

DISCLAIMER

Maggie Paquet, Biologist, of MAIA BioLogics, and Wayne McCrory, RPBio, of McCrory Wildlife Services Ltd., gathered the research and prepared this document with input from the Conservation Officer Service, BC Parks, local and regional governments, local residents, Valhalla Wilderness Society, and others. We have assumed that the information provided from the various sources is accurate and reliable.

The study was done according to the BC Bear Smart Community Program guidelines for a bear hazard assessment and a bear-people conflict management plan, except where additional analysis was deemed necessary.

While this report contains the best information available to provide authorities in the study area with an accurate and authoritative analysis of the subject matter, no liability is assumed with respect to the use or application of the information contained herein.

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- e. Ministry of Transportation and Infrastructure

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All photographs, unless otherwise captioned, are by Wayne McCrory or Maggie Paquet. Thanks to Kris Hopping, Norma Rodgers, Jorge Becker, Erica Mallam and Lawrence Ruskin for the use of their photos.

Maggie Paquet, Port Alberni, BC

Wayne McCrory, New Denver, BC

Cover photo: Black bear in cherry tree. Jorge Becker photo.

SPECIAL NOTE REGARDING THIS STUDY

Large Multi-Jurisdictional Study Area Different From Other Studies

All previous Bear Smart Community Program studies have been confined to local government boundaries, whether municipal, village, or within a regional district. Our Upper Slocan Valley study area is not delimited in the same way. It encompasses the entire Upper Slocan Lake watershed from Valhalla Park in the south to Summit Lake in the north, and to the surrounding watershed heights of land in all directions. These boundaries reflect black bear and grizzly bear distribution rather than political boundaries. By using this comprehensive, multi-jurisdictional approach, we felt a greater degree of success could be achieved to minimise bear-people conflicts in the region.

More precisely, our study area includes two incorporated villages, five rural unincorporated communities, other settlement areas in the Regional District of Central Kootenay (RDCK), three large provincial Class A parks, two smaller provincial park campgrounds, various trails, all other Crown lands in the area, and private resorts. The area is within the traditional territory of the Sinixt First Nation.

Fortunately, most of the large network of hiking trails and public campgrounds in the Upper Slocan Valley grizzly and black bear country have already had bear hazard studies done and mitigation measures taken. Where necessary, we have done hazard assessments to fill in.

The bear hazard study forms the basis for a proposed action plan or “bear-people conflict prevention plan” to address steps that need to be taken by the various management jurisdictions to further minimise bear-people conflicts in the Upper Slocan Valley. The plan is “proposed” because the final decisions on any actions must be made by the particular levels of government involved. For example, we identified where bear-proofing of the garbage system needs to be improved in the villages of New Denver and Silverton, but it is up to the elected councils to decide what actions to take. Although BC Parks already has a bear-people conflict prevention plan for their West Kootenay park system, we feel this agency can also make some improvements.

Rationale For Longer Study Time Frame

By the time we completed the first draft of this report late in 2008, we had already become aware of the limitations of doing low-budget, one-year Bear Smart-funded reports for other jurisdictions. One limitation was in not having the benefit of testing and monitoring some of our priority recommendations, such as the effectiveness of certain types of bear-proofing. Also, we were not sure if the standard Bear Smart recommendations for high black bear problem areas, such as the Village of New Denver, would work as well as predicted. For these reasons, we decided to allow 2-3 years for the Upper Slocan Valley Bear Smart coordinators (hired part time by the Valhalla Wilderness Society) to test some of our preliminary recommendations. During the hiatus in our reporting, considerable progress was made in public education, bear-proofing, and non-lethal training for RCMP, BC Parks rangers and others, along with implementation of some low key non-lethal bear treatments. Unfortunately, we found that this was not enough to head off the severe bear problems experienced by the village of New Denver in 2011, where at least 11 black bears were shot due to controversial control measures. This bad year occurred despite the work of the Valhalla Society’s coordinators and other volunteers putting in a large effort in the community to deal with bears and attractants, and with the local Harvest Share group picking and processing over 4,000 pounds of fruit in New Denver. However, by delaying our final report until now, we have been able to work more closely with the communities to identify gaps in the current Bear Smart program and come up with a more realistic plan to reduce bear-people conflicts and the high kill rate of black bears in New Denver.

Important Notes on Changes in BC's Bear Smart Policy and Funding Support

Since the initial Upper Slocan Valley Bear Smart program was initiated in 2006, and this study was started in 2008, the province has made changes to the policy and funding level of the Bear Smart Community Program. These changes, combined with significant cutbacks to the Conservation Officer Service (COS), have served to impair provincial support for the communities that have bought into the program.

At the outset, the Bear Smart program had committed to paying up to 50% of the costs of bear-proofing by municipalities for up to \$10,000 per year. In 2008, the Bear Smart program provided \$10,000 to the Valhalla Wilderness Society for this study, and \$9,000 in 2009 for signage at transfer stations, bear warning signs for trails, some bear-resistant residential garbage receptacles, and demonstration electric fencing materials to assist in fruit tree and livestock situations. After 2009, Bear Smart ran out of funds, including what we had hoped would be a contribution of up to \$10,000 in matching funds so the two villages could purchase much-needed bear-resistant garbage containers. We feel this greatly hindered the ability of the villages to move toward a more bear-proof waste management system. On a positive note, the Regional District of Central Kootenay (RDCK) still provides a nominal amount of funding for the Valhalla Society's Bear Smart coordinators. As well, in 2012, the provincial Bear Aware program (run through a different agency than the Bear Smart Community program) sponsored a coordinator specifically to help New Denver reduce its significant problems with black bears.

MoE Policy for non-lethal controls for Bear Smart communities now in question

For several decades, the Conservation Officer Service (COS) in the West Kootenays has responded to serious black bear complaints, especially where they perceive a threat to human safety, mostly by live-trapping bears in baited culvert traps and then shooting the bears and taking the carcasses to the landfill (even though there is evidence that the specific problem bear may not have been the one trapped and killed). Although grizzly bears are sometimes destroyed, a greater effort is made to relocate or translocate them (relocation refers to transporting a captured bear to a site within its home range; translocation means moving it to a site outside its home range). However, in the Lower Mainland, including Whistler, the COs have been doing some relocations and translocations of black bears for the past decade or more. The reason for this is that regardless of whether or not these communities had achieved full Bear Smart Community status, they were actively engaged in widespread public education activities and in reducing attractants (BCMoe 2001). The destruction of high numbers of black bears in the West Kootenays and the Slocan Valley without any relocation or translocation efforts continues to be very controversial.

One of the strong selling points for starting a Bear Smart Community program in the Upper Slocan Valley in 2006 was the provincial policy that once Bear Smart Community status had been achieved, or well on its way, the COS was committed to doing some non-lethal control of bears, including translocations. The 2001 Ministry of Environment (MoE) policy states:

Non-lethal control of bears, including short distance (<10 km) translocation, aversive conditioning, and on-site release, will only be used in communities that have been formally designated as "Bear Smart" and where a plan outlining the responses to human-bear conflicts has been prepared and approved by the ministry's Regional Director.

As a result of this policy and ongoing community bear problems, in 2006, the Valhalla Wilderness Society took the leadership role of being the umbrella organisation for a Bear Smart Community program in the region. The launch involved delivering the official Bear Smart Community powerpoint to the public in Silverton in November 2006. This was attended by over 40 people, who were largely supportive. Valhalla Society biologists also made shorter presentations to the villages of

New Denver and Silverton to explain what comprised a Bear Smart study and community program. In all of these presentations, they outlined the MoE policy of implementing non-lethal control of black bears if the communities became proactive and made enough progress to eventually achieve Bear Smart Community status. The communities were very excited about the promise of some black bears being moved out of the communities by non-lethal methods rather than being shot. Then came government cutbacks of the Conservation Officer Service, which hindered their capacity to deliver non-lethal bear control methods to communities that become Bear Smart. Nonetheless, in 2007, Wayne McCrory was able to work with several of the COs on a bear aversion program of a family of grizzly bears that had habituated to the sides of the highway at Summit Lake, with some success.

The cutbacks continued to the point that there was little time and budget for the COS to do non-lethal control activities, particularly translocation and relocation, for black bears. We found this disturbing as it contradicted Ministry policy; worse, it pulled the rug out from under communities that had bought into the program specifically so non lethal controls would be done.

Equally disturbing, this situation is contrary to a number of studies on the subject of translocation, including one done for the Ministry itself. A provincial review by Sharpe and Duffell (1995) indicated a success rate of up to 50% or more, depending on where in the province it was done, and on how much time, research, and budget was available. Many of the bears used in this assessment had been translocated before they became too problematic (Sean Sharpe pers. comm.). Another provincial study by Forbes (1995) of 283 translocated black bears suggested that a large component of the translocated population adjusted well to the wild, subsequent to release. Proctor and Neumeier (1996) found partial success in translocation efforts of black and grizzly bears in the Revelstoke area in that many of the bears appeared not to have repeat encounters.

We now recommend that the RDCK and the two villages in the Upper Slocan Valley apply for Bear Smart Community status. In the interim, we also recommend that some relocation and translocation of black bears be implemented on an experimental basis, especially in the village of New Denver and before bears become habituated and food-conditioned. A petition signed by 279 people, including 171 from the villages of New Denver, Silverton, and Slocan, was recently endorsed by the Village of New Denver (see Appendix 1). The petition asks that the province reinstate live trapping and relocation, which have been accepted practices in previous years (see Appendix 2).



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- Appendix 3.** List of potential foods (natural attractants) for grizzly bears and black bears in the Selkirk Mountains and Interior Wet Belt
- Appendix 4.** Waste management bylaws for towns in the study area and nearby:
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- Appendix 5.** Excerpts from New Denver OCP
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PART ONE—SUMMARY

INTRODUCTION

This report is the first of its kind in the provincial Bear Smart program because the study area is a large multi-jurisdictional area that encompasses the northeast segment of the Slocan Lake watershed. It includes the two municipalities of New Denver and Silverton, along with rural communities and settlements in Area “H” of the Regional District of Central Kootenay (RDCK).

Normally, the Bear Hazard Assessment or BHA (Phase 1) study and the Proposed Bear-People Conflict Prevention Plan or “Bear Plan” (Phase 2) are done as two separate reports. We have combined the two reports due, in part, to the extended timeframe of this project (see “Special Note Regarding this Study” on pages *iii-v*). We also wanted to reduce repetition and so, using the recommendations of the BHA to develop the proposed Bear Plan, we have combined both Phase 1 and Phase 2 into this one report. We hope this has saved the reader time and helped to reduce possible confusion in what has already become a large document.

The report assesses recreation facilities (front and backcountry parks, campgrounds, hiking and biking trails) in public lands under various jurisdictions, including BC Parks (Ministry of Environment, Parks and Protected Areas Division), the Ministry of Forests, Lands, and Natural Resource Operations (MFLNRO), and highway rest stops (Ministry of Transportation and Infrastructure). RDCK residential, recreation, and waste management facilities are assessed; as were some private resorts.

Since we found that most of the bear-people conflicts and threats to human safety involved black bears attracted to uncontained or uncontrolled garbage and other food attractants around residential and livestock areas in town and country, the main focus of this report has been to provide a technical review and blueprint to enable the two villages and rural areas in the Upper Slocan Valley to become “Bear Smart” under the provincial Bear Smart Community Program. At the same time, we are making recommendations for government agencies to support more non-lethal treatment of bears, and to improve the management of public trails and camping areas in surrounding Crown lands in the study area.

The report has three parts: Part One summarises the findings of the Bear Hazard Assessment and Problem Analysis (Phase 1) and its specific and general recommendations. It then summarises the priorities for implementation of the proposed Bear-People Conflict Prevention Plan (Phase 2).

Part Two is the Bear Hazard Assessment (BHA) or Phase 1. It describes the Bear Smart Community program and includes a description of the study area, its history, demographics, and ecological settings. The ecology of both black and grizzly bears is described, including their behaviours and how these predispose bears to having conflicts with people. It delineates the methods used in the Phase 1 BHA, including a discussion and analysis of the conditions and bear-related problems in the various locations in the study area. Part Two concludes with recommendations for each category of condition or problem.

Part Three outlines the goals and benefits of the proposed Phase 2 Bear-People Conflict Management Plan for the area (also referred to as the “Bear Plan”). Agreements by local governments to implement the Bear Plan will enable Upper Slocan Valley communities and rural areas to apply for provincial Bear Smart Community designation. The positive outcomes include increased public safety for residents and visitors, fewer problems with bears, and more efficient use of taxpayer dollars due to reduction of costly—and often repetitious and frequently unsuccessful—control measures. Another positive outcome will be a reduced number of black bears that are killed. Current provincial policy commits the Conservation Officer Service (COS) to work more closely with communities on non-lethal approaches to bear management, once Bear Smart Community status is achieved.

Throughout this document, please keep these points in mind:

- The Bear Plan proposed by the consultants has yet to be approved and adopted by the local governments within the study area.
- The Bear Plan addresses both grizzly bears and black bears.
- Management goals are proposed for community direction and buy-in of the Bear Plan.
- Since we conducted our study over a multi-year period, many of the Bear Plan's recommendations have already been presented to the communities, and some have already been implemented. In 2011, the Valhalla Society Bear Smart coordinators helped residents install 22 electric fences, including 11 for fruit trees in New Denver. This allowed us to fine-tune the Plan for 2012 and beyond, with bear-proofing of attractants the priority focus.
- If the Bear Plan and management goals are implemented, a significant reduction of management bear kills and property damage, increased public safety, and more efficient use of the COS time and equipment, and taxpayer dollars will be the positive outcomes.
- The consultants do not recommend continuing with any waste collection/containment systems in the study area that are only partially bear-proof, have a poor track record, or that are likely to result in high long-term maintenance costs, increased property damage, and continued limited success in attempts to manage bear conflicts.
- The Bear Plan's highest priority is to see a significant reduction of bears getting access to attractants (livestock, fruit trees, compost, garbage) to the point that there will be minimal conflicts with bears and few bears destroyed or relocated.
- Successful implementation of the Bear Plan will require coordination of multiple jurisdictions (the villages of New Denver and Silverton, Area H of the RDCK, BC Parks, the CO Service, the RCMP, Recreation Sites and Trails Branch of the MFLNRO, the Ministry of Transportation and Infrastructure), and public groups.

The final report will be submitted to the Conservation Officer Service and Wildlife Conflict Prevention branches of the BC Ministry of Environment, and to the local governments in the study area. It will be available to the public online at www.vws.org. Printed copies can be obtained by contacting the Valhalla Wilderness Society.

SUMMARY OF PHASE 1: BEAR HAZARD ASSESSMENT & PROBLEM ANALYSIS

Assessing the Bear Hazard

The bear hazard in the Upper Slovan Valley involves both black bears and grizzly bears. Black bears are more prevalent in lower elevation areas where most people reside and recreate. Grizzly bears are of greater concern in mid- to high-elevation habitats in the backcountry where many people hike and some also camp. To assess the bear hazard of different areas in the Upper Slovan Valley, we used previous bear hazard studies, seasonal habitat values, numbers (volumes) and types of attractants (fruit trees, garbage, livestock, etc.), wildlife corridors, local knowledge, interviews, past history of encounters and problems, COS conflict and bear mortality data, and information from local bear attacks and bear attack studies elsewhere (Herrero 2002).

For purposes of discussion, we segregated the study area into municipalities; geographic subsections of rural private lands and unincorporated settlements within the RDCK; BC provincial parks, trails, and campgrounds; trails and campgrounds under the jurisdiction of the Ministry of Forests, Lands, and Natural Resource Operations (MFLNRO); parks and trails under the jurisdiction of the RDCK; highway roadside stops, and private resorts and campgrounds.

Bear hazard studies have already been done and recommendations implemented for many of the public recreation areas, including the three large backcountry provincial parks (Valhalla, Kokanee Glacier, and Goat Range), the two frontcountry provincial campgrounds (Rosebery and Summit Lake), and most trails and areas managed by the MFLNRO. Bear hazard studies have also been done for a number of other trails by Valhalla Wilderness Society biologists. For the Bear Smart program, we focused on unsurveyed areas where gaps exist, such as the two municipalities (New Denver and Silverton) and Wragge Beach Campground; we also re-surveyed some sites, such as the Rosebery and Summit Lake provincial campgrounds.

Summary of Results of the Bear Hazard Assessment

During the period of our study, the overall bear hazard was low for most frontcountry residential and rural areas, where the predominant concerns are with black bears. The highest concerns involving black bears and public safety occur from spring to fall in the Village of New Denver, where fairly large numbers of black bears move into residential areas to feed on fruit, unsecured garbage, and other attractants. Although this occurs only periodically, the high number of black bears living in the village is a public safety issue for residents, visitors, and people who stay at the municipal campground. Black bears are also a concern in some of the unincorporated rural areas, such as Hills, largely due to attractants associated with livestock, especially chickens, but also unsecured garbage.

Periodic responses by Conservation Officers and RCMP—to both types of situations—occur when there is a perception of increased public safety hazard or repeated predaceous attacks on livestock. These responses usually result in killing the bears involved, even though it is recognised that this is not a solution to the problem.

For grizzly bears, some low-elevation areas have seasonal presence, including Enterprise Creek-Cape Horn, Fish Lake-Retallack, Hills-Bonanza Marshes, and Summit Lake. Most have a few grizzlies traveling through in the spring, but there is an increased risk of an encounter when serious attractant problems arise. The rail-to-trail through the riparian areas from north of Hills to Summit Lake was identified as the highest hazard of the low elevation recreation areas reviewed. Spring is the time of heaviest grizzly use, but some are also present along Bonanza Creek during the fall kokanee runs. The area is on a grizzly bear/wildlife travel corridor between Valhalla and Goat Range provincial parks. Most of the backcountry trails in grizzly country have had bear hazard studies and have been re-routed or are managed to minimise bear-people encounters. New trails being built by tourism businesses and by mountain bike interests in the backcountry are of concern as they appear to be done without proper bear hazard assessments. In the Idaho Peak area, the Wakefield Trail has a moderate grizzly hazard and should be managed accordingly.

Summary of Public Education Activities

Since the provincial Bear Smart program was implemented in 2006, an extensive public education program has occurred throughout the study area, including presentations to the village councils, other public presentations in the two villages and nearby rural communities, a widely circulated Bear Smart hand-out, an annual Bear Smart booth at the popular Hills Garlic Festival, workshops on setting up electric fences, press releases, letters-to-the-editor, and other activities. Bear Smart coordinators have also assisted with hundreds of phone calls, providing information on bear-proof residential bins, and conducting a public workshop on how to set up electric fences in the communities. Bear Smart informational sandwich boards were prepared and placed at the three RDCK transfer stations (Rosebery, Slocan, and Nakusp). Bear warning signs were prepared for use on some trails. Provincial Bear Aware material has also been widely circulated. The Harvest Share group has continued to educate the public concerning their fruit picking program. The Villages also annually distribute a flyer on how to control attractants. However, signage at the village campgrounds was lacking in adequate bear information including the need to store all foodstuffs, coolers, etc. in a bear-proof manner.

BC Parks provides some information on bears at their two large campgrounds (Rosebery and Summit Lake) but this was found to be inadequate as there was no information on the need to store all foodstuffs, coolers, etc. and no provisions for distributing the provincial bear pamphlet. Similar public information was found to be lacking at the BC Parks boat launch kiosks for Valhalla Park and the Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) Campground at Wragge Beach.

Continuing public education on the Bear Smart program, bears in general and especially the need to control attractants is important for the communities to continue. The Villages, BC Parks and MFLNRO need to improve their signage and information distribution on bears at their campground and other information kiosks.

Summary of Bear-People Conflict Monitoring System and Review of Conflict Data

There is no systematic monitoring of all bear-people conflicts. We relied mostly on information from the Conservation Officer Service (COS) complaint (RAPP) line, which is estimated to reflect only about 25% of all bear-people conflicts, since many go unreported. We also used information from BC Parks, news releases, and local knowledge. The RCMP pass their complaint and control information along to the COS. We found that the COS complaint data had some errors in reporting and interpretation when checked against local information. Other than our report, there is no effort by the COS or anyone else to do a systematic analysis of all conflict information on an annual basis.

Three injurious bear incidents over the past 15 years

In recent times, there have been three bear encounters in the Upper Slocan Valley that have led to human injury, two involving black bears and one involving a grizzly bear. Of interest is that two involved predaceous attacks on people camping at night: one involving what was likely a food-conditioned mother black bear at Rosebery Campground and the other involving a subadult grizzly bear at the parking lot at Shannon Lake. In these instances, the victims were lucky to have sustained only minor injuries since predaceous attacks by bears are often lethal. The other black bear attack occurred in 2011 near New Denver when a hiker attempted to protect his dogs, which had pursued a mother black bear that turned on the dogs to protect her cub. In this instance, the victim is lucky it was a small mother black bear and not a mother grizzly bear.

Interestingly, there have been no injurious encounters involving hikers or mountain bikers and mother grizzly bears in the backcountry, even with the escalation of backcountry activities during the past 2-3 decades. Perhaps the proactive measures by BC Parks and the (former) Forests ministry to conduct hazard studies and take proactive measures to minimise the risk of bear-people encounters in the backcountry is paying off. Most hikers now also carry red pepper bear spray, which is proven to help deter serious attack attempts by bears.

Few bear-people conflicts in the backcountry including large provincial parks

In recent times, there appear to have been no serious encounters or conflicts with grizzly or black bears in the backcountry in the three large provincial parks in the Upper Slocan Valley. Since there is no official tracking of bear-people conflicts on backcountry Crown lands outside of provincial parks, based on anecdotal information, there appear to be few if any conflicts on the large network of hiking trails in other backcountry areas.

Review of COS bear complaint data (mostly 2002-2008)

Analysis of the COS bear complaint information (RAPP) line indicated that the majority of conflicts in the Upper Slocan Valley were in the frontcountry developed areas and involved black bears and uncontrolled attractants, such as garbage and fruit trees. Calls to the COS probably represents about 25% of the actual number of conflicts that residents have with bears.

Surprisingly, we discovered that some residents had a high level of expectation that if a bear was becoming a nuisance, the CO would come and remove the bear, thus solving their problem. In fact, some of these complainants had experienced previous problems involving the same attractants, but had taken no steps to remove or otherwise deal with those attractants. In other words, the focus of the complainant was often on the Conservation Officer, who they expected would get rid of their problem, rather than focusing on how they could solve their problem themselves and prevent it from happening again.

- There was virtually no enforcement by the COS concerning provincial laws and attractants. We found only one report of a CO issuing a warning that a Dangerous Wildlife Protection Order (DWPO) would be issued in the future.
- During the 7-year period, there were only 5 grizzly reports or complaints to the CO Service / RAPP line versus 159 black bear reports or complaints. Most of the grizzly complaints were at Summit Lake and no grizzly reports were serious enough to warrant relocation. Bear aversion was done on one family group that eventually appeared to be successful in moving these grizzlies out of the area.
- No black bears were relocated. From 2002-2008, there was a total of 35 destroyed as follows: 20 were destroyed by the CO service, 6 were destroyed by the RCMP, 7 were destroyed by residents, and 2 were injured in highway collisions or other accidents and were subsequently humanely destroyed.
- New Denver had the highest number of black bear control kills (18) for 2002-2008 and the highest (11) in the West Kootenays for 2011 alone. In the eight years between 2002 and 2011, excluding 2009 and 2010 (because we don't have the data), there were 29 black bears killed in New Denver.
- From 2002-2008, Hills had 4 black bears killed, Summit Lake 4, Rosebery Provincial Park (Campground) 3, Rosebery 2 and the rest killed in other rural areas. There is no record of any black bears being killed in the village of Silverton for this period. The one initially reported for Silverton in 2007 was most likely in the Red Mountain rural area.
- Of the 159 complaints for the study area, 124 (78%) contained information on attractants and bear activity. Over half (56%) of all attractant complaints in the study area for the period 2002-2008 involved fruit trees, livestock, and garbage. Fruit trees and bushes accounted for the highest (21%) with livestock chickens (18%) and garbage (17%) as close seconds.
- The remaining 44% of attractant complaints were generally spread out over the study area. Property damage (buildings, vehicles, pets, etc.) accounted for 10% of the total attractant complaints followed by camp food (coolers, BBQs) at 9%. Other attractants included livestock feed (5%), freezers (5%), other types (birdfeeders, rabbit hutches, etc.), at 4%, composts (4%), house break-ins (3%), garden (3%) and sheep livestock at 1%.
- New Denver had the most attractant complaints (35%), followed by Hills (26%), Rosebery (14%) and Rosebery Provincial Park (8%). As noted, Silverton had few complaints. Not surprisingly, mortality of bears for each subarea more or less corresponded to the level of attractant complaints; except New Denver has far more bears killed in proportion to the number of complaints.
- The majority of garbage complaints were in New Denver, although Hills ranked second. There appear to be no garbage problems in the large provincial parks where there is a pack in/pack out policy, or in the three government-run frontcountry campgrounds (Summit Lake, Rosebery, and Wragge Beach). Rosebery Campground, however, has other attractant problems.
- Fully half of the livestock complaints occurred in Hills and primarily involved chickens.

- New Denver was the focal point of fruit tree complaints with 18, or 70% of the study area's complaints involving fruit trees.

Cost estimates of COS control actions on black bears

- Each one-way trip to the Upper Slocan Valley, COs estimate a cost of \$400 (Ben Beetlestone, pers. comm.), so that to come and set a culvert trap and then return after the bear is caught (or to retrieve the empty trap) costs about \$800.
- Based on the overall estimated 19 CO round trips to the Upper Slocan Valley to deal with nuisance black bears between 2002-2008, we estimate a cost of \$15,200. Of this amount, the Village of New Denver, where 29 black bears were destroyed for the 2002-2008 period, accounted for six CO visits/control measures for a cost of \$4,800 (the majority of bears were shot by the RCMP). For 2011, in which 11 black bears were destroyed in New Denver alone, we estimate the return-trip control visits for New Denver numbered at least 11, for a cost of \$8,800. Thus for New Denver, control costs by the COs cost an estimated \$13,600 for the years (2002-2008 and 2011).
- These wasteful control costs incurred to the taxpayers of the province would purchase a fair amount of bear-proof residential bins. For example, 1/3 of the village of New Denver or the entire village of Silverton could have bear-proof residential bins for what it costs taxpayers to pay the COs to destroy bears that have become a community nuisance.

Summary of Waste and Attractants Management Practices

We found significant improvements in management of garbage and other attractants over the past 15 years; enough, in fact, to recommend that the communities apply for provincial Bear Smart Community status. However, more success has been achieved in the backcountry, including provincial parks, through a largely pack-in/pack-out policy and the provision of food-storage lockers, than in the frontcountry and residential areas, where much higher volumes and varieties of complex attractants still need to be managed. The necessary activities of living produce high volumes of foods and garbage, along with fruit trees, livestock, and other attractants. Also, a higher summer influx of tourists and seasonal residents increases the volume of human-caused attractants at a time when black bears are most active at lower elevations.

Considerable progress was made when the last open garbage dump in the study area was closed nine years ago by the RDCK and replaced with the Rosebery Transfer Station, which has bear-proof commercial bins to handle rural and village garbage and certain recyclables. An RDCK station for clean recyclables is located in each of the villages that services both municipal and rural residents. In response to increased public awareness about bears and garbage over the past decade, there has been considerable bear-proofing by local and provincial government agencies at the facilities they manage (highway rest stops and village pedestrian and camping areas). To date (November 2012), an estimated \$87,200 has been invested in bear-proof garbage containers and food storage lockers in the Upper Slocan Valley, with New Denver investing at least \$50,000 and Silverton \$15,000. Thanks to the Bear Smart coordinators and the Harvest Share program, significant progress has been made in the installation of electric fencing to keep bears away from fruit trees and livestock, as well as in picking fruit before bears can access it. These programs continue.

Bear-proofing in places like the large provincial parks has resulted in practically no attractant problems in these areas, which has greatly benefitted recreational use and the grizzly bear population. Increased garbage and attractant management appears to have worked better for Silverton than for New Denver and some rural areas, such as Hills. Enough garbage and other attractants exist in New Denver and rural areas to more or less erode some the value of bear-proofing for black bears. Because of the intelligence of bears and constant need for high energy foods, partial bear-proofing mixed with

non-bear-proofing does not work well in high conflict areas, especially in bad bear years, such as what New Denver experiences periodically. One neighbour who does not bear-proof ruins it for others who do. New Denver also still uses curb side pick up of garbage that facilitates some bears getting into garbage bins. In addition, the lack of strong and enforceable attractant bylaws by the villages and RDCK, combined with the lack of enforcement of provincial attractant laws by the COs, has exacerbated the problem. The cessation of Bear Smart matching costs of up to \$10,000 annually for bear-proofing has also not helped matters.

Completion of bear-proofing of the majority of garbage and other attractants in the frontcountry, and in residential and rural areas is clearly the key need in order for bear-people conflicts to be minimised and public safety improved. How to get there is the subject of our Proposed Bear-People Conflict Prevention Plan. This is the number one priority.

Summary of Bylaws

The villages of New Denver and Silverton each have a bylaw pertaining to waste management and another pertaining to domestic animals, including poultry and other small livestock. Our review indicates that the bylaws need to be revised to reflect Bear Smart principles, including the need to make all attractants bear-proof, whether domestic or commercial, or involving domestic animals, such as chickens. Bylaws should reflect any decisions to require that all households use bear-proof residential garbage bins, depending on what type of bear-proof waste management system the villages decide on. The RDCK, including Area “H”, has no bylaw pertaining to garbage and attractant management on rural private lands, and has no requirements to bear-proof all attractants. The RDCK could help reduce bear-people conflicts on rural private lands by passing a well-designed attractant bylaw, including regulations for small farms and livestock operations.

Summary of Official Community Plans (OCPs) and Green Space Management

Over recent years, both villages and the RDCK have developed OCPs, but these have little information on bears, including no identification of green spaces or corridors used by bears for travel. We also found the Slocan Lake North Portion of Electoral Area “H” Official Community Plan lacking in Bear Smart principles. These need to be incorporated when the OCPs are next revised.

The recommendations arising out of this Phase I bear hazard assessment and problem analysis are incorporated into the proposed Bear Plan.

SPECIFIC AND GENERAL RECOMMENDATIONS FROM PHASE I (BHA) FOR EACH JURISDICTION

Villages and Unincorporated Rural Areas

Specifically for New Denver

1. New Denver should be recognized as the priority area in the West Kootenays to address the high and chronic level of bear-people conflicts. Reducing these conflicts will require a more proactive Bear Plan by the village, as well as support from the provincial Bear Smart and Bear Aware programs and the COS.
2. Continue to support the Bear Aware program started 2012 and as needed in the future to help educate people about the need for overall better management of attractants.
3. Continue to support the Harvest Share program, combined with removal of fruit trees (while also considering their heritage and fruit tree value), and making it mandatory that residents either pick all of their fruit or use electric fences as a deterrent.

4. Use this report to adopt a Bear Plan for New Denver, and work with others to apply for Bear Smart Community status, given the high investment in bear-proofing already completed. This will help bring about commitment by the province to have the COs do some non-lethal treatment of black bears, including relocations.
5. Support efforts to have COs or well-trained authorized volunteers to do an “early treatment” program that deals with bears when they first start using the village at the beginning of cherry-ripening time. This would involve capturing bears in a culvert trap and, instead of shooting them, give them short or long distance relocations with “hard release.”
6. Combine the above activity with one or two people well-trained in bear aversion techniques to discourage bears from coming into New Denver before they get established in town and become food-conditioned and habituated to people.
7. To ensure success of these programs, the village needs to commit to being more proactive in dealing with its attractant issues as a foundation for a Bear Plan, including upgrading their bylaws and developing a fully bear-proof waste management system. This could include providing bear-proof residential bins first to hotspot areas and then for the whole community. Alternatively, the village might consider going to a residential neighbourhood bear-proof dumpster system similar to the town of Canmore. The village has two commercial Haul-All bins that sit empty all winter at the village campground. Why not start a pilot project using these and others in town that are not being used to capacity? Such a system would eventually be a cost savings to the village. Whichever way the village goes, certainly cost-sharing should be explored and we would hope that eventually that some provincial Bear Smart funding for this will kick back in.
8. Replace all non-bear-proof pedestrian bins in the municipal campground, Kohan garden, Mori Trail, and other areas with bear-proof ones.
9. Significantly improve signage at the municipal campground (kiosks on both sides) that alerts the public to the fact black bears frequent the area and of the need to not leave any foodstuffs unattended. The campground contractor needs to more closely enforce the issue of coolers and other attractants being left unattended for bears to access.
10. Work with other agencies to develop guidelines and standard signage for bear warnings and closures when and where hazard situations are identified at village-managed trails, campgrounds, and parks.
11. Amend the New Denver OCP so that it mentions the village’s commitment to work towards provincial Bear Smart Community status. This should include specific language about the following items:
 - a. Design, maintain, and manage parks and trails to minimise bear-people conflicts. This includes consideration of sight lines, garbage cans, landscaping and naturally occurring plants, and informational signage about bears.
 - b. Update bylaws related to food attractant issues, including garbage, birdfeeders, backyard composts, outdoor barbecues, fruit trees, landscaped plants, chickens, beehives, etc..
 - c. Encourage residents to not use landscaping plant species that could attract bears, such as berry-producing shrubs and trees (e.g., Oregon grape (*Mahonia* spp.), mountain ash).
 - d. Encourage residents to pick fruit or use electric fencing to minimise bears’ access to this abundant village food source.
 - e. Ensure that any residents who keep chickens or bees install bear-proof fences and hutches, such as through electric fencing.

- f. Encourage any new homes being built that have backyards bordering on green spaces to install perimeter fencing to keep bears and other wildlife away, particularly from children's play areas.
 - g. Community planning should involve green space management that includes a bear habitat and travel corridor map so that bear/wildlife concerns can be adequately addressed in existing and new developments.
 - h. Bear Smart recommendations and criteria should be included in the OCP's guiding principles.
12. Upgrade municipal bylaws related to meeting Bear Smart requirements. More specifically this would include:
- a. Animal Control Bylaw No. 516 should be upgraded to include the need for small livestock (domestic fowl and poultry, rabbits) enclosures, including coops, hutches, and outdoor runs, as well as livestock feed, to be bear- and animal-proof, including the proper installation electric fencing with adequate warning signage.
 - b. Update Waste Management Bylaw No. 581 to reflect whether the village continues with the old curbside pick-up system without requiring bear-proof residential household bins except on a voluntary basis, requires bear-proof residential household bins for village hotspots or for everyone, or decides to go to a neighbourhood bear-proof communal bin system such as the town of Canmore. The bylaw upgrade should include the phrase "attractant management" in the title, along with "waste management."
13. Add to the bylaw's definition section:
- a. A definition of bear-proof, or at the very least, bear-resistant, garbage can.
 - b. "Animal attractant" means antifreeze, paint, food products, food waste, unclean barbecues, pet food, livestock and livestock feed, beehives, offal, birdfeeders containing bird feed between April 15th and December 1st and hummingbird feeders, improperly maintained composts, restaurant grease barrels on public or private land that are accessible to animals, accumulation of fruit in containers or on the ground and any other edible products or waste that could attract animals;
14. Also add the following:
- a. Every owner or occupier of real property shall be encouraged to store all garbage in a bear-proof container or otherwise store garbage and all other odoriferous household waste in a bear-proof manner such as inside the house, a strong storage shed, or other facility. [The additional use of bear-proof residential receptacles is preferred].
 - b. Every owner or occupier of real property shall ensure that all ripe fruit, and fruit fallen from trees or bushes on such real property is removed and properly disposed of at least every 3 days. The use of electric fencing while fruit is ripening is encouraged. If the owner of a fruit tree cannot or does not pick and otherwise remove their fruit, they shall use electric fencing to secure it from bears or remove the fruit tree. The heritage value of the fruit tree needs to be considered.
 - c. Every owner or occupier of real property shall ensure that a birdfeeder (including hummingbird feeders) containing bird feed on such real property is suspended on a cable or other device in such a manner that it is inaccessible to animals, that bird feed fallen from a birdfeeder is removed from the ground and properly disposed of at least every 3 days, and birdfeeders containing bird feed are not used between April 15th and December 1st in each year.

- d. 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 animals.
- e. Every owner or occupier of real property shall manage their compost in a bin in an open area away from bushes, or secure inside a high fence, or electric fence and add dried vegetation such as leaves, grass, raw manure or straw, on compost piles, and avoid adding oils, animal products, or pet waste.
- f. Every owner or occupier of real property shall manage other attractants, such as pet food and barbecues so that they are inaccessible to wild animals, including bears.
- g. Recycling: Every owner or occupier of real property shall ensure that food and other odoriferous waste is cleaned from the waste containers (bottles, plastics, tin cans, etc.) before being deposited in the RDCK recycling bins and ensure that no garbage shall be deposited in the bins provided.
- h. Every person who violates any of the provisions of this bylaw, or who suffers or permits any act or thing to be done or omitted to be done in contravention of this bylaw is liable, upon conviction, to the maximum penalties prescribed by the Community Charter and the Offence Act, plus the costs of prosecution.

Specifically for Silverton

- 1. Use this report to adopt a Bear Plan for the village and work with others to apply for Bear Smart Community status, given the investment in bear-proofing already completed and low frequency of bear problems. This will help bring about the commitment by the government to have the COs do some non-lethal treatment of black bears, including relocations when needed.
- 2. Work on a cost-sharing program to provide bear-proof residential bins in village areas bordering the green spaces on the east side the village, and other areas as the need arises.
- 3. Significantly improve signage at the municipal campground (kiosks on both sides) that alerts the public to the fact that black bears frequent the area and of the need to not leave any foodstuffs unattended. The campground contractor needs to more closely enforce the issue of coolers and other attractants being left unattended for bears to access.
- 4. Include Bear Smart criteria and information, including green space management, in the next rendering of the official community plan (OCP). These should generally follow the above-mentioned recommendations for New Denver.
- 5. Upgrade municipal bylaws related to meeting Bear Smart requirements. More specifically this would include:
 - a. Bylaw No. 460 regarding livestock should be upgraded to include the need for a poultry coop and poultry run, and any poultry feed to be bear- and animal-proof, including the proper installation of electric fencing with adequate warning signage.
 - b. Bylaw No. No. 433 should be upgraded to include not only waste management in the title, but also attractant management.
- 6. Add to the definition section:
 - a. A definition of bear-proof, or at the very least, bear-resistant, garbage can.
 - b. "Animal attractant" means antifreeze, paint, food products, food waste, unclean barbecues, pet food, livestock and livestock feed, camp coolers, beehives, offal, bird feeders containing bird feed between April 15 and December 1, hummingbird feeders, improperly maintained composts, restaurant grease barrels on public or private land that are accessible to animals,

fruit trees including accumulation of fruit on the tree, in containers or on the ground and any other edible products or waste that could attract animals;

7. Also add the following:

- a. Item 9 Campgrounds. This needs to make reference to the continued use of bear-proof garbage receptacles and food storage lockers provided by the village for campers, proper maintenance by the caretaker to minimise odours (i.e., cleaned and washed out with soap and water at least once a week), monitoring to prevent overflow garbage from being left outside the bins on busy weekends, and so on.
- b. Re public Information and signage at the municipal campgrounds. Information signs with bear information need to be placed and maintained in a visible location at the entrance to both the lakeshore and creekside campgrounds. This should include general information on bears warning all campers to store any unattended food in their vehicles or the storage lockers provided, including coolers, barbecues, pet food, and other attractants. Anyone camping or picnicking at a village park or campground shall use the bear-proof garbage receptacles for all waste, always store their food attractants away from bears, such as in their vehicles, and never leave their barbecues, coolers, pet food, and other attractants in a manner that they are accessible to bears. The campground attendant shall patrol the sites several times daily to ensure that attractants are not left unattended, including overnight, and inform the owners and/or leave a warning sign.
- c. Item 15 re recycling: Every owner or occupier of real property shall ensure that food and other odoriferous waste is cleaned from the waste containers (bottles, plastics, tin cans, etc.) before being deposited in the RDCK recycling bins and ensure that no garbage shall be deposited in the bins provided.
- d. Item 25. Every owner or occupier of real property shall be encouraged to store garbage in a bear-proof container or otherwise store garbage and all other odoriferous household waste in a bear-proof manner such as inside the house, a strong storage shed, or other facility. The use of bear-proof residential receptacles is preferred.
- e. Every owner or occupier of real property shall ensure that all ripe and fruit fallen from a tree or bush on such real property is removed and properly disposed of at least every 3 days. The use of electric fencing while fruit is ripening is encouraged. If the owner of a fruit tree cannot or does not pick and otherwise remove their fruit, they shall use electric fencing to secure it from bears or remove the fruit tree. The heritage value of the fruit tree needs to be considered.
- f. Every owner or occupier of real property shall ensure that a birdfeeder containing bird feed on such real property is suspended on a cable or other device in such a manner that it is inaccessible to animals; that bird feed fallen from a birdfeeder is removed from the ground and properly disposed of at least every 3 days, and birdfeeders containing bird feed are not used between April 15th and December 1st in each year.
- g. 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 animals.
- h. Every owner or occupier of real property shall manage their compost in a bin in an open area away from bushes, or secure inside a high fence, or electric fence and add dried vegetation, leaves, grass, raw manure or straw on compost piles, and avoid adding oils and animal products.
- i. Every person who violates any of the provisions of this bylaw, or who suffers or permits any act or thing to be done or omitted to be done in contravention of this bylaw is liable, upon

conviction, to the maximum penalties prescribed by the Community Charter and the Offence Act, plus the costs of prosecution.

Specifically for RDCK Area “H”

1. RDCK Area “H” needs to pass a strong attractants bylaw.
2. The Rosebery Transfer Station should have an electric perimeter fence, as at Nakusp.
3. The RDCK should continue to provide support funding to the Bear Smart coordinators to help rural residents set up electric fences for livestock, fruit trees, and other attractants and to continue their public education program. Emphasis should be on Hills first and then Rosebery, which have the highest incident problem rates.
4. Work with other agencies to develop guidelines and standard signage for bear warnings and closures where hazard situations are identified at RDCK managed trails and regional parks.
5. The RDCK needs a plan to proactively manage the risk of bear encounters and disturbances to wildlife once they acquire ownership of the rail-to-trail between Rosebery and Summit Lake. The high risk of a grizzly bear encounter in May and June between north Hills and Summit Lake needs to be a priority focus for public information management. We recommend:
 - a. A policy for non-motorised use should be implemented to minimise disturbances to bears and other wildlife, such as wintering deer, moose, and elk.
 - b. This 5-6 km wetland trail section between north Hills and Summit Lake should be given priority for improvement, including brushing out all CPR rights-of-way to improve visibility.
 - c. Bear warning signage should continue to be posted for May and June at either end of this section. Signs need to be removed when bear sign drops off in early summer (currently this is done by volunteers). Temporary closures may also be necessary, such as when a mother grizzly and young are feeding along the right-of-way, or a grizzly or black bear feeding on a large mammal carcass.
 - d. RDCK needs to have a dog-on-leash rule to prevent unpleasant encounters between users and grizzly bears and to minimise disturbances to wildlife in all seasons. Residents have also identified concerns of disturbances by winter recreationists to over-wintering moose, deer, and elk. Some uncontrolled dogs have chased wildlife during deep snow conditions; this needs to be addressed by RDCK through posting warning signs in the winter.
6. Include Bear Smart principles and information, including green space management, in the next rendering of the Slocan Lake North Portion of Electoral Area “H” Official Community Plan.
7. Encourage Three Islands Resort at Summit Lake to continue good attractant management, including bear-proofing their garbage storage shed as the facility is in a grizzly bear travel corridor; as well as to continue their Bear Aware program.

General Overall Recommendations for Rural Farms and Homesteads

1. All attractants should be kept/stored in a bear-proof manner. Composts need to be inside a garden fence or at least periodically covered with manure or other decaying materials that make the site unattractive to bears or, even better, secured inside an electric fence. Freezers need to be where they cannot be accessed by bears as they know how to open them.
2. Bear-proof residential bins work well for storing your garbage as well as livestock feed, and should be mandatory.
3. Electric fencing should be done around fruit trees and berry-patches and should be mandatory. All fruit needs to be picked in a timely fashion and not left out for bears and other wildlife.

4. Rural residents must be made more aware that if a bear or other animal depredates their livestock such as chickens, the predator will most likely be back for more. As well, residents need to be made aware that it costs taxpayers approximately \$800 for the Conservation Officers to travel to the area and set a culvert trap, then make a second trip to remove the bear and/or recover the trap. We cite one instance where taxpayers ended up paying an estimated \$1600 to have COs make two round trips to deal with the problem created by the landowners' refusal to bear-proof their chicken pens. This \$1600, if put towards preventing the problem by proper electric fencing, would have bear-proofed their chicken runs and buildings and at least two or three other small rural chicken operations.
5. For smaller livestock, especially chickens, goats, sheep and other small farm animals, ensure they and their feed are kept in bear-proofed buildings and paddocks/outdoor enclosures. Using electric fencing is the most secure and inexpensive method, but fencing must be correctly installed and maintained. Electric and other fencing must be designed not just to keep out bears and other large predators from spring until fall, but also need to have winter predator-proof fencing that may have to be separately designed to keep out pine marten, mountain lions, bobcats, coyotes, and other predators. We also now have wolves returning to the area. The rural Bear Smart coordinators in the Slocan Valley give local workshops on electric fencing and low-key bear aversion techniques, and also assist in ordering (at the owners' costs) proper electric fencing.
6. We highly encourage rural landowners to carefully learn and practice bear aversion techniques to discourage bears that might be hanging around their properties. They should be able to teach bears that their homes, livestock areas, and other private areas are no-go zones for bears, especially when a bear first shows up on the property. This can prevent the bears from becoming habituated, which then makes it easier for them to get into composts and other attractants. The use of a well-trained farm dog (that also does not chase deer) can work well. However, we have found from experience that carefully used noisemakers can be effective. For people experienced with firearms, the judicious use of 12-gauge noisemakers can work. We have found that the small RG-46 launcher pistol with a 7-shot cylinder can be very effective. It is not a firearm *per se* and shoots off both bangers and whizzers. Cost is about \$100 and is available, as are the 12-gauge noisemakers and other deterrents, from Margo Supplies, www.margosupplies.com. With any noisemaker, be careful not to start a forest fire. Bear aversion courses and training can be arranged in the valley through the Bear Smart coordinators. Over time, other techniques may be available, such as installing an electric shock mat on a floor if, say, a bear comes onto your porch and gets into your freezer; these can prevent it from returning.

