An Evening of Community-led Innovation hosted by WildWise Yukon

Summary notes & follow-up

One of the frustrations of working on human-bear conflicts is seeing bad endings repeat themselves year after year. If we expect a different outcome we need to try something different…and from there came the idea to gather a group of northerners together to talk about designing a better “mousetrap”.
The goal of the April 9th evening was a first attempt at a group brainstorming exercise to dream up ways to reduce human-bear conflicts. Yukoners didn’t disappoint – over 30 people attended and there were lots of original new ideas recorded in our notes below.

A shout out to the sponsors and partners that helped support our first “bear-friendly hackathon”! Lauren Beille (Yukon College), Alessia Guthrie (Cold Climate Innovation), Julie Nielsen(YuKonstruct), Bob Sharp (YuKonstruct), Ken Knutson (Environment Yukon), Jeff & Jared Marley (Margo Supplies) and Yukon Brewing.

Challenge # 1 - Is there a cost-effective way to retrofit existing Whitehorse garbage or compost carts to make them bear-resistant?

Although over half of participants live outside the City of Whitehorse waste collection area, the City's polycarts are a problem in common for many people who attended the Hackathon. The current carts have become bear attractants causing residents to call Conservation Officers for help removing food conditioned bears from Whitehorse neighborhoods every year. Food conditioned bears can behave in a manner which is dangerous to humans and destructive to human properties.

The Prototypes

In the true spirit of a Hackathon, Philippe LeBlond spent the day prior to the event building a prototype latch system which addresses both the need for securing the lid at the curbside and the potential that some residents may not be able to operate a two-handed latch. LeBlond, well renowned, local innovator and environmental champion brought his prototype to the event, generating much interest and discussion about how the current bins work, whether sending the current ones to the landfill or to recycling is a responsible move. LeBlond's latch is opened by the resident using a foot pedal (which would be covered in a way that would not be accessible to bears) and by the waste hauler via external pressure on the lateral, spring levers.

Hot on LeBlond's heels, JP Pinard took to the challenge with only a knife and pizza box in hand. Similar to Leblond's prototype, JP's latch requires applied pressure from the waste hauler truck to open the latch. The spring-loaded mechanism on the front of the polycart would require the use of just one hand to release a latch that clamps the lid down tight.

The Ideas

Meanwhile, a group of concerned citizens hashed out some interesting ideas to deal with the current polycart situation:

1. Glenn Piwowar - Paint the polycarts bright orange so people don't want to leave them in a visible location

2. Keith Lay - Look into underground garbage storage systems. An example can be found here: http://www.swrl.com/sybertech_waste_reduction_inground_trash_system_millennium_4000.html

3. Lue Maxwell - Use a pheromone or other biological agent as a deterrent.

4. Lucile Fressigne - Reduce the smell by washing or sprinking with an agent that bears don't like, such as ammonia, bleach or pinesol

5. Rohit Kasbekar - Attach a device (such as a critter gitter) that emits a high frequency sound when a bin is overturned to each bin. According to Rohit, 18000-22000 Khz will deter a bear. He suggests testing the device at the perimeter of the Whitehorse landfill and designing the device with a remote that allows it to be turned on and off from inside the home. Rohit warned that it is uncertain whether kids can detect sound at this frequency and what the consequences might be.

6. Kim Lisgo – Suggests holding a contest to design and test various latches (compatible with the current polycarts) and inviting engineering clubs from across Canada to participate. Kim suggests that the entry fee could be the cost of a polycart and a cash prize could be obtained from a sponsor. Kim volunteered to contact the University of Alberta to inquire about the feasibility and advised that the first step would be to develop parameters such as cost and patenting.

Challenge #2 - How would an early warning alarm system for unattended picnic coolers work? (E.g. for a short lunch stop along the river bank during a canoe trip and bathroom break).

We had a small group of four people and began by looking at a device called a Critter Gitter that the Conservation Officer Services Branch had provided as a demo. Margo Supplies sells it for $87 and provides this description.

