



What does the public say about reducing human-bear conflict?

WildWise Yukon 2017 Door to Door Outreach Project Summary and Lessons Learned

Prepared by Heather Ashthorn for the Centre for Human-Wildlife Conflict Solutions



Introduction

WildWise Yukon focuses on reducing human-wildlife through education, outreach and research activities. Between 2014-2016 we conducted a door to door outreach project in the Yukon's Southern Lakes region. We visited over 150 residential properties and talked with residents about wildlife attractant management. We were interested in finding out what attractants were available and what residents would be willing to do to decrease access to those attractants by wildlife. [\(A summary report can be found here\)](#)¹.

Because we received such positive feedback (over 80% of residents told us that they found our visits valuable and suggested we extend the program to other areas) we decided to expand our reach to areas close to and outside of Whitehorse with a recent history of human-bear conflict. The goal of this report is to summarize the findings of our 2017 door to door surveys and identify some next steps toward reducing future human-bear conflicts around residential properties.

Methods

This year, our project areas were Carmacks, and the Whitehorse neighbourhoods of Mount Sima, Wolf Creek, Spruce Hill and Copper Ridge. We focused on streets within each of those areas that had a history of negative human-wildlife encounters (Table 1) or that are close to natural habitat or wildlife corridors.

We chose areas that Yukon Conservation Officers suggested based on their recent history of negative human-bear encounters. We conducted all of our door to door visits in June and early July, 2017.

Our approach was to take note of obvious available attractants, engage in conversation with residents about their experiences with wildlife and negative human-wildlife encounters close to their homes and provide practical tips on bear safe ways to store wildlife attractants by doing a voluntary survey of each property with the residents. We used a standardized survey (Appendix 1) to assess and compare availability of common attractants and recorded additional comments, requests and anecdotes to guide the discussion and future outreach initiatives. We introduced WildWise Yukon as a non-profit organization that aims to reduce the number of negative human-wildlife encounters in Yukon, noted that we chose the neighborhood because

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of the recent history of negative human-wildlife encounters and explained that we do not have an enforcement role but are working on helping people find solutions to manage the attractants on their property as well as working in collaboration with municipal and territorial governments to address the problem at a policy level.

We attempted to visit every house on the streets we chose to focus on. We left a project explanation, backyard checklist and contact information when nobody answered the door. We stated in our materials that we would return to the property at a convenient time for the resident if they contacted us.

