

Bear Smart Communities

A CROSS-JURISDICTIONAL SCAN OF COMMUNITIES WORKING
TOWARDS REDUCING HUMAN-BEAR CONFLICT



ACKNOWLEDGEMENTS

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Acronyms

ADFW – Alaska Department of Fish & Wildlife

CBJ – City/Bureau of Juneau

C.O.S – Conservation Officer Services

DOS – District of Squamish

EY – Environment Yukon

GBSS – Get BearSmart Society

RMOW – Resort Municipality of Whistler

UBCM – Union of BC Municipalities

WBHA – Whitehorse Bear Hazard Assessment

WBWG – Whitehorse Bear Working Group

WWY – WildWise Yukon

Introduction

Many communities in Canada and the US have taken steps to reduce conflict between humans and bears both to promote conservation of bears and to reduce the risk of human injury and property damage. The vast majority of conflicts occur around human settlements where garbage, compost, human food and other sources of calories for bears are made available. When bears have access to human garbage and foods they can easily come to rely on these valuable resources and then become defensive of them, a situation which is often lethal for the bear and dangerous for humans.

In Whitehorse, Environment Yukon's Conservation Officer Services Branch receives calls about human-bear conflict through the TIPP line. As in all communities in this scan, reported conflicts are the only metric available to examine conflict trends over time. Since 2012, there have been an average of 20 human-bear conflicts per year within the Whitehorse City Limits (WCL). Roughly two-thirds of those conflicts have been reported in country residential subdivisions and in 70%, garbage and compost have been noted as the main attractant. Since 2011, there have been three years in which the number of bears destroyed due to human-bear conflict has captured the media and public's attention. 2017 was one of them. Over a third of the bears destroyed were due to conflicts reported within the Whitehorse District, which extends far beyond the WCL but not so far that a bear can't easily travel throughout. Six of them were destroyed within the WCL. Over 60 bears were destroyed throughout the Territory.

The Centre for Human-Wildlife Conflict Solutions (commonly referred to as WildWise Yukon) is a non-government organization with a mandate to reduce human-wildlife conflict (HWC). Our approach combines research, outreach and education and is informed both by the current local situation and the successes and failures in communities that are working to reduce HWC. WildWise Yukon (WWY) works in collaboration with Environment Yukon, the City of Whitehorse and many other stakeholders throughout the Yukon to identify what the problems are that lead to HWC and to develop solutions.

In 2016, WWY, with financial support from Whitehorse Bear Working Group (WBWG) members, commissioned the Whitehorse Bear Hazard Assessment which identified risks to the human-bear system throughout Whitehorse. Yukon College completed a bear hazard assessment for Yukon Place the same year. The associated recommendations continue to guide the work that WWY is doing. However, without a Human-Bear Conflicts Management Plan, typically the next step taken to formalize responsibilities and timelines on the hazard assessment recommendations, little can be accomplished.

Because we value an evidence-based approach, WWY recognized the need to provide decision makers, as well as the public, with a baseline of information about the successes and challenges that other municipalities have realized on their path to reducing human-bear conflict. This project is a scan of methods used by provincial, federal and municipal governments in British Columbia, Alberta and Alaska that are attempting to reduce human-bear conflict. We have used a template of questions about their top down (using law enforcement such as fines) and bottom up (education to inspire behavior change) approaches as well as the metrics they are using to track both rates of conflict and behavior change over time. The community profiles were completed by interviewing a network of people involved in bear smart initiatives in each community, as well as by reviewing waste, animal control, wildlife attractant, zoning and building bylaws, City Council agendas and minutes and seemingly endless bear hazard assessments, human-bear conflict management plans and educational materials.

The intent of this scan is to give Whitehorse stakeholders, including the City, WildWise, Yukon Government and the public material to inspire bear smart decision making and action. Whitehorse has a lot of work to do to catch up with the other municipalities in this scan.

‘Bear Smart’ Explained

All jurisdictions in this scan have a consistent goal to reduce human-bear conflict but have taken different approaches to getting there. In BC and Alberta, BearSmart is a ‘product’ of the Provincial governments. In Alberta, BearSmart is an education program and in BC it involves a combination of education and enforcement measures. Municipalities and non-profit organizations can appeal to the Province for support in achieving BearSmart goals. Alaska does not have a BearSmart program but, at a federal level, provides support to municipalities that are taking proactive measures to reduce conflict. Here is a brief overview of each.

Alberta

Alberta Bear Smart is a program of the Alberta Ministry of Environment that seeks to reduce human-bear conflicts and increase public stewardship in Alberta by providing strategic information and education materials to the public, stakeholders and government agency staff dealing with bears.

Program manual: <http://aep.alberta.ca/recreation-public-use/alberta-bear-smart/documents/AlbertaBearSmart-ProgramManual-May2011.pdf>

British Columbia

The Bear Smart Community Program is a joint initiative of the BC Ministry of Environment, BC Conservation Foundation and the Union of BC Municipalities. It is a voluntary program with an established set of criteria. Municipalities can apply for BearSmart Community status after completing all six criteria, which can only be accomplished through collaboration. Funding is provided by all members.

Background document: https://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-ecosystems/conservation-officer-service/bearsmart_bkgdr.pdf

Criteria:

1. Prepare a Bear Hazard Assessment
2. Prepare a Human-Bear Conflict Management Plan
3. Revise planning and decision-making documents
4. Implement a continuing public education program
5. Develop and maintain a municipal bear-proof solid waste management system

6. Implement “BearSmart” bylaws

Many BC BearSmart communities accomplish their public education criteria by implementing the BC Conservation Foundations’ WildSafe program. The program is funded by municipalities, the Provincial Government and through donations.

WildSafe BC: <https://wildsafebc.com/>

- WildSafe bin testing: <https://wildsafebc.com/bear-resistant-bin-testing/>
- WARP: <https://warp.wildsafebc.com/warp/>

Alaska

Alaska’s bear smart initiatives are carried out by the Alaska Department of Fish and Wildlife (ADFW, also known as the Alaska Department of Fish & Game), non-profit organizations and municipalities. Alaska does not have an organized bear smart program but does have high rates of human-bear conflict around most human settlements. It is the one of the first States to enact laws to reduce conflict. Urban Bear Ordinances are akin to wildlife attractant bylaws.

Bear Smart Initiatives by Jurisdiction – A quick comparison of actions taken by governments and other stakeholders to reduce human-bear conflict

Bear smart actions taken	British Columbia				Alberta		Alaska	Yukon
	Squamish pop 19,000	Whistler pop 12,000	Castlegar pop 7800	Coquitlam pop 135,000	Canmore pop 14,000	Crowsnest Pass pop 5600	Juneau Pop 33,000	Whitehorse Pop 25,000
Bear Smart Community	✓	✓		✓	✓	✓	NA	
Bear Hazard Assessment done	✓	✓	✓	✓	✓	✓	NA	✓
HWC conflict management plan	✓	✓	✓	✓	✓		✓	
Interagency human-bear conflicts prevention committee	✓	✓	✓	✓	✓		✓	
Wildlife attractants bylaw	✓	✓	✓	✓	✓	✓	✓	
Bylaws provide definition of wildlife resistant container/enclosure	✓	✓	✓	✓	✓	✓	✓	
Active enforcement of attractants bylaws	✓	✓		✓	✓	✓	✓	
Municipal employee dedicated to HWC prevention	✓	✓		✓				
Dedicated education program in community	✓	✓	✓	✓	✓	✓	✓	
Municipality provides enforcement funding to CO services		✓						
Municipal funding for bear smart initiatives	✓	✓	✓	✓	✓		✓	
Provincial/Federal Gov. provides funding for bear smart initiatives	✓	✓	✓	✓	✓	✓	✓	
Bear proof or resistant commercial waste system	✓	✓	✓	✓	✓	✓	✓	
Bear proof or resistant residential waste system	✓	✓	Garbage only	Compost only	✓			
Type of residential bear proof or resistant bin used	Rollins	NA	Rollins	Rollins	Haul All	Up to resident	Up to resident	NA

Bear Smart Initiatives – A Little More Detail

Managing attractants is not technically complex but does usually require a change in attitudes and behavior at a community level. Governments and other institutions often lean heavily on education as a means to promote behavior change with varying, and often unsatisfactory, results. WWY has tested the effects of education related to reducing human-wildlife conflict on behavior change in and around Whitehorse through our door to door work and follow up visits. We have found that the people we engage with are generally interested in human safety and bear conservation and can recall what they learn from our programs. We have also found that, armed with information alone, they generally don't change what they are doing to reduce conflict. They often don't equate themselves as part of the problem (Ashthorn, 2017). Other researchers have had similar results. One of the most cited studies currently being examined by people attempting to reduce conflict was conducted by Mordo-Baruch et al (2011). They conducted several 'experiments', testing the effects of education and enforcement and found that education on its own did little to change human behavior and, further, that proactive enforcement of the law had better results. They caution the reader that it is important to consider that their efforts to educate may not have been especially good, an important message for any government or other agency planning to invest resources into education with the expectation that it will work. While money for education is often available, it is not necessarily the best use of those funds, unless, perhaps, an evidence-based approach is taken.

Provincial, territorial and federal governments are often forced into a reactive approach to bear management when conservation officers are left to carry the brunt of the responsibility for dealing with garbage bears. The strain this puts on their resources leaves little for proactive (conservation) measures. In theory, Conservation Officers are responsible for managing wildlife and municipalities are responsible for managing waste and other attractants. All municipalities in this scan have had to make changes to bylaws, enforcement effort and involvement in public education to fully step into their responsibilities and Provincial and Federal governments have had to find creative and effective ways of supporting municipalities to shoulder the very large task of changing human behavior. The following themes emerged from the dozens of interviews we conducted, planning documents we scoured and bylaws we investigated.

Education

The leading force behind every bear smart community we reviewed is education. In Alberta, the Provincial government's bear smart program is an education program that is delivered in 'bear smart' communities. Municipalities play an active role in educating the public about attractant management by teaming up with non-profit organizations and other agencies. Bylaw officers are instrumental, as they are in BC and Alaska, in educating residents about the bylaw which they do primarily by issuing warnings and at-the-door information about the law. In BC, implementing an ongoing education program is one of the six criteria to achieve bear smart status. The WildSafe program receives funding from municipalities, other stakeholders and through donations. Castlegar and Squamish have WildSafe coordinators who are a constant presence at community events and who also assist bylaw enforcement with patrols. They work with the municipality and Provincial government to identify new opportunities and fill gaps. They are instrumental in reviewing and contributing to planning documents. Coquitlam and Whistler both have bear smart educators on staff at the municipality which helps maintain a good working relationship

with governments and a high level of efficiency when something needs to get done. Alaska focuses almost exclusively on education to attempt to change human behavior.

Bylaws

Aside from Whitehorse, all municipalities we review in this scan have addressed attractant management through bylaw. Most have created a specific attractant management bylaw with a high level of detail about how residents are expected to store their attractants. Squamish is the most detailed we have found, including clear instruction on securing attractants generated by urban food production (beehives and hens). Most municipalities report some degree of push back from long term residents in communities that have introduced a new attractant management bylaw but those with a long standing education program that supports the introduction of those bylaws also report a degree of buy in, or at least a decline in complaints over time. Why? They aren't sure. A light handed approach to enforcement is probably one factor and a growing population (i.e. more people who have only lived with the 'new' laws) a contributor as well.

Bylaw Enforcement

Enforcement was the most challenging aspect of bear smart measures to obtain information about. We were hoping to be able to provide a picture of workload for bylaw officers and municipal staff in general when new bylaws come in to effect. What we discovered is that most municipalities are still experimenting with the education/enforcement cocktail. There are so many factors, including availability of natural attractants and changing preferences of bears on the landscape, that contribute to the level of conflict year to year. Bylaw enforcement generally has to follow a reactive approach to what is happening. Most bylaw departments told us that they tend to use light handed enforcement (warnings and education) and ticketing following high conflict years. Coquitlam is probably the community to watch for effectiveness of a top down approach to bylaw enforcement. The commonality across communities is that bylaw enforcement has become a shared responsibility, often with the educators flagging properties that are in violation of the bylaws, tagging bins with stickers to alert the property owner that they are storing waste in a manner that attracts wildlife and violates the bylaw/s as well as the enforcement officer on patrol, and reporting to the municipality. One of the key challenges for enforcement officers reported to us is with tourists and renters who come and go frequently. The clear message is that enforcement is one tool but not a fix-all.

Bear Proof Bins

There are a few different systems in use and, apart from Canmore which has used the Haul All system, and Whistler that does not provide curbside collection but does require bear proof storage of wastes, municipalities seem to have done as little as possible to meet bear smart waste management standards. For example, Coquitlam provides the same carts that were used by WildWise during our pilot project, but only on compost bins. Residents continue to put attractants in garbage bins and compliance with using the locks is low. Castlegar provides the same system but only on garbage bins. Residents can purchase bear proof compost bins from the City but aren't required to. Very few people have and compliance with using the locks is low. The bears are also chewing through the hinges in Castlegar. The City has had to replace several bins, which it will do one time only, a second mishap being at the property owner's expense. Crowsnest Pass' bylaw mandates the use of bear proof garbage storage but it

is up to the resident to purchase a bin or build an enclosure. Compliance is improving but still low. Squamish provides bins with clip locks as well on both garbage and compost. Again, use of locks is far from perfect and the Squamish WildSafe coordinator spends a lot of time tagging bins that are improperly used. The Juneau waste hauler supplies bins to residents and have tested out several poly carts with different locking mechanisms to varying degrees of success. The Alaska Department of Fish & Game reports that the system is marginal at best and there is a high degree of non-compliance with secure waste storage among residents. Accordingly, we feel it can be said that these systems are proving to be bear 'resistant' at best. Canmore is the only community we reviewed that is not even talking about their system anymore. They began phasing in the Haul All system in 1997 throughout the town for both residential and pedestrian waste and their garbage bear incidents immediately dropped to almost none and have stayed low. Carcross, Yukon, uses the same system and has not had a single garbage bear related incident since, save two in 2017 when the electric fence at the landfill was not functional. Whistler garbage bear incidents have also declined since publishing specific instructions for building bear proof waste enclosures as per their Solid Waste Bylaw but compliance still isn't perfect and garbage bears are destroyed every year.

Metrics

The short of it is that everyone is struggling to develop metrics to track change in the number of negative human-bear encounters related to change in human behavior or implementation of bear smart actions over time. Everyone says there are too many variables affecting bear behavior to be able to say with confidence that any one thing is working. The one community (Canmore) that can directly relate a reduction in garbage bear incidents has a system that nearly eliminates non-compliance so behavior change can't be attributed to people acquiring more information. In place of tracking outcomes for humans and bears, most municipalities are reporting on the number of people reached through education programs and number of bins tagged and warnings and tickets issued which is not necessarily a reflection on compliance as much as it is on enforcement decision making.

City of Whitehorse, Yukon Territory

Overview: Whitehorse is the commercial and legislative ‘hub’ of activity for the Yukon Territory. It is by far the largest municipality, governed by five governments including federal, territorial, municipal and two self-governing First Nations. Planning and decision making are complex.

The City has an Official Community Plan (OCP) which was reviewed in 2010 and identifies sustainability, community safety and environment as key priorities. The plan identifies “environmentally sensitive areas”, many of which form the periphery of the Urban Containment Boundary where human-bear encounters are common and many negative human-bear encounters have occurred. The OCP states the following objective regarding these areas:

1.1.1 Environmentally sensitive areas... such as significant wildlife corridors and important water bodies, are found throughout the City and their protection is a priority. Every effort shall be made to preserve these areas through limiting disturbance, promoting compact development, and ensuring connectivity between significant areas. Proposed development or activities that may impact the ecology of these areas shall be examined through comprehensive planning processes. It is also recognized that development may need to cross these corridors. Mitigative measures shall be taken to ensure impact to wildlife is kept to a minimum. (p. 32)

Improving tourism opportunities and local food production are addressed in the OCP. There are several sections to the plan which could be revised on the next round to include bear smart community planning. The City of Whitehorse’s Manager of Water and Waste explains,

“The OCP is a key tool for coordination and agreement between the governments sharing jurisdiction in Whitehorse. Addressing human wildlife conflict mitigation at the OCP level is an opportunity and milestone in achieving a bear smart community”

Whitehorse is the only community in this scan that has not enacted a wildlife attractant bylaw or included detailed regulations for wildlife attractant management in its solid waste bylaw. There is an opportunity now to amend our bylaws and improve enforcement to support the bear smart education initiatives that are already happening in the community, lead by Environment Yukon (EY) and WildWise Yukon (WWY). This could be an easy win supported by all stakeholders.

An assessment of human-bear conflicts reported to Conservation Officers (C.O.s) from 2012-2017 concluded that waste and organics are the primary attractant in 70% of occurrences. Waste management is always the elephant in the room regarding bear smart measures. The City of Whitehorse is currently supplying residents on curbside collection with non bear proof garbage and compost carts and continuing to use Gas Tax funds to purchase more each year to service new residential dwellings. Additionally, the City is planning to add curbside organics collection to its services which will increase the number of non bear proof compost bins that are available bear attractants in the city.

Envisioning and planning for a bear smart waste management system takes careful consideration and is a longer term vision, however, there are many other significant steps that can be taken to reduce the availability of attractants and improve safety for humans and bears while planning for a bear proof waste management system.

1. Context/background

URL for municipality: <http://whitehorse.ca/>

URL for bylaws & planning documents:

Waste Management Bylaw 2012-30: <http://whitehorse.ca/home/showdocument?id=71>

Official Community Plan 2010 - <http://ww3.whitehorse.ca/planning/OCP/2010-Whitehorse-OCP.pdf>

Contacts:

	<i>Contact person</i>	<i>Title</i>	<i>email</i>	<i>Phone</i>	<i>Responsibilities</i>
City of Whitehorse bylaw enforcement				867-668-8317	Bylaw enforcement
Bylaw complaints				667-2111	Receives complaints
City of Whitehorse Waste & Water	Geoff Quinsey	Manager	Geoff.quinsey@whitehorse.ca	668-8350	Curbside compost & waste collection, maintenance of city waste system, including waste bins for residential dwellings
Conservation Officer Services Branch	Aaron Koss-Young	Human-Wildlife Conflict manager	Aaron.koss-young@gov.yk.ca	867-393-6206	Program implementation to reduce HWC
WildWise Yukon	Heather Ashthorn	Executive Director	info@wildwise.ca	(867)335-5212	Education/outreach/research to reduce HWC

Human population size: 25,000

10-11,000 residential dwellings, 6000 homes on the City's curbside collection system

Area: 416.5 sq.km

Overview of wildland-urban interface: The City of Whitehorse declares itself "The Wilderness City". There is a thriving population of wilderness seeking adventurers among its residents and over 100 wilderness tourism operators throughout the Yukon Territory, most operating adventure based tours in and around Whitehorse. Wildlife viewing is encouraged as a way to increase tourism and can happen right in the city. Foxes, coyotes, deer and bears are commonly seen, especially in greenbelt and country-residential neighborhoods. Human-wildlife conflicts are common in these areas.

History of human-bear conflict in the area: Conservation Officers are the primary responders to calls about human-bear conflict, the majority of which are garbage related. In 2017 over 60 human-bear conflicts were reported to C.O.s in the Whitehorse District, which extends as far as Carcross and the Takhini River Bridge. On average since 2012 there have been 20 human-bear conflicts reported within the Whitehorse City Limits. There are likely more conflicts that are not reported. Residential waste (garbage and compost) is the identified attractant in 70% of conflicts in Whitehorse. However, reporting may under-represent what bears are actually after. Outcomes for bears vary according to many factors

including management decision making and bear behavior. Six bears were destroyed within the City of Whitehorse in 2017.

