landing locations, flight paths, flight timing, weather conditions, flight ratings and miscellaneous observations annually during the trial period.

To facilitate the data collection, pilots flying in the park were asked to log their flights on Leonardo, a publically-accessible website and paragliding forum (<http://www.paraglidingforum.com/leonardo/tracks/>). Half of the pilots who flew during the trial period recorded their flights on the Leonardo website.

No other flights or emergency landings were reported to Jasper Dispatch.

It seems unlikely that hang gliders will ever launch in Jasper, due to the absence of any road-accessible launching pads in the park. The rest of the discussion in this report will focus on paragliders.

The trial period ended in April 2017. Parks Canada representatives and the HPAC board met in Jasper on May 4, 2017, to review the results of the trial program. The purpose of this document is to:

- Report on the frequency and nature of flying that happened in the park during the trial program.
- Evaluate the potential impacts associated with these activities on all aspects of Parks Canada's mandate.
- Assist both Parks Canada and HPAC in providing better information to pilots interested in flying in the park in future.
- Present formal recommendations for the future management of this activity in Jasper National Park.

¹ HPAC. Flying in Jasper National Park. Retrieved from <https://www.hpac.ca/pub/?pid=389> on June 2018.

2.0 Flight Frequency and Characteristics

Parks Canada has records of 11 different pilots flying 15 times in the park during the two-year trial period. All of the pilots launched from Whistlers Mountain. Twelve flights ended in Marmot Meadows; three flights ended in other locations (south along the Icefields Parkway and just east of the Town of Jasper along Highway 16). Fourteen of the 15 flights took place in 2015.

Only one flight was logged on the Leonardo website in 2016; however, the SkyTram has records of three pilots signing waivers that summer. The SkyTram has indicated that pilots sometimes take the tram up to the top of Whistlers prepared to launch but do not end up launching due to poor weather or other factors.

HPAC was unable to confirm anecdotal reports of 10 additional flights during the two-year time period. It is possible that pilots hiked up to launch sites, flew with simple variometers, and did not log their flights online.

The average speed of the eight flights recorded in the Leonardo database was 28.3 km/h. The average maximum speed of the flights was 47.9 km/h.

2.1 Flights from Whistlers to Marmot Meadows

Pilots used three different launch sites on Whistlers Mountain; one on the west side of the mountain and two on the east side (see Figure 1). On average, pilots spent 17 minutes in the air and travelled 6.3 km before landing at Marmot Meadows. The flights that began on the west side of the mountain circumnavigated the mountain before landing on the east side in Marmot Meadows. One of the flights that began on the east side followed the east ridgeline of the mountain before landing. The other two were more direct flights into Marmot Meadows. All the flights that landed at Marmot Meadows complied with the guidelines.