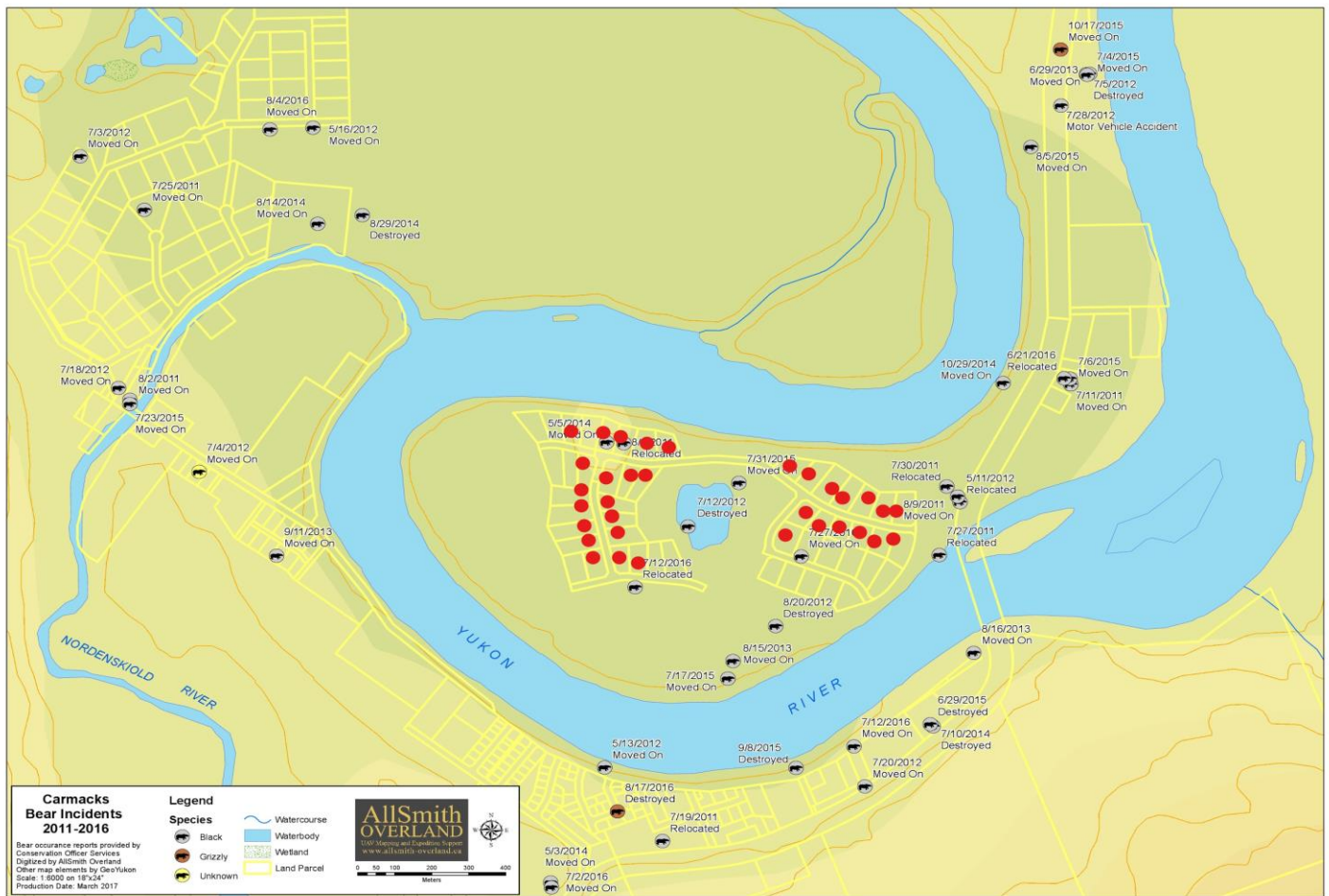


Figure 1 Map of Carmacks. Red dots indicate properties visited but not necessarily surveyed. We completed 11 surveys within this neighborhood.

