

Appendix 8: Recommendations For Mitigating Bear-Human Conflicts.

I am providing general and specific recommendations for addressing bear-human conflict issues in each of the 18 major Yukon Territory communities and the hamlet of Elsa. Recommendations are based on a combination of the results of my black and grizzly bear-human interaction models, best available practices discussed in the “Bear Smart” literature, suggestions by interviewees and my own suggestions derived from researching available resources and regulatory mechanisms for each community. The first section provides some general recommendations, the second section discusses recommendations that are similar among communities and the third section discusses recommendations specific to a particular community. Recommendations are aimed at a number of sectors: urban residents, rural residents, commercial, land-use planning councils, the department of community services, the department of highways, the department of energy, mines and resources, the department of agriculture, the department of environment and the Yukon government. Recommendations are aimed at increasing human tolerance of bears and reducing the frequency of bear-human interactions with the underlying goal of reducing the number of human-caused bear mortalities and the number of bear related human injuries and human mortalities.

GENERAL RECOMMENDATIONS

Both black and grizzly bear-human interactions were influenced by anthropogenic features during both foraging seasons (hypophagia and hyperphagia). Roads are associated with valley bottoms and clearcuts, features that bears use for traveling and foraging (Roever et al. 2010). Anthropogenic linear features act as ecological traps because they attract bears with food rewards, but have a high risk of mortality because of high human use (Nielsen 2005). Benn and Herrero (2002) found that 85% of bear mortalities occurred within 500 meters of roads or settlements or within 200 meters of trails; similarly, the majority of both black and grizzly bear-human interactions in this study

occurred within the same proximity of anthropogenic features. Therefore, managers need to consider planning and developing roadways and human settlements in ways that minimize both direct and indirect human impacts on bears. Bear conscious roadway planning, namely planning for development of roadways in habitat of lower quality to bears and developing these roadways in a more bear friendly manner, could reduce the frequency of bear-human interactions and, in turn, reduce the numbers of bear mortalities. In addition, managers must avoid planting attractive non-native vegetation such as clover along roadways. These steps will reduce the attractiveness of roadsides by depleting available roadside vegetation sought after by bears. With proper roadside maintenance bears should frequent roadsides less, decreasing the frequency of bear-human interactions and consequently, decreasing bear mortality.

Managers should continue with more regular maintenance of roadside vegetation, especially near human communities. More specifically, managers should consider planting *Hedysarum boreale* in place of *H. alpinum* along Yukon roadsides. Yukon botanist Bruce Bennett (2003) suggests grizzly bears avoid *H. boreale* in favor of *H. alpinum*. *H. alpinum* is a primary food source of Yukon grizzly bears; therefore, reducing the availability of this food source will reduce the attractiveness of Yukon roadsides to grizzly bears and may vastly reduce the frequency of grizzly bear-human interactions along roadways. A recent study examining the effects of sweet clover removal on these two species of *Hedysarum* found *H. boreale* to be more resilient than *H. alpinum* (Spellman and Wurtz 2011); therefore, I would assume that *H. boreale* would dominate over *H. alpinum* in disturbed habitat conditions that is typified by Yukon anthropogenic features.

With the aid of managers, development of human infrastructure should be restricted in ecologically important bear habitat. Stricter regulations will ensure that bears have available to them high quality habitat unaltered by humans where food patterns are predictable. Managers should be conscious of interconnecting key habitats across the Yukon landscape to minimize energy expenditure by

bears in their travels. Roads fragment habitat, cause bears to underutilize key food sources and increase bear mortality (Schneider 2004); therefore, roads developed for temporary use should be constructed in a more ecologically friendly manner and should be deactivated following disuse. Re-contouring and replanting of roads will help remove the linear corridors created by access routes (Stadt 2001) and minimize the impact they have on bear distribution.

Managers need to seriously consider the impacts of human development along water bodies because water bodies function as travel routes for bears and offer highly productive berry habitat important during hyperphagia. Underbrush should be removed and trees should be thinned in human occupied areas along water bodies to reduce the attractive quality of these areas to bears by reducing the availability of vegetative cover and forage. Vegetative cover should also be reduced in and around communities, including along roadways near human occupied areas, to further reduce the frequency of bear-human interactions and human-caused bear mortality. Long-term planning must be incorporated into management plans to ensure critically important habitat areas, such as riparian areas, are secured from human development to ensure sufficient habitat is available to support bear populations.