Measures of human-bear conflict:

C.O.S. records # HWC calls, attractants involved, outcomes and locations

Bear Hazard Assessment conducted? Yes, 2015

2. Waste & attractant management

Solid waste system overview: The City of Whitehorse distributes rolling poly carts for garbage and compost to all urban residential dwellings and collects garbage and compost on alternating weeks. *“The rolling carts were implemented after the 2007 Canada Winter Games and accompanied the change to pneumatic pick-up garbage packer trucks, reducing labour costs and allowing the cost of collection to remain relatively low. The City has continued to purchase these carts, which are not bear proof, as the City's population and the residential collection program has grown. This practice continued with the 2017 purchase of carts and the 2018 capital budget plan to procure an additional \$100,000 in new carts.”* (Personal communication, Geoff Quinsey, March 2018)

Between 2013-15, WildWise Yukon piloted a bear resistant waste bin program, retrofitting over 200 City issue rolling garbage and compost carts with bear resistant locks from Rollin's Machinery. The pilot project demonstrated decreasing compliance with use of the clips over two summers. At last assessment, only 50% of residents supplied with the locks were using them. Additionally, residents complained that the extra weight of the metal rim and clips resulted in cracked lids and broken hinges. Compliance was higher among residents who purchased their own locks. WildWise concluded and reported to the public that the product should not be considered bear proof or an option for bear proof waste management in Whitehorse.

In 2018, Whitehorse City Council approved the purchase of two new waste packers to replace the City's aging ones. WildWise Yukon asked the City to provide Mayor & Council with a cost analysis of the Haul All system used in Carcross Yukon and Canmore Alberta, which has a solid track record of reducing garbage related bear incidents. City staff determined that the cost of implementing the Haul All System and the labor required are too high and the transition time required too long to be practical. The waste packers approved by City Council are compatible with a number of models of bear resistant rolling bins but not with the more robust Haul All system used in Carcross Yukon and Canmore Alberta. The City is currently testing two models of bear resistant rolling cart with the waste packers currently in use. The City of Whitehorse, however, has not made any commitment to purchasing bear resistant rolling carts in future. On average, the cost of bear resistant bins is three to four times higher than the non-bear resistant bins the City is currently providing.

Overview of relevant bylaws regarding solid waste & wildlife attractants: The Whitehorse Waste Management Bylaw does not address wildlife attractants except to say that waste should not be stored in a manner that attracts wildlife. It does not give instruction on how to ensure that wildlife is not attracted to waste in the non-bear proof bins provided by the city. Whitehorse has a zoning bylaw which

instructs proper storage of waste containers according to determined property line setbacks. Whitehorse does not have a stand alone wildlife attractants bylaw.

Bylaws on bear-resistant garbage containers: none

Bylaws on where garbage containers may be stored:

Waste Management Bylaw

Section 24. The owner of eligible premises shall, by 11:00 p.m. on collection day, return the appropriate cart to, and store it on, the owner's property in accordance with setback requirements as prescribed in the City of Whitehorse Zoning Bylaw.

Time when waste carts can be put out for collection:

Waste Management Bylaw

23. On collection day, the owner of eligible premises shall set out curb-side waste by 7:00 a.m., but no earlier than 6:00 p.m. on the evening prior to collection day, by placing the appropriate cart:

24. The owner of eligible premises shall, by 11:00 p.m. on collection day, return the appropriate cart to, and store it on, the owner's property in accordance with setback requirements as prescribed in the City of Whitehorse Zoning Bylaw.

Bylaws on other wildlife attractants:

Waste Management Bylaw

GENERAL RULES

5. No person shall set out waste in any manner or condition that:

- (2) harbours or attracts wildlife; or
- (3) is a hazard or threat to public health and safety.

3. Enforcement & Compliance

Overview of enforcement & compliance efforts: Conservation Officers respond to calls about human-bear conflict and have the authority to issue Dangerous Wildlife Protection Orders (DWPOs) and fines to people who violate the [Wildlife Act](#) (cause wildlife to become a nuisance). However, C.O.s do not have authority to issue fines or DWPOs if the attractants responsible for a negative encounter with a bear are due to garbage stored "in a container provided for garbage disposal" or in compliance with the City's Waste Management Bylaw. As a result, C.O.s issued a very small number of DWPO's between 2012-2017 related to human-bear conflict within the City of Whitehorse.

City of Whitehorse bylaw officers have the authority to fine residents for non-compliance with the Waste Management Bylaw however, the bylaw pertaining to harboring and attracting wildlife (General Rules, Section 5(2)) is too vague to be enforceable. All Whitehorse residents on curbside collection who do not have bear proof or bear resistant locks on their bins are currently setting out waste in a manner that attracts wildlife, which could be considered a threat to public safety.

Bylaw penalties regarding wildlife attractants:

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Section 5

Waste is unsightly, attracts wildlife or is hazard \$200.00

Number of bylaw complaints, investigations and charges per year: 1-2

Workload for bylaw officers related to human-wildlife conflicts: NA

Were there bylaws related to human-wildlife conflicts that didn't work or had to be changed? NA

Are there weaknesses in the present bylaws that could (should) be changed?

The current bylaw contains only one section with reference to wildlife attractants:

No person shall set out waste in any manner or condition that harbours or attracts wildlife.

This bylaw contradicts the City's current practice of issuing non-bear proof garbage and compost carts to all residents and is, therefore, unenforceable unless the resident overfills the cart.

There are many amendments that could be made to the current Waste Management Bylaw or included in a new wildlife attractants bylaw. Some examples are:

- Change in time that carts can be at the curb from 6pm the night before to 6am the day of;
- Wildlife attractants could be defined;
- Expectations for the storage of waste so that it does not attract wildlife could be clearly defined;
- Non-wildlife proof bins to be stored in a wildlife proof enclosure if they are not certified bear-proof bins. Plans for building bear proof enclosures could be included;
- All new residential and commercial developments to be built with wildlife-proof waste storage/enclosures;
- Other wildlife attractants identified (bee hives, urban hens, bird feed/feeders, fruit-bearing trees & shrubs) & provisions made to secure those attractants;
- Animal control bylaw section pertaining to urban hens could be amended to include mandatory electric fencing and secure storage of feed – permit issued conditional to inspection of working fence;
- List waste and wildlife attractants bylaw on City website as a common, enforceable bylaw.

All of the above suggestions are 'borrowed' from wildlife attractant bylaws in other jurisdictions included in this scan. It is common for a bear hazard assessment to recommend wildlife attractant bylaw wording. A sample can be found in the Whitehorse Bear Hazard Assessment.

What is the level of coordination or cooperation with other levels of government in attempts to reduce wildlife attractants?

The Whitehorse Bear Working Group (WBWG) was formed in 2014 at the direction of Whitehorse City Council, after two particularly bad 'bear seasons' to address opportunities to reduce human-bear conflict. The terms of reference for the WBWG state the following objectives:

1. To develop and maintain a Human-Bear Conflict Management Plan that supports Bear Smart principles"
2. To reduce the availability of attractants in residential neighborhoods and at businesses in Whitehorse;

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3. To develop, recommend and support public education programs;
4. To develop and recommend to City Council, wildlife resistant waste management practices; and
5. To propose amendments to bylaws, regulations, legislation, and the inclusion of wildlife management principles into various levels of community planning.

The WBWG is a collaboration between WWY, Environment Yukon and the City of Whitehorse. Its primary accomplishment is the completion of the Whitehorse Bear Hazard Assessment, which is typically the first step taken by communities in B.C. to achieve Bear Smart Community status. A bear hazard assessment is the preliminary investigation of risks with associated recommendations that guide the development of a conflict management plan. All parties, as well as Ta'an Kwachan Council and Kwanlin Dun First Nation, contributed funds towards the Whitehorse Bear Hazard Assessment. WWY lead a multi-stakeholder workshop in 2016 after completion of the Whitehorse BHA to discuss and determine the relevance of the recommendations and to identify champions. A summary report of priority actions identified by workshop participants, including several City of Whitehorse staff is available here: <https://static1.squarespace.com/static/56a7bfd942f5526d03005cb6/t/57c4d6969f745671dd4689d6/1472517784354/BHA+workshop+summary.pdf>

The WBWG also discussed suggestions for amendments to the Waste Management Bylaw which were submitted by WildWise Yukon in 2016. The amendments have not been brought forward to City Council for consideration. No further action has been taken by the WBWG, however, the City of Whitehorse and WildWise Yukon both worked on compiling data from six years worth of human-wildlife conflict reports provided by Environment Yukon and met to review the results and discuss their presentation.

WildWise Yukon and Environment Yukon work together on education, outreach and research. WildWise Yukon received funding through a contribution agreement with Yukon Government for program support and project funds through grant applications and has secured funding for a number of research projects from the City of Whitehorse's Environment Grant.

Did citizens raise particular complaints when new bylaws affecting wildlife attractants were introduced?

NA

4. Public Education

Who drives bear smart initiative? WildWise Yukon & Environment Yukon

What role does your municipality play in distributing bear safe information?

Information on website: <http://whitehorse.ca/departments/environmental-sustainability/waste-diversion/additional-information/wildlife>

Public Service Announcements, social media, utility mail out annually

Were there any particular public education messages or campaigns that seemed ineffective?

The door to door work that WildWise carried out in Whitehorse residential neighborhoods in 2017 does not seem to have changed behavior at all. There are just as many residential waste carts out on the streets the night before collection as there were and just as many unsecured carts in between collection days.

Whitehorse, Yukon Territory
March 2018

What are the characteristics of public education messages or campaigns that seemed effective?

Still to be determined

Were the educational efforts aimed at gaining compliance with bylaws (top down approach) or changing human attitudes towards bears and reducing conflict (bottom up approach)?

Bottom up.

5. Performance metrics

Are any indicators used to track changes (progress) over time?

NA

Were metrics defined before changes were made and if they were, how often are they updated or applied? (i.e. has anyone come up with a useful and reliable way to attribute changes in behavior to the changes made by municipalities?)

NA

District of Squamish B.C.

Overview: The District of Squamish (DOS) is located along the Sea to Sky corridor between Vancouver and Whistler at the end of Howe Sound. Once the site of a thriving resource extraction industry, the area has more recently become a haven for wilderness adventure lovers. Its slogan is “Hardwired for Adventure”. The quickly growing community achieved bear smart status in 2010 after six years of collaboration between multiple stakeholders.

The District of Squamish is a member of the Bear Conflict Management Committee which was formed to update the Bear Conflict Management Plan. Other members include WildSafe, Conservation Officer Services, waste management service providers and the Squamish Nation.

The DOS has included provisions for reducing human-wildlife conflict in the zoning bylaw (No. 2200, 2011), animal control bylaw and wildlife attractants bylaws. Additionally, their development permitting process includes measures to reduce landscaping attractants. Amendments to these bylaws were triggered by the Bear Management policies in the 2009 Official Community Plan Bylaw. The OCP was reviewed in 2017 and is awaiting approval. Further provisions to reduce HWC have been included.

1. Context/background

URL for municipality: <https://squamish.ca>

URL for bylaws: <https://squamish.civicweb.net/filepro/documents/19302>

Contacts:

	Contact person	Title	email	Phone	Responsibilities
DOS Bylaw enforcement	Kellie McIntosh	Director of community services	bylaw@squamish.ca	604.815.5067	Enforces wildlife attractant bylaw
DOS Engineering	Chris Wyckham,	Director		604-815-5021	Utilities, environmental programs Oversees sustainability coordinators
Squamish WildSafe	Vanessa Logey Isnardy	Coordinator	squamish@wildsafebc.com	604-815-5066	Education, outreach, bear smart community planning
WildSafe BC	Frank Ritcey	Provincial Coordinator “The Brains”	bc@wildsafebc.com	250-828-2551	Wildlife Mapping project (WARP)
Ministry of Environment C.O. Services	Mike Badry	Wildlife Conflict Manager	Mike.badry@gov.bc.ca	788-698-4276	

Human population size: 19,500

Area: 105 sq.km

Overview of wildland-urban interface: Squamish is located at the tip of Howe Sound. It is the ‘gateway’ community to the Squamish-Lillooet corridor, which includes Whistler, Pemberton and Mt. Currie. It is a lush, riparian environment where the coast mountains meet a protected ocean sound and an area that has had an environmental restoration focus for the past several decades. Several rivers run into the District of Squamish, B.C.
March 2018

sound, creating a unique salt/freshwater environment. Black bears and other wildlife frequent this human and garbage laden corridor and interactions between humans and bears, bears and human wastes, are common.

History of human-bear conflict in the area: In 2004, 27 bears were killed in Squamish. By 2007, the District had made significant steps toward becoming a bear smart community, including completion of a bear hazard assessment, conflict management plan, inclusion of Bear Management recommendations in the Official Community Plan and adoption of a Wildlife Attractants bylaw. The District had already initiated the Bear Aware education program offered through the Ministry of Environment and WildSafe BC and had received funds from the program to retrofit some residents with bear proof bins.

Despite the progress, Conservation Officers continued to receive a high volume of calls about bears, 64% related to them accessing human garbage. District of Squamish staff appealed to council to take a staged approach to replacing the existing tote system over time, beginning with bear proof locks on all garbage totes that had not yet been retrofitted and then bear proofing the commercial and public garbage disposal systems. Recommendations also included updating the existing solid waste and wildlife attractant bylaws to include a zero tolerance policy (first offence = fine) the district's landscaping and development policies to ensure that further attractants were not being made available and to plan for bear smart trail and green space development.

Measures of human-bear conflict: # calls to C.O.'s, # bears destroyed/relocated

Bear Hazard Assessment conducted? Yes

2. Waste & attractant management

Solid waste system overview: The District of Squamish offers curbside collection to all residential dwellings, including strata developments that have signed a contract with the district for waste disposal. Wildlife resistant containers are provided to all residences and are the property of the waste contractor. Property owners can choose between three cart sizes and their collection fees are adjusted accordingly. Businesses must comply with the wildlife attractants and solid waste bylaws and ensure that wastes are secured in bear proof containers. The DOS provides information to visiting businesses such as film crews to ensure that the bylaws are adhered to and offers bear resistant poly-carts and dumpsters for lease.



Bylaws on bear-resistant garbage container:

Solid Waste Bylaw No. 2547, 2017

3.3 Every Person disposing of Residual Waste or Organic Material must, for that purpose, use only a Residual Waste Container or Organics Container that has a Wildlife Resistant lock.

Wildlife Attractants bylaw No. 2053, 2009

6. Every owner and occupier of real property must ensure that a wildlife resistant container, a wildlife resistant enclosure, or a commercial refuse container located on the property is of a size that is suitable for the amount of refuse generated and is kept and maintained:

- (a) in a clean and sanitary condition;
- (b) in a closed and secure manner when refuse is not being deposited or emptied; and
- (c) in a good, workable condition and in accordance with the criteria set out in Schedule A or B as applicable.

7. If a wildlife resistant container, a wildlife resistant enclosure or a commercial refuse container is damaged, the owner or occupier of the real property on which it is located must ensure that it is repaired within 5 business days of the damage occurring. In circumstances of adverse weather or delivery conditions, strikes, material or labour shortages, or similar hardship beyond the control of the owner or occupier, the 5-day period may be extended by the Manager of Operations in writing and in accordance with any specified time limits, conditions or requirements that the Manager of Operations may determine as being appropriate and necessary in the circumstances.

Note: The Wildlife Attractants bylaw contains detailed criteria for building wildlife resistant enclosures and the use of wildlife resistant commercial containers.

Bylaws on where garbage containers may be stored:

Wildlife Attractant bylaw:

TREATMENT OF REFUSE

3. Except as permitted in this bylaw, a person must not store any refuse that is an animal attractant in such a manner that it is accessible to wildlife.

4. Without limiting section 3, a person must not leave, place or store outdoors any refuse that is a animal attractant except:

- (a) in a wildlife resistant container;
 - (b) in a container enclosed within a wildlife resistant enclosure that meets the criteria established in Schedule A; or
 - (c) in a commercial refuse container that meets the criteria established in Schedule B.
- (m) Residual Waste Containers and Organic Material Collection Containers must be kept locked with both Wildlife Resistant locks at all times, except as described in paragraph (l).

Time when waste carts can be put out for collection:

5am – 7pm on the day of collection, unlocked between 8am and 5pm.

Bylaws on other wildlife attractants:

Wildlife Attractant Bylaw:

GENERAL REQUIREMENTS

8. A person must not feed wildlife, and must not feed animals in a manner that is likely to attract wildlife.

9. Every owner or occupier of real property must ensure that:

- (a) any fruit that has fallen from a tree is removed from the ground within 3 days and if stored outdoors, only in a wildlife resistant container or wildlife resistant enclosure;

- (b) any bird feeder containing bird feed, suet or nectar is suspended on a cable or other device in such a manner that it is inaccessible to wildlife; and the area below any bird feeding devices or activity is kept free of accumulations of seeds and similar animal attractants;
- (c) any composting activity is carried out and any composting device or equipment is maintained in such a manner so as not to attract wildlife;
- (d) barbecue equipment and tools that remain out of doors must be clean and free of residual food or grease;
- (e) any refrigerator, freezer, storage container or similar appliance, device or apparatus that contains animal attractants of any type, if placed or located outdoors, is located and equipped in such a manner that it is inaccessible to wildlife; and
- (f) any grease, antifreeze, paint or petroleum product is stored in such a manner that it is inaccessible to wildlife;
- (g) keep bees and beehives in such a manner so as not to attract wildlife;
- (h) keep bees and beehives in such a manner so that they are reasonably inaccessible to wildlife. Beehives must be enclosed by electric fencing and situated according to the Zoning Bylaw;
- (i) keep hens in such a manner so as not to attract wildlife;
- (j) keep hens, coops, and pens in such a manner so that they are reasonably inaccessible to wildlife. Coops and Pens must be enclosed by electric fencing and situated according to the Zoning Bylaw.

10. Without limiting any other provision of this bylaw, any person responsible for a site that is used for filming, a catered event or a construction site must ensure that any animal attractants are disposed of in a designated wildlife resistant container that is located on that site.

Animal Control Bylaw

Keeping of Urban Hens (As amended by Bylaw No. 2335, 2014)

- (n) ensure that the Coop and Pen are situated in such a way that would reasonably prevent entry by wildlife;
- (o) ensure that the Coop and Pen are fully enclosed by electric fencing and situated no less than 1 metre from the electric fencing per the Zoning Bylaw;
- (s) secure all Hen food that is stored outdoors from vermin and wildlife;

Zoning Bylaw

AGRICULTURE, URBAN means the act of growing food on a lot. In addition to produce grown in a garden, this also includes community gardens, fruit and nut tree production, the keeping of hens and/or bees, and agricultural retail sales limited to 30 m² in gross floor area and provided that at least 75% of goods for sale are produced on site. Urban agriculture is an accessory use on parcels that are zoned residential. (Bylaw 2303, 2013)

ANIMAL ATTRACTANT means any substance or material, with or without an odour, which attracts or is likely to attract animals; and without limitation includes food or other edible products, whether intended for humans, animals, or birds, grease, oil, antifreeze, paint, petroleum products, and compost other than grass clippings, leaves or branches.