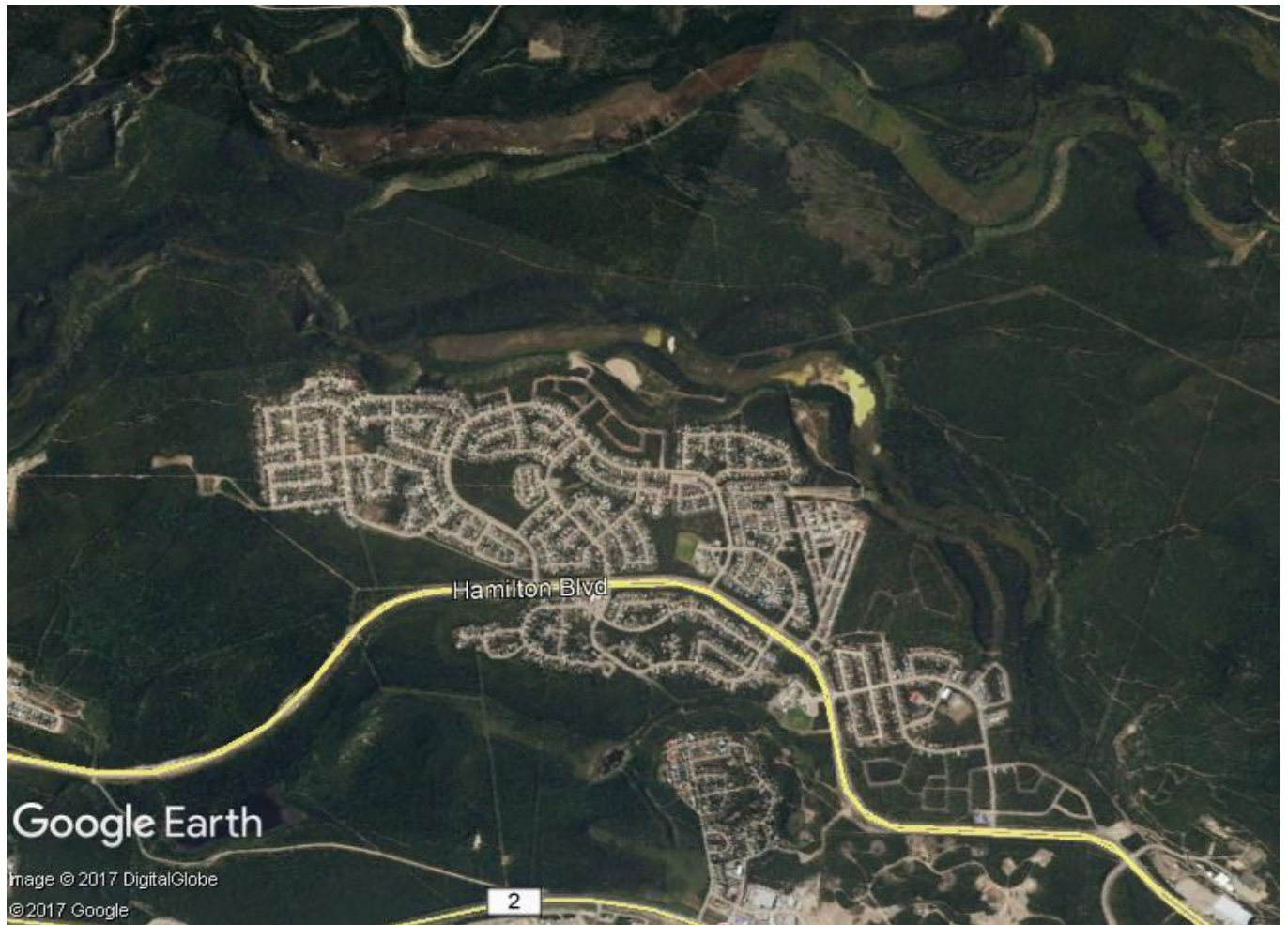


Table 1 A sample of recent negative human-bear encounters in our 2017 focus communities as reported by Conservation Officer Services Branch of Yukon Government.

Date	Area	Attractant	Outcome
April 22, 2016	Carmacks	Garbage	Bear destroyed
August 8, 2016	Carmacks	Pets, human food	Bear destroyed
August 11, 2016	Carmacks	Garbage, human food	Bear destroyed
May 10, 2017	Carmacks	BBQ, deep fryer grease	Bear destroyed
May 3, 2017	Pine Ridge (adjacent to Spruce Hill)	BBQ, compost, garbage	Bear destroyed
May 11, 2017	Mt. Sima	BBQ, bird feeder	Bear destroyed
May 30, 2017	Spruce Hill	BBQ, compost, garbage	Bear destroyed

Figure 2 Whitehorse rural residential neighborhoods visited; Wolf Creek, Mt. Sima and Spruce Hill. Map show proximity to green spaces and the Alaska Highway Corridor.

July 1, 2017	Copper Ridge	BBQ, garbage	Bear destroyed
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Results and discussion

Over 70% of the people we visited (n=109) completed the survey and shared their observations and stories about encounters with wildlife. We spent 15-45 minutes at each of these properties. Some people chose to answer survey questions on their doorstep and others opted for a walk-around with us and so our data is based on what people said, not necessarily what we observed.

Most people expressed concern for wildlife and personal safety and professed interest in reducing human-wildlife conflict. This might reflect a theoretical tolerance for wildlife but does not necessarily mean that people are tolerant of having close encounters with wildlife where they live and play, or a willingness to take personal responsibility. Many people reported seeing wildlife, especially bears and foxes, on their properties and seeing signs of bears (prints, scat and markings on trees) on trails and green spaces close to their properties as well as having had a close encounter, such as a bear rummaging through their garbage or grazing on dandelions in their backyard. The Conservation Officer Services reports frequent calls from the public during the spring, summer and fall, suggesting that tolerance for wildlife in close proximity might actually be quite low, and that there is a reliance on enforcement services (removal of wildlife) to deal with problems that arise when wildlife come into human-dominated areas. In contrast, one rural resident told us about a placer miner he knows who destroys over 20 bears per season and buries them on his claim (out of sight) without reporting the kills to Conservation Officer Services. The reasons behind people's decision making about reporting bear incidents are likely complex, possibly informed by world view, education, past history with bear encounters, degree of willingness to accept the media's interpretation of human-bear encounters and a multitude of other things.

