

# Bear Aware Trail Signs: A Summary Report of the Development Process

Heather Ashthorn

Wild Wise Yukon,  
Centre for Human-Wildlife  
Conflict Solutions,  
Whitehorse, YT

Scott Gilbert

Renewable Resources  
Mgmt Program,  
Yukon College,  
Whitehorse, YT

## Background

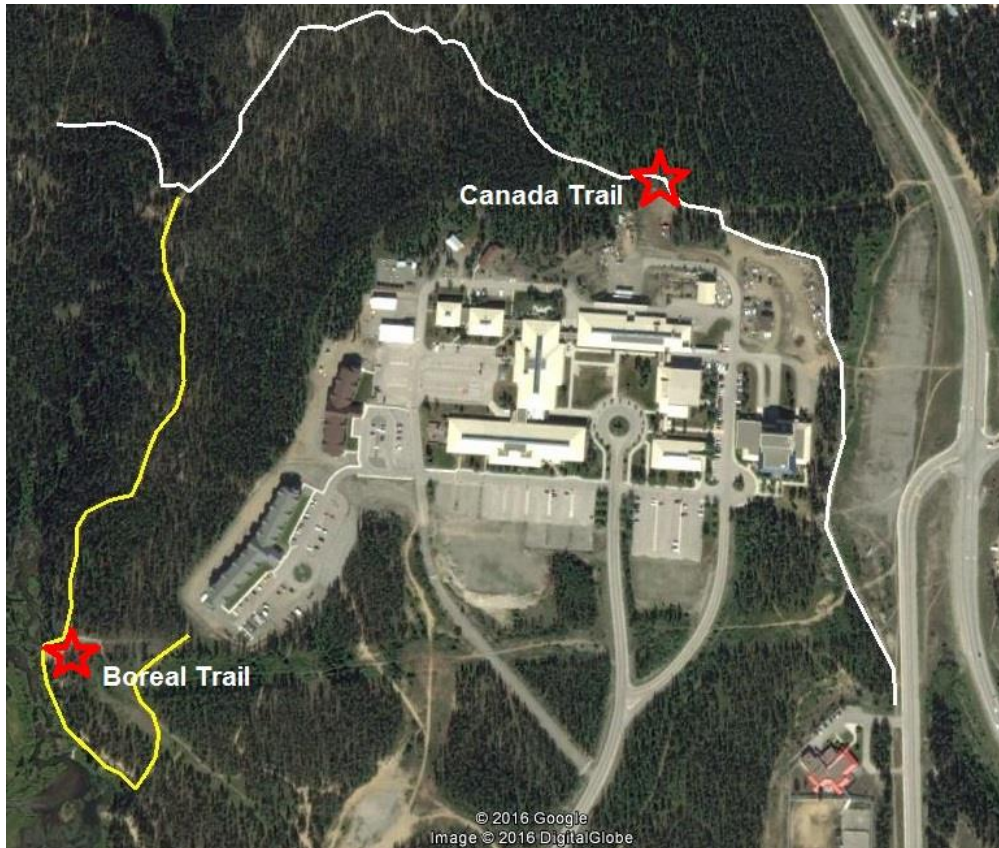
In 2015 A Bear Risk Assessment was completed for Yukon Place (Gilbert and Smith 2015). Following suit, the Whitehorse Bear Working Group commissioned a similar study for Whitehorse (Homstol and Edwards 2015), looking at potential risks to the human-bear system within the urban containment boundary. WildWise Yukon organized a multi-stakeholder workshop in the spring of 2016 to determine the relevance of recommendations that were made as part of the Whitehorse Bear Hazard Assessment. Improving access to education about the human-bear system was recommended in both documents and was highlighted as one of the possible immediate actions in the spring workshop.

## Process – Sign Preparation

In 2016 WildWise Yukon supported the development of bear aware trail signs through a student lead project at Yukon College (Ashthorn 2016). Yukon College was considered an ideal location because it had easy access to a well-used trail system where bears were known to occur, a student body that included long time northern residents as well as international students new to the north and a sample population of students and staff receptive to appeals for help by answering questionnaires. The research component compared the effectiveness of graphic versus written messaging. Ashthorn (2016) used Survey Monkey to ask Yukon College students, residents and visitors about their use of the trails behind Yukon College, their knowledge of bear behavior and safe travel in bear country and their updated knowledge after viewing either written or graphic messaging about both. The survey results were used to draft specific wording for bear safety and interpretive trail type signage. We consulted with Parks Canada, Environment Yukon and Yukon College staff to refine the wording and made recommendations for the design of bear aware signage.