WILDLIFE ATTRACTANT means any substance or material, with or without an odour, which attracts or is likely to attract Wildlife; and without limitation includes food or other edible products, whether

intended for humans, animals, or birds, grease, oil, antifreeze, paint, petroleum products, and compost other than grass clippings, leaves or branches;

4.6 Fencing

(d) Electric security fencing:

(i) may be installed within a fenced portion of a property that has an existing non-electrified fence that is a minimum of 1.2m in height, forms a continuous enclosure around the electric security fencing, and is constructed in such a manner as to prevent unauthorized entry; 38 (ii) must display unobstructed warning signage on a yellow-coloured background that clearly indicates the risk of electric shock, installed at ten metre intervals around the electric security fencing; (iii) may not involve the electrification of barbed or razor wire; (iv) must only use controllers that meet the requirements of any applicable Canadian Standards Association standard; (v) may not conduct current in excess of 10,000 volts; and (vi) In the case of electric security fencing to prevent wildlife from accessing urban hens, beehives, fruit or other food sources:

a) Urban hen coops and pens, as well as beehives, must be surrounded by electric security fencing at a minimum distance of 1m from hen coop, pen or beehive;

b) For beehives, the non-electrified perimeter fence identified in 4.6 (d) (i) must be 1.8m in height;

c) A minimum of six strands of 12.5 gauge high tensile galvanized wire is required, with the bottom wire no more than 5 cm from the ground and subsequent wires spaced at an interval of no greater than 25 cm apart, with alternating positive and negative strands, with the top wire at the height of no less than 110cm from the ground;

d) Electric fence shall be programmed to a minimum conduction of 6000 volts to a maximum of 10,000 volts;

e) Corner posts and gate areas must be braced to ensure posts will not bend or pull from the ground when the wire is pulled to the appropriate tension. Install guy wires or inside angle braces to alleviate any tightening/loosening problems; and

f) Ground the system using three (3) 16mm ground rods, 2-3 m deep and spaced at least three (3) m apart, connected to the negative output terminal of the fence charger by ground clamps. Place the rods in moist soil when available which insures a good ground. (Bylaw 2303, 2013)

3. Enforcement & compliance

Overview of enforcement & compliance efforts: Bylaw services has responsibility for enforcing all district bylaws and has a new system for prioritizing calls according to risks to public safety. Bylaw responds to complaints about wildlife attractants but not to complaints about wildlife. WildSafe, Conservation Officers, Animal Control and the RCMP assist with patrols and reporting to bylaw services. C.O.'s and RCMP have authority to issue warnings and tickets.

Squamish bylaw generally takes a bottom up approach to enforcing the wildlife attractants bylaw by providing information, tips, referral to WildSafe. Warning may be issued but ticketing is rare. Squamish has an external adjudicator to deal with ticketing both to increase compliance with payments of fines and to deal with property owners who do not live in Squamish.

Squamish WildSafe runs a bin tagging program that patrols Squamish neighborhoods the night before collection when they are able. If bins are out WildSafe puts a sticker on the bin with a reminder and warning that bylaw will fine a second offence. They note the address, report to Squamish bylaw for follow up if there is a repeat offence. The program seems to have influenced increased compliance, however, challenges remain when tenants change.

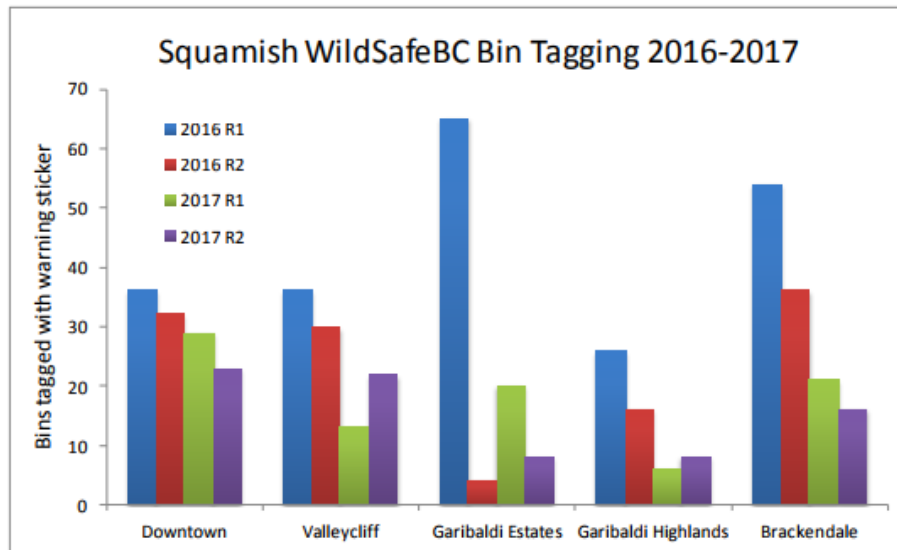


Figure 3. Results of bin tagging on the eve of curbside collection throughout Squamish from 2016 to 2017

Bylaw penalties regarding wildlife attractants:

ENTRY & INSPECTION

11. A bylaw enforcement officer for the District may enter onto any property in accordance with section 16 of the Community Charter, S.B.C. c. 26 to inspect and determine whether this bylaw is being met. Where a bylaw enforcement officer believes that, as a result of a breach of this bylaw, wildlife is located on or near the property and has endangered or harmed a person, or presents an imminent threat to the safety of any person, the officer may take steps to prevent, avert, reduce or mitigate the harm or threat or provide assistance. In so doing, the officer may seek the assistance of a conservation officer appointed under the Wildlife Act, R.S.B.C. 1996, c. 488, or a police officer, as may be reasonable or necessary in the circumstances.

12. A person must not obstruct or interfere with a bylaw enforcement officer who has entered onto property pursuant to section 11, or other person assisting the officer. OFFENCE, PENALTY & ENFORCEMENT

13. Any person who contravenes or violates any portion of this bylaw, who fails or omits to do anything required under this bylaw, or who permits, suffers or allows any act or thing to be done or omitted to be done in contravention or violation of this bylaw, commits an offence; and where the offence is a continuing one, each day that the offence is continued shall constitute a separate offence.

14. Upon being convicted of an offence under this bylaw, a person shall be liable to pay a fine of not more than \$10,000.

15. This bylaw may be enforced by means of a ticket issued under the “District of Squamish Municipal Ticket Information Bylaw No. 1832, 2004”, as amended or replaced from time to time.

Number of bylaw complaints, investigations and charges per year: It is difficult to track number of hours spent because effort is divided between response to particular complaints and patrol hours which are not wildlife attractant bylaw specific. Officers may address a number of different citizen concerns while on patrol.

2017 – bylaw received 49 complaints re. wildlife attractants

Workload for bylaw officers related to human-wildlife conflicts: Varies year to year depending on human behavior & availability of natural attractants. Department has a policy on how calls are prioritized. The workload is generally low but also shared with other agencies. Bylaw relies heavily on WildSafe BC to educate the public and take pressure off enforcement.

Were there bylaws related to human-wildlife conflicts that didn’t work or had to be changed?

None reported. Bylaws are reviewed and amended regularly to improve their effectiveness and incorporate new considerations.

Are there weaknesses in the present bylaws that could (should) be changed?

Bylaw revisions are fairly new. WildSafe hasn’t identified any present weaknesses but notes that enforcement of the bylaw is an ongoing challenge due to staffing shortages, tenant changes and other variables. The Squamish OCP was just reviewed and reducing conflict is prioritized and supported throughout. Squamish bylaw officers note that conflict dynamics are always changing. For example, the new urban hen bylaw increases the number and nature of available attractants and, while the bylaw mandates electric fencing, very few people keeping urban hens are actually compliant with the bylaw. Revisions are always possible and DOS City Council has been very receptive to reports from bylaw and WildSafe and responsive with willingness to make amendments.

What is the level of coordination or cooperation with other levels of government in attempts to reduce wildlife attractants?

High. The DOS works closely with the Squamish Council and Ministry of Environment to reduce HWC.

Did citizens raise particular complaints when new bylaws affecting wildlife attractants were introduced?

Yes. WildSafe and bylaw officers report that the ‘old guard’ pushed back against wildlife attractant bylaws but were also instrumental in pointing out that the DOS had a responsibility to make sure that attractants in public spaces (parks, sidewalk garbage bins etc.) were secure if the public was going to held accountable for attractants on private property. In response, the DOS allocated \$20,000 over 5 years to replace all garbage receptacles in parks and at trail heads with Haul All bins.

4. Public Education

Who drives bear smart initiative? Squamish WildSmart & District of Squamish

What role does your municipality play in distributing bear safe information?

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- Information on website: <https://squamish.ca/our-services/wildlife/>
- More website info
 - Urban hens: <https://squamish.ca/assets/Uploads/chicken-Brochure.pdf>
 - Urban bees: <https://squamish.ca/our-services/animal-control/bees/>
- Partnership with WildSafe to produce commercial dumpster stickers and Business Pledge program to promote best practices
- Municipal campground signage in partnership with WildSafe and Ministry of Environment
- Provides funding to WildSafe

Are there any particular public education messages or campaigns that seem ineffective?

No but it is difficult to know what exactly the public is responding to when behavior does change.

What are the characteristics of public education messages or campaigns that seem effective?

WildSafe acknowledges the challenges that are presented by changing human population dynamics and that public education is only effective with the support of bylaw enforcement. Volunteers and, more recently, the WildSafe coordinator has been working on education initiatives since 2005. The WildSafe 'brand' is well known throughout the community and schools and other groups are starting to reach out for presentations and demonstrations.

Social media is becoming the way to spread the word – map out where the key concern areas are based on CO reporting system and distribute to user groups

Were the educational efforts aimed at gaining compliance with bylaws (top down approach) or changing human attitudes towards bears and reducing conflict (bottom up approach)?

Both

5. Performance metrics

Were any indicators used to track changes (progress) over time?

The new OCP identifies garbage tagging as a way to measure changes in behavior. WildSafe notes that this metric is problematic and also that metrics have been very difficult to define over time because so many things change from year to year.

Were metrics defined before changes were made and if they were, how often are they updated or applied? (i.e. has anyone come up with a useful and reliable way to attribute changes in behavior to the changes made by municipalities?)

No

Resort Municipality of Whistler (RMOW)

Overview: Whistler, B.C. is a resort community located north of Vancouver on the outskirts of Garibaldi Provincial Park. It is home to one of the largest ski resorts in North America which offers year-round mountain, trail and river based activities and adventures. It is also home to at least 50 black bears. The Whistler tourism community promotes bear viewing as a means of attracting and entertaining tourists which creates very real challenges to bear management.

RMOW is touted as being B.C.'s leading official Bear Smart Community, a designation achieved after completing a short list of proactive improvements to bylaw, enforcement and education initiatives as outlined by the B.C. Ministry of Environment. RMOW became a Bear Smart community in 2011 and made the Whistler Bear Working group a committee of council to solidify a mechanism for bear management in to the future. Members include federal, provincial, municipal agency, businesses and NGO representatives as well as individuals who have a vested interest in reducing human-bear conflict. The municipality works closely with Conservation Officers to manage bears and enforce bylaws. While these efforts have lead to some tangible improvements, the Get Bear Smart Society and RMOW report that there is still work to do to further reduce human-bear conflict.

The take home message from Whistler is that much can be accomplished through collaboration and that reducing conflict requires a sustained, collaborative and creative effort.

URL for municipality: <https://www.whistler.ca/>

URL for bylaws: <https://www.whistler.ca/municipal-gov/bylaws-and-regulations>

Solid Waste Bylaw:

https://www.whistler.ca/sites/default/files/2017/Oct/bylaws/pdf/24196/2139_solid_waste_bylaw_no_2139_2017_adopted.pdf

Human-Bear Conflict Management Plan (2016):

https://www.whistler.ca/sites/default/files/2017/Mar/related/22452/2016_human-bear_conflict_management_plan.pdf

Contacts:

	Contact person	Title	email	Phone	Responsibilities
RMOW	General inquiries			604-932-5535	
RMOW bylaw services	Chris Riess	Senior bylaw enforcement officer	criess@whistler.ca	604-935-8280	
RMOW bylaw services	Lindsay DeBou	Bylaw supervisor		604-953-8281	
RMOW bear aware coordinator	Heather Beresford	Manager Environmental Stewardship	hberesford@whistler.ca	604-935-8374	Co-Chair of interagency Whistler bear advisory committee
WildSafe BC	Frank Ritcey	The Brains		250-828-2551	Wildlife Mapping project (WARP)

Ministry of Environment C.O. Services	Mike Badry	Wildlife Conflict Manager	Mike.badry@gov.bc.ca	778-698-4276	
Get Bear Smart Society	Nicole Fitzgerald	member	info@bearsmart.com		Education & collaboration to reduce HWC

Human population size: 12,000 residents, 2,000,000+ visitors/year

3900 homes, mostly single unit homes.

Area: 240 sq. km

Overview of wildland-urban interface: The municipality is relatively small and surrounded by wilderness and wilderness trail networks. Because Whistler is a resort town, many of its inhabitants spend a large proportion of their time, both at work and outside of work hours, on the trails and in the backwoods surrounding the municipality. The RMOW itself has low overlap with quality black bear habitat and grizzlies are considered nearly extinct in the area. There is, however, a high risk of negative human-bear interactions in the surrounding area and within the RMOW due to non-natural attractants.

History of human-bear conflict in the area: When the Whistler Bear Hazard Assessment was done (2003) there had never been a human-bear interaction that had resulted in human injury within the municipality. According to the 2016 Human-Bear Conflict Management Plan, there have since been eight human-black bear encounters that have resulted in human injury. McCrory notes that the expansion of biking and multi-use trails and the inclusion of competitive trail-using events increases the potential for negative interactions. The potential for human injury and fatality was considered high before the BHA and is increasing. By 2003 the Get Bear Smart Society and the Whistler Black Bear Project had several years worth of public education behind them. Proactive measures taken before and since the Whistler BHA have reduced the number of bear mortalities resulting from negative human-bear interactions per year from around 20 to between one and six (McCrory, 2004)

Measures of human-bear conflict: RMOW uses the Tempest database to track bylaw response. The database has a section for wildlife attractants. The database tracks # calls for service to deal with animal attractants, nature of incident & tickets issued. Stats can be accessed via a request for information: <https://www.whistler.ca/municipal-gov/FIPPA>

In Whistler:

bears destroyed: Average = 9/year due to human caused problems

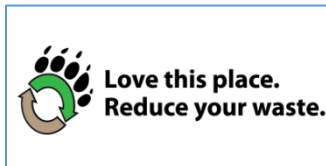
B.C. Provincial Government: Uses a central operator to receive calls re. human-bear conflict. Information regarding the nature of the call is collected by the operator. Information documented by the responding Conservation Officer (outcome, age & sex of animal, methods used to deal with the problem, etc.) is merged with the call center info and uploaded to the WARP (Wildlife Alert Reporting Program) which maps all of the information in a publicly accessible, searchable format. All personal info is scrubbed. Stats collected include:

- Type of encounter
- Attractants involved
- outcomes
- who responded

WARP site: <https://warp.wildsafebc.com/warp/>

Bear Hazard Assessment conducted? Yes. 2004 <http://www.bearsmart.com/docs/bha.pdf>,

Solid waste system overview: From 2011 to 2016 garbage produced by commercial and multi-family accommodation properties in Whistler increased by 35 percent. The RMOW has taken steps toward reducing the amount of waste produced as well as availability of wastes to wildlife through bylaw amendments and education campaigns. RMOW updated the solid waste bylaw in 2017.



The Town of Whistler does not offer curbside collection because many residents are only in Whistler on weekends and outdoor storage of wastes poses a significant risk of attracting bears. RMOW outlines conditions for storage and dumping of wastes in their solid waste bylaw. The town employs a contractor which operates two waste depots for garbage, compost and recycling. There is one waste transfer station as well for the community and surrounding areas which is used for larger items.

Residents of single family homes are responsible for taking their own wastes to the depots. Strata development corporations manage waste disposal for strata residents. Both must comply with the RMOW Solid Waste Bylaw.

Overview of relevant bylaws regarding solid waste & wildlife attractants: The RMOW uses the solid waste bylaw as a means to reduce human-bear conflict. It includes clear guidelines on acceptable waste storage and disposal, including storage and disposal of food waste and recyclables. In 2009 council passed a bylaw amendment re. the construction of secure waste storage enclosures, detailing the use of features such as bolts on doors and wildlife proof construction materials. These additions were made after a concerted effort on bylaw's behalf to patrol the municipality for compliance to the earlier bylaw amendments which mandated wildlife proof waste storage. Bylaw officers realized at this time that tourists and other visitors were generally unaware of the bylaw and prone to leaving storage areas open or unlocked. The bylaw outlines a fine schedule for infractions. The solid waste bylaw was further updated in 2017 to ensure that the new bylaws governing recyclable and food waste sorting would comply with wildlife proof standards.

The RMOW solid waste bylaw is focused on residential complexes with 12+ units, plus businesses. All residential owners are expected to construct and keep wastes in bear proof enclosures.

Bylaws on bear-resistant garbage containers:

Solid Waste Bylaw

"wildlife proof container" means a fully enclosed container, of sufficient design and strength to prevent access by Dangerous Wildlife, that is securely affixed to the ground or to an immovable object or fixture; and

21. No person shall dispose of Food Scraps material except by: a) depositing the material in a container labelled or otherwise designated for the collection of food scraps or inside a Wildlife Proof Enclosure; or b) delivering the material to a designated Composting facility within the SLRD.

Bylaws on where garbage containers may be stored:

Solid Waste Bylaw

"wildlife proof enclosure" means a structure which has enclosed sides, a roof, doors and a self-latching mechanism of sufficient design and strength to prevent access by Dangerous Wildlife, that is designed and constructed in accordance with specifications for a RMOW standard Solid Waste Wildlife Proof Enclosure.

10. Every Multi-Family Residential Complex greater than 11 Dwelling Units in size and every ICI Parcel, must be equipped with a Wildlife Proof Enclosure of a size that is suitable for the amount of Solid Waste management reasonably expected on the Parcel.

11. Every Multi-Family Residential Complex with less than 12 Dwelling Units in size, must either be equipped with a Wildlife Proof Enclosure of a size that is suitable for the amount of Solid Waste management reasonably expected on the Parcel, or must pay the annual Solid Waste Depot Operations Fee found in Schedule C of this Bylaw.

15. No person shall cause, permit or allow any Solid Waste that may reasonably be expected to attract Dangerous Wildlife to be stored, kept or otherwise to remain on a Parcel except in a Wildlife Proof Container or Wildlife Proof Enclosure.

"wildlife attractant" means any substance that could reasonably be expected to attract wildlife;

16. No person shall provide, leave, dispose of, or place an attractant in, on or about any land or premises in a manner that may attract or be accessible to Dangerous Wildlife.

32. No person shall dispose of Mixed Containers or Refundable Beverage Containers except into a receptacle labelled or designated for the particular type of container being disposed of, and which is either: a) a Wildlife Proof Container; b) within a Wildlife Proof Enclosure; or, c) located at a Municipal Depot or Municipal Transfer Station or another facility that receives Mixed Containers or Refundable Beverage Containers.

Guidelines for constructing wildlife proof enclosures:

<http://www.bearsmart.com/docs/GarbageEnclosurePackage-Whistler.pdf>

- All latches used on loading and emptying doors must be self-closing. There should be no secondary step required to secure the doors.
- Reinforced surfaces are necessary in case bears apply force from pushing or jumping.
- All containers should be handicap accessible.
- Gaps should be kept a maximum width of ¼". This will prevent bears from getting a firm claw grip and will also prevent rodents from entering the container.
- Water should drain away from the container's interior.
- All containers must have provisions for bolting firmly to a hard surface.
- Container surface should never overlap. Instead, doors should recess into the container body. Overlapping surfaces provide bears a place to grab.
- Do not rely on gravity to re-latch container doors. Latch hardware should be spring-loaded.

- Latches should be designed with consideration to the abilities of all sizes of bears. The latch hood must be sized properly. A deflector plate must be set near the latch opening so small bears cannot slide their paw in. The actuation lever must be properly recessed out of the reach of adult claw tips. The force required to operate the latch must be less than 5 lbs. The inside of the door must have a protective plate covering the latch to ensure consistent function.

Time when waste carts can be put out for collection: N/A

Bylaws on other wildlife attractants:

Solid Waste Bylaw

16. No person shall provide, leave, dispose of, or place an attractant in, on or about any land or premises in a manner that may attract or be accessible to Dangerous Wildlife.
17. No person shall install or keep a bird feeder on a Parcel unless the bird feeder is inaccessible to any wildlife other than birds (aves).
18. No person shall feed Dangerous Wildlife.