Copper Ridge had the highest availability of garbage and compost of any of the subdivisions close to Whitehorse (Table 2). Over 90% of homes in Copper Ridge have single or double car garages, but during our visits, garbage and compost were stored outside of the garage and visible from the street. We feel this indicates that once people put the garbage in their poly cart they no longer consider it to be their responsibility and perhaps don't think about the possible repercussions of having a bear attractant on their property.

Table 2 Percentage of residential properties with available attractants by community.

Attractant	Spruce Hill n=17	Mt. Sima n=11	Wolf Creek n=16	Copper Ridge n=53	Carmacks n=12
Garbage	24%	45%	31%	79%	92%
Compost	53%	45%	56%	77%	33%
BBQ outside/not cleaned	41%	64%	56%	32%	33%

BBQ not cleaned after use	18%	9%	19%	17%	17%
Outside, unsecure food storage	0%	18%	6%	4%	17%
Bird feeder	12%	27%	31%	11%	8%
Pets/ pets being fed outside	7%	6%	4%	4/13%	29%
Chicken coops	0%	0%	6%	2%	0%
Gardens without electricfence	29%	27%	44%	11%	17%
Foam products (bike seats, hot tub covers etc)/Petroleum products	24/47%	36/45%	56/44%	6/4%	25/33%
Natural attractants (soapberry, dandelion, vetch, etc.)	53%	73%	75%	43%	42%

On Keewanaw St. in Copper Ridge, almost all of our invitations to carry out an attractant survey were turned down and several residents told us that there was no need because they perceived that there was not a problem. We noted that all residents on this street stored their garbage in an unsecure location, but in conversation most reported seeing bear prints or other signs on the trails behind their properties. We do not know of any recent negative encounters between people and bears on this street. In contrast, one street over, Winze Place, has been the site of several close human-bear encounters with at least one recent negative outcome (a sow was shot and her two orphaned cubs moved to the Calgary Zoo in 2015) and almost every householder wanted to talk about bears and take us on a guided tour of their property. One resident had taken matters into his own hands after having a negative bear encounter on his property, attempting to retrofit his family's poly cart with a home-made locking device which was not bear resistant and possibly gave the home owner a false sense of security. Others on the street had taken various measures to remove bear attractants from their yards (mowing dandelions, removing petroleum products, getting rid of back yard composters). We think this emphasizes that **often it takes a tragedy to initiate behavioural change.**

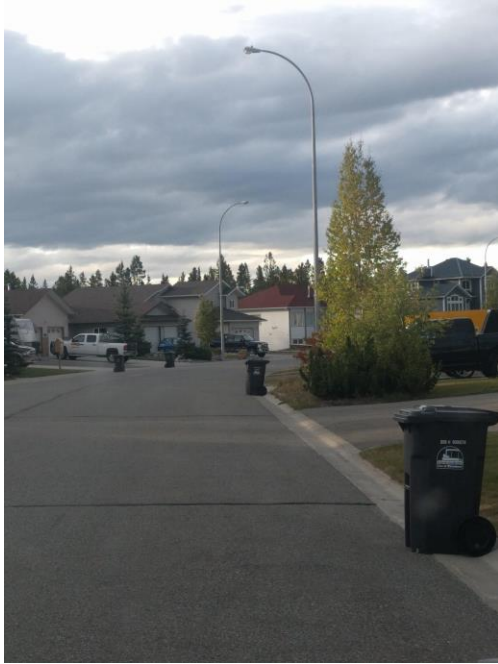


Figure 3 City of Whitehorse poly carts in Copper Ridge. Photo taken at 6:00pm the night before collection, one week after WildWise outreach project on North Star Drive.

Within a week of visiting door to door in Copper Ridge, Environment Yukon Conservation Officer Services destroyed a black bear that had accessed garbage and barbecue grease in the yards of the people we spoke directly with about attractants. We now question the effectiveness of going door to door with information. It is a costly and time consuming action and education, by itself, may not change human behaviour. Our sample results suggest that some City of Whitehorse residents who already pay for garbage and compost collection are not inclined to change their behaviour in how they store their City-issued poly carts (Figure 3). It is interesting to note that **while people stated a *desire* to reduce human-bear conflicts, these events suggest that there is not a *willingness* to** change their behaviour to reduce conflicts.