Following this student-led research, WildWise Yukon applied to Yukon College and the City of Whitehorse for funding to continue with the next steps in trail sign development. Funding from both organizations was used to refine the wording, layout and design of a product which could then be tested for effectiveness at Yukon Place. A graphic artist was hired to execute the draft production design and the Yukon College administration was consulted to determine suitable field locations on campus suitable for testing. In early October the signs were erected on the

heavily used Canada Trail behind the Yukon Arts Centre and on the “Pumphouse Pond” lookout on the Boreal Trail behind the Seniors’ Residence at Yukon Place (Figure 1).



**Figure 1.** Map of the Yukon College campus at Yukon Place showing locations of sites chosen to test bear safety signs.

We used a conventional 4x4 post and plywood support for the sign erected on the Boreal Trail. Planning for the second sign, set up at the Canada Trail location, entered the realm of performance art and involved an over-sized plywood cut-out of a standing grizzly bear (Figure 2). A set of small plywood doors in the beast’s belly could be opened to display the sign (50cm by 65 cm). Fearing vandalism of the sign and with an abundance of caution, we installed a trail camera opposite the sign to monitor activity. We did not observe any damage to the sign but we were able to use the surveillance to assess how often people stopped to read the sign and develop a profile of the general use of the trail.

## Process – Gathering Feedback

We circulated electronic and print copies of the draft signs to groups outside Yukon College to widen our network for feedback. We solicited feedback on the test signage and messaging from Active Trails Yukon, the City of Whitehorse’s Trails and Greenways Committee, the Contagious Mountain Bike Club and community associations. We also solicited feedback on the project design through the WildWise Yukon website (<http://wildwise.ca/#be-wild-wise>)

Our final instrument for assessing the effectiveness of the sign was a short, anonymous questionnaire using Survey Monkey software. In a series of eight questions we asked respondents to rank their knowledge of bear behavior and safe travel in bear country before viewing the sign and again after viewing the sign. We also asked for feedback on access by asking if language was a barrier to understanding the messaging and for suggestions to improve the product.

Our hope was to sample the same composition of staff and students as Ashthorn (2016) but we were told that we should not send the questionnaire to Yukon College staff because of the danger of contributing to “survey fatigue”. To solicit feedback from students we made arrangements with Student Services to put up a static display of the bear sign poster outside the Yukon College Bookstore, in the Pit area, with a sign encouraging students to fill out an anonymous printed copy of the questionnaire (Appendix 1) or use their smartphone to link to the actual SurveyMonkey form online using a QR code. We did not receive any completed questionnaires using this approach. We asked several instructors to invite the students in their class to complete the survey. This approach was more successful and we received a total of 27 responses.



**Figure 2.** The oversized silhouette of a grizzly bear (approx. 215 cm high) was cut out of 1.9 mm thick plywood and mounted on a 2m 4x4 post set in the ground. The doors on the front of the bear open to reveal the bear safe messages; a display rack for brochures is mounted under the sign.

## Results

Our game camera from the Canada Trail sign location recorded few instances of wildlife over the three- month period from October to January (1 coyote, 1 fox and 1 feral cat) and no instances of actual bears which is understandable given their low numbers in the area and the time of year. We used the same set of images to summarize the characteristics of the type of human trail users passing through the area (Table 1). We were a bit surprised to see the amount of activity on the trails during darkness although many of these trail users could be seen using headlamps. Vehicles are prohibited on this portion of the trail so the appearance of ATVs represents bylaw infractions.

**Table 1.** Activity category of 783 people passing the Canada Trail sign location between Oct. 4, 2016 and Jan. 16, 2017. Day length changed considerably over this period and “daylight” and “night” simply refer to ambient light levels.