Managers should also address the importance of higher elevation habitats to grizzly bears in future management plans. Managers should advise backcountry enthusiasts against using hiking trails leading up into alpine habitat, especially during crepuscular times of the day when grizzlies are most active, to reduce the potential for grizzly bear-human interaction. In addition, seasonal closures should be implemented in key habitat areas according to their use by grizzly bears. Human use restrictions may be most important during late hypophagia when Yukon grizzlies appear to use higher elevation habitat more frequently.

In addition to land use planning and development, managers should implement aversive conditioning programs in Yukon communities to increase the wariness of bears. Most managers consider wariness of bears a desirable trait (Mattson 1993). Bears that are habituated to humans tend to use habitats nearer

to roads, trails and human developments (Jope, 1985; McLellan & Shackleton, 1989; Olson et al. 1990), which predisposes them to a greater chance of bear-human interaction and human caused mortality (Benn and Herrero 2002). Honeyman (2008) and Mazur (2010) found aversive conditioning successful in increasing the wariness of bears around humans. For aversive conditioning to be effective non-natural attractants must be inaccessible. Managing human storage of non-natural attractants and human influence on habituating bears and encouraging problem bear behavior should complement aversive conditioning. As for natural attractants, with aversive conditioning in place bears will likely find the costs to outweigh the benefits of acquiring food within or near human communities; consequently, bears will likely forage elsewhere. Nevertheless, during dire years bears may still forage along travel routes and other areas near human communities, but may do so outside of prime hours of human activity. Therefore, managers should implement scarification practices in highly productive vegetated areas along human anthropogenic features, and other areas in or near human communities, because scarification eliminates most berry-producing shrubs for several decades (Minore et al. 1979; Zager 1980; Martin 1983).

Wildlife managers should research the impacts of current FireSmart practices on bears and bear-human interactions. FireSmart practices appear to attract bears closer to human communities and increase the potential for bear-human interaction by creating conditions similar to natural wildfires, thereby promoting the growth of early successional vegetative species that are favored forage of both black and grizzly bears. Therefore, researching the effects of FireSmart practices will lead to innovative FireSmart practices that are less attractive to bears. One option may be to apply relatively inexpensive non-selective natural herbicides to underbrush, such as vinegar. Alternatively, more selective systemic herbicides that target the roots of plants could also be used. Finale (glufosinate-ammonium) is a type of selective systemic herbicide that may achieve greater success in the long-term. Therefore, thinning of trees and removal of underbrush that occurs in FireSmart programs should be combined

with these other protocols, or should be modified in ways that reduce the attractiveness of habitat in and near human communities to bears.

While minimizing vegetative availability within human communities, managers should enhance the natural habitat in remote areas surrounding human developments to further reduce bear-human interaction potential in human communities. Managers could create patches of habitat productive in natural vegetation by harvesting timber in key areas to complement other recommended actions. Timber should be harvested in moist-to-wet sites, because it is more productive in bear food (Minore et al. 1979; Zager 1980; Bratkovich 1986; Hillis 1986), and in early successional vegetative communities because it would closely replicate the productive vegetative communities created by natural wildfires (Martin 1983, Zager et al. 1983). Thinning of trees on wetter sites would further promote the growth of bear favored vegetation (Pelton 1979, Alaback 1984, Urness 1985, Young and Beecham 1986) and create variable canopy openings that favor the growth of different vegetative species. To further enhance habitat managers could also plant native berry plants and other vegetative species. Managers should promote vegetative productivity in higher and lower elevation habitat. Higher elevation habitat would accommodate grizzly bear foraging during hypophagia; lower elevation habitat would accommodate grizzly bear foraging during hyperphagia and black bear foraging during both seasons. Sites should be well spaced out to accommodate a variety of bears foraging without getting into conflict with other bears, should consider the availability of nearby water sources and should be a sufficient distance away from recreational use and residential areas (Get Bear Smart Society 2011).