Only one out of 53 Copper Ridge resident said they would be willing to change their behavior by storing their garbage in their garage or locked shed during the summer months. Most people surveyed said that it would be either inconvenient or too smelly to store their household wastes in their garages and they were unwilling to do so.

It is also worth noting that all of the other subdivisions that we visited close to Whitehorse (Spruce Hill, Wolf Creek and Mount Sima) are outside of the City's garbage collection service and residents have to dispose of their own wastes. In these areas we observed that garbage and compost is far less accessible to wildlife. Many rural residents are using secure storage and disposing of wastes frequently. All of these subdivisions are in high-commuter areas and residents are disposing of household wastes at landfills, workplaces and other facilities. BBQs, bird feeders, petroleum products and gardens were more common attractants in these rural areas (Table 1). As well, it is likely more common that people expect to see and are more tolerant of wildlife in these subdivisions and are more proactive about managing household wastes.



Figure 4 Carmacks plywood dumpster. These receptacles are not bear proof and are stationary; possibly contributing to food conditioning of bears.

In Carmacks, a truly rural community where waste is managed either by the Little Salmon Carmacks First Nation (LSCFN) or by the municipal government, people were more likely to acknowledge that bears are frequently seen in their neighborhoods and would be destroyed if they caused any trouble. People we talked with in this neighborhood expressed minimal concern for promoting human-bear coexistence. We observed a high degree of available attractants of all kinds on the limited number (n=12) of properties we visited. All homes in the LSCFN village area have non-bear-resistant waste receptacles at the end of the driveway (Figure 4). Residents acknowledged their existence and demonstrated very little interest in discussing alternate attractant management.

All of these rural and semi-rural areas are in close proximity to expansive green spaces and a high availability of natural attractants such as fruiting soapberry plants. People are generally attracted to living in these areas because of their wilderness value. Carmacks is rural and remote. A mapping project that WildWise Yukon completed in 2017 shows a high level of negative human-bear interaction as well as the movement of bears through residential areas. It appears that the majority of bears reported to Conservation Officer Services move through the community without causing trouble or being destroyed; however, Conservation Officers report frequent calls and considerable resources being spent on locating and dealing with bears that have been reported by community members. Again, this may indicate a low tolerance for human-bear interactions and lack of willingness, ability or “know-how” to take personal responsibility for the problem.

Across all locations surveyed, we found that many people were aware of the negative human-bear encounters that have occurred in their neighborhoods in recent years and many people are quick to point out the properties on which the bears were captured or destroyed. We heard a lot of theories about who was to blame for the negative encounters, including the “bad” neighbor, the City of Whitehorse and Yukon Government, and who should be responsible for fixing it (the bad neighbor, the City of Whitehorse, Yukon Government) but little understanding of bear behavior, habituation or food conditioning. It seems clear that this blame centered mentality leaves little room for taking personal responsibility and behavior change.

Lessons learned

Communities and suburbs are established in boreal forests that bears use as movement corridors or areas for foraging so it is no surprise that we have potential interactions. Our surveys and discussions with residents have brought an old problem to the surface. Although we can influence behavior change in wildlife by reducing their access to garbage, human foods, and other attractants, wildlife will always look for the easiest source of calories. The challenge is to manage human behavior to reduce negative impacts on and encounters with wildlife.

Our door to door outreach highlighted the prevalence of both “ignorance” and “indifference” in the people we talked with. Sylvia Dolson’s 2016 Bear Smart Community Survey results distinguishes between the two as such:

“Ignorance: People that are genuinely unaware of bear problems they create by unsafe storage/handling of food and garbage... Indifference: Those people who are clearly aware of bear smart food/garbage handling practices, but choose not to do so either through laziness or they just do not care whether they create public safety issue for others or that their actions may result in the destruction of a bear(s).”

Through our research and discussions we are becoming aware that there is no one solution to the human-bear conflict problem. Different approaches are needed to combat ignorance versus indifference.