Government Agencies

BC Parks

Three large provincial parks (Valhalla, Goat Range, and Kokanee Glacier)

The large provincial parks in the Upper Slocan Valley are models for management practices that minimise bear-people conflicts, including adequate provision of bear-proof food/garbage storage lockers at most campsites, an effective pack in/pack out policy, and implementation of proactive programs to reduce the bear hazard in hiking and camping areas through comprehensive bear hazard studies. The result has been very few bear-people conflicts.

The following are areas where improvement is needed:

1. The government needs to improve funding for staffing and programs. This will help with programs to minimise bear-people conflicts through improved monitoring of bears, enforcement of food and garbage control, and other necessary measures.

2. Trail maintenance needs to be improved, especially for brushing through higher hazard bear habitats.
3. Carry out bear hazard assessments for any new trails or other facilities prior to any development in the larger parks.
4. For Valhalla Park, adequate bear information, including bear safety brochures, needs to be provided at the boat launch kiosks on Slocan Lake. These should be very visible, not on the backs of other signs.

Frontcountry camping parks (Rosebery and Summit Lake Provincial Parks)

1. Both parks need to add adequate bear information at the large kiosks at the park entrances. This should include providing the provincial bear safety brochures.
2. Warning signs should continue to be posted when a bear or bear sign is observed in the campground, or in the case of Summit Lake, if grizzly bears are observed feeding along the nearby highway. Temporary closures should be implemented when a high bear hazard situation occurs. BC Parks should assist other agencies and organizations in developing a standard protocol and signage for bear warning signs and closures.
3. Visitors also need to be informed at the kiosks to never leave their food and coolers unattended and to store these in their vehicle or the bear-proof receptacle provided. BC Parks should ensure that Park Facility Operators on patrol make sure that campers abide by this rule. Warning notices should be handed out and repeat offenders should be ticketed, as is done by BC Parks at the provincial campground in South Tweedsmuir Park.
4. A food storage locker for people who do not have vehicles, such as bicycle tourists, needs to be provided at Summit Lake, if this has not yet been done.

Ministry of Forests, Lands, and Natural Resource Operations (MFLNRO) campgrounds and trail network

The Ministry has done a basically good job of bear-proofing some of their remote hiking trails through bear risk assessments. The following are needed improvements.

5. Carry out bear hazard assessments of any new trails or other facilities.
6. Recognize the Dennis Creek Meadows Trail and the Wakefield Trail (Idaho Lookout) as high hazard areas for grizzly bears and post permanent warning signs. Closures may have to be enacted.
7. Unauthorised mountain bike trails that infringe on high quality bear habitat need to be evaluated and managed accordingly. Applications for any new trails should require bear hazard assessments.
8. Any trail guides for mountain bikes should provide adequate information on both bear species and safety.
9. Work with other agencies to develop guidelines and standard signage for bear warnings and closures where more hazard situations are identified at MFLNRO managed trails and campgrounds.

Wragge Beach Campground:

10. The Ministry should improve signage at the main kiosk to inform people that they are in bear country and that they need to properly store all of their food, including coolers, pet food, and barbecues in their vehicles, as well as to not leave any attractants unattended.

11. The Ministry should provide several bear-proof lockers for people without vehicles to store their food and garbage.
12. The campground operator should continue to patrol and ensure that people properly store their food and garbage so that it is not available to bears.
13. The ministry should have a bear-people conflict management policy that provides for warning signage to be readily available and posted if a bear is reported in the vicinity, and a policy for closure of the area should a more hazardous situation develop.

Ministry of Transportation and Infrastructure: highway roadside rest areas

1. The Village of New Denver should work with the Highways contractor (Yellowhead Road & Bridge) to correct the problem of garbage overflows at the New Denver rest stop, which may mean a volunteer will have to monitor it and take care of any unsecured garbage by depositing it in the Village Haul-All dumpsters at the nearby campground.
2. As Summit Lake and Fish Lake rest stops are in grizzly bear travel and feeding areas, any activity in these rest stops needs to be monitored and reported to the COs, and have an action plan for posting warning signs or effecting outright closures, depending on the degree of the bear hazard identified

For Public Schools in the Study Area (Arrow Lakes School District #10)

There is only one school, Lucerne Primary and Secondary, in New Denver.

1. The School Board should replace the two non-bear-proof pedestrian bins and any other non bear-proof garbage receptacles with bear-proof ones, as they serve to attract bears to the school.
2. Residents around the school should be encouraged to control all of their fruit and garbage.
3. Warning signs should be posted around the school access points when a bear is known to be frequenting the vicinity.
4. Any bears actually frequenting the school grounds should be reported to the COs. Children should not be allowed on the school grounds when a bear is present.
5. Public education on bears in the community should continue to be encouraged through the school system.

SUMMARY OF PHASE 2: PROPOSED BEAR-PEOPLE CONFLICT PREVENTION AND MANAGEMENT PLAN—THE “BEAR PLAN”

The proposed Bear Plan has two components: (1) general priority actions that apply to all agencies, jurisdictions, and residents working together, and (2) specific recommendations for each agency, local government, and rural sub-area. There was some overlap in this approach, but we felt it was the most workable format to explain things as clearly as possible, especially since a variety of jurisdictions are involved in bear-people management and conflict reduction in the Upper Slocan Valley. It also allows for a specific agency or village or rural landowner to see all of the proposed recommendations for them to follow laid out in one place.

Keep in mind that some of the recommendations have already had some implementation since 2006. Bear plans usually have a 5-year implementation period to phase in the required elements of the Bear Smart Community Program, but some of these have already occurred. We now feel the communities are far enough along in the process to adopt the recommendations of the Bear Plan using this report as a guide.

Top priorities for government agencies, municipal governments, and residents

Following is a list of what we feel are the top four general priorities for the province and all communities in the Upper Slocan Valley so they can work together to significantly reduce bear-people conflicts. More specific recommendations for each respective government agency or local government (Silverton, New Denver, and RDCK) and rural sub-area follow.

Priority 1. Complete bear-proofing of all attractants.

The top priority for the communities should be to complete bear-proofing waste management and all other attractants, such as fruit trees and livestock, in municipal and rural areas. Within the Upper Slocan Valley, New Denver should have the most proactive program. For bear-proofing residential garbage containers and electric fencing, the community should seek support/partnership funding from a variety of sources. We highly recommend that the province resume the funding of Bear Smart initiatives to assist the communities with partnership funding for bear-proofing.

Priority 2. Communities should apply for Bear Smart Status.

We conclude that enough progress has now been made for the villages, the RDCK, and the various government agencies to enable us to recommend they apply to the province for Bear Smart Community status. This will enable more proactive and non-lethal participation and assistance of the Conservation Officers for bear issues throughout the study area. This would be similar to other designated Bear Smart communities, such as Whistler, Squamish, and Kamloops, which, while these places have Bear Smart Community status, each remains only partially bear-proof in terms of managing garbage and other attractants.

As part of this, a number of informed people in the study area should participate in the regional West Kootenay Bear-People Conflict Working Group in Nelson, rather than form a local Bear Working Group (as recommended by the province's Bear Smart Community Program).

Priority 3. Province to implement more non-lethal approaches to bear management.

In 2012, a petition signed by 279 people (including 171 from the villages of New Denver, Silverton, and Slocan) was recently endorsed by the Village of New Denver (see appendices 1 and 2). The petition asked the province to reinstate live trapping and relocation. We agree. The province should immediately implement proactive black bear relocations and translocations as they do in the Lower Mainland, as well as implement or foster bear aversion programs to help deter the build-up of bears living too close to residential areas. "Early treatment," such as relocation and bear aversion when the bears first show up in the communities rather than leaving the situations advance to problem bear status would be a more proactive approach.

Priority 4. More enforcement of provincial laws regarding attractants.

The province, namely the Conservation Officer Service, should enforce the provincial laws (e.g., Waste Management Act and Wildlife Act) concerning attractant management instead of just killing the so-called problem bears and not using the laws to require people to clean up their acts. People who repeat offend, in particular, should be given a warning notice and then a violation ticket. The following are other general priorities in no particular order of importance:

Next Priorities

Priority 5. Continue to support Bear Smart and Bear Aware.

The Bear Smart coordinators for the rural areas and the Bear Aware coordinator for the Village of New Denver should continue to be supported as best as possible.

Priority 6. Improve bylaws regarding attractants.

The communities should incorporate more comprehensive Bear Smart principles into municipal and regional bylaws and community plans, and ensure they have bylaw officers to enforce them. Official community plans (OCPs) should be upgraded to include Bear Smart principles.

Priority 7. Continue public education.

The communities should continue supporting an area-wide public education and conflict monitoring program.

Priority 8. Bear warning and closure signage.

The villages and RDCK need to develop a credible bear warning and closure sign system and guidelines. Other government agencies (Ministry of Forests, Lands and Natural Resource Operations, Ministry of Transportation and Infrastructure) besides BC Parks that manage trails and campsites need to develop a common set of guidelines similar to BC Parks for managing more hazard bear situations at the facilities they are responsible for. This includes when to post warning signs or implement temporary closures. Closures may be necessary when a mother grizzly and young are frequenting an area, a bear is feeding on a large mammal carcass, or a bear has been reported as being very aggressive or where human injury has occurred. Normally closure signage is posted for at least two days after the dangerous situation passed as identified by a qualified person.



PART TWO—PHASE 1: UPPER SLOCAN VALLEY BEAR HAZARD ASSESSMENT

1.0 INTRODUCTION TO THE BEAR SMART COMMUNITY PROGRAM

Conflicts between humans and bears occur frequently in many British Columbia communities. Every year in BC, about 1,000 black bears and roughly 50 grizzlies are needlessly destroyed because of real and perceived threats to people and property. Bears do present potential safety risks. Management attempts were largely reactive in that problems were only addressed after they had developed. There was no coordinated attempt to prevent conflicts. “Fixing” the problems usually meant destroying the bears involved or moving them to a remote location. Killing bears does not stop conflicts because the bears don’t learn to stay away from human-use areas and non-natural attractants. More importantly, people don’t learn not to attract bears to their properties.

Moving, or translocating, bears requires having good knowledge about the availability of a suitable area to put a bear into, and having the manpower and equipment to move it there. If not done properly, it can result in the bear returning to where it had learned to find food, being killed by a dominant bear in the “new” area, or starving to death. This is a reactive approach because it attempts to manage a problem after it has developed. It does not solve the problem because another bear will soon replace the one killed or translocated. In addition to being ineffective, this approach is also very expensive. It costs well over a million dollars each year for Conservation Officers to respond to the many thousands of bear complaints throughout the province.

The “old” way of dealing with human-bear conflicts proved futile. It did nothing to decrease the frequency or intensity of future conflicts, and little to protect public safety or prevent property damage. We now know there are proactive ways to reduce the potential risks associated with people living in “Bear Country” and to reduce negative effects on bear populations by continually killing bears. This inefficiency, combined with changing public attitudes towards destroying bears resulted in changes to how human-bear conflicts are managed. What was needed was a way to prevent conflicts. These changes form the basis for the Bear Smart Community Program.

The Bear Smart Community Program is a province-wide initiative to reduce conflicts between people and bears and, in doing so, increase public safety. The province created the proactive Bear Smart Community Program in 2002 in partnership with the Union of BC Municipalities and the BC Conservation Foundation. According to the government’s website,¹ the program guides communities toward a safer and more sustainable way for people and bears to co-exist. The program’s goal is “to address the root causes of bear-human conflicts, thereby reducing the risks to human safety and private property, as well as the number of bears that have to be destroyed each year.” The initiative depends on a partnership with other provincial agencies, regional and municipal governments, businesses, community groups, NGOs, and individuals.

1.1 A Two-Phase Process

There are two phases to the Bear Smart Program. Phase 1 is to conduct a bear hazard assessment (BHA), which is a detailed assessment and analysis of the state of the problem in a given location. The BHA makes recommendations for solving the problems and conditions that are described in the report for that location. There are seven criteria that need to be met in Phase 1; these are listed in the table below, along with current progress in achieving them for the communities in the Upper Slocan Valley:

¹ <http://www.env.gov.bc.ca/wld/bearsmart/bearsmintro.html>

Table 1. Status of criteria required to achieve Phase 1 Bear Smart status in the Upper Slocan Valley

	Criterion	Status
1	Conduct Bear Hazard Assessment	completed
2	Review public education programs	completed
3	Design conflict monitoring and reporting system	completed
4	Review waste management system	completed
5	Review waste management bylaws	completed
6	Create (or review) green space management strategy	completed
7	Review community planning strategy (OCPs, etc.)	completed

Phase 2 entails producing a Bear-People Conflict Prevention (or Management) Plan for the community to implement. This is the problem solution phase of the program. Phase 2 has six (6) criteria that need to be implemented by the communities. It contains the priorities and actions for carrying out the recommendations that are described in the BHA. The implementation period for the Bear Plan is typically up to five years to allow communities to achieve the required activities and acquire the funding needed to implement new systems and practices. Table 2 below lists the six criteria for Phase 2, along with the communities' progress status in achieving these criteria:

Table 2. Status of criteria required to achieve Phase 2 Bear Smart status in the Upper Slocan Valley

	Criterion	Status
1	Implement bear-people conflict monitoring system	in progress
2	Implement public education programs	completed
3	Implement bear-proof waste management system	in progress
4	Implement and enforce Bear Smart bylaws	in progress
5	Revise the OCP and local development plans to be consistent with the goals of the Bear Plan	in progress
6	Implement the green space management plan	in progress

1.2 Components for Designation as a Bear Smart Community

The government's website states that there are six (6) required components a community must complete—or be committed to and engaged in implementing—in order for it to be designated a Bear Smart Community. Table 3 below shows the overall progress of communities in the Upper Slocan Valley.

Table 3. Status of required components for designation as a Bear Smart Community

	Criterion	Status
1	Prepare a BHA using the criteria outlined	completed
2	Prepare a bear-people conflict management plan (Bear Plan) to address the hazards and conflicts identified in the BHA. Once local governments accept the management plan, they can apply for designation as a Bear Smart community.	completed
3	Implement a continuing public education program directed at all sectors of the community.	completed
4	Develop and maintain a bear-proof municipal (or regional) solid waste management system.	in progress
5	Implement and enforce Bear Smart bylaws that prohibit the provision of food to bears as a result of intent, neglect, or irresponsible management of attractants.	in progress
6	Revise planning and decision-making documents and policies to be consistent with the Bear Plan	in progress

Items in tables 2 and 3 that are marked as “in progress,” indicate a commitment to achieving the requirements of the Bear Smart Community program. Because the study area is multi-jurisdictional, the timing for completing the components is not necessarily synchronous throughout the region, but all jurisdictions are in various stages of completion.

The establishment of a Bear Working Group (BWG) is another important activity to help communities achieve Bear Smart Community status. The BWG is a partnership that includes federal and provincial agencies, regional and municipal governments, businesses, community groups, NGOs, and individual citizens acting as a dedicated team whose goal is to provide the community with leadership and direction to becoming Bear Smart. It is important to remember that some activities of this partnership may require funding and ongoing commitment from jurisdictions and agencies that are outside of the control of some of the local governments, such as the COS, other provincial departments (Environment, Highways, MFLNRO), the RCMP, and the area school district. However, by showing support to maintaining the BWG and working to implement decisions made by the group, communities in the Upper Slocan Valley can help to increase the level of commitment of these outside agencies.

It is important to remember, too, that, for small communities in particular, there are limited resources and personnel available to participate in a BWG. To help solve this problem, we have recommended representatives from the Upper Slocan Valley participate in the regional BWG that has been established in nearby Nelson, where many of the provincial and regional district offices are located. This recommendation has been accepted by the relevant agencies and organisations in Nelson and in the Upper Slocan Valley and the logistics are currently being worked out.

1.3 Response Plan



Conservation Officers drag carcass of bear that was destroyed when it came into conflict with people. This reactive measure is one the Bear Smart Community Program can help prevent.
COS photo.

The Conservation Officer Service (COS) and BC Environment are committed to working with local governments, law enforcement agencies, and community groups to develop a response plan for bear-people conflicts that is specifically tailored to that community. Once a community has been designated as “Bear Smart,” more options become available in how bears can be managed. In a Bear Smart Community, fewer bears will be coming into conflict with people and those that do will not be getting a readily accessible food reward. The response plan will allow BC Environment and its partners the option of using non-lethal techniques, such as bear aversion, when bears exhibit undesirable behaviours.

Non-lethal control of bears, including short distance (<10 km) translocation, aversive conditioning, and on-site release, will only be used in communities that have been formally designated as “Bear Smart” and where a plan outlining the responses to human-bear conflicts has been prepared and approved by the ministry’s Regional Director (such as in Whistler and Kamloops). Non-lethal management techniques may be used when it is determined that a bear’s behaviour does not pose a moderate to high risk to public safety or cause significant damage to the public or private property. In some communities that have not yet achieved Bear Smart

status, a degree of non-lethal management techniques are also being implemented due, in large part, to public pressure and local conditions, such as on Vancouver's North Shore. The reason for this is that, while the area has not yet achieved full Bear Smart Community status, it has been actively engaged in widespread public education activities and in reducing attractants (BC MOE 2001).

However, in spite of the widespread and ongoing Bear Smart activities in the Upper Slocan Valley, both the BearSmart Community program and the Conservation Officer Service have experienced significant funding cutbacks that have affected the province's ability to meet its promises to use non-lethal techniques and translocations to communities that deserve this sort of Bear Smart attention.

2.0 BEAR-HUMAN INTERACTION DEFINITIONS²

Most of the following definitions apply to terms used to describe bear-human interactions:

Aggressive behaviours:

Defensive: Defensive aggression is usually provoked and results in the bear swatting, charging, etc. when approached too closely.

Offensive: Offensive aggression is usually initiated by the bear as attempted predation, tearing tents without food attractants, etc.³

Anthropogenic foods: Foods generally derived directly or indirectly from humans—usually non-natural (e.g., garbage), but can also be natural (e.g., fruit trees, artificially planted landscaping species, such as bearberry, Oregon grape, mountain ash trees).⁴

Backcountry: Refers to areas beyond main roads and that generally receive limited human use. In the study area, it includes all areas beyond the low elevation areas adjacent to Slocan Lake.

Bear/human interaction: Any of the various activities and their effects involving bears and humans, including sightings, encounters, and incidents.

Bear Plan: a bear-people conflict prevention (or management) plan.

BHA: a Bear Hazard Assessment.

Bluff or False Charge: A type of defensive or dominance behaviour exhibited by bears that can be characterised by a bear running or moving towards a person but veering off or stopping before making physical contact. This is almost always accompanied by other ritualised displays, like huffing, jaw-popping, or slapping the ground.

BWG: the Bear Working Group comprised of public and private agencies, and community groups and individuals.

CO/COS: a Conservation Officer or the Conservation Officer Service.

Dangerous wildlife: Under BC's Wildlife Act, specifically the carnivore species: bear, wolf, coyote, and cougar.

Displacement: Encounters where the bear is displaced and runs or walks away.

² Most of these definitions come from the publication: Wellwood, Debbie. 2001. *Hazard Assessment of Bear-Human Conflict in Stewart, British Columbia—Phase 1*, Raven Ecological Services, Smithers, BC; others are adapted from information from Wayne McCrory and others specialising in bear biology.

³ BC Ministry of Environment. Dec 2002, Third Ed. *Bear-People Conflict Prevention Plan for Parks and Protected Areas in British Columbia*. Victoria, BC; pp. 73.

⁴ Dolson, S., and C. Sherlock. 2006. *Responding to Human-Bear Conflicts: A review of non-lethal management techniques*. Prepared for Conservation Officer Service. Get Bear Smart Society, p. 8.

Dominance behaviour: Body language and vocalisations used by bears to establish dominance hierarchies. Bears may also use this behaviour when interacting with people. The behaviour includes direct eye contact, jaw-popping, huffing, swatting, and bluff or false charges. This behaviour is considered defensive posturing rather than aggressive behaviour.⁵

Encounter: When bear is aware of human presence, regardless of whether or not the human is aware of the bear; bear may ignore people (because habituated to people), or may approach people.

Food-conditioned: Bears that have been rewarded or positively reinforced with non-natural foods, such as human food or garbage, and as a result have learned to associate humans and/or human developments with the potential to obtain food. Bears that are both human-habituated (see below) and food-conditioned generally pose a serious threat to human safety. As a result, these bears are frequently killed (Herrero 1985, Ciarniello 1997).

Frontcountry: Loosely refers to areas accessed by main roads; is where most human use occurs.

Human-habitation: The reduction or absence of an avoidance or fear response that a bear can learn from neutral interactions with people and that are not threatening, painful, or injurious (to the bear). Bears can be human-habituated without being food-conditioned; refers to bears that appear accustomed to people.

Incident or conflict: The most serious bear-human interaction. An interaction is considered an incident or conflict when any of the following occur:

1. physical contact between a person and a bear
2. damage to or loss of property or food
3. high intensity charge by a bear toward people
4. people have to take extreme evasive action in response to a bear
5. people use a deterrent on a bear
6. a bear is translocated or destroyed

Non-lethal bear management or “bear aversion techniques”: A term used to describe various bear behaviour modification methods, including active approaches like aversive conditioning, bear-shepherding and hazing, as well as passive methods such as electric fencing.⁶

Non-natural foods: Foods made available to bears by people and that are either not natural in a bear’s diet or have been taken out of a natural/wild context and placed in a settled area (such as some tree or shrub species that people use for landscaping purposes, in a backyard garden, agricultural setting, etc.).

Observation: When a human sees a bear but the bear is unaware of the human.

Relocation: Capture and subsequent transport of a bear to a location within its likely home range often in an attempt to temporarily mitigate bear incidents (Hopkins et al. 2010).

Stress-related behaviour: Observed bear response when provoked during a human-bear interaction (Herrero et al. 2005).

Translocation: Capture and subsequent transport of a bear to a location outside its presumed home range often in an attempt to permanently mitigate bear incidents or augment a population (Hopkins et al. 2010).

Zero Tolerance: Refers to the COS and other authorities, such as bylaw officers, using rules of law to ticket people (not just warn them) for not removing attractants that cause bear problems.

⁵ Dolson, S., and C. Sherlock, *Ibid*, p. 8.

⁶ Dolson, S., and C. Sherlock, *Ibid*, p. 9

Conservation Officers have used the Dangerous Wildlife Protection Order (DWPO) for garbage and other attractant infractions, which carries a fine of \$575. This legal tool has been little applied because it has been difficult to successfully pursue in court and be an effective deterrent (Peter Busink, CO, pers. comm.). However, in 2011, section 33.1 of the BC Wildlife Act was amended to enable COs to more easily issue a \$230 ticket for negligence or carelessness regarding *the mismanagement of attractants (such as food, compost, and garbage waste) that could invite dangerous wildlife, such as grizzly and black bears, cougars, coyotes, and wolves.*



3.0 THE STUDY AREA

Our Upper Slocan Valley study area encompasses the entire Upper Slocan Lake watershed (east side) from Enterprise Creek in the south to Summit Lake in the north, and to the surrounding watershed heights of land in all directions. These boundaries reflect black and grizzly bear distribution rather than political boundaries. By using this comprehensive approach, we felt a greater degree of success could be achieved to minimise bear-people conflicts in the region. More precisely, our study area includes the following locations:

- a. two incorporated villages: New Denver and Silverton
- b. rural unincorporated communities, including: Hills, Retallack, Sandon-Cody, Summit Lake, Rosebery, Red Mountain, and Red Mountain south to Cape Horn
- c. other settlement areas in Area H (north) of the Regional District of Central Kootenay (RDCK), which includes the Rosebery waste transfer station, some “rails-to-trails” areas, and private lands
- d. all or portions of three large provincial Class A parks: Valhalla, Kokanee Glacier, Goat Range
- e. two smaller provincial park campgrounds: Summit Lake, Rosebery
- f. various public trails (within and outside of parks)
- g. all other Crown lands in the area
- h. private campgrounds and resorts (including Three Islands Resort)

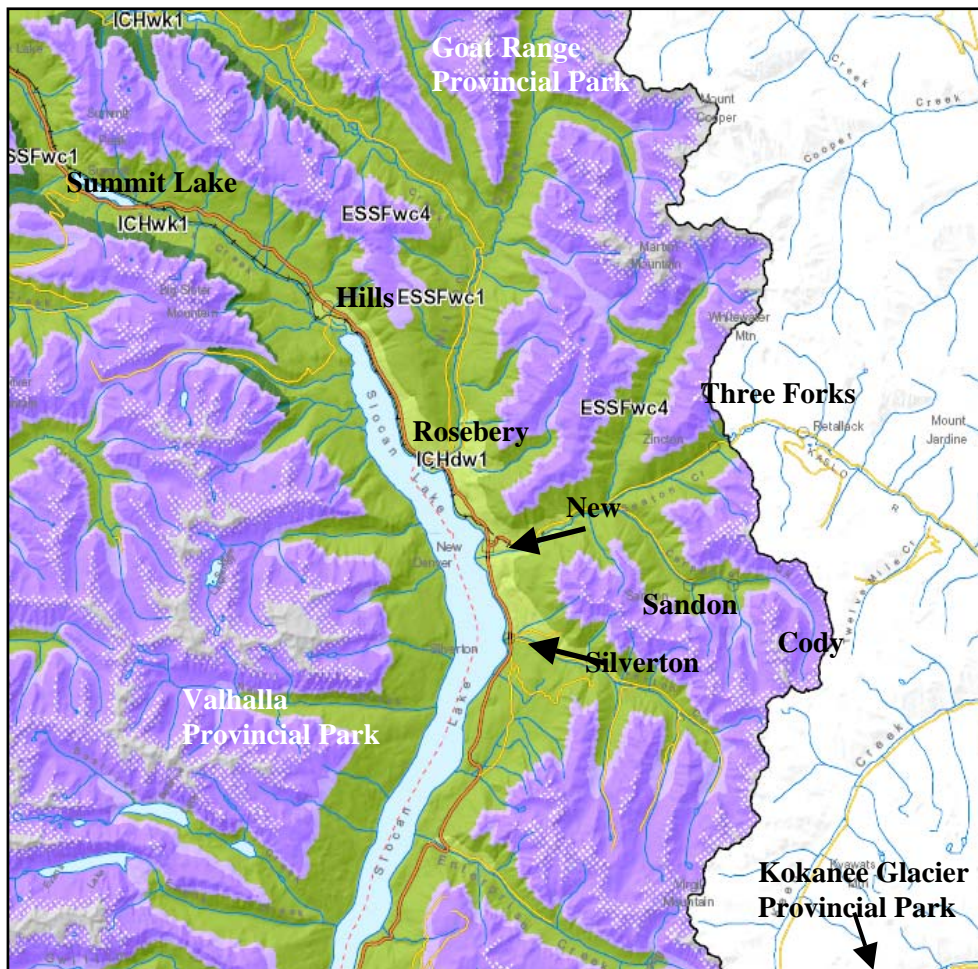


Figure 1.
Communities and
settlements in the
Upper Slocan
Valley study
area.

3.1 History and Demographics of the Study Area⁷

The study area is within a region of the province known as “the west Kootenays.” Kootenay is an anglicised pronunciation of Ktunaxa, the aboriginal group that, along with the Sinixt, occupied the region for millennia.

For several thousand years, aboriginal people in the valley have used its resources for food and shelter. Archaeological sites are scattered along the length of the Slocan River and there are some well-preserved pictographs on the western cliffs of Slocan Lake. Until as recently as 1890, there had been no documented incursions into the Slocan Valley by settlers or other outsiders.

That all changed in the early 1890s, when silver-lead ore was found near Sandon. Thousands of prospectors poured into the area. Mining towns like Sandon, New Denver, and several smaller settlements popped up. Railway companies built lines to the mining camps. Sandon’s population was in the thousands. But it was a short-lived phase. By 1910, the mining boom had declined to almost nothing and many towns vanished. A few, like New Denver and Silverton, pegged their futures on other resources, such as agriculture, logging, and outdoor recreation. During WWII, over 1,500 Japanese-Canadians were interned in New Denver and Rosebery. In the decades of the 1960s-1980s, young Canadians and Americans flocked to the area and began communal living arrangements, small farming, and other livelihoods, including the rise of the arts community for which the Slocan has become well known. Later, it became a focus for retirees. Today, only about 5,600 people live within the 330,000 hectares (1,275 square miles) of the Slocan Valley; fewer in the upper portion of the valley that makes up the study area.

The largest community is New Denver, population about 600. Incorporated in 1929, it has a hospital and the only K-12 school in the study area. It was once the regional capital. On the east shore of Slocan Lake, it has a museum, shops, a municipal campground, and heritage buildings.

Eight kilometres south of New Denver is Silverton. Home to a museum, art galleries, shops, a hotel and B&Bs, it, like New Denver, was once an important service centre for area mines. It is the smallest incorporated municipality in BC and has a population of just over 250 residents.

Sandon is 11 km east of New Denver. At its peak, Sandon had over 5,000 residents and was a bustling mining boom town. Situated in a narrow valley surrounded by the remnants of mining on the steep mountainsides, it is now a ghost town and historical site that is visited by 60,000 people a year. The first community in BC with electricity, Sandon was known as the Monte Carlo of North America. But floods, fires, and depleted mines spelled the end of all that.

North of New Denver are the unincorporated communities of Rosebery, Hills, and Summit Lake. Small agriculture is a livelihood, and logging has been an economic mainstay in the lower and middle elevations. The spectacular beauty of this part of the valley attracts people from all over, and provision of amenities and services for outdoor recreation is a regional economic generator.

The Upper Slocan Valley watersheds contains generally low habitat values for both grizzly and black bears at lower elevations, with high quality habitats along Bonanza Creek riparian areas for both spring green plants and fall Kokanee spawning. Generally, black bears occupy the low to mid-elevation habitats, which puts them at greater risk of conflict with people. Grizzly bears tend to occupy the higher quality wetbelt habitats from mid- to high elevations (subalpine and alpine). However, in spring, some grizzlies use lower elevation habitats, such as the Bonanza Creek wetlands, which puts them in close proximity to rural farmsteads and public recreation use areas.

⁷ Information in this section is largely from the website: <http://www.slocanvalley.com>, augmented by information from the websites of the Regional District of Central Kootenay (<http://www.rdck.bc.ca/>) and the villages of New Denver (<http://www.newdenver.ca/>) and Silverton (<http://www.silverton.ca/>).

3.2 Ecological Description of Study Area

Describing the study area in ecological terms helps us to understand how to use habitats in a sustainable way. Understanding ecological classification systems enables us to see how the various plant and animal species interact within habitats. When we learn that soil nutrients, for example, in addition to climate and topography, play a major role in the development of habitats, and further learn about the nutrient cycling enabled by interactions between bears and forest ecosystems, we can better appreciate the ecological values of bears.

There are two main ecological classification systems in use in British Columbia: the Ecoregion Classification System and the Biogeoclimatic Ecosystem Classification (BEC) System.

The Ecoregion Classification System is based on climatic processes and landforms, and brings into focus the extent of critical habitats and their relationships with adjacent areas. Largely developed by Dennis A. Demarchi and others in both Canada and the US, it was adopted by the Wildlife Branch in 1985 to serve as a framework for recognising small-scale ecosystems in BC.⁸

Ecoregion classification helps us understand the great habitat diversity of BC. The system stratifies BC's terrestrial and marine ecosystem complexity into discrete geographical units at five levels. The two highest—Ecodomains and Ecodivisions—are very broad and place BC globally. The three lowest—Ecoprovinces, Ecoregions, and Ecosections—are progressively more detailed and narrow in scope. They describe areas of similar climate, physiography, oceanography, hydrology, vegetation, and wildlife potential. Within each ecoregion, zones occur where soils, plant and animal communities, and aquatic systems develop because of the interaction of climate with the land and surficial materials. These zones are best defined within the BEC system.

3.2.1 Northern Columbia Mountains Ecoregion

The study area is within the Southern Interior Mountains Ecoprovince, which is divided into seven ecoregions containing 19 ecosections. The ecoregion in which the study area is situated is the Northern Columbia Mountains Ecoregion. This is a rugged, often ice-capped mountain area that rises abruptly from the Southern Rocky Mountain Trench to the east. This block of mountains intercepts eastward-flowing precipitation, making these the wettest mountains in BC's Interior. In fact, this ecoregion is commonly called the "Interior Wet Belt," and valleys here contain many plant species normally found in the wet ecosystems along BC's coast (e.g., western red cedar, western hemlock, sword fern, devil's club, etc.). This ecoregion contains six ecosections. The one we are concerned with is the Central Columbia Mountains Ecosection.

3.2.1.1 Central Columbia Mountains Ecosection

This is an area of high ridges and mountains, with narrow valleys and trenches. Precipitation is high from the valley bottoms to the upper slopes.⁹ The subalpine zone is characterised by Engelmann spruce and subalpine fir, and stands of lodgepole pine, which can develop after fire. Characteristic wildlife includes grizzly and black bears, mountain caribou (a rare ecotype of woodland caribou), mountain goats, grouse, waterfowl; and mule and white-tailed deer.¹⁰

⁸ <http://srmwww.gov.bc.ca/ecology/ecoregions/>

⁹ *Ibid.*

¹⁰ www.environnement-canada.ca/soer-ree/English/Framework/Nardesc/moncor_e.cfm

3.2.2 Biogeoclimatic (BEC) zone classifications in the study area

Biogeoclimatic zones are a forest classification system, largely developed to its current state by V. Krajina, K. Klinka, D. Meidinger, J. Pojar, and others. The three main biogeoclimatic zones in the study area are Interior Cedar-Hemlock (ICH), Engelmann Spruce-Subalpine Fir (ESSF), and Alpine Tundra (AT); they occur from lowest to highest elevations, respectively. Using both classification systems together enables a progressively more detailed description and understanding of the ecological potential and processes of a location.¹¹

3.2.2.1 Interior Cedar-Hemlock (ICH) Biogeoclimatic Zone

The ICH zone occurs at low to middle elevations of southeastern BC. In the study area, it is found in the lower slopes of the Columbia Mountains and is commonly called the Interior Wet Belt. Along with the ESSF zone described below, it has the wettest climate in BC's Interior.

The ICH is the most productive forest zone in the Interior and has the highest diversity of tree species of any zone in the province. Western redcedar and western hemlock dominate in mature forests, along with grand fir, white spruce, Engelmann spruce, and subalpine fir. In younger forests, western larch, Douglas fir, western white pine, black cottonwood, lodgepole pine, paper birch and trembling aspen are common, with some ponderosa pine on the driest sites. Forest fires in the drier areas play an important ecological role; vegetation and berries (huckleberries, blueberries) on these sites are important for both black and grizzly bears. Black bears traditionally den in the hollow interiors of very old cedar trees, although on drier sites they also excavate winter dens in banks of hard dirt or clay under root structures that provide stability from cave-ins.

Wetlands are generally small, due to the topography, but many lakeshore marshes and small riparian areas occur and contain understory species also important to bears, including sedges, skunk cabbage, devil's club, and common horsetail.

Wildlife typical to this zone includes grizzly and black bears, cougar, mule and white-tailed deer, Rocky Mountain elk, mountain goat, mountain caribou, marmots, and various bat species. Numerous bird species, including a variety of owls, various kinds of woodpeckers, golden eagle, ruffed grouse, and mountain bluebird live here, and there are some important, but restricted, habitats for reptiles and amphibians, including the Pacific tree frog and western terrestrial garter snake.

3.2.2.2 Engelmann Spruce-Subalpine Fir (ESSF) Biogeoclimatic Zone

The ESSF zone is intermediate between the ICH and the comparative "rocks and ice" and stunted vegetation above the treeline. The climate is cold, moist, and snowy. Winter is the longest season.

Subalpine parkland, characterised by clumps of trees interspersed with heaths, meadows, and grasslands, is a common habitat type. Lodgepole pine is common after forest fires; deciduous trees are uncommon in this zone. Whitebark pine is another common tree here. The seeds (pine nuts) of this tree are a rich food source for a variety of animals, including grizzly and black bears.

Interestingly, because grizzlies do not readily climb trees, as do black bears, the main way grizzlies get this food is to rob the stashes of red squirrels. In some areas, after a good year for these pine nuts, they can dominate the food habits of bears for the entire next year. Bears can even locate cones under 6 feet of snow.¹²

Subalpine meadows and avalanche tracks also contain important plant foods for bears, such as cow parsnip, lovage, avalanche lily, western spring beauty, bunchberry, blueberries, huckleberries, slide alder, mountain ash, common horsetail, and various sedges and grasses.

¹¹ www.for.gov.bc.ca/hfd/library/documents/treebook/bigeo/bigeo.htm

¹² US Geological Service Northern Rocky Mountain Science Center: www.nrmssc.usgs.gov/research/grizzlyb.htm

The ESSF is one of the most productive zones for grizzly bears. Avalanche tracks, particularly, provide important spring and summer habitats. Furbearers, such as martens, red squirrels, and wolverines are also at home in this zone, as are a number of seed-eating birds (e.g., crossbills, pine siskins, Clark's nutcracker), and other species, including spruce grouse, kinglets, nuthatches, mountain chickadee, winter wren, and varied thrush. Few amphibians and reptiles occur here, although long-toed salamanders and western toads do occur.

3.2.2.3 Alpine Tundra (AT) Biogeoclimatic Zone

The AT zone occurs above the ESSF zone and has the harshest climate. Species diversity and density are comparatively low. In the Southern Interior, however, this zone is more variable than elsewhere in BC. In lower elevations, stunted (krummholz) and dwarf forms of subalpine fir, white spruce, Engelmann spruce, mountain hemlock, and whitebark pine are found. Shrubby willows occur, as do kinnikinnick, lingonberry, bog blueberry, red bearberry, grasses, sedges, lupines, and cow parsnip.

Due to the presence of grizzly bears, black bears rarely venture into the AT zone. Grizzly bears use the krummholz and lush meadow habitats during summer and fall to graze on green plants, such as horsetail, grasses, and sedges. They commonly excavate for corms of avalanche lily and western spring beauty. In late fall, they use alpine slopes to excavate their winter dens; although caves may also be sought out. Most of the resource use here is based on high recreational values for mountaineering, hiking, camping, skiing, horseback riding, etc. However, mining also occurs, sometimes to the detriment of grizzly bear habitat.

3.3 Regional, Provincial, National, and International Contexts

The entire “greater” study area contains important elements of regional, provincial, national, and international significance. These elements include cultural, ecological (including wildlife and plant species), hydro-logical, and even geological characteristics.

Predominant among these elements is the presence of prime habitat for many endangered and threatened (red- and blue-listed) fish, plant, and animal species. Notably, much of the study area contains important habitats and/or movement corridors for provincially blue-listed grizzly bears.¹³

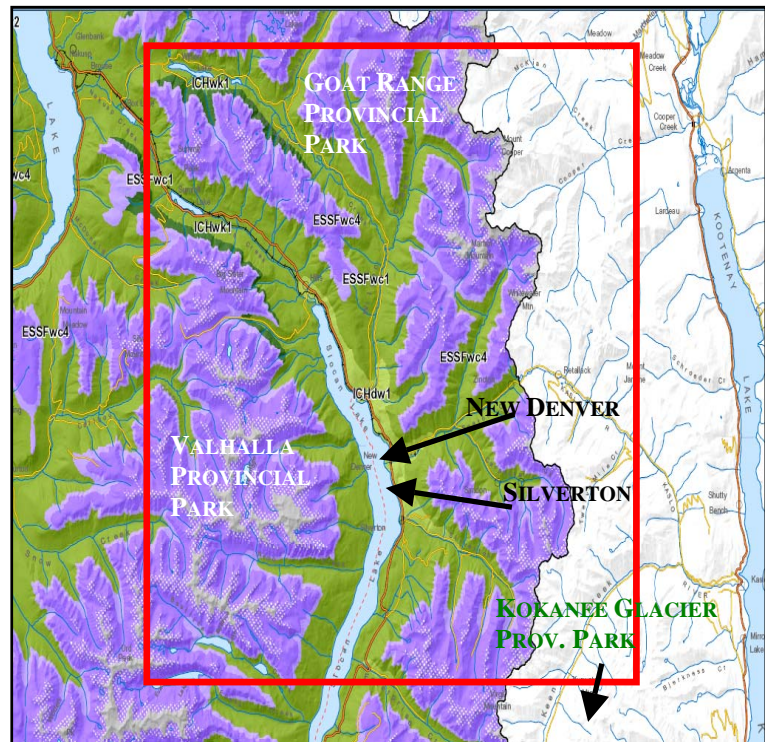


Figure 2. Large Class A provincial parks adjacent to the study area.

¹³ Valhalla Provincial Park Management Plan Draft Background Document. 2004. Wildland Consulting Inc. BC Ministry of Water, Land and Air Protection, Environmental Stewardship Division, Kootenay Region; pp. 85.

As well, small, relict populations of the provincially red-listed mountain caribou (a rare ecotype of woodland caribou) occur in old-growth spruce forests in the Northern Park Ranges Ecoregion and the Columbia Mountains and Highlands Ecoregion; the “Selkirk herd” is the southernmost population of mountain caribou in the province.¹⁴ Because of their comparative and actual rarity, both grizzlies and mountain caribou are species of international significance.

The three major provincial parks here (Valhalla, Goat Range, Kokanee Glacier) protect many of the significant ecological elements within the study area, as follows:

Valhalla Provincial Park (50,067 ha), wholly within the study area, contains many features and characteristics of regional and provincial significance, including:

- a. regionally significant large mountain lakes, including Evans Lake, Beatrice Lake, and Wee Sandy Lake;
- b. regionally significant protection of the greatest frontage on a main valley lake (Slocan Lake);
- c. regional significance in that this park contains six of the seven landscape elements typical of the Central Columbia Mountains;
- d. regionally significant alpine and subalpine vegetation at locations such as Mulvey Basin, Drinnon Pass, Gwillim Lakes, Upper Demers Lakes, Avis Lakes, Mt Meers, and below the New Denver Glacier;
- e. regionally and provincially significant pictographs, archaeological, and pre- and post-contact heritage sites;
- f. provincially and regionally significant recreation feature values;
- g. provincially significant pristine lake and mountain panoramas, based on views of the Valhalla Range from various elevations on the east side of Slocan Lake;
- h. provincially significant scenery, including Mulvey Basin, the Devil’s Range, and Nemo Walls;
- i. provincially significant plant communities, including the Evans Lake yellow cedar forest (see below), the Cove Creek coastal salal/ponderosa pine forest, and the upper Nemo Creek Engelmann spruce/coastal fern association.

Encompassed within Valhalla Provincial Park is the Evans Lake Ecological Reserve.¹⁵ At 185 ha, this small ecological reserve was established to protect one of the few known stands of yellow cedar (*Chamaecyparis nootkatensis*) in the Interior of BC.

A portion of Goat Range Provincial Park (78,947 ha) occurs in the northeastern part of the study area. The BC Parks management plan for this wilderness park states (p. 2):

The vision for the future of Goat Range Provincial Park sees the park managed so that it continues to be recognised as an internationally significant area that protects and preserves for perpetuity the wilderness values of the Southern Selkirk Mountains.

and in respect of wildlife conservation: (p. 11):

With the establishment of Goat Range Provincial Park, a strategic centre link was formed with all of the major protected areas in the region joining the Southern Selkirks to the Purcells and creating a natural bridge reaching toward the Northern Selkirks. These connections and linking corridors are critical to providing for genetic exchange and dispersal of migrating species [including grizzly bears] throughout the region.

and (p. 13):

¹⁴ <http://www.env.gov.bc.ca/ecology/ecoregions/humidtemp.html>

¹⁵ http://www.env.gov.bc.ca/bcparks/eco_reserve/evans_er.html

The park protects high value wildlife and habitats for wide-ranging species at risk, such as mountain caribou, wolverine, and grizzly bears [and] other species including elk and mountain goat. [Also,] the Lardeau River is the only known indigenous spawning area in the world for giant Gerrard rainbow trout.

The northwest quarter of Kokanee Glacier Provincial Park (32,035 ha) occupies the southeast portion of the study area. Established in 1922, it is one of BC's oldest provincial parks. The draft background report for Kokanee Glacier¹⁶ indicates its importance to bears (p. 11):

...highlights of the park are the varied habitat associations accessible as prime bear habitat. The headwater topography fosters rich riparian habitats for bears while valley sides are lined with avalanche chutes and provide an abundance of berries and other seasonal vegetation. Other staples...for bears are provided by alpine meadows and barren surfaces which allow digging for ground squirrels and avalanche lily corms. The alpine also provides denning areas for grizzly bears, while mid-elevation old western red-cedar forests provide denning structures for black bears...scientists have estimated it could be up to 15 or more [grizzlies], including 3-4 nursery groups [that use the park annually].

This park also contains regionally and provincially significant recreation features, including:

- a. regionally significant streams, waterfalls, and cascades, including Kokanee Creek, Keen Creek, Woodbury Creek, Lendrum Creek, and Lemon Creek
- b. regionally significant historic recreation features related to past mining activities in the park (e.g., Slocan Chief Cabin and numerous trails)
- c. provincially and regionally significant glacier and glacial landform features exemplified by Kokanee Glacier, Woodbury Glacier, landforms found in the Joker Basin-Coffee Pass area
- d. provincially significant alpine and subalpine vegetation: Kokanee Lake meadows, Keen Lake meadows, Lemon Pass, and Lendrum Creek headwaters
- e. provincially-significant mountain scenery, including Humpback Ridge, Glacier View Peak, Gray's Peak, Trafalgar Mountain, and Caribou Ridge
- f. provincially significant alpine lakes, including Kokanee, Lendrum, Keen, Kaslo, Nalmet, and Sapphire lakes

One of the little-recognised features of Goat Range and Kokanee Glacier provincial parks is that they are home to white phase Interior grizzlies. These typically have a whitish body colour, dark leggings, and a head with white and dark shadings. During the campaign to establish Goat Range Park, it was called the "White Grizzly Wilderness Proposal."¹⁷

Overall, the study area and provincial parks provide a variety of habitats and linkages for grizzly bears, an iconic species that represents wilderness in a world where wilderness itself is increasingly shrinking and, concomitantly, increasing in global importance. Bringing the region into Bear Smart compliance greatly increases the chances of maintaining viable populations of grizzlies for the future.