Critter Gitter: Approaching animals activate a 120dB Siren and flashing lights when passing in front of the Critter Gitter crossing its path. Each unit Critter Gitter will detect animals in a 90° cone up to 12m (40ft) away. Combining both infrared and motion sensors prevents false activation. Once tripped, the horn emits a 120dB sound for approximately five seconds while two red lights (simulating eyes) flash during the alarm cycle. Powered by a standard 9v battery (not included) - high performance 9v lithium batteries provide the longest life.

Our critique was that campers might find it too expensive and that it would be prone to false alarms if a Gray Jay or pet broke the infrared beam.

Our discussion turned to four new ideas:

1. Rohit Kasbekar suggested there is a difference in the hearing range of bears and humans and this could be exploited to design a device that would deter a bear but not annoy humans. The premise he gave us was that the hearing range of bears went beyond the human range (that ends around 18,000Hz); therefore an alarm in the 20,000 Hz range should not be detectable by people but should get a response by bears.

Challenge # 2 continued

The device could be started by an infrared sensor or a remote start fob. The recognized drawback was that dogs could hear in this upper range so that dog owners would be concerned. We also realized that the benefit of an alarm was to remind the owner to return to deal with the intrusion back at their cooler – an ultrasonic alarm that humans could not hear would not provide the feedback. Note[1]

2. Rohit said he had read that bears are deterred by the scent of pine and wondered if this could be used in some situations. Note[2]

3. Another suggestion for campground use (rather than wilderness trips) was to equip each campsite / picnic table with a bear-resistant storage container. The drawbacks we discussed included the high cost and potential redundancy given that most Yukon campers travel by vehicle where attractants can be safely stored.

4. Sandy Johnston asked why we are focusing on an alarm if you could protect the cooler with some type of electric mesh? Bob Sharp joined in and the discussion turned to how to design a shroud like net that could be draped over a cooler (or backpack) and electrified to ensure it would deter any animal that investigated. One suggestion was to simply cut out a section of commercial electric netting and set it up with pins to secure the shroud to the ground (and a ground connection). The shroud could short out if the cooler was made of metal but would be fine with plastic coolers. The power demand would not be great and the weight might be low enough to also be of use to backpackers. Note[3]

[1] Paper on hearing range of a single polar bear - http://jeb.biologists.org/content/210/7/1116.long

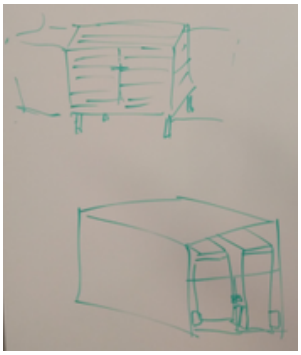
[2] Colorado Parks and Wildlife states that, “Bears also dislike the strong scent of pine-based cleaners, but avoid using anything with a fresh, lemony or fruity smell.”

[3] A 164 foot section of Electra Netting, 48 inches high, currently costs $323 at Margo Supplies. An average cooler might be 24 X 17 X 15 inches and that roll of fencing could be cut into about 25 shrouds (each 48 x 72 inches) at a cost of $13 each.

Challenge #3 - Many Yukon homes lack a garage or shed to store garbage safely. Is there a cost-effective way of designing bear-resistant storage? Perhaps big enough for polycarts

Our group went back to basics on this question and recognized there could be different solutions for homeowners in urban areas (with polycarts) versus folks living in rural areas of Whitehorse where there is currently no garbage collection (and no polycarts).

- One participant explained that they use a freezer to keep their compost bear safe (frozen!) until the biweekly compost collection and then put it in the polycart for collection. [Urban]
- Have a centralized community / subdivision collection site using bear-resistant containers [Urban /Rural]
- Use an enclosed trailer for garbage storage [Rural]
- Build an inexpensive “cart” corral with a roof and 3 sides with a gate to allow access to polycarts.