Overview of enforcement & compliance efforts: The solid waste bylaw is enforced by bylaw officers with help from B.C. Conservation Officers. Chris Riess, Manager of bylaw services, reports that the RMOW increased patrol to monitor compliance when the solid waste bylaw was amended in 2009 to enforce the use of wildlife proof enclosures for waste storage. He says that compliance has improved considerably over a few short years and very few infractions are observed now. The bylaw enforcement department strives to use proactive and complaints based enforcement. Bylaw enforcement officers are “jack of all trades”, not dedicated to any particular bylaw.

In addition, the RMOW has made amendments to their development permits to reduce bear attractants. Developers must choose from a list of approved species before landscaping can be completed on new builds or where the municipality is responsible for landscaping. Fruiting trees and berry bushes were recently removed from the approved list.

Bylaw penalties regarding wildlife attractants:

There are no specific penalties by number of offences on record. It is up to individual bylaw officers to decide on the severity of the infraction and issue a warning or ticket accordingly.

From the Solid Waste Bylaw:

“The RMOW Infrastructure Services Staff is authorized to enter on any Parcel, at all reasonable times to ascertain whether the regulations and directions of this Bylaw are being observed.

Any Bylaw Officer is authorized to enter on any Parcel, at all reasonable times to ascertain whether the regulations and directions of this Bylaw are being observed.

Every person who violates or fails to comply with a provision of this Bylaw, or an order, direction or notice given under this Bylaw, commits an offence and is liable on summary conviction to a fine not exceeding \$2,000.”

Each day during which an offence under this Bylaw continues is a new and separate offence.

RMOW is in the process of switching to an adjudication system to make it easier to issue tickets to residents who are out of town. The system keeps the process out of the provincial court system. An external adjudicator hears disputes if they arise. Information can be found here:

<https://www.slrd.bc.ca/services/bylaw-enforcement>

Number of bylaw complaints, investigations and charges per year:

2017:

Complaints received re. bear attractants (bears in garbage) – 108

of tickets issued: 29 (\$200 ea = \$5800 collected)

Bylaw department reports being under-staffed for the last few years and so have not been able to track changes over time. RMOW contributes \$20,000/year from their municipal budget to Conservation Officer services to increase patrol and response to human-bear conflict which takes some of the pressure off bylaw officers.

Stats kept by the RMOW can be released via information request: <https://www.whistler.ca/municipal-gov/FIPPA>.

Workload for bylaw officers related to human-wildlife conflicts:

Fluctuates depending on bylaw amendments. C.O.s are paid by RMOW to help with proactive measures and track hours spent.

Overall workload is difficult to determine because a multi-faceted approach is taken. The first approach to dealing with bylaw infractions is through education. When that doesn't work, warnings and tickets may be issued. Workload is divided between C.O. services and RMOW bylaw officers.

Were there bylaws related to human-wildlife conflicts that didn't work or had to be changed?

From Heather Beresford:

A big issue was around communicating with the media. We used to all speak independently and in isolation from one another when the media called usually about a bear being shot. We would end up with conflicting messages and often the COS would get thrown under the bus by the non-profit bear advocacy group. To solve that, we all agreed that if a bear was shot, we would all convene on a conference call before we spoke to the media to share information/concerns about the situation, and develop the key messages we wanted to share with the media.

Garbage sheds was another situation where we used to tell people/condo properties to make their garbage storage sheds "bear proof." Of course, that could be interpreted in many different ways, not all successful. That's when we drew up the garbage shed specifications (I think you've got those drawings) that we give out to people/contractors who need to build a shed. Those specs are based on years of experience with what works and what doesn't.

Acceptable construction methods for wildlife proof enclosures had to be clearly defined to make locking mechanisms automatic (i.e. reduce user error).

AWARE – contracted to help contact local businesses to start separating wastes – may make wildlife proofing more challenging. Bylaw services is anticipating that enforcement will have to be increased and is unsure of whether this new sorting bylaw will decrease compliance with existing bylaw.

Are there weaknesses in the present bylaws that could (should) be changed?

Solid Waste Bylaw was updated in 2016 to fill most of the ‘gaps’.

Guidelines for building wildlife proof enclosures should be added as an appendix.

Backyard composting has been a (small) problem and could be addressed in the bylaw.

What is the level of coordination or cooperation with other levels of government in attempts to reduce wildlife attractants?

High. Bear Smart Community status is earned through the Ministry of Environment’s bear smart community program.

RMOW provides funding to C.O. services (\$20,000/year) to expand the scope of practice and amount of attention they can give the municipality. C.O.s do a combination of proactive (patrol) work and reactive (bear and conflict management) work and track hours spent within this budget)

Whistler Bear Advisory Committee – an interagency working group formed to co-author the RMOW Human-Bear Conflict Management Plan which came into effect in 2009. Roles are established within the plan and responsibility for the plan is shared between all members of the committee. Was made a committee of council in 2015. Members include Get Bear Smart Society, C.O. Services, bylaw officer, Manager of Environmental Stewardship, a city councillor. RMOW provides a monthly review of stats for the meeting. The plan was updated in 2016 with the following amendments:

- Plan future trail and recreation sites with both black and grizzly bears in mind, and place appropriate informational signs.
- Review the RMOW Special Events Bylaws annually against the performance of events to determine if further bear smart recommendations should be incorporated.
- Support initiatives to reduce bear habituation and safety issues related to wildlife viewing along the Callaghan Road
- Encourage Whistler Blackcomb to continue to mitigate human-bear conflict and potential for bike park collisions.

Did citizens raise particular complaints when new bylaws affecting wildlife attractants were introduced?

There was generally a high level of buy-in. Some homeowners did not like having to comply with the wildlife proof enclosure bylaw but came into compliance relatively quickly.

Some residents do not have transportation and therefore have a hard time getting their wastes to the depots. RMOW passed a bylaw allowing garbage on buses, which seems to have been effective.

Public education

WildSafe BC – Established by the B.C. Ministry of Environment and conservation foundation to help communities that have established partnerships between levels of governments. Reduces conflict through education, innovation and cooperation.

- Starting a bear aware bylaw committee: <http://www.bearsmart.com/docs/bear-aware-bylaw-committees.pdf>
- Sample bear aware bylaw template: <http://www.bearsmart.com/docs/ModelOrdinanceBearProofing-API.pdf>
-

Get Bear Smart Society - is the key driver behind the bear smart initiatives in Whistler. GBSS has worked with municipal, provincial, public and private sector representatives to ensure that bear smart initiatives continue to be a priority. Their list of accomplishments is impressive and includes:

- Bear smart resources for Whistler residents and visitors: <http://www.bearsmart.com/bear-smart-whistler/>
- Bear Smart Restaurant Program
- Info for camping in bear country
- Info for bear smart construction sites

Who drives bear smart initiative? RMOW & Whistler Bear Working Group

What role did your municipality play in distributing bear safe information?

The RMOW takes the lead on public education and outreach through the following routes:

- Bear Smart Assistant Program - \$18K/yr, employs one part-time person April – Dec, 20 hours/wk. Funds are allocated out of the municipality's Environmental Stewardship budget.
- \$20K provided to C.O. services to up their proactive work (restaurant garbage handling etc.). Funds are allocated out of the ES budget.
- Another \$5-10K per year for communications, including updates to the bear conflict management plan.
- Overall annual financial contribution of @ \$45,000 from the municipality's budget
- Door to door patrol when new bylaws are introduced
- Information is accessible to the public through the RMOW's main website
- RMOW actively engages with the public about human-bear conflict through social media
- RMOW targets tourists, business owners, strata corporations, developers etc. individually.

Examples:

- Guidelines for reducing food wastes on commercial properties: https://www.whistler.ca/sites/default/files/2017/May/related/23666/rmow2081_organ icguide_v7.pdf
- Bear alerts: <https://www.whistler.ca/services/environmental-stewardship/bears>

Were there any particular public education messages or campaigns that seemed ineffective?

Hard to measure what people are responding to. There have not been any programs that have been discontinued.

What were the characteristics of public education messages or campaigns that seemed effective?

A combined approach – the carrot and the stick – has led to success in reducing the availability of attractants and creating a bear smart culture among residents of Whistler.

Sylvia Dolson, founding member of the Get Bear Smart Society, conducted interviews with practitioners across the country and asked what management tactics are effective at reducing human-bear conflict. She sums the most common responses up with the following quotes:

“An assertive education program coupled with wildlife attractant bylaws coupled with practical infrastructure solutions for bear-proofing storage of attractants, such as electric fences and bear-resistant trash bins. Also, non-lethal management options for first or second time situations where bears still get access to attractants to keep individual grizzly bears alive, especially females, particularly in an at-risk population.”

“Education should not just be about attractants; to develop buy-in, we must show that bears have value. Connecting people to animals helps them lose their fear. Helping bears through an unusually difficult time, helps people feel good about their actions; they’re not always being reprimanded.”

Were the educational efforts aimed at gaining compliance with bylaws (top down approach) or changing human attitudes towards bears and reducing conflict (bottom up approach)?

Combined approach

- Mandating wildlife proof enclosures was a top town approach that was quickly effective
- Providing educational materials, access to information, outreach, etc. gains attention and buy-in from residents over time.

Metrics

Were any indicators used to track changes (progress) over time?

Change is hard to measure. The conflict management plan identifies tangible goals so success can be measured by achieving those goals. The City also keeps track of hours & money spent, and stats such as:

- # of tickets and warnings issued
- # of calls/complaints received
- # of violations noted by officers on patrol

Behavior change can’t be attributed to changes in these numbers because there are so many variables that influence the degree of interaction between humans and bears year to year.

Were metrics defined before changes were made and if they were, how often are they updated or applied? (i.e. has anyone come up with a useful and reliable way to attribute changes in behavior to the changes made by municipalities?)

N/A

Castlegar, BC

Overview: Castlegar is located in the West Kootenay region of B.C. at the confluence of two rivers. Its main industry is the extraction and processing of forest products and claim to fame is its lineup of professional hockey players. The city's home page informs us that, "Happiness is...places only the bears will hear you and places where humanoid conversation feels like a group hug".

Castlegar's 2011 Official Community Plan outlines four Human-Wildlife Conflict Reduction Policies:

- 1 Promote responsible attractant management among residents to prevent human-wildlife conflict in the community.
- 2 Continue to support community education surrounding attractant management as a means to reduce human-wildlife conflict.
- 3 Consider important bear habitat and travel corridors in land use decisions.
- 4 Consider "bear proofing" the solid waste management system, including bear resistant residential waste containers.

The small community has completed a Bear Hazard Assessment and submitted their stage 1 application to the Ministry of Environment for review. They have also created a wildlife attractant bylaw, revised their solid waste bylaw and made reference to becoming a Bear Smart Community in their OCP.

1. Context/background

URL for municipality: <http://www.castlegar.ca>

URL for bylaws: <http://www.castlegar.ca/bylaws.php>

Wildlife Attractant Bylaw 1198: <http://www.castlegar.ca/pdfs/1198WildlifeAttractants.pdf>

Solid Waste Bylaw 1248: http://www.castlegar.ca/pdfs/bylaw_1248.pdf

Official Community Plan, Bylaw No. 1150, 2011: http://castlegar.ca/pdfs/OCP_Bylaw_1150.pdf

Contacts

	Contact person	Title	email	Phone	Responsibilities
Civic Works	Paul Taylor	Front desk	civicworks@castlegar.ca	365-5979	Waste management
Bylaw enforcement	Wayne Cox	Enforcement officer		365-5979	Bylaw enforcement
Castlegar WildSafe www.wildsafebc.com	Jenny Wallace	Castlegar coordinator	caslegar@wildsafebc.com	365-8971	Education & implementation of bear smart initiatives
WildSafe BC	Frank Ritcey	The Brains	bc@wildsafebc.com	250-828-2551	Wildlife Mapping project (WARP)
Ministry of Environment C.O. Services	Mike Badry	Wildlife Conflict Manager	Mike.badry@gov.bc.ca	788-698-4276	Wildlife management

Human population size: 7800 including 13 small, outlying communities.

@ 3400 private dwellings

Area: 19.8 sq.km

Overview of wildland-urban interface: From the city's website: Castlegar is the hub-central for exploring life's tickle trunk of outdoor activity in the West Kootenays. Do it outdoors. Life's an adventure. The city draws attention to the multitude of hiking, skiing and mountain biking trails in and around Castlegar, providing testimonials from residents and visitors about the accessibility and high quality of these urban-wildland spaces.

History of human-bear conflict in the area: Human-bear conflicts in Castlegar are, historically, common and largely related to attractant management. The town was retrofitted with bear proof garbage bins in 2016 and, while the season saw a high number of conflicts, they saw the fewest ever related to garbage. When this desirable attractant was removed, bears moved on to compost and fruit trees.

Measures of human-bear conflict:

bears destroyed/relocated, calls received by C.O's,

Bear Hazard Assessment conducted? Yes, 2017

2. Waste & attractant management

Solid waste system overview: Castlegar has a fully automated curbside collection system. The city provides poly-cart garbage bins retrofitted with bear resistant garbage clips manufactured by Rollins Machinery and collects garbage and recycling on alternating weeks. Recycling bins supplied by the city are not bear resistant. The city also has a composting facility that accepts food and yard waste from all residents. Bear resistant compost bins are available for purchase from the city. The Castlegar bylaw officer reports that bears have figured out how to break through the clips used on the garbage bins. The City will replace the bin once for free but damage after that is the responsibility of the property owner to repair. Residential waste collection guidelines can be found here:



http://castlegar.ca/pdfs/2018_2019_WM_Curbside_Collection_Brochure_and_Map_NEW.pdf

From Castlegar WildSafe Coordinator:

Castlegar introduced a new solid-waste management program in April, 2016 to help meet waste diversion goals AND Bear Smart Community requirements. The switch to bear-resistant carts occurred at the same time as a switch to bi-weekly garbage collection and a switch to new garbage trucks and fully automated collection. The City chose 242 L IPL carts with Rollins Machinery bear-resistant retrofits (metals strapping reinforcements and steel carabiner-type locks). They are the same carts used in Squamish for their organics collection. The City also has a smaller 120 L version available, which ended up being quite popular, despite the switch to bi-weekly collection.

The carts were purchased through existing tax reserves, so residents didn't see any change to their utility bill. In other communities where bear resistant carts have been implemented, residents have had

to pay off the cart through small increases to their utility bill spread out over the course of a couple years.

In my research, I was told it was essential to start with a sturdy cart with a high percentage of resin and to avoid flimsier (cheaper) carts. The IPL cart has more resin than cheaper models and is surprisingly thick and strong. We have had issues with certain food-conditioned bears breaking the clips and accessing garbage, but very few instances of the carts themselves being destroyed. The City will replace clips free of charge and will replace ONE cart damaged by bears per resident (subsequent replacements will be the resident's responsibility).

The City's bylaw requires that people store their carts securely and we always emphasize that the safest place for garbage is still inside a locked building. If carts must be left outside, both clips must be locked at all times and the carts should be chained to a secure anchor point to prevent a bear from dragging the whole cart away and to lessen their chances of compromising the clips.

It's worth noting that even if you provide all residents with top of the line bear-resistant carts, the initiative will only be effective if people are willing to play their part. If people are unwilling to lock and store their carts properly, you will end up with food-conditioned bears testing even the more responsibly stored locked carts. Education and compliance enforcement will still be hugely important. It is so essential to have the City, the COS, bylaw officers and any educational groups on the same page in terms of cart storage expectations.

Overall, we are very happy with the program. While it may not be the perfect system (mainly because of improper use), there is FAR less accessible garbage in our community and we are seeing a reduction in garbage-related conflict.

I've attached a couple pictures of the carts and here is a link to a news story with a photo of the new garbage truck: <http://castlegarsource.com/news/bear-proof-containers-be-delivered-next-week-new-garbage-collection-system-start-april-4-40982#.WhSLYWJSxz8>

Overview of relevant bylaws regarding solid waste & wildlife attractants:

Wildlife Attractants Bylaw 1198

"Wildlife Attractant" means antifreeze, paint, food products, food waste, compost, and other edible products or waste that could attract Wildlife;

Bylaws on bear-resistant garbage containers:

Solid Waste Bylaw 1248:

4. Every owner of a residential dwelling premises within the solid waste collection area shall use the solid waste disposal system established by the City pursuant to this bylaw. The owner of each dwelling unit may choose the size or quantity of collection carts that meets their needs and the fees charged will reflect the size or quantity of collection cart; which are as follows;

- a) One 242L (64 gallon) - bear resistant collection cart
- b) Two 242L (64 gallon)- bear resistant collection carts
- c) One 121 L (32 gallon) - bear resistant collection cart

Wildlife Attractant Bylaw 1198:

"Wildlife Resistant Container" means a fully enclosed metal container with a sturdy metal cover capable of being completely closed to reduce odours and secured with a latching device of sufficient strength and design to prevent access by Wildlife;

"Wildlife Resistant Enclosure" means a fully enclosed structure with no more than a 1 ern gap or opening at any location, containing four walls, a roof, and door(s) capable of being securely latched and of sufficient strength and design to prevent access by Wildlife;

Bylaws on where garbage containers may be stored:

Solid Waste Bylaw 1248:

23. All containers shall be kept on the ground level or on a platform not more than one foot in height above ground and shall be readily accessible from the street, or lane abutting the premises.

Storage of Refuse

3. No person shall: (a) Store any Refuse or Wildlife Attractant in such a manner that it is accessible to Wildlife; or (b) feed Wildlife.

4. A person storing Refuse that is a Wildlife Attractant in a container shall: use a Wildlife Resistant Container; or store such refuse in a Wildlife Resistant Enclosure.

5. Every owner or occupier of real property shall ensure that a Wildlife Resistant Container or Wildlife Resistant Enclosure on such real property is: maintained in good condition and kept in a clean and sanitary condition; kept closed and secure when Refuse is not being deposited or emptied; and if damaged, repaired within 7 days of the damage occurring.

Time when waste carts can be put out for collection:

Solid Waste Bylaw 1248:

21. All collection carts shall be kept unlocked and readily accessible for emptying, between the hours of 7:00 a.m. and 7:00 p.m. on the day of collection.

22. Collection carts shall not be unlocked or placed on any City lane, street or boulevard prior to 4:00a.m. on the day of collection.

Bylaws on other wildlife attractants:

Wildlife Attractant Control Bylaw 1198

Other Wildlife Attractants

9. Every owner or occupier of real property shall ensure that fruit fallen from a tree or bush on such real property is removed from the ground of such real property at least every three days when fruit is on the ground of such real property.

10. Composting is exempt from the provisions of this Bylaw as long as it does not attract wildlife.

11. Every owner or occupier of real property shall ensure that a bird feeder containing bird feed on such real property is suspended on a cable or other device in such a manner that it is inaccessible to Wildlife.

12. Every owner or occupier of real property shall store or place an outdoor fridge or freezer containing food products on such real property in such a manner that it is inaccessible to Wildlife.

13. Every owner or occupier of real property shall store antifreeze and paint on such real property in a manner that it is inaccessible to Wildlife.

3. Enforcement & compliance

Overview of enforcement & compliance efforts: While Castlegar's bylaws empower bylaw enforcement officers to issue compounded fines, bylaw has yet to issue a single one. Instead, bylaw relies heavily on WildSafe to patrol neighborhoods and report on bins left out overnight and to issue warning/reminder stickers on those bins. Bylaw reports that compliance has gradually increased and the most heavy handed action that the bylaw officer has taken so far is to visit properties and remind residents repeatedly to secure their attractants.

Bylaw penalties regarding wildlife attractants:

Wildlife Attractant Control Bylaw 1198

15. Each day that a contravention or violation of or failure to perform any provision of this bylaw continues to exist will be deemed to be a separate offence.