Grizzly bears are a large and occasionally dangerous species whose behaviour is not always predictable. Grizzlies may cause...damage to specific economic interests and injuries to individuals. Implicit in efforts to conserve grizzlies is the acknowledgement that these are costs that society is willing to accept for the benefits of having [these] bears...

Healthy populations of grizzly bears require large landscapes where habitat is managed in ways compatible with their needs (Schoen 1990). Grizzly bears are a classic "umbrella species" because landscapes adequate to maintain long-term viable populations of this species

¹⁶ http://www.env.gov.bc.ca/bcparks/planning/mgmtplns/kokanee/backgrd_draft.pdf

¹⁷ Wayne McCrory, personal communication, 15 August 2009.

are ipso facto adequate to maintain a host of other species with similar requirements for large landscapes. Such species include grey wolf, lynx, wolverine, marten, and mountain caribou...

In addition to their umbrella role, grizzly [and black] bears help perpetuate natural systems. Through their feces, they transport and disperse seeds of berries and other plants. In recent years, evidence has developed that bears have played an important role in maintaining forest health by transporting and depositing nutrients from salmon far from streams where the salmon had been consumed... Grizzly bears are excellent excavators, using their long claws as shovels to overturn large areas of earth in search of edible roots, tubers, and ground squirrels. These sites enhance vegetation diversity by providing fertile ground for pioneering plant species.

We recognise the functional values that grizzly bears have in ecological systems. However, we do not have to justify their existence by demonstrating these values. It should suffice that grizzly bears are an apex carnivore and a symbol of ecological integrity that represents the current expression of untold millennia of evolution. If we fail to nurture grizzly bears and the conditions necessary for them to thrive, there can be little hope that functionally intact ecosystems will continue to support the diversity of life forms that enhance our lives and the human spirit.¹⁸

3.4 Ecology of Bears in the Study Area

Before embarking on a discussion of results and recommendations, it is useful to present information on the ecology of bears—both black bears and grizzlies. This includes information on the habitats they require, their behaviours, and how these predispose both bear species to conflicting with people.

3.4.1 Black bears

Six subspecies of black bears (*Ursus americanus* spp.) occur in BC. The black bear subspecies in the study area is *Ursus americanus cinnamomum*, called so because the reddish-brown colour phase is more common than on the coast. This is the subspecies found throughout most of BC and in the rest of Canada. On the coast, the common subspecies is *Ursus americanus altifrontalis*, which are primarily black in colour, and are distinct from black bears found on Vancouver Island (*Ursus americanus vancouveri*), Haida Gwaii (*Ursus americanus carlottae* [for the Queen Charlotte Islands]), the north-central coast (*Ursus americanus kermodei*, “spirit” or kermode bear, a white colour phase), and the “glacier bear” (*Ursus americanus emmonsii*, blue colour phase) of the extreme northwest (Tatshenshini-Alsek region) of the province.¹⁹

Research has revealed the importance of bears in ecosystems, particularly ones with salmon-forest components, and helps us understand that bears provide important ecosystem functions, such as the distribution of salmon-derived nutrients (e.g., nitrogen) that enable the growth of lush forests. Bears also distribute the seeds of a number of plant species, thus contributing to the biodiversity of an area.

Black bears are truly forest-dependent animals. They prefer the types of forested habitats found in valley bottoms (which is also where people like to live). The dense understorey in older forests offers a wide variety of bear foods. Trees provide protective cover and, when climbed, safety from threats. The fact that black bear sows send their cubs up the nearest tree to protect them from threats is one of the main behavioural differences between black and grizzly bears, which don’t climb trees so easily. In wet areas, the hollow interior of large trees and tall stumps provide bears with important places to den for the winter that are high and dry, enabling them to better maintain body temperature during the

¹⁸ Peek, James, et al. 2003. *Management of Grizzly Bears in British Columbia: A Review by an Independent Scientific Panel*. BC Ministry of Water, Land and Air Protection, Victoria; pp. 4-5.

¹⁹ Paquet, M. (original text). 2001. *Black Bears in British Columbia: Ecology, Conservation and Management*. BC Environment Ministry brochure, pp. 6.

wet winters and to avoid predators.²⁰ Black bears in the Interior wet belt also excavate dens in compacted soils under the root structures of trees and other suitable sites. In BC's mountainous terrain, valley bottoms are also where most of our towns and other settlements are located. This is a root cause of conflicts between people and black bears.

3.4.2 Grizzly bears²¹

Grizzly bears in BC are classified as *Ursus arctos horribilis*, a subspecies of *Ursus arctos*, the widest-ranging bear species in the world. They are blue-listed by the BC Conservation Data Centre and classed as a vulnerable species in BC by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).



Grizzlies are considered threatened where they still occur in the Southern Interior, including in the study area. Local population declines occur primarily due to area-concentrated mortality and habitat loss and fragmentation. Sources of area-concentrated mortality include trophy hunting, poaching, conflicts with livestock, and inadequate garbage management. These activities are associated with increased access stemming from livestock range activities, forestry, and mining. Due to the very low reproductive capability of grizzly bears, these activities represent particularly significant threats when adult females are killed. Habitat loss and fragmentation occur on a broad scale as a result of forestry and fire suppression, and expanding human settlement. The latter, with its associated developments (agriculture, recreation, roads, hydro reservoirs, and utility corridors) is concentrated in valley bottoms formerly used as spring habitats and movement corridors between mountain ranges. Human population increase represents the greatest threat to grizzly bears in BC.

The ecology of grizzly bears is essentially similar to that of black bears, with the following significant differences:

1. Because grizzlies evolved in open habitats, such as rocky plains and tundra-like areas, they obtain a considerable amount of their natural foods (roots and corms, small mammals, insect larvae) by digging. Hence their claws are longer than those of black bears. This claw length is the reason why grizzlies don't climb trees as readily as black bears and, importantly, why grizzlies defend their cubs so aggressively. However, grizzlies DO climb trees if motivated to do so.
2. Grizzly sows mature later than black bears generally, and don't usually produce their first litter until they are about five or six years old, or even older. Cubs stay with their mothers for at least three to four years. When grizzlies reach this age, the mother shuns them in the spring as she leaves to mate and start the reproductive cycle all over. This is considered to be a very low reproductive rate.
3. Grizzlies in the Interior excavate their dens in compacted soils in the alpine or upper subalpine. They have very particular requirements for siting dens; slope, aspect, and depth of winter snow cover are extremely important. Caves may also be used. In comparison, black bears in the Interior wet belt den at lower elevations in the hollow structures of large, old cedar trees, or in dens dug into compacted soil under root structures or old stumps.

²⁰ *Ibid.* Davis, H. 1996.

²¹ Sources for information in this subsection are: <http://www.for.gov.bc.ca/hre/topics/grizzly.htm>, <http://www.env.gov.bc.ca/wld/twg/species/mammals.html>, and the BC Environment Ministry's brochure titled *Grizzly Bears in British Columbia: Ecology, Conservation, and Management* (found at website: <http://www.env.gov.bc.ca/wld/documents/grizzlybear.pdf>)

4. Grizzlies are less tolerant of humans than are black bears. They are extremely powerful animals and, when defending cubs or a food source, such as an ungulate carcass, represent considerable danger to people.

It's important for people to know that grizzlies have behavioural characteristics that they do not share with black bears largely because of their evolution in different habitats. Grizzlies have different responses to humans than black bears, and there are things people need to do differently in the presence of grizzlies than what we would do when coming into contact with a black bear.

Grizzlies also play an ecological role by distributing plant seeds in their faeces and, when they turn over meadows for roots and corms, they help maintain healthy soils by increasing nutrients in the dirt. A study in Glacier National Park found that grizzly diggings for corms of glacier lily increased ammonium-N and nitrate-N in the soil. Seed production of glacier lilies that grew in sites dug by grizzlies was double that in undug meadows (Tardiff and Stanford 1998).

3.4.3 Common to both bear species



In her report, *Reducing Human-Bear Conflicts* (March 1997), Ciarniello says that to understand how “problem” bear behaviour develops, one needs to know the biological requirements of bears and how they learn. While bears are classified as carnivores, both black and grizzly bears are...

...opportunistic omnivores that feed primarily on grasses, forbs, berries, [and insect larvae], “but prefer richer, fatty foods when available (e.g., fish, ungulates)... [and] will

switch foods according to their...distribution and abundance... [B]ears will select habitats that contain plant foods high in... nutrients... Consuming large quantities of digestible food is especially important prior to denning. The ways bears process foods, and their constant struggle to attain the largest layer of fat possible to survive winter denning, are keys to understanding their attraction to non-natural foods. Landfills and other non-natural foods [especially garbage, orchards, and berry farms] are some of the most concentrated sources of calorie-rich foods and are, therefore, attractive to bears.

A bear spies a tempting berry plant and compost bucket on a patio. L Ruskin photo

She further explains:

Bears select habitats based on a number of factors, including quality and availability of foods, forest/security cover, breeding opportunities, avoidance of other bears (e.g., black bears avoid grizzly bears, female and subadult bears avoid adult males). The amount of nutrition attained influences reproductive success and social status, and is vital to survival. Non-natural attractants are often concentrated in a site (e.g., a landfill) and within an area (e.g., a town) and offer high nutrient availability with [comparatively] little energy expenditure [by the bear]...

Curiosity is a [lifelong] characteristic that helps bears discover the most productive and nutritious foods... [they] also possess the ability to learn through the observation of other bears [and their own experiences, often needing only one incident to teach them something]. Because bears are very effective learners, any high energy food that they feed on may be included in their search image [emphasis added].

Bears quickly learn to recognise visual cues, such as a garbage can, a freezer on a porch, or plants in a patio garden, as potential food sources, and this fact is stored in their memory. Coupled with their keen sense of smell, considerably more effective than a dog's, it is easy to understand how garbage becomes such a powerful attractant.

In order to survive—both as individuals and as a species—it is absolutely imperative that bears “bulk up” before denning. A female will not produce young if she does not have sufficient fat reserves to successfully sustain herself and gestating, and then nursing, offspring. While mating occurs in spring and early summer, implantation of the embryo occurs in late fall, just prior to winter denning. Nature has provided her body with the knowledge that if she cannot provide the fats and nutrients for herself and her young, including nursing cubs for at least 14 weeks prior to emerging from her den, the embryo will be flushed from her body. This is why hyperfeeding in fall is such an imperative for both bear species.

By allowing bears access to non-natural food sources, particularly calorie-rich garbage, Ciarniello (1997) says,

...we may accelerate the natural reproductive cycle of the bear. Being drawn to richer artificial food sources, bears respond with a decreased interval between breeding, larger litter size, and earlier reproduction.

She also points out (pp. 7-8):

Bears are very effective learners. Cubs remain with their mother for one to three years and...learn the requirements... for survival for the remainder of their life. If the mother is a 'garbage bear,' then the cubs will learn to forage on garbage. Similarly, if no avoidance of humans is displayed and/or food is attained from humans, then a lack of fear of humans and an association between humans and food may be learned.



Sow and cub check out porch for a meal; the cub remembers this. N. Rodgers photo.



This bear has learned that garbage cans are a source of food. D. Stephens photo

When you consider this information, it becomes easier to understand what attracts bears to human use areas and what makes them lose their fear of people. You can see that when we don't manage non-natural attractants, we provide a smorgasbord for bears and teach them to associate people with sources of food. Couple this with the knowledge that bears have amazing capacity to learn and remember, and that sows teach their cubs how to survive in all habitats, including settled ones, and the picture on how and why conflicts develop between bears and people further emerges.

Our challenge is to introduce factors that significantly decrease the availability of non-natural foods for bears, and offer learning opportunities to bears that strongly discourage them from approaching places where people live, including rural locations. This leaves the wild areas where people may work or recreate where we have the

added responsibility to learn how to avoid potential problems with bears and employ practices that reduce conflicts, such as by brushing out and widening trails, reducing or eliminating security cover in picnic and play areas, and learning how to react more safely when confronted by a bear of either species.

Bears, like people, are creatures of habit. Their movements from one habitat type (denning, feeding, shelter, mating) to another become trails they may use for generations. When human development breaks up previously contiguous bear habitat, the animals' movement corridors become fragmented. Not only does this force bears to risk entering areas where there are people when they would normally avoid us, it can have negative effects on conserving bears as a species. Habitat fragmentation causes wildlife populations to become isolated and increases the risk of extirpation and, ultimately, extinction of at least that unique genetic stock of the species. This is another important reason to proactively manage bear-human conflicts that, while not directly related to the Bear Smart Community program, is essential if we want to achieve any degree of environmental sustainability.

4.0 STUDY APPROACH AND METHODS

Note that this report covers both the Phase 1 (Bear Hazard Assessment) and Phase 2 (Bear-People Conflict Management Plan) requirements of the provincial Bear Smart Community program.

4.1 Overall Study Approach

For the most part, the Phase 1 Bear Hazard Assessment followed the specific objectives established by the BC government's Bear Smart Community program (Davis et al 2001):

- 1. identify sites, areas, trails, and practices with historic, existing, and potential human-bear conflict;*
- 2. identify gaps in existing knowledge of bear use and human-bear conflict in the area, and provide recommendations for further investigation and additional hazard assessment phases; and*
- 3. produce management recommendations to reduce existing and potential conflicts within the community and to pursue 'Bear Smart Community' status.*

The objectives of the Phase 2 Bear-People Conflict Management Plan (the Bear Plan) are also established by the ministry as follows (Davis et al. 2001):

- 1. summarise the bear-people conflict issues identified in the hazard assessment,*
- 2. identify the community's level of commitment to the program,*
- 3. identify the level of tolerance of the community towards maintaining or restoring natural bear habitats (e.g., travel corridors and feeding areas) adjacent to the community,*
- 4. clearly establish goalposts for the success of the program,*
- 5. identify the agencies, groups, or individuals responsible for addressing problems,*
- 6. determine what is necessary to address each problem successfully,*
- 7. set priorities for specific actions to be taken,*
- 8. develop a timetable for addressing each problem, and*
- 9. conduct a cost estimate of proposed management actions and provide a budget breakdown for each of the criteria in the program.*

Preparation for the management plan should include a brainstorming stage for generating ideas and concepts for developing the plan. The contents of the conflict management plan should be developed locally and regionally using a consensus-based approach for identifying and assessing preferred solutions.

4.2 Phase 1: Bear Hazard Assessment Methods²²

The first step was to divide the study area into different sub-areas based on management jurisdiction (e.g., villages, large provincial parks,) or recognisable distinct geographic/ development rural areas (e.g., Hills, Rosebery, Red Mountain).

A Bear Hazard Assessment for each sub-area was done using a variety of information sources, including:

- background information, both in hard copy and online, including OCPs and development plans of the villages of New Denver and Silverton; bylaws of both villages, and other information provided on the websites of both villages and the RDCK (Appendices 4 and 5)
- information about “Area H” demographics and waste management on the RDCK website, as well as telephone and email conversations with RDCK personnel in Nelson and at the Rosebery Transfer Station
- researching BC Environment and Forests ministries websites for ecosystem and habitat information sources (including other websites), and a number of websites devoted more specifically to bears and bear-people conflicts (e.g., Bear Aware, Get Bear Smart Society)
- review of research on bear ecology, including bear behaviours, use of habitats to support population dynamics, and importance of bears as components of forest ecosystems
- extensive research on waste and attractant management equipment and methods
- extensive review and analysis of bear-people conflict and control data obtained by the Conservation Officer Service, supplemented by anecdotal information from interviews, historical documents, other studies, newspaper articles (e.g., bear attacks) and other sources
- discussions with the RDCK's Engineering & Environmental Services Coordinator (Wendy Horan) and review of the draft Solid Waste Management Plan

²² Adapted from McCrory & Paquet, 2006.

- interviews and discussions with Conservation Officers in and outside the region, and discussions with government Bear Smart Community Program personnel
- interviews with a number and variety of area residents
- research of local media to determine number and content of articles about bears in the area
- extensive on-the-ground fact-checking and map ground-truthing.
- extensive field surveys of seasonal bear habitat values, artificial attractants such as fruit trees, travel corridors, security cover, bedding sites, and other parameters.

The only black and grizzly bear habitat inventories done in the Upper Slocan Valley have been in association with bear hazard studies for Valhalla Wilderness Provincial Park (McCrory 1984) and Kokanee Glacier Provincial Park (McCrory 1985 and 2000. McCrory and Mallam 1992). We used some of this knowledge for our field assessment of rural and residential areas. We examined many of the residential, recreational, institutional, and commercial areas in the study area to assess potential hazard ratings and to ground-truth maps and other information provided to us (such as the siting of garbage cans and dumpsters in residential areas and at housing developments, commercial sites, in municipal and provincial parks, along village streets, etc.).

Using information from the Wildlife Call Centre database, from BC Parks, and from the regional Conservation Officers, we focused our efforts on locations where there had been higher numbers of complaints reported and on the rural/village edges, since these likely present greater opportunities for bears to get access to residential garbage, orchards, and livestock.

We assessed the potential for bear-human interactions at high-risk sites, such as commercial food outlets (grocery stores, restaurants, etc.), parks and greenbelt areas, and along walking paths and trails, by reviewing the complaint data, collecting anecdotal evidence, and by visual inspection. This data is combined with research and our knowledge of bear ecology.

We reviewed the villages' bylaws and policies dealing with planning and development, including their Official Community Plans (OCPs). We also reviewed the regional district's bylaws with respect to waste management. We assessed these for wildlife-friendly language and their adequacy to prevent or reduce bear-people conflicts. The abundance and types of fruit trees were assessed and some of their use by black bears monitored when different fruits were in season, particularly in New Denver. Landscaping throughout the villages was also looked at in order to determine what types of plants are used and whether or not there are any species that are likely to attract bears (e.g., mountain ash, wild cherry trees, salal, Oregon grape, uva-ursi ground cover, etc.).

We reviewed Bear Hazard Assessments and Bear-People Conflict Management Plans completed for other jurisdictions in BC, including Lions Bay (Paquet 2005), Resort Municipality of Whistler (McCrory 2005, Paquet 2009), Squamish (McCrory & Paquet 2006), the North Shore (McCrory 2006), Sunshine Coast Regional District (Paquet 2007), City of Port Alberni (Paquet 2007), City of Coquitlam (Paquet 2007), District of North Vancouver (Paquet 2008), and community "bear aware" activities in these and other locations, including in Kamloops, Revelstoke, Prince George, the Town of Canmore (Alberta), and in national, provincial, and regional parks throughout British Columbia. The scope and context of these were applied to this bear hazard assessment and conflict management plan to ensure its consistency with provincial requirements.

We conducted interviews in person, by phone, and by email with area residents, with local government officials and personnel, with Conservation Officers working in the area, with BC Parks rangers and campground contractors, with RDCK staff, and with people at companies that manufacture and/or sell waste management equipment and systems.

In addition to interviews with the above people, we collected information on local bear-people conflicts and CO control actions from the occurrence reports logged with the province's Wildlife Call Centre database for the years 2002 through to 2008. While these were not available for the years 2009-2010, we did get information on COS actions in the area for 2011. We then organised and analysed the data according to location, type of occurrence and attractant, and result or response, if noted in the reports. Responses ranged from no response (because there was no perceived immediate threat to human safety), to removal (relocation or translocation) of the bear(s), to killing the bear(s).

The data was further organised into the same sub-areas of the study area as we used for our bear hazard review in order to determine which areas were experiencing the highest number of problems. Following are more specific descriptions of the methodologies applied.

4.2.1 Habitat evaluation

Methods of habitat evaluation generally followed those developed for earlier hazard studies in BC provincial parks and Forest Service trails in the Upper Slocan Valley. Fortunately, for the larger provincial parks, habitat and hazard evaluations had already been done.

A field assessment of potential black and grizzly bear habitats in and adjacent to residential and recreational developments, including walking and hiking trails, residential subdivisions, the one school, and municipal parks, was conducted by Wayne McCrory. As many areas as possible were sampled, with priority given to the areas where we had prior knowledge of conflicts with bears and where we felt risk assessment was most critical (e.g., certain neighbourhoods and commercial areas, playgrounds, and parks).

Greenbelts in residential areas, such as along the shore of Slocan Lake, stream corridors, and powerlines, were assessed. Each was evaluated for potential bear food densities and assigned a value as follows:

- trace (Tr)
- low (L)
- moderate (M)
- high (H)
- very high (VH)

We used a list of plant, animal, and insect foods for grizzly and black bears in the BC Interior developed by McCrory Wildlife Services from extensive field studies (see Appendix 1).

4.2.2 Bear travel/connectivity evaluation

Since it was beyond the scope of this study to do a detailed connectivity assessment using GIS computer modelling, a subjective field assessment of trails, powerlines, roads, riparian corridors, and other travel features was used. Particular emphasis was placed on New Denver due to the high rate of black bear-people conflicts. Some emphasis was also given to the Hills and North Slocan Lake area as it is on a wildlife corridor between Valhalla and Goat Range provincial parks.

4.2.3 Profile of potential dangerous bear encounter types

Information from Herrero's book, *Bear Attacks* (2002) and other studies was extrapolated to our Upper Slocan Valley study area. This included the bear encounter profile developed for the Whistler bear hazard assessment (McCrory 2004). Where information was available from government agencies and from media and interviews, details were collected on injurious bear encounters in the study area (see Section 5.4.1).

4.2.4 Final hazard ratings

Habitat potential, travel corridor information, conflict data, availability of garbage and other attractants, type of site use by people, cover, disturbance, any encounter profiles, and other factors to determine relative bear hazard values for the various locations in the study area were used to assign final hazard ratings. These included residential areas, the school, parks, and recreational trails.

4.3 Phase 1: Problem Analysis—Methods

4.3.1 Audit of public education system on bears and bear safety

All public information on bears, bears attractants, and bear safety was reviewed, including village signage at campgrounds, BC Parks information kiosks, and other outlets. Information came from background documents, field surveys, interviews, and reports by area Bear Smart coordinators.

4.3.2 Bear-people conflict data and analysis

All available sources of bear-human conflict information were obtained and analysed. Where possible, data was segregated according to year, type of attractant/problem (garbage, fruit, etc.), Upper Slocan Valley sub-area or specific location, and other factors (see Section 5.4).

We also attempted to put a cost estimate on black bear control actions undertaken by the Conservation Officer Service (see Section 5.4.4).

4.3.3 Audit of attractants (garbage, livestock, etc.) and waste management methods

An audit was done of bear-proof and non bear-proof garbage receptacles in public locations and for some businesses, but not for rural and residential households on private property. We also gathered information on small livestock holdings in rural areas. We also made a crude estimate of fruit tree abundance in the villages and rural areas, but did not attempt to count them by species since most were on private property. Information on waste management equipment and methods from different companies and communities was also obtained.

4.3.4 Review of bylaws

Bylaws for the villages of New Denver and Silverton, as well as for the Regional District of Central Kootenay Area H were assessed for language relevant to preventing conflicts with bears, and further appraised for their values in and barriers to supporting Bear Smart Community principles (see Section 5.6 and Appendix 2).

4.3.5 Review of official community plans and green space management

Planning documents were obtained from the villages, including hard copies and information from the city's website. These were reviewed with respect to any information about bears and/or recognition of the need to reduce bear-people conflicts (see Section 5.7 and Appendix 3).

4.3.6 Interviews, meetings, and workshops

Valhalla Society Bear Smart coordinators Daniel Sherrod, biologist Erica Mallam, Evelyn Kirkaldy, and biologist Wayne McCrory engaged in interviews, emails, and phone conversations with residents about problems with black and grizzly bears. Wayne McCrory gave a Bear Smart powerpoint presentation to the public and to the village councils of New Denver and Silverton. Coordinators also attended an RDCK meeting on their Zero Waste policy, as well as presented our draft review of the New Denver OCP when this was being revised in 2008.

4.4 Phase 2: Bear-People Conflict Prevention and Management Plan—Methods

While the Phase 2 Bear-People Conflict Prevention and Management Plan (the “Bear Plan”) is usually done as a separate report, we decided to combine Phase 1 and Phase 2 because in the years between now and when we first began the study, we were able to test some of our proposed implementation actions and realised it was more efficient to combine our findings into one report.

The Phase 2 Bear Plan is the action plan in which we make recommendations based on the results of the Bear Hazard Assessment. The Bear Plan describes the appropriate steps that need to be taken in order to reduce bear-people conflicts, improve public safety in the communities, and reduce the costs both to taxpayers and to the area’s bear population. As a guide to developing our proposed Bear Plan, we followed the approach used for the Municipal District of Squamish (McCrary and Paquet 2005) and Whistler (McCrary 2005, Paquet 2009).

The province considers the Bear Smart Community program as a partnership with communities to reduce bear-people conflicts. After nearly ten years of doing similar Bear Smart studies for other communities and monitoring their progress, the authors have developed a realistic appraisal of the efficacy of past and current Bear Smart and Conservation Officer practices in addressing bear-people conflicts at the community level that includes the following considerations:

- Management activities and guidelines for addressing hazardous bear situations, including warning signs and area closures
- Provincial Bear Smart policies and support funding, including changes over the years that may affect whether or not communities will buy into the program
- Conservation Officer Service policies regarding reporting methods and response approaches to bear conflict issues, including use of local community RCMP back-up
- Evaluation of costs of COS responses to conflicts with black bears
- Pros and cons of translocation/relocation and bear aversion practices
- Deficiencies in current provincial policies that may limit the ability of communities to implement an effective reduction of bear-people conflicts

In the end, it is up to the community at large, local and provincial governments, and elected officials to decide what actions to take to implement what we have proposed.

5.0 RESULTS AND DISCUSSION

5.1 Community Vision Statement(s)

The process of developing a Bear Smart Community vision opens up the discussion to the whole community on how it can become Bear Smart. This is necessary in order to find the additional solutions residents and visitors can embrace.

In his 2006 North Shore BHA (pp. 48-49), McCrary commented on the lack of a common community vision and the often strongly conflicting range of notions residents held about bears and bear-proofing the waste management system. Much of the disparity, he noted, was due to the lack of widespread scientific information about bears, their behaviours, and about the kinds of waste management systems that have been put into place in communities that are already working towards being Bear Smart.

Most residents of the Slocan Valley are bear aware. In late fall 2006, after we made a presentation to the villages and the wider community, we received support letters for a Bear Smart program and funding from the villages and the RDCK. Since that time, support has continued to grow through activities of the Valhalla Society Bear Smart coordinators, including public education, Bear Smart

signage at the Slocan and Rosebery waste transfer stations, and a two-page brochure on bears produced by the Valhalla Society. Since 2007, a Bear Smart booth has been run annually at the annual Hills Garlic Festival, which is attended by about 5,000 people.

The other proactive activities of the coordinators in the community, such as assisting people with electric fencing for fruit trees and livestock, has continued to build strong support. The local Harvest Share group has continued to build public awareness of the need to pick and remove fruit to make it unavailable to bears. However, the high level of problems in New Denver in 2011 brought to the fore considerable public debate and community consensus on the need for more proactive Bear Smart measures, including the need to have bears removed by live-trapping and relocation from the village by the COs when the bears first show up, rather than after they become a problem and are subsequently shot. This was also evident in a recent petition signed by 279 people (including 199 from the villages of New Denver, Silverton, and Slocan) and endorsed by the Village of New Denver (see appendices 1 and 2). The petition asked the province to reinstate live trapping and relocation, as was done in previous years.

We can safely say that since we started this study and assisted with affiliated community programs, the population at large has a more common vision to reduce bear-people conflicts and the number of bears shot annually by the COs. More effort still needs to be made to extending bear awareness to tourists and seasonal residents who have second homes in the area.

One of the best ways to increase this broader awareness and acceptance of Bear Smart principles is to engage more people in the recommendations and implementation of the proposed bear-people conflict prevention plan. The community at large is also now more interested in pursuing Bear Smart Community status.

5.2 Results of the Bear Hazard Assessment

The following covers most of the human-use areas in the Upper Slocan Valley that overlap with bear habitat. We did not attempt to inventory all trails that have been built in more recent times, such as a fairly large network of new mountain bike and ATV trails/routes. Nor were we able to inventory private lands in municipal and rural settings, except in isolated instances with permission of the owners. We included data gathered from the COs on bear-people conflicts between 2002-2008, plus some anecdotal reports. Most of the conflicts involved black bears and various non-natural attractants in rural and municipal developed areas, and not in the surrounding backcountry, such as trails and primitive campsites, where few conflicts occur.

To discuss the hazard assessment, we segregated the study area into geographic or government agency management areas, as follows:

1. Developed residential and farmstead areas: villages and rural properties
 - a. Village of New Denver
 - b. Village of Silverton
 - c. Regional District of Central Kootenay (RDCK): unincorporated rural private lands, sub-areas from north to south:
 - ◆ Summit Lake
 - ◆ Summit Lake Provincial Campground
 - ◆ Three Island Resort Campground
 - ◆ Hills
 - ◆ Rosebery
 - ◆ Rosebery Provincial Park
 - ◆ Rural New Denver North, Golf Course
 - ◆ Rural New Denver (Denver Siding)

- ◆ Three Forks-Sandon-Cody
 - ◆ Bear and Fish Lakes-Retallack
 - ◆ Areas bordering and near Silverton
 - ◆ Red Mountain
 - ◆ South of Red Mountain to Cape Horn
2. Parks, campgrounds, trails, and other areas managed for public recreation
 3. Private resorts and campgrounds
 4. Public schools: School District Number 10 (Arrow Lakes): Lucerne primary and secondary schools, New Denver
 5. Household Waste Management Area: RDCK Rosebery Waste Transfer Station

5.2.1 Villages and unincorporated rural areas

5.2.1.1 Village of New Denver

New Denver is the number one problem area of the Upper Slocan Valley. We will use the record number of bears killed (11) in New Denver in 2011 to illustrate this. More bears were killed in New Denver last year than anywhere else in the region (*Valley Voice*, 20:19, Sept. 21, 2011).

Our analysis of conflict data from the Conservation Officer Service (see Section 5.4) shows that New Denver also has more bear conflicts and bears killed overall than the rest of the Upper Slocan Valley put together. This is best illustrated in 2011, when New Denver had nearly all of the bear complaints and all of the bears killed in our entire study area. There were very few complaints in the rural areas and none in the Village of Silverton.

More so than any other residential community in the Upper Slocan Valley, New Denver has nearly all of the ideal requirements that make it attractive for black bears to move into and live in the community as seasonal residents. Here, they can feed on an abundance of easily accessible domestic fruit and fruit trees, wild berries, patches of clover and grasses in the green spaces, and have access to garbage and other artificial foods.

The village is spread over an approximately one-kilometre-wide creek delta that gives a wide interface between forested natural habitat and adjacent residential areas. This large interface provides easy access and egress for bears to come into the village to feed and then move out to rest and bed. Other forested and semi-forested travel corridors also help provide access for bears into other parts of the village.

The lakeshore zone on the northwest, in the vicinity of the Mori Trail, provides a semi-secluded travel and feeding corridor right to Carpenter Creek. As well, within the village limits, Carpenter Creek has a 200-300 m wide green space largely overgrown with small conifers and deciduous trees that also facilitates access in and out of the village. This gives good cover for bears to drag garbage bags from residences bordering this green space. A wide forested belt also connects bears from the Galena Trail area up Carpenter Creek to the residential area near the school. The Galena Trail and Old Sandon Road Trail provide travel corridors from backcountry bear habitats right into the village.

Thus abundant food (fruit and garbage), plenty of forest and brush travel routes for easy access and cover, and for resting and bedding, along with a tolerant attitude towards bears has, in some years (such as 2011), created a situation for a high degree of bear-people conflicts. As the bears became more habituated to people and conditioned to living on the easy pickings of the village, they also became more aggressive, raiding coolers and available garbage at the municipal campground, breaking into freezers, and attempting to get into vehicles. A few were also reported entering people's houses. One resident's small dog was killed by a black bear when she let the dog out at night, not aware there was a bear at the bottom of her steps. One resident received minor injuries defending his

dogs from mother black bear whose cub was up a tree. Although this bear was not killed, by late fall a record 11 black bears had been killed by COs and the RCMP in control measures, stirring a controversy that sharply divided this sleepy Valhalla village on bear issues.

All this is symptomatic of the advanced stage of habituated and food-conditioned bears that have been allowed to develop these behaviours due to an abundance of uncontrolled high energy attractants in a residential setting coupled with inadequate prevention and response.

Although the risk of a bear involved in an unprovoked attack on a person in the village is extremely low (such as a bear preying on a person for food), the current circumstances caused us to rate the overall bear hazard to the public as high during periodic years of high numbers of black bears invading New Denver. In particular, children around schoolyards, backyards, playgrounds, and beaches would be at increased risk during some years. The following quote from Herrero (2002), while made for rural areas, is quite applicable to New Denver:

Children (especially those twelve and under) should be carefully tended when bears are around. In rural areas, black bears and children may end up sharing berry patches or children's play areas and, while such situations seldom lead to injury because black bears will normally move or flee, they have at least four times led to children being killed. Most rural dwellers know the woods well enough not to panic over black bears' danger to children. Our four children all grew up playing in bear country. I have always watched them carefully, however, and have kept them close when I knew that black bears were nearby.

This high hazard rating also applies to campers and their children at New Denver's Centennial Park and Campground in the "orchard," where lack of adequate warning signage, some non-bear-proof bins, and the absence of a bylaw that requires people to store their coolers in their car trunks, trailers, or campers exacerbates the problem.

The following example of a predaceous attack by a black bear on a child in a backyard in Nelson is illustrative of our concerns.²³ On 24 August 2007, a grandmother was in her garden when she heard one of her two grandchildren scream. She then saw the child coming up the stairs to the garden with a large black bear right behind her. The black bear swiped the girl with its paw as she tried to escape up the steps, slicing the back of her calf. As the black bear moved right over the little girl, the woman ran and snatched the child from between the bear's paws. As the grand-mother backed away, the bear came after them and swiped them both, cutting the woman's thigh and her granddaughter's belly. Holding both of her grandchildren, the woman then screamed at the bear, which wandered off. The young girl required six to eight stitches on her leg. The bear was later tracked down and killed by the Conservation Officer, who felt that the attack was not predatory. We disagree, as it fits with behaviour we would interpret as a mild attempt at predation.

The Village of New Denver also manages a number of attractive hiking trails, including trails on both sides of the Carpenter Creek green space. The north side trail is generally in an open area but has been planted with clover that along with abundant fruit and some garbage, attracts bears. The south side trail, for a good deal of the way, is in a second-growth forest that could be "daylighted," by opening up the cover. In 2008, when I walked the trail, it was strewn with garbage that had been dragged in by a bear from adjacent residences. These trails were rated low hazard.

Two of the trails that pass through dense brush and tree cover that have available bear foods are the short trail behind the Kohan Gardens in the Orchard and the 0.4 km Mori Trail along the Slocan Lake lakeshore. These are rated to have a moderate bear hazard. In 2009, a bear had been feeding heavily on apples and other fruit near the Kohan Trail, so the Bear Smart coordinator posted a bear warning sign. The Mori Trail and Kohan Trail need to be kept brushed out and permanent bear warning signs

²³ <http://www.cbc.ca/canada/british-columbia/story/2007/09/06/bear-attack.html>

posted each spring and taken down each fall. As noted, in 2011, the Mori Trail still had two metal non-bear-proof garbage bins; even though they are intended for dog waste, we found that people put garbage in them.

Section 5.4 details the COS bear-people conflict data. The data confirms anecdotal information and comments by the local CO during our 14 May 2007 interview that they have to deal with more problem bears in New Denver than in Silverton and Rosebery, and that Rosebery's problems decreased after they closed the open dump.

Regarding the waste containment and collection system for residents and most small businesses in New Denver, bear-proofing is left up to individual homeowners and business, with once-a-week curbside pick-up for household garbage and a bylaw that instructs residents to put their garbage containers out on the street only on the morning of pick-up. Most residents don't use bear-proof containers and bears have been able to access garbage around residences or raid cans left out illegally on the street the night before, or even after they have been placed on the street in the morning, since it may take the garbage truck 2, 3, or more hours to make its rounds (see Section 5.5.1 for more information on waste management in the Village of New Denver).

In other areas, the village has made considerable progress and investment over the years to provide some bear-proof garbage containment at public sites, including Centennial Park and Campground and larger businesses. New Denver also has a small compacting collection truck with equipment to unload large Haul-All dumpsters; it also now services garbage at Silverton.

Today, New Denver's bear-proof waste containment system includes the following commercial Haul-All dumpsters, most of which are provided by the village:

- 1 at Mountainberry Store
- 1 at Valhalla Inn (also has a bear-proof kitchen oil container)
- 1 (new) at Newmarket Store
- 1 (new) at "Rory's On Main" restaurant on Main Street

Two dumpsters have been provided for some years at Centennial Park and Campground, but these are closed to residents in winter and open to tourist use in summer. There is also a bear-proof dumpster at the Hospital-Pavilion. The village also has five bear-proof Haul-All pedestrian receptacles (Hid-A-Bag) at the following public locations:

- 4 on Main Street
- 1 at Greer Park

In 2009, our surveys showed there were nine non-bear-proof pedestrian garbage containers in Centennial Park and Campground; on November 9 that year, two were still full of smelly garbage.

In 2011, the village replaced one of the non-bear-proof pedestrian cans along the trail on the north side of Carpenter Creek with a Rollins bear-resistant polycart. The village also provided bear-proof food storage lockers at Centennial Park for bicyclists and other campers without vehicles, but they were stolen.

Prorated to today's prices from Rollins Machinery in Abbotsford, BC, this represents an investment in bear-proof waste containers by New Denver of approximately \$41,000 over time. In May 2012, the village ordered eight Hid-A-Bag pedestrian containers to replace most of the non-bear-proof containers in town, including some in Centennial Park. The total estimated value of these is \$9,600. Thus, New Denver has invested about \$50,600 in bear-proofing to May 2012.

The Valhalla Wilderness Society has contributed an additional \$1,500 in bear-proof containers, including the Haul-All pedestrian receptacle (Hid-A-Bag) at the boat launch in Centennial Park.

On the other hand, through May 2012, New Denver had retained about 18 non-bear-proof pedestrian containers at various public locations, including:

- 2 at Kohan Gardens
- 1 at Nikkei Internment Memorial Centre
- 1-2 across from Lucerne School (belong to School Board)
- 2 along Mori Trail (primarily for dog droppings but had some garbage on Nov. 14/09)
- 1-2 at cemetery

Despite offers of some assistance by the Bear Smart program to remove or replace these with bear-resistant containers, that hasn't happened. Bears occasionally continue to get garbage from some of these bins (along with access to other attractants, such as fruit, barbecues, freezers, and campground coolers), thus defeating New Denver's investment in bear-proof receptacles. We see that mixing bear-proof with non-bear-proof waste containers at Centennial Park, as in other situations, still allows bears free access to garbage. For example, during the peak of the bear invasion in New Denver in summer 2011, the regular garbage bins were observed to have been left out in these areas. On August 7, after the first bear was shot when it got into a cooler in the village campground, the Bear Smart coordinator photographed a full can of garbage in front of the Centennial Park cook shack at 7:20 a.m. He also observed that all of the other non-bear-proof cans were half full of garbage. A survey done on 3 May 2012 showed most of these kinds of containers were still out, and this at the time when bears are coming out of their winter dens!

As previously noted, the local group Harvest Share has made significant progress since 2008 in organising people to pick their fruit. But even with stepped-up activity during the bear invasion year of 2011, they could not keep up with the large production of fruit in the village. Some progress has also been made by the Bear Smart coordinator in bear-proofing fruit trees and composts, and for safety concerns around homes and yards. In 2010, two electric fences were set up; 11 were set up the following year.

Recommendations specifically for New Denver

1. New Denver should be recognized as the priority area in the West Kootenays to address the high and chronic level of bear-people conflicts. Reducing these conflicts will require a more proactive bear plan by the village as well as support from the provincial Bear Smart and Bear Aware programs and the COS.
2. Support a Bear Aware program in the community in 2012 and as needed in the future to help educate people about the need for overall better management of attractants.
3. Continue to support the Harvest Share program, combined with removal of fruit trees (while also considering their heritage and fruit tree value), and making it mandatory that residents either pick all of their fruit, use electric fences as a deterrent.
4. Use this report to adopt a bear plan for New Denver, and work with others to apply for Bear Smart Community status, given the high investment in bear-proofing already completed. This will help bring about commitment by the province to have the COs do some non-lethal treatment of black bears, including relocations.
5. Support efforts to have COs or well-trained, authorised volunteers to do an "early treatment" program that deals with bears when they first start using the Village at the beginning of cherry ripening time. This would involve capturing bears in a culvert trap and, instead of shooting them, give them short or long distance relocations with "hard release."

6. Combine the above activity with one or two people well-trained in bear aversion techniques to discourage bears from coming into New Denver before they get established in town and become food-conditioned and habituated to people.
7. To ensure success of these programs, the Village needs to commit to being more proactive in dealing with its attractant issues as a foundation for a bear plan, for example:
 - a. Pass a stronger attractant bylaw addressing fruit trees, garbage storage, chicken yards, barbecues, etc. This would include the support of electric fencing as a deterrent. The fences should be well marked with warning signs.
 - b. Develop a fully bear-proof waste management system. Strongly consider going to a residential neighbourhood bear-proof dumpster system similar to the town of Canmore. The Village has two commercial Haul-All bins that sit empty all winter at the Village campground. Why not start a pilot project using these and others in town that are not being used to capacity? Such a system would eventually be a cost savings to the Village. Another option would be to work out a cost-share system where bear-proof residential bins would be provided to hotspot areas of the town.
 - c. Remove all non-bear-proof pedestrian bins from the municipal campground, Mori Trail, and other areas.
8. Significantly improve signage at the municipal campground (kiosks on both sides) that alerts the public to the fact black bears frequent the area and of the need to not leave any foodstuffs unattended. The campground contractor needs to more closely enforce the issue of coolers and other attractants being left unattended for bears to access.
9. Have in place a bear warning and area closure signage system for more hazardous situations identified by the village or others.

5.2.1.2 Village Of Silverton

This sister village is much smaller in size and number of households than New Denver, and there are far fewer fruit trees. Like New Denver, Silverton also has a municipal park and campground that fronts on Slocan Lake. However, the campground is not adjacent to areas that have dense cover, fruit trees, and wooded travel corridors. Silverton is also not backed with a fairly extensive rural area comprised of small residential lots and farmsteads. Most of the bear sightings and small amount of attractant problems are around Silverton's perimeter. These primarily involve garbage and fruit trees, although decades ago (prior to partial bear-proofing), each year, a few bears were regularly seen in the village feeding on fruit, garbage, composts, and were known to help themselves to food in freezers left on porches. According to unconfirmed reports, some of the rural land-owners take matters into their own hands. There is a small number of black bears that do travel around the edges of the village in some years, getting into fruit trees and sometimes going deeper into the village. For example, on 3 September 2007, a large black bear was observed crossing the highway near the bridge; no complaints were filed as a result.

Bear problems in Silverton today are virtually non-existent, due partly to some bear-proofing, better education through the Bear Smart program, and the limited number of fruit trees. Between 2002 and 2008, there were no complaints from Silverton to the COS report line. Although we were not able to examine complaint data after this, in 2011 there were no bears destroyed in Silverton compared to 11 in New Denver in the same year. In 2010 there were some black bear concerns at the municipal campground attended to by the Bear Smart coordinator. Silverton subsequently provided temporary signage at the campground to make sure people knew that bears could be expected in the area and to store their food and garbage properly.

According to Bear Smart coordinator Daniel Sherrod, in 2011, there was one complaint in Silverton with no action taken. Currently, the kiosk at the main lakeshore campground has a message on the back side as follows: “Please use the trash bins. This is bear country. Keep a clean campsite.” At the Creekside campground just up the road, there are no bear warning signs or any visible signs instructing people not to leave coolers or any other attractants out unattended.

For approximately 100 households (about 40% seasonal), Silverton has a curbside garbage pick up similar to New Denver where bear-proofing is left up to the individual homeowner. The RDCK has large commercial bins near the Village office for recycling of household containers and these appear to be largely bear-proof. Most containers, such as tin cans and plastics, are washed by the residents, although this requirement is not in Silverton’s bylaws. Businesses use a commercial Haul-All dumpster (bear-proof). In terms of a bear-proof garbage containment system at public sites and for local businesses, the village has invested an estimated \$15,000 (equivalent to today’s prices).

More information on attractants and the need to make Silverton’s bylaws and OCP more Bear Smart is provided in those sections of this report. The following recommendations apply to all aspects where the village could improve their bear-people conflict reduction plan, despite the nominal amount of conflicts today.

Recommendations specifically for Silverton

1. Use this report to adopt a bear plan for the Village and work with others to apply for Bear Smart Community status, given the investment in bear-proofing already completed and low frequency of bear problems. This will help bring about the commitment by the government to have the COs do some non-lethal treatment of black bears including relocations if needed.
2. Work on a cost-sharing program to provide bear-proof residential bins in village areas bordering the green spaces behind the village.
3. Significantly improve signage at the municipal campground (kiosks on both sides) that alerts the public to the fact black bears frequent the area and of the need to not leave any foodstuffs unattended. The campground contractor needs to more closely enforce the issue of coolers and other attractants being left unattended for bears to access.
4. Pass a stronger attractant bylaw addressing fruit trees, garbage storage, chicken yards, barbecues, etc. This would include the support of electric fencing as a deterrent. The fences should be well signed with warning signs.

5.2.1.3 Regional District of Central Kootenay (RDCK) managed areas:

The Upper Slocan Valley has fairly extensive and spread out unincorporated rural private lands with small farmsteads and dwellings throughout. The area has numerous fruit trees. Many of the small acreages have older fruit trees going back to the early settler days and are considered of heritage value. Besides fruit trees, other attractants that cause conflicts with bears in these rural areas include uncontained garbage, composts, gardens, berry crops, barbecues, livestock (especially chickens), livestock feed, and beehives. A commercial trout-rearing pond in Hills has also had some bear depredations.