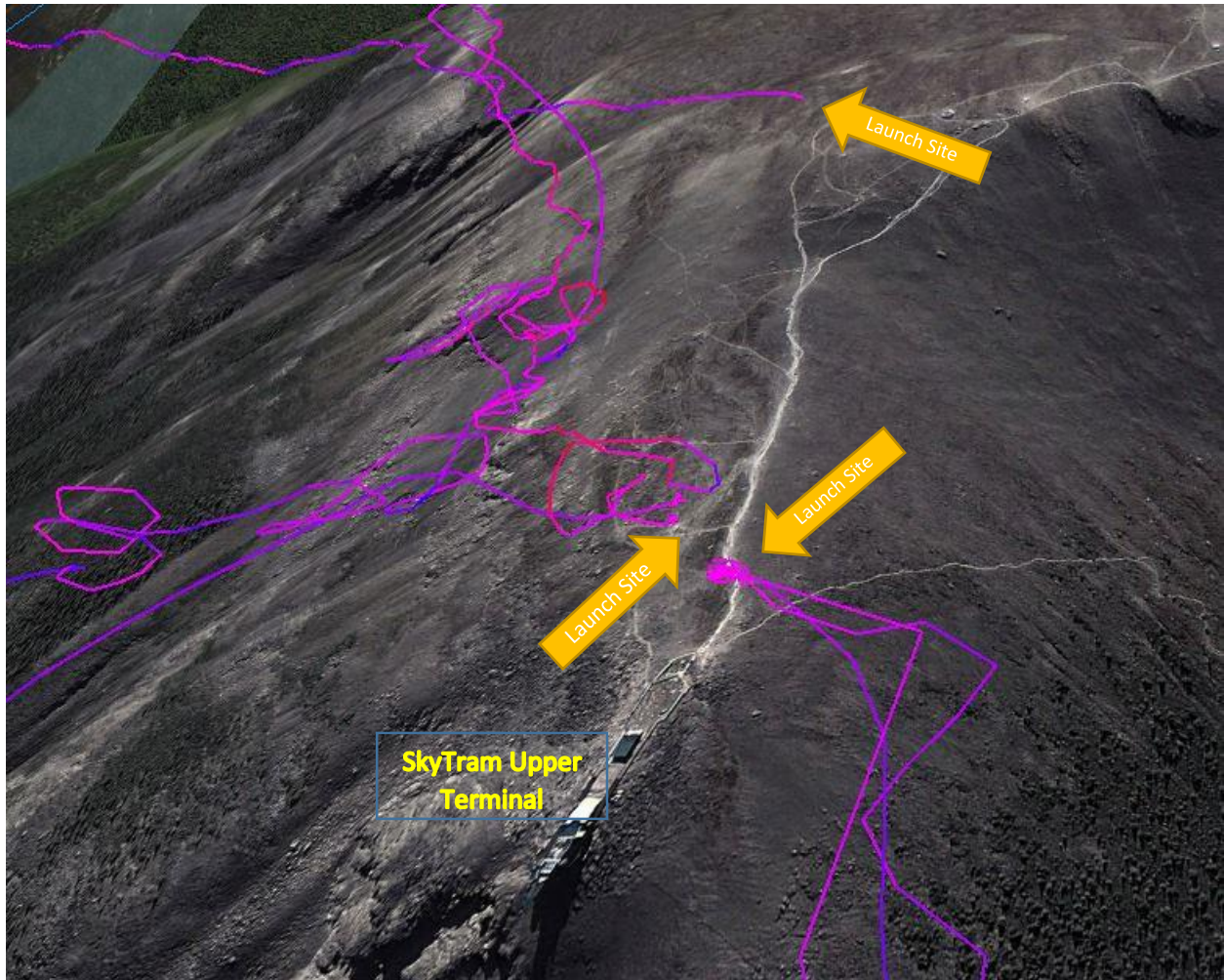


Figure 1. Launch Sites on Whistlers Mountain with Six Flight Tracks Overlaid

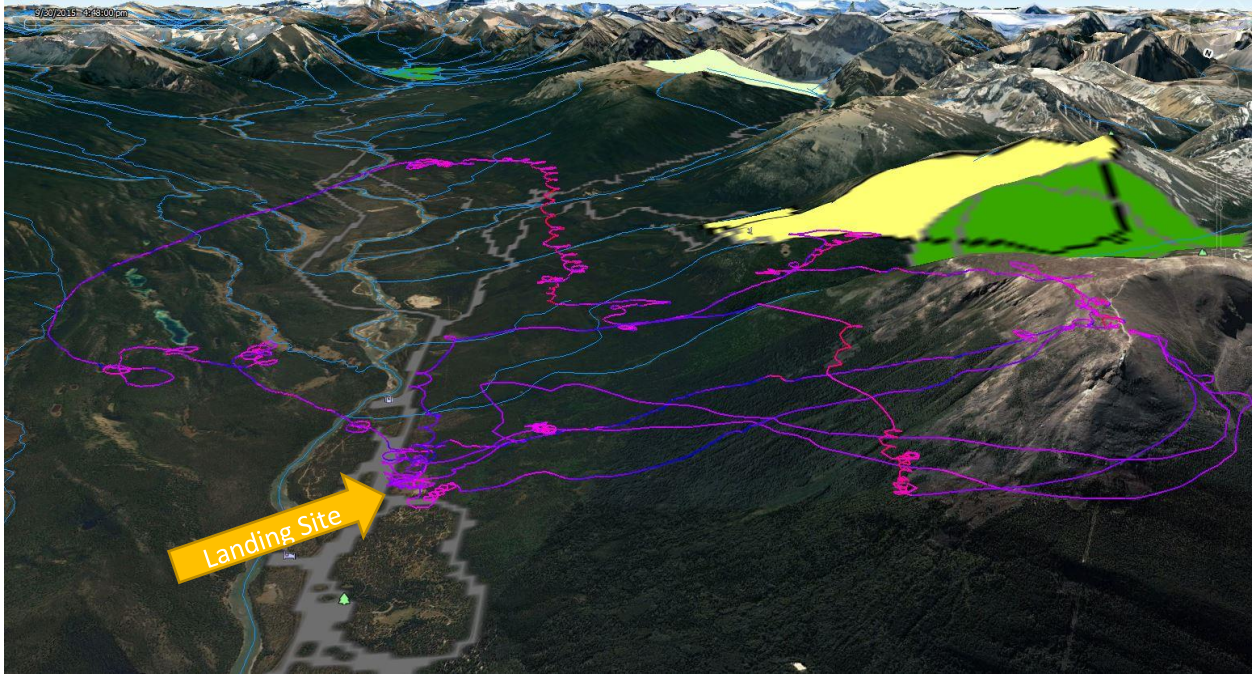


Figure 2. Six Flight Tracks with Landings at Marmot Meadows Group Campground (The yellow and green patches are areas where launching and landing were not permitted during the trial program.)

2.2 Cross-Country Flights

The longest cross-country flight (28.1 km) followed a fairly linear path to the west of the Icefields Parkway for 72 minutes (see Figure 3). The pilot landed just south of Athabasca Falls, approximately 30 m from the Athabasca River and about 30 m from the driving lanes of the Icefields Parkway (see Figure 4). That flight probably met the guideline to avoid landing “within 30 m of any watercourses (e.g. lakes, rivers, creeks) and their banks” but not the guideline to avoid landing on “roadways and associated rights-of-way.”² The intent of the roadway guideline was to avoid landings or low-level flying around busy roadways, such as the Icefields Parkway and Highway 16, to lessen the potential for distracted driving.

² A right-of-way is defined by Transport Canada (2008) as “the permanent physical intrusion of a highway or freeway, including the road surface, shoulders, side slopes, drainage ditches and/or storm drainage ponds. Areas adjacent to the shoulders that are kept free of vegetation to improve sightlines for motorists are generally considered to be part of the right-of-way.”



Figure 3. Cross-Country Flight from Whistlers Mountain to South of Athabasca Falls



Figure 4. Landing Location South of Athabasca Falls along the Icefields Parkway

A shorter cross-country flight (11.0 km over 40 minutes) ended just east of the Town of Jasper—in a location that is farther from roadways but still highly visible to through traffic on Highway 16 and to vehicles entering the town of Jasper. The pilot indicated that he landed near Jasper’s Wastewater Treatment Plant, which is several hundred meters from the location identified by his Global Positioning System (GPS) unit. The GPS unit³ may have stopped recording data just short of his landing or the unit may not have been calibrated correctly.

During the May 4 meeting, Parks Canada and HPAC discussed the Jasper entrance landing and the Icefields Parkway landing from both a pilot and a motorist safety perspective. HPAC’s view was that both landings were probably safe for pilots and motorists. The tightly-spiralling GIS tracks suggest that the landings likely took seconds; the chutes would have collapsed from view as soon as the pilots were on the ground.