Schedule A

Refuse accessible to wildlife \$50.00

Feed Wildlife \$50.00

Failure to store refuse in wildlife resistant container or enclosure \$50.00

Failure to maintain wildlife resistant container or enclosure \$50.00

Failure to secure wildlife resistant container or enclosure \$50.00

Failure to repair wildlife resistant container or enclosure \$50.00

Failure to remove fruit from ground \$100.00

Bird feeder accessible to wildlife \$50.00

Outdoor fridge or freezer accessible to wildlife \$50.00

Antifreeze or paint accessible to wildlife \$200.00

Number of bylaw complaints, investigations and charges per year:

Bylaw receives a lot of complaints. No tickets issued to date. Reports to WildSafe and to C.O.S to avoid duplication of reporting.

2016 – 80 people observed leaving garbage out overnight. WildSafe issued warning/reminder stickers to each.

2017 – 12 people observed leaving garbage out overnight

Workload for bylaw officers related to human-wildlife conflicts: Bylaw officers are busy in spring and fall but generally light to medium duty related to HWC. WildSafe reduces pressure on bylaw enforcement services by teaming up to do curbside bin patrol the night before collection. WildSafe reports properties with bins out to bylaw and bylaw keeps a list of addresses to respond to second violations. Bylaw has taken a light-handed approach so far, dispatching more warnings and information when a second violation occurs. Has not yet issued any tickets.

Were there bylaws related to human-wildlife conflicts that didn't work or had to be changed?

Bylaw reports that the biggest challenge has been with people feeding birds. Officers have had to issue several repeat 'warnings', which really take the form of reminders.

Are there weaknesses in the present bylaws that could (should) be changed?

Bylaw officers have no identified any but also do not have any pressure on them to enforce.

What is the level of coordination or cooperation with other levels of government in attempts to reduce wildlife attractants?

High

Did citizens raise particular complaints when new bylaws affecting wildlife attractants were introduced?

No particular complaints. Tickets are not being issued (i.e. no incentive to abide by the bylaw). Some residents are repeat offenders and need constant reminders.

4. Public education

Who drives bear smart initiative? Castlegar WildSafe

What role does your municipality play in distributing bear safe information?

- Provides funding to Castlegar WildSafe
- Hosts bear smart information on website: http://castlegar.ca/pdfs/bear_aware_brochure.pdf

Are there any particular public education messages or campaigns that seem ineffective?

None identified. City relies on WildSafe to do most of the education and outreach. WildSafe and City bylaw officer report slow but steady buy in from residents. Education has mostly been geared toward increasing use of bear proof bins and managing fruit trees & shrubs.

What are the characteristics of public education messages or campaigns that seem effective?

None identified.

Are the educational efforts aimed at gaining compliance with bylaws (top down approach) or changing human attitudes towards bears and reducing conflict (bottom up approach)?

Primarily bottom up.

5. Performance metrics

Are any indicators used to track changes (progress) over time?

WildSafe reports on number of bins being used, number of contacts through outreach.

Bylaw has access to records re. number of complaints and responses and reports stats to WildSafe and C.O.S to make sure overall reporting re. HWC stats does not contain duplicates.

Were metrics defined before changes were made and if they were, how often are they updated or applied? (i.e. has anyone come up with a useful and reliable way to attribute changes in behavior to the changes made by municipalities?)

No

Coquitlam, B.C.

Overview: Coquitlam is one of 21 municipalities that make up Metro Vancouver, one of the largest cities in B.C. and the first Metro Vancouver district to earn bear smart status. Coquitlam was originally the site of a large lumber mill and has become a ‘bedroom’ community of Vancouver with many of its residents commuting to Vancouver or other communities along the Fraser River for work. It hosts a culturally and linguistically diverse human population. Coquitlam was the first municipality in Metro Vancouver to earn bear smart community status, in 2017, after 12 years of collaboration between the B.C. Ministry of Environment, the City of Coquitlam, non-profit and conservation organizations.

The City of Coquitlam takes the lead on reducing human-wildlife conflict in the municipality through their Urban Wildlife Conflict program. They employ an Urban Wildlife Coordinator who is responsible for outreach and education (the bottom up approach) and enforcement (the complimentary top down approach). The annual budget for the Urban Wildlife Program rings in at around \$120,000. The City’s efforts also include revisions to planning and decision-making documents such as the Official Community Plan, the Master Trail Plan and neighborhood plans to include bear smart initiatives. To date the City Manager’s annual Urban Wildlife Conflict program report to council has met the bear smart community requirement for a bear conflict management plan.

While all six steps towards bear smart community status have been achieved, city staff acknowledge that the designation does not mean that the problem is solved and there will not be an end date on the effort that needs to be put in to reducing conflict. The City has established an arsenal of tools to deal with many of the variables that affect the level of human-wildlife conflict year to year.

1. Context/background

URL for municipality: <https://www.coquitlam.ca/>

URL for bylaws: <https://www.coquitlam.ca/city-services/online-services/bylaw-library.aspx>

Solid Waste Management bylaw: <http://publicdocs.coquitlam.ca/cyberdocs/getdoc.asp?doc=2339550>

Wildlife control bylaw: <http://publicdocs.coquitlam.ca/cyberdocs/getdoc.asp?doc=2504681>

Contacts

	Contact person	Title	email	Phone	Responsibilities
Engineering & public works				604-927-3500	Solid waste management
Bylaw services	Julie Kanya	Urban wildlife coordinator	urbanwildlife@coquitlam.ca	604-927-3554	Urban wildlife education, outreach & enforcement
Bylaw enforcement				604-927-7387	
Environmental Services	Stephanie Warriner	Manager		604-927-3536	
Information requests		City Clerk	FOI@coquitlam.ca	604-927-3010	
B.C. Cons. Officer Services				1-952-7277	Wildlife encounter reporting
WildSafe BC	Frank Ritcey	The Brains	Bcwildsafe.com	250-828-2551	Wildlife Mapping project (WARP)

Ministry of Environment C.O. Services	Mike Badry	Wildlife Conflict Manager	Mike.badry@gov.bc.ca	788-698-4276	Wildlife management
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Human population size: 135,000.

48,000 dwellings, 25,000 single family homes, all urban (suburban) residential.

Area: 152 sq.km

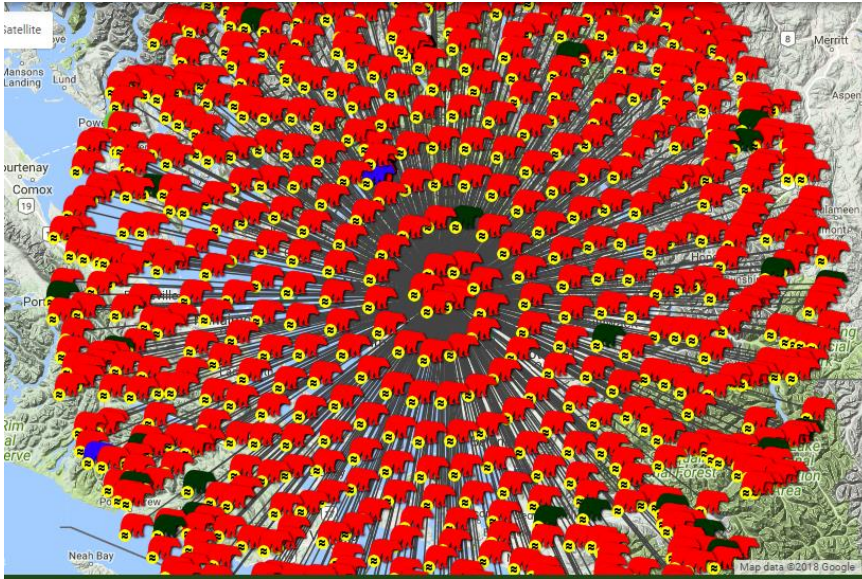
Overview of wildland-urban interface: Coquitlam is surrounded by farms, rivers, lakes and wetlands. Its northern boundary meets an extensive network of interconnected Provincial Parks and rich, riparian environment. It is situated where two major rivers meet and is flanked by mountains, 15 kilometers from the Pacific Ocean. The areas around the city provide natural habitat for bears and the availability of attractants within the city provide virtual bear grocery store where bears eat, sometimes at a very high cost.

Part of Coquitlam's wildlife conflict management planning includes ensuring safe passage of wildlife through and around the city via two 'green belts'. This strategy has potential to decrease the amount of time that bears spend chewing on garbage while they are en route from berry patch to salmon bearing river. The accompanying reality is that humans are also attracted to green spaces. The likelihood of human-bear encounters may increase when both are funneled into these corridors so there is a need for education and other proactive measures to reduce the likelihood of negative encounters.

History of human-bear conflict in the area: In recent years, an average of 7 bears per year were killed in Coquitlam when they attempted to access human foods and waste. In 2007 one Coquitlam resident was seriously injured by a black bear. In neighboring Port Coquitlam, a child was mauled in 2016 by a black bear sow who had been accessing compost from a cluster of poly carts that were left unlocked, despite being retrofitted with bear proof clips. Residents reported that they had witnessed the bears feeding there for months and the response from the public was a surge of phone calls to the City and to Conservation Officers reporting sightings and other situations involving bears that the public had previously shown a higher degree of tolerance to. Conservation Officers destroyed 15 bears in Coquitlam that year.

Measures of human-bear conflict: The City of Coquitlam keeps track of how many call and complaints are received and responded to, how many tickets and warnings are issued.

The BC Ministry of Environment tracks human-wildlife conflict statistics for the province as a whole here: <https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/wildlife/human-wildlife-conflict>



The Wildlife Alert Reporting Program can be used to track incidents by species, encounter type, location and outcome. Here is a snapshot for Coquitlam from 2013-17 using black and grizzly bears and garbage/compost as the search criteria. There is no data available on WARP before 2013.

<https://warp.wildsafebc.com/warp/>

Reported garbage & compost bear incidents:

2013 – 332

2014 – 503

2015 – 493

2016 – 771

2017 - 677

Bear Hazard Assessment conducted? Yes, 2005. 50 Recommendations were made in the BHA. City staff prioritized the recommendations and made their own recommendations to Council about which ones to pursue. All of those that were recommended by City staff have been completed.

2. Waste & attractant management

Solid waste system overview: Coquitlam offers curbside waste collection to all residential dwellings (approx. 25,000) through a contract with BFI Canada. Local businesses are responsible for their own waste management. The City owns and provides 240L poly carts to all residents like the ones currently used in Whitehorse. Green carts for food wastes are retrofitted with bear proof locks such as the ones used in WildWise Yukon's bear proof bin pilot project in 2014. Receptacles for non-food waste and recycling are not retrofitted with locks but residents can purchase retrofitted garbage carts from the City. Residents may also purchase larger or smaller poly carts and their utility rates will be adjusted accordingly. Organics are collected weekly to reduce the availability of wildlife attractants and the City expects that household waste receptacles will be free of food wastes as



per their sorting policies. Garbage is collected bi-weekly. Residents can request that the City repair or replace broken waste bins at cost.

As reported by the City Manager to Council on May 9, 2016:

Bear resistant garbage bins have been in place at all City-owned facilities, parks, trails and amenities since 2008. The City is also pilot testing foot pedal operated bins through 2016 in an effort to improve user convenience of wildlife-resistant garbage bins in City parks. In addition, all civic facilities feature bear-proof chain-link enclosures for centralized waste collection bins.

In 2014, a new fully automated solid waste collection system was implemented City-wide that included distribution of more than 25,000 locking wildlife resistant green carts to all single family residences. To further promote and encourage use of the wildlife-resistant green carts, the City also shifted to bi-weekly garbage collection while maintaining weekly organics collection. An extensive award-winning education campaign was also launched to promote the new Wildlife-Resistant Collection Program. Implementation of the new collection system has been extremely successful, with 77% (6,300 tonnes) more food waste now being collected in the curbside green carts. The City continues to explore additional measures to discourage wildlife from accessing waste carts, including testing the use of "Gravity Locks" on curbside green cart and garbage bins.

Coquitlam has encountered some challenges with their bear resistant garbage bins in the form of low compliance. Residents are not consistently using the locking clips and are overfilling the carts. In response, Coquitlam has been piloting a 'gravity lock' project involving 30 houses since the fall of 2015. The residents who are using the new system have all stated preference over the clip system. The gravity lock system is compatible with the waste hauler's current trucks. In early 2017 the City's Urban Wildlife Conflict Officer suggested testing the gravity locks at a wildlife testing facility and, at that point, committed to providing a report on their effectiveness and cost analysis for expanding their use.

Overview of relevant bylaws regarding solid waste & wildlife attractants: The City of Coquitlam has made significant efforts to reduce human-bear conflict through bylaw amendments and 'adaptive' enforcement response. Both the solid waste and wildlife control bylaws contain clear instruction for residents regarding appropriate handling and storage of household wastes. The City supplies bear proof compost bins to all properties on automated curbside waste collection and residents can purchase similar bins for garbage at their own expense. The bylaws require that residents make sure other wildlife attractants such as bird feeders, bee hives and outdoor freezers are managed appropriately. However, the City's Manager of Environmental Services noted in 2016 that many residents were still not complying with the updated wildlife and solid waste bylaws, particularly in relation to locking carts and harvesting ripe fruit. In response, the City has increased enforcement efforts, collecting around \$150,000 in wildlife attractant related tickets the same year. Coquitlam is following suit with other jurisdictions that have earned bear smart status, solving one problem at a time through a combined carrot and stick approach.

Bylaws on bear-resistant garbage containers:

Solid waste bylaw

5.3 No person shall place any waste into a residential waste container or recycling container other than those provided to that person's residential dwelling.

Residents may purchase a wildlife resistant garbage cart to use instead of their regular garbage cart at a cost of \$140.00 for a 120 litre cart; or \$150.00 for a 240 litre cart or \$160.00 for a 360 litre cart.

Bylaws on where garbage containers may be stored:

The solid waste bylaw does not directly address storage of garbage containers, however it does make a provision for the General Manager of Engineering and Public Works for the city, at their discretion, to require any homeowner to contain landscaping wastes that are not in a green cart in a wildlife resistant enclosure.

While not in the bylaw, the city's website makes the following recommendations:

- Between collection days, store your Garbage Cart and Green Cart in a secure location such as a garage or shed.
- If you don't have a secure inside location to store your carts, keep any material indoors that might attract wildlife and then put it out on collection day.

Time when waste carts can be put out for collection:

No earlier than 5:30am, no later than 7:00am

Bylaws on other wildlife attractants:

Bylaw No. 4284, 2012

3.3 Except as provided in section 3.4, no person shall knowingly or willingly feed, or in any manner provide or furnish access to food or any other edible substance, to any wildlife.

3.4 Bird feeders must be suspended on a cable or other device and in such a manner that they are inaccessible to wildlife other than birds.

3.5 Every owner or occupier of property within the City must ensure that:

- 3.5.1 all fruit on trees or bushes be harvested immediately upon ripening;
- 3.5.2 all fallen fruit from trees or bushes be removed immediately;
- 3.5.3 bee hives are inaccessible to wildlife;
- 3.5.4 grease containers are inaccessible to wildlife;
- 3.5.5 outdoor refrigerators or freezers are inaccessible to wildlife;
- 3.5.6 dairy products and proteins are not put into compost piles.

3. Enforcement & compliance***Overview of enforcement & compliance efforts:***

Coquitlam has been enforcing bear smart initiatives since 2005. Enforcement efforts include patrols by bylaw officers, warning stickers, non-compliance letters, notices of violation and fines. Enforcement effort varies from year to year and is likely influenced by new bear smart initiatives as they emerge as well as by the relative presence of bears in the city. Coquitlam's current waste collection system is fairly new. Time will tell if enforcement efforts will decrease as residents adjust to the new expectations being

shaped by the City's efforts to reduce the volume of wastes ending up in landfills and the number of negative human-wildlife occurrences.

Bylaw penalties regarding wildlife attractants:

From the solid waste bylaw:

10.2 Every person who violates a provision of this Bylaw, or who causes, permits, or allows an act or thing to be done in violation of a provision of this Bylaw, or who neglects or refrains from doing anything required by a provision of this Bylaw, is guilty of an offence and is liable, upon summary conviction, to a fine not exceeding the maximum set out in the Offence Act, as amended.

Further, although the solid waste and animal attractant bylaws do not specify how wastes are stored on private properties, bylaw officers are given the following authority:

Bylaw No. 4679, 2016

5.4 The Engineer may issue a notice requiring all owners and occupiers of a residential dwelling to place any solid waste specified in the notice in a wildlife resistant enclosure until such solid waste [referring to landscape material that is not in a green cart] is placed out for collection pursuant to the provision of this Bylaw. Any owner or occupier who has been given a notice under this section must comply with the conditions as specified by the Engineer.

LANDSLAPE WASTE includes weeds, leaves, grass and tree, plant or shrubbery cuttings less than 75 centimeters in diameter and less than 1 meter in length;

WILDLIFE RESISTANT ENCLOSURE means a fully enclosed structure consisting of wall, roof and door of sufficient design and strength so as to be capable of keeping its contents inaccessible to wildlife.