Type of user	Daylight	Night	Total
Walker	519	79	598
Runner	107	27	134
Cycler	38	9	47
ATV	3	1	4
<b>Total</b>	<b>667</b>	<b>116</b>	<b>783</b>

We attempted to separate out trail users who were passing the sign without notice and those who stopped to spend time at the sign. Our game camera vantage point simply allowed us to see the backs of people as they oriented to read the bear sign so our interpretation is somewhat coarse. Almost 30% (227) were “caught” reading the trail sign, or at least orienting to the sign and spending time in front of it. The numbers over time should be treated with care; a person who travels the trail regularly might stop to read it the first time the sign was noticed and then ignore it on subsequent trips. We think many of the trail users we detected later in the fall could have been regular trail users so the number of people stopping to read the sign would be expected to decrease over time and the number of unique trail users who have read the sign at least once would increase. In comparison, our questionnaire results showed that 65% of participants who reported that they saw the signs on the trail indicated that they also stopped to read it. We did not monitor the bear sign with a conventional installation on the Boreal Trail but it would be helpful to know if the response was similar. It is possible that the imposing nature of the grizzly cut out itself attracted some visitors. We recorded one case of a trail user “hugging” the bear for a picture as well as four instances of trail users taking a “selfie” with the bear cut out.

**Table 2.** Number of trail users passing the Canada Trail sign location who were judged to have stopped and spent time looking at the sign. Night time users represent people who viewed the sign with a headlamp.

	<b># of Trail Users</b>			
	<b>Oct 4-20</b>	<b>Oct 20-Nov27</b>	<b>Nov 28-Jan 16</b>	<b>Total</b>
<b>Daytime</b>	59	115	35	209
<b>Night</b>	5	12	1	18
<b>Total</b>	<b>64</b>	<b>127</b>	<b>36</b>	<b>227</b>

One of the bear safety messages featured in the sign was the importance of keeping pet dogs on a leash. The camera trap information allowed us to classify the number of pets that were accompanying their owners (Table 3). There was about an equal mix of dogs on leash and dogs running free. Again the numbers over time should be treated with care as it is unlikely the samples for each month are independent; many dogs have a regular routine of taking their owners for a walk and will be overrepresented through time.

**Table 3.** Number of trail users passing the Canada Trail sign with a dog on a leash and dogs observed off leash.

<b>Dogs</b>	<b>Oct 4-20</b>	<b>Oct20-Nov27</b>	<b>Nov 28-Jan16</b>	<b>Total</b>
<b>On leash</b>	23	57	31	<b>111</b>
<b>Off leash</b>	36	55	29	<b>120</b>
<b>Total</b>	<b>59</b>	<b>112</b>	<b>60</b>	<b>231</b>

### **Questionnaire Feedback**

Our final survey results suggest that the Yukon College community considers themselves to be fairly educated about bear behavior and safe travel in bear country. We gleaned some useful tips about font size and styles which we will apply to the final product. There was no direct criticism of the content of the signs.

Our consultation with the Contagious Mountain Biking Club resulted in collaboration between WildWise Yukon and that organization to develop a similar bear safety sign that is ‘geared’ towards trail cycling culture. One of us (HA) attended a board meeting of the Contagious Mountain Biking Club to present our original draft sign and elicit feedback; the spirited feedback received from the group was that trail cyclers will not respond to messaging about slowing down and that it is unlikely that cyclists would leash their dogs while cycling. We feel that it is important to gain buy-in for safe practices in bear country and agreed to develop wording that represents current best practice and is likely to influence good practice. Wording has been developed for a cyclist sign, the cyclist on the original sign will be replaced with a trail runner, and WildWise Yukon has received funding for design, layout, production and installation of both types of signage at several dozen locations in and around Whitehorse.