RECOMMENDATIONS SIMILAR AMONG YUKON COMMUNITIES

Urban Residents

- ◆ All residents should store garbage inside secure buildings or in bear-resistant containers until immediately before time of pick-up or transfer to the landfill (Get Bear Smart Society n.d.). Garbage cans should be

- regularly washed with bleach (personal communications 2008). Garbage pick-up should be more frequent for residents with garbage pick-up, especially later in the season; residents without garbage pick-up should make more frequent trips to the landfill (personal communications 2007; 2008). Residents that transport their own garbage should ensure it is properly secured in the back of trucks en route to the dump (personal communications 2007; 2008). Residents should store recycling in a similar manner so it is inaccessible to bears (personal communications 2008). Stricter enforcement is needed to ensure compliance with proper waste handling techniques (personal communications 2008).
- ◆ Pet food should be stored inside secure buildings or in bear-resistant containers (personal communications 2007; 2008). Pets should be fed indoors (Get Bear Smart Society n.d.); if pets are fed outside any remaining food, including animal bones and meat scraps along with food bowls, should be removed immediately after feeding (personal communications 2007; 2008).
 - ◆ Birdfeeders should be avoided during bear season (Get Bear Smart Society n.d.). Those persistent on using birdfeeders during bear season should hang birdfeeders well out of reach or should bear-proof their birdfeeders (Get Bear Smart Society n.d.). Any uneaten food and seed hulls tossed out by birds should be regularly cleaned up (personal communications 2008). Alternatively, higher quality birdseed without millet or chips of sunflower seed should be used because they leave nothing under the feeder (Get Bear Smart Society n.d.).
 - ◆ BBQ's should be thoroughly cleaned after each use, including grease trays and drip cans, and should be stored out of reach from bears (Get Bear Smart Society n.d.). Ceramic bricks should be used in place of lava rocks because they are easier to clean (Get Bear Smart Society n.d.).
 - ◆ Freezers and fridges should be kept indoors (Get Bear Smart Society n.d.). If freezers and fridges are kept outdoors they should be secured with a hefty lock and regularly cleaned to reduce buildup of odors (personal

- communications 2008); however, indoor storage is highly recommended (Get Bear Smart Society n.d.).
- ◆ Animal carcasses and animal parts should be discarded into a designated pit 8–10 ft deep and buried or incinerated at the landfill to reduce odors (Get Bear Smart Society n.d.).
 - ◆ Communities with a large proportion of the population drying and / or smoking meat should consider developing a community meat cache with separate chambers that allow residents access to individual caches (personal communication 2007). The community cache should be placed in a convenient location and surrounded by an electric fence (personal communication 2007). An extensive education program should preview use of the community cache and educational sessions should be held to advise residents about proper drying and smoking techniques (personal communications 2007; 2008). Residents in less populated communities, or in communities where a small proportion of the population use traditional meat processing techniques, should adopt inexpensive portable electric fences to surround meat while drying and smokers while in use at their own residences (personal communication 2007). High caches are preferable for fermenting meat (personal communications 2007; 2008).

Rural Residents

- ◆ Cabin users should store all garbage and food waste in bear-resistant containers until it can be properly disposed of (personal communications 2007; 2008). Any remnant meat scraps from animal carcasses should be immediately discarded in the bush at least 2 km away from other cabins and trails (personal communications 2008). Fish guts should be discarded into the water at time of catch to minimize accumulation of food waste (personal communications 2007; 2008). All combustible and odorous food waste should be incinerated as soon as possible in an acceptable incinerator or transferred to a designated waste facility to avoid attracting bears to the site (personal communications 2007; 2008). Incinerators

should either be forced air or fuel fired to ensure waste is completely burned (personal communications 2007; 2008). All non-combustible waste should be stored in bear-proof containers and regularly removed to prevent attracting bears to the site (personal communications 2007; 2008). Inexpensive electric fences should be used to prevent access to any meat or fish hanging and any other available attractants such as petroleum products (personal communications 2008). High caches are preferable for fermenting meat (personal communications 2007; 2008). Cabins should use one or a combination of property protection devices available such as unwelcome door / window mats, scarecrows, motion sensitive noise and visual deterrents and stimulus deterrents that teach bears to avoid non-natural attractants and specific areas (Get Bear Smart Society n.d.). Devices should be changed from time to time to prevent bears from acclimatizing to such deterrents (Get Bear Smart Society n.d.). Mothballs or bowls of ammonia could also be placed outside of windows and doors to help dissuade bears (personal communications 2007; 2008). Cabinet doors and drawers should be left open when cabins are not in use to reduce lingering food odors (personal communication 2008). Cabin users should use odor reducers, such as charcoal filters, in ventilation systems and should regularly clean ducts and hoods (personal communications 2007; 2008). At the end of the season, attractants should be removed, cabins should be thoroughly sanitized to minimize lingering odors, windows should be boarded up and doors should be properly secured (personal communications 2008). Reverse swing doors should be installed to complicate bear access to cabins (personal communication 2008). Lime should be applied to outhouses to reduce odors (personal communication 2008).