The rural areas of the Upper Slocan Valley come under the jurisdiction of the Regional District of Central Kootenay (electoral area “H”). It was beyond the scope of this study to adequately survey habitat in all these rural areas, particularly on private land, so our review consists of general observations and local knowledge. Where possible, we also used conflict information from the COS from 2002-2008, along with anecdotal information. As best as we could, we segregated the rural areas into loose geographic areas, with some unavoidable overlap. The discussion follows more or less from north to south.

Summit Lake

Three Islands Resort, a private campground at the north end of Summit Lake, the BC Parks Summit Lake Campground, and the Ministry of Transportation and Infrastructure Summit Lake Rest Stop and Boat Launch are discussed elsewhere in this report. The Summit Lake area is a recognized grizzly bear travel corridor in Spring and, on average, about 1-2 grizzlies are reported in the general area each year. Although the two campground areas are in low-moderate value bear habitat, the road-transmission line corridor along Highway 6 for about 3-4 km is prime Spring bear habitat with lush growth of grasses, horsetail, and cow-parsnip. This includes an avalanche chute that reaches the highway opposite the Summit Lake Rest Area-Boat Launch. Apparently, a few grizzlies also feed on spawning rainbow trout in a small creek along the west side. In Spring 2007, a mother grizzly bear and two yearlings frequented the roadside in the Summit Lake area for approximately one month, including the areas opposite the two campgrounds and public rest stop. This same bear family had been reported several times the previous Spring, but appeared to stay out of trouble. When the mother and young returned in 2007, the owner of Three Islands Resort was concerned and carried out very diligent food and garbage control. The COs were also concerned about the campground owners storing garbage in an adjacent non-bear-proof shed until the garbage went to the Nakusp landfill.

Biologist Wayne McCrory worked closely with the COs to ensure that the whole area was posted with appropriate warning signs. This included biologist Erica Mallam leaving warning signs and Bear Smart booklets with Three Islands Resort. Part of the Summit Lake Rest Area was temporarily closed while the grizzly family was present. Some bear aversion (.12-gauge cracker shells and noisemakers) was used, but appeared to have limited value. In late June or early July, this family group, which had become a popular roadside attraction, moved on and was not reported again in the following years, suggesting, but not proving, that the bear aversion discouraged them from coming back.

Hills

Hills is an unincorporated rural farming community at the north end of Slocan Lake, with a more dense strata subdivision of permanent and seasonal residents occupying part of the lakehead area. Much of developed Hills is low to moderate bear habitat due to open fields, lots of woodlands, and old and new fruit trees. Hills also has a large marsh and numerous wetlands along Bonanza Creek between north Hills and Summit Lake. These wetlands are important Spring habitat for grizzly bears and black bears, and it is this habitat that contributes to the high hazard of the hiking/biking trails in May-June along the old CPR rail grade (see RDCK trail section).

Bonanza Creek is the most important spawning stream in the Slocan system for kokanee salmon, with an estimated run of 30,000 in some years (Gebhart 2000). The kokanee biomass is a vital resource to grizzly and black bears in Fall, and to the entire Slocan Lake sport fishery. Bonanza Marsh is one of the few remaining natural marshes adjoining an Interior lake that has not been damaged by development. It is partly fed by a high water tributary channel from Bonanza Creek. It has a number of endangered species, including trumpeter swans and a rare orchid.

The other important ecosystem influence related to Hills is the fact that the Hills-North Slocan Lake area is an important wildlife corridor between Valhalla and Goat Range parks. Because of this, the area was designated a Special Resource Management Zone (SRMZ) in the Kootenay-Boundary Land Use Implementation Strategy. When the Kootenay-Boundary Land Use Strategy became a legislated higher level plan, the category of Special Management Zones was eliminated, despite very strong public support for this designation. Thus special logging guidelines were never developed by government to address this and so the area has been, and is being, heavily clearcut, roaded, and fragmented by ongoing commercial logging.

As a result of the habitat and corridor features, black bears regularly travel through Hills, while grizzly bears frequent the Bonanza Creek wetlands in Spring, as well as Bonanza Creek in September

during the kokanee spawning runs. Grizzly females with young, as well as single bears, have been sighted along the abandoned CPR right-of-way in Spring, and occasionally a few wander to feed on the fields of the small farms. However, grizzly bears appear to avoid most human habitation and stay out of trouble. In the 1950s, one was trapped and killed at a small farm in North Hills for killing chickens. Black bears are the most commonly sighted, sometimes using fields for grazing in Spring, and wild cherry and other fruit trees in late Summer and early Fall. As will be seen, chickens have become a favoured food item in Hills for black bears.

COS data for Hills was analysed from 2002 to 2008. It shows that there was only one complaint in 2002. Early on July 31, a resident complained about an adult black bear that broke into another resident's outdoor freezer that contained packaged meat and turkey. At 11:45 a.m., the bear came back to get into the freezer. The resident let her dog out and the bear charged the dog. The CO came and set the culvert trap on July 31 and removed it on September 2 with no bear being caught. In these incidents confined to one specific small farm, it appears that the COs made two round trips to address a freezer incident at a cost of \$800 (each round trip) to taxpayers.

On 16 April 2003, there were a number of calls about a black bear being a nuisance in Hills. One caller reported the bear breaking in their front door, but was able to scare it off. Another reported that a black bear came around over four nights and broke into the chicken coop and ate some feed. It also tore down fences. In July 2003, one complaint involved a black bear walking through private property where there was livestock. In September 2003, a caller reported a black bear no longer afraid of humans that had been in the area for all of the cherry season. On October 20, a caller reported a black bear hit by a vehicle on the highway. The bear probably died.

In 2004, there were also a number of complaints. On May 17 and 24, callers complained about a black bear hanging around that was not afraid of humans. Also on May 24, a caller complained about a bear ripping apart their chicken coop that had no chickens but compost. On June 9 another property owner complained about a black bear hanging around for 10 days that had tried tearing the roof off their shed that had chicken feed stored in it. There were no further complaints that year until November 9, when someone called that a large animal had been in their chicken pen and damaged the fence trying to get at livestock. On November 20, the same June 9 caller had a black bear kill some of their chickens. The next call from these two adjacent farms was November 23, when the neighbour of the November 20 caller complained about the same bear trying to break into his barn where he keeps chickens. Although it is not recorded, apparently the COs set a trap, but no bear was caught. The bear appeared to wander off. On December 1, there was a also call about an orphan black bear cub that did not appear related to the chicken killing as that appeared to be a larger bear.

In July 2005, the same caller as in late Fall of the previous year had a small black bear that climbed the fence and killed a chicken right in front of the caller. The caller claimed to have lost 17 chickens the previous year. A bear had also killed the neighbour's duck the previous week. This neighbour also filed a complaint in July after the bear tried getting into his barn after his chickens and said he thought it was the same bear as the previous year and knew of four people in Hills who had lost chickens to a bear so far in 2005. There were then no complaints in Hills until September 30, when the same caller said the bear was back at night and broke into his barn and killed 2 chickens. The same caller called again on the same day and said he had now lost all but three of his chickens. It appears from the records that the COs trapped and killed the bear. However, the data demonstrates the possibility that once a bear gets into attractants related to chickens, it will be persistent; even though it may wander off for several months, or go away to hibernate, it will return, since there is no doubt that at least some of the depredations at the two adjacent farms were caused by the same bear from Spring to Fall and from 2004 to 2005.

In these incidents confined to two specific small farms, it appears that the COs made four round trips to address a bear killing chickens, costing taxpayers \$3,200 (\$800 for each round trip).

The next year (2006), one of the callers who had a bear killing their chickens in 2004 and 2005, phoned in a complaint that a black bear had killed seven of their laying hens and that they previously had problems with the same bear. Another farmer called in to report there was a bear trying to get into his chicken coop. There are also cows and dogs. The bear was trying to get into the perimeter fence and tried to tear the door off. There is electric fencing around the property, but not the chicken coop specifically.

In 2007, the first complaint filed from Hills was on June 1 about a bear that had been hanging around too much and that the caller felt was the same bear that had been around last year being a general nuisance. On June 7, the same caller reported the bear had been into his empty compost box and garbage container at the side of his house. There were no other complaints until August 16, when a caller complained about a bear hanging around their residential area getting a bit of food despite their attractants being controlled. Another complaint was filed on August 22 by another resident who also reported they thought one of the bears had been shot by a neighbour. On September 22, another caller from Hills reported a bear had been getting into fruit trees in the area for the past month. The bear had been breaking into freezers and sheds containing garbage in the area. A few days later, another caller complained that her shed was broken into and the freezer inside was broken into. She knows of many other neighbours that had the same problem, that is, a bear that did not seem to be interested in any of the fruit trees in the area, just freezers. The caller wanted the bear trapped. On October 9, a caller advised that a bear had been in the neighbourhood and broke into the shed to get at the garbage.

On April 29, 2008, a caller reported a bear was on their porch after pet food. On May 15, another caller reported a black bear had got into their freezer and had also damaged several neighbours' cars. On the same date, another caller reported a black bear had broken into his vehicle and also several of his neighbours vehicles. There was another call on the same date reported muddy paw prints on their vehicle. Another caller then reported that a black bear had got into their vehicle and broke the window to get out. On May 16 another caller complained about the bear not just getting into vehicles but sheds.

Around the same time, bear biologist Wayne McCrory, who lives in Hills, set up an electric fence around the neighbour's new Toyota Prius to prevent the black bear from breaking into her car again. The bear had apparently opened the door and helped itself to a bag of tortilla chips left on the back seat. At the time, McCrory had not been convinced there was a bear in the neighbourhood opening peoples' car doors until he woke one rainy morning to find the bear had opened and left open a door on each of the family cars. The bear had slept overnight in the back seat of one of the



vehicles, but had done no damage. After this incident, the bear was dubbed the "Hills Car Door Opening Bear." Within a week, the bear returned; it turned out to be a sub-adult brown-phase black bear. The bear was quite habituated and charged McCrory's dog, which had tried to chase the bear away. The bear was quite aggressive towards the dog but was chased off by McCrory's wife with a broom. McCrory then followed the bear into the woods attempting to get a chance to shoot a noisemaker to discourage the bear, but the bear disappeared. After this, there were no more reports of

the bear getting into vehicles or doing other damage and it was assumed that someone in the community had shot it. However, the following Spring, a similar but slightly larger brownish bear was observed along the highway feeding on grasses. When McCrory stopped to see if it looked like the same bear, his dog barked and the bear bluff-charged the vehicle. The same bear colouration, size, and aggressive behaviour towards the same dog indicated that this was the same “Hills Car Door Opening Bear,” after which no further problems with this bear were noted in the community.

Rosebery

This small rural community is comprised of one seasonal restaurant, wooded rural acreages, a lakefront subdivision along Rosebery Drive, and a new subdivision to the north. Rosebery Regional Park is at the mouth of Wilson Creek and Rosebery Provincial Park Campground is located about 1 km from Slocan Lake on the north side of Wilson Creek. There are some old fruit trees and wooded areas with some seasonal bear foods. In August 2006, a mother black bear and a cub were reported feeding on Saskatoon berries near the trail through Rosebery Regional Park. Some kokanee spawn in Wilson Creek in Spring that likely also attract bears. The Rosebery Waste Transfer Station is about 0.5 km north, but has few bear problems.

Periodically, Rosebery has problems with black bears and attractants, including garbage, composts, and fruit trees. When the garbage dump 5 kms above Rosebery was closed in 2003, people experienced an increase in bear problems similar to the increase noted at the Rosebery Park Campground. In 2004, a black bear ripped the door of a trailer and tried to get into the garbage stored inside. In April 2005, a mother black bear with cubs got into a resident’s coolers, compost, garbage cans, and other attractants. In late Summer 2006, a mother black bear and two cubs were responsible for a fair number of complaints to the COS. The bear was reported to have ripped a door off the restaurant and, after feeding in a plum tree, the mother bear attacked a dog. The bear family was getting into constant trouble with attractants both in the residential area and in Rosebery Provincial Campground. Although the COS set a culvert trap, the bears were not caught.

Attractant problems persist both in the residential areas and the provincial campground. Once a problem bear situation occurs, complaints arise from both areas. The restaurant recently installed a bear-proof garbage receptacle and at least one resident has installed an electric fence around their compost.

New Denver North, Golf Course

There are some small holdings and farmsteads in this rural area, plus a golf course and associated restaurant. According to interviews with a number of area residents, black bears and household attractants are a common problem. This is despite there being limited bear habitat values and only a few farmsteads with fruit trees. Bears that become problems in this rural area are also likely the same bears that become hooked on attractants in New Denver. We don’t know if the golf course has bear-proof garbage containers at its restaurant, which is open during the Summer.

On May 21, 2004, a resident here reported that a black bear broke into her cabin by tearing off the door and breaking a window. The bear then fed on food in the freezer for most of the day. The following day, a neighbour called to report the bear was also getting into garbage cans. On September 29, another farmstead in the same neighbourhood reported that a black bear had been in the area for the past month and about two weeks previously had killed six of his chickens.

Problems with a black bear getting into a chicken yard and killing chickens surfaced late in Fall 2008. A temporary electric fence was installed for the owner by the VWS Bear Smart coordinator. The same chicken problem occurred the following year as the owner failed to install their own electric fence, but apparently this has now been corrected.

Areas bordering New Denver (Denver Siding)

Private acreages and subdivisions surround and form a large rural interface between the more densely populated residential areas of New Denver and the surrounding wildlands. For many decades dating back to the 1950s and earlier, the local garbage dump was located above New Denver. This artificially increased the local black bear population but also kept bears fed in the dump. As with many other dump-bear areas in the past, some bears still sought food in the Village and caused problems. Some were relocated with some success, depending on the circumstances. Black bears relocated by CO Pete Ewart in the 1970s and early 1980s across the Arrow Park Ferry appeared to have the least frequency of returning. For a period, the Village of New Denver also had its own home-made culvert trap for relocating bears that became problematic in town, usually dump bears. Limited monitoring showed some bears did not return. Eventually, the Village was forced to donate the culvert trap to the Conservation Officer Service.

In the late 1970s or thereabouts, the Regional District moved the open dump from rural New Denver to a remote area several kilometres above Rosebery. While this reduced bear problems in New Denver, it merely transferred conflicts with bears to other locations, including at Rosebery Provincial Campground and adjacent residential areas.

Today, even without the open garbage dump, rural areas adjacent to New Denver exhibit the same problems that chronically afflict New Denver about every 3-4 years. Bears that eventually become habituated to people in the Village and addicted to fruit, garbage, composts, and other attractants, start this behaviour at residences in the surrounding rural buffer. These private lands, as well as undeveloped Crown lands, also provide natural habitat suitability, including large forested green spaces, travel corridors, and dense tree and shrub cover for bedding and resting. Bears habituated to residential areas and conditioned to artificial foods travel back and forth throughout these areas.

In years of a low black bear problems in New Denver, a few black bears still forage prior to denning in Fall on apples around the perimeter without much in the way of conflict. Periodically, one or two black bears are killed by residents or trapped and shot by the COs.

New Denver's first injurious black bear attack occurred on August 15, 2012 in the rural area skirting New Denver. The incident involved a mother black bear defending her cub, which was in a tree, and against uncontrolled dogs. This incident is discussed in greater detail in section 5.4.1.

Recommendation:

The two rural areas near New Denver should be included as part of the proactive bear conflict reduction program we are recommending in order to deal with the chronic bear problems that afflict the village. This is the number one priority of the Upper Slocan Valley Bear Smart program. It should include control of fruit and garbage.

Three Forks-Sandon-Cody

Currently, only small numbers of black and grizzly bears occur here on a more or less permanent basis. High quality bear habitat occurs more around Cody in Spring due to avalanche paths with good bear foods. We have noted grizzly sign to be common here in Spring. Bear problems appear to be limited due to the low numbers of people. There are no records of complaints from 2002 to 2008. About 20 years ago, the one resident at Three Forks was experiencing problems with a mother black bear and cubs. We helped set up an electric fence to deter the bears. In Spring 2011, a healthy grizzly bear was frequenting Three Forks for several weeks, often feeding on the open slopes where the K & S Trail starts. The bear appeared not to be aggressive and was popular with local photographers. We are guessing from photographs observed that it was likely 4-5 years old.

We have no recommendations other than that people control their attractants and use caution when hiking and mountain biking in the Sandon area.

Bear/Fish Lakes to Retallack

See also Retallack Cedar Grove Trail and Fish Lake Rest Stop. There is one seasonal resident at Bear Lake and some random camping from Spring until Fall. There are one or two permanent residents at the ghost town of Retallack, while Retallack Resort is open year-round. The area is moderate quality bear habitat with some good riparian areas along Kaslo Creek between Retallack and Fish Lake. One or two grizzlies and black bears can be sighted near here in Spring. The Retallack Cedar Grove is an important black bear denning area, but does not appear to conflict with the few residences and one lodge, although we did not do any interviews. On August 26, 2006, Retallack Resort reported a black bear going to their dumpster and approaching the back porch where recycling is kept. On August 29, they reported the bear was into the powder keg and the caller was concerned that “someone was going to get hurt soon.”

Areas bordering Silverton

Private lands and housing around Silverton comprise a much smaller human development zone than those surrounding New Denver, including fewer attractants such as fruit trees. Although there are no records of complaints from 2002 to 2008, we have one anecdotal report of a black bear getting into uncontrolled garbage and being shot by the land-owner.

One area of interest is the private land holdings at the old Mammoth Mine, several kilometres above Silverton at much higher elevations, about half way to Idaho Lookout. This area is more within the range of grizzly bear; a small number often frequent the fields here in Spring. There have been problems with grizzly bears raiding gardens, but at least one owner installed a bear-proof electric perimeter fence, with our assistance in its design. This has been successful.

Recommendation:

Rural Silverton should be included as part of the proactive bear conflict reduction program for the Village.

Red Mountain Road Rural Area

Some of this extensive rural area borders riparian areas along Hasty Creek and other drainages. We consider it good mid-elevation habitat for black bears and the occasional grizzly bear. Black bears are commonly sighted and are involved in the usual attractant issues. Complaint reports, however, between 2002-2008, have been few but this may reflect people just not wanting to file a complaint and have the bear shot, rather than putting up with a low level of conflicts. On October 14, 2003, a resident filed two complaints about a black bear that tore down their fence to get at chickens and also fed on grapes alongside their house. On July 31, 2006, a caller reported a neighbour's young sheep that appeared to have been killed by a bear and was concerned about other sheep in the same corral. Although it is not reported in the CO data, we are aware that a black bear was trapped and killed by the CO. Daniel Sherrod, the VWS Bear Smart Coordinator, worked with the livestock owner to install a bear-proof electric fence. He also worked with another property owner giving advice on a bear-proof fence to curtail the extensive feeding by black bears in their garden and raspberry patch. Others have also been assisted by the coordinator.

South of Red Mountain Road to Cape Horn

A few grizzly and black bears frequent the side of the highway here feeding on green vegetation in Spring. One or two grizzlies also feed in the few remote farm pastures in this area. Few complaints have been reported from the small farms and homesteads on the benchlands off the highway. We are unsure of the methods used to contain and store garbage at the new housing subdivision (Kokanee Falls) near the mouth of Enterprise Creek.

Complaint data from 2002-2008 shows that on January 19, 2004, a rural landholder filed three complaints about a small black bear that had been sighted in the vicinity of their farm the previous week. They were concerned that the bear had not hibernated and would get into their chickens; it has also been near their rabbit hutch. The bear had been treed by their dogs. The owners were given permission by the CO to shoot the bear, which they did.

In August 2006, a wildfire burned a large part of the area above Highway 6; this will lead to improved bear habitat over time, particularly for huckleberry shrubfields at higher elevations, just as the 1912 burn at the headwaters of Keen Creek in Kokanee Glacier Park created a very productive huckleberry area for grizzlies and a few black bears, still highly used a century later.

5.2.2 Parks and Areas Managed For Public Recreation

The Upper Slocan Valley has an extensive network of hiking and bike trails, and primitive backcountry and frontcountry parks and campsites. All the recreational facilities in the three larger BC provincial parks have had bear hazard assessments and remedial measures taken to minimise encounters with bears. Some high hazard trails and campsites were closed or relocated, and management of attractants has been excellent. As a result, there are few problems, including with hiking and camping facilities located in grizzly country. Similarly, most trails and campgrounds previously managed by the Forests ministry have also had hazard assessments, with proactive measures taken to minimise conflicts with grizzly bears. This includes the popular Idaho Lookout trail network. Local organisations have also taken steps to minimise bear-people conflicts on other trails managed by them. Public hiking trails and camping areas on Crown lands have also had professional hazard assessments. More recently, a large number of approved and “illegal” mountain bike trails have been opened up by the public. None of these have taken into account the high hazard bear habitat they cross.

Public recreation areas are organised by management agency, except for the one private campground.

- BC Parks: large provincial parks (Valhalla, Kokanee Glacier and Goat Range) - trails and campgrounds
- BC Parks: small provincial parks (highway) - Rosebery and Summit Lake Campgrounds
- Ministry of Forests, Lands, and Natural Resource Operations (MFLNRO): campgrounds and trail network
- Ministry of Transportation and Infrastructure: highway roadside pullouts & picnic areas
- Regional District of Central Kootenay (RDCK) Managed Areas: regional parks and regional trails
- Municipal parks, campgrounds, and trails: Villages of New Denver and Silverton
- Private Campgrounds: Three Islands Resort at Summit Lake

5.2.2.1 Large BC parks (Kokanee Glacier, Valhalla, and Goat Range), trails and campgrounds

The upper Slocan Valley takes in portions of three large provincial wilderness parks (Kokanee Glacier, Valhalla, and Goat Range), as well as two small provincial campgrounds (Summit Lake and Rosebery). These all have grizzly and black bear habitats of varying quality, with better habitats at mid- to high elevations. Trails and campsites in the provincial parks have all been fairly well managed to mitigate bear hazards. Parks in the study area are generally encompassed within the blue dotted line in the map below.²⁴ BC Parks keeps its own bear-people conflict data on occurrence reports. Although we met with BC Parks and requested these on February 9, 2007, we never received them.



Figure 3. Overview map of large and small BC parks in and near the study area.

²⁴ <http://www.env.gov.bc.ca/bcparks/explore/parkpgs/kokangla.html#parkmap>

Kokanee Glacier Park—32,035 hectares

This park is on the southeast side of the study area. Established in 1922, it is one of the oldest parks in the province. Wildlife supported by the largely alpine and subalpine habitats in this park (most of the park is above 1500 metres elevation) include blue and Franklin grouse, ptarmigan, and golden eagles. Small mammals found here include hoary marmot, pika, ground squirrels, and marten. Larger mammals include mountain goat, mule deer, and black and grizzly bears.

One of the major conservation roles of this park is to protect habitat for grizzly bears. Because the park encompasses prime subalpine and alpine habitats in the headwaters of a number of drainages, it concentrates grizzly bear use, with an estimated 10-20 grizzlies using the park at any given time. Maintaining the separation of people and grizzlies is an important management objective here. In the grizzly bear hazard studies, some areas have no development and their use is discouraged specifically for this reason. Other trails and use areas are carefully designed to avoid bear habitat or are closed at certain times of the year when bears are known to be feeding on ripe berries nearby.

Kokanee Glacier has over 85 kms of hiking trails. The west side of Kokanee Glacier Park includes the headwaters of Enterprise Creek, which has a number of hiking trails accessed from the Slocan Valley side. These trails include the main Enterprise trail to the central park area, a rustic hiking route to Heather Lake, and a trail to Paupo (Blue Grouse) Basin. The park also includes the headwaters of Silverton Creek, beyond Fisher Maiden Lake.

A bear hazard study was done of recreation facilities in Kokanee Glacier Provincial Park by McCrory (1985), including an assessment of previous bear-people encounters. A follow-up bear management study was done in 1992 by Wayne McCrory and Erica Mallam. Subsequently, a third bear hazard study (McCrory 2000) was done to upgrade the bear-people conflict management approaches used by BC Parks and to examine the bear hazard in other areas of Kokanee Glacier not previously surveyed. These studies have provided a scientific background and blueprint for very proactive management by BC Parks over the past 27 years, and is believed to have contributed to a very low grizzly bear-visitor encounter rate and no injurious incidents for this highly visited provincial park; a model for the province.

Additional information was obtained on hiking trails in the Upper Slocan Valley-Kokanee Park during an interview with BC Parks staff members Dave Haegy and Tom Roos on May 10, 2007. Since the 2000 bear hazard study, no encounters appear to have been documented. Landslides on the access road up Enterprise Creek resulting from the 2006 wildfire that extensively burned middle Enterprise Creek between Kokanee Park and Slocan Lake has resulted in vehicle access to Kokanee being restricted above the wash-out at about km 6. Subsequently, BC Park rangers have given this area less attention and it is likely that visitor use has dropped significantly. Public information on bears in the park is provided by BC Parks in a variety of venues.

Kokanee Glacier Park trails included in the previous hazard assessments are:

- Enterprise Creek Trail (McCrory 2000): Low-moderate bear hazard. Mark trees and other bear sign indicate both species of bears use the trail for travel, including the upper area to Enterprise Pass. Brushing the trail to improve visibility was recommended in 2000 and has since been carried out. Cautious monitoring and management was recommended. Despite the campsite along the Enterprise Creek Trail being in moderate quality habitat and along a bear travel route, no problems have been reported in recent times (D. Haegy pers. comm.). The campsite was previously relocated from a higher hazard area. A bear-proof food storage locker was also installed.
- Paupo (Blue Grouse) Basin Trail: The 1985 bear hazard study gave this trail a moderate hazard rating. The trail was slashed out in 2006 to improve visibility. It appears to be getting increased visitor use (T. Roos pers. comm.).

- Heather Lake: From past surveys (W. McCrory), this primitive hiking route, used mostly by local trout fishermen, appears to be a lower hazard situation.
- Upper Silverton Creek above Fisher Maiden Lake: This is a very remote backcountry area with no hiking trail beyond Fisher Maiden Lake. The lake and high country area used to be accessible by an old mining then logging road. However, the road has not been maintained and is overgrown so that even access by ATV has become difficult. We attempted to access this area in 2009, including hiking the old, overgrown road for several kilometres about 4 km below Fisher Maiden Lake. There was some grizzly bear sign on the road, but we concluded that public access to the park via Fisher Maiden was no longer viable except for the most adventurous, well-prepared, and hardy hiker.
- Moyer Creek access, tributary of Silverton Creek: Although this is primarily a winter snowmobile area, road and hiking access was checked out in early Fall 2009. The old logging road on the west side was barely passable by a vehicle it was so overgrown. Although there was evidence of grizzly bear use in logged and unlogged habitats along the road, very little human access was evident. We drove to the last logging landing just north of the Kokanee Park boundary, but concluded that the bear hazard here was not an issue.

Valhalla Provincial Park—50,067 hectares

Located on the west shore of Slocan Lake, north of Slocan and opposite New Denver and Silverton, Valhalla Provincial Park encompasses most of the Valhalla Range of the Selkirk Mountains. The park can be accessed by logging roads, trails, and water. Public boat launches with park signage exist in a number of towns, including Slocan, Silverton, and New Denver, by which trailheads can be reached by vessel. There is also a boat launch with park signage at Hills.

Encompassed within Valhalla Provincial Park is the Evans Lake Ecological Reserve.²⁵ At 185 ha, this small ecological reserve was established to protect one of the few known stands of yellow cedar (*Chamaecyparis nootkatensis*) in the BC Interior.

The Valhalla Park Master Plan recognises the importance of prime grizzly bear habitat in the Valhalla Range, where grizzly bears forage in small open habitats near the lakeshore in Spring for corms of glacier lily to the rich alpine meadows in the high country. As a result of an extensive bear hazard study after the park was created (McCrory 1984), three of the least undeveloped of the seven park drainages (all of which were found to have high value grizzly habitat) were zoned to be left undeveloped in order to provide secluded grizzly bear security habitat largely free of intrusion by people. These remote watersheds also have some of the highest quality bear habitats. This, combined with the re-routing of some hiking trails to avoid high quality grizzly habitats, is believed to have helped minimise bear-people conflicts in Valhalla, just as a similar approach has helped in nearby Kokanee Glacier Provincial Park. In 2003, the campground at the east end of Beatrice Lake was closed due to hazard trees (Dave Haegy pers. comm.).

We could not locate any recorded conflict information for Valhalla Park, although we requested same in a meeting with BC Parks in February 2007. There was one incident on the Mulvey Trail (Dave Haegy pers. comm.). Since the park was created, there has not been anyone mauled in an aggressive encounter with a grizzly bear, although as noted elsewhere (Section 5.4.1), there was a predaceous attack on campers north of the park that caused minor injuries to one of the party.

According to an interview with Bob Fuhrer, Valhalla Park Ranger (Dec. 19, 2006) one of the problems is that park staff are forced to be reactive because of lack of funding. They are no longer able to brush out many of the park trails through grizzly habitat. However, there are not too many

²⁵ http://www.env.gov.bc.ca/bcparks/eco_reserve/evans_er.html

problems with garbage in the park. The park policy is to “pack it in/pack it out.” He said eight out of ten people are conscientious about their garbage. The rustic campsites along Slocan Lake all have bear-proof lockers for temporary storage of food and garbage. This is especially important to help minimise potential conflicts between black bears and canoeists and kayakers, who tend to bring more food and condiments than people camping in the backcountry. As well, some of the more popular backcountry campsites have similar lockers, including the campsite at Emerald Lake on the trail to Cahill-Beatrice Lakes.

In 2009 and 2010, we re-surveyed the lakeshore campsites between Slocan and Nemo Creek and confirmed their low hazard rating. According to Bob Fuhrer (pers. comm.), in about 1998, BC Parks had to close the lakeshore campground at Evans Creek because of a female black bear on a deer kill. She had been sleeping by the trail when they came upon her. Startled, she jumped up and stood on a small rise with something bright red behind her. The rangers were concerned that it might have been a camper. It turned out to be the open lung of a young deer. In about 2006, the Bear Smart program received a phone call from the local RCMP who had been called by a hiker on the trail to Cahill Lake. The people reported that a black bear had been following them and showing unusual interest, suggestive of possible predaceous behaviour. When we interviewed the hikers, it appeared that the bear was just trying to move down the trail

Also in 2009 and 2010, we re-surveyed the trail between Slocan Lake and Little Cahill Lake, the Cove Creek-Salal Trail, and the trail to the Nemo Rock Castles, and confirmed the very low habitat values and risk of a bear encounter. Of interest is that we located a grizzly bear mark (rub) tree in the salal habitat of the Cove Creek Trail. In recent times, due to staff cutbacks, some of the trails have been poorly maintained and fallen into a state of disrepair. One example is the Wee Sandy Lake Trail, which was originally recommended for annual clearing and brushing in the mid- to higher reaches due to a higher grizzly bear hazard. Back country use of Wee Sandy Lake now appears to have dropped to very low visitation (P. McCrory pers. comm.).

Valhalla Park trails with higher hazard ratings mainly involving grizzly bears include:

- a. Higher reaches of Gwillim Creek Trail, but receives very little use
- b. Upper Trail to New Denver Glacier
- c. Mid- to upper Wee Sandy Trail to Wee Sandy Lake
- d. South side of Cahill Lake during huckleberry season

Public information on bears and bear safety in Valhalla Park is available on the BC Parks website, the Valhalla Park brochure, and at small kiosks at some of the boat launching areas along Slocan Lake that access the park. In the past, the Valhalla Wilderness Society produced a visitor trail guide to the park that included comprehensive bear ecology and safety information, as well as bear hazard information on each trail, but the guide is now out of print and in need of updating and reprinting. The Valhalla Society also provided a Haul-All bear-proof pedestrian bin at the BC Park kiosk at the New Denver boat launch.

There are four BC Parks information kiosks at boat-launching sites for the park along Slocan Lake, one at Slocan, one at Silverton, one at New Denver and one at Hills. Only one of these, at New Denver, has information on bears on the reverse of the “Wilderness Ethics and Backcountry Safety” sign.

Overall, we feel that Valhalla Park is very well managed to minimise bear-people conflicts. Although the park no longer has a seasonal ranger due to government cutbacks, periodic patrols are still done to monitor visitor use and bear activity.

Recommendations for Valhalla Provincial Park

1. The government needs to improve funding for staffing and programs for this and other parks. This will help to continue to minimise bear-people conflicts through improved monitoring of bears and other necessary measures.
2. Trail maintenance needs to be improved, especially for brushing through higher hazard bear habitats.
3. Adequate Bear information needs to be provided at the other three boat launch kiosks to the park. The should be very visible, not on the backside. This should include providing the a pamphlet holder with the government's bear safety brochure.

Goat Range Provincial Park—78,947 hectares

This wilderness park, the bottom portion of which is in the northeast part of the study area, is also important habitat for grizzly bears, elk, mountain goats, and the endangered (red-listed) mountain caribou (an ecotype of woodland caribou). The park protects a mix of low-, mid-, and high-elevation forests, including some old-growth stands, as well as extensive alpine meadows and lakes, and numerous rivers and creeks. It provides habitat for the internationally important Gerrard rainbow trout and important spawning areas for Kootenay Lake kokanee.

About 98% of this park is zoned for wilderness recreation. Conservation values include a full elevational range of ecosystem types and habitats from riparian corridors and old growth forest to alpine tundra.

On the west side, several tributaries of Wilson Creek are encompassed by the park boundary, with only two hiking trails. The 1 km trail to Wilson Creek Falls is in a very low bear hazard area. The main Wilson Creek Trail above the falls was previously maintained by the Ministry of Forests to its confluence with Keene Creek. It later fell into disrepair but was upgraded by the Valhalla Wilderness Society about 15 years ago for only about 4 km, to near a grizzly bear mark trail in an old-growth forest. The lower part of the trail was considered low hazard, but beyond about 4 km, the old trail crossed a number of avalanche chutes with higher bear hazard, so a decision was made not to open the old trail beyond 4 km. After the area was protected within Goat Range Provincial Park, the log crossing at Burkitt Creek became unsafe to cross and since then, the trail has not been maintained.

In the past, the Valhalla Wilderness Society produced a visitor/trail guide to what was called the White Grizzly Wilderness Proposal before the park was established. The fold-out guide included comprehensive bear ecology/safety information as well as bear hazard information on each trail, but the guide is now out of print and in need of updating. There appears to have been no bear-people conflicts in the Wilson Creek side of Goat Range Provincial Park since it was established.

Recommendations for all three large provincial parks

1. The provincial parks are models for management practices that minimise bear-people conflicts, including adequate provision of food storage lockers and other facilities at campsites, along with implementation of programs to reduce the bear hazard in hiking and camping areas through comprehensive bear hazard studies. We would hope that funding will improve in the future so that trails may be more adequately maintained, particularly in the more hazardous habitats.
2. Valhalla Park information kiosks at boat launching areas on Slocan Lake should provide adequate bear information, including bear safety brochures.

5.2.2.2 Small BC parks and campgrounds

There are two small provincial parks that provide for public camping. These used to be managed by BC Parks staff, but are now managed privately by park facility operators (PFOs).

Rosebery Provincial Park & Campground—32 hectares²⁶

Rosebery Provincial Park is 5 km north of New Denver on Hwy 6. It is situated on the banks of Wilson Creek on the east side of Slocan Lake. Just for camping, this 32-hectare park was established in April 1959. The park has 33 shady forested campsites situated in a mixed forest of western hemlock, Douglas fir, and lodgepole pine. Tucked along the banks of Wilson Creek, this park has an intimate, forested creek setting that offers secluded camping for overnight travellers or visitors seeking more adventure. It is a good staging area for backcountry exploration of nearby Valhalla, Kokanee Glacier, and Goat Range provincial parks.

The primary role of Rosebery Provincial Park is to maintain holiday destination and tourism travel route recreational opportunities oriented to a forested creek setting. The campground opens May 1 and closes in mid-October, with July and August being the busiest months.

Due to the poor quality of the habitat, this campground was given a low hazard rating. Some bears use the park to seek out small numbers of kokanee that spawn in Wilson Creek in Fall, and to carry out raids on unattended or poorly stored foodstuffs by campers or on fruit and garbage in the adjacent residential areas.

The open garbage dump about 5 km up Wilson Creek was closed in 2003 and replaced by the Rosebery Waste Transfer Station, about 1 km away. Up to 15 or more black bears used the dump and were believed to have caused problems at the Rosebery Campground and residential areas in 2003 and 2004. The new Rosebery Transfer Station, 0.5 km to the north of the campground, is not bear-proof but has had only a small number of bear problems compared to the old dump. Although we did not review previous complaint data, during the period the Rosebery Dump was open, black bear problems in the campground were much more prevalent than they are today.

The campground is the only location in our study area where what appeared to be a predaceous night attack by a female black bear with young took place, involving a mother and her children in a tent. The mother received only minor injuries and was able to beat off the attack. The bears were subsequently hunted down and destroyed by the Conservation Officer Service. Despite a recent request to BC Parks, we were unable to get the incident report for specifics but it is believed the bear had a history of feeding on garbage. Apparently this happened about 15 years ago.

BC Parks has been very proactive in providing bear-proof garbage receptacles some decades ago as follows:

- 3 bear-proof double Haul-All Hid-A-Bag garbage receptacles
- 1 bear-proof food storage locker for people who do not have vehicles, such as bicycle tourists

From May to early July, the garbage containers in the park are emptied once a week and then once per day during the peak months of July and August. The garbage is taken to a larger bear-proof container in the service yard, which is fenced off. Twice a week, it is taken to the Rosebery Transfer Station.

According to a 2007 interview with the park facility operator (PFO), August can be the worst month for bear problems. If there is a bear in the area, the PFO posts a warning sign and talks to people when they arrive in the park. The PFO bear problem reports were submitted to both BC Parks and to the employer, Wildlands Consulting. The PFO felt that despite warnings, people were still a problem because of leaving out attractants, such as coolers and dog food.

We reviewed COS conflict data for the campground from 2002-2008. There were no complaints in 2002, and two in 2003, the year the Rosebery dump was closed. A mother black bear and 2 cubs were

²⁶ http://www.env.gov.bc.ca/bcparks/planning/mgmtplns/rosebery/rosebery_ps.pdf

reported as nuisances in May 2003, and a small black bear was caught in the culvert trap in June and apparently destroyed. These were likely “dump bears.”

Complaints increased to four in 2004, likely “dump bears” again. In May 2004, there were two reports of problems with garbage and the cooking shelter, and one report of two aggressive bears that ripped up two tents and broke into a nearby house. Food in the campground was cited as the cause. The RCMP tried to shoot the bears, but apparently were unsuccessful. The same month a bear was also reported to have broken a window in a camper that had food in it. There were no complaints in 2005, but a significant increase occurred at the campground in 2006. Instead of occurring in May, three incidents occurred in August involving a bear or bears (possibly mother with 1-2 cubs) getting food in the campground. In one report, a bear got into a cooler, then a cooler in a vehicle (along with a ripped tent), and later broke into the canopy of a camper/trailer to obtain food. The park attendant also filed two complaints the same month involving a mother with two cubs that would not leave the campground, and another instance involving the same bear family and one other bear. Tenters were asked to vacate the campground. Although not recorded in CO complaint data, the PFO reported in an interview that he had to call the CO, which resulted in a trap being set for three days at the campground, with no bear being caught. In 2007 and 2008, there appeared to be no complaints from the campground, although in 2008 there were problems with a bear and attractants at private residences adjacent to the campground.

The only management deficiency we identified concerns the lack of adequate information on bears and a proactive program that requires people to not leave any food unattended or improperly stored. While the main entrance kiosk has signage that mentions keeping dogs on a leash and depositing garbage in the bear-proof receptacles provided, there is no messaging advising people to store their food in their vehicle or in a bear-proof manner, as well as not leaving their coolers, dog food, barbecues, or other attractants unattended at any time.

Our above-mentioned review of the complaint data indicates that despite ample bear-proof garbage receptacles, people leaving their coolers and other food out in the open is causing some bear problems that appear to escalate to the point where bears do not show any fear of people, break-ins of tents and campers, and tenters even having to be vacated. Adjacent properties with uncontrolled attractants likely play an interchangeable role.

Summit Lake Provincial Park & Campground—6 hectares

Summit Lake Provincial Park is a small camping and fishing park located at the height of land on Hwy 6, 18 km southeast of Nakusp and 26 km northwest of New Denver. Established in 1964, the park provides local and destination outdoor recreation and helps diversify local community tourism. The campground contains a picnic-day use area and 35 vehicle accessible shady campsites along the lakefront or in the cedar-hemlock forest.

The park features important migration and breeding habitat for western toads (*Bufo boreas*), particularly on the northern end of the lake. While they are still yellow-listed (not endangered) in BC, COSEWIC has classified western toads as “near threatened” because of their decline in the US (due to habitat loss and disease), and the general global decline in amphibians. These primarily nocturnal and terrestrial amphibians inhabit the park, usually in late summer when tadpoles undergo metamorphosis. Each late summer and early fall a natural spectacle occurs as thousands of the juvenile toads emerge from the lake and migrate to the nearby forest to hibernate for the winter. Tens of thousands have been estimated to have been killed on the highway. Recently, “baby toad” migration barriers have been constructed to direct the migration to culverts but this has met with limited success. For the past several years, biologists with the Columbia Basin Fish and Wildlife Compensation program have organised a hugely successful event by having the public capture baby toads and release them on the mountain side of the highway. Also, the islands near the campground

present excellent nesting opportunities for shorebirds and provide perching refuge for eagles, hawks and kingfishers. The forests and rocky talus slopes north of the park offer suitable habitat for grizzly bears, mountain goats, and cougars. The BC Parks website urges visitors to “keep a clean camp and be Bear Aware.”

The campground is on a peninsula on the east side of the highway, thus off-setting the habitat being used by black and grizzly bears, except for the few that become habituated to road traffic. Although the campground was rated to have a low seasonal habitat value for bears, the dense shrub understorey, including red-osier dogwood, thimbleberry, and plants would foster some cover and berry foods for the occasional adventuresome bear. Grasses and sedges are also sporadic. There appear to be no problems at this site but the potential still exists, particularly in Spring when a few grizzly bears use the valley bottom as a cross-valley corridor and also for feeding activities when they become habituated to the highway.

In June 2006, a grizzly bear and two cubs were reported grazing on the lawn at the campground. The next year what was believed to be the same bear family became regular residents along the highway in the vicinity of the campground. A camper from the BC Parks campground, who was interviewed on May 17, 2007, observed the grizzly bears feeding in the ditch at the highway at 6:00 a.m. as they were going to go jogging. The Park Facility Operator was also interviewed and knew of the grizzly bears that had been “going back and forth for 5-6 days.” He was not worried as he felt it was the same bear family that was there last spring. BC Parks was advised to post warning signs at the campground. In late May, bear biologist Wayne McCrory worked with the Conservation Officers to do some bear aversion (noise makers and rubber bullets) and, although the bears still frequented the area for a short time after the flush of Spring plant growth, the bears never returned in subsequent years, likely in response to the 2007 bear aversion program.

BC Parks has been very proactive in providing a fish-cleaning station and bear-proof garbage receptacles some decades ago, as follows:

- 3 bear-proof double Haul-All Hid-A-Bag garbage receptacles
- 1 bear-proof single Haul-All garbage receptacle (pedestrian size)

An interview with the park contractor in 2007 showed that they tried to have a larger common bin to store garbage from the campground so they did not have to take it to the transfer station in Nakusp all the time. This did not work out as the garbage did not get picked up regularly and was costly. Now the contractors take the garbage to the refuse site when it is open three times a week.

Our main concern is similar to that at the Rosebery Provincial Campground, namely the lack of information on the main entrance sign informing the public that both species of bears can be present. Additionally, there is no signage that informs people not to leave food and coolers unattended and to store these in their vehicles at night. We strongly recommend that these improvements be done. Also, although BC Parks provides the park contractors with bear brochures to hand out to the public, it would be important to also provide these at the entrance kiosk.

Recommendations for Rosebery and Summit Lake Provincial Park Campgrounds

1. Both parks need to add adequate bear information at the large kiosks at the park entrances. This should include providing the standardised bear safety brochures.
2. Warning signs should continue to be posted when a bear or bear sign is observed in the campground, or in the case of Summit Lake, if grizzly bears are observed feeding along the nearby highway.
3. Visitors also need to be informed at the kiosks to never leave their food and coolers unattended and to store these in their vehicle or the bear-proof receptacle provided. BC Parks should ensure

that PFOs on patrol make sure that campers abide by this rule. Warning notices should be handed out and repeat offenders should be ticketed, as is done by BC Parks at the provincial campground in South Tweedsmuir Park.

4. A food storage locker for people who do not have vehicles, such as bicycle tourists, needs to be provided at Summit Lake, if this has not yet been done.

5.2.2.3 Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) campgrounds and trail network

For several decades, the Recreation Branch of the Ministry of Forests was in charge of managing trails and campsites in primitive areas on Crown lands outside of BC provincial parks. Some years back, budgets were cut and management turned over to the Ministry of Tourism, Culture and the Arts, until several years ago, when budgets were almost entirely cut in the region. In 2011, Dan Reiben, the former coordinator, was hired on contract under the BC Recreation Sites and Trails Branch under the new Ministry of Forests, Lands and Natural Resource Operations. Reporting is now done to a Regional Recreation Manager in Vernon, who reports directly to the Provincial Recreation Director in Victoria.

The ministry manages one large campground, Wragge Beach on Slocan Lake and four small backcountry campsites (Bannock Point, Shannon Lake, Beaver Lake, Wilson Lake), road access and interpretive trails at Idaho Lookout, as well as a network of hiking, biking, and multi-use trails that have been developed and/or managed in cooperation with one or more outdoor, historical, or conservation group. In some instances, such as the North Slocan Trails Society, the Ministry has a cooperative agreement for the Society to manage certain trails.

Starting in 1992, the Ministry of Forests, Recreation Branch, commenced a proactive program to minimise bear-people conflicts at their recreation facilities in the Upper Slocan Valley and other areas. As a result, bear hazard studies have been done on most of the hiking trails prior to their development or subsequent improvement. These include the K & S Railway Interpretive Trail from Sandon to Three Forks, the Alps Alturas Trail, Dennis Creek Meadows Trail, Wakefield Trail, the Retallack Cedar Grove-Black Bear Den Trail, and the Whitewater Bear Viewing Trail. Although the latter two trails are just out of the Slocan drainage, we included these since they generally fall within the Slocan management realm. The Silverton Historical Society was responsible for opening up the old Wakefield mining trail between the Idaho Lookout parking lot and Silverton Creek.