³ The accuracy of a GPS unit varies from model to model. There are many units on the market now that are accurate within $\pm 6-10$ m, however some older models may have an accuracy of ± 25 m.

It is common practice for pilots to scan roadways for traffic because the wake from large vehicles, such as transport trucks, can cause issues when landing. If traffic is too heavy or too many trucks are on the road, pilots can delay their landings or look for more suitable landing spots. Pilots land right next to major highways in many locations in Canada, such as the landing zone in the median of the Trans-Canada Highway at Lady MacDonald in Canmore and several landing zones adjacent to the Trans-Canada Highway in Bridal Falls, British Columbia. HPAC board members reported that no concerns with distracted driving have come up in relation to those sites in the past, but they were also willing to comply with a prohibition on landings near park roadways, if required.

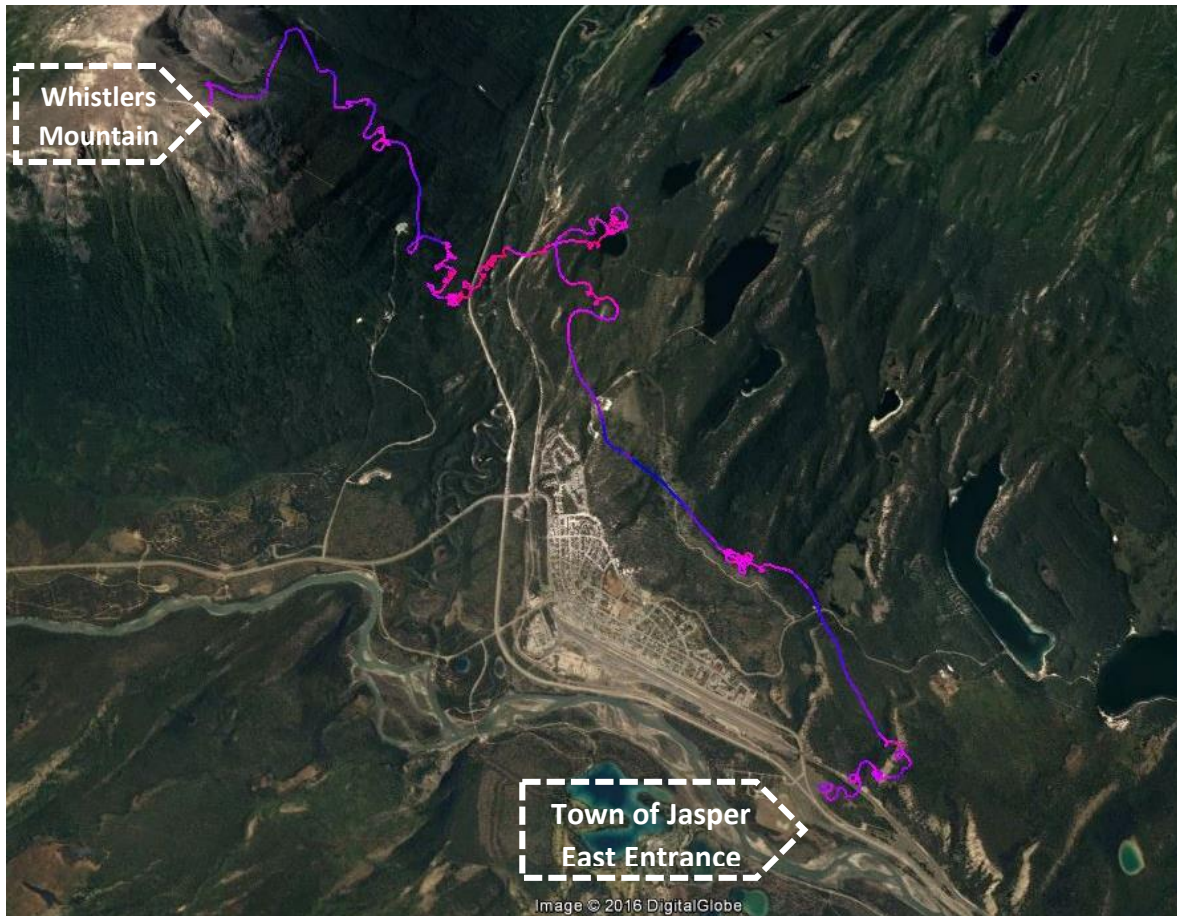


Figure 5. Cross-Country Flight from Whistlers Mountain to East Entrance to Town of Jasper