- ◆ Fish camps should follow similar practices as other residents for properly handling garbage, food waste, pet food and other attractants (personal communications 2007; 2008). Fish drying and smoking should be confined to caches surrounded by portable electrified fencing units (personal

communications 2008). High caches are recommended (personal communications 2007; 2008).

Commercial

- ◆ Bear-resistant garbage containers should be used at all local businesses including restaurants, gas stations, tourist facilities, campgrounds, RV Parks, etc., for temporarily storing garbage, food waste and recycling before it is transferred to the landfill (Get Bear Smart Society n.d.; personal communications 2007; 2008). Food handling facilities should make frequent trips to the landfill to prevent garbage from overflowing (personal communications 2007; 2008). Local restaurants should implement an odor reducer, such as charcoal filters, in ventilation systems and should regularly clean ducts and hoods (personal communications 2007; 2008).
- ◆ Community campgrounds should implement food storage lockers (personal communications 2007; 2008).
- ◆ Natural food sources that are attractive to bears should be removed from all human use areas, with special emphasis on campgrounds, RV parks and golf courses (personal communications 2008).

Land Use Planning Council

- ◆ Further transmission line development should follow thorough land assessments to reduce infringement on high quality bear habitat (personal communications 2007; 2008). Attractive forage should be removed from current transmission line trails (personal communications 2007; 2008).

Department of Community Services

- ◆ All community schools, parks, trails and other community recreational areas, should implement bear-resistant garbage containers (personal communications 2007; 2008). Garbage containers should be regularly

- emptied, to prevent waste from overflowing, and regularly maintained to ensure proper functioning (personal communications 2007; 2008).
- ◆ A secondary battery, voltage meter and hit indicator should be incorporated into the electric fence system at all community landfills (personal communications 2008). The fence should be regularly checked so that damage or malfunctioning can be remedied immediately (personal communications 2008). Garbage trucks transferring waste to the landfill should ensure that waste is adequately secured (personal communications 2007; 2008).
 - ◆ Communities should initiate composting programs at their local landfills to cut down on the number of available attractants (personal communications 2007; 2008). Until funding is unavailable, those who choose to compost should choose a location away from both their house and bear travel routes (Get Bear Smart Society n.d.). Individuals should mix with lime and brown material and turn regularly to help reduce odors (Get Bear Smart Society n.d.). Meat, fish, oil, grease and dairy products should not be composted (Get Bear Smart Society n.d.). Electric fencing is advised to ensure bears cannot access composted material (personal communications 2008). Alternatively, residents could construct bear-proof composts or use inexpensive indoor worm composters (Get Bear Smart Society n.d.).
 - ◆ Natural food sources that are attractive to bears should be removed from all human use areas including campgrounds owned and operated by the community (personal communications 2008). Community services should identify any poorly managed green spaces that are not the responsibility of the community services division and issue warnings to those responsible for care-taking the property. Community services should carry out maintenance work at the owner's expense for those who fail to meet green space maintenance standards following a warning.

Department of Highways

- ◆ Roadways should be seeded with vegetation unattractive to bears (personal communications 2007; 2008).
- ◆ Bear-proof garbage containers in government campgrounds, highway camps and along highways should be more frequently emptied and maintained to ensure proper functioning (personal communications 2007; 2008).

Department of Energy, Mines and Resources

- ◆ Mining camps should store all combustible and odorous food waste in bear-resistant containers until it can be hauled to a designated waste facility or properly incinerated (personal communications 2007; 2008). Incinerators should be forced air or fuel fired to ensure waste is completely burned (personal communications 2007; 2008). Homemade incinerators should have good ventilation, use mesh to support garbage and use slow burning accelerants such as diesel fuel (personal communications 2007). All petroleum products, biodiesel and other vegetable-based fuels and lubricants should be stored in sealed and locked containers or surrounded by a portable electric fence (personal communications 2008). Incinerator residue should be buried in a designated pit or more preferably removed from the site whenever feasible (personal communications 2007; 2008). All non-combustible waste should be back-hauled to a waste facility as frequently as feasibly possible with no waste left behind at the point of seasonal shut down (personal communications 2007; 2008). No odorous or visible garbage and / or food waste should be left inside vehicles (personal communications 2007; 2008). More remote camps should consider installing an electric fence around the entire site (personal communications 2007; 2008). Early consideration should be given to the development and planning of mining camps, including the overall layout (personal communications 2007; 2008).