One solution is to provide access to education. This path is popular with government and often becomes the focus of non-profit organizations seeking funding from government or through other means. Education is relatively inexpensive and sometimes shifts perception of responsibility away from governments and onto the public and small organizations. Funding education initiatives ticks a box off for both sides of the funding equation and suggests that, once information has been distributed the public no longer has an excuse to continue behaving the way it has in the past. However, as we discovered this summer, some people *do* continue to behave the way they have in the past. It is possible that entrenched ideas are not influenced by the introduction of new ideas (Ruben Anderson, Behavior change and sustainable systems consultant, personal communication, 2016). In other words, just because we have gained information doesn’t mean we will do anything with it.

Although North Americans may be convinced that more education is the solution to all problems, education may be limited in its reach. When we were researching an evidence-based approach to trail sign education we found out that the group most receptive to change were people who did not have any prior bear aware education (Ashthorn, 2016). We designed our signs to deliver simple, fact-based information that would help keep trail users safe while in bear country. Our study design included a self-evaluation of what people had learned after we had exposed them to different types of information. We found that most people had very good recall but we did not have mechanism in place to follow up later to self-evaluate behavior

change as a result of the information they were given. In order to understand if education is having any lasting effect is important to develop mechanisms for this self-evaluation.

We have approached reducing human-bear conflict through a slate of other education campaigns as well. [Current examples can be found on our website here²](#). Not all conclusions are so gloomy in regards to how effective education is but creativity is required to make it work,

As Ashthorn (2016) reported, worldwide, non-government organizations and private institutions are developing education tactics about bears, both to increase human tolerance of bears and, therefore, indirectly to protect bear populations. These education campaigns also help to increase human safety, reduce property damage caused by bears and reduce costs associated with dealing with the problem (Campbell, 2012; Dunn et al., 2008; Spencer et. al., 2007).

Some researchers have speculated that behaviour will not shift unless people recognize a consequence to their collective actions (Peine, 2001). Another complementary route to behavior change is to provide support through regulations or bylaws for compliance and enforcement. Unlike bears, which may defend their young and/or a resource in their immediate area, humans tend to defend an entire territory, resources and young included. When bears break in to garbage dumpsters and access other attractants in or near human settlements many consider them “nuisance” bears and there is often a strong lobby from humans to ‘manage’ (destroy, relocate or, more recently, haze) them. In these situations, public support for conservation and coexistence may be replaced by criticism aimed at governments and conservation officers for not instituting bear management protocol to protect the public and greater concern for costs than conservation (Dunn, Elwell & Tunberg, 2008).

As we found out when researching trail sign design, wildlife managers may set out to shape the public’s behaviour but the acceptance of any management strategy will be influenced by the belief system of the target group. Attitudes vary depending on the context of a situation (Overbey, 2015; Don Carlos et al., 2009).

Because our surveys suggest that people are unlikely to change behavior on their own volition and using the mantra, *A Fed Bear is a Dead Bear*, as guidance we are more and more convinced that policy and enforcement need to be improved to deal with the problem at hand, the unnecessary destruction of bears due to human negligence and higher than necessary rates of human-bear conflict in general.

² <http://wildwise.ca/projects/#current-initiatives>

With our lessons learned in mind, here are some possible next steps:

1. Research how waste management bylaws and other conflict reduction strategies (e.g. educational programs) are working in other jurisdictions, in order to find strategies that could be replicated in Whitehorse.
2. Our work going door to door highlighted the need to have a better understanding of the diversity of opinion people have towards bears. We need several types of information about the make-up of our community.
 - a. The first is a description of how many Whitehorse residents are new to the North or our community and have a wish to learn more living safely with bears. We expect this is a relatively small group and our experience shows they would be receptive to educational efforts; providing bear aware information would be straight forward and considered "low hanging fruit" by policy analysts.
 - b. Using a conventional public education campaign to target the larger group of residents who are "indifferent" to making personal changes to coexist with bears is a poor strategy. For this group it may be helpful to try and explore what the barriers to behaviour change are. For example, we learned that many residents are reluctant to store their CoW poly carts in their garage.
 - c. Finally, we recognize the need for insight to the attitudes people have towards bears and how they perceive the risk posed by bears. Developing an understanding of how people's sense of risk associated with bears influences their decision making (e.g. do they call a C.O., destroy the bear themselves or ignore the bear when it is on their property) may inform an effective approach. It is likely that attitudes vary between communities, districts, territories and at other scales. (Cable et. al, 1987). Additionally, finding out what the public considers a "win" will help us develop an approach that gains public buy-in.
3. We need to understand the past patterns and trends in human-bear conflict. We are currently working on compiling data based on reporting to Environment Yukon. The data may be used to answer questions about trends in human-wildlife conflict and help us understand tolerance to different management approaches. Streamlining the reporting process so that government and the public have timely access to data may help mount a coordinated response to reducing human-wildlife conflict. There are simple technologies that can be used, or designed specifically that will help people responding to human-wildlife conflict with accurate and timely reporting.
4. Reinvigorate the Whitehorse Bear Working Group. This collaboration is not always an easy one but it could be an agent for change if all parties agree that change is needed. It has been our experience that Mayor and Council have not been fully informed and, therefore, not appropriately engaged in the work that the WBWG has done in the past. Improving communication between working group members and Mayor and Council, perhaps by having a councilor attend working group meetings, may improve the group's opportunities to effect positive change.