## **Next Steps & Recommendations**

1. We have recruited volunteers from Yukon College and the community to translate the draft bear sign into various languages and our recommendation is to add a QR code at the bottom of the final version of the sign that provides a link to the language of choice (French, Japanese, Korean or German). The link could be accessed by trail users with a smartphone and would take them to a WildWise Yukon web page displaying the translated text.
2. It may be worthwhile creating some additional plywood cut-outs of a standing grizzly bear to display signs. There seemed to be a strong positive reaction to the eye-catching sign and the first step in public education is to capture the attention of the viewer. The test sign we used stands over 215 cm tall and this is both unrealistic and perhaps intimidating for some people. A more realistic height might be 150 cm high.
3. We suggest that Yukon College consider adding two more sign locations on campus to intercept visitors who may be touring the campus. One sign could be placed in the vicinity of Roddy's Camp that connects with spur trails to the Canada Trail and a second sign added on the paved path that serves as an entrance to the Boreal Trail (located between the College Daycare entrance and the building at 520 College Drive).
4. The proposed trailheads to receive signs elsewhere in Whitehorse will be determined in collaboration with Environment Yukon, the Contagious Mountain Biking Club (CMBC), walking groups and, we are hoping, the City of Whitehorse. Groups such as the CMBC use their own bear occurrence reporting system through their FaceBook pages and members have valuable information about the trail systems in and around Whitehorse. We know that the forest margin of Copper Ridge, downtown Whitehorse and the bluffs behind the Erik Neilsen International Airport are all 'hotspots' for bear activity so we will focus there first.
5. WildWise Yukon has engaged Environment Yukon's Y2C2 crew to carry out the installation in June.

## **Acknowledgements**

We thank the students in RRMT 202 for their feedback on the signs and Katie Aitken and Kelly Choy for sharing the questionnaires with their class. Erin Johnson provided help with administering the Yukon College funds. We thank Colleen Wirth from Student Services at Yukon College and the City of Whitehorse Environment Fund for financial support. We are also grateful for the support of our talented translators, Eric Jun Kim, Kaz Kuba, Babette Mueller and Alexandre Mischler.

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# Bear Aware Trail Sign Survey

WildWise Yukon and Yukon College are working together to make trails safe for bears and humans. This sign project started with a student research project at the college which looked at how people respond to different types of messaging. The project is being completed by staff from WildWise Yukon, Yukon College and volunteers.

Your feedback is important to us and will be used to create the final product which will be found at trail-heads all around Whitehorse this summer.

Thank you for taking the time to complete this survey.  
WildWise Yukon & Yukon College

1. How would you rate your knowledge of bear behavior?
    - Good. I have learned about bear behavior in the past and would feel confident explaining bear behavior to others.
    - Fair. I have had some exposure to information about bears but could learn more.
    - Poor. I don't know much about bear behavior.
  2. How would you rate your knowledge about safe travel in bear country?
    - Good. I have learned about safe travel in bear country in the past and feel confident about my ability to travel safely in bear country.
    - Fair. I think I know how to travel safely in bear country but could really use a refresher.
    - Poor. I do not know how to travel safely in bear country.
  3. If you saw the signs on the trails behind Yukon College did you stop to read them?
    - Yes
    - No
    - If you answered no, could you please tell us why not?
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**Please take a minute or two to look at and read the trail sign and then answer the following questions.**

4. How would you rate your knowledge of bear behavior after viewing the trail sign?
  - I answered "good" before and I would still answer "good" (I already knew all that and I didn't learn anything new)
  - I answered "fair" before and now I would answer "good". (I knew a little bit before and now I know more)
  - I answered "fair" before and there is no change - still "fair"



- I answered "poor" before and now I would answer "fair or good". (I didn't really know any of this and I learned a bit)
  - I answered "poor" before and I am still answering "poor". (I still don't feel confident about any of it)
  - Worse! I thought I knew about bear behavior but I guess I didn't.
  - I think some of the information on these signs is wrong (please below)
- 
- 

5. How would you rate your knowledge of safe travel in bear country after viewing the trail sign?

- I answered "good" before and I would still answer "good" (I already knew all that and I didn't learn anything new)
  - I answered "fair" before and now I would answer "good". (I knew a little bit before and now I know more)
  - I answered "fair" before and there is no change - still "fair"
  - I answered "poor" before and now I would answer "fair or good". (I didn't really know any of this and I learned a bit)
  - I answered "poor" before and I am still answering "poor". (I still don't feel confident about any of it)
  - Worse! I thought I knew about bear behavior but I guess I didn't.
  - I think some of the information on these signs is wrong (please below)
- 
- 

6. Was language a barrier to understanding the trail sign?

- Yes
- No
- Sort of
- I would prefer to read the sign in \_\_\_\_\_

7. Do you have any suggestions to make the sign more effective?

- No
- Yes \_\_\_\_\_

8. Is there a trail head in your neighborhood that you would like to see a version of this sign on?

- No
- Yes (please describe the location) \_\_\_\_\_

**Thank you for completing this survey!**