Department of Agriculture

- ◆ Agriculture and livestock operations should use electric fencing whenever practical (personal communications 2006; 2007; 2008). Gardeners should use electrified fencing and agriculturalists should use a combination of scarecrows, visual and / or noise deterrents (Get Bear Smart Society n.d.). Food for livestock should be stored in bear-resistant containers and / or surrounded by electrified fencing (Get Bear Smart Society n.d.). Agriculturalists should avoid using fish fertilizers and other attractive chemicals (Get Bear Smart Society n.d.; personal communications 2007; 2008). Agriculturalists should avoid planting oats and root vegetables such as potatoes that are attractive to bears (Get Bear Smart Society n.d.; personal communications 2007; 2008). Vegetables should be regularly harvested as they ripen (Get Bear Smart Society n.d.). Further agriculture development proposals should undergo more thorough assessments and should be restricted in important bear habitat areas (personal communications 2008).

Department of Environment

- ◆ A multi-tiered educational program should be implemented that is directed at all age classes and professions (personal communications 2007; 2008). Residents and transients should be educated through informational sessions, pamphlets, posters and signage (personal communications 2007; 2008). Information should address bear ecology and behavior, what constitutes an attractant, proper waste and attractant management techniques, including the purpose and benefit of proactive measures, and recommended actions to take during a bear encounter (personal communications 2007; 2008). Educational materials should specifically address proper fish and animal carcass handling techniques, including their storage, smoking and drying (personal communications 2008). Signs should be placed nearby bear-proof garbage containers located in

campgrounds and other fishing areas that advise residents and tourists about proper fish gut disposal into moving water (personal communications 2008). Emphasis should also be placed on the reasons for the electrification of community landfills (personal communications 2008). Annual informational sessions should be held regarding the proper use of bear deterrents, especially for those employed out on the land (personal communications 2007; 2008). Warning signage should be placed along highways discouraging dumping of RV septic tanks and at campgrounds / RV Parks advising it is an offense to feed dangerous wildlife (personal communications 2007; 2008). Trail users should be advised against using trails early morning and late afternoon when bear use is greatest (personal communications 2008). Information should be provided in multiple languages including German (personal communications 2008).

- ◆ Hydro employees, miners, forestry workers and others working in bear country should be properly trained on how to avoid and deal with bears (personal communications 2007; 2008). Employees should both carry and should be trained in how to use bear deterrents such as bear spray (personal communications 2007; 2008).
- ◆ Campers should be advised to store food in airtight containers or inside odor proof bags in locations that they are out of sight (Get Bear Smart Society n.d.). Any other odorous items should be stored in a similar fashion (Get Bear Smart Society n.d.). Campers should also be advised to gut fish and dispose of guts in the water at time of catch before bringing fish back to the campground (personal communications 2007; 2008).
- ◆ Hunters should be further educated in regards to proper food and waste management (personal communications 2007; 2008). CO's should educate fisherpersons to throw fish scraps in the water at the time of catch and hunters to dispose of animal entrails in areas far from human settled areas and human use trails when fisherpersons and hunters are issued their licenses (personal communications 2007; 2008). Hunters and

fisherpersons should also be advised by CO's to not be so quick to give up their kills and should use any available deterrent to dissuade bears from stealing their kills so this action does not become a learned trend (personal communications 2007; 2008). CO's should also advise hunters to hunt in pairs so that one person can keep a lookout and be prepared to deter a bear before it gets too close (personal communications 2008). Greater enforcement is needed on the land to ensure that hunters and fisherpersons pack out all of what they pack in and that they follow all other regulations (personal communications 2008). CO's should be less lenient and issue stiff penalties for acts of disobedience.

- ◆ Guides should have appropriate levels of skill and experience in the activity being conducted (personal communications 2007; 2008). Guides should be required to complete annual training courses and should be more strictly regulated and assessed from time to time by a CO to ensure proper conduct (personal communication 2007; 2008).
- ◆ CO's should issue fines to residents and transients who fail to properly secure attractants after they receive a single warning (personal communications 2008).
- ◆ CO's should warn residents through up to date signs when a bear is regularly frequenting an area (personal communications 2007; 2008). Signs should be dated and removed immediately after the issue is resolved (personal communications 2007; 2008).