Wragge Beach Campground

This was developed about 20-25 years ago at the “islands,” about 5 km from the north end of Slocan Lake. As a result of public consultation, the Ministry agreed not to locate any camping sites right at the beach. The site did not have an attendant and campers were responsible for managing their own attractants. About a decade ago management of the campground was turned over to a private campground operator and a \$10.00 fee was implemented.

The campground is located in a mossy hemlock forest adjacent to a large beach area. There are very few natural bear foods. A few black bears travel the lakeshore. One grizzly bear was observed on the access road about one km from the campground in May 2012. The campground was given a very low hazard rating.

Over the years, this lakeshore campground has become popular with summer visitors. The campground is not monitored, is user maintained, and no garbage receptacles are provided. There is a sign making it clear that this is a “pack-it-in/pack-it-out” site. We are not aware of any bear-people conflicts at this site.

The main entrance kiosk has no signage informing people that they are in bear country. Although the sign refers to proper care of food, there is no messaging about leaving any food unattended including coolers, barbecues, and pet food. As with BC Parks highway campgrounds, this deficiency needs to be remedied with proper signage. As well, there are no bear-proof storage lockers for boaters, bicyclists or other people who camp without vehicles.

Recommendations:

1. The Ministry should improve signage at the main kiosk to inform people that they are in bear country and that they need to properly store all of their food including coolers, pet food, and barbecues in their vehicles as well as to not leave any attractants unattended.
2. The Ministry should provide several bear-proof lockers for people without vehicles to store their food and garbage.
3. The campground operator should continue to patrol and ensure that people properly store their food and garbage so that it is not available to bears.
4. The ministry should have a bear-people conflict management policy that provides for warning signage to be readily available and posted if a bear is reported in the vicinity, and a policy for closure of the area should a more hazardous situation develop.

Bannock Point, Shannon Lake, Beaver Lake, and Wilson Lake Primitive Campsites

Bannock Point and Wilson Lake have primitive campsites with a low bear hazard. They are user maintained, with the public expected to pack in and pack out their own garbage and to store their food properly. High summer camping and recreational use occurs at Bannock Point on Slocan Lake, but it is in very low quality bear habitat so the safety concerns here are nominal.

Shannon Lake rustic campsite has not been maintained for years. It is in a moderate-high quality grizzly bear area, including a travel corridor. In 2004, a large international “Rainbow Gathering” was held at Shannon Lake. They have no membership or responsible organisation. Hundreds of campers descended on Shannon Lake for about a week. After people departed, complaints led to a site inspection by the Valhalla Wilderness Society that showed that a large compost/garbage pit was left uncovered that could attract grizzly bears. As a result, Valhalla Society volunteers packed in tools and covered and cleaned things up. A second gathering was held at the same location in 2005, apparently with improved clean up.

We are not aware of any grizzly bear-people conflicts at the lake. However, about 20 years ago, there was what can be considered a predaceous night attack of a couple camping at the trailhead parking lot by a subadult grizzly (see Section 5.4.1 for a description of this injurious encounter).

Beaver Lake has a low-moderate hazard as it is in a semi-riparian area and on a grizzly and black bear travel corridor with adjacent avalanche chutes and slide paths that attract bears to this remote area. The site is not monitored but we are not aware of any bear incidents.

Trails

In earlier times when New Denver had a BC Forestry ranger station, a two-person field crew was hired each summer to keep the network of backcountry trails cleared out. Unfortunately, this program was discontinued after the Forest Service shut down local ranger stations and centralized operations out of Castlegar and Nelson.

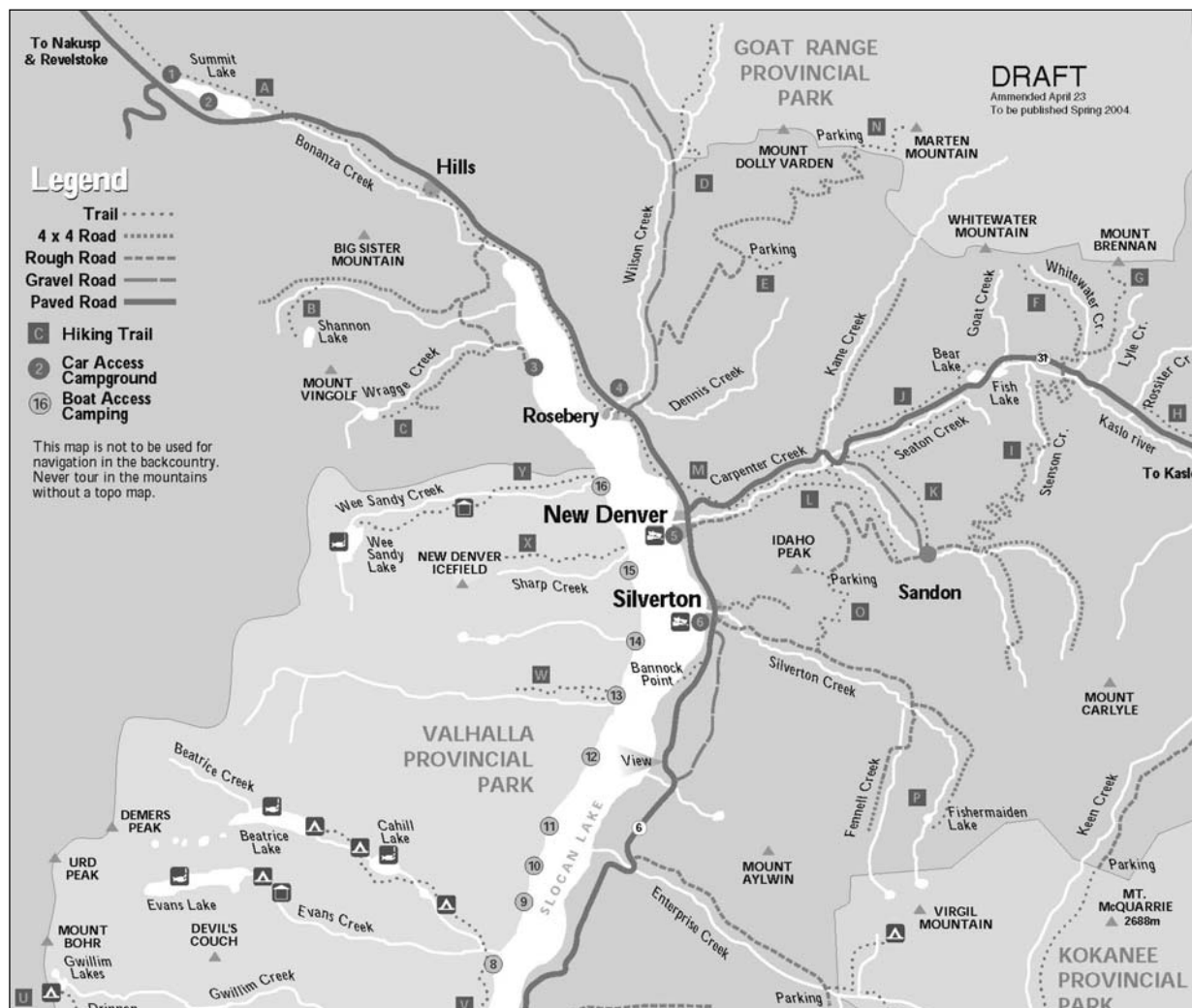


Figure 4. Map of trails in the region.

In 1992, the Ministry of Forests commissioned a bear hazard study of the Alps Alturas-Marten Creek Mine/Trapping Trail, as well as the trail network at Idaho Peak, including the Wakefield Trail (McCrory and Mallam. 1992). This old trail to the Alps Alturas antimony mine had previously been kept open by trapper Perry Kennett and by the Forest Service. This trail branched from the Kane Creek upper access trail on the north side of the confluence of Marten and Kane creeks. It ascended the north side of Kane Creek, passing by Kennett's cabin.

The bear study identified a high grizzly hazard in the subalpine basin crossed by the upper Marten Creek Trail and recommended the trail be allowed to go fallow and an alternative be developed using an old mine road connecting through the alpine to the upper portion of the Alps Alturas Mine Trail. The access is via the Hicks-Dennis Creek logging road. Subsequently, the Valhalla Wilderness Society got a grant to do this and, despite a low-moderate risk of encountering a grizzly bear, the trail became very popular due to the splendid mountain views and alpine meadows. At the upper end, the trail now provides rock climbers access to the rugged peaks of Goat Range Provincial Park, just beyond the headwaters of Marten Creek.

At Idaho Lookout, the 1992 McCrory and Mallam study identified a high hazard for encountering a grizzly bear along a proposed ridge hiking trail east of the main parking lot, as well as the upper

Wakefield Trail below the main parking lot. The study recommended that the ridge trail not be built and this was accepted by the Ministry. However, when we checked out the ridge in 2011, we noted that hikers had established a rudimentary route along the ridge. Similarly, use of the Wakefield Trail had grown considerably since 1992, particularly by mountain bikers. As a result, Daniel Sherrod, the Upper Slocan Valley Bear Smart Coordinator, obtained permission to post several small bear signs at the two trails to inform the public that bears could be encountered. We still consider the Wakefield Trail to have a moderate risk of an encounter with a grizzly bear, with a higher risk for mountain bikers who tend to travel at higher speeds than hikers on this very steep trail..

During the 1992 hazard study, the main Idaho Lookout hiking trail was rated to have a low-moderate risk of an encounter with a grizzly bear, with some evidence of grizzly use, such as digging for small amounts of glacier lily corms. Similar use was also observed in the lily patches along the road in Wild Goose Basin. Over the previous decades when the lookout was maintained, the caretakers would report 3-4 grizzly sightings a year, either along the trail or in the adjacent meadows below the lookout tower. In 1992, when there was still some observed grizzly use of the area, warning signage was recommended along the main trail and this was subsequently posted for over a decade at the main kiosk at the parking lot. However, a Bear Smart follow up survey in 2011 indicated no evidence of grizzly bears using the lily habitats along the main trail to the Lookout and the road through the meadows of Wild Goose Basin. This change was likely because of the significant increase in visitation since the 1992 bear survey. This is a prime example where grizzly bears vacate productive habitat due to high vehicle and hiking use. However, it would not be surprising if, over time, one or two female grizzlies with young started using these prime habitats again by habituating to vehicles and people.

The Dennis Creek Trail in Wilson Creek was developed in the 1980s by the Ministry of Forests without a bear hazard study. A subsequent bear hazard assessment by the Valhalla Wilderness Society showed the hiking trail to have a very high hazard. There are several grizzly bear mark trees on the access trail and often evidence of grizzly bear use. The extensive meadows at the headwaters of Dennis Creek and adjacent ridges have abundant glacier lily corms, grasses, and sedges; all prime seasonal bear foods with sometimes high bear use, including hundreds of diggings for corms. In fact, this is one of the most prime grizzly bear alpine/subalpine habitats in the Upper Slocan Valley.

Over time, the area has experienced a gradual increase in hiking use, partly due to the attractive wildflower meadows. Only the openness of the subalpine meadows eases some of the extreme risk of a grizzly bear encounter here (see Valhalla Wilderness Society: Trail Guide to White Grizzly Wilderness). We highly recommended the Ministry post permanent grizzly bear warning signage at the trailhead and be prepared to temporarily close the trail in the event of a bear encounter.

The upper meadows also have good potential habitat for winter denning for grizzly bears as well as for natal/maternal dens for wolverine, which give birth and rear their young in late winter. As the Dennis Creek Meadows have become quite popular for non-commercial backcountry powder skiing, consideration should be given to avoiding disturbing denning grizzlies and wolverine. Recently the area was also added to semi-protected mountain caribou habitat.

The Whitewater Bear Viewing Trail above Retallack was built after a bear hazard assessment was done about 20 years ago for the Ministry of Forests by Wayne McCrory. The valley has extensive subalpine meadows and the bear surveys showed that the old mine trail on the east side crosses through extensive meadow habitat of high value to grizzly bears; particularly with many areas where the bears excavate large numbers of glacier lily corms or feed on succulent vegetation. Subsequently, a new trail was built by the Ministry on the steep slopes of the west side, reducing the hazard to hikers from high/extreme on the old trail to low on the new trail. Following the initial construction, the Valhalla Wilderness Society obtained a grant to improve and extend the trail. In subsequent years,

others have obtained funding or volunteered to keep this world-class hiking and grizzly bear viewing trail open and safe.

The new trail up the west side of the valley ascends considerably through rockslides, eventually connecting by marked cairns to the old mine trail on the east side. There is a primitive camping area with an outhouse at the upper end, still on the west side. The old mine trail on the east side is used by grizzly bears traveling over the pass into McKian Creek that is now within Goat Range Provincial Park. It also passes an old grizzly den dug into an alpine meadow. Although a new and safer route was surveyed and staked near the creek bottom and up to the pass, funds have never been obtained to establish this better alternative to the old mine trail.

Hiking use has grown over the past 20 years, including by commercial tour groups. The trail is one of a few in western Canada where it is almost guaranteed to be able to observe one or more grizzly bears across the valley and from a safe distance. Although there have been reports of a few hiking groups encountering a grizzly bear or two on the main trail and in the upper valley, we are not aware of any aggressive encounters.

The Retallack-Cedar Grove Trail was built about the same time as the Whitewater Bear Viewing Trail. The old-growth black bear denning habitat was initially identified by the Valhalla Wilderness Society, who cooperated with the Ministry of Forests to construct an interpretive loop trail. Subsequently, the society was able to get a grant to improve the trail and install a black bear den interpretive sign. The sign was pushed down by heavy snows but was rehabilitated by the Society in 2011 with a new and stronger sign kiosk. The trail has a low bear hazard. It is supposed to be closed during the winter to protect denning black bears from human disturbance, but winter recreation visitation is not monitored or enforced.

The K & S Railroad Interpretive Trail was built from Sandon to Three Forks by the Valhalla Society about 20 years ago with a grant from the federal government. Interpretive signage at the trailheads and along the trail has since been upgraded by the society. Extensive remedial work has also been done by a local mountain biking group. The trail has a low bear hazard, but small bear information signs have been posted at either end by the society. In Spring 2011, a subadult grizzly bear foraged on the grassy slope at the Three Forks trailhead, becoming a popular target for local photography buffs. Originally designed for hiking, it has become more popular with mountain bikers. Some snowshoeing is done in the winter with cross-country skiing at the Sandon end. The trail should continue to be managed for non-motorised use.

Mountain bike trails

Over the past decade or so a large network of mountain bike trails has been developed in the Upper Slocan Valley, many done in cooperation with the provincial government, but some done without approval and that have been controversial. In many ways, old mine trails and abandoned mine and logging roads have provided multiple opportunities for such a network to develop. Some years ago, the local mountain bike group developed a trail map showing the opening up of many old trails and routes with no consideration for the bear hazard. The map and accompanying text has no information on the risk of a bear encounter, something that has occurred elsewhere where bikers go at top speeds through prime bear country with sometimes fatal consequence to the biker and possible injury to bears. In the bear hazard assessment in Whistler (McCrorry 2004), this was a major concern identified for the large network of public and commercial bike trails within the municipality. For the Upper Slocan Valley, we are concerned that mountain bikers will continue to open up trails without proper authorisation or without proper consideration of the risk of encounters with grizzly and black bears.

In 2011, Mike Koolen, a local outdoor enthusiast and mountain biker, formed the North Slocan Trails Society in order to develop and manage more family-oriented trails versus the more “hard core free ride crowd.” The society has an agreement to manage the K & S and Wakefield trails. For the latter,

the society's priority will be to notify people that the trail goes through bear habitat, is quite steep, and more suitable for mountain bikers than recreational cyclists (*Valley Voice*, Sept. 21, 2011). Mountain biking started on the Wakefield Trail shortly after the bear hazard study was done for the Ministry of Forests by McCrory and Mallam (1992), including "extreme" downhill mountain biking. In 2012, a commercial mountain bike tour company began advertising bike trips on the Wakefield Trail. Based on the previous hazard study, we would recommend that this trail be cautiously used for mountain biking, with visible warning signs at both trailheads. Erosion problems are also a concern. Although the mountain bike map includes some relevant information about the local dangers, it does not include bears as a risk. Such information should be included in the next edition.

Recommendations:

The Ministry has done a basically good job of bear-proofing some of their remote hiking trails through bear risk assessments. The following are needed improvements.

1. Carry out bear hazard assessments of any new trails or other facilities.
2. Recognize the Dennis Creek Meadows Trail and the Wakefield Trail (Idaho Lookout) as high hazard areas for grizzly bears and post permanent warning signs. Closures may have to be enacted.
3. Unauthorised mountain bike trails that infringe on high quality bear habitat need to be evaluated and managed accordingly. Applications for any new trails should require bear hazard assessments.
4. Any trail guides for mountain bikes should provide adequate information on both bear species and safety.
5. Work with other agencies to develop guidelines and standard signage for bear warnings and closures where more hazard situations are identified at MFLNRO managed trails and campgrounds.

Wragge Beach Campground:

1. The Ministry should improve signage at the main kiosk to inform people that they are in bear country and that they need to properly store all of their food, including coolers, pet food, and barbecues in their vehicles, as well as to not leave any attractants unattended.
2. The Ministry should provide several bear-proof lockers for people without vehicles to store their food and garbage.
3. The campground operator should continue to patrol and ensure that people properly store their food and garbage so that it is not available to bears.
4. The ministry should have a bear-people conflict management policy that provides for warning signage to be readily available and posted if a bear is reported in the vicinity, and a policy for closure of the area should a more hazardous situation develop.

5.2.2.4 Ministry of Transportation and Infrastructure: Highway roadside rest areas

The Ministry has tourism rest stops at highway pull-outs at Fish Lake, Slocan Lake Viewpoint, New Denver, and Summit Lake. All but New Denver have picnic sites. The road contractor, Yellowhead Road and Bridge, Kootenay Ltd. (YRB) is in charge of managing the sites, including garbage pick up.

Today, each rest stop has a set of double Haul-All pedestrian garbage bins that are bear-proof, for a total of 8 bins. In 2006, Fish Lake Rest Stop and Slocan Lake Viewpoint still had the older model, semi-bear-proof tourism receptacles. The receptacles were enclosed in cement within a wooden corral. The other two sites had double Haul-All bear-proof pedestrian receptacles.

Fish Lake rest stop is in a Spring grizzly bear travel corridor and a Fall huckleberry feeding area. In Spring, grizzly bears also use the slide paths and valley bottom riparian areas. In 2005, what appeared to be a grizzly bear ripped some of the wood off of the garbage corral at Fish Lake and appeared to get a small amount of garbage. As the corral was left somewhat accessible to bears in early 2006, Wayne McCrory repaired it. Subsequently, the Ministry replaced the homemade structures at Fish Lake and the Lookout with two double Haul-All containers.

The only persistent garbage problem noted is that the bins at the tourism stop in New Denver are not adequately monitored and, on busy tourism weekends, are over-flowing with bags of garbage outside the bins. In some years, black bears frequenting the Village have been noted to access garbage left outside the bear-proof bins.

Summit Lake Rest Stop and Boat Launch, although in a good riparian area for bears, is out on a spit of land and has few bears due to the adjacent highway. The edge of the highway has good bear habitat as well, including an avalanche path that comes down to the highway with abundant cow parsnip, a favoured bear food in Spring and early Summer. As noted elsewhere in this report, in May 2007, a grizzly bear and two yearlings fed over a period of several weeks along the main highway, sometimes in the vicinity of the rest stop. As this family group had also been reported in the rest stop, the COs posted warning signs and closed the rest stop until the bears moved off, aided by some bear aversion treatment (noisemakers and rubber bullets). The bears never showed up in the area again.

Recommendations:

1. We recommend that the Village of New Denver work with the Highways contractor (Yellowhead Road & Bridge) to correct the problem of garbage overflows at the New Denver rest stop, which may mean a volunteer will have to monitor it and take care of any unsecured garbage by depositing it in the Village Haul-All dumpsters at the nearby campground.
2. As Summit Lake and Fish Lake rest stops are in grizzly bear travel and feeding areas, any activity in these rest stops needs to be monitored and reported to the COs, and have an action plan for posting warning signs or effecting outright closures, depending on the degree of the bear hazard identified.

5.2.2.5 Regional District of Central Kootenay (RDCK) managed areas: Regional parks & trails

Rosebery Parklands Regional Park, Bigelow Bay Regional Park, and the Galena Trail from Three Forks to Rosebery are managed by the RDCK. The regional government has also applied to the CPR to acquire the remainder of the old right-of-way from Rosebery to Hills to Summit Lake, and also to Nakusp. We have included our hazard assessment for the Rosebery to Summit Lake trail in our discussion since it has considerable all-season recreation use.

Three Forks Regional Trail (Galena Trail)

The 12 km long Rosebery to Three Forks trail was developed by community groups for hiking and biking about 20 years ago. It follows the abandoned CRP railroad grade from Three Forks to Rosebery. It is now leased and managed by the RDCK as a designated non-motorised regional park trail. The Rosebery to Three Forks Regional Parks Commission appointed by RDCK provides management direction. The RDCK also provides some funding for maintenance.

This trail has a low bear hazard. About mid-section it crosses some small avalanche chutes, but generally it is low elevation forest in the lower Carpenter Creek Valley. Normally, little bear activity is noted, but picks up in Summer and Fall where it crosses residential areas that have fruit trees at New Denver Siding (Craig Pettitt, pers. comm.).

At the north end, the Galena Trail connects to Rosebery Parklands Regional Park near the mouth of Wilson Creek. In order to protect this land, about 25 years ago, local groups formed the Rosebery Parkland Society. Part of the land was subdivided to help pay for the acquisition. Recently, the society turned the park portion over to the Regional District. This 2.8 hectare parcel of waterfront property is designated as a waterfront access park and is used for beach recreation activities. Habitat wise, the park is on a floodplain with some dense forest and shrub areas. A few black bears tend to frequent the area from midsummer or when they are attracted to fruit trees and some garbage and composts in the adjacent residential areas. Late-ripening wild fruits also attract the bears into the park, including serviceberry, red osier dogwood, and others. We are unsure how much black bears feed on the small kokanee run that has made a resurgence in Wilson Creek in the last 30 years. We have no management concerns except that adjacent residential areas need to be bear-proofed. Warning signs might be posted on the trail network when bears are known to occur in the area. The trail needs to be constantly brushed out.

Rosebery to Summit Lake proposed regional park rail-to-trail

As part of this study, we surveyed bear habitats along the trail from Rosebery to Summit Lake. From Rosebery to the south end of Hills and north end of Slocan Lake, bear habitat values are very low. A few black bears use the trail for travel. The Girl Guides Camp area and Bonanza Marsh at the head of the lake has moderate habitat value, including riparian areas in the marsh, wild fruit trees, elderberry, red-osier dogwood, hazelnut, hawthorn, and others along the lakeshore and trail fringe. The good visibility of the right-of-way here lowers the risk of a bear encounter. As well, the right-of-way is at least 400 m from Bonanza Creek, which is the main fish spawning creek for Slocan Lake. We do not feel any special management steps need to be taken along the rail-to-trail here.

Besides being important habitat for rainbow trout and bull trout, a study by Gebhart (2000) noted that Bonanza Creek is the most important spawning stream in the Slocan system for an estimated 30,000 kokanee (*Oncorhynchus nerka*, landlocked sockeye, also called redfish). In September, redfish spawn from near the mouth to what appears to be spawning habitat some 4-5 km upstream. At this time, there is evidence that both black bears and grizzly bears congregate in small numbers to feed on the fish. Fortunately, however, the main spawning areas are remote from any road (except for the Bonanza Road bridge) so there is little contact between people and bears at this time. Even near the mouth, Bonanza Creek primarily winds through a dense shrub zone allowing most bears to feed without human presence or being viewed. There are few bears observed along the rail-to-trail here in Fall.

The primary habitat-related hazard concern is during Spring from about 2 km north of Slocan Lake (where the railroad trail skirts the north end of private lands in Hills) through the extensive marshlands near “Red House” (an old CPR cabin) and on through to the south end of Summit Lake. From Red House to Summit Lake, there are small wetlands along the rail trail that contribute to high bear habitat values. Wayne McCrory has been monitoring habitat values and bear use along the railroad trail from Hills to Summit Lake since 1982. One Spring, he observed four grizzlies on the railroad right-of-way near north Hills, including a mother with two yearlings. Others have also observed grizzly bears here in Spring and sign is very common. Important Spring bear foods include high densities of grasses, sedges, common horsetail, cow parsnip, and others. Scat and feeding signs along the right-of-way are very common in these wetland habitats. The other potential early Spring food would involve ungulate carcasses as some moose and elk winter along this area. This could attract bears of either species, exacerbating the Spring bear hazard that already exists.

The rail-to-trail goes along the east side of Summit Lake. Although a few grizzly bears have been sighted here, it was considered to have a low hazard except at the north end. Here, some riparian

habitats on private lands contribute to the cross-valley corridor values. Adjacent mountain goat winter habitat leads to the occasional dead mountain goat along the way.

This Hills-North Slovan Lake area is also on a cross-valley corridor between the Valhalla Range (Valhalla Park) on the south and Wilson Creek/Goat Range Provincial Park on the north. Species at risk, including grizzly bears, wolverines, and even mountain caribou have been sighted in the corridor area. As part of the Kootenay-Boundary Land Use Plan (KBLUP) Implementation Strategy, the zone north of Valhalla Park through Hills was designated a Special Resource Management Zone (SRMZ) because of its importance as a wildlife travel corridor between the two parks, but no special guidelines were ever developed. Unfortunately, the area has been heavily roaded and logged over the past decade. The Ministry of Forests recently installed a few gates to limit public access, but this likely does little to help with the manner in which extensive logging and roading has compromised wildlife corridor values that were supposed to be protected by the KBLUP. Currently, residents of Hills are working on a conservancy corridor proposal to protect the remaining connectivity values between Valhalla and Goat Range provincial parks.

The rails-to-trail from 2 km north of Slovan Lake to the south end of Summit Lake is considered a high hazard bear area, particularly for grizzly bears in Spring. Increasing use is occurring by commercial and non-commercial bicycle users, despite the trail becoming brushed-in and flooding of some of the areas by beaver dams. We consider this the highest hazard trail at lower elevations in the Upper Slovan Valley. For quite a number of years in Spring, volunteers with the Upper Slovan Valley Bear Smart program have been posting grizzly bear warning signs along the right-of-way north of Hills and just south of Summit Lake.

Recommendations

Currently, some maintenance and bear warning sign management is done on an ad hoc basis by volunteers. Once the trail from Rosebery to Summit Lake comes under ownership of the RDCK, the high risk of a grizzly bear encounter in May and June between north Hills and Summit Lake needs to be a priority focus for public information management.

1. A policy for non-motorised use should be implemented to minimise disturbances to bears and other wildlife, such as wintering deer, moose, and elk.
2. This 5-6 km wetland trail section between north Hills and Summit Lake should be given priority for improvement, including brushing out all CPR rights-of-way to improve visibility.
3. Bear warning signage should continue be posted for May and June at either end of this section. Signs need to be removed when bear sign drops off in early summer. (Currently this is done by volunteers).
4. RDCK needs to have a guideline in place for temporarily closing the trail should a high hazard situation be identified, such as a mother grizzly and young feeding along the right-of-way, or a grizzly or black bear feeding on a large mammal carcass.
5. Residents have identified concerns of disturbances by winter recreation to over-wintering moose, deer, and elk. Some uncontrolled dogs have chased wildlife during deep snow conditions; this needs to be addressed by RDCK through posting warning signs in the winter.
6. RDCK needs to have a dog-on-leash rule to prevent unpleasant encounters between users and grizzly bears and to minimise disturbances to wildlife at all seasons.

Bigelow Bay Regional Park, located on Slovan Lake immediately adjacent to the northern boundary of the Village of New Denver, is leased by the Regional District and managed by the RDCK's Slovan Lake Recreation Commission. Previously, it was developed and managed by the Village of New Denver, but because it is outside the village, management control was turned over to RDCK. This day

use park is used for beach recreation activities and classified as a waterfront access park. The Village still manages the one pedestrian Haul-All garbage container, which is bear-proof. Black bears do wander through here when they are frequenting town to get fruit and garbage as the lakeshore fringe is a bear travel route.

5.2.3 Private Resorts and Campgrounds

Three Islands Resort at Summit Lake

The only private campground in the study area is Three Islands Resort at the north end of Summit Lake. It is mostly used by people with trailers and campers. The camping sites are close to the highway in an open area of extensive lawns. This helps reduce its potential for bear visitations because black bears prefer cover and trees.

The Summit Lake area is a recognized grizzly bear travel corridor in Spring; on average, about 1-2 grizzlies are reported in the general area annually. Although the campground is in low value bear habitat, the road-transmission line corridor along Highway 6 for about 3-4 km is prime Spring bear habitat with lush growths of grasses, horsetail, and cow parsnip. Apparently, a few grizzlies also feed on spawning rainbow trout in a small creek along the west side. In May 2007, a mother grizzly bear and two yearlings frequented the roadside in the Summit Lake area for approximately one month, including the area opposite the campground. The owner was very concerned and carried out very diligent food/garbage control. The COs were concerned about the campground owners storing garbage in an adjacent non-bear-proof shed until garbage days at the Nakusp Landfill.

Biologist Wayne McCrory worked closely with the COs to ensure that the whole area was posted with appropriate warning signs. This included biologist Erica Mallam leaving warning signs and Bear Smart booklets with Three Islands Resort. Part of the Summit Lake Rest Area was temporarily closed as the grizzly family was using lush spring habitats there. Some bear aversion (.12 gauge cracker shells and noisemakers) was used, but appeared to have limited value. In late June or early July, this family group, which had become a popular roadside attraction, moved on and was not reported again in the following years, suggesting but not proving that the bear aversion discouraged them from coming back.

The manager knew of the grizzly family that had been in the vicinity earlier in the year, but the bears hadn't bothered them. The campground visitors are given information about managing their garbage. Most people have "big units" and keep their garbage inside overnight. The garbage cans are disinfected twice a day and the garbage is collected daily. The resort checks the sites twice daily at 11 a.m. and 6:30-7:00 p.m. to make sure there is nothing left out. She said the visitors are good about not leaving out coolers, etc. The fish offal is collected and dropped off at a far distance up one of the logging roads.

COS records from 2002-2008 indicate a few complaints originating from Three Island Resort, including problems with attractants that are available on site for bears. On May 12, 2004, the resort reported that a bear had ripped open one of their plywood garbage containers and got into garbage. A grizzly had been sighted near the rest area 2 km south, but the owners were unsure if this was the same bear that ripped open the wooden container. On May 27, 2009, the resort reported a black bear at the campground that damaged some awnings, birdfeeders, and bit through a gas can and spilled that all over the place. Several other complaints included that the bear was not afraid of people. On May 29 the same year, Three Island Resort filed another complaint to COs that the black bear was getting into garbage and damaging awnings.

Recommendation:

1. Although the resort appears to be doing a good job of managing attractants, we recommend they bear-proof their main garbage storage shed and continue their Bear Aware program.

5.2.4 Public Schools

Lucerne Primary and Secondary, New Denver

There is only one school in the study area under the jurisdiction of School District #10 (Arrow Lakes): Lucerne Elementary-Secondary School in New Denver has students in all grades from K-12.

Lucerne School is generally in a large open area with only a few trees; this openness helps to discourage bears. For years, the school has had a commercial Haul-All bear-proof dumpster. Several years ago, some of the Village style pedestrian canisters were placed across from the school where students go to smoke, etc. Only the lower part of the ball field near the elementary part of the school has a chain link fence around it.

The school generally has a low hazard but the hazard increases in years that the black bears invade the Village for fruit and garbage. Residences around all sides of the school have fruit trees. Generally some of the complaints occur in August when bears are frequenting the adjacent areas for cherries and other fruit and when a large number of summer students are using the high school for the Valhalla School of Music. For example, residents filed complaints on August 8, 2008 that there was a black bear in a tree across from the Elementary school while the music school was on, and again on August 18, 2008 that there was a bear traveling through the yards towards the school. In 2010, similar concerns were made to the Village during Music School with not only a bear feeding on fruit but being near the non-bear-proof canister across from the school. Between 2002 and 2008, there were 4-5 complaints of bears and attractant problems near the school, with residents concerned about the safety of the children.



In 2011, Daniel Sherrod, Bear Smart Coordinator, gave a talk on bears and bear safety to the school. It is planned to continue this program. Recently, a community group worked with the school to establish a greenhouse and garden space with a compost, which could attract local bears if not properly managed.

Recommendations

1. The School Board should replace the two non-bear-proof pedestrian bins and any other non bear-proof garbage receptacles with bear-proof ones.
2. Residents around the school should be encouraged to control all of their fruit and garbage.
3. Warning signs should be posted around the school access points when a bear is known to be frequenting the vicinity.
4. Any bears actually frequenting the school grounds should be reported to the COs. Children should not be allowed on the school grounds when a bear is around.

5.3 Review of Public Education Activities

5.3.1 Bear Smart Requirements for a Bear Working Group (BWG)

In their report, Davis et al²⁷ describe the importance of the Bear Working Group (also called a Bear Stewardship Committee) as the most effective way to implement the Bear Smart Community Program. Decisions on the process, delivery, and implementation of the Program must come from a community that takes ownership of it. Community ownership implies that the community has a desire to reduce preventable destruction of bears. The primary objectives of the Bear Working Group are to:

1. Initiate and support the development of the “Bear Smart” Community Program.
2. Review management strategies and options for attaining “Bear Smart” Community status.
3. Initiate and review the Problem Analysis.
4. Establish a Human-Bear Conflict Management Plan that will implement the recommendations from the Problem Analysis.
5. Monitor the progress of the program.
6. Provide annual reports to identify the progress of the program, evaluate the success or failure of management strategies, and provide direction for the program for the following year.

One of the Bear Working Group’s major roles is as an overall coordinating and decision-making body that has a strong working relationship with all agencies involved in public education, infrastructure improvements, policy development, and conflict monitoring. Bear Working Groups have been formed in more populated areas, such as in the greater Vancouver region and at Whistler, and have played a key role in helping some communities achieve Bear Smart status.

In 2006, when the Bear Smart program was first presented at a public meeting for the Upper Slocan Valley communities, the idea of forming a BWG was presented. There was subsequently little interest and the feedback we obtained was that the community had limited resources to start a BWG. In addition, we found that COs, who form an integral part of any BWG, were understaffed and too busy to attend any community meetings and the bear aversion training workshop convened by the Valhalla Wilderness Society on behalf of the area. We concluded that, although a good idea, in smaller communities, forming a BWG was too challenging due to a lack of resources. At the same time, there were no BWGs formed in the West Kootenays in spite of other provincial bear programs that were underway.

In 2012, the COS started a West Kootenay Bear Conflict Working Group that would meet in Nelson, the regional centre. According to CO Jason Hawkes (pers. comm.), it was originally planned for the Nelson and Kaslo administrators, but ended up spreading out to the communities of the West Kootenays. The goal is to mitigate bear-people conflicts by working with municipalities to develop best practices for attractant management, such as for waste management, attractant bylaws, etc. The challenge in the West Kootenays is that a large portion of the area is outside of a city or municipal jurisdiction, so the RDCK was included to represent smaller communities and rural residential areas. Representatives from the Upper Slocan Valley will now be part of this broader bear working group. This will greatly help the communities here to meet this important requirement of the Bear Smart Community program.

5.3.2 Public education activities throughout the study area

Due to the spread-out nature of the communities in the study area, including the public and private parks, campgrounds, resorts, and trails, public education activities have not been (and are not) concentrated in just the two main villages.

²⁷ Davis et al, Ibid. p. 19.

In general, public education has been carried out by the Valhalla Wilderness Society Bear Smart coordinators, volunteers, and others for the past six or more years. A combination of activities, including public events, media articles, public presentations, presentations to village councils, door-to-door canvassing, and placing bear warning signage on trails and in other public use areas have been carried out throughout the study area, including at the villages, in rural areas, in area provincial parks and campgrounds, and on a variety of recreational trails. The villages, Harvest Share, BC Parks, and others through different venues also carried out public education activities on bears and the need to control attractants. Some examples are described below:

Media coverage

Press coverage of the start of the provincial Bear Smart program and the Upper Slocan Valley bear hazard study was printed in the local paper “Valley Voice” in Fall 2006. Progress on the program’s status has been covered from time to time since then. This has included a press release every Spring to remind people of ways to make attractants unavailable to bears. In May 2012, the results of this study was summarised in the local media.

Public presentations



A Bear Smart public presentation was done in Silverton on November 26, 2006 to launch the program. This included a powerpoint on the provincial government’s Bear Smart Program and a powerpoint on how to do a Bear Hazard Assessment and Bear People Conflict Management Plan that was jointly prepared by Maggie Paquet and Wayne McCrory.

Beginning in September 2007, and annually for the past five years, Evelyn Kirkaldy has run an information booth at the Hills Garlic Festival on behalf of the Upper Slocan Valley Bear Smart program. The one-day festival is attended by about 5,000 people. A pamphlet was prepared and distributed and several bear-resistant garbage containers

(BearSaver) and a small portable electric fence are displayed. Following is a summary of Kirkaldy’s 2007 report:

Garlic Fest, 9 Sept ‘07: Upper Slocan Valley Bear Smart Program Information Table

We set up an electric fence and a bear-proof trash bin display. Handouts included the Upper Slocan Valley Bear Smart Program leaflet, a composting brochure, Bear Smart at Home and in the Woods, Non-Lethal Bear Management, Bear Aware brochures, and a Bear Smart checklist. Living in Bear Country and Bear Smart Kids booklets were available. The kid’s table had bear trivia sheets and educational activity pages to colour.

About 100 people passed through our display. The majority of discussions revolved around the issue of fruit trees and bears. I recommended electric fencing and referred to our demonstration fence display. I also discussed picking fruit as it ripened, as well as not letting it accumulate on the ground, pruning to discourage trees from bearing fruit, and recommended that fruit trees should not be grown too close to homes. I also recommended electric fencing for the protection of livestock and chicken coops. At least five parties came in and told me

about how well their electric fencing worked. I spoke to a handful of people about compost, how to keep it non-odorous, and recommended locating it in an open area away from cover.

I talked to people about a variety of other subjects. Several foreign tourists asked about what to do when encountering a bear. I engaged in discussions with Upper Slocan Valley locals, folks from other parts of the Kootenays, as well as from other areas in BC. How to tell the difference between black and grizzly bears and many common misconceptions about bear behaviour were discussed. Many folks needed clarification on how to avoid encounters and how to best handle black bear or grizzly bear encounters while hiking, camping, or working in the wilderness.

There was minimal discussion about garbage and people did not seem too interested in our bear-proof garbage can display, even though I continually brought it to their attention. Three parties did tell me about bears coming into their homes and getting into their trash because all had left their doors open. They readily admitted that they knew it was their fault.

Evelyn Kirkaldy, Upper Slocan Valley Bear Smart Program

Other activities

Since the presentations given early on in this work, there have also been various presentations to village councils, all of which have been attended by members of the public. In May 2012, the preliminary results of this study were incorporated into a powerpoint presentation that was delivered to the villages of New Denver and Silverton.

In addition to these, the Valhalla Society Bear Smart coordinator Daniel Sherrod, has provided advice, demonstrations, and installation of electric fences to residents. In 2011 in Silverton, he consulted one resident and set up a fence for another; both for fruit trees. He set up one electric fence for a compost in Rosebery, and a number in New Denver almost entirely related to fruit trees and domestic fruits. He also set up two for chickens.

In 2010 and 2011, he provided 24 consults in rural areas, some of which resulted in installing an electric fence. Eight of these were for livestock (bees, fish, chickens, goats, alpacas, and rabbits), 10 related to gardens, composts, and fruit (grapes, blueberries, raspberries, tree fruit), and 6 related to outbuildings, including secondary kitchen facilities, food processing areas, garbage, root cellars, and outside freezers. In 2012, he and Evelyn Kirkaldy provided several workshops to teach the public how to set up electric fences.

The Valhalla Society has also printed and distributed a number of brochures on Bear Smart practices and other information about bears, their behaviours, and habitats. They have also distributed Bear Aware materials, including the Bear Aware booklet on setting up electric fencing. Aside from providing these to residents, there is an ongoing need to have these available for seasonal residents and tourists. In 2011 a petition was circulated in the Villages asking that the province reinstate live trapping and relocation that had been done before. It pointed out how upsetting it was to some community members including bears witnessing bears being shot by officials within New Denver. It was signed by 279 people, including 199 from the villages of New Denver, Silverton, and Slocan, and was presented to the Village of New Denver in 2012. The village endorsed the petition (see appendices 1 and 2).

The Harvest Share group has continued to distribute their brochure to educate the public concerning their fruit picking program.

The Villages also annually distribute a flyer on how to control attractants. However, signage at the village campgrounds was lacking in adequate bear information including the need to store all foodstuffs, coolers, etc. in a bear-proof manner.

Signs

Bear Smart informational sandwich boards were prepared with the approval of RDCK and placed at the three RDCK transfer stations (Rosebery, Slocan, and Nakusp).

The Valhalla Society also produced a number of larger black and grizzly bear warning signs (yellow background, black text) that were used on trails where the bear hazard was known to warrant warnings. A small sign with a bear on it was produced to inform people that bears might be in the area to be used for placing on several of the local trails.

BC Parks provides some information on bears at their park signboards, but this appears limited and is in need of improvement. For example, some of their signboards at boat launches for Valhalla Park provide no information on bears. Sign kiosks at the two large campgrounds (Rosebery and Summit Lake) lack bear pamphlets and information that tells people to store their food, coolers, and other attractants at all times. MFLNRO has no information on bears at their Wragge Creek Campground and should. The Bear Smart Coordinator worked with the recreation coordinator of MFLNRO to install warning signage on trails at the Idaho Lookout Parking Lot.

Recommendations

1. The current level of public education on bears needs to be continued and the needs and means to control attractants needs to be emphasised in the messaging.
2. We recommend that representatives from the Upper Slocan Valley be part of the West Kootenay Bear Conflict Working Group that meets in Nelson, the regional centre. This will greatly help the communities here to meet this important requirement of the Bear Smart Community program
3. As noted elsewhere, for Valhalla Park, adequate bear information, including bear safety brochures, needs to be provided at the boat launch kiosks on Slocan Lake. These should be very visible, not on the backs of other signs.
4. As noted elsewhere, for the BC Parks public campgrounds at Rosebery and Summit Lake, information needs to be provided on the kiosks on the need for people to store all foods and other attractants including their coolers in a bear-proof manner. Provincial bear pamphlets need to be provided at the kiosks.
5. MFLNRO needs to add bear signage to its kiosk at Wragge Campground including the need for people to store all foods and other attractants including their coolers in a bear-proof manner.

5.4 Assessment of Bear-People Conflict Monitoring System and Analysis of Conflicts

5.4.1 Bear-People Conflict Monitoring System

No formal monitoring of bear sightings in the frontcountry or backcountry is done except by BC Park rangers when they are on patrol in provincial parks. There is no systematic monitoring of all bear-people conflicts. Bear-people conflicts are monitored mostly through the COS complaint (RAPP) line. These are estimated to reflect only about 25% of all bear-people conflicts as many go unreported. The two Bear Smart coordinators also keep some notes, but do not formally record all bear sightings and complaints. Complaints filed to the RCMP are often passed along to the COs. The village offices also keep some notes of complaints directed to their offices, but they do no formal monitoring. The provincial Bear Aware program is commencing a bear sighting/complaint Google map system so people can go online and through their website find the location of any bear complaints or sightings reported to the COs.

Recommendations

1. Where information and programs have been available to assist people to bear-proof their attractants and chronic problems persist, the COs should adopt a zero tolerance policy for non-compliance and issue warning and tickets, especially for chronic offenders.

2. Being a member of the aforementioned West Kootenay Bear Conflict Working Group will also enhance conflict monitoring in the study area.

5.4.2 Analysis of Conflicts

5.4.2.1 Injurious bear incidents

During the early silver mining days starting in 1892, there were likely substantial encounters and conflicts with bears that led to numerous bears being killed. We are not aware from historic documents of anyone being injured by a bear during the early settlement days.

In recent times, there have been three bear encounters in the Upper Slocan Valley that have led to human injury, two involving black bears and one involving a grizzly bear. Of interest is that two involved predaceous attacks on people camping at night; one involving what was likely a food-conditioned mother black bear at Rosebery Campground and the other involving a subadult grizzly bear at the parking lot at Shannon Lake. In these instances, the victims were lucky to have sustained only minor injuries since predaceous attacks by bears are often lethal. The other black bear attack occurred in 2011 near New Denver when a hiker attempted to protect his dogs, which had pursued a mother black bear that turned on the dogs to protect her cub. In this instance, the victim is lucky it was a small mother black bear and not a mother grizzly bear.

Interestingly, there have been no injurious encounters involving hikers or mountain bikers and mother grizzly bears in the backcountry, even with the escalation of backcountry activities during the past 2-3 decades. Perhaps the proactive measures by BC Parks and (the former) Forests ministry to conduct hazard studies and take proactive measures to minimise the risk of bear-people encounters in the backcountry is paying off. One thing that is encouraging is that many people now using the backcountry take better care of their attractants, are generally more bear aware, and carry red pepper spray. We are also not aware of anyone in the study area in recent times having to use bear spray to neutralise a serious bear encounter in the backcountry.