Fines: \$250 first offence

\$500 all other offences

Number of bylaw complaints, investigations and charges per year:

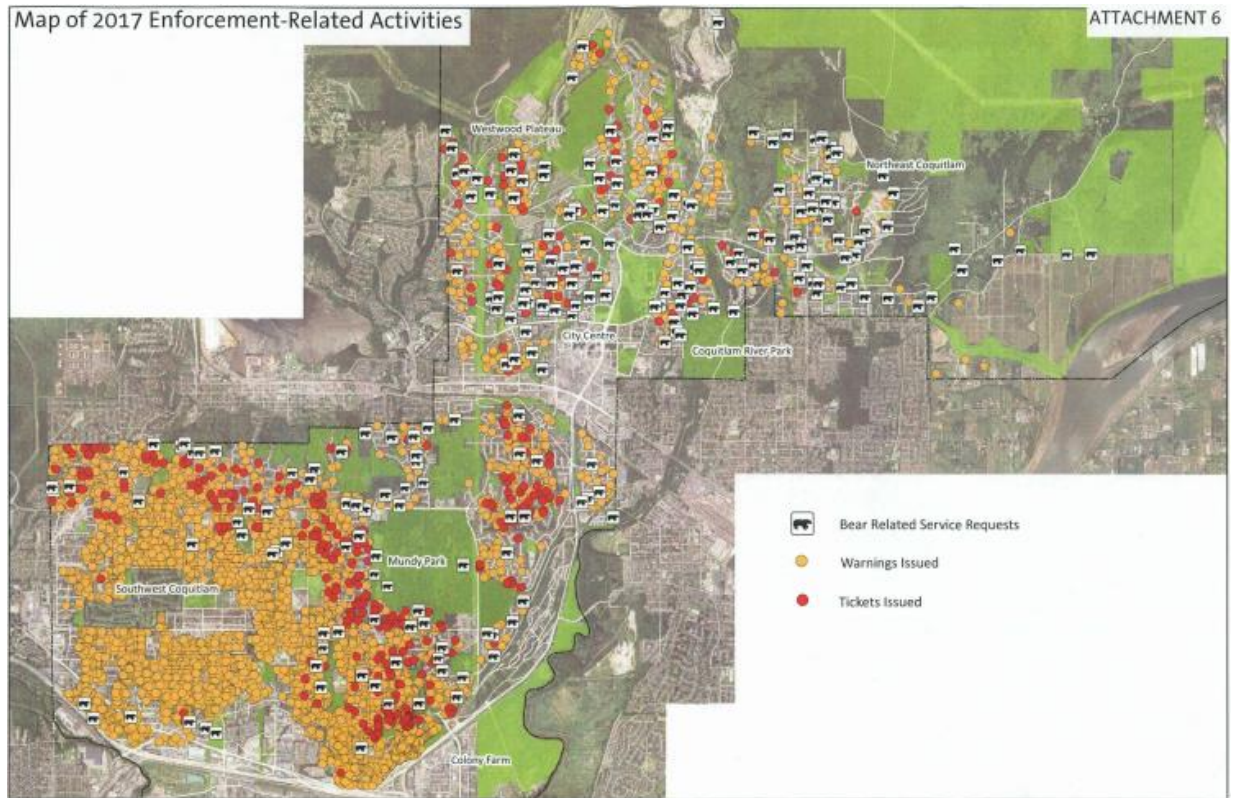
2016 snapshot:

- Over 1300 calls related to wildlife in 2016, 307 related to bears (4-fold increase from the previous 4-year average)
- 492 calls were related to unsecured attractants
- 300+ tickets issued (= \$150,000 in fines)
- 1600+ warnings issued

2017 snapshot:

- 1290 calls related to wildlife
- 300 related to bears
- Over 1700 complaints made to Conservation Officers

The following figures were retrieved from the Urban Wildlife Program Update for City Council at [Urban Wildlife Program Update for City Council: http://www.coquitlam.ca/docs/default-source/council-agenda-documents/regularcouncil_2017_12_04_-_item_16.pdf?sfvrsn=2](http://www.coquitlam.ca/docs/default-source/council-agenda-documents/regularcouncil_2017_12_04_-_item_16.pdf?sfvrsn=2)



Wildlife, Attractant and Pest Service Request Summary*

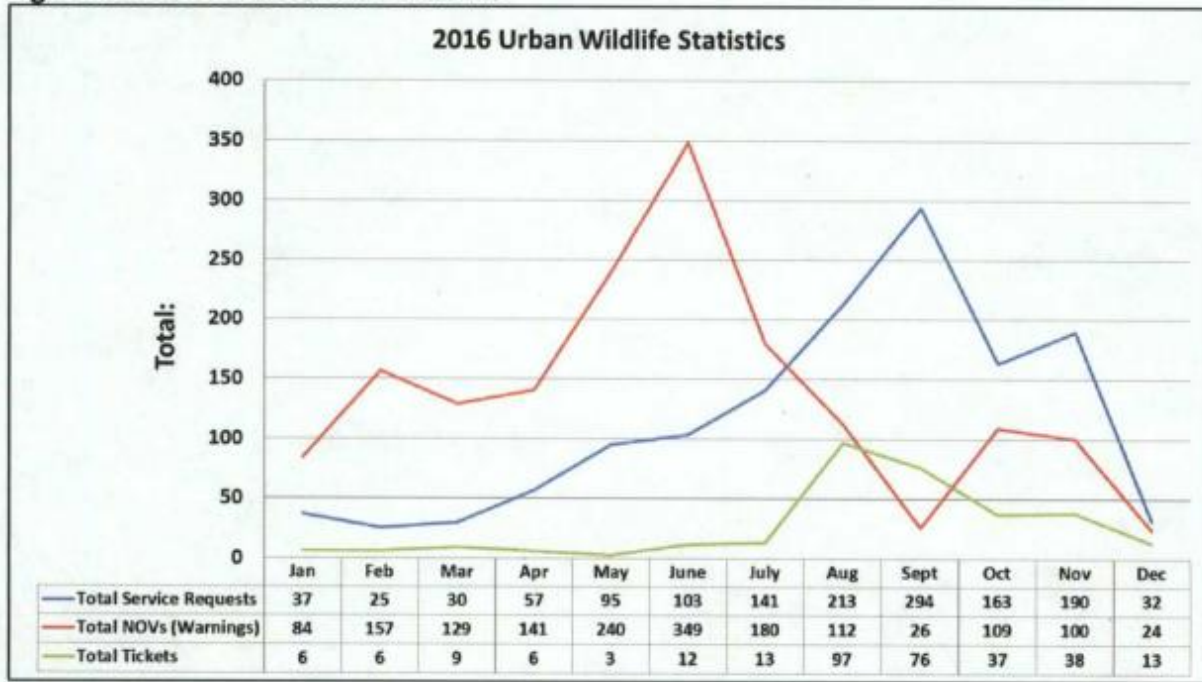
SR Type	2017	2016	Average for 2012 - 2015
Garbage	248	492	31
Bears	301	307	270
Other**	435	226	20
Rodents	115	120	88
Fruit Trees	6	46	0
Raccoons	33	42	35
Wasps	40	36	22
Coyotes	19	27	22
Wildfowl	17	22	8
Insects	29	18	11
Bobcat/Cougar	2	11	10
Mosquitoes	2	9	1
Bird Feeder	5	7	0
Birds/Crows	16	5	7
Squirrels	4	5	5
Deer	9	2	4
Moles	0	2	2
Composter	0	2	1
Skunk	9	1	10
Total	1290	1380	544

Notes:

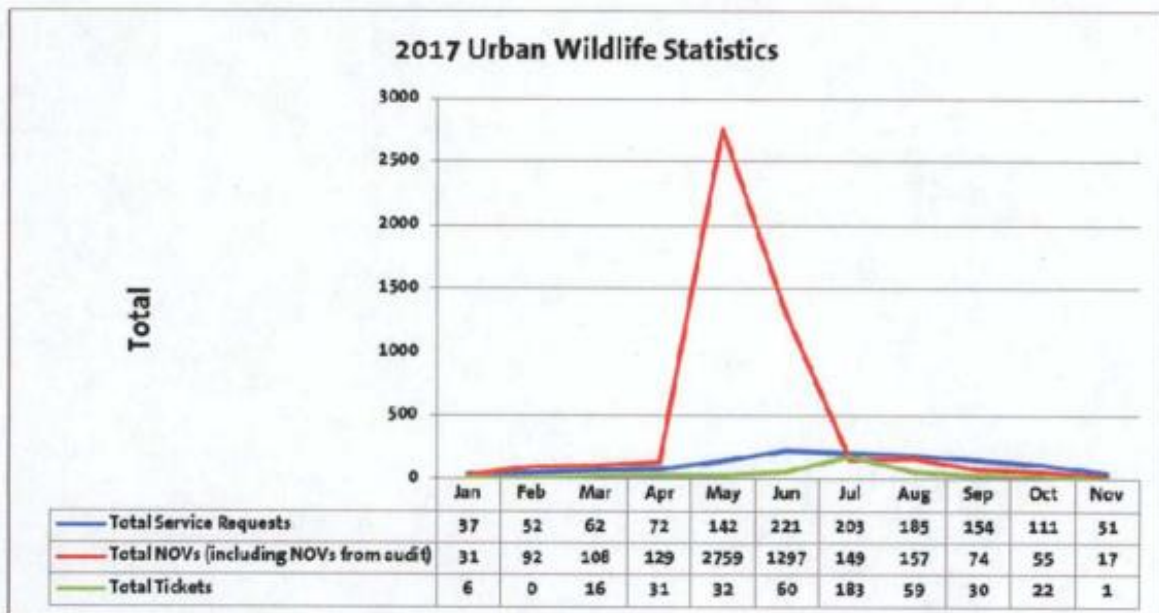
*statistics are current to November 24, 2017

** "Other" includes: service requests related to outreach, enforcement, or an unidentified wildlife/pest/vector/attractant

Figure 1: 2016 Urban Wildlife Statistics



2017 Enforcement Statistics and Summary



Workload for bylaw officers related to human-wildlife conflicts: Varies from year to year. The City attributes the increase in wildlife conflict related calls to a poor yield of natural bear foods in the spring of 2016 and to the increased efforts to educate the public about wildlife and wildlife attractants (i.e. a more aware and engaged public). Enforcement has also been increased in the past two years because human behavior was not changing enough to reduce conflict without a top down approach.

Were there bylaws related to human-wildlife conflicts that didn't work or had to be changed?

The City is exploring options to replace the current bear lock clip system with self locking clips. A patrol of the city in the summer of 2017 revealed that compliance with using the locks was low.

Are there weaknesses in the present bylaws that could (should) be changed?

The bylaw does not provide clear direction for the use and construction of wildlife resistant enclosures or mandate the use of certified wildlife resistant garbage carts. People are still putting attractants in the garbage carts and compliance on using the compost bear locks is low. City staff have conducted a gap analysis and have made recommendations to Council to improve the clarity and consistency of wording for all types of residential dwellings and commercial operations.

What is the level of coordination or cooperation with other levels of government in attempts to reduce wildlife attractants?

High. Achieving bear smart community status requires collaboration with BC Ministry of Environment, BC Conservation Foundation and Union of BC Municipalities (UBCM). Each partner is responsible for carrying out and enforcing their respective plans that are made to achieve bear smart status and reduce human-wildlife conflict. However, all parties continue to put pressure on each other to improve their responses. For example, in 2011 the UBCM passed a resolution to request that the Province establish a Provincial Wildlife Management Plan, to which the Province responded with a reminder of their existing Human-Wildlife Conflict Prevention Strategy (2003) which requires all parties to take responsibility and be accountable for their own prevention actions.

Did citizens raise particular complaints when new bylaws affecting wildlife attractants were introduced?

The new wildlife attractant bylaws were introduced along with changes in the City's waste diversion strategy, with an accompanying major increase in utilities charges. It is possible that protest is expressed through non-compliance but just as likely that many residents don't know about the changes or think their behavior is not problematic.

4. Public education

Who drives bear smart initiative? The City of Coquitlam, Urban Wildlife Coordinator.

What role does the municipality play in distributing bear safe information?

Coquitlam plays an active role in educating the public about its bear smart initiatives, bear behavior, attractant management and citizen responsibility. The Urban Wildlife Coordinator, employed by the City, is available to deliver in-class presentation for K-12, ESL groups and summer camps. Topics covered include attractant management and wildlife behavior. They can also be found throughout the year at public events.

Examples of educational materials:

- Urban wildlife brochure: <http://www.coquitlam.ca/docs/default-source/city-services-documents/urban-wildlife-brochure.pdf>
- Youtube video re. bear behavior: https://www.youtube.com/watch?time_continue=2&v=Sz7Vv_jlrQo
- Program website: <https://www.coquitlam.ca/public-safety/animal-pest-control/wildlife-management>

Many of the materials produced through this program have been translated into several languages that are commonly spoken throughout Coquitlam.

Were there any particular public education messages or campaigns that seemed ineffective?

None reported

What are the characteristics of public education messages or campaigns that seem effective?

Still working on gaining public by in through education. The Urban Wildlife Coordinator does a lot of outreach in the schools and through social media.

Are the educational efforts aimed at gaining compliance with bylaws (top down approach) or changing human attitudes towards bears and reducing conflict (bottom up approach)?

Both

5. Performance metrics

Were/are any indicators used to track changes (progress) over time?

None specifically identified. Number of calls/complaints is influenced by many variables, including availability of natural attractants. The need to increase bylaw enforcement when non-compliance with the use of bear proof compost bin clips suggests that behavior change does not happen with education alone.

Were metrics defined before changes were made and if they were, how often are they updated or applied? (i.e. has anyone come up with a useful and reliable way to attribute changes in behavior to the changes made by municipalities?)

No

Canmore, AB

Overview: Canmore is nestled in the Rocky Mountains on the western flank of Banff National Park and adjacent to the Bow Valley Wildland Provincial Park. It is situated along three major transportation routes (the Trans Canada Highway, railway and major river corridor).

Canmore's coal mining economy tanked in the mid 20th-century and the town was saved from economic despair by the 1988 Winter Olympics which drew international attention to the wilderness recreation potential of the town and surroundings. The population grew rapidly after the Olympics and the local economy is now largely based on wilderness adventure tourism, surrounded by ski and mountain resorts.

The town and surrounding area are major wildlife corridors and the town and transportation routes throughout are criss-crossed with wildlife crossings. The Town of Canmore, through the process of becoming a Bear Smart Community, has taken many steps to address human-wildlife conflict in collaboration with the provincial government, non-profit and community groups. For example, to minimize negative interactions and co-exist with wildlife, corridors are protected from development in the Parks bylaw. Canmore has become a leading example of how to get things done and to keep addressing new challenges that emerge.

1. Context/background

URL for municipality: <https://canmore.ca/>, <https://canmorealberta.com/>

URL for bylaws: <https://canmore.ca/town-hall/bylaws-policy>

- Wildlife Attractants Bylaw
- Recyclables and waste disposal bylaw
- Parks Bylaw

Contacts:

	Contact person	Title	email	Phone	Responsibilities
Town of Canmore bylaw@canmore.ca	Simon Robins	Supervisor of Waste Services		403-678-1580	Oversees waste bylaw
	Andreas Comeau	Manager, Public Works		403-678-1577	
Wildsmart Community Program website: www.wildsmart.ca	Nick De Ruyter Tyler McClaron		info@wildsmart.ca	403-678-3445 Ext 2	Education & outreach, coordination of volunteer programs, communication of gov. efforts
Biosphere Institute of the Bow Valley				403-678-3445	Administers WildSmart program – non profit conservation group
Bear Conflict Solutions Institute Website: http://www.bearconflict.org/				403-609-2242	Education, outreach, research

Alberta BearSmart website: http://aep.alberta.ca/recreation-public-use/alberta-bear-smart/default.aspx	Alberta Environment & Parks			780-944-0313	Education & outreach programs run by volunteers in Alberta communities
Bow Valley Waste Management Commission Website: http://bvwwaste.ca/				403-673-2708	Operates municipal landfills
Alberta Fish & Wildlife Enforcement Branch (Dept. of Justice & Solicitor General)	Daniel Boyco	Chief Fish & Wildlife Officer	Daniel.boyco@gov.ab.ca	780-427-2372	Enforcement of federal & provincial wildlife ordinances, Peace Officer Program
Alberta Environment & Parks	Jay Honeyman	Human-wildlife conflict biologist	Jay.honeyman@gov.ab.ca	403-609-8512	Conflict prevention
Kananaskis County Emergency Services				403-591-7755	Wildlife encounters call centre
Alberta Justice & Solicitor General – Peace Officers			peaceofficerinfo@gov.ab.ca		Bylaw enforcement

Human population size: 12,000 - 14,000

8000 private dwellings, @6000 inhabited by full time residents

Area: 69.43 sq.km

Overview of wildland-urban interface: Canmore is surrounded by protected wilderness and has a dominant culture of wilderness travel and adventure. There is a well established and extensive network of multi-use trail systems surrounding the town which are heavily used by residents and visitors.

History of human-bear conflict in the area: Prior to 1990, residents of Canmore experienced frequent interactions with bears (accessing garbage) in town. The 1990s brought a rapid growth in the town's population. Canmore residents recognized the inevitable impacts on wildlife and began to put pressure on the Town of Canmore to reduce the potential for negative human-wildlife interactions. Canmore had initiated many bear smart actions, including bear proofing its waste management system when, in 2005, Isabelle Dube was killed by a habituated grizzly bear who had previously been tranquilized and relocated by Conservation Officers. She was jogging with two friends on a trail near the town of Canmore at the time of the mauling. Her death led to the creation of a wildlife sightings network and, ultimately, the [Bow Valley WildSmart program](#) and confirmed the need for the City to take further steps to reduce human-bear conflict.

Measures of human-bear conflict:

bears destroyed, # conflicts reported – Kept in a database at Alberta Environment & Parks. Can be accessed by calling Jay Honeyman.

Reporting mechanism for bear occurrences – Jay Honeyman (Human-Wildlife conflict biologist) is working on producing an annual summary of bear conflicts & outcomes. AE&P feeds weekly bear reports to WildSmart which publishes them on their website along with a [conflict map](#) (see below). Metric to gauge effectiveness is number of visits to website which spike on the day the updates are released (Friday)

afternoon). Reports include information on bear 'hot spots', especially during berry season, as reported by AE&P operations division, staffed by biologist across the province.

Bylaw services initiated an online reporting mechanism in 2016.

Bear Hazard Assessment conducted? Yes. 2007

http://www.wildsmart.ca/pdf/Bear_hazard_assessment_report_BowValleyFinal.pdf

2. Waste & attractant management

Solid waste system overview: Canmore discontinued residential curbside waste collection in 1999 to reduce human-bear conflict. The Haul-All system, which provides metal communal disposal bins that have proven to be impermeable to bears, was piloted in 1997 and, while there were significant challenges during the transition from curbside collection, the four habituated bears destroyed and nine relocated in 1998 in Canmore triggered the complete transition. The system was implemented throughout the town by 1999. During the process, the town established a Waste Management Committee made up of concerned citizens who helped guide the process. The Town of Canmore has installed 160 bins throughout the City which are emptied regularly by the Bow Valley Waste Management Commission. Canmore provides wildlife proof recycling receptacles throughout the town for pedestrian disposal as well. Each 'residential' bin services 20-30 homes. Businesses are responsible for their own disposal and must adhere to the wildlife attractants and waste bylaws. A detailed description of the process of implementing the Haul All system in Canmore can be found here:

<http://www.bearsmart.com/docs/canmorebearproofwaste.pdf>

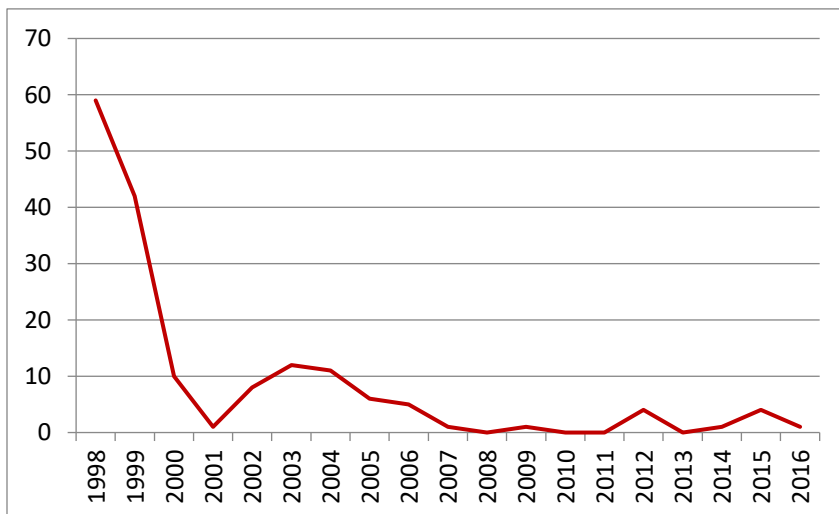
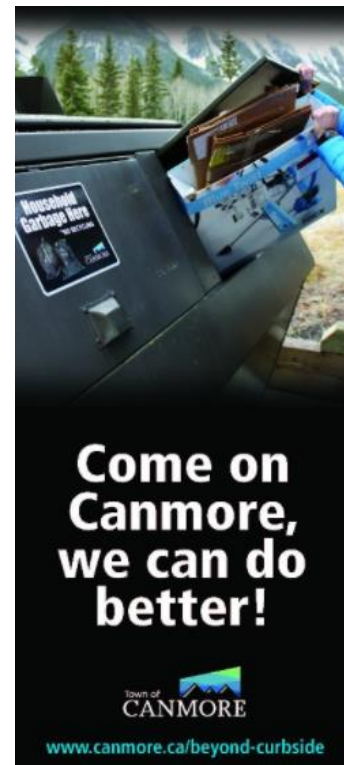


Figure 1 Number of garbage related negative human-bear encounters in Canmore, 1998-2016. Haul All bear proof bin system implemented 1997-99. Provided by Jay Honeyman, 2018.



The town's website offers the following advice to residents:

- Please make sure the lids are closed after you deposit your garbage in the bins
- If the bins are full, locate the next closest bin in your neighborhood- which should not be far away
- If you see a bin that needs to be emptied contact the Solid Waste Services team at 403.678.1580.

Haul All makes many products for a range of situations. They can be viewed here:

<http://haulall.com/contain/beartight/>

Overview of relevant bylaws regarding solid waste & wildlife attractants: Canmore has two bylaws that work together to reduce the availability of attractants. The Wildlife Attractants Bylaw and the Recycling and Waste Disposal Bylaw contain guidelines for storage and disposal of wastes as well as management of other wildlife attractants. Alberta Peace Officers enforce bylaws and are empowered to issue violation tickets according to a fee schedule.

