Bear Hazard Assessment Report
Port Alberni, British Columbia

Bear Smart Community Program, Phase I

November 2007

Prepared for
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I would like to acknowledge the expertise and advice contained in the report: *"Bear Smart" Community Program: Background Report*, by Helen Davis, Debbie Wellwood, and Lana Ciarniello; and in the report *Hazard Assessment of Bear-Human Conflict in Stewart, British Columbia—Phase 1*, by Debbie Wellwood, RPBio, Raven Ecological Services, Smithers, BC. As well, the MSc Thesis of Helen Davis, *Characteristics and Selection of Winter Dens by Black Bears in Coastal British Columbia*, 1996, also informed this report. Ms. Davis' thesis offered considerable insight into the behaviours and habitat requirements of black bears on Vancouver Island, which are a subspecies of North American black bears distinct from the subspecies found on mainland BC.

Bear biologist Wayne McCrory (RPBio), of McCrory Wildlife Services, New Denver, BC, continues to mentor my work in this field. For his advice, assistance, and moral support, I am truly grateful.

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Maggie Paquet, Port Alberni, BC

Cover photos: View up Argyle Street from Harbour Quay, Credit: M Paquet. Inset: Crepuscular (at dusk or early dawn) behaviour of local bear, Credit: Emma Colyn.

Table of Contents

SUMMARY

The City of Port Alberni expressed interest in reducing conflicts between bears and people in the city, and to increasing safety for residents. The city commissioned this bear hazard assessment to determine how to achieve that goal. This report represents the city's first step in becoming a Bear Smart Community and is the foundation for a future Bear-People Conflict Management Plan for Port Alberni.

The report describes the province's Bear Smart Community Program, how this assessment was conducted, the ecosystem conditions in which the city is situated that predisposes it to conflicts between people and bears, the number and types of bear-people conflicts over various annual periods, and explains the need for an ongoing public education and bear-human conflict monitoring program. The ecology and behaviour of black bears are briefly described so readers can understand some of the basic reasons people and bears come into conflict with each other in this study area.

Port Alberni is located in the central part of Vancouver Island at the head of Alberni Inlet, a roughly 60-km fjord trending northerly from the Pacific Ocean. The city is bordered on the west by the Inlet and the Somass River, and on the north, east, and south by forests and mountains. It is dissected by at least four fish-bearing creeks (Ship, Dry, Roger, and Kitsuksis) and smaller tributary creeks (Owatchet, Treehouse, Weaver, and Lugrin), some of which are fish-bearing at various times of year.

The area has been inhabited by First Nations people for thousands of years, and by European, then Asian, settlers for the past about 150 years. A natural deep-sea port and dense coastal forests, along with once-rich fisheries and marine resources, historically provided ample habitats for both people and wildlife, including deer, elk, cougars, and black bears.

Juxtaposed in an ecological transition zone between the wet Pacific coast and the dry conditions along the Strait of Georgia, and couched in a valley among the Inland Vancouver Island mountains along with the Somass-Stamp river system, Sproat and Great Central lakes, and the marine environment of the Inlet, the Alberni Valley is an exceptionally diverse ecosystem that contains prime black bear habitat. As well as the creeks, there are ravines, roads, and hydro and railroad rights-of-way that provide natural and man-made travel routes to enable access for bears into and throughout the city. When the residential, industrial, recreational, and commercial uses of the area are superimposed onto the natural habitats, there is high potential for conflicts between people and bears.

Like most areas in southwestern British Columbia, the Alberni region is currently experiencing extensive residential development and industrial logging activities. Together, these are having effects on regional wildlife populations and their habitats. In recent years, bears have moved into settled areas in higher numbers than in the past. A city resident[1] stated that she has lived at the interface between the city and the forest all her life and rarely saw a bear. She said it's only been in the last half-dozen years that she now sees bears fairly often and has noticed problems with them getting into people's garbage and fruit trees. Other long-time residents corroborate this comment.

The increasing amounts of wildlife habitat loss and alienation due to urban and industrial development, as well as increased disturbance from recreational and tourism activities throughout the entire region has created an expanded interface between settled and previously wild areas and is resulting in an increased number of interactions between people and black bears.

In order to determine what actions the city needs to undertake to reduce bear-people conflicts, a thorough review of the province's bear complaint database (which details complaints from city residents to the Wildlife Call Centre in Victoria) was conducted. This research revealed that for the size of the city, Port Alberni residents report a high number of complaints. The years 2004-2005 saw a dramatic increase in these numbers, and a comparatively high number of bears were translocated or destroyed, particularly in 2005 and 2006. So far in 2007, this trend has continued.

[1] Rita LaJeunesse, pers. comm., Aug 2007.

The report describes the city's waste management system and bylaws regarding garbage and the landfill (which are shared with the Alberni-Clayoquot Regional District) in relation to how they may or may not help to restrict access to garbage and other attractants by bears. The regional district is currently engaged in a review of solid waste management; new bylaws and equipment are anticipated to be in place in the near future that will significantly reduce access to garbage by bears.

The report discusses the potential risks and hazards at schools and parks in the city. It presents a review of the city's Official Community Plan and development policies in the context of how these may or may not enable community members and local businesses to be Bear Smart. Finally, the report lists a number of recommendations on how the City of Port Alberni can reduce conflicts between people and black bears, reduce property damage, increase safety for city residents, and become a Bear Smart community.

In 2004, Alberni area residents made 410 calls to the provincial Wildlife Call Centre. In 2005 and 2006, they made 505 and 381 calls, respectively. So far in 2007, over 330 calls have been made by mid-October, with the prospect that the final number for 2007 will be greater than in 2006. Considering that the number of calls represents only about 25 to 30 percent of the actual interactions people have with black bears, these numbers indicate there are well over 1,000 incidents in any given year that are not reported. This means that city residents experience a lot of "unease" about bears. In 2006, Conservation Officers had to destroy 12 black bears. For all years, the majority of bears were destroyed or moved because they were attracted to people's homes or commercial areas primarily by garbage, and, to a lesser extent, by fruit trees and gardens (mostly grapes).[2] In addition to bears destroyed by the COs, some residents, mostly in rural areas, shot bears they felt were a threat to their safety, pets, or livestock. There was also a disturbingly high number of reports of injured bears and orphaned cubs sighted (50 reports for 2004-2006).

Currently, Port Alberni has no volunteer group focused on bear-people conflicts or ongoing monitoring activities (as there are in Whistler, Squamish, Lions Bay, the North Shore, and many other locations in the province). This is not to say, however, that there is no public interest in the issue. The writer has received numerous phone calls and emails from city residents and local media to request information and advice about "problems" with bears. As an indication of the growing concern about bears, in 2007, the regional district allocated funds to the BC Conservation Corps to enable Crystal McMillan, Bear Aware Program Supervisor for Vancouver Island & Lower Mainland, to extend delivery of the Bear Aware Program to Port Alberni. Details on this are described in section 3.6.

Using information from the CO Service database, the interactions between bears and city residents were mapped. Locations assessed include school grounds; city parks; residential, commercial, and industrial areas; and known bear movement corridors (largely along streams, trails, and ravines). The types of complaints reported include property damage, strewing garbage around, damage to fruit trees and gardens, getting into compost, and just plain scaring people so they don't feel safe.

Analysing this complaint data revealed that the primary attractant—by far, and in every neighbourhood and throughout every season—was garbage, both residential and commercial. The next most common attractants were found to be fruit trees, gardens and composts, birdfeeders, and, to a far lesser extent than expected, wild berries (e.g., Armenian blackberry and salmonberry). A significant percentage of property damage was reported (7% to 12% of all reports in each year; mostly to fences, sheds, and loss of livestock). Generally, people expressed strong concerns for their own and their children's safety. Misinterpretation of bear behaviour (interpreting it as aggressive rather than more correctly as defensive) was common. All this shows the need for wider understanding of bears—their ecology and behaviours—in order to increase people's understanding of why they are having conflicts with bears, to increase their tolerance for bears and their feeling of safety, and to significantly reduce property damage and attracting bears to residential and commercial areas within the city.

[2] MOE, CO Service data. Information on translocation and destruction of bears was severely limited (scant) over the study period. There may have been more bears moved and destroyed than available records indicate.

School staff throughout the city showed a good general knowledge of the relationship between garbage and the occurrence of bears on school grounds, although there is room for improvement at some of them when it comes to putting this knowledge into practice.

City parks were assessed and assigned hazard ratings, as were randomly sampled residential, commercial, and industrial sites. Nearby national, provincial, and regional parks and trails, while not assessed, are described in the context of presence of bear habitat and safety considerations.

Reviewing a local government's vision statements for its parks and recreation facilities, its bylaws, its strategic and official community plans, and development or zoning policies is an important aspect of all bear hazard assessments. What is required is evidence that these show an awareness of and consideration for the behaviours and ecological requirements of bears and the need to maintain safe distances between people and bear use areas. Neither Port Alberni's Strategic Plan and OCP, nor any of its vision statements, bylaws, or development/zoning policy statements currently contain language about restricting bears' access to non-natural attractants (including garbage and landscape plantings), environmental considerations specifically relevant to bears, the ways bears use habitats, or how development practices can be designed to minimise the potential for bear-people conflicts. The regional district's proposed Solid Waste Management Plan does recognise this need, however, and when it is implemented, will cover the city. What remains to be done is to include some specific Bear Smart language and practices in the city's bylaws, OCP, and other planning documents and policies.

The Ahahswinis Reserve of the Hupacasath First Nation, while a separate jurisdiction, is within the boundary of Port Alberni. With permission, this area is included in this bear hazard assessment.

The recommendations listed at the end of this report are intended to assist the city in reducing bear-people conflicts over time. Phasing-in the recommendations over a five-year period allows for better understanding and compliance by the public, helps keep costs affordable, and allows for modifications to suit local conditions.

Summary Recommendations

A full list of recommendations is given in section 4. The following are those the author feels should be instituted as soon as possible in order to effect an immediate reduction of bear-people conflicts.

Amend the waste management bylaw so residential garbage bins can only be put out on the morning of collection day, and require these bins to be bear-proof. Enforce the bylaw.

Conduct a detailed habitat assessment specifically to inform the OCP and other development plans in order to minimise the potential to result in additional conflicts with bears in new development areas.

Amend the OCP to include language indicating the City's intention to consider bear habitat and travel corridors in development permits to help minimise the potential for bear-people conflicts.

Install bear-proof garbage bins in public places, including in city parks and at minimal, but strategic, locations along walkways and trails.

Enact bylaws that require housing complexes, schools, institutions, and businesses (e.g., delis, restaurants, grocery stores) to use only bear-proof garbage bins and dumpsters, or to place existing bins and dumpsters (and grease bins) inside secure bear-proof enclosures.

Enact bylaws that require all new housing, commercial, and industrial developments within the city to "build in" bear-proof waste management practices and equipment at the time of development.

Enact bylaws that require industrial businesses (e.g., fish plants, sawmills, the paper mill) to install and maintain bear-proof fencing around their dumpsters, and perimeters where necessary, including bear-proof gates that are kept securely closed.

Increase informational signage about bears in parks and trails, including temporary signage when bears have been sighted in a particular location.

Engage in public consultation to find effective ways to prevent conflicts between bears and people.

Establish a dedicated ongoing public education and bear-people conflict monitoring program that includes direct liaison with the area's Conservation Officers and RCMP.

Harmonise Bear Smart practices with adjacent ACRD electoral areas so efforts in Port Alberni are not defeated by lack of effort outside its immediate boundary.

Commission a Bear-People Conflict Management Plan (according to the requirements stated in the BC Bear Smart Community Program) for staged implementation over a 3- to 5-year period.

By agreement, the deliverables of this Bear Hazard Assessment are:

1. Local and regional context maps that show habitats potentially suitable for use by bears, and that indicate likely bear movement corridors in and surrounding Port Alberni (e.g., rivers and creeks).
2. City maps that identify locations of bear-people conflicts based on Wildlife Occurrence Reports from the CO Service. These will indicate the neighbourhoods that pose varying degrees of risk for conflicts with bears, and are accompanied (within the body of the report) with an analysis of the data and a discussion of the patterns of bear-human interactions in Port Alberni.
3. Discussion of current and potential bear hazards at high human use areas (parks, schools, etc.).
4. Reviews of public education activities to reduce bear-human conflicts, bylaws governing waste management practices, and the City's Official Community Plan and development policies.
5. Recommendations for reducing the potential for bear-human interactions and increasing the safety for people and property throughout the city. These recommendations, along with the information contained in the report, will form the basis of a Bear-People Conflict Management Plan for the City of Port Alberni, which is Phase II of the Bear Smart Community Program.

This report fulfils the BC Environment ministry's requirements for Phase I of the Bear Smart Community Program and conforms to the ministry's standards for future achievement of Bear Smart Community status for the City of Port Alberni, BC. Copies have been provided to the following:

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Data was collected under a research agreement between the writer and the BC Ministry of Environment. All personal information (including names, specific addresses, contact information) was removed from individual complaint reports and the locations were generalised to the 100-block of a street. Upon finalising the report, all data were deleted from the writer's computer and paper copies were shredded.

Introduction to the Bear Smart Program

Bear Smart is a community-based program announced in 2002[3] to reduce conflicts between people and bears, and to increase safety for people. It is sponsored by a partnership of the BC Water, Land & Air Protection (now Environment) ministry, Union of BC Municipalities, and BC Conservation Foundation.

Every year in British Columbia over 1000 black bears and 50 grizzly bears are destroyed because of real and perceived threats to people and property. As our province becomes more settled, and with increasing and more widespread access to backcountry and wilderness areas, these numbers continue to increase. If we do nothing, we cannot achieve sustainable management of wildlife.

At one time, we assumed bear-human conflicts occurred because of "problem" bears; that the bears themselves were responsible. Today, we know that conflicts are primarily due to our own behaviours. We've learned that "the natural ecology of the bear plays only a small role in the development of problems."[4] The larger role is played by people and, therefore, the solution needs to come from us.

In past years, government policy for managing bear-human conflict has been to trap and move a "problem" bear to another area, or simply to destroy it. This is a reactive approach because it attempts to manage a problem after it has developed and doesn't serve either bears or the public very effectively. It costs over a million dollars a year for conservation officers to respond to the thousands of calls, takes time away from their many other responsibilities, and often results in needless destruction of bears. In recent years, public education has been recognised as a more effective means of reducing conflicts between bears and people. New policy acknowledges the need for a proactive approach.

The Bear Smart Community program is proactive because it seeks to prevent problems. It guides communities toward a safer and more sustainable way for people and bears to co-exist. It does this through a variety of activities, principally by focusing on public education about bears and on how people can prevent conflicts with bears, largely by removing non-natural attractants from communities. It is also an incentive for municipalities to adopt more sustainable waste management practices.

CRITERIA FOR COMMUNITIES

The government program requires communities to meet the following six criteria in order to be designated Bear Smart:

1. Prepare a bear hazard assessment of the community and surrounding area.
2. Prepare a management plan based on the bear hazards and land-use conflicts identified in #1.
3. Revise planning and decision-making documents to be consistent with the management plan.
4. Implement a continuing education program directed at all sectors of the community.
5. Develop and maintain a bear-proof municipal solid waste management system.
6. Implement Bear Smart bylaws that prohibit the provision of food to bears as a result of intent, neglect, or irresponsible management of attractants.

A TWO-PHASE PROCESS

Achieving Bear Smart Community status is a two-phase process. In Phase I, the sources of potential bear-human conflicts in the community are identified and mapped. This involves identifying natural and non-natural attractants and showing where in the community they occur; identifying locations in the community where there is potential for conflicts, mapping those, and assigning a risk level.

[3] See ministry Press Release and Backgrounder dated June 24, 2002 in Appendix 1.

[4] Davis, H.; D. Wellwood; and L. Ciarniello. 2002. *"Bear Smart" Community Program: Background Report*. BC Ministry of Water, Land and Air Protection. Victoria. p. 1.

Bear Aware Coordinator in Coquitlam delivering a public education program in a city park. City employees were also present to discuss waste management bylaws and programs. M. Paquet photo

Phase I also requires that communities be actively engaged in educating the public about the causes of bear-human conflicts and how to reduce their numbers. The Bear Smart Community program is designed to be adaptive so that new management options or improvements can be incorporated into each step. Criteria for each step in the process are provided so that communities have clearly defined and achievable targets.