Following are the details of the three injurious encounters that have occurred in the past 20 years in the Upper Slocan Valley:

i. Rosebery Park Campground, predaceous black bear night attack, about 15 years ago

Despite a request to BC Parks, we were unable to get the incident report for specifics, but it is believed the bear involved had a history of feeding on garbage at the (formerly) adjacent garbage dump. The campground is actually the only location in our study area where what appeared to a predaceous night attack by a female black bear with young took place, involving a mother and her children in a tent. The mother received only minor injuries and was able to beat off the attack. The bears were subsequently hunted down and destroyed by the Conservation Officer Service.

ii. Shannon Lake Trail Parking Lot, predaceous grizzly bear night attack, about 20 years ago

About 20 years ago, a couple was camping outside at the trailhead parking lot and were attacked in the early morning hours by a subadult grizzly bear. The large-sized and heavy-set man was able to beat the grizzly bear off with a baseball bat. Fortunately, only one of the party was lightly injured and briefly hospitalised. The Ministry of Forests Recreation Officer closed the area for several weeks, posting signs. Years later we learned from a second-hand source that the young grizzly bear was found dead in the vicinity a few days after the attack, apparently from injuries sustained by being beat with the bat. This is the only recorded incident that we are aware of in our study area where a person was attacked and injured by a grizzly bear and also the first that we know of involved what appeared to clearly be a predaceous night attack on sleeping campers by a grizzly bear.

iii. Hiker injured by mother black bear near New Denver, Aug. 2011. Dogs involved

New Denver's first injurious black bear attack occurred on August 15, 2012 in the rural area skirting New Denver. Several hikers with three uncontrolled dogs encountered a mother black bear on the trail up Carpenter Creek. A cub was later observed up a tree. The dogs were already attacking the mother bear, which had turned on the dogs and had one by the throat. The male owner of the dogs then intruded to try to save his dogs, swinging his fishing rod, which drew some attention of the bear away from the dogs. However, the bear still had one of the dogs by the throat so the man wrapped his arm around the bear's head and squeezed and the bear let go of the dog, hitting the mother bear with his fishing pole. The mother bear turned on the man and inflicted a minor hand wound before leaving. The victim was hospitalised and treated with 14 stitches for a bite on his arm. As this was a defensive attack by a mother black bear, the bear was not destroyed (Valley Voice. Vol. 20, No. 19, Sept. 21, 2011).

5.4.2.2 Bear-people conflicts in the backcountry, including large provincial parks

Based on interviews with BC Parks and others there have been no serious encounters or conflicts with grizzly or black bears in the backcountry in the three larger provincial parks in the Upper Slokan Valley. Since there is no official tracking of bear-people conflicts on backcountry crown lands outside of provincial parks, based on anecdotal information there appear to be few if any conflicts on the large network of hiking trails in other backcountry areas. As noted in the attractant section, one potential conflict occurred when a large informal Rainbow gathering at Shannon Lake when a compost pit was left uncovered. The one mauling by a grizzly occurred at the Shannon Lake parking lot roughly 20 years ago. The majority of the conflicts in the Upper Slokan Valley are in the frontcountry developed areas involving black bears and uncontrolled attractants such as garbage.

5.4.3 Analysis of Complaint Data

The primary source of complaint data is from the COS call-in (provincial RAPP) line. We found that the COS complaint data had some errors in reporting and interpretation when checked against local information. Other than our report, there is no effort by the COS or anyone else to do a systematic analysis of all conflict information on an annual basis.

For our analysis in this report, we used mostly the occurrence data obtained from the Conservation Officer Service data bank on complaints filed by the public from 2002-2008. We also included information on the COS bear control mortality for New Denver for 2011. BC Parks keeps a separate bear occurrence file and, despite our request for this information for provincial parks in our study area, no data was provided. In some instances, we added reliable anecdotal information obtained from our own surveys and from interviews.

For purposes of discussion, we segregated our analysis into three general categories: overall occurrence complaints, attractant complaints, and bear control kill/injury occurrences. We were careful to develop data analysis "rules" to avoid redundant reporting of the same incident from skewing our analysis. For example, sometimes the same person phoned several times on the same day or subsequent days, once to report the incident and repeat calls to do follow up. For our summary of general complaints we did not bother to filter out repeat calls on the same complaint. However, for our analysis of attractant complaints, in which we broke the complaints into different categories for each subarea of the study area, we found that by tallying repeat calls from the same resident on the same issue, such as a bear killing chickens, could bias our analysis. Thus for these repeat complaints on the same incident, we filtered out and eliminated a complaint that did not involve an added depredation but included a repeat complaint say if the bear came back and killed another chicken. Also, sometimes one complaint might involve a bear accessing two or three different attractants. In this case, for overall complaints, this was analysed as one complaint, but if the bear was listed as marauding a fruit tree and then ate two chickens, this was listed as two separate attractant incidents for our attractant analysis. There were also other limitations of the COs complaint data worth mentioning as follows:

5.4.3.1 Data limitations

In the following discussions, it is useful to keep in mind that there are limitations to some of the information and data (primarily COS occurrence records) used in this report. Detailed information on the status of grizzly and black bear populations throughout the entire study area was not available, so no definitive conclusions can be made on the effects that access to non-natural attractants, or removing bears from their respective populations by destroying and relocating them, may be having on the size or status of those populations. Nor was there current inventory on all the changes in habitat characteristics due to the rapid rate of habitat alteration and alienation.

Province-wide, the number of complaints citizens make to the Conservation Officer Service call centre (the RAPP line: 1-877-952-7277) is upwards of 10,000 every year, yet this high number is estimated to represent only about 25% to 30% of the actual volume of conflicts with bears.

Locally, many residents do not report bears getting into garbage and other attractants or livestock depredations since they don't wish the COs to shoot the bear. They may not want anyone to know they may have caused a bear problem by being careless with their attractants, or they may feel they are liable to get a ticket. In some instances, incidents are only reported to the Bear Smart coordinators, who then help the property owner resolve the problem without the need to report the incident unless the coordinator feels the COs need to be informed or involved.

In other instances, the person shoots the bear on their private land and does not report it. We are aware of some of this going on in the Slokan Valley by a few residents, but this appears to have decreased as people become more bear aware and do not want to see bears killed because of people problems. CO Ben Beetlestone noted in an interview on May 14, 2007, that there were still a few residents in Hills who took it upon themselves to kill the bears to protect livestock, including one who gets permission first, as the CO does not have time to go and take a statement.

Thus the actual number of black bears killed in our study area as derived from the COs data under-represents the actual number killed. However, based on interviews and anecdotal information we feel that numbers killed illegally and not reported is likely quite low.

There are other considerations to take into account when reviewing data in the following tables and their subsequent analyses. Chief among these is the simple factor of human error when reporting an incident. A caller may give a wrong address, no address, or only a general neighbourhood; or a number may be inadvertently transposed when moving data from file to file. Also, when taking a call, operators sometimes make assumptions on the nature of the problem. Again, simple human error or time constraints can result in recording information that is not quite accurate or that doesn't present all the facts of the incident. Also with the COs dataset, we found that some of the occurrence reports don't include response information, such as COs travelling to a site and setting a culvert trap. As well, we occasionally found the improper complaint category was listed. Where possible, we attempted to remedy this based on local knowledge and information provided by the Bear Smart Coordinator.

Another factor is that the date ranges in each year of data were not consistent for every location (e.g., April-October in some years, May-December in others, etc.). For some years, attractant data was incomplete (e.g., either no indication of the attractant, or only one attractant when there may have been others). As well, when using records from various years, differences in methods of recording or storing reports may also have introduced errors when the information was retrieved. In some cases, reports were handwritten and were difficult to decipher. There was practically no historic data available on the numbers of bears destroyed and translocated for the study area, making comparisons with current years and other areas impossible.

Notwithstanding any of the above, none of the data used were taken on hearsay; all of it came from actual reports held by the Conservation Officer Service and is as accurate as possible. No personal

information that could identify callers was used or conveyed during data input to generate either the tables or any maps of bear sightings. For the villages of New Denver and Silverton, the information used was generalised to the nearest 100-block of a street or intersection so that only neighbourhoods could be identified to indicate the travel routes of bears or the general locations of bear-people conflict “hotspots.” For rural areas, we generalised the information to subregions without specific reference to the farm or residence location.

A research agreement for the COS occurrence data was entered into with the Ministry by the contractor (M. Paquet). Once the data points had been inputted, tabulated, and analysed, the contractor deleted all electronic data from all hard drives and storage devices, and shredded all paper copies of COS occurrence records.

5.4.3.2 Grizzly bear vs Black bear complaints to the COS for the Upper Slocan Valley

Grizzly bears

As the CO Service/RAPP line received only five reports regarding grizzly bears in the seven-year period 2002-2008, we will discuss these here. One complaint related to a large public “Rainbow” gathering at remote Shannon Lake that several years earlier had left a large amount of compost in an uncovered pit that would easily have attracted a grizzly if volunteers had not gone in and covered it.

Most of these complaints were related to Summit Lake, which is on a grizzly bear travel corridor and spring habitat. One of the complaints related to a bear getting into a plywood garbage box at Three Islands Resort Campground at Summit Lake in May 2004. At the same time, a grizzly bear had been sighted 2 km down the road. Another in May 2007 reported a grizzly and cub feeding along the highway across from the same resort. A week later, another caller reported a grizzly with two cubs (the same bears) along the highway in the same location. On June 7, 2007, another resident near to the resort called about the same bears that had spooked her horses.



Using a slingshot to “train” bear to avoid people and attractants.

As discussed elsewhere, in 2007, bear biologist Wayne McCrory worked with the Conservation Officers to do some bear aversion (noise makers and rubber bullets) on the mother bear along the highway. The young were actually yearlings and had been sighted in this area in 2006. Although the bears still frequented the area for a short time after this treatment, they never returned in subsequent years, likely in response to the 2007 bear aversion program (i.e., there were no further complaints from Summit Lake in subsequent years regarding this bear family).

Overall, no grizzly bears became serious problem bears and none were killed or relocated. In addition, we are not aware of any food/garbage or serious incidents in the backcountry.

Black bears

The CO Service/RAPP line received 159 reports regarding black bears in the seven-year period 2002-2008 (average 22.7/yr), generally in two periodic peaks (spring and fall). Keep in mind that calls to the RAPP line are estimated to represent only about 25% of the actual number of conflicts that residents have with bears.

One surprising and noteworthy aspect of our research was that we discovered some residents had a high level of expectation that if a bear was becoming a nuisance, the CO would come and remove the bear, thus solving their problem. In fact, some of these complainants had experienced previous problems involving the same attractants, but had taken no steps to remove or otherwise deal with those attractants. In other words, the focus of the complainant was often on the Conservation Officer, who they expected would get rid of their problem, rather than focusing on how they could solve their problem themselves and prevent it from happening again.

5.4.3.3 Analysis of black bear mortality, control kills, and site visits

The following list of black bear mortalities was derived from a number of sources, including a review of the COS call-out forms in the ring-binder at their Castlegar office for bear/wildlife control activities (2002-2007), the provincial database of COS complaint occurrence files (2002-2008), interviews, and local knowledge. Where possible, we teased out of the data information on where the CO set a culvert trap or made a site visit but did not kill the bear. Since control mortality was very high for New Denver in 2011 (the highest of any area in the West Kootenays), we augmented our data from information reported in the media.

Of the 159 black bear complaints made to the COS report line by residents in the Upper Slocan Valley for the period 2002-2008, there was a total of 35 [see Table 4] destroyed as follows: 20 were destroyed by the CO service, 6 were destroyed by the RCMP, 7 were destroyed by residents, and 2 were injured in highway collisions or other accidents and were subsequently humanely destroyed.

For the years after 2008, our data is not as complete. We have no reliable data for 2009 and 2010. In 2011, there were 11 black bears killed in New Denver alone. This means that in the eight years between 2002 and 2011, excluding 2009 and 2010, there were 29 black bears killed in New Denver. There is no record of any black bears being killed in the village of Silverton for the 2002-2008 period. The one reported for Silverton in 2007 was most likely in the Red Mountain rural area.

There was NO translocation of any black bear during 2002-2008. All black bears dealt with were destroyed. Details of disposition are listed below, including bears trapped and killed by the CO, bears shot by the RCMP or a resident, and incidents where the CO visited the incident site and set a culvert trap but was unsuccessful in capturing the bear. We found only one report of the COs issuing a warning that a Dangerous Wildlife Protection Order (DWPO) would be issued in the future.

2002 8

- One black bear killed in Summit Lake by resident; aggressive behaviour due to garbage - Sept. 26
- Four black bears (sow/3 cubs) destroyed by COs in New Denver, safety reasons – Sept. 20
- Three black bears destroyed in New Denver re dog attack – Sept. 6 (apparently by RCMP)
- Culvert trap set in Hills but was unsuccessful in trapping the bear - July 7-8
- CO visited site in Rural New Denver North where mother bear with 3 cubs had killed a chicken and taken some apples - Sept. 26

2003 5

- One black bear destroyed by RCMP in Rural New Denver (Siding) re aggressive behaviour - April 28

- Three black bears (sow/2 cubs) destroyed by COs in Rosebery Provincial Park re safety concerns - June 26
- One black bear in Hills injured on road (probably died) - Sept. 20
- Culvert trap set in Rosebery residential area with no bear caught - June 7

2004 6

- One young black bear destroyed by resident South of Red Mountain-Cape Horn re sick/starving - Jan. 22
- CO set culvert trap in New Denver re fruit trees. RCMP shot bear - May 20
- One bear shot by RCMP in New Denver re campground problems/garbage, safety - May 23
- One black bear destroyed by CO re chickens, Rural New Denver-Golf Course - Sept. 29
- Bear reported killed by resident in Rosebery - May 24
- One black bear destroyed by resident in Hills re property damage – Nov. 10
- CO set culvert trap in Rosebery re bear breaking into shed/garbage; not trapped - May 24
- CO set culvert trap in Hills re chickens killed; no bear caught - Nov. 28

2005 1

- One female black bear destroyed by COs in Hills re chickens – Nov. 08

2006 8

- Three black bears (sow/2 cubs) destroyed New Denver by COs re habituated/safety – Aug. 27
- Two black bears destroyed New Denver by COs re habituated/safety – Aug. 27 (same day as above)
- Two black bears destroyed by COs at Summit Lake re chickens between May 15 and 25
- One black bear destroyed by RCMP New Denver re injured Sept. 8
- COs set trap at Rosebery Aug 6 after bear with 2 cubs attacked a dog; no bears caught
- COs set trap at Rosebery Campground after female and cubs got into cooler; no bear caught – Aug. 10-12
- One record indicated CO warned a business that a DWPO would be issued at some time – Aug. 31

2007 6

- One black bear killed by CO at Rosebery - June 15
- One black bear destroyed by resident at Summit Lake re chickens - April 25
- One black bear destroyed by COs New Denver re safety - July 29
- One badly injured “shot” bear in New Denver; assumed shot by resident and dead – Oct. 10
- Complainant reported a problem black bear shot by neighbour in Hills – Sept. 22
- One black bear destroyed by CO Red Mountain area re safety Aug. 22

2008 1

- One black bear in trap destroyed by COs in New Denver – Sept. 13

Table 4 below shows that reports to the Wildlife Call Centre over the seven-year period 2002-2008 resulted in the destruction of at least 35 black bears. It is important to repeat that calls to the RAPP line generally represent only about 25% of actual bear-people conflicts. It is also important to note that the statistics used to develop the table were incomplete because not all data had been inputted to the system when the contractor did the research.

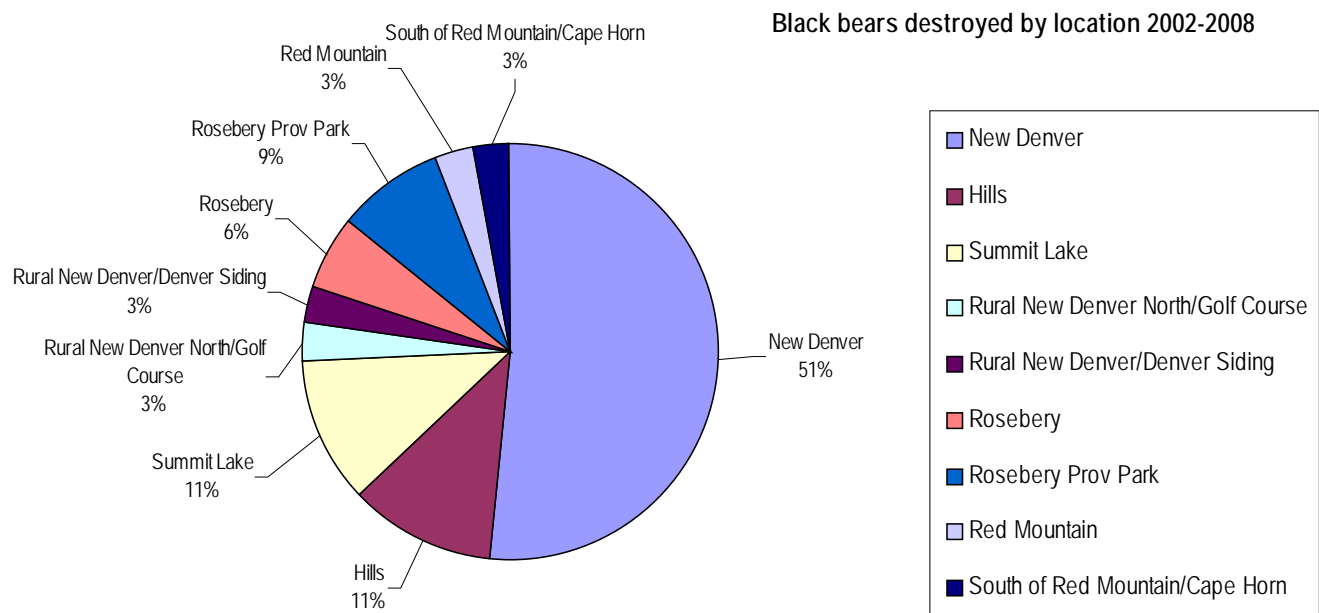
Table 4. Summary of information on black bears destroyed, 2002-2008

Year	Location	# destroyed by CO	# killed by resident	# shot by RCMP	# injured or died	total dead bears	Actions taken by COs (visited site, set trap, result)
2002	Summit Lake		1			1	
	New Denver	4				4	trap set, all caught/killed
	New Denver			3		3	
	Hills						culvert trap set by CO unsuccessful
	Rural New Denver North						CO visited site where chickens killed & apples taken by sow & 3 cubs
	total for year					8	
2003	Rural New Denver/Siding			1		1	
	Rosebery Prov Park	3				3	includes bear in trap killed
	Hills				1	1	
	Rosebery						trap set, no bear caught
	total for year					5	
2004	South of Red Mountain to Cape Horn		1			1	Resident killed sick or starving young bear on Jan 22 with CO's permission
	New Denver			1		1	CO set culvert trap, RCMP shot bear
	New Denver			1		1	bear in garbage at campground
	Rural New Denver North	1				1	
	Rosebery		1			1	
	Rosebery						CO set trap, no bear caught
	Hills		1			1	
	Hills						CO set trap, no bear caught
	total for year					6	
2005	Hills	1				1	trapped, killed
2006	New Denver	3				3	
	New Denver	2				2	
	Summit Lake	2				2	bear in trap killed
	New Denver				1	1	RCMP shot injured bear*
	Rosebery						CO set trap, no bear caught
	Rosebery Prov Park						CO set trap, no bear caught
	total for year					8	
2007	Rosebery	1				1	bear in trap killed
	Summit Lake		1			1	
	New Denver	1				1	
	New Denver		1			1	
	Hills		1			1	
	Red Mountain	1				1	
2008	total for year					6	
	New Denver	1				1	CO set trap, bear shot
Totals		20	7	6	2	35	

Table 5. Black bears destroyed by location, 2002-2008

Location	number
New Denver	18
Hills	4
Summit Lake	4
Rural New Denver North/Golf Course	1
Rural New Denver/Denver Siding	1
Rosebery	2
Rosebery Prov Park	3
Red Mountain	1
South of Red Mountain/Cape Horn	1

Figure 5. Black bears destroyed by location, 2002-2008



5.4.3.4 Analysis of complaints by village and rural sub-region

Of the 159 complaints dealing specifically with attractants, 124 (78%) contained information on the attractants and bear activity. Table 6 below lists the attractants and at which village or rural sub-region for the 2002-2008 period. We produced pie charts of percentages of attractants for three general areas: New Denver, Hills, and all rural areas including Hills. As Silverton had few complaints, this was not analysed in a pie chart.

Table 6. Total numbers of all attractants by year

Year	Livestock-Chickens	Livestock feed	Livestock -Sheep	Food (coolers, campers, BBQ, cook-houses)	Freezer	Garbage	Fruit trees (incl 1 wild berries)	Compost	Garden	Property damage (buildings, vehicles, injured dog)	House break-in	Other (bird-feeder)	Totals
2002	1				1		2				1		5
2003	4	1			1	1	3	1		1			12
2004	9	1		3	1	7	8	2	1	1	1	1	35
2005	2			1		1		1				1	6
2006	4		1	3		5	6		1	3+ 1 (dog injured),	1	2	27
2007	2	1(pet food), +1		4	2	6	2	1	2	1			22
2008		2 pet food			1	1	5			6	1	1	17
Totals	22	6	1	11	6	21	26	5	4	13	4	5	124

Figure 6. Percentage of attractants for the period 2002-2008 (n = 124)

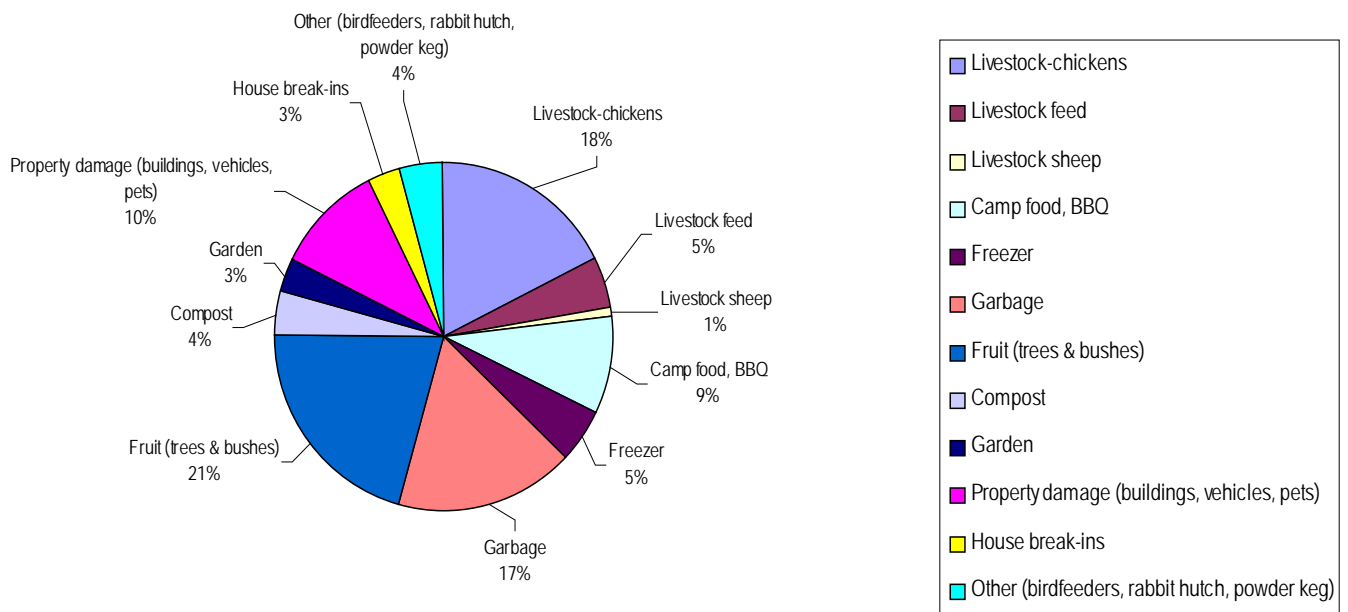


Table 7. Overall attractants by location, 2002-2008

Location	Livestock chickens	Livestock feed	livestock sheep	Food (coolers, BBQ, campers, cook-houses)	freezer	garbage	fruit trees	compost	garden	Property damage (buildings, vehicles, 1 injured dog)	House break-ins	Other (bird-feeder)	Totals
New Denver	4			4	2	9	18		2	1	2		42
Silverton													0
Hills	11	2 +1 pet food		1	3	4		3		5	1	1	32
Rosebery		1pet food		1		3	3	2	1	2 +1dog injured		2	16
Rosebery Prov Park				5		1				3			9
Summit Lake	3												3
Summit Lake Prov Park													
Three Island Resort													0
Rural New Denver (Denver Siding)						1	1						2
Rural New Denver (N to Golf Course)	2				1	1	2				1		7
Red Mountain	2	1+1pet food	1				2		1	1			9
South of Red Mountain to Cape Horn												rabbit hutch	1
Fish/Bear Lake/Retallack						1						powder keg	2
Three Forks-Sandon-Cody						1							1
Totals	22	6	1	11	6	21	26	5	4	13	4	5	124

Figure 7. Percentage of attractants by location, 2002-2008 (n = 124)

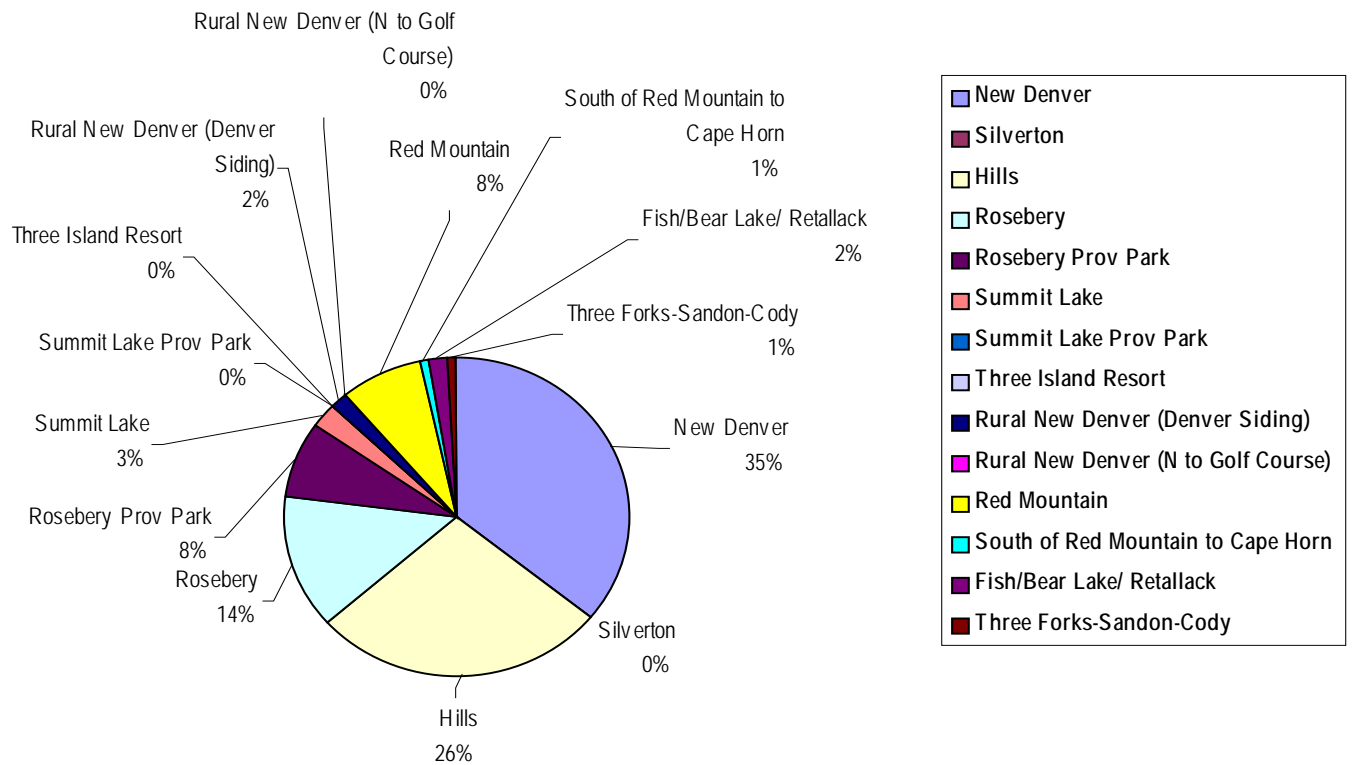


Figure 8. Percentage of attractants for New Denver, 2002-2008 (n = 124)

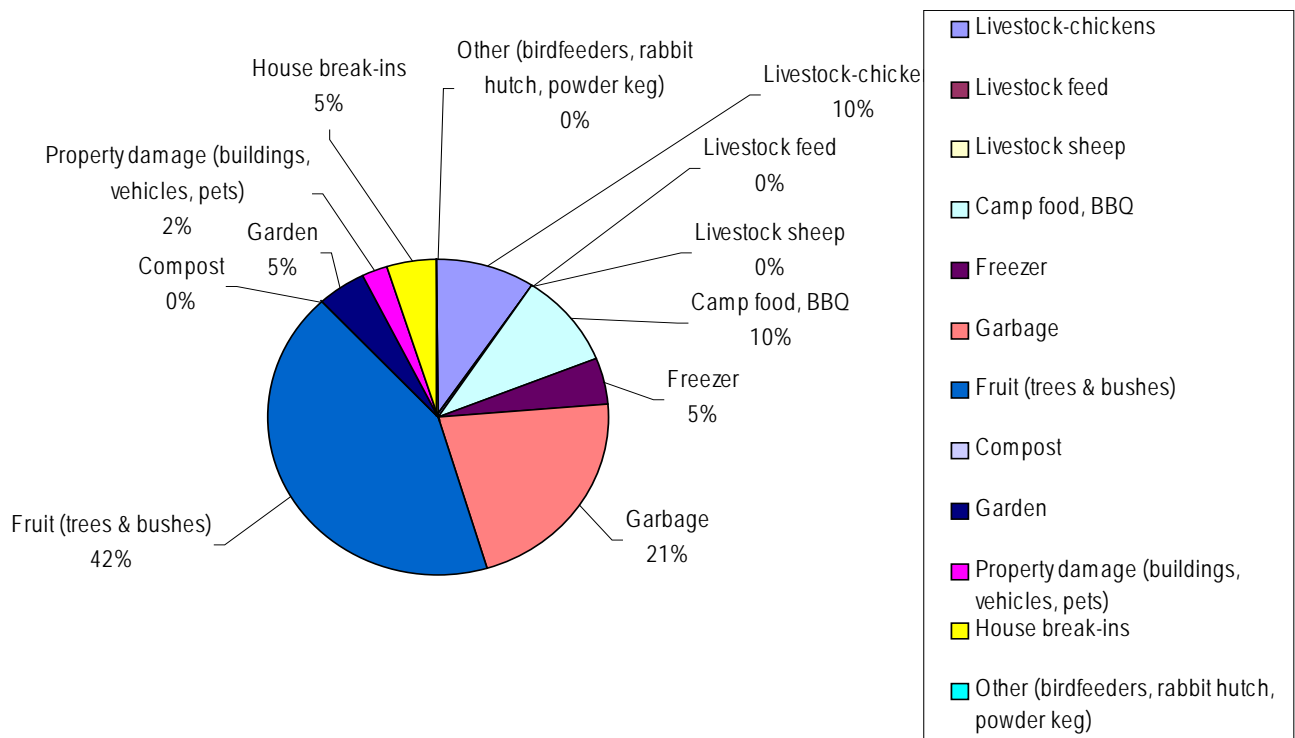


Figure 9. Percentage of attractants for Hills, 2002-2008 (n = 124)

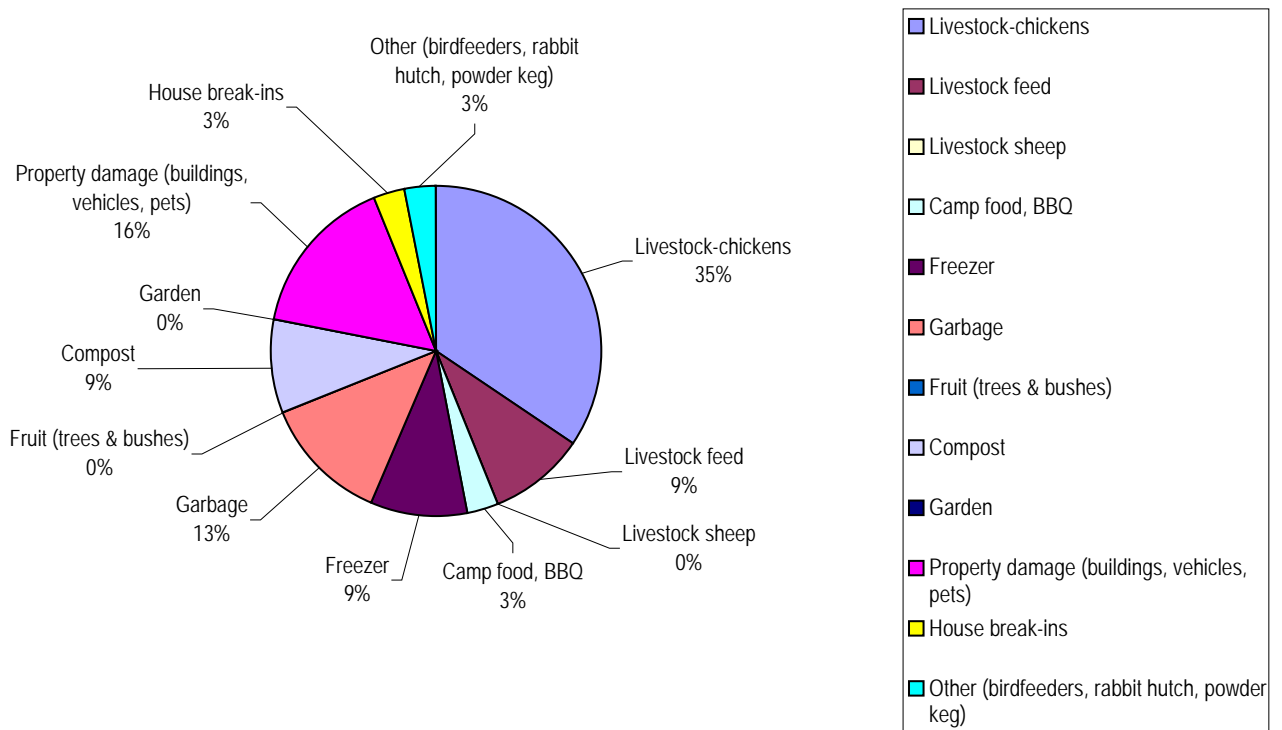
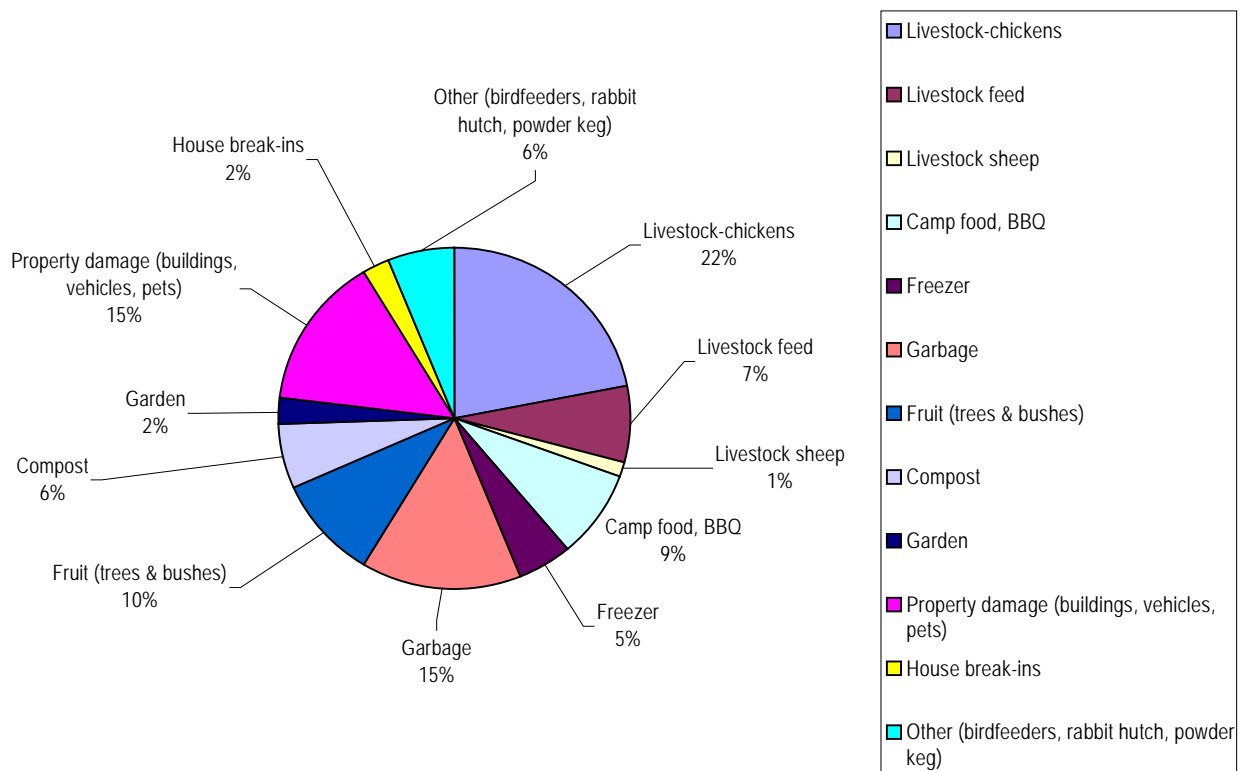


Figure 10. Percentage of attractants for rural areas including Hills, 2002-2008 (n= 124)



5.4.3.5 Analysis of complaints by attractant type

Complaints involving garbage

Overall, garbage accounted for 21 complaints, or 17% of the 124 attractant complaints. The majority of these were in New Denver, although Hills ranks second. Ensuring that all garbage cans and dumpsters in the village were mandated by bylaw to be bear-resistant would go a long way to preventing these complaints in the future. There appear to be no garbage problems in the large provincial parks where there is a pack in/pack out policy, or in the three government-run frontcountry campgrounds (Summit Lake, Rosebery, and Wragge Beach). Highway rest stops have few garbage problems except for overflows at New Denver. Thus, most of the garbage attractant problems are in the developed residential and business areas, not in the backcountry.

Complaints involving livestock

Overall, livestock accounted for 22 or 18% of the 124 attractant complaints. Fully half of these (11) occurred in Hills and primarily involved chickens.

Historically, problems between bears and livestock have been a persistent problem in the Interior Wetbelt. Most of the farms are 10-acre parcels with small numbers of domestic farm animals. Private citizens may kill wildlife that are a problem and may protect their private property. However, neither the dead wildlife nor any part of it may be kept. Conservation officers must be notified immediately of any problem wildlife killed. Our opinion is that unless early treatment through bear aversion techniques is applied, bears that kill smaller domestic animals, such as chickens and pigs, will become repeat offenders and will eventually be shot by the landowners or Conservation Officers. The following event, though not in the Slocan Valley, typifies local situations that persist, although more people are using electric fencing to protect their livestock.

In late October–early November 1984, an adult male grizzly bear killed chickens and a turkey at 4-5 different small farms in the Burton area nearby, despite attempts at capture by Aldrich snares and direct shooting by the Conservation Officer Service, with the assistance of some armed locals. The bear was finally shot by a local when it returned to one of the farms (Arrow Lake News 1984). No mention was made of the need for farmers to protect their chickens with electric fencing.

Complaints involving fruit trees

Fruit trees accounted for 26, or 21% of the 124 attractant complaints for the period 2002-2008. New Denver was the focal point with 18, or 70% of the study area's complaints involving fruit trees. Residents of the villages and rural areas could prevent bears being attracted to both fruit trees and livestock with the proper use of electric fencing.

Complaints involving other attractants

Over half (56%) of all attractant complaints in the study area for the period 2002-2008 involved fruit trees, livestock, or garbage. The remaining 44% of attractant complaints (livestock feed, composts, gardens, camp food, outdoor freezers, birdfeeders, food in vehicles, etc.) were generally spread out over the study area.

5.4.3.6 Cost estimates of COS control actions on black bears

We estimated costs (for 2002-2008) of COs making control trips either to investigate complaints or kill bears, including those where they set a culvert trap. From the occurrence data, and adding in incidents when COs made a visit with the bear trap but did not catch a bear, we estimate that COs made approximately 19 control trips during this period, including 6 for which a bear was not caught in the trap.

For each one-way trip to the Upper Slocan Valley, COs estimate a cost of \$400 (Ben Beetlestone, pers. comm.), so that to come and set a culvert trap and then return after the bear is caught (or to retrieve the empty trap) costs about \$800. Based on the overall estimated 19 CO round trips to the Upper Slocan Valley to deal with nuisance black bears between 2002-2008, we estimate a cost of \$15,200. Of this amount, the Village of New Denver, where 29 black bears were destroyed for the 2002-2008 period, accounted for six CO visits/control measures for a cost of \$4,800 (the majority of bears were shot by the RCMP). For 2011, in which 11 black bears were destroyed in New Denver alone, we estimate the return-trip control visits for New Denver numbered at least 11, for a cost of \$8,800. Thus for New Denver, control costs by the COs cost an estimated \$13,600 for the years (2002-2008 and 2011).

5.4.3.7 Patterns and trends revealed by the data

Variation in numbers and types of complaints and attractants from year to year can be attributed, in part, to seasonal variations in natural food abundance from year to year. In one year, spring may be cold and wet, delaying the growth of green plant foods bears generally feed on, or summer may be hot and dry earlier on, hastening the ripening of wild foods, particularly berries, which then dry out, leaving few berries for the normal early fall feeding. This is the general reason given by government throughout the province to try to explain annual variations and spikes in bear-people conflicts. For example, the general trend for the period 2002-2007 was one of steady increase in the number of reports to the Call Centre, except for the anomalous year 2005. In that year, the huckleberry crop was outstanding. Here's what the district Conservation Officer reported:²⁸

In 2005, there was an extremely large huckleberry crop that did not dry out during the summer thus providing an abundance of natural mountain food for the bears all summer and fall. I saw huckleberries in areas where I have never seen before nor since. This was the case for the entire West Kootenay region in 2005. Unfortunately, this year's [2008] crop is weak in most areas and the anticipated hot dry summer will likely see a boost in complaints come mid-August, similar to last year.

We agree that this was likely the case in 2005. However, in our opinion, in other years when there is a lower or less productive berry crop, attributing increased bear-people conflict rates to this aspect alone is not that simple. In Whistler, for example, black bears have been observed frequenting residential areas seeking garbage and other attractants (and being given some bear aversion treatment) while at the same time productive huckleberry patches in the natural areas in the adjacent valley bottom or greened-up riparian areas with abundant seasonal bear foods showed little or no black bear use. Similarly in Squamish, which has a number of small salmon spawning streams in residential areas, black bears appeared to still prefer foraging for garbage and other artificial attractants over feeding on salmon (W. McCrory, pers. comm.). In years when black bear problems in New Denver reach a high, productive huckleberry and other native fruit areas can still be found in adjacent valleys within the home range of the same bears. The issue is confounded in the Interior (including the Slocan Valley) by the fact that grizzly bears utilize berry patches over a longer time period than black bears since they can range from low to high elevation habitats, whereas black bears tend to range from low to mid- elevations in occupied grizzly habitat; i.e. black bears have less access to all of the available berry patches that grizzlies do. We suggest that where black bears become habituated to people in residential areas and then conditioned to garbage and other artificial foods, including abundant domestic fruit, that, unless discouraged, they will tend to forage less in wild areas even when and where a variety of native plant and other foods are readily available. We have reason to believe that abundant domestic fruit years (cherries, apples, plums, etc.) such as occurred in New Denver in 2011 from late spring to fall, exacerbates the growing preference in some years for

²⁸ Ben Beetlestone, personal communication, 18 July 2008.

habituated black bears to forage largely in non-native habitats. We would also like to point out that many black bears still survive in the wild in the Slocan Valley even in low berry years by foraging more on other available foods, including insects, spawning kokanee, green plants, and so on. As discussed elsewhere in greater detail, the problem really is not just people-caused attractants, it is the fact that we allow black bears to come into human occupied areas and search out various food sources without any efforts to discourage that use before it escalates to the stage where the bears are generally shot in order to “fix” the problem. It does not prevent the problem.

5.5 Review of Waste and Attractant Management Practices

As background to this review, it should be noted that both authors of this report have done extensive research on waste management and attractants in other jurisdictions, including on the different types and effectiveness of bear-proof waste management systems, and residential and commercial containers. All of this information cannot be included in this report, but it is available upon request. A good source of information is www.GetBearSmart.com.

A variety of management approaches have been used in the Upper Slocan Valley over the past 15 years to minimise bear-people conflicts around the subject of human foods and garbage. In the backcountry, including the large provincial parks and other Crown lands, human attractants are managed through a pack-in/pack-out policy. This has worked well with few or nominal apparent problems. Most backcountry users, whether backpackers, mountain bikers, ATVers, hunters, or fishers, generally follow sound practices to not leave food unattended and in the reach of grizzly and black bears.

In the frontcountry and residential areas, bear-proofing for human food, garbage, and other attractants has proven much more complex and challenging. The much higher density of residences, farmsteads, and other developments in the valley bottoms overlap with mostly black bear habitat. The necessary activities of living produce high volumes of foods and garbage, along with fruit trees, livestock, and other attractants. A higher summer influx of a tourists and seasonal residents increases the volume of human attractants. Considerable progress was made when the last open garbage dump was closed nine years ago by the RDCK and replaced with the Rosebery Transfer Station, which has bear-proof commercial bins to handle rural and village garbage and certain recyclables. The volume of smelly garbage has been significantly reduced over the years by an RDCK recycling program for “clean” plastic and glass food and beverage containers and tin cans (as well as paper and cardboard). A recycling station is located in each of the villages that services both municipal and rural residents.

In many ways, the communities have come a long way from the days of open garbage dumps around each population cluster and a total lack of any bear-proofing. In response to increased public awareness on bears and garbage over the past decade, there has been considerable bear-proofing by local and provincial government agencies at the facilities they manage (highway rest stops and village pedestrian and camping areas). To date (May 2012), an estimated \$87,200 has been invested in bear-proof garbage containers. Table 8 is a summary of the investments made in the Upper Slocan Valley on purchases of bear-proof waste containers or food storage lockers, based on costs prorated at today prices obtained from Rollins Machinery in Abbotsford, BC.