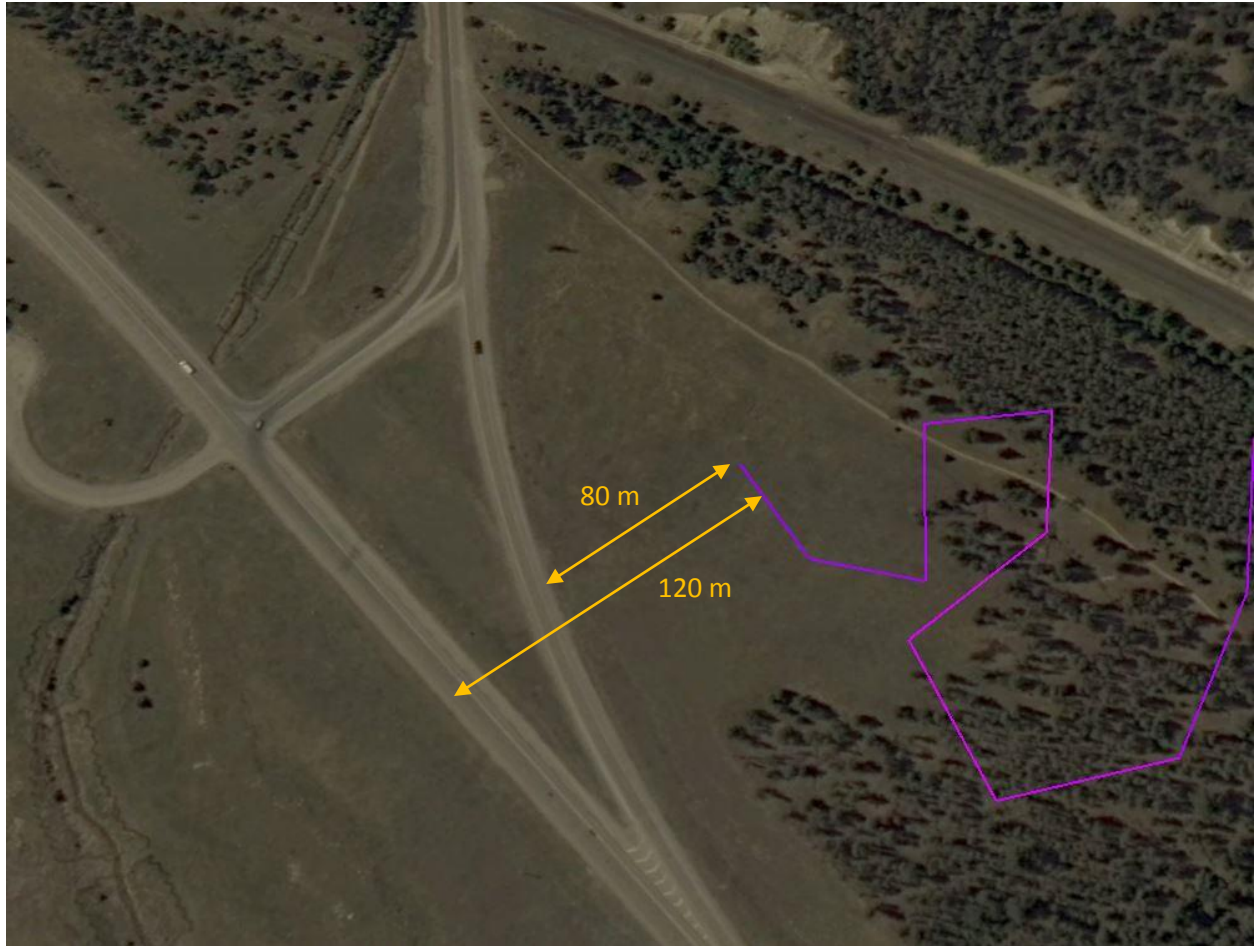


Figure 6. Landing Location at East Entrance to Town of Jasper

The trial was well communicated to licensed pilots by HPAC and the expectation was that more pilots would take advantage of the trial period to practice paragliding in Jasper. There are several possible reasons for the small uptake:

- There is no resident population of paragliding pilots in Jasper.
- Pilots need a high level of skill and experience to paraglide in the Rocky Mountains.
- Paragliding is highly weather-dependent (and although the summer of 2016 began with clear skies and unseasonably warm weather, most of the summer was smoky or rainy).
- More time is required for momentum to build and for more pilots to think of Jasper as a paragliding destination. Two new schools, one in Drayton Valley and the other near Red Deer, may boost the size of the flying community in north-central Alberta in future.
- The guidelines and best practices developed to support the trial program are too complex. Pilots are unwilling to try out flying in Jasper because they are concerned that they may not be able to comply with the guidelines, which could have consequences for the association and other pilots seeking to fly in the park.

- Jasper National Park is relatively expensive (e.g. pilots must pay park entry fees, SkyTram fees and costs for overnight accommodations) compared to other paragliding locations in the province. (The Jasper SkyTram has worked with HPAC to develop a pricing structure for paragliders that facilitates repeat flights on the same day.)
- Our knowledge of potential launch and landing sites is limited. A body of local knowledge is beginning to grow as pilots scout out potential launch sites. For example, an Edmonton pilot has hiked Sulphur Skyline and Roche a Perdrix and has determined they are unsuitable for launching.

3.0 Benefits and Impacts of Paragliding by Mandate Element

3.1 Ecological Integrity