The background report for the Bear Smart Communities program,[5] which is basically a handbook for it, explains the requirements for Bear Smart Community status. Phase I, it says, is the Problem Analysis phase and has these seven components:

1. conduct preliminary bear hazard assessment
2. review bear-human education programs
3. design bear-human conflict monitoring system
4. review waste management system
5. review waste management bylaw
6. create a green space management strategy
7. review community planning strategy

Phase II focuses on the Bear-Human Conflict Management Plan and has these six components:

1. implement bear-human conflict monitoring system
2. implement education program
3. implement bear-proof waste management system
4. implement and enforce Bear Smart bylaws
5. revise the Official Community Plan and Regional Growth Strategy to be consistent with the Bear-Human Conflict Management Plan
6. implement green space management program

This report documents the current conditions and activities being undertaken in Port Alberni in relation to Phase I of the Bear Smart Community program.

[5] *Ibid*. Davis, et al. p. 16.

GOALS OF THE PORT ALBERNI BEAR HAZARD ASSESSMENT

A bear hazard assessment assesses bear habitat and bear-people complaints in a given geographic area, analyses the information, then proposes recommendations to enable communities to become "Bear Smart." The primary objectives of the Port Alberni Bear Hazard Assessment are to reduce the number of bear-people conflicts in the city and support the city's application for Bear Smart Community status. This report shows how Port Alberni can meet the criteria for Phase I of the program. It details activities and conditions within the city that contribute to the preventable causes of bear-human conflict and that indicate measures the city can adopt in order to reduce conflicts. The ultimate goals are to ensure the safety of people and protection of property, and to reduce the number of bears that are destroyed.

This report contains the following information:

1. Discussion of information relating to natural and non-natural attractants in and near the city, and that identifies the following:
    - general bear habitat suitability within and adjacent to the city, known movements of bears in the area (including travel corridors), and visibility and other sensory issues;
    - human-use areas that have high risk for conflict with bears, such as schools, playgrounds, residential areas located in or adjacent to bear habitat, parks and trails that pass through higher-quality bear habitats (e.g., creeks, berry patches), and residential, commercial, and industrial areas along the waterfront at the top of the Inlet (or the Somass estuary);
    - major features that may influence the travel patterns of bears, including riparian areas, roads, community edges, hydro or railway rights-of-way, and security cover/green space;
    - residential and commercial garbage management, including in parks and public places;
    - regional issues that may affect the success of a Port Alberni Bear Smart Community program, for example, the connectivity between the city and the forests and rural areas surrounding it.

2. A review of patterns of bear-human conflicts based on discussions with the district Conservation Officer, and on data from the Problem Wildlife Occurrence Reports recorded at the Call Centre for the Conservation Officer Service. This includes a discussion of:
    - sites, areas, and trails that are considered high risk for bear-human conflict,
    - practices that are considered high risk for bear-human conflict, and
    - potential data limitations

In their background report, Davis et al.[6] state that to understand how "problem bears" develop, we need to know the biological needs of bears, their behaviours, and how they learn. In other words, the public needs to learn more about bear ecology if it is to learn how to reduce the causes of bear-human conflict and, in the process, increase the degree of safety for themselves and their property, and for the bears themselves. Therefore, this report also contains a section on bear ecology and behaviours, and on the importance of bears to the health of coastal salmon-forest ecosystems.

This report will show how the city of Port Alberni can help its residents reduce the risks associated with living in "bear country," and at the same time preserve the natural environment in which the city is situated, and which is considered one of its major assets.

[6] *Ibid*. p. 4.

BEAR-HUMAN INTERACTION DEFINITIONS[7]

The following definitions apply to terms used to describe bear-human interactions:

Aggressive behaviour	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.[8]
Bear-human interaction	Any of the various activities and their effects involving bears and humans, including sightings, encounters, and incidents.
Displacement	Encounters where the bear is displaced and runs or walks away.
Encounter	When a bear is aware of human presence, regardless of whether or not the humans are aware of the bear; the bear may ignore people (because they are habituated to people), or they 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).
Human-habituation	The reduction or absence of an avoidance or fear response that a bear can learn from neutral inter-actions with people and that are not threatening, painful, or injurious (to the bear). Bears can be human-habituated without being food-conditioned.
Incident or **conflict**	The most serious bear-human interaction. An interaction is considered an incident or conflict when any of the following occur: a) physical contact between a person and a bear b) damage to or loss of property or food c) high intensity charge by a bear toward people d) people have to take extreme evasive action in response to a bear e) people use a deterrent on a bear f) a bear is translocated or destroyed
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.

[7] Most of these definitions come from the following publication: Wellwood, Debbie. 2001. *Hazard Assessment of Bear-Human Conflict in Stewart, British Columbia—Phase 1*, Raven Ecological Services, Smithers, BC; p. 7; others have been adapted from general research and information from Wayne McCrory, RPBio.

[8] 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.

1.0 STUDY AREA

1.1 Port Alberni Background and History [9] [10] [11]

The City of Port Alberni (2,185 ha) is located in the central area of Vancouver Island at the head of Alberni Inlet (a roughly 60-km long fjord trending northerly from the Pacific Ocean at Barkley Sound), and on the east side of the Somass River and its estuary. The region is named after Don Pedro de Alberni, a Spanish officer who commanded a fort on Vancouver Island's west coast in the 1790s. The city was incorporated in 1912 with the arrival of the Esquimalt & Nanaimo Railway. In 1967, Port Alberni amalgamated with the adjacent town of Alberni (to the north). In addition to the major influence of the Somass-Stamp River system, the city is dissected by major east-west trending creeks (evident in Figure 1 below) running from the heights of the Beaufort Range and Mt. Arrowsmith to the estuary. Today, the city's population is about 18,000.

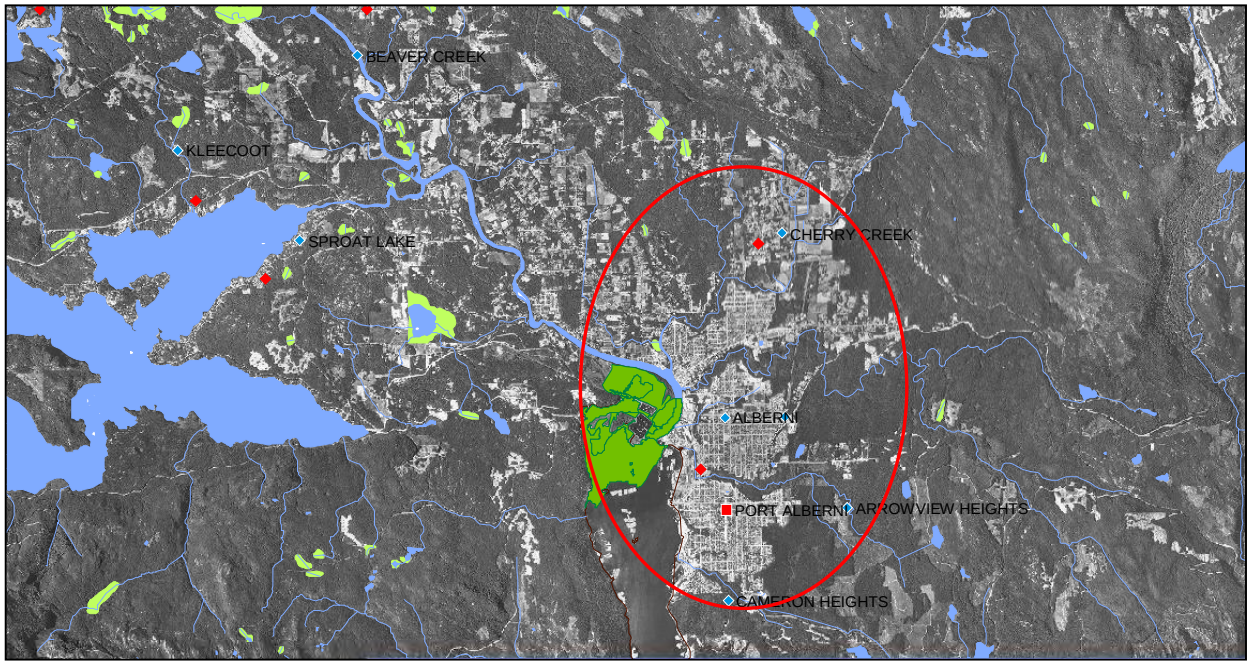


Figure 1. Area map showing location of Port Alberni (the grey area inside the red ellipsis). Source: http://www.shim.bc.ca/

Port Alberni is situated in the Alberni-Clayoquot Regional District (ACRD), a geographically diverse area that encompasses 897,000 hectares (see map on next page). The area contains the traditional territories of ten of the 14 Nuu-chah-nulth nations (including two adjacent to the City of Port Alberni), a number of provincial and national parks, a national historic site, and a number of remote backcountry trails. Covered with mountains, large and small lakes, numerous salmon-bearing rivers and creeks, as well as important and large marine areas, the habitats throughout the ACRD can be considered to contain moderate to prime black bear habitats. The regional district has overall responsibility for waste management in the region, and manages two landfills. The city of Port Alberni, however, conducts residential garbage collection and, together with the regional district, is developing a recycling program. Recycling depots are located in the city and at the landfill. Currently, the ACRD is undergoing a major overhaul of its Solid Waste Management Plan (see sections 3.7 and 3.8, and Appendixes 11-14). Commercial and industrial garbage pickup is done under contracts with private companies.

[9] http://en.wikipedia.org/wiki/Port_Alberni,_British_Columbia

[10] Alberni Valley Museum. 1984. *Port Alberni's Industrial Waterfront Heritage: A Survey*.

[11] http://portalbernimyhome.bc.ca/history.html

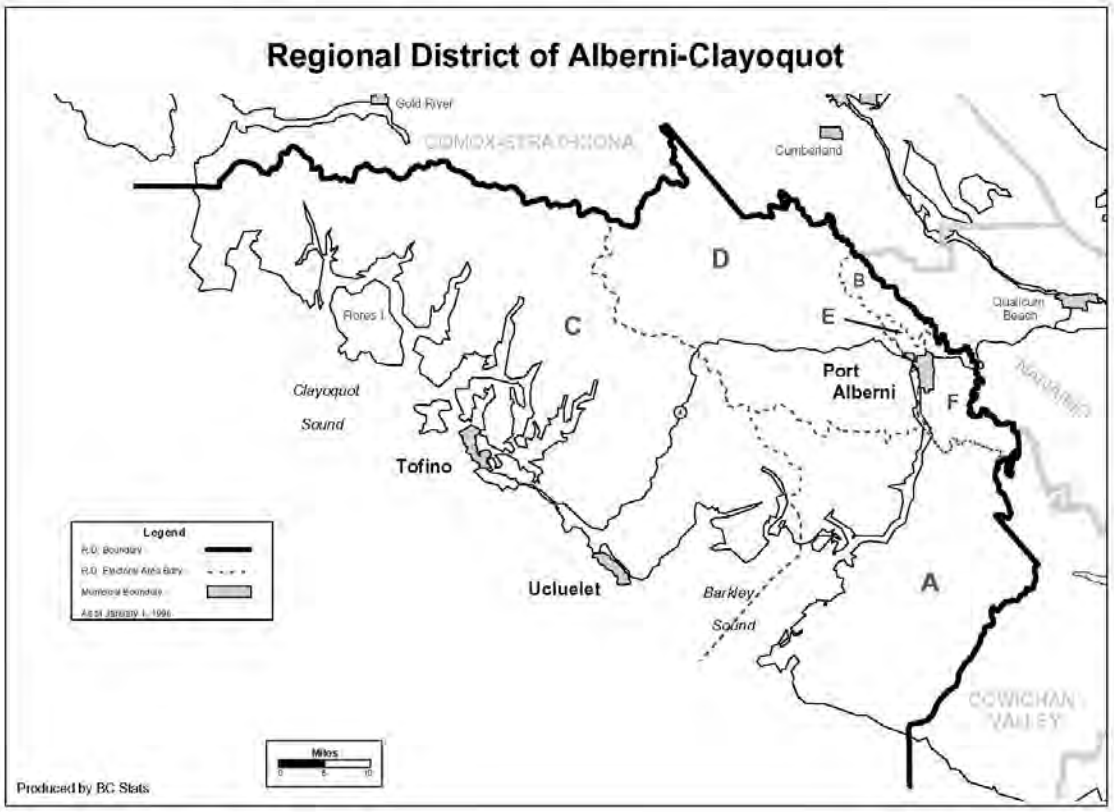


Figure 2. Map of Alberni-Clayoquot Regional District. Source: ACRD, courtesy of Lori Wilson, Mapping Technician

For thousands of years, the only inhabitants were of the Nuu-chah-nulth aboriginal culture, a rich culture that reflects the region's ecological diversity and abundance. The first Europeans arrived in the mid-1800s. In 1860, Edward Stamp built the first sawmill in BC. Within three years, all the trees within three miles of the mill had been cut and the town abandoned. But Europeans were here to stay. By the 1880s, farmers had settled at Beaver Creek, McCoy Lake, Cherry Creek, and elsewhere in the Somass River valley. A paper mill was built on the Somass River in 1892. By 1896, the harbour was reoccupied due to a small gold rush near China Creek. By 1912, the E & N Railway had come to town, the Canadian National Railway was on its way, and mills were making lumber and shingles. Canneries, herring salteries, wharves and docks, and blacksmiths followed.[12]

Falls on Kitsuksis Creek show high tourism potential on area trails. Photo: H. Carlson

By the mid-20th century, Port Alberni had become an industrial town focused on logging and wood and paper products, but also fishing and fish-processing, a deep sea port, gold mining,[13] and was a centre for government and other services in central Vancouver Island. Today, Port Alberni's geographical position as the "Gateway to the Pacific Rim" is giving it the impetus to reinvent itself as an all-season tourism destination for cultural and outdoor recreation.

[12] Alberni Valley Museum. 1984. *Ibid*.

[13] http://www.empr.gov.bc.ca/DL/ARISReports/27691.pdf

1.2 Ecological Description of Study Area

Ecologically, the Alberni region is situated in a transition zone that contains characteristics of two ecoprovinces: Coast and Mountains Ecoprovince and the Georgian Depression Ecoprovince. Transition zones are generally more ecologically diverse than surrounding areas. On a more local scale, Port Alberni is also in a transition zone with characteristics of the ecoregions and ecosections described below. These descriptions are found in the Ecoregion Classification System.[14] Vegetation in the Port Alberni area falls primarily into variations within the Coastal Western Hemlock and Mountain Hemlock biogeoclimatic zones. The Alpine Tundra biogeoclimatic zone occurs at the very top of the highest mountains surrounding the Alberni Valley (e.g., Mt. Arrowsmith, Mt. Klitsa).[15]

1.2.1 Coast and Mountains Ecoprovince—Western Vancouver Island Ecoregion, Windward Island Mountains Ecosection[16]

The Coast and Mountains Ecoprovince extends from coastal Alaska to coastal Oregon. In BC, it includes the windward side of the Coast Mountains and Vancouver Island. It consists of the large coastal mountains, a broad coastal trough and associated lowlands, islands, and continental shelf, as well as the insular mountains on Vancouver Island and the Queen Charlotte Islands archipelago. It features a moist climate influenced largely by frontal systems coming in from the Pacific Ocean.

The Western Vancouver Island Ecoregion includes the western lowlands, islands, and mountains of Vancouver Island. The Windward Island Mountains Ecosection is the area of lowlands, islands, and mountains on the western margin of Vancouver Island.

1.2.2 Georgian Depression Ecoprovince—Eastern Vancouver Island Ecoregion, Leeward Island Mountains Ecosection

The Georgian Depression Ecoprovince lies between the Vancouver Island Mountains and the southern Coast Mountains. It is a large basin containing the Strait of Georgia and Puget Sound. In BC, the basin encompasses the southeastern Vancouver Island Mountains and the Nanaimo Lowlands in the west, the Strait of Georgia and Gulf Islands in the middle, and the Georgia Lowlands and Fraser Lowlands in the east. Its climate is somewhat drier than that of the Coast and Mountains Ecoprovince.

The Eastern Vancouver Island Ecoregion is an area of reduced rainfall leeward of the Vancouver Island Ranges. The Leeward Island Mountains Ecosection is a mountainous area from the crest of the Vancouver Island Ranges to the Nanaimo Lowlands.

1.2.3 Biogeoclimatic Zone Classifications in the Study Area

Vegetation in the Coast and Mountains Ecoprovince is dominated by the Coastal Western Hemlock (CWH) and Mountain Hemlock (MH) biogeoclimatic zones. In the Georgian Depression Ecoprovince, vegetation is dominated by the CWH, MH, and Coastal Douglas-fir (CDF) biogeoclimatic zones. The Alpine Tundra (AT) biogeoclimatic zone occurs at the tops of the mountains in both ecoprovinces, although there is no AT or MH within the boundary of the study area; rather, Port Alberni contains characteristics of both the CWH and CDF zones.