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Appendix 1

LOT # _____

Home Walk Around Sheet

Check the boxes that apply to the residence to account for areas that present

1. Garbage Storage

- Garbage stored outside in an unsecure enclosure
- Garbage not stored in a bear-proof container
- Garbage stored on porch/balcony
- Garbage stored in unsecured/unlocked shed
- Large amount of garbage stored on property
- Cooking grease discarded in yard
- Food scraps/compostable waste disposed in garbage

If curbside pickup is available:

- Garbage is put out the night before pick up – is it locked or in bear-proof container? YES
NO

2. Compost

- No Bear-proof composter
- Is un-kept and/or odorous
- Contains meat, fish, oil, grease and/or dairy products
- Is close to forest edge, thickets or wildlife pathways

3. Porches, Windows and other Entrance-ways

- Doors/windows are not closed/locked
- Outdoor door-handles have lever style handles
- Doors do not have deadbolt lock installed

4. Outdoor barbeques, freezers, fridges, dryers and smokers:

- Food is stored in outdoor freezer/fridge/shed that is not bear-proof
- Freezer/fridge not outfitted with appropriate lock or secured in bear-proof enclosure
- Barbeque is not cleaned/washed after use
- BBQ contains full grease container/food residue
- BBQ grease traps use lava rocks
- BBQ stored outdoors when not in use
- Smokers used/stored outdoors or in unsecure shed
- Meat shed is not secure – unlocked, non-electrified, etc.
- Smoker/dryer is very dirty and odorous

5. Property

- Property is left un-occupied for long periods of time
- Vehicles are left unlocked
- Trash, groceries, animal blankets/feed, coolers, etc. are left in vehicle

6. Yards and Green Spaces

- Lawns not mowed/weeded – Dandelions and clover abundant
- Native/non-native foods planted in/present in yard
- Brush is close to home/walkways
- Birdfeeder is present on property and:
 - full during bear-season (April – November)
 - hung in reach of bears (< 3m off the ground)
 - birdseed kept outdoors/unsecured
 - birdseed contains millet
 - seed is spread under feeder
- Hummingbird feeder present

7. Gardens

- Vegetable contains potatoes and root vegetables

- Flower garden contains sweet vetch, dandelions and clover
- Ripe fruits/vegetables not harvested
- No electric fence present around larger gardens
- blood meal, fish fertilizer or deer repellent used in garden

8. Pets

- Pets fed outside
- Pets kept outside overnight
 - Pet chained
 - Yard unfenced
- Pet food is stored outside in unsecure manner and:
 - Containers are not bear-proof
- Dog bones lying around in yard
- Pet faeces not regularly picked up and disposed of in secure container
- Pets are allowed to roam freely during the day/night
- Small pets are allowed outdoors (cats, rabbits, guinea pigs) unsupervised

9. Outdoor chicken coop

- Coop is not secure against predators
- Coop does not have apron or tall enough fences
- Coop not electrified
- Coop too close to trees
- Gaps under fence
- Run not enclosed/covered properly

9. Other/Miscellaneous

- Citronella candles/bug sprays present and/or used outdoors
- Yard contains hot tub covers, bicycles (seat), snowmobiles (seat), old refrigerators (insulation) or other materials containing formaldehyde (formic acid given off as it breaks down)
- Yard has unsecured petroleum products (gas, oil, grease)