Bylaws on bear-resistant garbage containers:

Bylaw 2016-11:

“animal-proof container” means a receptacle designed in accordance with the Town of Canmore’s Engineering Design Standards for the storage of waste between collection times. “animal-proof enclosure” means a structure designed in accordance with the Town of Canmore’s Engineering Design Standards for the storage of waste between collection times.

5: DISPOSAL IN RESIDENTIAL AREAS

5.2. Notwithstanding section 4.1, no person shall dispose of household waste in any bin other than an animal-proof container or animal-proof enclosure signed as being for the collection of household waste.

5.3. No person shall dispose of household waste in an animal-proof container unless the waste is contained within a securely fastened bag. 4.12. No person shall dispose of organic food waste into any outdoor container or structure for the purpose of composting

5.5. Where an animal-proof container, animal-proof enclosure, or community recycling container is located on private residential property, the owner of the property or his agent shall remove, or cause to be removed: a) any recyclables or waste placed on top of or beside, or which has overflowed from, any animal proof container, animal-proof enclosure, or community recycling container located on that premises,

6: DISPOSAL ON COMMERCIAL PREMISES

6.1. Notwithstanding section 4.1, no person shall dispose of waste generated on a commercial premise in any location other than the animal-proof bin or animal-proof enclosure associated with that premises.

6.2. Every owner of a commercial premise shall provide for the removal of waste from that premise.

6.3. Every owner of a commercial premise shall maintain any animal-proof container or animal-proof enclosure located on that premises in such a manner that it remains animal-proof, serviceable and sanitary.

Bylaws on where garbage containers may be stored:

4: GENERAL DISPOSAL

4.1. Unless otherwise permitted by this bylaw, no person shall dispose of waste anywhere in the town other than in: a) an animal-proof container, or b) an animal-proof enclosure.

4.2. Unless otherwise permitted by this bylaw, no person shall store waste outside.

4.3. No person shall provide a container or enclosure meant for the collection of waste that does not meet the Town of Canmore's Engineering Design and Construction Guidelines, as amended.

4.4. No person shall dispose of waste in such a manner as to prevent an animal-proof container or animal-proof enclosure from securely closing.

4.8. Unless otherwise permitted by this bylaw, no person shall dispose of recyclables anywhere in the town other than in: a) a recycling depot, or b) a recycling container signed for collection of the recyclables being disposed of.

4.12. No person shall dispose of organic food waste into any outdoor container or structure for the purpose of composting

4.13. No person, other than a person authorized by the Town, shall remove or interfere with recyclables or waste after it has been deposited in an animal-proof container, animal-proof enclosure or recyclables container.

Time when waste carts can be put out for collection: N/A

Bylaws on other wildlife attractants:

Bylaw 2017-10

3.1, "No person other than a Peace Officer or a person appointed by the CAO who is acting in the course of their duties shall store, collect, handle or dispose of wildlife attractants in such a way that the wildlife attractants are accessible to or may attract dangerous wildlife."

3.2 No person or owner of a parcel of land shall permit fruit from a tree or bush, or otherwise located on a parcel of land, to accumulate on the tree, bush or ground such that it attracts dangerous wildlife.

3.3 No person or owner shall feed, or attempt to feed or permit the feeding of dangerous wildlife and must not feed other animals in a manner that is likely to attract wildlife.

3.4 Notwithstanding section 3.3, a person or owner may place or permit the placement of an outdoor birdfeeder containing bird feed, seeds, suet, nectar or any other attractants provided that a) the bird feeder is suspended on a cable or other device in such a manner that it is inaccessible to wildlife other than birds and b) the area below any bird feeder is kept free of the accumulation of any wildlife attractants.

3.5 Notwithstanding Section 3.4, no person or owner shall place or permit the placement of outdoor bird feeders containing bird feed, seed, suet, nectar or other attractants between April 1st and November 30th of each year.

3.6 Notwithstanding Section 3.4 and 3.5, no property owner and no person shall place, or cause to be placed, on or near the property of that person, any matter which has the effect of attracting pigeons.

More information can be found here: <https://canmore.ca/residents/stewardship-of-the-environment/removing-wildlife-attractants>

Canmore also has a feral rabbit management program to help reduce wildlife attractants. Info here:

<https://canmore.ca/residents/stewardship-of-the-environment/feral-rabbit-management-program>

3. Enforcement & compliance

Overview of enforcement & compliance efforts: The town of Canmore enforces their solid waste and wildlife attractants bylaw through the Alberta Department of Justice & Solicitor General's Peace Officer program. The Alberta government empowers Peace Officers through a Provincial act and outlines guidelines for employers when hiring an officer.

Compliance is high because waste disposal is bear proof throughout the town. Peace Officers take a proactive approach by patrolling the town and trails, encouraging citizens to resolve conflicts before they arise. The Town of Canmore has an online reporting mechanism as of 2016 which is used alongside the Kananaskis Emergency Service number to assist citizens in reporting.

The municipality doesn't actively seek violations but does receive and respond to complaints.

Bylaw penalties regarding wildlife attractants: Penalty: Min: \$250. Max: \$10,000, applicable to anyone who contravenes any part of the bylaw, including all partners in business who consented to the act of violation. Enforceable by peace officers re. the [Alberta Peace Officer Act](#).

Wildlife Attractants Bylaw, Schedule A:

Feeding wildlife - \$500

Failure to remove fruit - \$100

Bird feeder infractions - \$100

Number of bylaw complaints, investigations and charges per year:

2016 snapshot

- 10 warnings pertaining to waste bylaw (The bylaw report does not specify if the warnings were related to wildlife attractants. Simon Robins reports 5-10 complaints over the past 5 years.)
- 1 ticket issued.

Bylaw services produces an annual report of activities. An example can be found here:

<file:///C:/Users/Heather/Downloads/2016%20Bylaw%20Services%20Annual%20Report.pdf>

Workload for bylaw (Peace) officers related to human-wildlife conflicts: Low

Were there bylaws related to human-wildlife conflicts that didn't work or had to be changed?

None identified by Town of Canmore contacts or Alberta Environment & Parks. Identifying strategies to further reduce conflict is ongoing.

Are there weaknesses in the present bylaws that could (should) be changed?

Solid waste and wildlife attractant bylaws are new (2016 & 2017). The rewrites consolidated the bylaw and separated out solid waste from animal attractant bylaw. No weaknesses identified yet.

What is the level of coordination or cooperation with other levels of government in attempts to reduce wildlife attractants?

High. Here are some examples:

- Canmore Conservation Officers do animal control and observation and report to bylaw.
- Town of Canmore provides funding to WildSmart for communication, education & outreach.
- In 2017 Canmore and Banff Mayors and MLAs spearheaded a roundtable on human-wildlife coexistence with the following objectives:
 1. Identify current state of human/wildlife conflict within the study area.
 2. Identify potential research opportunities to fill knowledge gaps pertaining to human/wildlife conflict.
 3. Develop proactive measures to reduce the frequency of human/wildlife conflict in the Bow Valley over the short, medium and long term while maintaining the viability and functionality of wildlife corridors and habitat patches for wildlife.
 4. Identify how agencies manage specific incidents of human/wildlife conflict and, if needed, suggest ways to standardize and improve decision making, management actions and public awareness.

Through this collaboration a technical committee was formed to:

- Identify trends and human-wildlife conflict mitigation programs
- Make recommendations on reducing the frequency of human/wildlife conflict
- Suggest improvements to how each agency responds to incidents
- Identify ways to change public behaviour through increased awareness and transparency

More information can be found here: <https://canmore.ca/residents/stewardship-of-the-environment/managing-human-wildlife-conflict>

Did citizens raise particular complaints when new bylaws affecting wildlife attractants were introduced?

The wildlife attractant and solid waste bylaws were put in front of council for a first reading and public forum during berry season. Council felt that the first draft of the wildlife attractant bylaw was a little over-reaching especially pertaining to gardens, however, the draft was passed.

Original garbage bin replacement was carried out as a pilot project in one neighborhood and gained public support quickly.

4. Public education

Who drives bear smart initiative? Bow Valley WildSmart is a key driver but the initiatives to reduce conflict have become a collaborative effort.

Many of WildSmart's initiatives are supported by [Friends of Kananaskis Country](#). Information made accessible to the public by WildSmart includes:

- WildSmart conflict map: http://www.wildsmart.ca/news/wp-content/uploads/2016/05/BearConflict2016_PostBerry_2016May111.jpg
- Living smart with bears: <http://www.wildsmart.ca/bearsmart.htm>

- Weekly bear activity report: <http://www.wildsmart.ca/news/category/bear-activity/>
- Tips for residential attractant management: <http://www.wildsmart.ca/garbage-disposal.htm>

What role does your municipality play in distributing bear safe information?

High level of coordination with WildSmart, including funding, to make sure messaging is consistent and public has access to information.

Town of Canmore has WildSmart messaging in several places on their website.

- <https://canmore.ca/joomla-pages-iii/categories-list/2-latest-news/645-be-bear-aware>
- <https://canmore.ca/residents/stewardship-of-the-environment/removing-wildlife-attractants>

Are there any particular public education messages or campaigns that seem ineffective?

No – the original bylaw amendments happened in a high conflict year in the middle of berry season. There was a high level of public buy-in.

What are the characteristics of public education messages or campaigns that seem effective?

Proximity of wildlife creates a personal relationship. Connecting people, especially children, to individual species promotes care and stewardship.

WildSmart is very present in the community – shows up to most events, schools etc.

Bear updates on the WildSmart website – a weekly shout out about bear activity around the community.

Are the educational efforts aimed at gaining compliance with bylaws (top down approach) or changing human attitudes towards bears and reducing conflict (bottom up approach)?

Both but mostly bottom up - changing attitudes.

5. Performance metrics

Are any indicators used to track changes (progress) over time?

conflicts, outcomes, # and nature of initiatives (# of e-fences being used, # contacts & partnerships made, tracking of incidents post-mitigation)

weekly during bear season w/ map of the valley that looks at the presence of bear reports over the last 10-15 years by area

Were metrics defined before changes were made and if they were, how often are they updated or applied? (i.e. has anyone come up with a useful and reliable way to attribute changes in behavior to the changes made by municipalities?)

No. Defining metrics for behavior change is an ongoing challenge.

Crowsnest Pass, Alberta

Overview: Crowsnest Pass includes five formerly separate communities in the Southern Rockies, Southeast Alberta. It is situated in a lush mountain pass and stretches along a narrow, 32km long stretch of highway and railroad. The area is in the transition zone between prairie and mountain environments and is surrounded by rugged wilderness, including several river drainages. The pass has been used for trade and transportation for millennia and more recently plundered for its non-renewable resources, including coal, oil, gas and lumber. There is some tourism but the industry is considered to be underdeveloped. Rapid growth in rural residential and vacation homes has contributed to a rise in negative human-bear incidents over the past few years.

Crowsnest Pass municipal government passed a resolution to become a BearSmart community in 2006. It is home to the Crowsnest Pass BearSmart Association (CPBSA), a non-profit group which is a partnership between Alberta Fish & Wildlife Enforcement Branch and a host of volunteers who do everything from tagging and monitoring movement of bears in and around the community to picking ripe fruit. Lost Creek Services Inc., a distributor of bear proof garbage bins, is a member of the CPBSA and has worked in concert with the association to increase interest in, willingness to purchase and use of the bins. The group works closely with Community Protective Services and municipal enforcement to communicate bear activity and promote the need for enforcement of wildlife attractant bylaws and has successfully worked with the municipality to amend the solid waste and animal control bylaws to reduce human-wildlife conflict and with Alberta Fish & Game to define conflict. Additionally, the Crowsnest Conservation Society operates a BearSmart garbage bin loan program.

1. Context/background

URL for municipality: <https://www.crowsnestpass.com/#>

URL for bylaws: <https://www.crowsnestpass.com/municipal-government/council/bylaws-listed-alphabetically>

Solid Waste bylaw: <https://www.crowsnestpass.com/public/download/documents/4967>

Animal Control bylaw: <https://www.crowsnestpass.com/public/download/documents/46754>

Contacts:

	Contact person	Title	email	Phone	Responsibilities
Crowsnest Pass main line				403-562-8833	
Town of Crowsnest Pass bylaw enforcement		Community Peace Officer		403-562-8833	Bylaw enforcement
Crowsnest Conservation Society website	Elizabeth Anderson		office@crowsnestconservation.ca e.anderson@telus.net	403-563-0058	Bear smart community programs and initiatives
CNP Bearsmart Association www.cnpbearsmart.com	Christy Pool		cnpbearsmart@gmail.com	403-563-8723	Non profit, partnership with AB fish & wildlife bear smart
Fish & Wildlife Enforcement	Daniel Boyco	Chief fish & wildlife Officer	Daniel.boyco@gov.ab.ca	780 427-2372	Bear management
	John Clarke	District Officer	John.Clarke@gov.ab.ca	403-562-3234	

Alberta Environment & Parks	Jay Honeyman	Human-wildlife conflict biologist		403-609-8512	Human-wildlife conflict prevention
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Human population size: 5600.

2586 dwellings occupied by full-time residents. Total of 3,235 residences.

Area: 373.1 sq.km, spread out along 32 km of highway corridor.

Overview of wildland-urban interface: Crowsnest Pass and surrounding area is used heavily as a recreation site, mostly for people living in or close to the area. It hosts a dense network of multi-use trails and recreational facilities. Due to its productive 'edge' environment, adjacent wildlands are home to many wildlife species, including black and grizzly bears. Reported negative human-bear interactions primarily happen in human settlements along the valley bottom, where the garbage is.

History of human-bear conflict in the area: Bears and other wildlife use the pass as a corridor for the same reasons that humans do. Because it is a relatively narrow pass there is a history of a high number of human-bear conflicts in the area. For example, according to the 2006 bear hazard assessment, the Alberta government logged over 1500 hours of wildlife conflict related enforcement hours in the five years previous to the study, averaging about 4.5 hours per call. The authors explain that this reactive approach is costly and ineffective at reducing conflict.

Measures of human-bear conflict:

bears destroyed/relocated, # calls to C.O. Services

Bear Hazard Assessment conducted? Yes, preliminary draft, 2006:

<https://open.alberta.ca/dataset/ae114f21-2e66-4c71-b51f-382a3ee51347/resource/a9709c93-0d1e-4ea9-963e-7556be59d985/download/2006-BearHazardAssessmentCrowsnestPass-2006.pdf>

2. Waste & attractant management

Solid waste system overview: The Municipality of Crowsnest Pass collects residential waste on a weekly schedule through a contractor. Waste collection is manual. The municipality does not collect commercial or industrial waste and all wastes are disposed of at the Crowsnest-Pincher Creek Landfill. Residential waste must be stored in an animal proof container as per the solid waste bylaw, with further support for reducing availability of attractants provided by the animal control bylaw. Homeowners own their own waste receptacles and the municipality recommends Haul All as a source of bear proof bins to new homeowners.

Crowsnest Pass Conservation Society conducted a pilot program which tested out several styles of bear resistant bin. They currently operate a wildlife proof waste bin loaner program which makes bear proof bins accessible to people who need a short term solution or to those who are committed to purchasing but want to test one out before they take the plunge. They state that, "Perhaps the greatest success of the Crowsnest Conservation BearSmart Bear-Resistant Garbage Bin Program is in the increased awareness of proper garbage management through visible bins distributed around the community". A summary of their pilot project can be found here: <http://crowsnestconservation.ca/wp-content/uploads/2013/03/CCS-Bear-Bin-Program-Summary-Feb2015.pdf>. The municipality is currently

considering purchasing bear resistant bins for all residential dwellings. We were unable to obtain any information about what model of bear resistant bins they are considering.

In 2015 the commercial waste hauler in Crowsnest Pass, in response to public and agency pressure, replaced all of their local dumpsters with bear proof dumpsters, significantly decreasing the incidence of bears accessing commercial wastes.

Overview of relevant bylaws regarding solid waste & wildlife attractants: The Municipality of Crowsnest Pass updated their Animal Control Bylaw in 2017. It includes guidelines pertaining to the proper storage of wildlife attractants. The solid waste bylaw was updated in 2013 and defines animal attractants, guidelines for acceptable waste receptacles, storage and handling of wastes and refers to the Animal Control Bylaw for guidance on wildlife attractants.

Bylaws on bear-resistant garbage containers:

Solid Waste Bylaw No. 863, 2013

"Animal Proof Waste Container" means a receptacle for disposing of residential Waste or Commercial Waste that is a fully enclosed container with a tight-fitting cover to reduce odours and a latching mechanism of sufficient design and strength to prevent access by animals. Any container that is overfilled so as to prevent latching or left unlatched is not considered an animal proof Waste container."

Bylaws on where garbage containers may be stored:

Solid Waste Bylaw No. 863, 2013

7.4 (a) "The owner or occupant of premises from which refuse is to be collected shall ensure refuse and recyclables are stored in an approved storage location at all times other than when waste or recyclables are being transferred to and stored in an animal proof waste container"

"Approved Storage Location" means a location within a Residential Unit, or a Multi-Residential Dwelling Unit, or a Commercial Premise, or any accessory structure that is fully enclosed with walls, a roof, a door, and a latching mechanism of sufficient design and strength to prevent access by animals. The structure should have no opening or gap greater than 1 cm width to prevent the insertion of a bear's claw."

Time when waste carts can be put out for collection:

7.4 (b) "Refuse receptacles may be placed for collection no earlier than 6:00 am on the day of collection and must be re-secured to an approved storage location no later than 7:00 pm on the day of collection."

Bylaws on other wildlife attractants:

Solid Waste Bylaw No. 863, 2013

"Animal Attractant" means food or food waste, compost, other waste or garbage, a carcass or part of a carcass of an animal, fish or other meats."

Animal Control Bylaw No. 991, 2017

"Wildlife Attractant" means any substance that could be reasonably expected to attract wildlife including but not limited to ibod products. domestic garbage, pet [bod, seed, restaurant grease, compost, a carcass or part of a carcass of an animal, fish or other meats, or fruit from fruit trees;

Section 12 - Wildlife Attractants

12.1 No owner or occupant of a premises shall place, store, permit, or dispose of Wildlife Attractants outdoors in such a manner that they are accessible to wildlife.

12.2 No person shall feed or attempt to feed wildlife, or deposit Wildlife Attractants in a place or manner that attracts wildlife.

12.3 Owners or occupiers of a parcel are responsible to remove ripened fruit from trees and ground in order to deter wildlife from feeding within the Municipality.

12.4 Bird feeders are to be removed once they become an attractant.

3. Enforcement & compliance

Overview of enforcement & compliance efforts: The Municipality of Crowsnest Pass employs one full-time Peace Officer (job vacant at present) and one summer student to enforce all municipal bylaws. Enforcement generally follows a 'top-down' approach to gain compliance, however, incentives have been offered by the Alberta Government over the years. Peace officers, at their own discretion, may excuse payment of a violation ticket if the resident purchases a bear proof bin and cleans up their mess.

Crowsnest Conservation Society reports that buy-in to bylaw amendments and other bear smart initiatives was low at first but time and consistent messaging has improved public response.

Bylaw penalties regarding wildlife attractants:

Solid Waste Bylaw No. 863. 2013:

13.2 Where a Peace Officer has reasonable grounds to believe that an owner or occupant has contravened any provision of this Bylaw, the Peace Officer may serve upon such person, a summons as outlined in this Bylaw. 13.3 An owner or occupant who contravenes any provision of the Bylaw by: (a) doing something that is prohibited in this Bylaw; (b) failing to do something that is required in this Bylaw; or (c) doing something in a manner different from that which is required or permitted in this Bylaw; is guilty of an offense and liable upon summary conviction to a fine of not less than one Hundred Dollars (\$100.00) or not more than Two Thousand Five Hundred Dollars (\$2,500.00).