[14] See section 6.1 for a more full description of the Ecoregion Classification System, adopted by the Wildlife Branch, and the Biogeoclimatic zone system that is in use by the Ministry of Forests.

[15] See section 6.1.

[16] Environment Canada, State of Environment Reporting: http://www.ecoinfo.ec.gc.ca/ecozones/ecozones_e.cfm and http://www.ec.gc.ca/soer-ree/English/vignettes/Terrestrial/pm/default.cfm

Figure 3. Aerial view of Port Alberni and area. The yellow line going east to west is Hwy 4. Source: www.GoogleEarth.com.

Coastal Western Hemlock Biogeoclimatic Zone[17]

The Coastal Western Hemlock (CWH) biogeoclimatic zone occurs at low to middle elevations (from sea level to about 900 m in the south) on the west side of the Coast Mountains. Western hemlock is the most common tree, although Douglas-fir, grand fir, western redcedar, Sitka spruce, western white pine, and bigleaf and vine maples are widespread throughout the warmer, drier southern portion of this zone. Red alder is common on logged sites, and yellow cedar occurs in higher, wetter sites.

Typical understorey plants include a variety of blueberry and huckleberry species (*Vaccinium* spp.), salal, salmonberry, wild currants, red-osier dogwood, red elderberry, Oregon grape, bunchberry, twinflower, trailing and other native and introduced blackberry species, Devil's club, Pacific crabapple, bearberry, and kinnikinnick. All are important bear foods. There are also skunk cabbage and various grasses, sedges, rushes, horsetails, and fungi that are used by bears in different habitats and seasons.

Black-tailed deer, Roosevelt elk, black bears, grizzly bears (not found on Vancouver Island), cougars, and grey wolf (possibly a distinct Vancouver Island subspecies) are the most common large mammals in this zone. After logging, abundant regrowth provides lush forage for many species, including black bears, but only for the first 20 or so years after logging. Retention of old-growth structures (large diameter old trees) are still needed to provide natural denning sites for bears.[18]

[17] BC Ministry of Forests. 1991. Special Report Series 6: *Ecosystems of British Columbia*. Chapter 6. Coastal Western Hemlock Zone. J. Pojar, K. Klinka, and D.A. Demarchi; pp. 95-111.

[18] Davis, H. 1996. MSc Thesis: *Characteristics and Selection of Winter Dens by Black Bears in Coastal British Columbia.* Simon Fraser University, Vancouver, BC.

Mountain Hemlock Biogeoclimatic Zone[19]

The Mountain Hemlock (MH) biogeoclimatic zone is usually the subalpine zone (900-1800 m asl) above the CWH. Mountain hemlock, amabilis fir, and yellow cedar are the most common tree species, with some Douglas-fir and western redcedar at lower elevations, and subalpine fir and whitebark pine at higher elevations in the zone. The predominant shrub species in this zone include a variety of huckleberry and blueberry species, which are a significant food source for black bears.

Coastal Douglas-fir Biogeoclimatic Zone[20]

The Coastal Douglas-fir (CDF) zone is limited to a small part of southeastern Vancouver Island, several of the Gulf Islands, and a narrow strip of the adjacent mainland, and is confined to elevations mostly below 150 m. This zone lies in the rainshadow of the Vancouver Island and Olympic mountains, and has warm, dry summers and mild, wet winters. Outside of parks, most of the forests in this zone have been logged at least once, and in many cases are on their second and third rotations.

The coastal variety of Douglas-fir (*Pseudotsuga menziesii* var. *menziesii*) is the most common tree in upland forests. Western redcedar, grand fir, arbutus, Garry oak, and red alder frequently accompany Douglas-fir, depending on site moisture and nutrient regime. Less common trees include shore pine, Sitka spruce, western hemlock, bitter cherry (*Prunus emarginata*), western flowering dogwood (*Cornus nuttallii*), bigleaf maple, black cottonwood, and trembling aspen. Forest composition varies considerably as a result of widespread human disturbance. Vegetation here includes about 50 rare species restricted to the zone, most at the northern limit of their distribution.

There are four representative site associations common to this zone, reflecting elevation and soil moisture conditions. These site associations are not found in any other biogeoclimatic zone: Douglas-fir—Salal, Douglas-fir—Shore pine—Arbutus, Redcedar—Grand fir—Foamflower, and Redcedar—Skunk cabbage. Understorey composition in these site associations includes, respectively: salal, Oregon grape, red huckleberry, baldhip rose, bracken fern, trailing blackberry, trailing snowberry, and western trumpet honeysuckle; ocean-spray, Oregon grape, saskatoon, white fawn lily, Pacific sanicle, and purple peavine; salal, Oregon grape, western yew, vanilla-leaf, sword fern, and three-leaved foamflower; salmonberry, Indian-plum, red elderberry, lady fern, giant horsetail, skunk cabbage, false lily-of-the-valley, and, as in the other site associations, a variety of mosses. Many of these plants are used as food by black bears throughout the various seasons.

Wildlife species common to this zone include black-tailed deer, Roosevelt elk, black bear, cougar, grey wolf, marten, raccoon, mink, river otter, various species of bats and small rodents. Marine mammals include Orca, northern sea lion, and harbour seal. Many species of waterbirds spend winters on the estuaries and sheltered waters in this zone, including mallard, scaups, trumpeter swan, various merganser and cormorant species, gulls, and colony-nesting great blue heron. Other birds common to this zone include pileated, downy, and hairy woodpeckers; ravens and crows; bald eagles; various hawks and falcons, including red tails, peregrines, and merlins; Steller's jay; brown creeper; various types of thrushes and wrens; hummingbirds; grouse; and great-horned, saw-whet, and barn owls. The zone also supports a respectable number of reptiles and amphibians, including Pacific tree frog, Enstina salamander, northwestern garter snake, western toad, and northern alligator lizard.

Alpine Tundra Biogeoclimatic Zone[21]

The Alpine Tundra (AT) biogeoclimatic zone has the harshest climate of all zones. Along the coast, it is characterised by high snowfall and extensive icefields and glaciers. Climatic conditions on the mountaintops above the Alberni Valley are considerably moderated by warm, moist Pacific air and there are no large permanent snow- or icefields in the vicinity. Wildlife density and diversity are

[19] *Ibid*. Chapter 7. Mountain Hemlock Zone. J. Pojar, K. Klinka, and D.A. Demarchi; pp. 113-124.

[20] *Ibid*. Chapter 5. Coastal Douglas-fir Zone. F.C. Nuszdorfer, K. Klinka, and D.A. Demarchi; pp. 81-93.

[21] *Ibid*. Chapter 18. Alpine Tundra Zone. J. Pojar, and A.C. Stewart; pp. 263-274.

comparatively low. Alpine meadows and grassy habitats provide some summer forage, and berry production (crowberry and blueberries) can be an important food source for bears in late summer.

1.3 Regional, Provincial, National, and International Contexts

Port Alberni is frequently characterised as being "the gateway to the Pacific Rim." Centrally located in the middle of Vancouver Island between the Strait of Georgia and the Pacific Ocean, roughly a million visitors a year pass through the city on their way to the provincial and national parks on the Pacific Ocean and the west coast villages of Bamfield, Tofino, and Ucluelet. These visitors originate from elsewhere in British Columbia, Canada, the United States, Europe, and countries around the world.

Many kinds of outdoor recreation, including ocean, lake, and river fishing; hunting; sailing; whale-watching; kayaking; surfing; camping; birdwatching; natural history and photography expeditions; and world-class hiking on the internationally famous West Coast Trail are some of the region's attractions.

To the west of Port Alberni is the Tofino Mud Flats[22] Wildlife Management Area (WMA), an integral part of the Clayoquot Sound UNESCO Biosphere Reserve and Important Bird Area (IBA). To the east is the Qualicum National Wildlife Area. Established in 1977 under the auspices of the Canadian Wildlife Service, it is part of the Little Qualicum Estuary IBA and the Mt. Arrowsmith Biosphere Reserve. The entire region is criss-crossed with back-country hiking trails that are in use almost year-round. There is a national park (Pacific Rim National Park Reserve), a national historic site (McLean Mill National Historic Site), and large provincial parks, including Carmanah Walbran to the southwest, and Strathcona to the north. Della Falls, at the south end of Strathcona, is the highest waterfall in Canada (440 m). This spectacular site can be reached by boating or paddling to the north shore of Great Central Lake then a 14-km hike. Smaller parks highlight recreational use of the region for both residents and visitors. All these areas have plentiful habitats to support a sustainable population of black bears.

In a provincial context, widespread public education to help people better co-exist with bears is an important goal. While, as a species, black bears are not yet threatened in British Columbia, we cannot foretell the future effects of a diminished genetic diversity, nor can we predict the effects of macro-environmental occurrences, such as climate change, on bears or on the variety of habitats they require. Overall, the attitude that accompanies becoming a Bear Smart Community benefits bears and other wildlife species by helping people be more attuned to their impacts on the natural environment.

Internationally, bears have been put at risk in many countries due to the actions of people. Maintenance of genetically diverse natural populations is part of a wise biodiversity management system (the precautionary principle). [23]

Although black bears are not considered a species at risk in Canada, their equivalent in other countries has either been extirpated, as in Europe, or seriously depleted to the point of endangerment (e.g., the Sun bear in Southeast Asia, the Spectacled bear in South America). Unless we change our behaviours (largely through widespread public education and participation in targetted activities like the Bear Smart Community program), the same fate will eventually befall bears in British Columbia, and in Canada generally.

[22] http://www.tofinomudflats.com/

[23] Synthesised from comments by Sean Sharpe, RPBio, Smithers (December 2004).

2.0 STUDY APPROACH AND METHODS

2.1 Overall Study Approach

For the most part, the study followed the specific objectives established for the BC Environment ministry's Bear Smart Community Program by Davis et al (2001).

> *The specific objectives of the Preliminary Hazard Assessment are to: 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.*

2.2 Methods

This Bear Hazard Assessment has been done using a variety of information sources, including:

- research of background information and documents, both in hard copy and online, including the OCP, bylaws, and other information provided on the City of Port Alberni's and the Alberni-Clayoquot Regional District's (ACRD) websites, the BC Ministry of Environment and Ministry of Forest ecosystem and habitat information sources (including their websites), and a number of websites devoted more specifically to black 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 coastal river/forest ecosystems;
- review of maps provided by the city and regional district government offices and online sources;
- extensive review and analysis of wildlife occurrence data provided by the district Conservation Officer Service;
- extensive research and interviews with company representatives regarding waste management and garbage handling equipment and systems;
- discussions with the ACRD's Environmental Services Manager (Drew Hadfield) and review of the draft Solid Waste Management Plan;
- interviews and discussions with Conservation Officers in and outside the region, and discussions with Bear Smart Community Program personnel in the BC Ministry of Environment;
- interviews with a number and variety of people in the city, including school principals and teachers, commercial business owners, members of the public, and employees of the City of Port Alberni;
- research of local media (primarily the *Alberni Valley Times*) to determine the number and content of articles about bears in the city;
- extensive on-the-ground fact-checking and map ground-truthing.

No long-term detailed scientific bear habitat inventories have been done for Port Alberni or surrounding areas. To remedy this, I have attempted to identify and map some of the areas potentially having high-to-medium use by black bears due to the type of vegetation that provides food and cover for bears, as well as possible and known travel corridors (e.g., Dry Creek) that allow for easy movements by bears. In five and a half days of field work, I examined many of the residential, recreational, institutional, industrial, and commercial sections of Port Alberni to assess potential hazard ratings and to ground-truth maps and other information given to me (such as the siting of garbage cans and dumpsters at housing complexes, commercial sites, along city streets, etc.). Using information from the Wildlife Call Centre database, I focused my efforts (in residential areas) on locations where there had been higher numbers

of complaints reported and on new housing developments at the city's edges, since these may present new opportunities for bears to get access to residential garbage.

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

I reviewed the city's bylaws and policies dealing with animal control, the OCP, parks and recreation; and the regional district's bylaws with respect to waste management, assessing each for their adequacy and language in dealing with the potential to prevent or reduce bear-people conflicts. Landscaping throughout the city 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 and cherry trees, salal).

I reviewed several Bear Hazard Assessments completed for other jurisdictions in southwestern BC, including Lions Bay (Paquet 2005), Resort Municipality of Whistler (McCrory 2005), Squamish (McCrory & Paquet 2006), the North Shore (McCrory 2006), Sunshine Coast Regional District (Paquet 2007), City of Coquitlam (Paquet 2007), and community "bear aware" activities in Kamloops, Revelstoke, Prince George, the Town of Canmore (Alberta), and in national, provincial, and regional parks. The scope and context of these were applied to this bear hazard assessment to ensure its consistency with provincial expectations.

I conducted interviews in person, by phone, or by email with Port Alberni and Alberni Valley residents, with Conservation Officers working in the area, with school principals and other staff, and with people at companies that manufacture and/or sell waste management equipment and systems, including:

- Ben York, District Conservation Officer, Alberni
- Mike Stern, Conservation Officer, Alberni
- Steve Ackles, Conservation Officer, Nanaimo and Alberni
- Bob and Ann Collins, farmers and campground operators, Arrowvale Farm
- Ken Watson, City Manager
- Russell Dyson, City Clerk
- Jacob Colyn, Parks Operations Supervisor/Horticulturist, City of Port Alberni
- Drew Hadfield, Manager, Environmental Services, Alberni-Clayoquot Regional District
- Jack Payne, Bylaw Enforcement Officer, City of Port Alberni
- Randy Fraser, Streets Superintendent, Engineering Department, City of Port Alberni
- Crystal McMillan, Bear Aware Supervisor for Vancouver Island, BC Conservation Corps
- Steve Thompson, Director of Marketing & Sales, BearSaver
- Jeff Rollins, Rollins Machinery Limited (sells Haul-All and other equipment)
- various city residents who did not want their names mentioned in this report
- Sandra (last name not given), Tenant Liaison, M'Kola Housing, a non-profit society
- Principals, vice-principals, and other staff in all city schools (SD #70 Alberni)
- Al Ross, Wildlife Manager; and Aaron Hamilton, Operations Director, Hupacasath First Nation

I also consulted wildlife biologists with expertise in bear biology, including Helen Davis (Armstrong), Sean Sharpe (Prince George), and Wayne McCrory (New Denver).

In addition to interviews with the above people, I collected information from the province's Wildlife Report database on the number and types of complaints that occurred locally for the years 2004 through a portion of 2007. I 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 immediate threat to human safety) to removal (translocation) of the bear(s), to killing the bear. The data was organised in order to determine which neighbourhoods were experiencing the highest number of problems. Using data points from these reports localised to the 100-block of the

given street, I then marked these points on maps provided to me by the city's planning technician to show the neighbourhoods with the heaviest concentrations of problems for each of the annual periods analysed (section 3.4).

2.2.1 Descriptions of assessment and evaluation methods[24]

Following are more specific descriptions of the methodologies applied.

Habitat evaluation

A field assessment of potential black bear habitats in and adjacent to residential and recreational developments, including walking trails, residential subdivisions, schools, and city parks was conducted by the writer. As many areas as possible were sampled, with priority given to the areas where there was prior knowledge of conflicts with bears and where risk assessment was felt to be most critical (e.g., schools, certain neighbourhoods and commercial areas, and parks).

Greenbelts and ravines between and among residential areas, such as stream corridors and the railway tracks, were also 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)

Cover classes (capability of providing security cover) were further subjectively rated, as follow: very low = 0-5%, low = 6-25%, moderate = 26-50%, high = 51-75%, and very high = 76-100%.

Since there is yet no diet study published specifically for black bears in the South Coast Mountains, a list of hypothetical black bear foods, determined through McCrory's work in Whistler (2004), was used to assess habitats (see Appendix 4).

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 powerlines, roads, riparian corridors, rail lines, and other travel features was used.

Profile of potential dangerous bear encounter types

The district Conservation Officer has advised that there have been no dangerous bear encounters reported in the City of Port Alberni, although some people have misinterpreted the defensive behaviours of black bears here. McCrory (2004) prepared a bear encounter profile for Whistler (see Appendix 5) and concluded that while there had been none at the time of his study, there was potential due to the increase in such backcountry activities as mountain biking. While the city of Port Alberni has none of these activities within city limits, they do occur in the immediately surrounding area and will likely become part of local tourism marketing. McCrory determined that dangerous encounters with dogs have a much greater likelihood than with bears. Since that time, there have been a few occurrences in municipalities in the Greater Vancouver area, including one at Minnekhada Regional Park. The former involved residential garbage (Port Moody), the resident's dog, and a sow with cub; the latter involved an encounter by an off-leash dog while its owner was walking it. To my knowledge, there have been no "dangerous bear encounter" studies done for Vancouver Island bears; this may be significant because Vancouver Island bears are a different subspecies than Lower Mainland black bears and may have different behaviour characteristics that make them less aggressive towards humans.