Yukon Government

- ◆ Greater law enforcement is needed to ensure residents do not use community and highway bear-proof garbage cans for discarding household waste (personal communications 2007; 2008).
- ◆ Greater law enforcement is needed to monitor littering along Yukon highways and in hunting areas where hunters are repetitively careless in leaving behind attractants other than animal scraps (personal communications 2007).

- ◆ Hunters should be restricted from hunting within 2 km of residences and within 200 meters of roadways (personal communications 2008).
- ◆ People caught feeding dangerous wildlife should be penalized, with penalties increasing upon successive acts of disobedience (personal communications 2007; 2008). People should also be restricted from feeding ravens and other animals since non-natural attractants are often left behind that attract bears (personal communications 2007). Greater authoritative presence is needed on the land to enforce penalties for non-compliance with the Yukon Wildlife Act where individuals encourage a bear to become a public nuisance (personal communications 2007; 2008).

RECOMMENDATIONS SPECIFIC TO A PARTICULAR COMMUNITY

RECOMMENDATIONS FOR BEAVER CREEK:

Municipal – City Works

- ◆ A local maintenance employee should be appointed to the landfill to ensure speedy repair (personal communications 2007). The landfill's electric fencing should be turned on earlier in the season (personal communications 2007). More regular vegetative clearing is recommended around the landfill's electric fence to prevent shorting (personal communications 2007).
- ◆ Vegetation should be cleared up to 50 m from the edge of the highway along the stretch of highway passing through the community. Where feasible, vegetation should also be cleared up to 50 m from the back of residences, especially at the northern end of community

RECOMMENDATIONS FOR BURWASH LANDING:

Urban Residents

- ◆ The community meat cache should be relocated to a more convenient location situated closer to community residences (personal communications 2007; 2008).
- ◆ Residents should more frequently check fishnets placed along the Kluane shore (personal communications 2008). Boats used for fishing and hunting should be kept clean of blood and both fish and animal scraps (personal communications 2008).

Department of Community Services

- ◆ An electric fence should be installed around the local metal dump (personal communications 2008).
- ◆ A full-time attendant should be employed at the Burwash Landing / Destruction Bay landfill and landfill hours of operation should be restricted to better manage incoming waste (personal communications 2008).

Department of Environment

- ◆ A shared, permanent CO should be appointed to the communities of Burwash Landing and Destruction Bay (personal communications 2008).

RECOMMENDATIONS FOR CARCROSS:

Urban Residents

- ◆ Fishnets placed along the shore should be checked more frequently (personal communications 2008).

Department of Community Services

- ◆ Vegetation should be cleared up to 50 m from the back of residences located in the subdivision across from the train tracks.

- ◆ Trees should be thinned and underbrush removed along bike and horse trails to improve visibility (personal communications 2008).
- ◆ Further development should be restricted at the beginning of the Choutla Subdivision near the salmon spawning stream (personal communications 2008). Bear aware signs should be posted here (personal communications 2008).
- ◆ Further development should be restricted at the eastern end of Nares Lake, which is thought to be important habitat to bears (personal communications 2008).

RECOMMENDATIONS FOR CARMACKS:

Department of Community Services

- ◆ A waste attendant should be assigned to regularly empty the bear-proof container located in the First Nation campground / boat launch area (personal communications 2007).
- ◆ High-bush cranberry bushes should be removed from behind the post office / heliport (personal communications 2007; 2008). The local ridge trail should be assessed to see how bear-human interactions could be reduced (personal communications 2007). Where feasible, vegetation should be cleared up to 50 m from the back of residences.

Department of Environment

- ◆ A permanent local CO should be appointed to Carmacks (personal communications 2007; 2008). Local authorities should meet to discuss how responsibilities of bear-human conflict management are delegated (personal communications 2007).

RECOMMENDATIONS FOR DAWSON:

Department of Community Services

- ◆ Trees should be thinned and underbrush removed along the Crocus Bluff and Moosehide trail systems (personal communications 2007; 2008).
- ◆ Vegetation should be cleared up to 50 m from the back of residences located in the Dome Subdivision.
- ◆ Further development should be restricted in the Dome subdivision (personal communications 2006; 2007; 2008).