Animal Control Bylaw 991, 2017:

14.2 The Community Peace Officer may issue a violation ticket to any owner alleged to have committed a breach of this bylaw which shall state the complaint and the specified penalty as described in Schedule B or Schedule C, and the date, time and place at which the defendant is to appear to answer the summons.

14.3 Voluntary payment of the violation ticket in accordance with terms of the violation ticket shall be accepted by the Municipality of Crowsnest Pass as a plea of guilty in accordance with Section 25 of the Provincial Offences Procedure Act.

14.7 Any person or owner who commits a breach of any of the provisions of this bylaw shall be liable to the lines as set forth in Schedule B or Schedule C for the offence listed therein, and to a fine of not less than \$75.00 for any other offence under this bylaw.

SECTION 12 Section 12.1—12.4 Improper storage or use of Wildlife Attractants \$250.00

Number of bylaw complaints, investigations and charges per year:

2014 – 6 charges

2015 – 29 charges, 37 warnings

Workload for bylaw officers related to human-wildlife conflicts: Peace Officers enforce the municipal bylaws. CNP BearSmart Association volunteers and Community Protective Services help with patrol. The community does not currently have a Peace Officer and this year's bylaw enforcement statistics are not yet available.

Were there bylaws related to human-wildlife conflicts that didn't work or had to be changed?

Wildlife attractant bylaw is relatively new. To be determined.

Are there weaknesses in the present bylaws that could (should) be changed?

Residents are responsible for purchasing their own bins and, while the bylaw defines animal proof receptacle, residents don't always comply. The bylaw does not require the use of *certified* bear proof bins but does make suggestions on what constitutes animal proof. The municipality has discussed purchasing bear-proof bins for all residents as a means to reduce accessible wildlife attractants but have not made that move yet.

What is the level of coordination or cooperation with other levels of government in attempts to reduce wildlife attractants?

The conservation society reports that level of coordination is dependent on individual relationships between government representatives and community involvement and available funding for the CNP BearSmart Association. The municipality works with Alberta SRD Fish & Wildlife to some degree and Crowsnest Pass Conservation Society occasionally receives funding from both.

Did citizens raise particular complaints when new bylaws affecting wildlife attractants were introduced?

Some citizens did not like the fine system put in place to deal with poor attractant management but complaints have subsided over time.

4. Public education

Who drives bear smart initiative? CNP BearSmart & Crowsnest Conservation Society:
<http://crowsnestconservation.ca/our-work/crowsnest-conservation-bearsmart-program/>

What role does your municipality play in distributing bear safe information?

In early years the municipality was only on board in theory. Change in council took a progressive stance on reducing conflict through bylaws.

- Spring and fall newsletter with bylaw reminders
- Link on website for Haul All bear safe bins.

Were there any particular public education messages or campaigns that seemed ineffective?

Crowsnest Conservaton Society's composter program did not have enough demand to be worthwhile.

What were the characteristics of public education messages or campaigns that seemed effective?

Consistent messaging over time, coupled with bylaw amendments, has motivated change in the community. Carrot and stick together.

Collaboration: the bear proof bin loan program for bear proof garbage bins was supported initially with referrals from C.O.S.

3 different styles used – Unbearable bins w/ scissor clip, then haul all w/ self latching system but latches were not working, on to Baricuda stealth 2, totter systems bin w/ self latch inside lid (latch can be replaced)

40 bins in circulation. Funding comes from grants and provincial government March madness spending

Financial support: The conservation society's tree swap program was popular because it replaced fruit bearing trees with ornamentals at no cost to the property owner but was eventually too expensive to continue. It initially operated with grant funding from Yellowstone to Yukon Conservation Foundation.

Were the educational efforts aimed at gaining compliance with bylaws (top down approach) or changing human attitudes towards bears and reducing conflict (bottom up approach)?

Both.

5. Performance metrics

Were any indicators used to track changes (progress) over time?

CN Conservation Society tried one point in time snapshot survey of behavior in collaboration with Alberta Government with intent to repeat in a few years. Follow up has not yet been done. Metrics have been hard to define.

Were metrics defined before changes were made and if they were, how often are they updated or applied? (i.e. has anyone come up with a useful and reliable way to attribute changes in behavior to the changes made by municipalities?)

No

City/Bureau of Juneau, AK

Overview: Juneau (CBJ) is a municipality of similar size to Whitehorse. It is located in a National Park Reserve, bordered by mountains on one side, ocean on the other. It is one of the first US states to enact laws to help reduce human-bear conflict by keeping bears out of garbage. The municipality has ongoing challenges with enforcing the ordinance. Reducing conflict in Juneau is a collaborative effort with responsibilities assumed by the CBJ, Alaska Department of Fish & Wildlife (ADFW), US Forest Services, Juneau Police Department and waste management contractors, all of whom make up the Juneau Bear Committee.

Much like Whistler, Juneau is a tourist destination and renowned for its bear viewing opportunities, which presents unique challenges to bears and conflict management.

1. Context/background

URL for municipality: <https://beta.juneau.org>

URL for bylaws: Urban Bear Ordinance 2004-11: <https://cdn.juneau.org/wp-content/uploads/2017/03/Ord2002-04am-2.pdf>

Amendments: https://cdn.juneau.org/wp-content/uploads/2017/03/2004-11_final_no_sign.pdf

Contacts

	Contact person	Title	email	Phone	Responsibilities
City/Bureau of Juneau	Rory Watt, Mila Cosgrove	Manager		907-586-5240	
Juneau Police	Bob Dilly	Community Service Officer Supervisor	badilley@juneaupolice.com	907-500-0828	Enforcement of Urban Bear Ordinance
Alaska Dept. of Fish & Wildlife		Wildlife Program Education Coordinator		907-465-8547	Lead on interagency approach to reducing HBC Public education
Alaska Dept. of Fish & Wildlife	Carl Koch	Wildlife biologist			Interagency bear working group rep.
Alaska Bears in Communities Program	Abby Lowell	Wildlife Education Specialist		465-4292	Elementary bear education incl. reducing conflict
	Kirsten Romanoff	Wildlife Education & Outreach coordinator		465-8547	
Juneau Bear Committee			bears@juneau.org		
Alaska Waste				780-7808	Residential & commercial curbside pickup
Waste Management				780-7801	Landfill

Human population size: 33,000

Area: 8430 sq.km

Juneau, Alaska - March 2018

Overview of wildland-urban interface: Juneau is situated in relatively undisturbed, productive coastal rainforest. Wildlife is commonly seen in urban environments and humans in wildlands.

History of human-bear conflict in the area: From CBJ website: The people of Juneau have experienced recurring conflicts with bears in our community. The city is surrounded by prime black bear habitat and it isn't uncommon to see bears wandering through town. Juneau residents treasure the natural surroundings in which we live: we live in bear country and we feel lucky to do so.

Measures of human-bear conflict:

calls received, response and outcome are all recorded by Alaska Department of Fish & Wildlife.

Juneau Police Department makes complaint reports available on the municipality's website. Here is an example: https://cdn.juneau.org/index.php?gf-download=2017%2F11%2FBear-Report-MEDIA_20171113.pdf&form-id=22&field-id=11&hash=9da3cd5a79524a5815700b613161c435073ccb43c6d34716500620265a0fa7a7

Bear Hazard Assessment conducted? No

2. Waste & attractant management

Solid waste system overview: Residential curbside pickup of wastes, including recycling, is operated through a contract with Alaska Waste. Both the waste collector and the landfill are privately owned. Alaska Waste supplies some residential customers with rolling bear resistant bins and have tried several models with varying success since 2012. There are several styles of bins distributed throughout Juneau, most of them dysfunctional. Before the rolling cart system, ADFG encouraged residents to build sturdy wooden sheds to store wastes and reports that the 'program' was gaining buy-in at the time of the switch to rolling carts. The switch raised a lot of concern because the newspapers mistakenly advertised the rolling carts as bear proof and ADFW had to go around putting stickers on all of the bins explaining that they are not even bear resistant.



According to Carl Koch, "Over the years the refuse company has tried many cans and I don't think any have worked as well as the Kodiak cans when properly installed. However, all of the cans in Juneau at 96 gallons (my wife and I have only filled it once in 2 years) and they charge \$14/more per month because of the cost of the cans (I think ~\$600.00 each) and the retrofit trucks".

Carl also reports that the Alaska Waste is now starting to distribute bear resistant bins and his department works with them to identify areas with the highest incidence of negative human-bear encounters for distribution of bear resistant bins.

See Appendix A for pictures of bins currently in use in Juneau. The 96 gallon BearSaver cart pictured here is displayed on Alaska Waste's website at: <http://www.alaskawaste.net/services/residential/bear-carts>. The waste hauler reports to have changed collection time to 8am to allow customers to avoid placing their carts at the curb the night before collection.

The public works department for CBJ operates a program called RecycleWorks, an education program geared towards keeping food and recycling out of the landfill. RecycleWorks is also responsible for the solid waste action plan which is a periodic review and prioritization of components of the Solid Waste Management Strategy. One component of the Juneau's solid waste management system is enforcement of the Urban Bear Ordinance. More info can be found here:

<http://www.juneau.org/pubworks/projectsandplans.php>

Along with supplying bear resistant garbage containers for pedestrian wastes, the CBJ employs one staff person (a Community Services Officer) who is responsible for enforcing the Urban Bear Ordinance in combination with other ordinances. Arrow Refuse supplies businesses with bear resistant dumpsters.

Overview of relevant bylaws regarding solid waste & wildlife attractants: The Urban Bear Ordinance came into effect in 2003-4. It is the only governing document that addresses wildlife attractant management for CBJ. It states that:

(1) "Bear attraction nuisance" means

(A) More than one-half gallon of any putrescible material, including packaging or other surfaces to which the material is adhered;

(B) Any organic material of a type which has previously attracted a bear to the property;

(C) Soiled disposable diapers;

(D) Exceptions. "Bear attraction nuisance" does not include: i. Material in a certificated landfill; ii. Manure or sewage; iii. Material in a garbage can stored outside temporarily for purposes of collection after 4:00 a.m. on a day scheduled for collection; iv. Living or dead flora or fauna indigenous to the property on which it is located; v. Material completely enclosed in a structure or container which requires hands or tools to open; vi. Material in a metal garbage container designed to be lifted and emptied by a garbage truck, provided that the container is tightly covered by a bear-resistant metal lid fastened with a bear-resistant device or located within a garbage containment area behind barriers approved by the City and Borough as sufficient to withstand entry by a bear.

Bylaws on bear-resistant garbage containers:

(2) "Garbage can" means a watertight, odor-free, corrosion-resistant container inscribed with the address of its owner and equipped with a tight-fitting cover secured so as to remain in place if the can is knocked over.

Bylaws on where garbage containers may be stored:

Section 3 (b) Storage of Garbage.

(1) Except as provided in this section, no owner or person in charge of property shall willfully or negligently cause or allow the storage of garbage on that property or any right of way adjacent thereto, except in: a. A fully enclosed structure subject to the setback requirements of Title 49 of this code; b. A garbage can owned and emptied daily by a government agency; c. A bear-resistant structure or container; or d. A certificated landfill.

Time when waste carts can be put out for collection:

(2) Notwithstanding subsection (b)(1) of this section, garbage may be stored outside in a garbage can meeting only the requirements of subsection (c) of this section, temporarily for purposes of collection after 4:00 a.m. on a day scheduled for collection.

Bylaws on other wildlife attractants: None

3. Enforcement & compliance

Overview of enforcement & compliance efforts: The Urban Bear Ordinance is enforced, for the most part, by a Community Services Officer (CSO) employed by the CBJ. The CSO is responsible for other ordinances and is stretched to prioritize bear attractant calls. Alaska Department of Fish & Wildlife occasionally partners with the CSO to go door to door to proactively educate residents about the ordinance and attractant management and reduce pressure on CSO's.

Bylaw penalties regarding wildlife attractants:

(3) Violation of subsection (b) of this section is an infraction. a. Whenever a garbage can is found in violation of any of the restrictions imposed by this subsection (b), the officer finding it may note the address and any other information upon or within the garbage can which may identify the owner or person in charge of the property using the garbage can, and shall conspicuously affix to such property a summons and complaint for the owner or person to answer to the charge in court at a specified time. b. It shall be no defense for the owner of property to a charge under subsection (b) of this section that the property was in the possession or control of another, unless it can be shown to the satisfaction of the court that at such time such property was being used without the consent of the owner. It shall be a defense for the owner of property to a charge of a failure to appear if it is shown to the court's satisfaction that the owner was not aware of the citation.

(1) "Bear attraction nuisance" means (A) More than one-half gallon of any putrescible material, including packaging or other surfaces to which the material is adhered; (B) Any organic material of a type which has previously attracted a bear to the property; (C) Soiled disposable diapers; (D) Exceptions. "Bear attraction nuisance" does not include: i. Material in a certificated landfill; ii. Manure or sewage; iii. Material in a garbage can stored outside temporarily for purposes of collection after 4:00 a.m. on a day scheduled for collection; iv. Living or dead flora or fauna indigenous to the property on which it is located; Ord. 2004-11 v. Material completely enclosed in a structure or container which requires hands or tools to open; vi. Material in a metal garbage container designed to be lifted and emptied by a garbage truck, provided that the container is tightly covered by a bear-resistant metal lid fastened with a bear-resistant device or located within a garbage containment area behind barriers approved by the City and Borough as sufficient to withstand entry by a bear.

Bear attractant nuisance: \$50

2nd within 2 years: \$100

3rd + within 2 years: \$300

Number of bylaw complaints, investigations and charges per year: Juneau Police Department makes a weekly list of bear calls available on the CBJ website, however, the listing does not include outcomes and detailed information about # investigations and charges for recent years was not available at the time of this scan.

2017 - ADFW received 601 calls about human-bear conflict, mostly related to garbage. 3 were destroyed, 3 relocated, 2 killed in defence of life/property. ADFW has responsibility for bear management and refers calls related to Urban Bear Ordinance violations to the CBJ's Community Services Officer.

Workload for bylaw officers related to human-wildlife conflicts: Depends on the years. Police department processes many of the complaints that come in. CBJ has one enforcement officer on staff. Number of calls fluctuates according to availability of natural and non-natural attractants, reproductive success of bears the previous years and many other factors. Workload cannot be anticipated year to year.

Were there bylaws related to human-wildlife conflicts that didn't work or had to be changed?

None identified.

Are there weaknesses in the present bylaws that could (should) be changed?

The ordinance does not specify what kind of bear proof bin should be used or require that a certified bear resistant product is used. It does not require a bear resistant can if the property owner is locking their garbage can in a shed. There is low compliance on the use of sheds for garbage storage and, therefore, still a high incidence of available garbage on properties.

The ADFW reports that there is an increasing number Juneau residents raising urban chickens. The Urban Bear Ordinance does not address 'other wildlife attractants' and chicken coops have become a popular source of calories for bears in the area. The ordinance could be improved to include mandatory electric fencing and other measures to secure chicken coops, feed and associated attractants.

What is the level of coordination or cooperation with other levels of government in attempts to reduce wildlife attractants?

Varies from year to year. Alaska Department of Fish & Game technically responds to calls about bears and refers attractant issues to Community Service Officers and Juneau Police Department. Collaboration with the CBJ is minimal.

Did citizens raise particular complaints when new bylaws affecting wildlife attractants were introduced?

None reported.

4. Public education

Who drives bear smart initiative? Alaska Department of Fish & Game.

ADFG works with partners to develop educational materials, including bear aware programs for schools. More info here: <http://www.adfg.alaska.gov/index.cfm?adfg=livingwithbears.akbears>

What role did your municipality play in distributing bear safe information?

Information on city website: <https://beta.juneau.org/manager/bear-information>

- Living with bears: how to avoid conflict: https://cdn.juneau.org/wp-content/uploads/2017/03/2008_living_w_bears_final.pdf

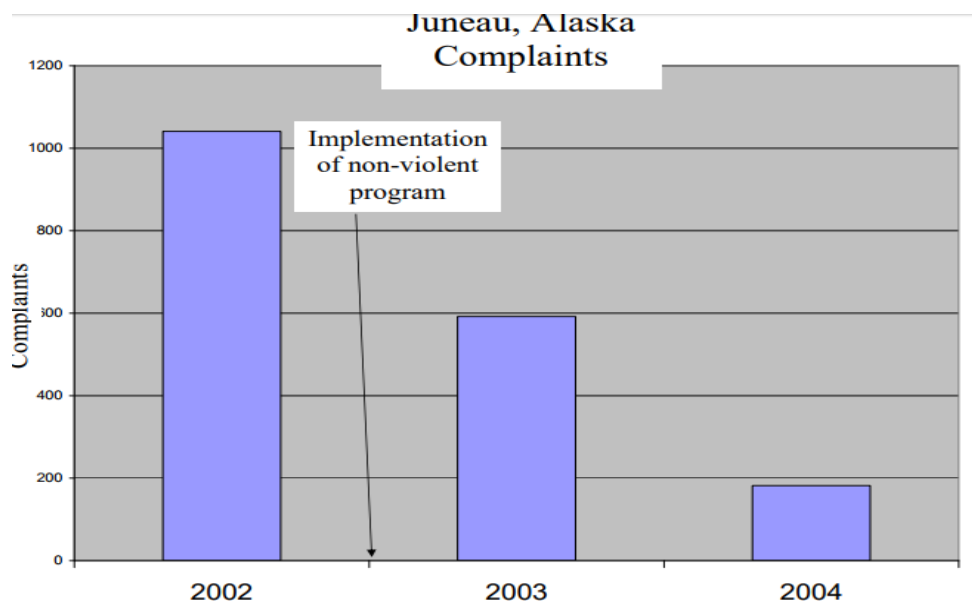
- Tips on how to keep garbage away from bears: https://cdn.juneau.org/wp-content/uploads/2017/03/living_in_bear_country_color.pdf
- More tips: https://cdn.juneau.org/wp-content/uploads/2017/03/CBJ_garbage_storing_tips1.pdf
- Weekly bear incident report from Juneau Police Department posted on website

Were there any particular public education messages or campaigns that seemed ineffective?

None reported but acknowledgement from Carl Koch and others that education will not work to reduce conflict without support from enforcement.

What are the characteristics of public education messages or campaigns that seemed effective?

Juneau introduced a non-violent (education + enforcement) program in 2002. The following years saw a significant reduction in calls to RCMP about human-bear conflict. The following is taken from E. Tavss' report (see references)



Are the educational efforts aimed at gaining compliance with bylaws (top down approach) or changing human attitudes towards bears and reducing conflict (bottom up approach)?

Both, mostly bottom-up.

5. Performance metrics

Were any indicators used to track changes (progress) over time?

No. Jessy Coltrane of the Alaska Dept. of Fish & Game has struggled with measures of success for human-bear conflict prevention. Thousands of calls regarding human-bear conflicts come to her office every summer. Coltrane does not believe that wildlife call data are valid measure of bear conflict rates. The proliferation of cell phones in part probably accounts for recent increases. A valid quantitative relationship between the number of calls and the actual rate of human-bear conflicts remains elusive.

Were metrics defined before changes were made and if they were, how often are they updated or applied? (i.e. has anyone come up with a useful and reliable way to attribute changes in behavior to the changes made by municipalities?)

No

Appendix A

Non-bear resistant trash can:



Bear resistant trash cans (if used properly):



Rollins Machinery – type clip system



“Home-made” system, encloses all edges of the lid to prevent access by bear claws, clip latches on lid.



BearSaver



Kodiak can

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Mordo-Baruch, S. et al. (2011). The carrot or the stick? Evaluation of education and enforcement as management tools for human-wildlife conflicts. PLoS ONE 6(1): e15681.
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