[24] Adapted from McCrory & Paquet, 2006.

Final hazard ratings

Habitat potential, travel corridor information, conflict data, garbage availability, type of site use by people, cover, disturbance, any encounter profiles, and other factors to determine relative bear hazard values for the various areas in the city were used to assign final hazard ratings. These included residential areas and new housing developments, schools, parks, and commercial and industrial areas.

2.2.2 Problem analysis methods

Bear-people conflict monitoring 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.), location (for mapping and analysis purposes), and other factors (section 3.4).

Assessment of specific hazards and potential risks

Schools and recreation amenities (including city parks; walkways, and trails), and new development areas were assessed for potential hazards, and recommendations were made (section 3.5).

Audit of public education system on bears and bear safety

All information used for public education purposes (such as brochures, handouts, signs, presentations, kiosks at community events, media articles, etc.) was reviewed for accuracy and focus with respect to bear ecology; bear hazard levels, and bear safety. The presence (or not) of a focused community program, whether delivered by local government or a volunteer group, was also looked at (section 3.6).

Audit of waste management methods

Information included came from background documents, field surveys, and interviews. Where possible, data on waste management systems from different companies and communities was obtained. From this, a comparative analysis of bear-proof systems and equipment was prepared (section 3.7).

Audit of Port Alberni bylaws

Bylaws were assessed for language relevant to preventing conflicts with bears, and further appraised for their values and limitations in supporting Bear Smart Community principles (section 3.8 and appendices 11-13).

Audit of OCP and development policies

Planning documents were obtained from the city, including hard copies and information from the city's website. The primary document is the Port Alberni OCP. Other information, such as instructions on how to apply for development permits, was also available on 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 (section 3.9 and Appendix 14).

Other background information

Background information on the ecology of black bears, possible behavioural differences in the Vancouver Island subspecies, and a Google search for bear-people encounters on Vancouver Island was also used to help inform this report. The draft report was then sent to Russell Dyson, Port Alberni City Clerk, to Ben York, District Conservation Officer, and to Sean Sharpe, RPBio, for technical and content review. Upon receipt of their feedback, the final report was produced.

3.0 RESULTS AND DISCUSSION

3.1 Ecology of Black Bears

Before embarking on a discussion of results and subsequent recommendations, it is beneficial to present information on the ecology of black bears. This includes their evolution, required habitats, and their behaviours and how these predispose bears to coming into conflict with people. Black bears on Vancouver Island are a distinct subspecies (*Ursus americanus vancouveri*) from those found on the mainland and in the rest of Canada. Among the differences are: large size, primarily black phase[25], and, because of the mild climate and historic abundance of food, generally have short hibernation periods and are not noted for aggressive behaviour toward people. Recent research points out the importance of bears in ecosystems, particularly those that have large salmon-forest components. This information helps us to understand that bears provide important ecosystem functions, such as the distribution of soil nutrients that have enabled the historically lush forests of southwestern British Columbia and Vancouver Island (see Appendix 7).

Black bears are truly forest-dependent animals. They prefer the types of forested habitats generally found in valley bottoms. The dense understorey in older forests offers a wide variety of foods bears require. The trees provide protective cover and, when climbed, safety from threats. In wet coastal areas particularly, large (generally old-growth) trees and tall stumps also provide bears with important places to den for the winter that are high and dry, thus enabling them to better maintain body temperature during the wet winters, and to avoid predators.[26] In our province's mountainous terrain, valley bottoms are also where most people like to live and where most of our towns are located. This is a root cause of bear-people conflicts.

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, they 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.…<u>Consuming large quantities of digestible food is especially important prior to denning</u>. 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] *are some of the most concentrated sources of calorie-rich foods and are, therefore, attractive to bears.*

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*

[25] *Black Bears in British Columbia: Ecology, Conservation and Management*. BC Environment Ministry, 2001 (see App 7).

[26] *Ibid*. Davis, H. 1996.

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, <u>any high energy food that they feed on may be included in their search image</u>* [emphasis added].

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

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, even 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. We now know why hyperfeeding in fall is such an imperative for the species.

By allowing bears access to non-natural food sources, particularly calorie-rich garbage, Ciarniello (March 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 in that time learn the requirements necessary 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.*

A sow and cub check out this porch for a meal; the cub remembers this food source. N. Rodgers photo.

When you consider this information, it becomes easier to understand what attracts black 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.

This bear has learned that our garbage cans are a source of food. How soon before it has to be destroyed?
Drake Stephens photo

Our challenge is to introduce factors that (a) significantly decrease the availability of non-natural foods for bears, and (b) offer learning opportunities to bears that strongly discourage them from approaching the places where people live, including rural locations. This leaves the more wild areas where people may work or recreate where, again, we have the responsibility to learn how to avoid potential problems with bears and employ practices that reduce conflicts (e.g., brushing out and widening trails, reducing/eliminating security cover in picnic and play areas, learning how to react more safely when confronted by a bear).

Bears, like people, are creatures of habit. Their movements from one habitat use type (denning, feeding, shelter, mating) to another become trails that they 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.

3.2 Data Limitations

In the following discussions, it is useful to keep in mind that there are limitations to some of the information and data used to produce this report. Detailed information on the status of the black bear population 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 the population by destroying and translocating them, may be having on the size or status of the population. Nor was there current inventory on all the changes in habitat characteristics due to the rapid rate of habitat alteration and alienation.

Information about waste management systems and equipment was subject to some of the companies' overly optimistic marketing claims about the effectiveness of their equipment to stop bears getting access to garbage. To help counteract this, the writer consulted with the Living With Wildlife Foundation in Montana and Wyoming, which operates testing centres for a variety of equipment and certifies those products that can successfully withstand abuse by captive grizzly bears for at least 90 minutes. After discussions with the writer, the manager at the Montana testing centre (Patti Sowka) agreed it would be useful to institute a program using only black bears. The rationale for this is that black bears are the only concern for most communities in North America outside of the Rocky Mountains and Alaska and a few settled areas in coastal BC. While some companies that make

residential garbage cans were generally forthright about prices, some of those that manufacture dumpsters were reluctant to discuss design or cost issues due to the highly competitive nature of this business (see Table 12, Explanatory Note 6.2, and Appendix 10).

Province-wide, the number of complaints citizens make to the Conservation Officer Service call centre (the RAPP line: 1-877-952-7277) are upwards of 10,000 every year, yet this high number is estimated to represent only about 25% to 30% of the actual volume of incidents between people and black bears. There are other considerations to take into account when reviewing data in the tables in section 3 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, only a general neighbourhood area; 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. 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. 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 little or inconsistent historic data available on the numbers of bears destroyed and translocated for Port Alberni, 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 the maps of bear sightings. 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." A research agreement was entered into with the Ministry by the contractor (M. Paquet). Once the data points had been inputted and mapped, the contractor deleted all electronic data from all hard drives and storage devices, and shredded all paper copies of reports.

3.3 Habitats and General Distribution of Bear Attractants in the City of Port Alberni

For the purpose of this report, the entire study area and surrounding areas are considered to have widespread occurrence of bear attractants—both natural and non-natural. Riparian areas and greenbelts throughout the city, depending on local conditions, have high potential to provide a variety of natural habitats (e.g., for feeding, denning, shelter, and mating, and movement or travel corridors) for black bears. In one location on the very border of the city, two bear dens, one on top of the other, were identified by a reliable local resident.[27]

[27] Frank Stini, personal communication, October 2007.

3.3.1 Bear plant foods found in the study area

Table 1 below, while not an exhaustive list, indicates there is a high number of natural and non-natural plant food attractants for bears throughout the study area. The list includes wild plants and plants used in gardens, either for food or landscaping purposes, lawns, and plants in fish or lily ponds.

red huckleberry, a naturally occurring attractant

Table 1. Naturally occurring (wild) and planted (landscape use) bear foods in and adjacent to study area[28]

Plant name	General abundance	Where found	Seasonality	Wild vs planted	Other comments
apples (sp., and other domestic fruit trees, including plums and pears)	abundant	residential gardens, garden escape in vacant lots, etc.	late summer, fall, early winter	planted	a major attractant, second only to garbage
black hawthorn [*Crataegus douglasii*]	some	moist open places, near streams	small fruits stay all winter	wild; common as garden escape	may be common hawthorn, an alien species
black twinberry (*Lonicera involucrata*]	abundant	forest & stream edges	summer	wild	also called bearberry honeysuckle
blackberries, black raspberries [*Rubus* spp.]; Armenian blackberry (*Rubus discolor*]	very abundant, ubiquitous	roadsides and clearings; between houses, in parks, vacant lots	late summer, early fall	wild	sunny exposed areas, along hydro, rail, and road rights-of-way
blueberry and huckleberry [*Vaccinium* spp], including: Alaskan blueberry, oval-leaved blueberry, black huckleberry, red huckleberry, dwarf blueberry, evergreen huckleberry	abundant, especially red huckleberry	forest edges, in parks and surrounding areas	early summer	wild and planted	many species with blue or red berries occur in area
bog cranberry [*Oxycoccus oxycoccos*, aka *Vaccinium oxycoccos*, *V. microcarpum*]	some	bogs and wet areas	late fall, winter	wild	dark red juicy berries
cherry, bitter [*Prunus emarginata*]	some	scattered throughout towns and rural areas	small bitter cherries	wild	
clover [*Trifolium* spp.]	abundant	lawns, parks, and schools	graze in spring & summer	wild and planted	scattered distribution
cotoneaster *[Cotoneaster dammeri* "bearberry" and other species]	locally abundant	landscape planting at many schools	berries summer through winter	horticultural species, planted	do not know if this plant attracts bears
cow parsnip [*Heracleum lanatum*]	some	forest edges, ditches, roadsides	spring, early summer	wild	
crowberry [*Empetrum nigrum*]	sparse	rocky slopes; subalpine & alpine meadows	juicy berries in late summer	wild	bears like this alpine and subalpine summer food
dandelions [*Taraxacum officinale*]	abundant	grassy areas, lawns, schools, vacant lots	graze spring, summer	wild alien	widespread introduced species
devil's club [*Oplopanax horridus*]	some	streambanks, forest edges	summer	wild	berries in red clusters relished by bears
false Solomon's seal [*Smilacina racemosa*]	very abundant	forest floor, streambanks	summer	wild	showy berry clusters
ferns (numerous species)	very abundant	forest floor, gardens, riparian areas	primarily spring	wild and planted	sword, lady, deer, and maidenhair ferns
fungi (various kinds)	common	throughout	summer, fall	wild	a variety occur
grasses (Graminae]	abundant	gardens, lawns, clearings, beaches	all seasons, esp. spring	wild and planted	scattered distribution
hairy manzanita [*Arctostaphylos columbiana*]	abundant	dry, sunny spots, rock slopes	berries; late summer	wild	can hybridise with kinnickinnik

[28] Table adapted from Paquet, M. 2005. *Bear Hazard Assessment Report, Village of Lions Bay, BC.*

Plant name	General abundance	Where found	Seasonality	Wild vs planted	Other comments
high bush cranberry [*Viburnum edule*]	abundant	forest edges, near streams	autumn; winter	wild	tart, clustered berries; stay on plants all winter
horsetail [*Equisetum* spp.]	abundant	disturbed, sandy fill areas, vacant lots	spring	wild	scattered distribution
Indian plum [*Oemleria cerasiformis*]	common	open areas, roadsides, streambanks	early to mid-summer	wild	low elevations
kinnikinnick or common bearberry [*Arctostaphylos uva-ursi*]	very abundant	throughout town, at schools, used as landscape plant	berries ripen late; stay on plants in winter	wild and planted	dry rocky slopes or dry forest clearings; ground cover
mountain sorrel [*Oxyria digyna*]	some	rocky areas	spring	wild	higher rocky slopes
Oregon grape [*Mahonia nervosa*]	very abundant	forest floor, landscaping	summer	wild and planted	in shady areas, slopes
Pacific crabapple [*Malus fusca*]	some	near streams	summer-fall	wild	small apples
raspberry [*Rubus* spp]; cultivated	some	gardens	summer	planted	
red elderberry [*Sambucus racemosa*]	some	open forest, near streams, clearings	summer	wild	red berries in tall shrubs
red-osier dogwood [*Cornus stolonifera*]	very abundant	moist to wet sites	spring-fall	wild and planted	favoured browse for deer
roses, wild (*Rosa* spp., esp. *nutkana* & *gymnocarpa*] & cultivated	abundant	gardens, "wild" areas, sometimes mixed with wild blackberries	rosehips in summer through fall, winter	wild and planted	in sunny areas; wild alongside roads and rights-of-way
rushes [*Juncus* spp.]	limited, abundant very locally	boggy areas, riparian areas, garden ponds	bears graze, esp in spring	wild	few wet areas or natural streambanks
salal [*Gaultheria shallon*]	very abundant	throughout area, land-scaping in city	juicy berries	wild and planted	dense thickets in ravines and brushy areas
salmonberry [*Rubus spectabilis*]	abundant	open forests, near streams	early summer	wild	can provide dense cover in riparian areas
sedges [*Carex* spp.]	locally abundant	rock gardens, ponds, wetland areas, fresh & salt water edges	spring, summer	wild and planted	scattered distribution; wet areas, stream-banks, landscaping
Sitka mountain ash [*Sorbus sitchensis*]	abundant	forest edges, city streets	late summer, fall	wild	clustered fruits
skunk cabbage [*Lysichiton americanum*]	common	boggy areas	spring	wild	wet or boggy areas
thimbleberry [*Rubus parviflorus*]	common	open sites; low to subalpine; streamsides	midsummer	wild	along trails, footpaths, forest edges
trailing blackberry [*Rubus ursinus*]	common	disturbed sites, thickets, dry open forest	late summer	wild	native blackberry
wild and domestic cherry (*Prunus* sp)	common	wild: moist forest, along streams, on logged-over areas, lining city streets	late summer fruit	wild	wild variety is bitter
wild currants [*Ribes* spp]	abundant	rocky slopes, gardens	early summer	wild and planted	disturbed roadside areas
wild and planted nut trees (hazelnut; *Corylus* sp.)	sparse	moist sites, forest openings, stream sides	fall through winter	wild and planted	a good source of protein

Trailing blackberry [*Rubus ursinus*). BC's only native blackberry.

Pacific crabapple (*Malus fusca*)

Crowberry (*Empetrum nigrum*)

Of course, bears have other uses for plants besides as food. Large diameter trees and stumps are important to provide dry denning sites. Bears rub against and otherwise mark trees to delineate territories. Remnant forest areas and dense brush along roadsides, riparian areas, and between houses and other developments provide security cover throughout the study area.

Bears also seek out many non-plant foods, such as insect larvae (particularly ants and wasps), carrion, mussels, barnacles, beach crabs, and other marine and freshwater species, and of course, fish, especially salmon. Generally speaking, there are fewer bear foods on steep, rocky lakeshores and streamsides, and more on sandy and muddy ones. Aside from a few mentions in provincial park brochures, I could find no comprehensive surveys of bear foods available in—or even near—the study area.

3.3.2 Natural vs non-natural attractants

While the difference between natural and non-natural attractants may seem obvious, it is necessary to describe what biologists and bear behaviourists consider to be the differences. Of key importance, they point out, is that when bears are in a completely natural environment, their behaviours are correspondingly "natural." When, due to a variety of factors, bears are forced to live—at least part of the time—in modified environments, fragmented habitats, or in locations where non-natural food attractants are abundant and/or easy for bears to get at, then their behaviours can present potential problems for people. Ciarniello (March 1997) lists the primary non-natural attractants bears find in urban, semi-rural, and rural settings in BC:

* garbage (at all points of handling)
* pet food (including birdfeeders)
* vineyards
* livestock ranching
* orchards * compost and garden residues
* fruit trees * apiaries * gardens
* agricultural production, greenhouses
* hobby farms

For Port Alberni, the areas of concern having the greatest potential for conflicts between bears and people are new developments in or bordering on a previously undeveloped area (e.g., new residential subdivisions); near schools; in and near public parks and greenspaces; footpaths alongside riparian areas (such as the Kitsuksis Walkway), and in the area of Harbour Quay and Victoria Quay, where there is a variety of restaurants, other food outlets, and the weekend Farmers Market. This is particularly true for areas adjacent to residential and commercial areas wherever unsecured garbage is available. Rural and agricultural properties where there may be livestock, apiaries, berry farms, fruit orchards, vegetable gardens, or greenhouses are all potential non-natural attractants. Although there are none of these in the study area, they do occur adjacent to its perimeter. Rural locations near the city, including the watersheds, nearby wilderness parks, and powerline and railway rights-of-way (except the railway line immediately within the city), were not surveyed for this bear hazard assessment because the intent of this report is to inform the city on how to reduce bear-people conflicts.