RECOMMENDATIONS FOR DESTRUCTION BAY:

Department of Environment

- ◆ Residents should be encouraged to immediately report bear-human interactions of all levels to the local CO so that advice can be given earlier on and action can be taken when necessary to prevent something more serious from developing (personal communications 2008).

RECOMMENDATIONS FOR FARO:

Department of Community Services

- ◆ The Faro community landfill should install a wider and longer cattle guard, or perhaps a winged cattle guard, to make it more difficult for bears to access the landfill via the cattle guard entrance. Pipe ends should be capped to prevent water from collecting and shorting out the system. Managers should consider constructing a small cover above the cattle guard or redesigning the shape of pipes to reduce water build up if problems persist with shorting of the cattle guard or lowering of voltage by water accumulation on pipes. Garbage should be regularly cleared from around the fence, especially around the cattle guard, to prevent shorts from occurring (personal communications 2008).

Department of Environment

- ◆ Better communication is needed between CO's, DCO's and community members so that issues can be addressed swiftly and adequately when the CO is unavailable (personal communications 2008).

Yukon Government

- ◆ The Drury Creek Landfill should be thoroughly assessed for needed improvements. The landfill should be checked regularly to ensure proper functioning and needed repairs are promptly made (personal communications 2008). The landfill should consider using a secondary battery, a voltage meter and a hit indicator (personal communication 2008). Managers may want to consider moving the landfill to another location (personal communication 2008).

RECOMMENDATIONS FOR HAINES JUNCTION:

Rural Residents

- ◆ The Champagne Landfill should implement an electric fence (personal communications 2007; 2008).

Department of Community Services

- ◆ The landfill should implement a new compactor that better compacts residential waste (personal communications 2007; 2008).
- ◆ Vegetation should be cleared up to 50 m from the back of residences where feasible, with special attention paid to the Willow Acres and Bearberry subdivisions. Additional tree thinning and underbrush removal is recommended for the Dezadeash River Trail, the trail behind the visitor centre, along the highway within the community and around the community school.

RECOMMENDATIONS FOR MAYO:

Department of Highways

- ◆ Bear-proof garbage containers in the Mayo Lake Dam Campground should be more regularly emptied and maintained (personal communications 2008).

RECOMMENDATIONS FOR OLD CROW:

Urban Residents

- ◆ Bear-resistant garbage containers could be shared by residents to help cut down on residential costs (personal communications 2008).

Department of Community Services

- ◆ Old Crow should appoint a permanent attendant to the community landfill (personal communications 2007; 2008). The landfill should have designated hours to ensure proper waste management (personal communications 2007; 2008). The landfill should be closely monitored to dissuade vandalism (personal communications 2007; 2008).

Department of Environment

- ◆ Old Crow should appoint a full-time CO, or an equivalent well-trained deputy CO, to ensure problems are dealt with in a timely manner (personal communications 2008).

RECOMMENDATIONS FOR PELLY CROSSING:

Municipal – City Works

- ◆ An attendant should be employed at the landfill with set hours open to the public to better manage incoming waste (personal communications 2008).

RECOMMENDATIONS FOR ROSS RIVER:

Yukon Government

- ◆ Better communication is needed among different government agencies (personal communications 2008). Meetings should be held when one or both of the First Nations Government and Yukon Government feels it is necessary to resolve pending issues (personal communications 2008).

RECOMMENDATIONS FOR STEWART CROSSING:

Yukon Government

- ◆ People fishing at Ethel Lake should properly dispose of fish guts in the water at the time of catch (personal communications 2008). Fish guts should be tossed as far off the shore as possible in designated fishing areas away from the campground and cabins (personal communications 2008).
- ◆ Ethel Lake garbage containers should be emptied regularly to ensure garbage does not accumulate (personal communications 2008). Garbage cans should be emptied more frequently on busy weekends (personal communications 2008).

RECOMMENDATIONS FOR TAGISH:

Municipal – City Works

- ◆ Vegetation should be cleared up to 50 m from the back of residences where feasible.

RECOMMENDATIONS FOR TESLIN:

Urban Residents

- ◆ All dry goods stored should be stored in secure buildings or sheds (Get Bear Smart Society n.d.). Goods stored in sheds should be placed in bear-

proof storage containers or sheds should be electrified (Get Bear Smart Society n.d.).