The trial program was not designed to contribute to the scientific body of knowledge on the effects of aerial activities, such as paragliding and hang gliding, on wildlife. Peer-reviewed literature that contributed to Parks Canada's understanding of the potential effects of this activity on wildlife is listed in Appendix A.

However, the trial program has provided data on the location, frequency, duration and length of flights, which can help us understand the potential for impacts on wildlife and other environmental values. Given the small number of flights and their relatively short duration, the adverse effects of this activity on wildlife and other environmental values are likely negligible. The number of flights that launched from the top of Whistlers Mountain represents an extremely small proportion of the total amount of visitor use on the mountain (about 140,000 visits to the upper terminal of the Jasper SkyTram in 2013).

A number of guidelines and best practices were established before the trial program began to minimize the risk of adverse effects (e.g. general disturbance, displacement) on park wildlife. Some of these guidelines, such as prohibitions on launching or landing within 1,000 m of known mineral licks and raptor nesting sites, had a spatial component and were included on the map of areas where launching and landing are prohibited. The flights that were logged were all in compliance with these guidelines. It is more difficult to assess if other wildlife-related guidelines were followed (e.g. avoid disturbing sensitive wildlife during take offs, landings and flights) although one pilot indicated that he avoided landing near an area where elk were grazing.

Caribou conservation is an important priority for Parks Canada in Jasper National Park. Environment Canada's *Recovery Strategy for the Woodland Caribou, Southern Mountain population (Rangifer tarandus caribou) in Canada* sets objectives to: 1) stop declines in size and distribution of caribou herds; 2) maintain current caribou distribution; and 3) increase herds to self-sustaining levels.