Due to the settlement history of the study area, there are numerous and widespread occurrences of garden escapes, including fruit and nut trees, and alien species (such as Armenian blackberry). In addition to these, residential and commercial landscaping frequently uses plants that are attractive to bears (e.g., mountain ash [rowan] and cherry (*Prunus* spp.] trees, roses, bearberry [*uva-ursi*] as ground cover). So while a given tree, shrub, or ground cover species may be found "naturally" throughout a local ecosystem (e.g., wild cherry, Oregon grape, salal, wild rose, red currant, kinnikinnick, clovers, certain grasses and sedges), when it is used to landscape people's yards, downtown streets, or any other commercial or residential application, it becomes a non-natural attractant in that context.

For coastal bears particularly, salmon is one of the most important sources of fat and protein. Salmon runs generally occur at just the right time for bears to put on fat reserves prior to winter denning. Over the millennia, bears have developed a critical relationship with salmon such that salmon, bears, and their forest habitats are thoroughly interdependent. We are now beginning to understand that the nutrient-rich coastal forest ecosystems we have enjoyed are due in large part to the role that bears have played in distributing—by eating salmon and then dropping their scat and fish carcasses throughout the forest—

some of the most important nutrients throughout the ecosystem, notably isotopic forms of nitrogen (see Appendix 7), which all gardeners know is an essential nutrient for lush growth.

Many of our towns and settlements (and Port Alberni is no exception in this regard) have developed adjacent to estuaries or alongside rivers and streams—streams that once were full of salmon and where bears could feed in relative safety. Today, many of these streams pass through parks, commercial or industrial areas, and residential neighbourhoods, often separated from human use areas only by a fence, hedge, or thin buffer strip. Many have public walkways or trails developed alongside them. Most don't have nearly the number of salmon in them as were historically available. While generally considered to be a natural source of food for bears, as they are currently situated in human-use areas, these streams can also be considered, in the context of this report, to be non-natural attractants for bears. Certainly they are often important travel corridors for bears and facilitate their movements into and throughout neighbourhoods and commercial areas.

3.4 Analysis of Complaints Reported to Conservation Officer Service

Data in the tables below are from either the BC Ministry of Environment's District Conservation Office in Port Alberni, or from the Provincial Wildlife Call Centre in Victoria (the "Report All Poachers and Polluters" or RAPP line: 1-877-952-7277). These latter are all the calls received by the CO Service's toll-free line and are considered to represent only a fraction of the actual number of interactions that the public has with bears in any given year. Some estimate it is as low as 25% of reportable incidents. The primary reason for this seems to be that people are concerned that COs or police will either do nothing, or they will shoot the bear as a matter of practice, but this is not usually the case. The writer urges people to notify the Call Centre so that the data gathered can more accurately reflect the number, locations, and types of experiences people have with bears. Callers are advised immediately and with authority on how to deal with their individual situations, and the information gathered enables the COs, local governments, researchers, and people doing public bear education programs to target their efforts in areas and neighbourhoods that are experiencing the most problems.

The number of reports and types of attractants for 2004, 2005, and 2006 are shown in tables 2, 3, and 4, with 2005 being a peak year likely due to weather conditions affecting wild food sources for bears. The tables highlight the most active months and primary attractants in each year. In the tables, "other" includes bbqs, beehives, bears in CO trap, birdfeeders, food in coolers, outdoor fridges/freezers, pets/ pet food, fish in rivers/creeks, bears grazing on lawns, and bears in backyard ponds and pools. "Fruit trees" is domestic fruit trees and grapes. "Wild berries" includes thimbleberry, salmonberry, and any of the wild blackberry species found in this region. "Sighting" indicates bears generally only passing through. "Nuisance" indicates the person reporting the incident is quite bothered by the presence of bears, with a number of these demanding the CO either trap or shoot the bear. The other categories are self-evident. The data at the bottom of the tables further highlights useful information to enable local governments to design effective waste management methods, public education programs, and make amendments to local development and zoning plans in order to become a Bear Smart Community.

It's important to note that a large percent of the raw data listed "sighting" as the only descriptor, yet when I read the details, I found more information about the attractant or cause for the report. I have no way to determine how consistently this occurred, meaning that the numbers for garbage, fruit trees, birdfeeders, etc. may be higher than the data indicated. Some reports described the bear's behaviour as aggressive, but in virtually all cases the bear was showing typical defensive behaviour. Understandably, in many of these, the complainant likely experienced fear and/or anger.

Table 2. Analysis of 2004 complaints

Month	Type of complaint				Attractants							Total
	sighting only	nuisance	property damage	injured or dead bear	garbage	fruit trees or grapes	garden or compost	livestock	wild berries	other	not applicable or available	
Jan	6	3	1	--	3	--	--	--	--	--	6	9
Feb	1	2	--	--	2	--	--	--	--	--	1	3
Mar	1	1	1	--	3	--	1	--	--	1	1	3
Apr	--	3	3	2	--	--	--	2	--	3	--	10
May	2	4	--	3	1	--	1	1	--	1	1	6
Jun	1	5	1	5	5	1	--	4	--	1	1	7
Jul	3	1	--	1	--	--	--	--	--	1	3	4
Aug	22	3	1	--	4	8	3	3	5	2	8	26
Sep	72	37	9	3	91	50	11	3	12	12	33	116
Oct	77	25	6	5	48	32	3	--	1	6	46	112
Nov	40	5	2	1	31	9	6	--	--	8	25	56
Dec	24	23	6	2	32	1	4	--	--	6	15	58
Total	249	112	30	22	220	101	29	13	18	41	140	410
%	61%	27%	7%	5%	54%	25%	7%	3%	4%	10%	34%	

Note the spikes in garbage as attractant for the months of September through December, and fruit trees as attractant for the months of September and October.

Highlighting: Yellow indicates peak activity and # of attractants; Blue indicates unusually low for time of year.

"Livestock" includes livestock feed; "other" includes birdfeeders, outdoor fridge/freezer, fish smoker, fish in pond, hatchery, beehives, bear in trap, pet/pet food

Note: The "Total" **column** is the total number of complaints received for that month. The number in the "Total" **row** may be greater than the number of complaints for each month because a caller may report more than one type of attractant. The percentage (%) row is for the whole year.

Comments from person reporting complaint				Location types				
kill this bear	don't kill this bear	trap or move this bear	asked for Bear Aware info	greenbelt	school	park	commercial or food outlet (2 malls, DQ, Smitty's, McDonalds)	industrial (boathouse, APD, Somass mill, paper mill, Coulson mill, fish plant—all in Harbour area)
18	4	24	2	91 (22%)	33 (8%)	19 (5%)	31	28

Figure 4. Port Alberni Bear Attractants 2004

Attractants for year 2004

Category	Number
Garbage	220
Fruit trees, grapes	101
Garden, compost	29
Livestock	13
Wild berries	18
Other	41
N/A	140

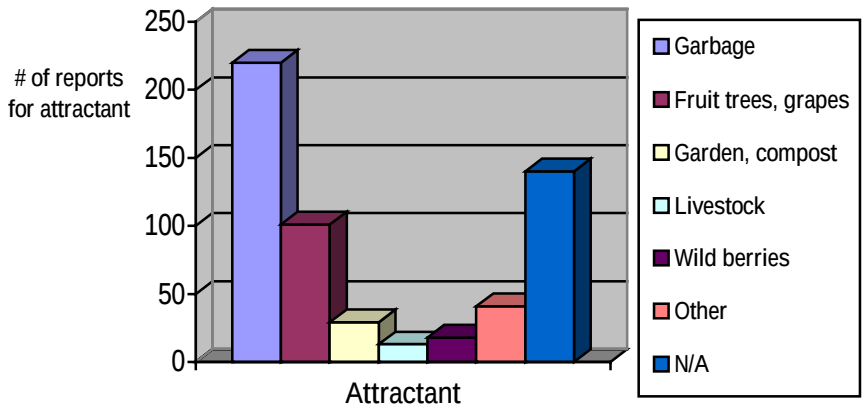


Table 3. Analysis of 2005 complaints

Month	Type of complaint				Attractants							Total # of reports
	sighting only	nuisance	property damage	orphan, injured or dead bear	garbage	fruit trees or grapes	garden/ compost	livestock	wild berries	other	N/A	
Jan	3	2	2	1	4	--	1	--	--	6	2	8
Feb	--	--	--	--	--	--	--	--	--	--	--	0
Mar	--	--	--	1	--	--	--	--	--	--	1	1
Apr	1	--	--	--	1	--	--	--	--	--	--	1
May	42	12	6	--	36	3	1	--	--	8	20	60
Jun	64	21	4	2	53	3	8	--	4	25	21	91
Jul	18	6	5	3	20	4	1	--	1	11	4	32
Aug	18	15	7	1	25	10	--	2	4	15	4	41
Sep	53	20	13	3	27	34	8	19	3	5	27	89
Oct	65	18	13	3	63	21	9	1	2	9	19	99
Nov	22	20	10	--	40	4	1	--	--	11	7	52
Dec	16	8	2	5	25	6	1	5	1	1	5	31
Total	302	122	62	19	294	85	30	27	15	91	110	505
%	60%	24%	12%	4%	58%	17%	6%	5%	3%	18%	22%	

Highlighting: yellow: vertical indicates high # of attractants; horizontal indicates high activity due to time of year; blue: indicates unusually low level of activity for time of year.

"Livestock" includes livestock feed. "Other" includes birdfeeders, BBQ, outdoor fridge/freezer, fish (in river/creek), fish smoker, fish in pond, hatchery, beehives, bear in trap, pet/pet food.

Note: The "Total" **column** is the total number of complaint reports received for that month. The number in the "Total" **row** at bottom of the Attractants portion of the table may be greater than the number of complaints for each month because a caller may report more than one attractant. The percentage (%) row shows the % each attractant represents for the whole year, and may also add up to greater than 100%. Note that for September, the percentage of complaints for livestock was extremely high (19/89, or 21%).

Comments from person reporting complaint				Location types				
shoot bear	don't harm bear	trap and move bear	asked for Bear Aware info	greenbelt	school	park	commercial or food outlet (2 malls, DQ, Smitty's, McDonalds)	industrial (boathouse, APD, Somass mill, paper mill, Coulson mill, fish plant—all in Harbour area)
20	9	23	15	154 (30%)	18 (4%)	17 (3%)	23	37

Figure 5. Port Alberni Bear Attractants 2005

Attractants for year 2005

Category	Number
Garbage	294
Fruit trees, grapes	85
Garden, compost	30
Livestock	27
Wild berries	15
Other	89
N/A	110

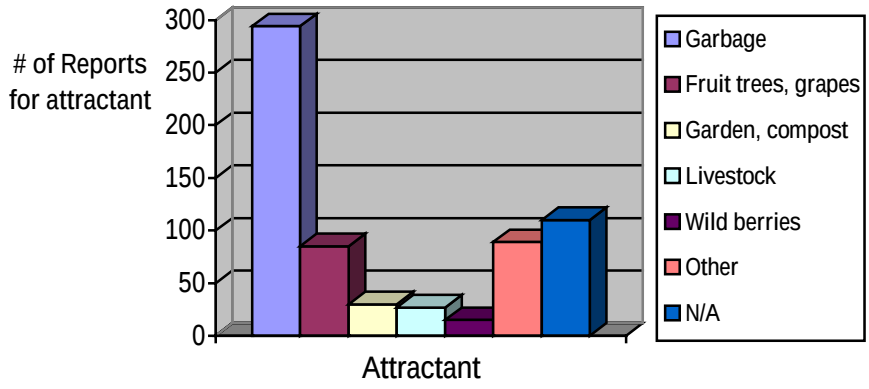


Table 4. Analysis of 2006 complaints

Month	Type of complaint				Attractants							Total
	sighting only	nuisance	property damage	orphan, injured or dead bear	garbage	fruit trees or grapes	garden/ compost	livestock	wild berries	other	N/A	
Jan	4	2	1	1	4					2	3	8
Feb	1				1							1
Mar	1	2		1	3						1	4
Apr	12	5	2	1	11	2	3				6	20
May	91	32	9	2	89	2	3			14	32	128
Jun	25	8	1		25	1				3	8	34
Jul	4	5	1		5	2				6	2	10
Aug	10	8	1		7	1	1	1		2	8	20
Sep	18	4	3	2	13	4		2		12	9	27
Oct	35	12	4		35	12			1	3	14	52
Nov	21	4	4		17	11				3	9	29
Dec	22	20	4	2	34	1	3			3	9	48
Total	244	102	30	9	244	36	10	3	1	48	101	381
%	64%	27%	8%	2%	64%	9%	3%	1%	0	13%	27%	

Highlighting: yellow: vertical indicates high # of attractants; horizontal indicates high activity for time of year; blue: indicates unusually low level of activity for time of year.

"Livestock" includes livestock feed. "Other" includes birdfeeders, outdoor fridge/freezer, fish smoker, fish in pond, hatchery, beehives, bear in trap, pet/pet food.

Note: The "Total" column is the total number of complaints received for that month. The number in the "Total" row at bottom of table may be greater than the number of complaints for each month because caller may report more than one attractant. The percentage (%) row is for the whole year.

Comments from person reporting complaint				Location types				
shoot this bear	don't harm bear	trap this bear	asked for Bear Aware info	greenbelt	school	park	commercial/ food outlet (2 malls, DQ, Smitty's, McDonalds)	industrial (boathouse, APD, Somass mill, paper mill, Coulson mill, fish plant—all in Harbour area)
16	8	21	6	180 (47%)	17 (4%)	8 (2%)	19	27

Figure 6. Port Alberni Bear Attractants 2006

Attractants for year 2006

Category	Number
Garbage	244
Fruit trees, grapes	36
Garden, compost	10
livestock	3
wild berries	1
other	48
N/A	101

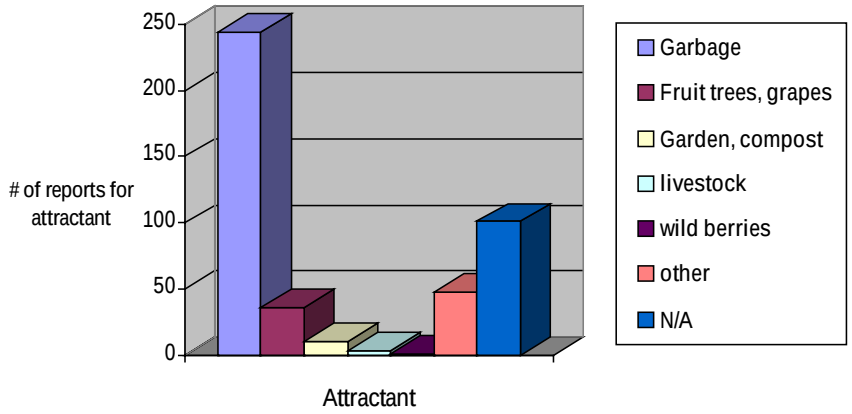


Table 5 below and Figure 7 on p. 29 both include bear-people conflict data for 2007. Time constraints prevented collecting detailed information on the attractants and locations of the reports, as well as any analysis of the data. The total monthly numbers are included, however, to give as good an indication as possible of the trends.

Table 5. Comparison of bear-people conflict activity for 2004-2007*

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2004	9	3	3	10	6	7	4	26	116	112	56	58	410
2005	8	0	1	1	60	91	32	41	89	99	52	31	505
2006	8	1	4	20	128	34	10	20	27	52	29	48	381
2007	7	0	0	10	38	59	28	44	43	150**	45**	45**	469**
Total	25	4	8	31	194	132	46	87	232	263	137	137	1765

*Yellow indicates high activity for time of year compared to rest of that year; blue indicates low activity for time of year compared to rest of that year. **Data for 2007 is incomplete. Monthly totals for Oct-Dec are extrapolations based on 101 reports by 23 Oct, extrapolated to 150 for month (conservative estimate), and averages in previous years for Nov and Dec.

In the period 2004 to 2007, there was an average of 441 calls per year from Alberni residents to the Wildlife Call Centre in Victoria. Considering the number of calls logged represents only about 25% of actual interactions, it's safe to assume that Alberni residents experienced an average of over 1700 conflicts with black bears in any single year during this period.