Table 8. Estimated investment in bear-proof waste management

Location	Item	Amount
BC Parks(large provincial parks)	4 Bear-Proof Food Storage lockers	\$2,600
BC Parks (2 frontcountry campgrounds)	4 Haul-All double Hid-A-Bag pedestrian bins	\$9,000
Ministry of Transportation & Infrastructure	6 Haul-All Double Hid-A-Bag pedestrian bins	\$8,100
Village of New Denver		\$41,000
Village of New Denver May 2012		\$10,000
Village of Silverton		\$15,000
Valhalla Wilderness Society		\$1,500
TOTAL	12 bear-proof items	\$87,200

As seen in the conflict analysis section, bear-proofing in places like the large provincial parks has resulted in practically no attractant problems. This has greatly benefitted the grizzly bear population, but enough garbage and other attractants exist in the two villages and rural areas to more or less erode the value of bear-proofing for black bears in the parks. As noted in other areas of the province, partial bear-proofing mixed with non-bear-proofing does not work well, especially in bad bear years, such as what New Denver experiences periodically. This is not necessarily a criticism since it must also be recognized that municipalities face significant costs to bear-proof, especially now that the up to \$10,000 in annual matching funds from the provincial Bear Smart Community Program for municipalities to become bear proof has been withdrawn.

Starting in September 2008, the Valhalla Society made available, partly through a provincial Bear Smart grant, a small number of BearSaver residential bins that could be purchased at cost, or rented or loaned. These bins are bear-resistant and made in California. Although preferred, the shipping and duty charges made them too expensive to ship to Canada. In May 2009, the Society purchased ten residential bear-resistant carts from Rollins Machinery of Abbotsford, BC. The availability of these bear-proof bins was widely advertised, including on our Bear Smart signs at the waste transfer stations at Rosebery, Slocan, and Nakusp. However, to date there has been very little interest from residents.

5.5.1 Waste Management Practices in the Village of New Denver

New Denver has a mix of bear-proof container types for most public areas and commercial businesses, but a non-bear-proof system for their approximately 310 residences, some of whom are absentee owners who come only in the summer. Using air photos, approximately one-quarter (75-78) of residences are in the “Orchard” on the south side of town. We focussed our inventory on businesses and public areas.

In May 2012, the Village of New Denver ordered eight new Haul-All pedestrian receptacles valued at approximately \$10,000, with a budget for eight more the following year. These are intended to replace the non-bear-proof bins currently in use in the village. This brings the total investment by New Denver to over \$50,000, representing the largest of the \$86,000 invested to date. The bear-proof food storage lockers placed in Centennial Park some years ago were stolen.

New Denver’s garbage service and other solid waste management is described in bylaw No. 581 (2004). Subsequent amendments (bylaws 643 and 668) involved only changes in fees. Bylaw 581, along with recommendations for improvement in all attractants management, are reviewed in Section 5.6 of this report. For household garbage, it is up to the owner to store it during the week for curbside pick up once a week. The bylaw does not allow containers to be placed on the street before 6:00 a.m.

of the day of pickup. Commercial garbage from local businesses, and most of the tourist garbage at Centennial Campground, are handled with Haul-All commercial dumpsters, which has effectively solved old problems with large volumes of garbage being available. However, this left smaller but widespread volumes of garbage still available to bears at a variety of sources throughout the village. As noted, for the period 2002-2008, garbage accounted for 21% of the complaints in New Denver. These sources include:

- Most residences still have non bear-proof containers that are not always stored to prevent access by black bears and other wildlife. Some garbage storage areas are not kept clean, so the build-up of smelly garbage has lead to house and shed break-ins by black bears.
- Pick up of curbside containers sometimes takes half a day, with the result that when bears are in the village, they get access to garbage cans that have yet to be picked up.
- There are 8-10 non bear-proof pedestrian containers in various locations, including Centennial Campground and Mori Trail (to be replaced with bear-proof ones in 2012).

New Denver needs to seriously consider going to a wholly bear-proof residential waste management system. Most rural and village residents and small businesses still have non-bear-proof garbage containers that they attempt to keep out of reach of bears by keeping them either in the house, in sheds, basements, carports, and other sites.

There is also an RDCK recycling depot on land managed in the Village, but this appears to attract few if any bear problems as the large metal bins are more or less designed to prevent a bear from getting in.

5.5.2 Waste Management Practices in the Village of Silverton

The Silverton waste management system services a number of small businesses (six commercial billings), public areas including a municipal campground, and 145 residences, 39% (56) of which are part time, mainly in summer. There is a tipping fee for the year regardless of occupancy. The Silverton garbage service and other solid waste management is outlined under bylaw no. 433 (2005). This and other bylaws, along with recommendations for improvement in terms of all attractant management, is discussed in the bylaw section of our report.

Silverton's garbage/waste management is very similar to that of New Denver. For household garbage, it is left up to the owner to store it during the week and once a week there is curbside pickup with the bylaw allowing the container to be placed on the street three hours before 8:00 a.m. of the day of the pickup. Garbage is allowed to be placed in a plastic bag.

For commercial garbage, some years ago the Village purchased a bear-proof Haul-All dumpster and located it at the Recycling Depot next to their office and then moved it to a central location behind the Silverton grocery store. Although the store closed recently, the dumpster serves all other downtown businesses, including two resorts. Garbage is picked up once a week by the New Denver truck equipped to side load this type of container.

Pedestrian garbage and the tourist volume at Silverton Campground is handled through bear-proof pedestrian containers.

In terms of a bear-proof garbage containment system for businesses and at public sites, the Village has invested an estimated **\$15,000** in bear-proofing, prorated to today's prices from Rollins Machinery in Abbotsford, as follows:

- 1 Haul-All commercial dumpster to service all businesses
- 4 Haul All Hid-A-Can bear-proof garbage containers at the two Silverton campgrounds; these each have room for two 36-gallon (136 litre) garbage cans

- 1 Haul All Hid-A-Bag bear-proof garbage container on main street
- 1 Haul All Hid-A-Bag bear-proof garbage container at the children's playground
- 1 Haul All Hid-A-Bag bear-proof garbage container at the park on the south side

The RDCK has large commercial bins near the Village office for recycling of household containers and these appear to be largely bear-proof. Most containers, such as tin cans and plastics, are washed by the residents, although this requirement is not in Silverton's bylaws.

As with New Denver, the Silverton waste management system still leaves smaller volumes of garbage being available to bears at a variety of sources, including storage areas at households and coolers, and other attractants at the municipal campground. However, Silverton's system appears to be working. Between 2002-2008, Silverton had no complaints filed with the Conservation Officer Service, whereas all rural areas, including Red Mountain (which was initially incorrectly identified as being in Silverton), had some complaints, and New Denver had 42 complaints over the same period. Although we did not examine complaint data after 2008, there were some black bear concerns at Silverton's municipal campground in 2010 that were attended to by the Bear Smart coordinator, and there were no bears destroyed in Silverton in 2011 compared to 11 in New Denver (D. Sherrod, pers. comm.).

5.5.3 Waste Management in the RDCK and in the Rural Areas Generally

5.5.3.1 RDCK waste management program and Rosebery Transfer Station

The RDCK manages one transfer station for garbage, construction waste, and metal waste at Rosebery; and two recycling depots, one at New Denver and the other at Silverton. These collection facilities service waste from the villages and rural areas.

The Rosebery Transfer Station was built by the RDCK in about 2003 to replace the open garbage dump above Rosebery that attracted many black bears. Rural residences have to take their own waste to the station, but for the villages garbage is collected in a truck and taken to the transfer station once a week. The station has an attendant for two days a week to accept garbage and other waste from rural residents for a tipping fee. Waste goes into different bins (wood and construction waste, metal and household, etc.). At night, the large metal lids are closed and have a locking system so bears cannot get into them.

Prior to the construction of the transfer station, Wayne McCrory wrote a letter to the RDCK on behalf of the Village of New Denver concerning bear habitat and hazard concerns at the new site. He recommended bear-proofing with an electric perimeter fence. He identified Spring black bear and grizzly bear use of the roadside green-up areas along Highway 6 near the site as one of the main bear attractants that could lead to problems at the station. However, electric fencing was never installed.

Since its inception, monitoring and interviews with on-site staff show periodic black bear problems that create safety concerns for workers. A few bears have tried to break into the large garbage bins after they have been routinely closed at night by trying to tear back the heavy metal lids. Also, both New Denver and Silverton empty their garbage on a day different from the standard two-day openings for public access. There have been problems with the village maintenance workers forgetting to close the lids on the bins and bears getting into garbage. Several times garbage bags have been observed around the site that have been dragged away by bears. Workers have also expressed personal safety concerns when black bears enter the site to attempt to get garbage during daylight hours. While it appears that only a low level of bear-garbage incidents occur, the fears of the workers are legitimate, particularly if an aggressive bear does get into one of the open bins. It is just a matter of time before a grizzly bear frequenting the nearby vegetated roadside areas discovers the transfer station.

Through RDCK and Bear Smart funding assistance, the Upper Slocan Valley Bear Smart Coordinator has installed a large sandwich board sign with bear messaging at the Rosebery Transfer Station (as well as at the transfer stations for Nakusp and Slocan City).

Recommendation

We highly recommend that RDCK install a bear-proof electric fence around the perimeter of the Rosebery Waste Transfer Station, as they have done at the Nakusp transfer station.

5.5.3.2 Waste management practices by rural residents

In rural areas, management of garbage and other attractants, such as fruit trees, livestock, and composts, is left up to the individual residents and landowners. At this point, area “H” in the RDCK has no garbage and attractant bylaws that apply to restricting people from creating problems with animals, including bears. However, provincial laws (e.g., the Waste Management Act and the Wildlife Act) do apply, but the Conservation Officer Service rarely enforces these.

We did no inventory of the number of rural households and businesses in our study area, so we have no idea how many use bear-proof practices for attractants and how many don't. We do know that significant improvements at all levels have occurred over the past several decades. However, the problems that persist need to be addressed through a combination of public education, strong RDCK bylaws for attractant management, enforcement of these by RDCK bylaw officers, and enforcement of provincial laws by the COS. These measures are particularly important where chronic problems persist with some landowners, such as in repeated livestock depredations that end up costing the lives of livestock and domestic animals, and costly control measures paid for by taxpayers. In these situations, to date, there have been no penalties or agreements with the landowners to force them to implement adequate bear-proofing of their attractant problems.

5.5.4 Management Practices for Other Attractants

The Upper Slocan Valley is a mix of rural, urban, and recreation-oriented areas. Garbage is generally the most widespread—and strongest—attractant for bears in most locations, particularly in urban areas. However, in rural areas, other very strong attractants are fruit trees and livestock, especially smaller animals such as chickens and goats.

5.5.4.1 Management of smaller attractants (coolers, barbecues, pet food, outside freezers, birdfeeders, etc.)

Other attractants continue to be a general problem in all residential areas where bears frequent. While the public commercial campgrounds in the frontcountry in the study area that are managed by BC Parks and the two municipalities have done a good job of providing adequate bear-proof receptacles for garbage and other attractants, the efficacy of their programs is more or less diminished and sometimes defeated by a lack of a proper program that informs and makes campers store their coolers, barbecues, pet food, and other attractants in a bear-proof manner and never leave foodstuffs and other attractants unattended. This is because bears are very intelligent animals and will go to any lengths, once attracted to the smells of food in a campground, to seek it out. Passing by garbage in the expensive bear-proof waste containers in a local BC Parks campground, they will quickly find an unattended cooler or a dish of pet food left while the owners are sleeping or off hiking. Thus begin the food attractant problems with this one quick and easy reward.

5.5.4.2 Management of domestic fruit and nut trees, and berry-producing plants

Fruit-bearing trees are a significant attractant problem in the Upper Slocan Valley. There are also a small number of nut-bearing trees that bears also find attractive, including walnut and domestic hazelnut. During the New Denver bear invasion last year, one resident described laying awake at night and listening to a bear munch hazelnuts in her tree. (Although wild hazelnut is common and the

nuts resemble the domestic variety, we have only ever noted one instance where a bear (a grizzly) had consumed the nuts in Fall.) Raspberries, strawberries, gooseberries, and domestic blueberries are also utilized by black bears, but are far less abundant and available than fruit trees.

Our analysis of COS conflict data from 2002-2008 shows that for rural areas including Hills, there were 8 (10%) complaints regarding fruit trees, 18 (42% for New Denver, and zero (0%) for Silverton.

Of lesser concern are fruit-bearing ornamental trees and shrubs, such as mountain-ash, bearberry (*uva ursi*, or kinnikinnick), red-osier dogwood (red willow), Oregon grape (*Mahonia* spp.), and others. Unlike in other places, such as Whistler, these do not appear to be an important attractant for bears in New Denver, but perhaps if fruit was not so abundant, these might assume greater importance.

The attractant problem in New Denver in particular is confounded by the native berry-producing shrubs growing in many of the green spaces, such as along the Mori Trail, including native mountain-ash, red-osier, hawthorn, Saskatoon, blue elderberry, wild rose, and others. These are also bear foods and in historic times were likely important to black bears seasonally when only the Sinixt lived in what is now New Denver.

In addition, it must be kept in mind that both domestic and native fruits in New Denver are important seasonal foods for a host of other wildlife, such as many species of birds, squirrels, and other animals.

In some areas, such as several campgrounds in Kananaskis Country, Alberta, the native berry shrub soopolallie (buffalo berry) was responsible for attracting grizzly bears near campers. Removal of all of these native shrubs attractants was a management strategy that helped resolve the problem (Steve Donelon, pers. comm.). We are by no means suggesting that native plant foods be removed in New Denver.

Since the commencement of the Bear Smart program in 2007, considerable progress has been made in making local domestic fruit less available to bears in New Denver and rural areas through more people picking more of their fruit, through electric fencing, and limited removal of some trees. The Bear Smart coordinators now report that more and more people are using seasonal electric fences for their fruit

In 2008, a major step was taken when local New Denver resident Bree Lillies formed Harvest Share not just to address the issue of fruit trees and bears but to attempt to have more of the local fruit used sustainably by residents. Harvest Share links fruit tree owners with volunteer pickers to harvest usable fruit. Pickers remove all fruit including windfall and damaged fruit from the property. Fruit is shared amongst the homeowners and volunteers and windfall is delivered to local livestock owners. Harvest Share also offers educational workshops throughout the season on fruit tree care and health, managing attractants, and fruit processing. This year (2012) will be Harvest Share's fifth year. Since 2008, participants have harvested and shared approximately 11,200 pounds of fruit. They now cover more than 50 properties and over 150 trees in the villages of New Denver and Silverton, with a volunteer picker list of approximately 30 people (plus their family members). Harvest Share collaborates with the local municipalities, Bear Smart, and the Healthy Communities Society to address the current bear attractant issue in our village. Harvest Share's goal is to reach all trees on private property and assist the homeowners with harvesting, clean up of windfall, and distributing the usable fruit.

As noted in the separate write-up of the bear hazard for New Denver and adjacent rural areas, New Denver has the highest density and varieties of fruit trees in the Upper Slovan Valley. 2011 was a bumper year for fruit starting with cherries in late spring and early summer, that started a record invasion of black bears. Subsequently, Harvest Share picked over 4,000 lbs. of fruit in the Village and adjacent areas. Bear Smart Coordinators also set up seven electric fences in the village, adding to the two fences done in the previous year. All of the fences were for fruit, compost and safety concerns around houses. Despite these good efforts, Harvest Share and the community could not keep up with

all of the fruit. The problem is confounded by a proportion of people with fruit trees being absentee landlords. In addition, there are wild fruit trees such as chokecherry that are impossible to pick. Even picking larger heritage trees for small fruit such as cherries becomes a challenge as the higher fruit is sometimes too dangerous to reach. Our own experience in picking several heritage cherry trees in New Denver has been that bears will still invade the trees with most of the fruit gone to get at the fruit that was impossible to pick. While some people have promoted the idea of cutting down some of the trees, others argue that some of the old trees have heritage value and may represent early genetic varieties and also provide food for birds and other wildlife.

As noted, for New Denver in years of low native berry crops the early fruit crop of cherries brings in the first black bears from their normal wild habitat or from remembering the treats they got in the Village from the previous year. This appears to start the whole chain reaction of bears moving in to New Denver and feeding on other fruits, then garbage, food in freezers, pet food and whatever else they can find. We therefore regard the fruit situation in New Denver as a special attractant problem.

In some rural areas we have observed that each year some bears will wander through and get into wild fruit trees or unpicked fruit or windfall apples, quite often at night, but if other attractants are not available, the bears will generally move on without becoming problematic more or less treating the domestic fruit as they would a native food.

Nonetheless we feel it important that all residents, rural and municipal with fruit trees, domestic berries, walnuts, berry-producing landscape plants and so on take appropriate measures to keep their fruit and other foods away from bears. The following recommendations apply to both rural and municipal areas. For New Denver, please see the write-up for that municipality concerning special recommendations.

General recommendations

1. Do not plant landscaping trees and shrubs that will provide berry food for bears unless they are in a bear-proof area.
2. Manage fruit trees by picking all fruit and windfalls as soon as they ripen and take measures to bear-proof the trees with electric fencing.
3. Remove unwanted or old fruit trees, keeping in mind some may have heritage value representing old genetic stock.

5.5.4.3 Review of management of large and small livestock

As noted in the detailed analysis in section 5.4.3, overall, livestock accounted for 22 (18%) of the 124 attractant complaints. Fully half of these (11) occurred in Hills and primarily involved chickens.

Once black bears develop a taste for chickens at one farm, others who have not bear-proofed their chicken hutches, yards, and chicken-feed storage areas will also be targetted for predation by bears. The problems occur both in the Village of New Denver and the rural areas.

General overall recommendations for rural farms and homesteads

1. All attractants should be kept/stored in a bear-proof manner. Composts need to be inside a garden fence or at least periodically covered with manure or other decaying materials that make the site unattractive to bears.
2. Bear-proof residential bins work well for storing your garbage as well as livestock feed.
3. Properly installed electric fencing offers the best defence against bears marauding small livestock and associated feed. We highly recommend it for anyone, rural or urban, who has domestic animals.

4. Electric fencing should be done around fruit trees and berry-patches.
5. Rural residents must be made more aware that if a bear or other animal depredates their livestock such as chickens, the predator will most likely be back for more but worse, this then will lead to their neighbours having problems.

As well, residents need to be made more aware that it costs taxpayers approximately \$800 for the Conservation Officers to travel to the area and set a culvert trap, then make a second trip to remove the bear or recover the trap. We cite one instance in the valley where two adjoining farms refused to fully bear-proof their chicken enclosures and barn and over several years they lost most of their chickens and a few ducks from what appeared to be the same bear. Subsequently, other people in the community also experienced attempts by the same bear to get into their barns, and so on.

Late in the fall of the first year, the COs set the culvert trap after numerous complaints from these two irresponsible adjoining chicken farmers who blamed the bear and had strong expectations that it was up to the COs to come and trap the bear. The COs never caught the bear that year, but did catch and destroy it the following year when apparently the same bear continued its depredations primarily at the same two farms. Rather than take the time to fully predator-proof their chicken and duck areas, in the end, the two small farmers lost most of their animals, a bear lost its life, and taxpayers ended up paying an estimated \$1600 to have COs make two round trips to deal with the problem created by the landowners' refusal to fully bear-proof. This \$1600, if put towards preventing the problem by proper electric fencing, would have bear-proofed their chicken runs and buildings and at least two or three other small rural chicken operations.

6. For smaller livestock especially chickens, goats, sheep and other small farm animals ensure they are kept in bear-proofed buildings and paddocks/outdoor enclosures. Using electric fencing is the most secure and inexpensive method, but fencing must be correctly installed and maintained. Electric and other fencing must be designed not just to keep out bears and other larger predators from spring until fall, but also needs to have winter predator-proof fencing that may have to be separately designed to keep out pine marten, mountain lions, bobcats, coyotes, and other predators. We also now have wolves returning to the area. The rural Bear Smart coordinators in the Slocan Valley give local workshops on electric fencing and low-key bear aversion techniques and also assist in ordering (at the owners costs) proper electric fencing.
7. We highly encourage rural land-owners to carefully learn and practice bear aversion techniques to discourage bears that might be hanging around their properties that their homes, livestock areas and other private areas are no-go zones for bears, especially when a bear first shows up on the property. This can prevent the bears from becoming habituated, which then makes it easier for them to get into compost and other attractants. The use of a well-trained farm dog (that also does not chase deer) can work well. However, we have found from experience that carefully used noisemakers can be effective. For people experienced with firearms, the judicious use of 12-gauge noisemakers can work. We have found that the small RG-46 launcher pistol with a 7-shot cylinder can be very effective. It is not a firearm per se and shoots off both bangers and whizzers. Cost is about \$100 and is available, as are the 12-gauge noisemakers and other deterrents from Margo Supplies, www.margosupplies.com. With any noisemaker, be careful not to start a forest fire. Bear aversion courses and training can be arranged in the valley through the Bear Smart coordinators. Over time, other techniques may be available, such as installing an electric shock mat on a floor if, say, a bear comes onto your porch and gets into your freezer; these can prevent it from returning.

5.6 Review of Bylaws

We reviewed the bylaws of the Village of New Denver and the Village of Silverton, as well as looked for bylaws in the rural RDCK portions of the study area, as they relate to managing garbage, domestic livestock, and other attractants and conflicts with bears and other wildlife. In general, both villages have waste management and animal control or livestock control bylaws that need to be significantly amended as recommended below. The RDCK portions of the study area need to have enforceable bylaws pertaining to attractants and bears. What is needed are bylaws similar to the ones in Kaslo and Nelson that include wildlife attractants (see Appendix 4). For example, Nelson's city website states the following:

Residents are reminded that the City's Waste Management and Wildlife Attractant Bylaw 3198, 2011 requires that all garbage be safely stored so it is not accessible by wildlife. Store garbage and recycling indoors, in a sturdy shed, or in a bear-resistant garbage container."

5.6.1 In the Village of New Denver

New Denver needs to improve bylaws to be consistent with a much more proactive approach to addressing small livestock issues (primarily chickens), garbage, fruit trees, and all other attractants.

The main bylaw dealing with waste management in the village of New Denver is titled, "A Bylaw to provide for the collection and removal of solid waste within the Village of New Denver, bylaw #581 (2004)." There are two bylaw amendments (#643 and 668) but these pertain only to fee schedules. Bylaw #581 is in need of being updated to include Bear Smart principles and, in fact, the village says it is in the process of discussing this. Currently, however, the bylaw has no provisions for bear- and animal-proofing of attractants, including household and commercial garbage, fruit trees, composts, small livestock holdings, and others.

In the Definitions section, the bylaw's description of a "bear proof container" does not describe a container that is either bear-resistant or bear proof. Further, section 8 of the bylaw states that non-bear-proof containers shall not be placed out for collection before 6:00 a.m. on collection days, which could be interpreted to mean that non-bear-proof garbage containers are specifically allowed. In other words, the bylaw does not require the use of bear proof containers for household garbage, and does allow people to set out unsecured non-bear-proof household garbage containers as long as it's done after 6:00 a.m. on collection days. Aside from not describing or requiring bear-proof containers for household collection, the bylaw does not make any reference to the use of bear-proof bins containers for commercial or business use. While the bylaw states that these bins are to be kept "inaccessible to animals," it does not specify or describe any means to achieve this, nor does it state any penalty for not doing this. The bylaw also does not specify bear-proof waste or attractant management in the municipal park and campground.

The bylaw does not address any Bear Smart principles about attractants, including those relating to fruit or garden materials, birdfeeders, livestock and livestock feed, beehives, outdoor fridges and freezers, composts, barbecues, pet food, commercial food wastes and grease containers, or any other materials that could attract animals, especially bears and other potentially dangerous wildlife.

Domestic livestock is managed under the "Village of New Denver Animal Control Bylaw No. 516, 1999." Besides dogs, this pertains to domestic fowl or poultry, pigeons, rabbits, and wild animals. The village allows only 12 domestic fowl or poultry, and 6 rabbits. Despite New Denver having a history of bears getting into chicken runs, there are no guidelines requiring enclosures and feed storage areas for domestic fowl or poultry being bear-proof. We found no provisions for beehives.

Recommendations to amend New Denver's bylaws for Bear Smart Program requirements

1. Animal Control Bylaw No. 516 should be upgraded to include the need for small livestock (domestic fowl and poultry, rabbits) enclosures including hutches and outdoor runs, as well as livestock feed, to be bear- and animal-proof, including the proper installation of electric fencing with adequate warning signage.
2. Updating Waste Management Bylaw No. 581 should reflect whether the village continues with the old curbside pick-up system without requiring bear-proof residential household bins except on a voluntary basis, requires bear-proof residential household bins for village hot spots or for everyone, or decides to go to a neighbourhood bear-proof communal bin system such as in the town of Canmore. The bylaw upgrade should include language for attractant management in addition to waste management.

Add to the definition section:

3. A definition of bear-proof, or at the very least, bear-resistant, garbage can.
4. "Animal attractant" means antifreeze, paint, food products, food waste, unclean barbecues, pet food, livestock and livestock feed, beehives, offal, birdfeeders containing bird feed between April 15th and December 1st and hummingbird feeders, improperly maintained composts, restaurant grease barrels on public or private land which are accessible to animals, accumulation of fruit in containers or on the ground and any other edible products or waste that could attract animals;

Also add the following:

5. Every owner or occupier of real property shall be encouraged to store all garbage in a bear-proof container or otherwise store garbage and all other odoriferous household waste in a bear-proof manner such as inside the house, a strong storage shed or other facility. [The use of bear-proof residential receptacles is mandatory/preferred].
6. Every owner or occupier of real property shall ensure that all ripe and fruit fallen from a tree or bush on such real property is removed and properly disposed of at least every 3 days. The use of electric fencing while fruit is ripening is encouraged. If the owner of a fruit tree cannot or does not pick and otherwise remove their fruit, they shall use electric fencing to secure it from bears or remove the fruit tree. The heritage value of the fruit tree needs to be considered.
7. Every owner or occupier of real property shall ensure that a birdfeeder containing bird feed on such real property is suspended on a cable or other device in such a manner that it is inaccessible to animals, that bird feed fallen from a birdfeeder is removed from the ground and properly disposed of at least every 3 days, and birdfeeders containing bird feed are not used between April 15th and December 1st in each year.
8. 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 animals.
9. Every owner or occupier of real property shall manage their compost in a bin in an open area away from bushes, or secure inside a high fence, or electric fence and add dried vegetation-leaves, grass, raw manure or straw- on compost piles, and avoid adding oils, animal products or pet waste.
10. Every owner or occupier of real property shall manage other attractants such as pet food and barbecues so that they are inaccessible to wild animals, including bears.
11. Recycling: Every owner or occupier of real property shall ensure that food and other odoriferous waste is cleaned from the waste containers (bottles, plastics, tin cans, etc.) before being deposited in the RDCK recycling bins and ensure that no garbage shall be deposited in the bins provided.

12. Every person who violates any of the provisions of this bylaw, or who suffers or permits any act or thing to be done or omitted to be done in contravention of this bylaw is liable, upon conviction, to the maximum penalties prescribed by the Community Charter and the Offence Act, plus the costs of prosecution.

5.6.2 In the Village of Silverton

Silverton manages its garbage and other waste under Bylaw No. 433, 2005, A Bylaw to provide for the control, collection, and disposal of garbage, household, and trade waste within the Village of Silverton. They have a similar once-a-week curbside pick-up system as New Denver. This bylaw needs to be upgraded as it has no provisions for bear- and animal-proofing of attractants, including household and commercial garbage, fruit trees, composts, and other attractants. While Silverton has few bear problems, it would be a good idea for the village to revise its waste management bylaw in order to enable the community to achieve BearSmart status and also help make the village better prepared for the off year when a bear invasion does occur.

Livestock is managed under the Animal and Poultry Regulation Bylaw No. 460, 2009. This pertains to rabbits, poultry, fur bearing animals and farm animals. Poultry is the only livestock allowed in the Village. The bylaw defines poultry as a bird normally kept for the purpose of providing meat or eggs and includes domestic fowl, ducks, geese, turkeys and pigeons. For poultry they allow 12 poultry but no rooster. Although guidelines are outlined for poultry coops and runs there is nothing about them being bear-proofed. There is also nothing about bear-proofing any chicken feed.

Recommendations to improve Silverton's bylaws Related to Bear Smart Program Requirements:

1. Bylaw No. 460 regarding livestock should be upgraded to include the need for a poultry coop and poultry run and any poultry feed to be bear- and animal proof, including the proper installation electric fencing with adequate warning signage.
2. Bylaw No. No. 433 should be upgraded to include not only a title of waste management but attractant management. Add to the definition section:
3. A definition of bear-proof, or at the very least, bear-resistant, garbage can.
4. "Animal attractant" means antifreeze, paint, food products, food waste, unclean barbecues, pet food, livestock and livestock feed, camp coolers, beehives, offal, bird feeders containing bird feed between April 15 and December 1, hummingbird feeders, improperly maintained composts, restaurant grease barrels on public or private land which are accessible to animals, fruit trees including accumulation of fruit on the tree, in containers or on the ground and any other edible products or waste that could attract animals;

Also add the following:

5. Item 9 Campgrounds. This needs to make reference to the continued use of bear-proof garbage receptacles and food storage lockers by provided by the Village for campers, proper maintenance by the caretaker to minimise odours (i.e., cleaned and washed out with soap and water at least once a week), monitoring to prevent overflow garbage from being left outside the bins on busy weekends, and so on.
6. Re: Public Information and signage at the municipal campgrounds. Visible information signs with bear information need to be placed and maintained in a visible location at the entrance to both the lakeshore and creekside campgrounds. This should include general information on bears warning all campers to store any unattended food in their vehicles or the storage lockers provided including coolers, barbecues, pet food, and other attractants. Anyone camping or picnicking at a Village park or campground park shall use the bear-proof garbage receptacles for all waste, always store their food attractants away from bears, such as in their vehicles, and never leave

their barbecues, coolers, pet food, and other attractants in a manner that they are accessible to bears. The campground attendant shall patrol the sites several times daily to ensure that attractants are not left unattended such as overnight and inform the owners and/or leave a warning sign.

7. Item 15 re recycling: Every owner or occupier of real property shall ensure that food and other odoriferous waste is cleaned from the waste containers (bottles, plastics, tin cans, etc.) before being deposited in the RDCK recycling bins and ensure that no garbage shall be deposited in the bins provided.
8. Item 25. Every owner or occupier of real property shall be encouraged to store garbage in a bear-proof container or otherwise store garbage and all other odoriferous household waste in a bear-proof manner such as inside the house, a strong storage shed or other facility. The use of bear-proof residential receptacles is preferred.
9. Every owner or occupier of real property shall ensure that all ripe and fruit fallen from a tree or bush on such real property is removed and properly disposed of at least every 3 days. The use of electric fencing while fruit is ripening is encouraged. If the owner of a fruit tree cannot or does not pick and otherwise remove their fruit, they shall use electric fencing to secure it from bears or remove the fruit tree. The heritage value of the fruit tree needs to be considered. .
10. Every owner or occupier of real property shall ensure that a birdfeeder containing bird feed on such real property is suspended on a cable or other device in such a manner that it is inaccessible to animals, that bird feed fallen from a birdfeeder is removed from the ground and properly disposed of at least every 3 days, and birdfeeders containing bird feed are not used between April 15th and December 1st in each year.
11. 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 animals.
12. Every owner or occupier of real property shall manage their compost in a bin in an open area away from bushes, or secure inside a high fence, or electric fence and add dried vegetation-leaves, grass, raw manure or straw- on compost piles, and avoid adding oils, animal products or pet waste.
13. Every person who violates any of the provisions of this bylaw, or who suffers or permits any act or thing to be done or omitted to be done in contravention of this bylaw is liable, upon conviction, to the maximum penalties prescribed by the Community Charter and the Offence Act, plus the costs of prosecution.

5.6.3 In the RDCK generally

The Regional District of Central Kootenay has different bylaws in the different sub-areas. For example, some sub-areas have animal control and unsightly premises bylaws, but Area “H” (which includes the Upper Slocan Valley) does not.

There was a recent initiative by some of the West Kootenay Bear Aware groups to have the RDCK enact bylaws for control of rural garbage, livestock, fruit trees, and other attractants but, apparently, this met with only limited interest.

Recommendation:

The RDCK Area “H” should develop strong garbage, livestock, and other attractant bylaws for rural property owners.

5.7 Review of Official Community Plans and Green Space Management Plans

One of the criteria for achieving Bear Smart Community status is to ensure planning and decision-making documents are consistent with the goals of the bear-people conflict management plan. Phase 2 of the program specifies this as a requirement. This means that “wildlife-friendly” language needs to be incorporated into community planning documents such that new subdivisions or recreational trails, for instance, are not superimposed onto important bear habitats or movement corridors. This is important because bears are great creatures of habit. It has been well-documented, for example, that bears use the same travel corridors and feeding areas over many generations.

At the time of our hazard review, both villages (New Denver and Silverton) and the RDCK were undergoing planning reviews. We attended or had representatives attend most public planning meetings to address the need for these new plans to include Bear Smart goals and recommendations. As the two villages were in the later stages of their OCP planning, in 2007, we submitted (in letter form) drafts of our concerns and recommendations so that they had the opportunity to consider these for their final plans.

5.7.1 In the Village of New Denver

The response of the Council of the Village of New Denver to our 2007 recommendations was to ignore most of them and only include a few notes, such as that they would encourage bear awareness for the Village. One comment was that the Council felt that our Bear Smart recommendations were “too rigid.”

New Denver’s Official Community Plan (OCP) intends for the protection of the heritage character of the village, including environmental characteristics—particularly along the foreshore of Slocan Lake and the riparian area of Carpenter Creek and its delta—while at the same time allowing for residential, industrial, and commercial development outside of these sensitive areas.

The OCP’s Vision Statement says the village will “promote a variety of personal and public opportunities within an overall context of sustainable ecological balance.” Language throughout the OCP, while it makes specific mention of bears in two places, generally has to do with the types of future development that will be allowed, geotechnical safety of development permit areas, and the design and other characteristics of “streetscapes” that will enhance the history of the area.

However, the sections that do mention bears are an excellent step in the right direction. Section 3.1.3, *General Form and Character of Existing and Future Land Use*, states that an objective of the village is to “encourage bear awareness activities for all citizens.” The corresponding policy (Section 3.2.8) for this objective states: “Council’s policy is to provide information and educational opportunities for bear awareness to New Denver and surroundings.”

The plan further describes objectives and policies for the provision of public parks, trails, and open spaces (Section 8) along the entire foreshore of Slocan Lake and the Carpenter Creek riparian areas. However, there is no further mention of particular considerations for bears or any other wildlife species.

We recommend in the future that the New Denver OCP give consideration to much stronger measures to reduce their serious black bear problems. The next version of the OCP should incorporate the overall recommendations we made in the Part One Summary section at the beginning of this report.

The following measures should be implemented by the Village to help it achieve Bear Smart Community status by reducing bear-people conflicts:

Recommendations:

1. Amend the New Denver OCP so that it mentions the village's commitment to work towards provincial Bear Smart Community status. This should include specific language about the following items:
 - a. Design, maintain, and manage parks and trails to minimise bear-people conflicts. This includes consideration of sight lines, garbage cans, landscaping and naturally occurring plants, and informational signage about bears.
 - b. Update bylaws related to food attractant issues, including garbage, birdfeeders, backyard composts, outdoor barbecues, fruit trees, landscaped plants, chickens, beehives, etc..
 - c. Encourage residents to not use landscaping plant species that could attract bears, such as berry-producing shrubs and trees (e.g., Oregon grape (*Mahonia* spp.), mountain ash).
 - d. Encourage residents to pick fruit or use electric fencing to minimise bears' access to this abundant village food source.
 - e. Ensure that any residents who keep chickens or bees install bear-proof fences and hutches, such as through electric fencing.
 - f. Encourage any new homes being built that have backyards bordering on green spaces to install perimeter fencing to keep bears and other wildlife away, particularly from children's play areas.
 - g. Community planning should involve a bear habitat and travel corridor map so that bear/wildlife concerns can be adequately addressed in new developments.
 - h. Bear Smart recommendations and criteria should be included in Smart Growth BC guiding principles.

5.7.2 In the Village of Silverton

To be considered for Bear Smart Community status by BC's Environment ministry, OCPs need to contain language that reflects Bear Smart Community principles. A search through Silverton's May 2008 draft OCP for the word "bear" found no use of the word. We can only conclude that (to that date) there has been no consideration for bears in the development of the village's official community planning process. On the other hand, a search through the draft for the word "wildlife" results in the following (from page 30), which does not spell out how, or even if, bear movement corridors will be considered:

Objective: To adhere to Federal Acts and Statutes by protecting all wildlife and fish habitats, including riparian corridors.

1. Council shall support stream stewardship policies of the Ministry of Environment.
2. Council shall use the following criteria to assess future commercial development:
 - a. The capability of the natural environment to support the proposed development, and its impact on important habitat and riparian areas.

Recommendation:

We recommend that subsequent versions of Silverton's OCP give consideration to much stronger measures to reduce problems with black bears. The next version of the OCP should incorporate the overall recommendations stated in the Part One Summary at the beginning of this report.

5.7.3 RDCK Slocan Lake North Area “H” Official Community Plan

After initial RDCK planning meetings in Fall 2006, it was decided to split planning for electoral area “H” into Upper and Lower Valley. Our Bear Smart study area roughly coincides with the Slocan Lake North portion of the planning area. The planning process began in 2006 and, in 2009, resulted in the RDCK bylaw #1967 called the Slocan Lake North Portion of Electoral Area “H” Official Community Plan (www.rdck.bc.ca/publications/bylaws/1967_Hn_OCP.pdf). During the public review process, Bear Smart criteria were presented to the RDCK planning team at various meetings held in the upper valley. While bears are not mentioned in the final product, some generalised objectives in the bylaw have potential to help bears, such as the following:

Environmental

Protect the natural environment.

- 5. Ensure that development does not adversely harm or detract from identified wildlife corridors and areas with high wildlife and fisheries habitat value.*

Resource Area Objectives

- ◆ *To protect riparian zones, sensitive ecosystems, watersheds and biodiversity.*

Natural Environment Objectives

- 1. To preserve and protect natural values within Slocan Lake North in recognition of their importance to the local economy, residents, visitors and for wildlife and ecological functioning.*
- 4. To foster an awareness of the natural environment and protect sensitive and significant natural features and values from negative impact as a result of development.*
- 5. To encourage the maintenance of wildlife habitat and winter range.*
- 8. To encourage Provincial and Federal governments, private organizations and private landowners to protect, enhance and manage sensitive habitat areas in the Plan area and to adhere to Federal and Provincial statutes and regulations for the protection of fish and wildlife habitats.*

Natural Environment Policies The Regional Board:

- 1. Supports the identification, protection, and enhancement of environmentally sensitive areas, such as watercourses, wetlands, shorelines, steep rocky terrestrial areas and ungulate winter range.*
- 2. Supports best management practices for land developers, as found in:*
 - a. Department of Fisheries and Oceans: Land Development Guidelines for the Protection of Aquatic Habitats, September 1993;*
 - b. Ministry of Environment: Develop with Care: Environmental Guidelines for Urban and Rural Land Development in BC, March 2006; and*
 - c. other applicable Provincial Guidelines and Best Management Practices sanctioned by the Province.*
- 3. Supports the Provincial requirement that developers apply for and obtain appropriate permits and authorization for “Changes In and About a Stream” pursuant to Section 9 of the Water Act.*
- 5. Encourages the retention of existing wildlife corridors.*
- 8. Encourages the protection of environmentally sensitive areas, important to the biodiversity and ecological functioning of the Plan area, and areas that contribute to community ‘greenway’ corridors that link open space areas.*

Recommendation:

Bear Smart principles need to be incorporated at the next update of the RDCK Slocan Lake North Area “H” Official Community Plan.

PART THREE—PHASE 2: PROPOSED BEAR-PEOPLE CONFLICT MANAGEMENT PLAN (THE “PROPOSED BEAR PLAN”)

6.0 INTRODUCTION TO THE PROPOSED BEAR PLAN

The following outlines background information on the goals and guidelines provided by the province for developing a bear-people conflict prevention plan. Normally the bear hazard assessment and the bear plan are developed as two separate documents. As discussed, we combined the two into this report, using the bear hazard recommendations to form the proposed bear action plan. This was done to simplify things and avoid unnecessary repetition. The proposed Phase 2 Bear Plan is in the summary of this report. It includes overall priorities and specific recommendations for each agency, village, the RDCK, and for residents.

Normally, bear plans have an implementation period, but we will leave this up to the various responsible jurisdictions to act accordingly because much has already been done since we started the Upper Slocan Valley Bear Smart program in 2006.

6.1 Goals of the Proposed Bear-People Conflict Management Plan

The generic goals of a Bear-People Conflict Management Plan²⁹ under the provincial Bear Smart program are to:

- a. provide a general summary of the conflict issues based on the BHA [Phase 1 Problem Analysis]
- b. identify the community's level of commitment to the program
- c. identify the level of tolerance of the community towards maintaining or restoring natural bear habitats (e.g., travel corridors and feeding areas) adjacent to the community
- d. clearly establish goalposts for the success of the program
- e. identify the agencies, groups, or individuals responsible for addressing problems
- f. determine what is necessary to address each problem successfully
- g. set priorities for specific actions to be taken
- h. develop a timetable for addressing each problem
- i. conduct a cost estimate of proposed management actions and provide a budget break-down for each of the criteria in the program³⁰

The government's background report for the Bear Smart Community Program also states that, "Preparation for the management plan should include a brainstorming stage for generating ideas and concepts for developing the plan. The contents of the management plan should be developed using a consensus-based approach for identifying and assessing preferred solutions."

The goal of this proposed Bear-People Conflict Management Plan is to build on the information provided in the Bear Hazard Assessment, assess the current status of conflict-reduction activities in the study area, and provide an implementation plan to significantly reduce human-bear conflicts, increase safety for people and protection of private property, and reduce the number of bears destroyed within the study area's boundaries.

²⁹ *Ibid.* p. 39.[Davis, Helen M. *et al.*]

³⁰ Many of these goals may be undertaken by the village councils and other agencies involved.

6.2 Benefits of the Proposed Bear-People Conflict Management Plan

The tangible benefits of completing an effective Bear Plan are:

1. increased safety for residents and visitors due to the reduced risk of encounters with grizzly and black bears
2. reduced property damage, including loss of livestock, by bears that have become food-conditioned
3. more effective, efficient use of public resources (COS, area bylaw services, RCMP, BC Parks)
4. better long-term prognosis for healthy bear populations
5. tourism benefits as global travellers are highly favourable to conservation of wildlife, especially large species such as bears
6. economic savings in terms of reduced property damage and reduced costs to the taxpayers of bear control measures by the Conservation Officer Service
7. fewer bears having to be killed or relocated

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APPENDICES

- Appendix 1.** Letter of Village of New Denver endorsing petition to reinstate live trapping and relocation of bears as practices of the Conservation Officer Service.
- Appendix 2.** Petition to reinstate previous COS practices re live trapping and relocation of bears as practices of the Conservation Officer Service.
- Appendix 3.** List of potential foods (natural attractants) for grizzly bears and black bears in the Selkirk Mountains and Interior Wet Belt
- Appendix 4.** Waste management bylaws for towns in the study area and nearby:
(1) Village of New Denver Waste Management Bylaw,
(2) Town of Kaslo bylaw to regulate animal attractants (good example)
(3) City of Nelson Waste Management and Wildlife Attractant Bylaw (good example)
- Appendix 5.** Excerpts from New Denver OCP
- Appendix 6.** Fall 2010 letter to RDCK from Bear Aware requesting a bylaw initiative
- Appendix 7.** Excerpts from BC Wildlife Act as amended in 2011

**APPENDIX 1. Letter of Village of New Denver Endorsing Petition to
Reinstate Live Trapping and Relocation of Bears As Practices of the
Conservation Officer Service.**



Corporation of the Village of New Denver

P.O. Box 40, New Denver, BC V0G 1S0 (250) 358-2316 FAX (250) 358-7251

C. Gordon, CMC, Administrator

A. Bunka, Mayor

May 10, 2012

Valhalla Wilderness Society
Box 329
New Denver, BC
V0G 1S0

Re: Petition for Live Bear Trapping and Relocation

The Council of the Village of New Denver received your petition regarding the above at its May 10, 2012 Regular Meeting, which was worded as follows:

"We the undersigned residents of New Denver and Silverton, call upon the BC government to replace the killing of black bears within our villages with the old policy of live trapping the bears and releasing them to wild areas. Our villages are closely surrounded by bear habitat. We have a super-abundance of cherry, apple, plum, and pear trees as well as a campground with food and garbage. Although residents are trying to reduce bear attractants, to completely eliminate them would be impossible. As unpredictable weather leads to failed berry crops, it is possible for our villages to magnetize even more bears to a fate of becoming increasingly habituated until they have to be killed.

The killing of bears inside the villages has led to instances of terrible suffering by the bears. People, including children, inevitably witness these killings, and the experience is traumatic. The need for destroying bears would be greatly reduced if the BC government would restore the live trapping and release program that worked in our villages for many years."

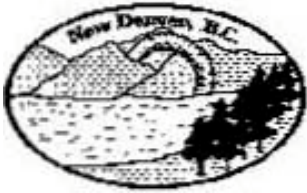
Please be advised that Council supports in principle the concept of your petition as it aligns with the intent of the resolution regarding "BC Conservation Service Capacity," which was adopted by Council, endorsed at the AKBLG Convention, and will be presented at the UBCM Convention in September 2012. A copy of the resolution adopted by Council and background information is attached for your information.

Yours truly,

[original signed by]

Carol Gordon, CMC
Administrator

encl



Corporation of the Village of New Denver

P.O. Box 40, New Denver, BC V0G 1S0 (250) 358-2316 FAX (250) 358-7251

C. Gordon, CMC, Administrator

A. Bunka, Mayor

BC CONSERVATION SERVICE CAPACITY

WHEREAS; the Provincial Government is responsible for managing bears through its Conservation Service, and the BC Conservation Service has not been able to adequately address bear-human conflict in municipalities due to a lack of capacity;

AND WHEREAS; municipalities are unable to appropriately respond to bear-human conflict, as their role is to enact policies that deter wildlife and limit wildlife attractants;

THEREFORE BE IT RESOLVED that the Provincial Government be requested to provide adequate funding and staffing in order for the BC Conservation Service to be more active and proactive in effectively managing bear-human conflict in communities across BC.