Critical habitat necessary to achieve the population and distribution objectives for southern mountain caribou is partially identified in the recovery strategy. Critical habitat for southern

mountain caribou is identified as the habitat possessing those biophysical attributes required by southern mountain caribou to carry out life processes. One of the biophysical attributes listed in the recovery strategy is low or no sensory disturbance. The recovery strategy directs Parks Canada to assess and manage sources of sensory disturbance to reduce their effects on caribou. Parks Canada is also required under the *Species at Risk Act* to ensure that any new activities will not adversely affect the function of critical habitat to the point where the activities could jeopardize species recovery as outlined in the recovery strategy.

The current guidelines require pilots to follow Jasper National Park's *Wildlife Flight Guidelines* to minimize the potential for disturbance to caribou and other sensitive species, such as mountain goats. Pilots are also asked to avoid snow patches on hot summer days.

An alternate, more robust approach is to identify high elevation caribou critical habitat as off limits to launching and landing to limit the potential for sensory disturbance to caribou, with the exception of habitat 200 m on either side of the trail to Whistlers Summit. Pilots would be directed to avoid flying over high elevation habitat and towards the valley bottoms.

Additionally, several guidelines place greater expectations on paragliders than on other recreational users. For example, the guidelines ask paragliders “to contact Jasper Dispatch to report soil disturbances or other problems” and to “learn to identify invasive, non-native plants and report infestations.”

A local environmental organization had concerns about the potential for flights over Maligne Canyon and their effects on black swifts, a species-at-risk. Few sites in the vicinity of Maligne Canyon are suitable for launching or landing a paraglider. To date, there have not been any flights over that area of the park.

3.2 Visitor Experience

Pilots have reported extremely high satisfaction with flying in Jasper National Park.

“My husband...had a great flight from the top of the tram to the Mountain Meadows in the campground yesterday. We were quite impressed at the knowledge and interest that your staff members showed. We had no problems easily finding all of the information that Werner needed for his flight.”

“1st flight in Jasper for me! Gorgeous scenery, definitely will come back to try some XC.”

The park did not receive any complaints from visitors about paragliding. During the inaugural flights, visitors at the upper terminal of the Jasper SkyTram seemed to be genuinely interested in, and to enjoy watching, the activity.

Some SkyTram clients have asked questions about the parameters for flying in the park and have expressed interest in returning to Whistlers Mountain to paraglide at a later date. However, we do not know how many have followed through on their initial interest.

No visitor safety issues were reported to Parks Canada's Visitor Safety Program.

3.3 Public Appreciation and Understanding

New activities can play a role in raising public awareness of new opportunities to experience the park and its unique characteristics as a protected area, and in engaging new partners in the protection and presentation of national parks. Despite some local media coverage of the launch of the trial program and strong communications by HPAC to its membership, there appears to be little awareness of the activity among the public and Jasper residents.

Parks Canada and HPAC established a good working relationship leading up to the trial program. Communication was infrequent once the trial program was underway, but Parks Canada and HPAC re-established regular communications in April 2017. HPAC has diligently posted all the information provided by Parks Canada on their website and responded quickly when asked to correct some incorrect website information. HPAC has been the main point of contact for pilots seeking more information about flying in the park, although basic information is also available on the Jasper National Park website. HPAC has also been vetting pilots who want to fly in the park to ensure that they have the skills and experience to do so safely.

At the May 4 meeting, HPAC board members identified two additional tools that would help them with pre-flight planning: KML files for areas where no launching and landing are permitted that can be overlaid onto Google Earth and a more detailed map at the SkyTram.

3.4 Operational Considerations

Launching a new, highly-specialized activity, such as paragliding, requires a significant time commitment behind the scenes: developing guidelines, web content, and other communications products and raising awareness among Parks Canada staff. The time committed to working with HPAC to determine the parameters of the trial program was relatively small compared to the time required to complete Parks Canada's internal processes and ensure that staff had been briefed on how the trial program would function.