Table 6. Comparison of totals in categories of complaints and attractants for 2004-2006

Year	Complaint type				Type of attractant (number)						
	sighting	nuisance	property damage	orphaned, injured, or dead bear	garbage	fruit trees/ grapes	garden/ compost	live-stock	wild berries	other	N/A
2004	249	112	30	22	220	101	29	13	18	41	140
2005	302	122	62	19	294	85	30	27	9	89	110
2006	244	102	30	9	244	36	10	3	1	48	101

Note: Yellow indicates high level of activity in that category/attractant type. "Other" includes barbecues, birdfeeders, pets/pet foods, fish in streams or ponds, fish smokers, beehives, outdoor freezer/fridge, bags of fruit or diaper pails on decks/porches, food in coolers or campsites, and calls to the local CO to inform him there is a bear in the trap set by the CO.

It is clear that garbage is by far the primary non-natural attractant in all years, followed by fruit trees. In most categories, 2004 and 2005 were exceptional years for bear-people conflicts in Port Alberni (2007 looks like one, too). In fact, this was the case for the entire South Coast region, including Vancouver Island. This was very likely due to hot, dry weather very early on and throughout the summer in 2004 that caused early ripening and drying out of one of the black bear's primary foods: wild berries. Bears in the region were forced to abandon their natural avoidance of people and move into settled areas in search of food. They found it in the easy accessibility of garbage, and in urban fruit trees and gardens. Because of their incredible ability to learn and remember, they were predisposed to repeating this behaviour in subsequent years. This is apparent for garbage as a percentage of attractants in 2005 (58%, up 4% from 2004), with a further increase in 2006 (64%, up 6% from 2005). Note also the reversed use of fruit trees as the second major attractant in all years, decreasing from 25% in 2004, to 17% in 2005, to 9% in 2006. This inverse relationship can be interpreted to show a steadily increasing reliance on garbage as the principal reason bears come into conflict with people in urban areas.

3.4.1 Complaints by neighbourhood hotspots and attractant(s)

While the reported attractant in any instance may be of greatest concern for the person making the report, in many cases, other attractants are likely also significant for bringing a bear to a particular location (e.g., livestock and accessible feed in rural areas, which represent a staging location for bears to come into the city, and where gardens and garbage are also present). Certain types of locations are more prone than others for attracting bears. These include riparian areas, power- and railway lines, parks, and other greenbelts. As well, for probably hundreds of bear generations, the region's bear population had used "traditional" movement corridors from the mountains, down the streams and natural geographic features, to the lakeshores and valley bottom feeding areas on a seasonal basis. Many of these have been built over and otherwise are now in human use, but the bears still know these travel routes because they are embedded into their behavioural patterns (and memory). Even when areas are almost totally paved and built over, and historic levels of fish presence are considerably reduced, when there is such a powerful attractant as garbage, bears will still come to the area to seek food (bears can smell garbage from well over a mile away), particularly during the important hyperphagic fall pre-denning season.

The percentage of complaints by residents on and near greenbelts increased from a low of 22% in 2004, to 30% in 2005, and a high of 47% in 2006. People living along and near greenbelts, and those using public trails, walkways, and parks, must be made aware of how to be safe in these areas. The city needs to pay particular attention to garbage management in these locations. As well as greenbelts, safety is also a major concern at schools (section 3.5.2). An average of 5% of all complaints are due to bears being on or near schools.

Table 7 below lists the hotspot neighbourhoods for the period 2004-2006 (information on locations for 2007 was too limited to include it here). The writer has also produced three large format maps of the city (for presentation purposes) that show the distribution of bear-people conflicts for 2004, 2005, and 2006. Data points (for the maps inserted after p. 29 and the table below) were generalised to the nearest hundred-block of the street and then presented in a range (e.g., 1000-1300 such and such street). Sometimes the only locator given was generalised, such as "at Victoria Quay" or "on the Kitsuksis Walkway" or "running across Stamp Ave near the paper mill." The table shows only those locations that logged five or more calls in each year. This information shows which neighbourhoods have problems year after year, and is especially useful for determining bear travel corridors, to target neighbourhoods for intensive education, and for focused garbage management, such as designing pilot projects to determine which methods and equipment are the most effective both for reducing the number of bear-people conflicts and to keeping costs within acceptable limits.

Table 7. Hotspot neighbourhoods for years 2004-2006

Year	Neighbourhood	# of calls
2004	2400-4200 10th Ave, excluding "the Dip"	7
	"10th Avenue Dip"	5
	2200-3100 blocks 11th Ave	5
	2500-3500 blocks 12th Ave	7
	2100-3500 blocks Anderson Ave (most in 2100-2300 blocks)	10
	2200-3600 blocks 14th Ave	9
	2200-2500 blocks 15th Ave	8
	2500-3000 blocks 1st Ave	9
	2500-3100 blocks 2nd Ave	5
	2500-3000 blocks 3rd Ave	7
	2400-3800 blocks 4th Ave (most in 2500-2600 blocks)	12
	2500-3500 blocks 5th Ave (most at Weaver Park area, 2700 block)	7
	2600-4100 blocks 6th Ave	9
	3000-3900 blocks 7th Ave	6
	3600-5400 blocks Argyle St	6
	Beaver Creek Rd (most Batstar-Marina area)	9
	2500-4300 blocks Bruce St	8
	Harbour Quay/general Harbour area	12
	4900-5000 blocks Melrose St	11
	3600-4900 blocks Neill St	6
	5200-6000 blocks River Rd	7

	Roger St from Victoria Quay to 6th Ave	6
	Stamp Ave from Roger St to Redford St	6
	5700 block Tebo Ave (all at one location)	8
	5000-5200 blocks Wilkinson Rd	5
2005	10th Ave "Dip" (all but two reports)	12
	2200-3800 blocks 11th Ave	11
	2400-3500 blocks 12th Ave	6
	2200-2700 blocks Anderson Ave	10
	2300-3000 blocks 14th Ave (most in 2300-2400 blocks)	9
	2300-2700 blocks 15th Ave	9
	3500-3600 blocks 17th Ave	7
	2600-3900 blocks 3rd Ave	6
	2700-3900 blocks 5th Ave	7
	2400-4800 blocks 6th Ave	10
	2600-3500 7th Ave	9
	2500-3900 blocks 8th Ave	5
	2300-3200 blocks 9th Ave	6
	Harbour Quay and general Harbour area	6
	Argyle St (two at Harbour Quay area and 13 in the 3700-3900 blocks)	15
	3700 block Argyle Way	18
	3600-3700 blocks Bishop Cres	6
	5100-3600 blocks Bruce St	6
	2700-4700 blocks Burde St (half at 4000 blk)	11
	5700 block Cherry Creek Rd (near new mall)	6
	5000-6200 Compton Rd	6
	3900 block Dunsmuir St	5
	4400-4900 blocks Elizabeth St	8
	3500-3600 blocks Estevan Dr	5
	Falls St in vicinity of Paper Mill Dam Park	5
	4800-5200 blocks Gertrude St	6
	5100-5400 blocks Golden St	15
	5200-5300 blocks Indian Ave	5
	4100 block Kendall Ave	6
	3600-4800 blocks Maitland St	7
	2200 block Mallory Dr	5
	4700-5300 blocks Margaret St	5
	4500 block North Park Dr	5
	5000-5200 blocks Pineo and Pleasant Rds	7
	4200-4700 blocks Southgate Rd	6
	Stamp Ave from Roger to Redford Sts	9
	3700-4500 blocks Wallace St	5
	5700 block Watson Rd	5
2006	2400-4400 blocks 10th Ave (six at "the dip")	10
	2500-3500 blocks 11th Ave	5
	2200-2700 blocks 15th Ave	11
	2500-3600 blocks 17th Ave	7
	2600-3900 blocks 3rd Ave	11
	2500-3900 blocks 5th Ave	8
	2600-4800 blocks 6th Ave	11
	2500-4800 blocks 8th Ave	11
	3700 block Argyle Way	7
	4900 block Broughton St	5
	3600-3800 blocks Bruce St (8 in 3700 block)	12
	2600-4000 blocks Burde St	9
	2100-2200 blocks Cameron Dr	8
	4100 block Clegg Cres South	5
	4100-4900 blocks Dunbar St	7
	4400-4900 blocks Elizabeth St	7
	3500-3600 blocks Estevan Dr	6
	4300-5200 blocks Gertrude St	5
	Harbour Quay and Port Authority terminal	5
	2400-2500 blocks Hilton Ave	6
	3900-4100 blocks Johnston Rd	5
	4100-4200 blocks Kendall Ave	7
	4000-5000 blocks Montrose St	6
	3900-4900 blocks Morton St	5
	3200 block Port Alberni Hwy	7
	Redford St between 3rd Ave and WCGH	6
	Roger St from 3rd/Stamp to Anderson Ave	6
	Stamp Ave from Redford to Roger Sts	5

In addition to the above, there were a number of reports concentrated on different streets surrounding West Coast General Hospital, the Wood St-Echo Field House/Echo Centre-Fir Park Village area, the Kitsuksis Walkway between Arrowsmith St and where Gertrude St meets Compton Rd, in the vicinity of North Island College and McKnight St where new residential development is taking place, at the top of Burde St where there is also new residential development, in the Cameron Heights/Ship Creek area, and nearby at the south end of the harbour area near the Coulson and APD sawmills.

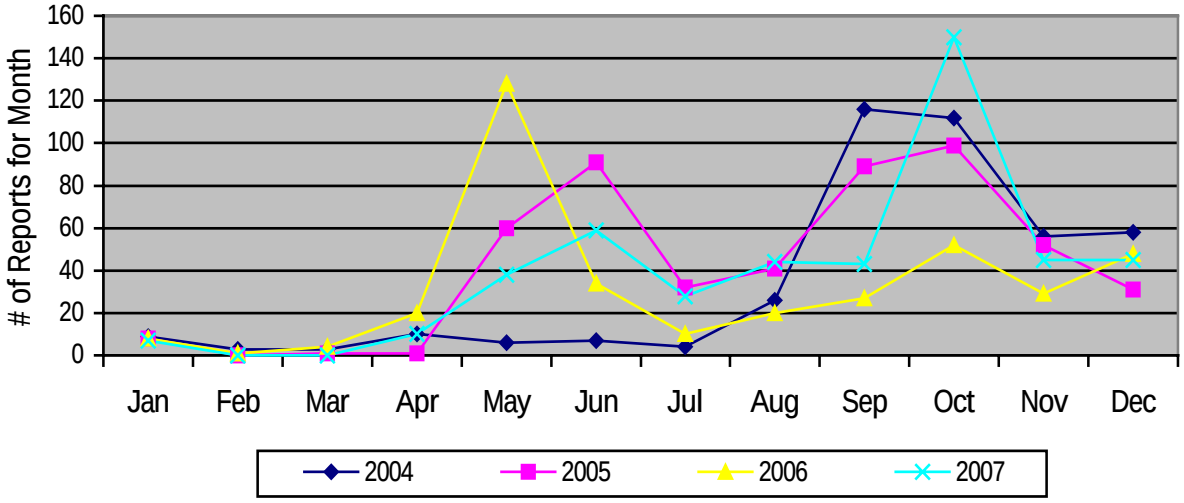
3.4.2 Patterns and trends revealed by the data

Looking at the three maps inserted after this page, which show the locations of bear-people conflicts for each of the years 2004, 2005, and 2006, it is evident that residents in South Port report significantly greater numbers of interactions with bears than do North Port residents. In both areas, however, the primary locations generating reports are adjacent to, or within one to two blocks, of creek corridors, including buried creeks (e.g., Treehouse Creek in South Port). These creeks, from south to north, are Ship Creek, Dry/Owatchet Creek (and tributaries), Roger Creek, Kitsuksis Creek, Lugrin Creek, and, of course, along the Somass River and estuary. Additional major areas of concern are adjacent to developed/undeveloped "edge" areas, such as around the Maquinna Woods, top of Burde Street, near McKnight Street and North Island College, Sahara Heights, Cameron Heights, and Westporte areas.

Figure 7 shows there are two annual spikes in bear-people conflicts. The first and lower spike occurs in spring; the second and higher spike occurs in autumn. A number of anomalies can be seen in the graph: 2004 had only one spike (late summer through autumn), but a high number of reports continued to the end of the year. For 2005, the year with the most reports overall, the graph clearly shows the two "normal" annual spikes, and a normal fall-off for the month of December. The data for 2006 shows a clear reverse in the spikes, with a very high spike for the month of May, then a general fall off and only a low "spike" for October, a lull in November, then another rise in December. The more normal pattern of two annual spikes re-occurs in 2007, with the spring spike being smaller than the one in autumn.

Some of these anomalies can likely be attributable to variations in annual weather patterns (and how these affect the availability of wild and domestic fruits). Some, however, particularly the high spike in May 2006, may relate more to two major factors: the easy availability of non-natural attractants, specifically garbage and domestic fruit (trees and grape vines); and the high ability of black bears to learn and remember where these non-natural attractants occur.

Figure 7. Comparison of bear-people conflict activity 2004-2007



3.4.3 Complaints in prior years

Data on complaints, as well as on the number of bears destroyed and translocated, for years prior to 2004 was only available in a very limited amount. Some aspect of the number of complaints from year to year is cyclical, with the main variables seeming to be a combination of regional weather conditions and current government policy on whether or not to remove and relocate (translocate) bears, or to destroy them. Increased experience and understanding of bear behaviour and ecology points to the futility of moving bears to new locations. In the first place, there may be no good bear habitat available. Secondly, they often end up back in conflict with people within a year or two. Another important reason for not relocating them is because they frequently cannot survive in the new habitat. Either they are killed or out-competed by a larger, more successful bear, or the habitat is not rich or diverse enough to support them and they starve to death. The other important variable is the degree to which areas on the edge of or outside of towns have been altered, largely by new developments or industrial uses. These only present a greater probability of bringing bears into increased conflict with people.

Regardless of the variables or cyclic nature of the phenomenon, it is clear that complaints in the years 2004-2007 indicate an upward trend overall, with 2005 showing the highest number of complaints received (505). That there were fewer complaints in 2006 can likely be attributed to two main factors: more “normal” weather patterns, allowing bears to find more seasonal wild foods at the usual time of year, and the high profile that bear-people conflict received in the local media.

3.5 Specific Hazards and Potential Risks

One of the primary purposes of the Bear Smart Community Program is to increase safety for residents. The following sections describe the hazards and potential risks for bear-people conflict in parks (provincial, regional, municipal) and trails, and at schools. There are also significant hazards in industrial and commercial areas, such as in the harbour area, at malls, restaurants, fast-food outlets, and food stores, and at institutional and multiple-dwelling housing complexes due largely to poor garbage handling. Most of the hazards can be reduced or eliminated when bear-proof waste management is put into place. In the case of parks and trails, additional practices, such as increasing visibility around play areas, brushing out trails, and effective signage and public information, can also reduce potential risks. Where possible, a hazard rating was assigned.