Unanimously endorsed by the Council
of the Village of New Denver at its
January 24, 2012 Regular Meeting

Special Resolution: BC Conservation Service Capacity

WHEREAS; the Provincial Government is responsible for managing bears through its Conservation Service, and the BC Conservation Service has not been able to adequately address bear-human conflict in municipalities due to a lack of capacity.

AND WHEREAS; municipalities are unable to appropriately respond to bear-human conflict, as their role is to enact policies that deter wildlife and limit wildlife attractants.

THEREFORE BE IT RESOLVED that the Provincial Government be requested to provide adequate funding and staffing in order for the BC Conservation Service to be more active and proactive in effectively managing bear-human conflict in communities across BC.

Additional text for presentation of resolution at AKBLG:

-Conservation Officers currently serve a very large area and have generally only addressed bear-human conflict concerns once a bear becomes aggressive and dangerous; a typical response is for the CO to come to the community to kill the bear.

-Bears are classified as “dangerous wildlife” according to the Fish & Wildlife Act; a permit is required to kill black bears and in order to trap bears safely, people must have appropriate training to protect the animal and the public. It is the responsibility of the Conservation Service, the Provincial Government to manage these “dangerous wildlife.”

-We live in bear country; we are concerned for the health and safety of our residents and the bears.

-The Provincial Government needs to provide enough funding to ensure the Conservation Service can be effective; this means adequate staffing and resources to do the job.

-Proactive measures include the ability to employ early intervention strategies and bear aversion techniques to discourage bears from frequenting communities, and becoming habituated. Active measures for problem bears include capturing, relocation and hard release, and if necessary, killing aggressive and dangerous bears.

-Our role in our municipalities is to enact policies that deter wildlife or limit wildlife attractants in their communities.

-The Province’s role is to take responsibility for managing dangerous wildlife, and training staff to perform this service. The Conservation Service must be adequately funded and it currently is not.

APPENDIX 2. Petition To Reinstate Previous COS Practices Re Live Trapping and Relocation of Bears As Practices of the Conservation Officer Service.

Petition to the Government of British Columbia for Live Trapping and Release of Black Bears from the Villages of New Denver and Silverton

We, the undersigned residents of New Denver and Silverton, call upon the BC government to replace the killing of black bears within our villages with the old policy of live trapping the bears and releasing them in wild areas. Our villages are closely surrounded by bear habitat. We have a superabundance of cherry, apple, plum and pear trees as well as a campground with food and garbage. Although residents are trying to reduce bear attractants, to completely eliminate them would be impossible. As unpredictable weather leads to failed berry crops, it is possible for our villages to magnetize ever more bears to a fate of becoming increasingly habituated until they have to be killed.

The killing of bears inside the villages has led to instances of terrible suffering by the bears. People, including children, inevitably witness these killings, and the experience is traumatic. The need for destroying bears would be greatly reduced if the BC government would restore the live trapping and release program that worked in our villages for many years.

SIGNATURE

[illegible]

Return to Valhalla Wilderness Society, P.O. Box 329, New Denver, British Columbia, V0G 1S0

APPENDIX 3. Grizzly and Black Bear Habitat Evaluation and Food Table Form for the Interior Mountains of BC, Including the Selkirks, Monashees, Purcells, and Rocky Mountains

The list of potential, preferred, incidental, and questionable bear foods is based on background studies elsewhere and our field sampling of scats and feeding sign. Common and Latin names follow MacKinnon *et al.* (1996) where possible. * = important in diet, ** = very important.

McCrary Wildlife Services Ltd.

PROJECT: _____ PP: _____ Observer(s): _____

Bear habitat transect/plot capability and use surveys

Transect/plot no.: _____ Date: _____ Type: _____ Area: _____
GPS: Location: _____ Size: _____ Veg. type: _____ Cover type: _____
Habitat classification: _____ Notes: _____ Other bear use: _____

Species	%	Bear Use	Phenology	Notes
FORBS				
Cow-parsnip (<i>Heracleum lanatum</i>)**				
Kneeling angelica (<i>Angelica genuflexa</i>)				
Mountain sweet-cicely (<i>Osmorhiza chilensis</i>)				
Blunt-fruited sweet-cicely (<i>Osmorhiza depauperata</i>)?				
False Solomon's-seal (<i>Smilacina racemosa</i>)				
Star-flowered false Solomon's-seal (<i>Smilacina stellata</i>)				
Hooker's fairybell (<i>Disporum hookeri</i>)				
Rosy twistedstalk (<i>Streptopus roseus</i>)				
Western meadowrue (<i>Thalictrum occidentale</i>)				
Stinging nettle (<i>Urtica dioica</i>)				
Baneberry (<i>Actaea rubra</i>)				
Edible thistle (<i>Cirsium edule</i>)				
Thistle spp.				
Lady fern (<i>Athyrium filix-femina</i>)				
Other fern spp.				
Mountain sorrel (<i>Oxyria digyna</i>)				
Common horsetail (<i>Equisetum arvense</i>)**				
Other horsetail spp.				
Common dandelion (<i>Taraxacum officinale</i>)*				
Indian hellebore (<i>Veratrum viride</i>)				
Clover spp.*				
Other forbs				
GRASSES (Poaceae)**				
Hairgrass spp.*				
SEDGES**				
ROOTS & CORMS				
Western spring-beauty (<i>Claytonia lanceolata</i>)*				
Yellow glacier lily (<i>Erythronium</i>				

<i>grandiflorum</i>)**				
Other lily?				
Mountain sweet-cicely (<i>Osmorhiza chilensis</i>)				
Sweet-vetch – Yellow hedysarum (<i>Hedysarum sulphurescens</i>)*				
Pink hedysarum (<i>Hedysarum alpinum</i>)				
Northern sweet-vetch (<i>Hedysarum boreale</i>)				
Astragalus spp.				
Arctic lupine (<i>Lupinus arcticus</i>)				
Cow-parsnip (<i>Heracleum lanatum</i>)		No root feeding noted		
BERRIES				
Black Huckleberry (<i>Vaccinium membranaceum</i>)**				
Grouseberry (<i>Vaccinium scoparium</i>)*				
Blueberry spp. (<i>Vaccinium alaskaense</i> , <i>V. ovalifolium</i>)*				
Dwarf or Cascade blueberry (<i>Vaccinium caespitosum</i>)				
Bog blueberry (<i>Vaccinium uliginosum</i>)				
Soopolallie (<i>Shepherdia canadensis</i>)**				
Serviceberry (<i>Amelanchier alnifolia</i>)				
Crowberry (<i>Empetrum nigrum</i>)*				
devil's club (<i>Oplopanax horridus</i>)?				
Red-osier dogwood (<i>Cornus stolonifera</i>)				
Black currant (<i>Ribes lacustre</i>)				
Kinnikinnick (<i>Arctostaphylos uva-ursi</i>)*				
Black twinberry (<i>Lonicera involucrata</i>)				
Highbush-cranberry (<i>Viburnum edule</i>)				
Red raspberry (<i>Rubus idaeus</i>)				
NUTS				
Whitebark pine (<i>Pinus albicaulis</i>)				
Hazel nut (<i>Corylus californica</i>)				
MAMMALS				
Mule deer (<i>Odocoileus hemionus</i>)				
White-tailed deer (<i>Odocoileus virginianus</i>)				
Mountain caribou (<i>Rangifer tarandus</i>)				
Moose (<i>Alces alces</i>)				
Rocky mountain elk (<i>Cervus canadensis</i>)				
Bighorn sheep (<i>Ovis canadensis</i>)				
Mountain goat (<i>Oreamnos americanus</i>)				
Columbian ground squirrel (<i>Spermophilus columbianus</i>)*				
Marmot spp.				
Beaver (<i>Castor canadensis</i>)				
Other mammal				
FISH				
Trout				
Salmon				
INSECTS				
Ants				
Wasps				

**APPENDIX 4. WASTE MANAGEMENT BYLAWS FOR TOWNS IN
THE STUDY AREA AND NEARBY:**

- (1) Village of New Denver Waste Management Bylaw,**
- (2) Town of Kaslo** (good example)
- (3) City of Nelson Waste Management and Wildlife
Attractant Bylaw** (good example)

(1) VILLAGE OF NEW DENVER WASTE MANAGEMENT BYLAW

THE CORPORATION OF THE VILLAGE OF NEW DENVER BYLAW NO. 581

A Bylaw to provide for the collection and removal of solid waste within the Village of New Denver

WHEREAS Section 64 of the Community Charter provides that Council may, by bylaw;

- a) require persons to use a waste disposal or recycling service, including requiring persons to use a waste disposal or recycling service provided by or on behalf of the municipality;
- b) require owners or occupiers of real property to remove trade waste, garbage, rubbish and other matter from their property and take it to a specified place;
- c) require the emptying, cleansing and disinfecting of private drains, cesspools, septic tanks and outhouses, and the removal and disposal of refuse from them.

AND WHEREAS the Council wishes to encourage waste reduction, reuse, composting and recycling to reduce the volume of waste being deposited into the landfill;

NOW THEREFORE the Council of the Corporation of the Village of New Denver, in open meeting assembled, enacts as follows:

1. This bylaw may be cited for all purposes as "Village of New Denver Solid Waste Management Bylaw No. 581, 2004."

DEFINITIONS

2. In this bylaw, unless the context otherwise requires,

"bear proof container" means, in the case of residential garbage, a cylindrical metal or rectangular wooden container with a secure lid, not exceeding 75 cm in height or 50cm in diameter, which is inaccessible to bears.

"collection day" means the day or days during each week on which waste is scheduled to be collected from a specific premises;

"container or non-bear proof container" means a receptacle constructed of non-corrosive durable metal or plastic equipped with a tight fitting cover constructed of the same or similar material and handles for lifting, having a capacity not greater than 79.56 litres (17.5 gallons) and fully lined with a plastic bag of the type designed for the disposal of domestic waste 76 x 90 cm (30"x 36") and constructed of material not less than 1.5 mil thickness;

"Council" means the Council of the Corporation of Village of New Denver;

"industrial waste" means material from excavations; material from lot clearing or building construction, repairs, alterations, or maintenance; debris from any building removed or damaged or destroyed by fire or any other cause; material from any manufacturing processes; dead animals; condemned or contaminated matter from any premises; (and any similar material other than human or animal excrement);

"landfill" means an area designated and established for the use of residents of the Village for the disposal of waste;

"non-residential container" means a metal bin, having a capacity of 3.06 cubic metres (4 cubic yards), used or intended to be used at a commercial, industrial, institutional, or other non-residential premises, supplied by the Village;

"stand" means a wooden or metal enclosure designed to hold all containers required by the premises on which the stand is provided, and which shall be so designed as to keep all containers a minimum of 250 mm (10 inches) and a maximum of 750 mm (29.5 inches) from ground level, in a closed position at all times and protected from interference from animals;

"waste" means discarded or rejected material but does not include human or animal excrement, industrial waste, compostable matter or recyclable material;

"waste collection area" means an area or areas established by Council within which waste will be collected by the Village as frequently as is considered necessary by Council;

"village" means the Village of New Denver.

RESPONSIBILITIES OF OWNERS AND OCCUPANTS

3. (1) No person shall dispose of waste or industrial waste except in accordance with this bylaw.

(2) No person shall dump or dispose of any waste or industrial waste, or any noxious, offensive, unwholesome or discarded matter in any place other than the designated landfill unless directed to do so by the Village.
4. The owner or occupant of every premises shall provide sufficient containers to hold the normal waste generated from that premises during the period between collection days.
5. No person shall place or keep any container or receptacle for industrial/residential waste upon any street or public land in the Village except as specifically provided in this bylaw.
6. The owner or occupant of every premises shall provide, and maintain in good and sanitary condition, sufficient containers for all waste upon the premises owned or occupied by him, and shall ensure that the mouth of each container is closed or securely covered except when the container is actually being filled or emptied.
7. Every person shall dispose of waste upon the premises owned or occupied by him/her by placing or causing the same to be placed in a container maintained for that purpose, but not elsewhere.
8. Except as otherwise directed by the Superintendent of Public Works, non-bear proof containers shall not be placed on the streets and lanes prior to 6:00 am on garbage collection days.
9. The owner or occupant of premises from which waste is to be collected shall ensure that all wet or granular material is separately wrapped or put into a plastic bag before being placed in a container for pick-up.

10. All non-residential containers shall be located in an area as directed by the Village. It shall be the responsibility of the occupant to ensure that all waste containers are kept, at all times before collection, in a fashion that keeps same inaccessible to animals and impervious to weather.

GENERAL REGULATIONS

11. Notwithstanding any other provisions of this bylaw, where a recycling program is in effect and storage or other recycling facilities are available, either within the Village or elsewhere, the following shall be either recycled or otherwise disposed of in accordance with this bylaw:
- (a) aluminum and tin cans
 - (b) corrugated cardboard
 - (c) glass bottles and jars
 - (d) motor oil
 - (e) paper
 - (f) magazines and catalogues
 - (g) plastic milk jugs
 - (h) all other material as may, from time to time, be accepted for recycling
12. The Village shall be responsible *for removing on collection day only the contents of one* container of residential garbage. Removal and disposal of the contents of all other containers which do not clearly display official Village tags shall be the sole responsibility of the owner or occupier of the premises which produced the waste.
- (a) Official tags will be sold by the Village of a cost of \$2.00 each and:
 - (i) one tag will be required for a second container of garbage
 - (ii) two tags will be required for each container in excess of two containers per week
 - (iii) may be obtained at the municipal office or from the public works crew during garbage collection runs
 - (iv) be firmly affixed to the top of the waste in the can
 - (v) be whole, unaltered, unobscured and clearly visible to the collector immediately upon removing the lid of the can
 - (b) On a disposable box or carton the official tag shall:
 - (i) be firmly affixed to the top of the closed box
 - (ii) be whole, unaltered, unobscured and clearly visible to the collector.
13. All waste placed in containers constructed of metal or plastic, for collection, must first be placed inside a plastic bag.
14. Garden waste placed at the curb for collection may be placed in secure, covered, disposable corrugated cardboard boxes or cartons which, when filled, weight no more than 10 kg (23 pounds). For the purposes of Section 11, each such box or carton shall be counted as a container.
15. When a stand is used for the storage of waste as provided for in this Bylaw, and while the stand is on his/her premises the owner or occupant of the premises shall be responsible for maintaining the stand in a condition which is not offensive or dangerous to the public health.

16. Where Council considers it in the public interest to do so, the Village may temporarily place one or more stands on public or private lands to accommodate waste expected to be generated at a special event or function. Council may, at its discretion, establish a charge for the temporary placement, use, and removal of stands under this subsection.
17. The owner or occupant of any premises shall at all times ensure that waste or industrial waste is kept within the containers or stand provided for that purpose, and not allowed to spill onto, or accumulate on, any street or adjoining public or private property.
18. No water or other liquid shall be kept in, or be permitted to remain or accumulate in, any container or stand and no person shall keep or place any explosive, toxic, hot or highly flammable substance in any container or stand.
19. Where any premises is served by a lane, all waste from such premises shall be placed in containers for collection at a location with two (2) meters of such lane, but not in the lane.
20. Where containers are placed for collection within any structure, fence, or other enclosure, direct access to the containers from a street or lane shall be provided.
21. Where any premises is not served by a lane, all waste from such premises shall be placed in containers for collection at a location as close as possible to the traveled portion of an adjacent street but not on a sidewalk or in such a location as to interfere with vehicular or pedestrian traffic.
22. Except on collection day, all containers shall be kept and maintained on the premises of the owner or occupant, and any can located on any street or other public land in the Village other than on collection day may be removed and disposed of at the discretion of the Village without compensation to the owner thereof.
23. Collectors designated by Council for the collection and removal of waste shall have the right to enter at all reasonable times all premises and yards to the extent necessary for the performance of his/her duties in accordance with this bylaw.
24. No person other than a lawful user thereof, or an authorized collector of the Village, shall open any container or stand, remove anything therefrom, add anything thereto, or in anyway disturb the contents thereof; nor shall any other person handle, interfere with or in any manner disturb any container put out for collection.
25. When any can is in a condition that presents a hazard to the collector or has been condemned by the Village for any other reason, and written notice to that effect has been given to the owner or occupant, the condemned can may be removed and disposed of along with the waste from that premises.
26. No person shall operate a vehicle in the Village while it is carrying waste or industrial waste unless the portion of the vehicle in which the material is being carried is securely covered or the material is secured to prevent any part of such material from falling off or out of the vehicle while it is in transit.
27. The removal of industrial waste from any premises and the full cost thereof shall be the sole responsibility of the owner or occupant of such premises.

28. The Village may suspend collection service from properties where stands or their locations for pick-up do not comply with the requirements of this Bylaw, but such suspension shall not relieve the owners or occupants of such premises from their responsibilities under this Bylaw.
29. Collectors shall not enter any building for the purpose of carrying from or returning thereto any container, except when in the judgment of the Village it is impractical to store the container outside the building.
30. Collectors shall not pick, sort over, or remove for their own use any waste or other discarded materials on any premises or on the collection vehicle.

FEES AND PAYMENTS

31. All fees and charges, commencing in the calendar year 2005 shall be as per Schedule "A" attached and forming part of this Bylaw.

OFFENSES AND PENALTIES

32. Every person who violates any provision of this Bylaw, or who suffers or permits any act or thing to be done in contravention of any provision of the bylaw, or who neglects to do or refrains from doing anything required to be done by any provision of this Bylaw, shall be deemed to be guilty of an offence under this Bylaw and shall be liable on summary conviction to a fine of not less than \$50.00 nor more than \$2,000.00.

REPEAL

33. Village of New Denver Garbage Collection Bylaw No. 536, 2000 and all amendments thereto are hereby repealed in their entirety.

EFFECTIVE DATE

34. This Bylaw shall come into full force and effect on January 1, 2005.

READ A FIRST TIME this 14th day of December 2004.

READ A SECOND TIME this 14th day of December 2004.

READ A THIRD TIME this 14th day of December 2004.

RECONSIDERED AND FINALLY ADOPTED this 17th day of December 2004.

G. L. Wright
MAYOR

Carol Gordon
ADMINISTRATOR

VILLAGE OF NEW DENVER BYLAW NO. 581, 2004

SCHEDULE A

1.	Residential - 1 container or less per week	96.00 per year
	one additional container per week	2.00
	additional containers in excess of two per week	4.00 each
2.	Hospital	2,613.00 per year
3.	School	1,593.00 per year
4.	Senior Citizens Housing Complex	506.00 per year
5.	Municipal Buildings	No charge
6.	Sandwich Shops	222.00 per year
7.	Hotel, Motel	370.00 per year
8.	Restaurant, Cafe	347.00 per year
9.	Grocery Stores, Supermarkets	469.00 per year
10.	Convenience Stores	177.00 per year
11.	Auto Repair Service with Gas Station	200.00 per year
12.	Auto Repair Only	177.00 per year
13.	Post Office	256.00 per year
14.	All other business (once weekly pick-up)	143.00 per year

(2) TOWN OF KASLO (good example)

VILLAGE OF KASLO BYLAW 1070

A BYLAW TO REGULATE ANIMAL ATTRACTANTS WITHIN THE VILLAGE OF KASLO

WHEREAS the Council of the Village of Kaslo deems it advisable to regulate attractants so as not to attract animals;

NOW THEREFORE the Council of the Village of Kaslo, in open meeting assembled, enacts as follows:

1. This bylaw may be cited for all purposes as the *Village of Kaslo Animal Attractants Regulation Bylaw 1070, 2008*.

2. In this bylaw, unless the context otherwise requires, "Animal" means a dog, cat, bear, cougar, coyote, wolf, skunk, raccoon, raven or crow;

"Animal attractant" means antifreeze, paint, food products, food waste, unclean barbecues, pet food, livestock and livestock feed, beehives, offal, bird feeders containing bird feed between April 15th and December 1st and hummingbird feeders, improperly maintained composts, restaurant grease barrels on public or private land which are accessible to animals, accumulation of fruit in containers or on the ground and any other edible products or waste that could attract animals;

"Container" means a receptacle constructed of non-corrosive durable metal or plastic equipped with a tight fitting cover constructed of the same or similar material and handles for lifting, having a capacity not greater than 17.5 gallons, which is capable of being completely closed to reduce odours and secured with a latching device of sufficient strength and design to prevent access by animals;

"Stand" means a fully enclosed wooden or metal enclosure designed to hold all containers required by the premises on which the stand is provided, which shall be so designed as to reduce odours, to keep all containers a minimum of 250 mm (10 inches) and a maximum of 750 mm (29.5 inches) from ground level, to have no more than a 1 cm gap or opening at any location, to be in a closed position at all times and to be protected from interference from animals;

"Waste" means discarded or rejected materials but does not include human or animal excrement, industrial waste, compostable matter or recyclable material.

3. No person shall store any animal attractant or waste in such a manner that it is accessible to animals.

4. A person storing animal attractants or waste shall

(a) use a container, or;

(b) store such container in a stand.

5. Every owner or occupier of real property shall ensure that a container or stand on such real property is

(a) maintained in good condition and kept in a clean and sanitary condition;

(b) kept closed and secure when material is not being deposited or emptied, and;

(c) if damaged, repaired within 7 days of the damage occurring.

6. A person is exempt from sections 4 and 5 for temporary special events if waste receptacles required for the special event are emptied into a container or stand in accordance with section 4 by 10pm on the day of the event.

7. 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 and properly disposed of at least every 3 days.
8. 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 animals, that bird feed fallen from a bird feeder is removed from the ground and properly disposed of at least every 3 days, and bird feeders containing bird feed are not used between April 15th and December 1st in each year.
9. 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 animals.
10. Every owner or occupier of real property shall ensure that livestock or beehives are inaccessible to animals by use of properly maintained electrified fencing.
11. Every person who violates any of the provisions of this bylaw, or who suffers or permits any act or thing to be done or omitted to be done in contravention of this bylaw is liable, upon conviction, to the maximum penalties prescribed by the Community Charter and the Offence Act, plus the costs of prosecution.
12. 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.
13. If any portion of this bylaw is held to be invalid by a court of competent jurisdiction, such invalidity shall not affect the validity of the remaining portions of this bylaw.
14. This bylaw shall come into full force and effect upon adoption.

READ A FIRST TIME this 24th day of June, 2008.

READ A SECOND TIME this 24th day of June, 2008.

READ A THIRD TIME this 24th day of June, 2008.

RECONSIDERED AND FINALLY ADOPTED THIS 8th day of July, 2008.

**(3) CITY OF NELSON WASTE MANAGEMENT AND WILDLIFE
ATTRACTANT BYLAW** (good example)

THE CORPORATION OF THE CITY OF NELSON

BYLAW NO. 3198, 2011

**BEING A BYLAW TO PROVIDE FOR AND REGULATE THE
COLLECTION, STORAGE AND DISPOSAL OF GARBAGE AND TRADE WASTE
WITHIN THE CITY OF NELSON
AND TO CONTROL WILDLIFE ATTRACTANTS**

Table of Contents No.	Page
Definitions	2
General Regulations	4
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THE CORPORATION OF THE CITY OF NELSON
Waste Management and Wildlife Attractant Bylaw No. 3198, 2011

WHEREAS in accordance with the *Community Charter*, and in the interests of public health, Council may establish services for the collection, removal and disposal of garbage

AND WHEREAS the Provincial Government has mandated a 50% reduction in waste by the year 2000 in an effort to protect our environment;

AND WHEREAS it is deemed desirable and expedient to provide uniform standards for garbage containers and to establish fees for the collection of garbage and trade waste in order to encourage citizens to reduce, re-use, recycle and compost, thereby reducing waste volumes going to the landfill and reducing the cost of garbage collection and disposal;

AND WHEREAS it is deemed advisable to enact a bylaw so as to discourage and prevent dangerous wildlife from accessing and becoming conditioned to, or dependent on, food sources generated or controlled by human activity;

NOW THEREFORE be it resolved that the Council of the Corporation of the City of Nelson, in open meeting assembled, enacts as follows:

DEFINITIONS

1. In this by-law:

"City" means The Corporation of the City of Nelson

"Container" is an enclosed garbage receptacle of maximum size of 80 litres (18 imperial gallons) or a plastic disposable garbage bag, of a size of 66 cm by 97 cm (26" by 38") and no bag or receptacle shall exceed 23 kilograms (50 Pounds) in weight

"Dangerous Wildlife" means bear, cougar, coyote or wolf, or a species of wildlife that is prescribed as dangerous under the *BC Wildlife Act*

"Designated Officer" means a Bylaw Enforcement Officer, member of the Nelson Police Department or a Conservation Officer as appointed under the *BC Wildlife Act*

"Garbage" means and includes all animal, mineral, synthetic, paper product and vegetable matter in any form or state abandoned, discarded or thrown out by any occupant of and generated from a residential, commercial, institutional or industrial property

"Hazardous Waste" means hazardous waste as defined in the *British Columbia Hazardous Waste Regulations, B.C. Reg. 63/88, OIC.268/88* as amended from time to time

"Occupant" means and includes any occupant, owner, lessee, tenant or responsible employee thereof of any residential property or dwelling or trade premises

"Residential Dwelling Unit" means and includes one or more habitable rooms designed for use by and occupied by not more than one family and in which separate kitchen and sanitary facilities are provided for the exclusive use of such a family, with a private entrance from outside the building, or from a common hallway or stairway inside the building

“Tag”	is a sticker purchased for a specified fee from the City of Nelson or an approved sales outlet and placed on the garbage container prior to pickup to indicate the disposal fee has been paid in advance
“Residential customer”	means the owner or occupier of a property or parcel of land that is zoned residential and has up to 10 residential dwelling units
“Recyclable material”	means any waste which is accepted for recycling by local recycling providers, including the City and the Regional District
“Wildlife Attractant”	means any substance that could be reasonably expected to attract dangerous wildlife including but not limited to food products, garbage, pet food, seed, restaurant grease, game meat, or glass or metal wear or any other item having contained food
“Wildlife resistant Container”	means a refuse container that is sufficient to accommodate normal uses of the property, and is designed to discourage and prevent access by wildlife, and; <ul style="list-style-type: none"> a) has a sturdy cover capable of being completely closed and secured with a latching device; and b) is intended for use other than residential, is made of metal and is self latching.

GENERAL REGULATIONS

2. No person shall store, deposit, pile, place, discard or otherwise allow to accumulate any garbage in or on any property, and in such a manner that may be accessible to wildlife, except as authorized by this by-law.
3. No person shall spill, scatter, deposit, throw, cast, lay, pile, place, discard, accumulate or otherwise cause to be thrown, cast or laid, or disturb or interfere with any garbage or wildlife attractant of any kind or nature on any street, lane, highway, park, beach, boulevard, sidewalk, or other public place or private property within the City.

REGULATIONS SPECIFIC TO WILDLIFE ATTRACTANTS

4. A person must not feed or attempt to feed dangerous wildlife, and must not feed other animals in a manner that is likely to attract wildlife.
5. No person may accumulate, store or collect any wildlife attractants in a manner that they are accessible to dangerous wildlife which may pose a risk to the safety of any person.
6. No person shall fail to take remedial action to avoid contact or conflict with dangerous wildlife after being advised by a designated officer that such action is necessary.
7. Every owner or occupier of real property must ensure that:
 - (a) Any fruit that has fallen from a tree or bush is removed from the ground and properly disposed of at least every three days and, if stored outdoors, only in a wildlife resistant container;
 - (b) Any birdfeeder 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 wildlife attractants; and bird feeders containing bird feed are not used between April 15th and December 1st in each year;
 - (c) Barbecue equipment and tools that remain out of doors must be clean and free of residual food or grease;

- (d) 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
 - (e) Any grease, antifreeze, paint or petroleum product is stored in such a manner that is inaccessible to wildlife.
8. Every person who owns, uses or possesses a wildlife resistant container shall keep it
- (a) In a clean and sanitary condition;
 - (b) Closed and secure, except at the time of deposit of permitted substances, and
 - (c) Maintained in good, workable and wildlife resistant condition at all times.
 - (d) Repaired (if damaged) within 7 days of the damage occurring.
9. No person shall leave garbage or other wildlife attractants outside a wildlife resistant container.

FAILURE TO COMPLY

10. Failure to comply with Sections 2 and 3 herein may result in the City by its own employees or others, cleaning up and removing such garbage and the cost of such cleaning and removal shall be charged to the owner or occupier of the property and where such charges are unpaid on the thirty-first of December in the same year, they shall be added to and form part of the taxes payable in respect of that real property as taxes in arrears and offenders may be publicly identified.

EXEMPTIONS

11. A person is exempt from Sections 2 and 3 for temporary special events if waste receptacles required for the special event are emptied into a wildlife resistant container by 10:00 p.m. on the day of the event.

ENTRY AND INSPECTION

12. A Designated Officer may enter onto any property in accordance with Section 16 of the *Community Charter* to inspect and determine whether this bylaw is being met.
13. Where the Designated 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 designated officer may take steps to prevent, avert, reduce or mitigate the harm or threat or provide assistance.
14. A person must not obstruct or interfere with a Designated Officer, or other person who is assisting the officer, who has entered onto property pursuant to Section 16 of the *Community Charter*.

PLACEMENT AND SPECIFICATIONS FOR GARBAGE CONTAINERS

15. All occupants shall thoroughly drain all garbage or trade waste before placing it in garbage containers and no garbage or trade waste of a semi-liquid consistency shall be collected from any premises whatsoever.
16. Every occupant shall place garbage or trade waste in a suitable container sufficient to prevent the entry of water, rain, flies and animals and the escape of noxious odours therefrom.
17. Every residential customer shall:
- a) Place all garbage:
 - i) in a plastic disposable garbage bag of a size of 66 cm by 97 cm (26" by 38")
 - ii) place the plastic bag in an enclosed garbage container of

- maximum size of 80 litres (18 imperial gallons)
 - iii) the container including its contents shall not exceed 23 kilograms (50 Pounds) in weight;
 - b) For collection purposes, all garbage containers must have their lids closed and must be placed in full view and as close as possible to the edge of the travelled way serving the property, without obstructing traffic;
 - c) Garbage containers or bags shall be readily accessible by 7:00 a.m. on the day designated by the City for garbage collection;
 - d) No person shall place any garbage containers or bags out for collection before 5:00 a.m. of the day as designated by the City for garbage collection;
 - e) All containers must be removed from the lane, roadway, or other collection place by 7:00 p.m. on the day as designated by the City for garbage collection and stored in private property in a safe manner;
 - f) Where the property is served by lane collection, place the garbage containers so that they are accessible from the lane so that the garbage collector will not be required to enter upon the private property, open gates, access garbage structures, climb or descent stairs, or lift containers over fences or vegetation for emptying.
 - g) tie or otherwise seal, to prevent spillage or entry of water, any plastic bags placed for collection.
 - h) place tags as required by Schedule "A" of this by-law, on plastic disposable garbage bags so that they are clearly visible to the garbage collector.
 - i) remove garbage containers from the public street or lane, after emptied.
 - j) it is the responsibility of the owner or occupier of the property to ensure the garbage container is in good condition and that the garbage is contained within the container.

EXCEPTIONS TO GARBAGE COLLECTIONS

- 18. No hazardous waste, tires, grass clippings, leaves, tree prunings, scrap lumber, logs, metal, stone, brick, concrete, car or truck batteries, recyclable oil or oil filters or recyclable corrugated cardboard, shall be set out for collection.

COLLECTION TIMES

- 9. The frequency of garbage collection for residential customers shall be as set by Council policy.
- 10. All property owners, whether residential customers of the City collection system or not, shall ensure that garbage is collected from their property on a regular basis.

PAYMENT OF FEES

- 11. Fees for collection and disposal of garbage shall be as outlined in Schedule AA@ attached to and forming part of this by-law.
- 12. Residential customers, as described in this by-law, are compelled to use the City of Nelson garbage collection and disposal system, unless exempted in writing by the Director of Operations for the City of Nelson.

PENALTIES

- 13. Every person violating any provisions of this by-law shall upon conviction be liable to a fine not exceeding Two Thousand (\$2,000.00) Dollars, plus costs for such violation.
- 14. Upon conviction for a breach of the provisions of this by-law, the Court of jurisdiction, besides imposing a penalty under the Section 13 hereof, may order the offender to carry out the provisions of this by-law within a time to be limited by the order and in default of the defendant carrying out such order, the City by its employees, servants or authorized agents shall forthwith at the expense of the offender take such action as is deemed necessary to carry out the requirements of this by-law and the expense therefore, if unpaid on the Thirty-

First of December in the same year, shall be added to and form part of the taxes payable in respect of that real property as taxes in arrears.

REPEAL

16. **"Waste Management Regulation By-law No. 2575, 1993"** and all amendments thereto is hereby repealed in its entirety.

CITATION

17. This by-law may be cited for all purposes as the **"The Corporation of the City of Nelson Waste Management and Wildlife Attractant Bylaw No. 3198, 2011."**

READ A FIRST TIME the day of , 2011.
READ A SECOND TIME the day of , 2011.
READ A THIRD TIME the day of , 2011.
FINALLY PASSED AND ADOPTED the day of , 2011

Mayor

Corporate Officer

Schedule "A"

RESIDENTIAL CUSTOMER - GARBAGE COLLECTION AND DISPOSAL FEES

The following shall be the rates charged for collection and disposal of residential garbage as described in Section 7 of this Bylaw.

Description		Annual Fee
Single Family Dwelling Units	Collection	\$40.00
	Disposal	Tag each container
Two-Family Dwelling Unit	Collection	\$80.00
	Disposal	Tag each container
Legal secondary suite within a single family dwelling unit	Collection	\$40.00
	Disposal	Tag each container
Multi-Family Dwelling Unit (properties with up to 10 units)	Collection	\$32.00
	Disposal	Tag each container
Residential Tags	Disposal	\$1.50 per tag

APPENDIX 5. EXCERPTS FROM NEW DENVER OFFICIAL COMMUNITY PLAN

VILLAGE OF NEW DENVER OFFICIAL COMMUNITY PLAN BYLAW NO. 611, 2007 [Draft 01/05/2007]

1. VISION

1.1. New Denver is a beautiful, safe, healthy, friendly, and ecologically sound lake-front community. The future vision of New Denver continues this tradition by encouraging development that is sustainable and meets community desires through efficient and effective policies, services and programmes designed for all residents and property owners.

New Denver's future built and natural environment must respect the diverse natural setting and must optimize recreational and economic opportunities for all. The vision shall promote a variety of personal and public opportunities within an **overall context of sustainable ecological balance**.

The vision for the Village of New Denver includes:

- 1.1.1. Safe and affordable housing;
- 1.1.2. Public ownership and public management of the Slocan Lake foreshore and Carpenter Creek riparian area;
- 1.1.3. A commercial core focused on 6th Avenue, and which provides a unique shopping experience for residents and tourists alike;
- 1.1.4. Connections and links to resources, activities and assets outside the Village boundaries;
- 1.1.5. A full range of health, educational, institutional and other social services within the municipal boundary.

2. LAND USE MAP DESIGNATION

2.1. The future use and development of land within the Village of New Denver shall be consistent with the overall pattern of land use depicted on Schedule 'B' – Land Use Designations Map, based on the following land use designations.

- 2.1.1. Single Family Residential
- 2.1.2. Multiple Family Residential
- 2.1.3. Commercial
- 2.1.4. Public and Institutional
- 2.1.5. Parks and Open Space**
- 2.1.6. Environmental Reserve

2.1. The general types of uses encouraged in each land use designation are explained in subsequent sections of this bylaw.

2.1. Council recognizes that some existing land uses do not conform to the designations shown on the Schedule 'B' – Land Use Designations Map.

The intent of Council is not to change the use of this land in the immediate future, but to illustrate the preferred pattern of land use as redevelopment occurs while this Official Community Plan is in force.

3. GENERAL FORM AND CHARACTER OF EXISTING AND FUTURE LAND USE

3.1. Objectives

- 3.1.1. To encourage a land use pattern that provides for the health, safety, convenience and enjoyment of residents and visitors, while striving to recognize existing land use patterns and minimize future land use conflicts.
- 3.1.2. To encourage growth principles as follows:
 - 3.1.2.1. To preserve open spaces, natural beauty and environmentally sensitive areas;
 - 3.1.2.2. To support new development within areas where existing infrastructure has capacity to service the development before developing new infrastructure.
 - 3.1.2.3. To provide opportunities for walking, cycling, kayaking, canoeing and sailing as alternatives to carbon-fuel based transportation;
 - 3.1.2.4. To promote new development or redevelopment that shall strive to be sustainable and sympathetic to the community character.
 - 3.1.2.5. To see that new and redevelopment utilizes green technology wherever possible.
 - 3.1.2.6. To encourage citizens to be active in community life and decision-making.
 - 3.1.2.7. To encourage land use that promotes local food security.
- 3.1.3. To encourage bear awareness activities for all citizens.
- 3.1.4. To encourage all public agencies and the public to minimize interface fire hazard.
- 3.1.5. To encourage the development of a comprehensive management plan for Slocan Lake.

3.2. Policies

- 3.2.4. Council's policy is to recognize the location of existing public and institutional uses.
- 3.2.5. Council's policy is to maintain parks and open space along the Slocan Lake waterfront, along Carpenter Creek, and in Centennial Park.
- 3.2.8. Council's policy is to provide information and educational opportunities for bear awareness to New Denver and surroundings.

4. RESIDENTIAL

- 4.2.11. Council's policy is to improve the appearance of dwellings by appropriately enforcing the Village's unsightly premises bylaw.

5. COMMERCIAL

- 5.2.11. Council's policy is to seek foreshore rights to waters within the Village boundaries. The purpose is to manage commercial and recreational uses along the foreshore by preserving heritage values, quiet and the natural setting of the foreshore.

8. PARKS AND OPEN SPACE

8.1. Objectives

- 8.1.1. To retain and improve existing parkland, open space and trails to serve local residents and tourists.
- 8.1.2. To promote a regional strategy with the Regional District and Village of Silverton to develop and maintain regional parks and trails that encourage active living for residents and tourists alike. Such examples include a trail connection along Slocan Lake to Silverton, connection to the Rosebery – Three Forks Rails to Trail Park.

8.2. Policies

- 8.2.1. Council's policy is that playing fields, beaches, playground, public parks, trails, dikes, waterfront area, creekfront areas, as well as the existing public campground in Centennial Park,

shall be designated as parks and open space as shown on Schedule 'B' – Land Use Designations Map.

- 8.2.2. Council's policy is to continue improving facilities in Centennial Park, including the campground.
- 8.2.3. Council's policy is to preserve the waterfront and creekfront area for park and public use.
- 8.2.4. Council's policy is to establish, improve and maintain a system of trails as set out on Schedule 'C' – Transportation & Trails Map, including trails in the following areas:
 - Along Centennial Park waterfront, from the Slocan Community Health Centre to Carpenter Creek;
 - From Carpenter Creek along the waterfront to Greer park and on to Bigelow Bay;
 - Steps from trail to Bellevue Street;
 - Along the dike on the south side of Carpenter Creek, from Slocan Lake across the Highway to the trail up Carpenter Creek;
 - Along the dike on the north side of Carpenter Creek, from the lake, across the Highway and connecting with 6th Street.
- 8.2.5. Council's policy is to build a footbridge across Carpenter Creek provided a significant co-funding programme becomes available.
- 8.2.6. Council's policy is to support the establishment of a trail from New Denver to Silverton along Slocan Lake.
- 8.2.7. Council's policy is to continue to provide informative signs along the trail system.
- 8.2.8. Council's policy is to develop a plan for providing interpretive facilities, improved park facilities, and public amenities along the waterfront and creekfront areas.
- 8.2.9. Council's policy is to identify improvements that can be made to the flood protection dikes without compromising the dike's function.
- 8.2.10. Council's policy is to encourage trail linkage between the trails within the municipality and the Rosebery to Three Forks Rails to Trails conversion.

APPENDIX 6. FALL 2010 LETTER TO RDCK FROM BEAR AWARE REQUESTING A BYLAW INITIATIVE



Nelson, Area E and F Bear Aware: Box 992, Nelson, B.C. V1L 6A5

Phone: 250-825-9585; e-mail: bearaware@netidea.com

To the Directors of the Regional District of the Central Kootenay:

Bear Aware would like to bring a delegation before the Board of Directors meeting of July 21st to request that the RDCK consider initiating a wildlife attractant bylaw. This delegation will include members of the Human-Bear Conflicts Resolution Committee, including biologists, the Conservation Officer, Nelson Chief of police, Regional Biologist from the MOE, and other local citizens, and would represent the five Bear Aware and bear awareness programs in the RDCK.

Human-bear conflict across the province results in about 600 bears being destroyed per year. There were 1200 calls in 2010 about black bears and 94 calls about grizzly bears to the Conservation Officer Service within the RDCK. This does not include calls to local police, the RCMP, and local government. Most of this conflict is due to poor management of bear attractants. The major attractants are garbage and fruit, but also include compost, bird feeders, pet food, and uncleaned barbecues.

Various communities within the RDCK already have or are considering such a wildlife attractant bylaw. These bylaws give designated officers and residents the means to address the poor management of bear attractants by residents who refuse to clean up outside such a process. Rural residents within the RDCK deserve such a tool as well.

I have attached the wildlife attractant bylaw from Kaslo that is currently in effect as an example of a bylaw that could be used as a model for a similar bylaw in the RDCK. Nelson has given three readings to a similar bylaw that will be considered for passing in the near future.

I have cc'd this request to all Bear Aware and bear awareness programs in the RDCK: Gillian Sanders (North Kootenay Lake Bear Smart), Betty Offin (Castlegar and Area Bear Aware), Gillian Cooper and Katia Plotnikoff (Transborder Grizzly Bear Project), and Daniel Sherrod (Valhalla Wilderness Society), and to members of the Human-Bear Conflict Solutions Committee (Jason Hawkes, Conservation Officer, Nelson Chief of Police Wayne Holland, Garth Mowat, MOE Regional Biologist, Rachel Holt Ph.D., Grant MacHutcheon, Fiona Galbraith, Matt Nuttall, and Colleen Matte).

I look forward to speaking to you about this proposed wildlife attractant bylaw.

Yours truly,

A handwritten signature in blue ink, appearing to read "Joanne A. Siderius".

Joanne A. Siderius, PhD.,
Bear Aware Provincial Supervisor and
Nelson Area E and F Bear Aware
Community Coordinator

APPENDIX 7. EXCERPTS FROM THE BC WILDLIFE ACT AS AMENDED IN 2011

Wildlife Act 2012 Sections 33.1 and 88.1

"dangerous wildlife" means (a) bear, cougar, coyote or wolf

Attracting dangerous wildlife

33.1 (1) A person must not

- (a) intentionally feed or attempt to feed dangerous wildlife, or
 - (b) provide, leave or place an attractant in, on or about any land or premises with the intent of attracting dangerous wildlife.
- (2) A person must not leave or place an attractant in, on or about any land or premises where there are or where there are likely to be people, in a manner in which the attractant could
- (a) attract dangerous wildlife to the land or premises, and
 - (b) be accessible to dangerous wildlife.
- (3) Subject to subsections (5) and (6), a person who contravenes subsection (1) or (2) commits an offence.
- (4) If an offence under this section continues for more than one day, separate fines, each not exceeding the maximum fine for that offence, may be imposed for each day the offence continues.
- (5) A person does not contravene subsection (1) (b) or (2) by providing, leaving or placing an attractant in, on or about any land or premises for the purposes of hunting or trapping wildlife in accordance with all other applicable provisions of this Act and the regulations.
- (6) A person does not contravene subsection (2)
- (a) by conducting a farm operation, as defined in section 1 of the Farm Practices Protection (Right to Farm) Act, if the person
 - (i) conducts the farm operation on, in or over land anywhere in British Columbia, and
 - (ii) meets the requirements set out in section 2 (2) (a) and (c) of that Act, or
 - (b) by operating a facility for the disposal of waste, that is operated in accordance with the Environmental Management Act by a municipality, as defined in section 1 (1) of that Act.
- (7) For the purposes of this section, "leave", in relation to a person who is an owner, tenant or occupant of land or premises, includes to fail to remove an attractant from or to allow an attractant to remain in, on or about that land or those premises.

Dangerous wildlife protection order

88.1 (1) In this section, "private dwelling" means a structure used solely as a private residence or a residential accommodation within any other structure.

- (2) If a conservation officer believes on reasonable grounds that dangerous wildlife is or may be attracted to any land or premises other than a private dwelling, the conservation officer may, without a warrant, enter and search the land or premises.
- (3) If a conservation officer believes on reasonable grounds that the existence or location of an attractant in, on or about any land or premises, other than in a private dwelling, poses a risk to the safety of any person because the attractant is attracting or could attract dangerous wildlife to the land or premises, the conservation officer may issue a dangerous wildlife protection order directing an owner, occupier or person in charge of that land or premises to contain, move or remove the attractant within a reasonable period of time specified in the order.
- (4) Despite subsection (3), a dangerous wildlife protection order may not be made in respect of any of the following:

- (a) a farm operation, as defined in section 1 of the Farm Practices Protection (Right to Farm) Act, that
 - (i) is conducted on, in or over land anywhere in British Columbia, and
 - (ii) meets the requirements set out in section 2 (2) (a) and (c) of that Act;
- (b) a person who is engaging in trapping in accordance with all other applicable provisions of this Act and the regulations;
- (c) a facility for the disposal of waste, that is operated in accordance with the Environmental Management Act by a municipality, as defined in section 1 (1) of that Act.
- (5) A person to whom an order under subsection (3) is expressed to apply must comply with the order within the period of time specified in that order.
- (6) For the purpose of ensuring that an order issued under subsection (3) is being, or has been, complied with, a conservation officer may, without a warrant, enter and search the land or premises other than a private dwelling that is affected by the order.
- (7) A person commits an offence if the person neglects or refuses to comply with an order in accordance with subsection (5).

Entering premises

- 89 (1) For the purpose of ensuring that this Act and the regulations are being complied with, an officer may enter and inspect any premises or enclosure in which live wildlife or live fish is kept but, at the request of the owner or occupier, the officer must produce proof of identity.
- (2) Despite the Trespass Act, an officer exercising duties under this Act may enter any land, whether enclosed or not but, at the request of the owner or occupier of the land, the officer must produce proof of identity.