Department of Community Services

- ◆ The Teslin community landfill should consider installing a wider and longer cattle guard, or perhaps a winged cattle guard, to make it more difficult for bears access the landfill via the cattle guard entrance. Pipe ends should be capped to prevent water from collecting and shorting out the system. Managers should consider constructing a small cover above the cattle guard or redesigning the shape of pipes to reduce water build up if problems persist with shorting of the cattle guard or lowering of voltage by water accumulation on pipes. Garbage should be regularly cleared around the electric fence, especially around the cattle guard, to prevent shorts from occurring (personal communications 2008). The electric fencing at the landfill needs more grounding rods to ensure fence voltage is high enough to deter bears from entering (personal communication 2008). The fence needs to be tightened in several areas and the wires need to be spaced closer together (personal communication 2008). The entire landfill, not just the domestic garbage section, should be electrified (personal communication 2008).
- ◆ The community of Teslin should consider implementing a bear-proof garbage bin outside of the landfill for use outside of business hours (personal communications 2007; 2008).
- ◆ Non bear-proof garbage cans should be removed from Friendship Park (personal communication 2008) because bear-proof garbage cans are available here.
- ◆ The bear-proof garbage can located at the baseball diamond needs to be anchored to the ground (personal communications 2008).
- ◆ Teslin should implement a stainless steel fish-cleaning table right along the boat dock (personal communications 2007; 2008). Fishing nets set

offshore should be checked regularly (personal communications 2007; 2008).

- ◆ Vegetation should be cleared up to 50 m from the back of residences where feasible, with special attention paid to the beginning and end of Sawmill Road and throughout the Cottage Lots and airport subdivisions.

Department of Environment

- ◆ The Teslin Lake Campground should store recycling in bear-resistant containers or install an electric fence around the shred currently used to store recycling.

RECOMMENDATIONS FOR WATSON LAKE:

Rural Residents

- ◆ The Frances Lake Culture Camp should implement charcoal filters in their ventilation system and regularly clean ducts and hoods to reduce food odors (personal communications 2007). No food should be left in cabins over winter unless stored in bear-proof containers (personal communications 2007; 2008).
- ◆ Stricter enforcement is needed that restricts the use of non-designated landfills (personal communications 2007; 2008). Remaining small-scale landfill operations should be closed; all necessary landfills, such as the Simpson Creek landfill, that do not infringe upon important bear habitat should be electrified (personal communications 2007).

Department of Community Services

- ◆ All garbage and food waste should be cleaned up and properly disposed of following community or group functions (personal communications 2008).

- ◆ The entire Watson Lake landfill should be electrified in addition to the domestic residential waste pit (personal communications 2008). A landfill attendant should be assigned to better manage waste in the landfill (personal communications 2008). Security at the landfill should be increased to dissuade vandalism (personal communications 2008).
- ◆ Bear-proof garbage containers should be implemented at the Junction 37 fuel station (personal communications 2008).
- ◆ Vegetation should be cleared up to 50 m from the back of residences with emphasis on the Upper Liard Subdivision.
- ◆ Vegetative clearing is recommended for the Wye Lake Trail and Northern Firebreak.

RECOMMENDATIONS FOR WHITEHORSE:

Municipal – City Works

- ◆ Holy Family School should be fenced completely around their facility (personal communications 2007; 2008).
- ◆ Closer monitoring is needed for the Marsh Lake Landfill to deter vandalism of electric fencing (personal communications 2008).
- ◆ Whitehorse subdivisions should be brushed up to 50 m from the back of residences where feasible.
- ◆ Managers should more carefully consider the threat of bear-human interactions in further community expansion (personal communications 2008).

Commercial

- ◆ Takhini Hot Springs owners should use electric fencing around vegetable oil drums (personal communications 2008).
- ◆ Icy Waters Fish Farm should use bear-proof bins to store fish waste. The owners should consider donating fish waste to dog kennels as food or to users and / or manufacturers of biodiesel. Additional fish waste should be

incinerated immediately on site to reduce odors. Electric fencing should be used around the site to further deter bears. Vegetation should be cleared up to 50 m around Icy Waters. Icy Waters and other fish farms should securely store fish food in bear-proof containers to reduce odors and prevent access. Algae and fish droppings should be stored in bear resistant containers until properly disposed of at landfills.

- ◆ Sky High Wilderness Ranch should use bear-proof storage containers for animal parts donated by hunters and further secure containers with electric fencing.