3.5.1 Surveys of parks

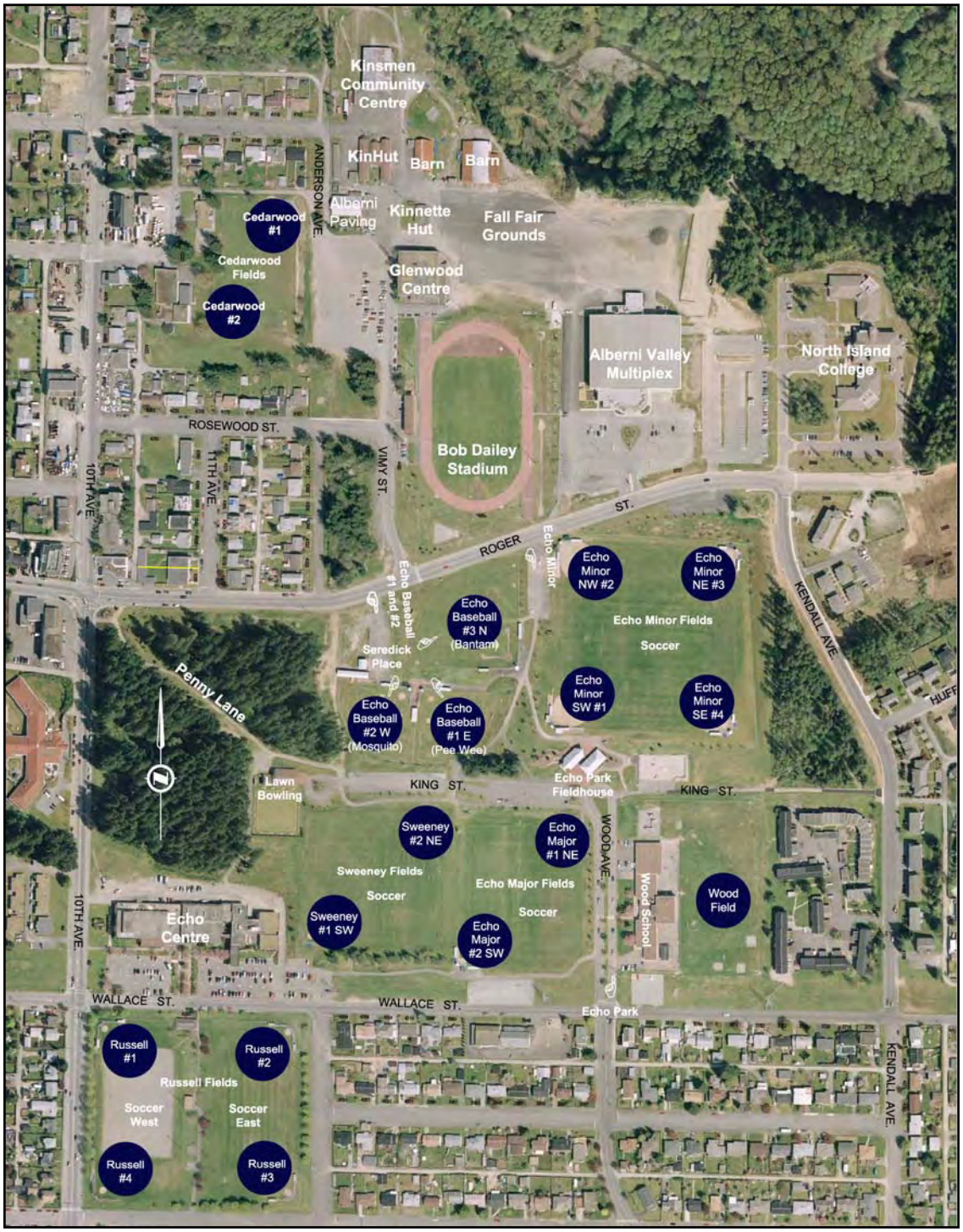
Parks and trails are assessed for public safety considerations in these categories: visibility around play areas and along trails; proximity to riparian areas, known bear travel corridors, and greenbelts; adequate signage related to the presence (or possible presence) of bears; and placement and design of garbage receptacles.

3.5.1.1 City of Port Alberni

The City of Port Alberni has 26 parks, including sports playfields and centralised facilities, such as the Alberni Valley Multiplex/Glenwood and Echo Park complex (including Echo Field House, Bob Dailey track and stadium, the Fall Fair Grounds, Penny Lane, and Russell Fields). The south and west sides of this large complex are surrounded by residential areas. The northeast and east sides, however, are on the edge of development and the Roger Creek riparian area, which is a known bear travel corridor (see Figure 11 on following page).

Not all 26 parks were surveyed in detail, due primarily to time constraints, but all were visited at least once. A summary of the hazard assessment follows in table 8. Where photos elucidate comments in the table, these are all on the two pages following the table. Virtually all these parks have the same hazard concerns, so recommendations for making all the parks “bear-proof/safe” are listed in section 4.0.

Figure 11. Alberni Valley Multiplex/Echo Park recreation complex



Source: http://www.city.port-alberni.bc.ca/ParksRec/CityParks/index.htm

Table 8. Summary of hazard survey of Port Alberni city parks

Port Alberni City Parks			
#	Park Name	Hazard rating	Conditions, Potential Bear Hazard
1	Black Sheep Rugby Field 3420 Argyle St	low to moderate	At the top of Argyle Street on south side. Dumpster here has metal lids and was locked at time of visit. Forested at the back and on the east side, where there is a ravine, but there is a new residential development currently in construction immediately east on the other side of the ravine, and a more or less completed new development across the street on the north. Some bear foods, including blackberries, occur here, but mostly in only a thin strip that is very visible to the rugby field.
2	Blair Park 5095 Pineo Rd	low to moderate	This park is situated on the east side of the lower/middle portion of the Kitsuksis Walkway. Bears are frequently sighted in this area (see write-up on the walkway). The rest of the area is residential and there are gardens and fruit trees, as well as "wild" blackberries nearby. The park itself has few bear foods and excellent visibility throughout. Hid-a-bag bins are not secure, so are not bear-proof; city empties them once a week. In the past year, at least one bear has been shot by COs in this general area because of complaints by residents.
3	Bob Dailey Stadium Vimy & Roger St	low to moderate	While the general area is near a bear travel corridor, there is excellent visibility at the stadium and on the track. Nearby Hid-a-bag bins are not bear-proof. Adjacent to Glenwood Centre, which has events that may have food and garbage dumpsters, but these are emptied at the end of each event day.
4	Cameron Heights Park 2121 Cameron Dr	low to moderate	Backed by and across the street from dense trees and understorey (see photo); fronted by and on one side by residential. Open barrel garbage can, empty, near edge of cover. No litter in park. Plenty of bear foods present: salal, huckleberry, Oregon grape, mushrooms, wild rose (hips). No visibility around picnic table. Two young residents said they saw the "occasional bear," sometimes get into people's garbage. Playset has good visibility immediately surrounding it, but person supervising children, if sitting at the picnic table (the only place to sit in t his park), would not see a bear coming from the forest behind them until practically at playset. Near Ship Creek.
5	Dry Creek Park 3501 Quadrant St	moderate to high	Contains important bear travel corridor along riparian area, which also has trails used by people; fairly dense forest and understorey with lots of blackberries and some salmonberries; fish in creek (see photos); 5-ft chainlink fence mostly around 2 horseshoe pitches, fenced front of field, no playset, portable outhouse, two haul-all type single bins, 1 open barrel garbage can, locked dumpster w/metal lids. Park is on a flat area surrounded on S and N by steep-sided slopes, above which are residential areas, some with fruit trees throughout the neighbourhoods. Park is also directly across street from city recycling depot, which has open access, and behind 3rd Street area that has a number of restaurants and fast-food outlets that have dumpsters. Bears are frequently sighted in this area.
6	Echo Park complex Wallace/Wood Streets	low to moderate	Northeast and east sides most vulnerable to bear presence, especially east side adjacent to housing complexes on Kendall Ave, where garbage is largely unsecured, poorly managed, and is backed further to the east by a large greenbelt area.
7	11th Avenue Park 2549 10th Ave	low	Situated in a residential area; park grounds are open, low chainlink fence along 10th only, neighbourhood fences on two sides, no fence along 11th. Good visibility throughout park, no understorey present, no bear foods present; didn't see any fruit trees in neighbouring yards. Hid-a-bag bin, not locked, no latch on back, quite stinky even though empty, located immediately adjacent to play area.
8	Glenwood Park 4453 9th Ave	low	Part of the greater Echo Park/Multiplex complex.

9	Gyro/Recreation Park 3245 7th Ave	low to moderate	Large city park with "old" arena and youth centre buildings, tennis courts, lacrosse court, playfields, and children's playset. Good visibility around playset area, but there are two non-secured hid-a-bag garbage cans in the playset area (see photo), except from houses across the street on the S side. Lots of clover in the grassy areas throughout. High fence around tennis courts, otherwise this park is unfenced; surrounded by residential area on three sides, across the street on N side is Dry Creek corridor, a known bear-use greenbelt; the dumpster close to the youth centre building on concrete area has metal lid, but was not locked.
10	Harbour Quay 5440 Argyle St	moderate to high	On the waterfront at the foot of Argyle Street and at the top of Alberni Inlet, near the estuary. Quay has restaurants, a fish market, and the weekend Farmers Market. The restaurants all have outdoor eating patios. About 12 Hid-a-bag bins located throughout, none bear-proof, some locked at the back and some not. Two large dumpsters provided by the City are in the Farmers Market area (see photo); they have plastic lids, not locked at time of visit. The largest restaurant has its grease stored in plastic cans enclosed inside a high chainlink fence on the north side that has three strands of barbed wire at the top; the largest stretch of these is compressed down, as if something, such as a bear, crawled over the top. There was a bear walking through the main part of the Quay about 4-5 weeks ago. The proprietors I spoke to were not concerned, but visitors tend to get very excited, mostly afraid, and this can be a potentially dangerous situation. There is a large play area that has good visibility, but there is a low, thick salal hedge nearby on the south side and it is immediately adjacent to the shoreline, where a bear could climb up the rocks and directly into the play area. Beside it are outlets that cook fish and other meats and have a very inviting smell, not just for visitors, but for bears, too. There was a bear under the pier last year that had to be shot because there were so many people around, lots of excitement and picture-taking, not a good situation. There are also a fuel terminal, ship-building company, the *Lady Rose* dock, marina, and other potential sources of attractants, particularly if these companies are not careful with their garbage. On the far south side of the area are a parking lot and docks where large fish bins are stacked.
11	Kitsuksis Walkway Arrowsmith & Margaret Sts at south end, Compton at Gertrude and Spencer Sts at north end.	moderate to high	The Walkway is a paved 3+-km loop around the lower section of Kitsuksis Creek, which empties into the Somass Estuary at Clutesi Marina. The north end of the loop has trails on the west side that lead off into unpaved and unofficial trails through bush. These areas are densely forested and have lots of bear foods, including huckleberries, Oregon grape, salal, fungi, and in season, fish in the creek and tributaries. There is a steep waterfall and the railroad trestle at this end. The other end is flat and open and sports a mini-golf area, a restaurant, a large parking area, the "old" arena (which has a number of events throughout the year), two gas stations, a city pump works, a footbridge, and some semi-wild areas, one of which is a popular birding area. In between are a number of benches and, on the east side part way up from the more developed end, is Blair Park, which has playsets, playfields, and a picnic shelter. On the northwest side, below the Gertrude St bridge, is a large patch of blackberries, a small swampy area, and an area of wildflowers that offer minimal bear foods (northern rice-root, *Fritillaria camschatcensis*). The walkway also has at least five single Hid-a-bag type garbage cans spaced out along both sides. These are not bear-proof because they have no latch mechanisms at the top, because they are unlocked at the back, and because they are not bolted to cement pads. (See also write-ups on Blair Park and on nearby housing developments.)
12	Kiwanis Park 3627 16th Ave		Not surveyed in detail, but near Maquinna Woods and other greenbelt areas.
13	Klitsa Park 4000 Compton Rd	low to moderate	This park is surrounded by residential areas and is generally wide open with good visibility. There are pear trees along the back and one side near residential area that residents said have attracted bears in past seasons.
14	Paper Mill Dam Park Falls Rd & Georgia Rd	moderate	Not surveyed in detail.

15	River Road Park 6038 River Rd	low to moderate	Small park on edge of Somass River. Bears could come up the bank, where, in spring and summer, there is good shrub cover. The playset has good visibility. The Hid-a-bag bins are not secured or locked, so are not bear-proof.
16	Roger Creek Park Gertrude at Pemberton	moderate	This park has two main parts: the large playset and waterpark area at the corner of Pemberton and Gertrude, and the riparian area along Pemberton. The riparian portion is used for picnics and has a shelter and tables throughout, as well as five or six non-bear-proof Hid-a-bag bins, some locked and some not. The back of one was partially open (see photo). The riparian area is mostly open with large old bigleaf maples and only lawn, but the area immediately adjacent to the creek has blackberries, huckleberries, Oregon grape, and salmonberries—quite dense in some places. The east "end" of the park has a RR bridge crossing Roger Creek. There are bears reported here fairly regularly. On the day of my visit, a mink was seen at the edge of the creek. The waterpark/play area has fairly good visibility, but there are garbage cans too close to the equipment, and there is a fairly dense area of salmonberries and other bear foods behind it on the south side. Between the picnic shelter and play area is a dense patch of understorey that has short trails through it from the Pemberton St side down to the edge of the creek. There are bear foods growing here, as well.
17	Russell Park 4250 Wallace St	low to moderate	Part of the greater Echo Park complex.
18	Seaton Park Hector Rd	moderate to high	Not surveyed, but during seasons when fish are present, has high potential to attract bears; alongside the Somass River in rural area.
19	Somass Park Hector & Service Rds	moderate to high	Not surveyed, but during seasons when fish are present, has high potential to attract bears; alongside the Somass River in rural area.
20	Spencer Park 5100 Spencer St	moderate	This park is immediately adjacent to the north end of the Kitsuksis Walkway, has considerable understorey containing bear foods in summer and fall. The residential area has reported problems with bears getting into garbage.
21	Stirling Field 4811 Beaver Creek Rd	moderate to high	This play field is adjacent to the Kitsuksis Walkway and commercial and food outlets. It is also adjacent to a tributary of Lugrin Creek and may have fish in it in fall.
22	Victoria Quay Park 4586 Victoria Quay	moderate to high	This linear park runs along the Somass Estuary. The east side is lined with commercial businesses, including food stores and restaurants. The Roger Creek (another bear corridor) estuary empties into the Somass at the south end of the Quay. The other side of the estuary is undeveloped primarily marshland that is a dedicated bird sanctuary. This is where visitors and residents come specifically hoping to view bears across the water (see photos on p. 55). In fall, when fish are present, there have been as many as four bears seen fishing along the far bank. Bears occasionally swim across the estuary here and have access to the garbage at restaurants (PWOR data supports this). They also move up and down the Roger Creek corridor, which gives them access to and from the bush on the east side of town.
23	Weaver Park 2700-block 5th Ave	low to moderate	Located in a residential area near downtown, this park is moderately treed along its south side, where there is also a ravine and buried creek bed. The playfield and playset are on the north side of the ravine and there is no understorey present, good visibility. The Hid-a-bag bin adjacent to the sidewalk on 5th St has no latch on back, so is not bear-proof. There was considerable litter on the ground around it. Local resident said in 50 years he has seen few bears, although PWOR data shows sow and 2 cubs seen here on more than one occasion in 2005 and 2006.
24	Westporte Place North Park 5578 Woodland Cres	low to moderate	Small children's play park in newish residential development, close to a "wild" interface area. 1 Hid-a-bag, unsecured. Playset is in the open with good visibility, except for wooden fence immediately behind it. Connects to west end of block near Westporte Place South Park by a fenced-in footpath.
25	Westporte Place South Park 5330 Russell St	low to moderate	While this larger park is wide open and has full visibility around play areas, it is across the street from a greenbelt, is adjacent to Rainbow Gardens Care Facility, which has commercial dumpsters, and very close to the greenbelt behind Rainbow Gardens.
26	Williamson Park 5081 Bishop Ave	low	This park has good visibility throughout. Surrounded by commercial and residential areas; little to attract bears unless nearby commercial dumpsters become a problem.

While not listed as a city park, Maquinna Woods is situated from south of Argyle Street near the top (east) end, all the way over to the far south end of town. This is the greenbelt area that is adjacent to some of the city schools (E.J. Dunn Middle School, Maquinna Elementary) and that backs the residential areas in the southeast border of the city. These woods are used extensively by city residents for recreational and "shortcut" purposes, and many portions have wide, hard-surfaced footpaths suitable for pushing baby strollers and bicycle use. The trails are mostly well-brushed out, especially after the winter storms of 2006, where many trees fell down and have since been removed.

Photos above and left taken at Harbour Quay: Farmers Market, beside restaurant, and at playset area. The bars on the dumpsters are down, which means the plastic lids can be easily lifted by a curious bear.

Photos below taken at Dry Creek Park show berries on slope above creek leading up to residential area and open garbage barrel chained to a tree beside the footpath.

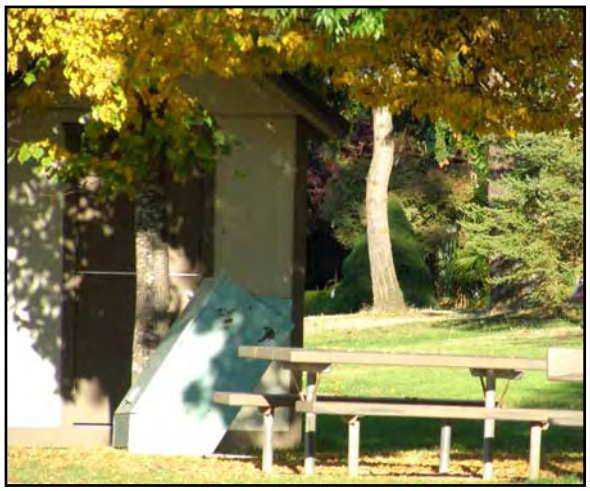
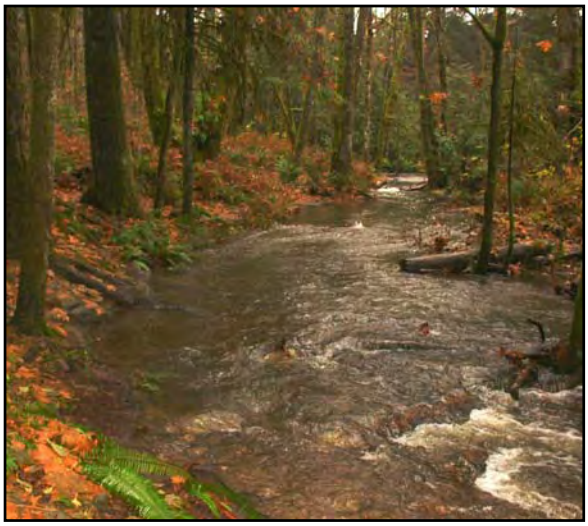


Photo left: Gyro Park, shows unsecured Hid-a-bag beside picnic table and adjacent to play area.