Jasper National Park's law enforcement program did not identify any law enforcement issues in relation to the activity during the trial program.

4.0 Options

Parks Canada committed to making a decision about the long-term approach to paragliding and hang gliding at the end of the trial period. Three options are proposed:

Option 1. Continue with the existing approach to managing individual pilots—pilots determine where to launch and land; Parks Canada identifies areas where no launching or landing will be permitted in consultation with HPAC; and Parks Canada and HPAC work together to identify best practices that will minimize potential impacts.

If this option is selected, it would be beneficial for Parks Canada to review the entire package of guidelines, best management practices and maps in order to provide more concise and appropriate guidance to pilots and to facilitate future compliance while ensuring adequate environmental protection, especially for caribou. The recommended approach for caribou protection is to exclude launching and landing in high elevation critical habitat, excepting a portion of Whistlers Mountain.

Parks Canada should also implement a Restricted Activity Order to ensure the procedures for flying in the park are legally enforceable.

Parks Canada would expect HPAC to continue to provide information on the number of flights in the park on an annual basis, so that we can understand how the activity is growing in the park.

It would also be helpful to have a more user-friendly map for pilots or KML files for flight planning purposes.

Option 2. Allow flights from designated launch and landing zones only (i.e. top of Whistlers Mountain, Marmot Meadows). This would entail working with HPAC to identify other feasible locations for launching and landing (as multiple locations are preferable from a safety and user perspective). The guidelines and best practices would need to be amended accordingly. Given the small number of flights and relative lack of information on suitable launch and landing locations, this approach is probably not warranted at this time. As the activity matures and becomes more popular, Parks Canada might consider designating launch and landing zones, if for example, the activity begins to impact other environmental or socio-economic values.

Option 3. Prohibit paragliding and hang gliding entirely through a Restricted Activity Order. This would not meet agency or park management plan objectives to diversify the visitor offer and to develop, support, and promote new recreational activities that are consistent with Parks Canada's legislative and policy framework.

5.0 Recommendation

5.1 Individual Paragliding

Overall paragliding has been a very positive experience for participants, and at the level at which it is currently occurring and can be expected to continue, there seems to be little potential for significant impacts to ecological integrity, visitor experience, public safety or park operations. The results of this evaluation suggest that it would be appropriate to accept Option 1 and continue with the existing approach to managing individual pilots.

5.2 Commercial Paragliding and Paragliding Events

Given the substantial amount of operational work that has been required to implement paragliding for individual participants, we do not recommend that Parks Canada consider a tandem operation or special events in Jasper.

Appendix A. Peer Reviewed Literature on the Effects of Paragliders and Hang Gliders on Wildlife

Boegel, R. and G. Haerer. 2002. Reactions of chamois to human disturbance in Berchtesgaden National Park. *Pirineos* **157**: 65-80.

Boldt, A. and P. Ingold (2005). "Effects of air traffic, snow cover and weather on altitudinal short-term and medium-term movements of female Alpine chamois *Rupicapra rupicapra* in winter." Wildlife Biology **11**(4): 351-362.

Enggist-Düblin, P., and P. Ingold. 2003. Modelling the impact of different forms of wildlife harassment, exemplified by a quantitative comparison of the effects of hikers and paragliders on feeding and space use of chamois *Rupicapra rupicapra*. *Wildlife Biology* **9**:37-45.

Schnidrig-Petrig, R. and P. Ingold (2001). "Effects of paragliding on alpine chamois *Rupicapra rupicapra rupicapra*." *Wildlife Biology* **7**(4): 285-294.

An additional report that has not been peer-reviewed, but reviews existing literature and was prepared in the Canadian context is:

Golder Associates. 2006. Overview-Level Impact Assessment of the Sport of Hang Gliding and Paragliding. Submitted to the B.C. Hang Gliding and Paragliding Association. Abbotsford, BC. 46 pp.