The group considered the plans drawn up by the Municipality of Whistler, BC for “Solid Waste Wildlife-Proof Enclosures” (Link here). and decided that it doesn’t seem appropriate for a single dwelling in the Yukon as it seems overbuilt, expensive and geared for commercial operations or condos (e.g. steel entry doors and space for a commercial dumpster).

Challenge #4 - Some homeowners with a garage choose not to store their garbage (e.g. polycarts) inside their garage. Can we find out why they make this choice and solve the problem or change the behaviour?

Particpants discussed why this problem exists:

1. there is no room in my garage
2. The polycart is smelly
3. polycart is too big (takes too much room/ cumbersome to bring inside)
4. General awareness
5. General inconvenience
6. Perception of risk is low, no incidents or very unlikely
7. Garage isn't actually that accessible for my polycart
8. Garbage polycart is unsightly I dont want to see it in my garage.

And what to do about it:

1. Use a small home hardware bucket for garbage inside the house, and another one empty inside the garage. Whenever these are full, go outside to polycart to dump just before pick up day. The smaller buckets are much easier to carry and handle than a garbage bag or the big polycart in the garage.

2. Visibility and awareness - use of marketing and data and statistics on bear encounters from previous years and current year to help people make the connection.

3. Marketing campaigns to build ownership of the problem. Grow understanding of perception of risk and reality of risk - Example: Fire Risk signs around Whitehorse. Each community could have a bear risk meter. Could be specific to activity of an individual bear or to season and changes in natural food sources.

Challenge # 4 continued

4. Ownership idea explored further with example of avalanche reporting. You never go in the back country with anyone who is not trained in avalanche safety. Assessments can add to a system and made accessible to all to help increase awareness and safety. Self reporting plays a roll. This could be similar for bear activity. Example from Wildsafe BC with a map people can add to. It provides instant updates. These ideas might stimulate a greater ownership of the issue and encourage others through gentle peer pressure or what is the new norm for safety.

5. Survey - Increase our understanding through public engagement on what would make them put the cart in the garage. This could help us learn more about the issue and spread awareness.

6. Design a polycart closet for inside a garage to remove bulky ugliness of the cart and help with organization. It wouldn't need to be bear proof if the garage is well built and locked, so more easily constructed and portable.

7. Youth Patrol idea where kids take action against inaction by adults in their neighbourhood. Similar concept to 'neighbourhood watch' but for being bear aware and complying with recommendations for good attractant management.
b) Youth could follow the Wildsafe BC model of tagging bins that have been left out with a reminder to keep bins secure and reporting 'repeat offenders' to C.O. Services or city bylaw services for follow-up.

8. Electoral advocacy - make your voice heard! Make it a critical platform agenda. Bring your concerns as a group of citizen to mayor and council. Bylaws need to be changed to improve pick up times and frequency and deal with wildlife attractant offenses.

9. Collaborate with groups that can help spread the message and apply peer pressure. Eamples: churches, groups with similar values re: animals/ safety of public, mom and tot groups.
b) Reach out to each community associate groups on Facebook and otherwise. Find an advocate in each association to help with messaging. Residents take great pride in their communities and sharing updates. Expand this to the umbrella association to more easily disseminate information to every association and use specific associations for more specific geographic targeting.

c) Hillcrest community association on has an annual BBQ - very popular with community and a good opportunity for WWY to reach out.

10. Education and Youth: Children's colouring and activity book. Educate the next generation to help inform and change behaviour of adults. Example: recycling. Partner with zero waste Yukon to get into school for education outreach; their messaging aligns with managing garbage and the accompanying benefits.

11. Video contest - Create a fun educational video that highlights the simplicity of changing behaviour: youth advocate versus patterned adult. Make contest entry available to anyone, possibly a good entry competition for the 48 Hour film contest. Expand creative competition to include PSA's, video either musical or other, commercial, social media, poster.

Thank you to the people who came to help solve this problem in common, our partners and sponsors!

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