Photo below: Cameron Heights Park, shows garbage barrel and picnic table at forest edge, bear could approach along path on left or from behind picnic table without being seen.

Photo left: Roger Creek Park, shows unsecured Hid-a-bag not locked at back. Photo below shows dense riparian area and trestle, used by people as a walkway.

Photo below: Kitsuksis Walkway, northwest side above foot-bridge where “unofficial” trails lead above riparian area having lots of bear foods, plus fish in creek during fall. Photo below right shows Kitsuksis Walkway beside Blair Park.



3.5.1.2 Alberni-Clayoquot Regional District parks, trails, and sites near Port Alberni[29]

All of the following regional parks and trails have some degree of wilderness or semi-wilderness characteristics. Black bears, among other species of wildlife (including cougars and wolves), range throughout these areas. Public use of these parks and trails by both locals and visitors—while not under the jurisdiction of the City of Port Alberni (except a small portion of the Log Train Trail)—is fairly high, and steadily increasing. None of these were assessed for this report.

Mt. Arrowsmith Regional Park

Mount Arrowsmith is a prominent visual focal point for most of the central portion of Vancouver Island. Access to the mountain is by a gravel logging road that starts near the summit of Highway 4, about 10 kms east of Port Alberni, then approximately 20 kms in from the highway. Access is also via a logging road off the Bamfield Road/Franklin River area south of Port Alberni. The park is on the east and west sides of Mt. Cokely in the Nanaimo Regional District. The public has access through the park using trails such as the Rousseau Trail and the Arrowsmith Trail. A long-time park user said, "While I don't believe there is much bear habitat available at that altitude (1000 m), there are some patches of blueberries and crowberries that bears would eat. There is still some old-growth on the lower Rousseau Trail that bears may use for denning habitat, and there are a few swampy ponds with skunk cabbage. In the dozens and dozens of times I've hiked that area, I've never seen a bear." (J. Carlson, personal communication, Aug 2007)

Sproat Lake (Electoral Area D)

The Sproat Lake Parks Commission operates two parks: Cougar Smith Park and Faber Road Park, and a network of public trails around the Sproat Lake area. There are bears and bear habitats here, as well as potential for bears to access residential garbage.

Log Train Trail

The Log Train Trail is a well-used linear trail, a large portion of which is leased to the Alberni-Clayoquot Regional District by the Highways ministry. The trail runs for 26 kms along the foot of the Beaufort Range and is accessible from some points within the city limits. The trail is used by walkers, joggers, horseback riders, and bicyclists. While the lease specifies non-motorised use, there is unauthorised dirt bike and ATV use. The trail crosses many creeks and runs adjacent to farms, residential areas, wetlands, and active logging areas. All potentially offer garbage attractants; agricultural areas have livestock attractants. The central part of the trail is adjacent to McLean Mill National Historic Site, where there is a café, garbage cans and a commercial dumpster, a fish hatchery, and tributary trails. The trail is heavily used by residents and visitors, and has some organised mountain-biking and running events on it and tributary trails. A

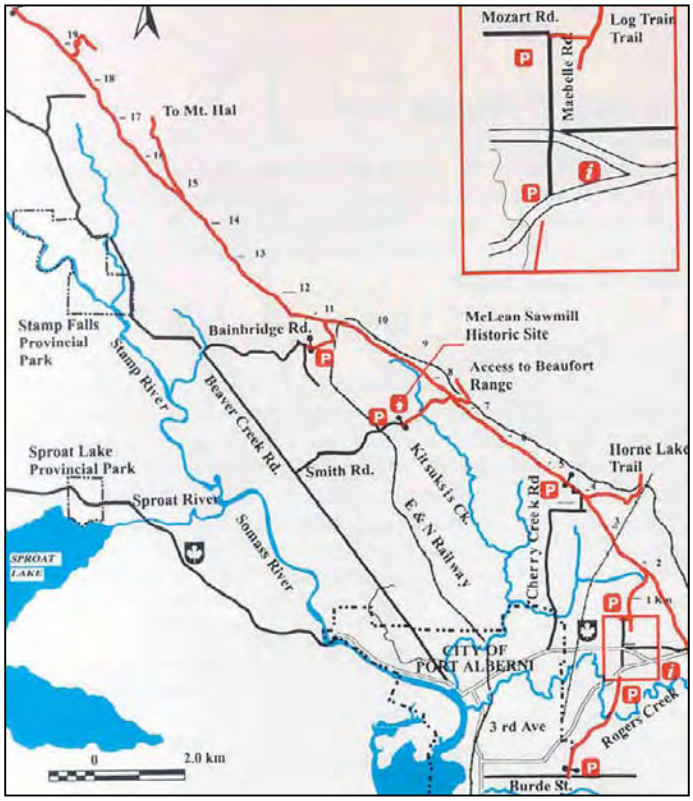


Figure 12. Map of Log Train Trail, a regional trail. Reprinted from the *Alberni Valley Trail Guide*, courtesy of Rick Avis and the Alberni Environmental Coalition.

[29] http://www.acrd.bc.ca/; 250-720-2700

local group, Friends of the Log Train Trail, maintains the trail and conducts walks that include public information on bear safety.

Other parks and trails in the area

There are many informal trails throughout the Alberni Valley, some of which are accessible from within or near the city limits. A volunteer group published the Alberni Valley Trail Guide, which lists 20 trails and has information on avoiding conflicts with wildlife, including bears. The guide is part of an ongoing project that has mapped about 110 trails within and beyond city limits. A spokesperson says: "We would like to see the boardwalk that the Hupacasath and the city have put in at Victoria Quay linked to the Log Train Trail via a new trail along Roger Creek. There is interest in linking the Log Train Trail to the Horne Lake Trail, an extension of the National Trail from Courtenay to the Log Train Trail linking to a new trail down the Alberni Inlet, and eventually linked to trails near Cowichan Lake and the Galloping Goose Trail between Victoria and Sooke." [source: http://www.westcoaster.ca/]

3.5.1.3 BC Provincial Parks

There are four provincial parks in the vicinity of Port Alberni: Stamp River, Taylor Arm, Sproat Lake, and Fossli. None were assessed for this report. While all are small, they are well-used for a variety of recreational activities, including camping, fishing, swimming, windsurfing, and water-skiing. There is also a considerable cultural and natural history contingent (of both residents and visitors) that uses the various park and nearby wilderness trails. Bears, wolves, and cougars may be encountered at any time in any of these parks and trails. The park operator is RLC Enterprize Ltd., phone: 250-474-1336, email: office@rlcenterprize.com; mid-island contact: Brad Ashdown, 248-1134 (Parksville). Source for the information below is on the BC parks website: www.env.gov.bc.ca/bcparks/.

Figure 13. BC Provincial Parks in the Alberni Area, courtesy BC Parks website www.env.gov.bc.ca/bcparks/

Stamp River Provincial Park—327 ha

This riverside park has 23 campsites and a main hiking trail that weaves through the forest, past the rapids and waterfall. Named for the pioneer who built Port Alberni's earliest sawmill, this park is a fusion of Stamp Falls and Money's Pool provincial parks. One of the park's main attractions is the annual run of Pacific salmon (sockeye, coho, and chinook) circling in the pool below Stamp Falls before ascending the fish ladders on their way to spawning beds. Lookout points offer views of the salmon fighting their way up the falls and fish ladders. This natural phenomenon occurs every year, starting in late August with sockeye and continuing with coho and Chinook right into December. In addition to a large number of people, the salmon also attract black bears. While fishing within park boundaries is not permitted, this park is a popular base camp for anglers fishing other parts of the Stamp River, as well as visitors travelling to and from the west coast of the Island. Dogs are required to be on a leash at all times in the park.

Stamp River is the main park where bears have higher potential to be a problem because of the high numbers of fish during their various spawning seasons. This park is heavily used by camping fishers during those times. If a bear is reported in the park, the operator posts a "bear in area" sign, and keeps it up for about three days, then removes it if the bear goes away. Most of the bears seen in this park are generally on the other side of the river from the campground. The park operator does not provide any other public information about bears or how to prevent problems with bears, although this information is available on the BC Parks website (where people also access information about making reservations). While there are no bear-proof caches or lockers in the campground, there have recently been two Haul-all bear-proof bins installed to service 23 campsites. These bins were provided by Rollins Machinery in Langley BC, which also provides the City of Port Alberni with bear-proof bins. The bins are regularly emptied into a large commercial dumpster which, while not bear-proof specifically, does have a heavy metal lid. The operator said the lid is not kept locked unless a problem with a bear getting into the dumpster is reported. The dumpster is emptied when full.

Sproat Lake Provincial Park 43 hectares

Located 15 minutes west of Port Alberni, Sproat Lake is a popular park for swimming, fishing, water-skiing, and windsurfing. This park is heavily used by city residents. The Martin Mars water bombers—the largest in the world—are based at the lake, and this attracts a number of visitors from outside the area. The park has two separate campgrounds, a large day-use area, and three picnic sites. The forest here is Douglas fir and western redcedar. The lower campground is located close to the lake. The upper campground is located across the highway from the lake and is connected to the lower campground and beach access by a trail that leads through a highway underpass. A variety of short access trails go around the park, including a trail to the eastern end of Sproat Lake, which has one of the finest panels of prehistoric petroglyphs in British Columbia. This park does not have a playground. Pets must be on a leash and under control at all times. Backcountry areas are not suitable for dogs or other pets due to wildlife issues and the potential for problems with bears. There are no bear-proof bins at this park.

Taylor Arm Provincial Park 71 hectares

Taylor Arm Provincial Park is located 23 km northwest of Port Alberni. The park's main purpose is to provide group camping facilities close to the shores of Sproat Lake. The three group campsites are located across the highway from the lake. A trail to the lake and beach leads through a highway underpass and takes approximately 10 minutes. This park does not have a playground. There are opportunities for lake fishing at this park, and, as with all the parks in this region, dogs must be kept leashed due to the potential for problems with bears.

Fossli Provincial Park 52 hectares

Fossli is strictly a day-use park. Situated on the south side of Stirling Arm on Sproat Lake, this undeveloped park has a beautiful walking trail. The 30-minute route leads through second-growth forest

to an old homestead site on Sproat Lake. The park has a picnic table and a pit toilet. There are opportunities for lake fishing here, but there is no playground nor is any hunting allowed. Dogs are required to be on a leash at all times due to the potential for problems with bears.

3.5.1.4 National Parks and National Historic Sites

Pacific Rim National Park Reserve

This national park reserve has three components: Long Beach, the West Coast Trail, and Broken Group Islands. Road access to Long Beach is through Port Alberni. Access to the northern portion of the West Coast Trail is by the road to Bamfield, which starts in Port Alberni, and one route of access to the Broken Group is by the *MV Lady Rose* or *MV Frances Barkley*, both of which have their headquarters dock at Harbour Quay in Port Alberni. Pacific Rim NPR has active and effective waste management and public education programs about safety in "bear country." One of the Alberni-Clayoquot Regional District's two regional landfills is located in the Long Beach component of the park. The park advises the public to "Keep pets on a leash and children close to the group: predators such as black bears and cougars call the rainforest their home. Make noise to warn them that you are in the area. Keep your group together and back out of the area if you see a predator. For more information see the *You are in Bear Country* and *The Cougar Fact Sheet* links on the park's website (http://www.pc.gc.ca/pn-np/bc/pacificrim/index_e.asp).

McLean Mill National Historic Site

The site encompasses 12.5 ha, and has about 4 kms of trails, most in the open, and a short one through dense bush. Fish streams (Kitsuksis Creek, side-channels and tributaries) and wetlands occur, and bears use these habitats primarily during fall, when there are fewer visitors. The central section of the Log Train Trail is nearby, and there are adjacent side trails. A volunteer group operates a salmon hatchery on site. The hatchery and on-site café present opportunities for bears to have access to garbage; however, the people who manage these areas are knowledgeable about attractant issues and waste management is well-contained. Site personnel say they've never had problems with bears, and only the occasional sighting by a visitor is reported. The site is typical of a coastal lumber camp and sawmill complex from the middle of the 20th century and was named a National Historic Site in 1989 [source: N. Malbon, Park Administrator, and www.alberniheritage.com/mill/].

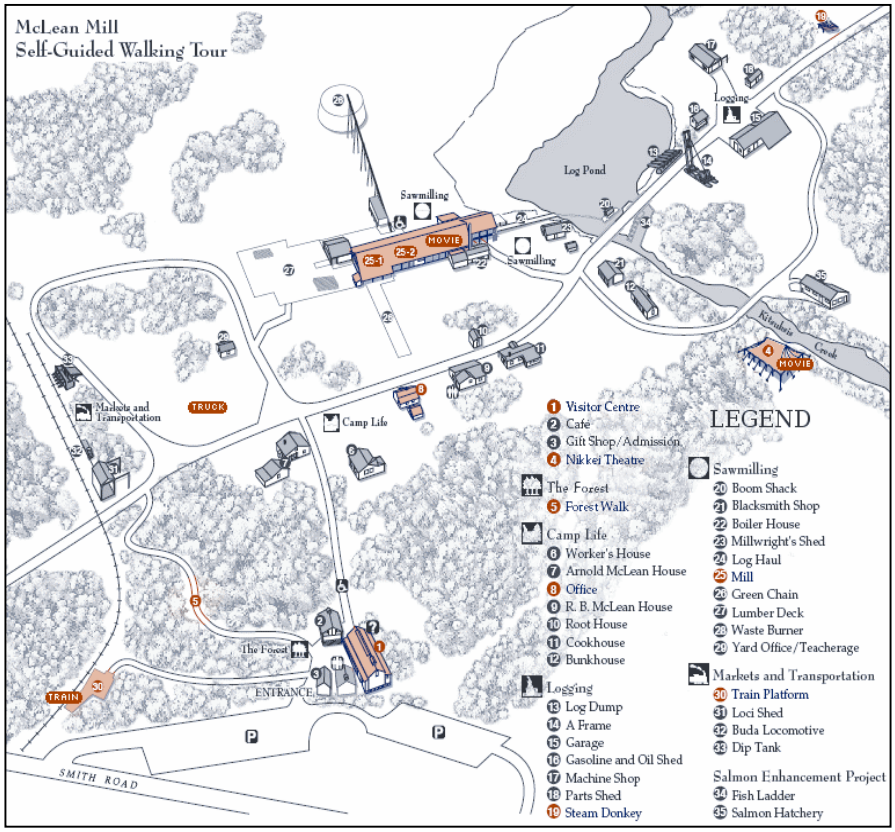


Figure 14. Map of McLean Mill National Historic Site, courtesy of the heritage section of the City of Port Alberni website: www.alberniheritage.com/mill/

3.5.2 Surveys of schools

There are ten public schools in Port Alberni (eight elementary schools, two middle schools, one senior secondary school, and one alternative school), all in School District #70. Most are located in good bear habitat. Nine were surveyed and assessed (VAST was not assessed). The following table will be provided to the district superintendent for distribution to the schools. Since recommendations to effectively bear-proof each of the school grounds are so similar, they are listed in section 4.0. All could benefit from a coordinated effort with surrounding residential areas to bear-proof the neighbourhoods.

Most of the schools had one or more problem areas or practices associated with waste management and landscaping plants that could be remedied to increase the safety of both students and staff (and, in some cases, for parents dropping off young children at elementary schools or nearby daycare centres). Many had dumpsters with plastic lids; at many, the lids were not kept locked; and at some, dumpsters were located immediately adjacent to play areas. They all need to have bear-proof dumpsters and garbage cans, or empty or bring smaller cans indoors at the end of each day.

Playsets at some of the schools were ill-situated too close to dense cover, berry patches, or fishbearing creeks. Some playsets were not easily visible from school windows, and at others, the fencing was either too low, had breaks and openings to allow bears easy access (some even placed dumpsters or open garbage barrels at openings in fences), or only partially enclosed the playsets or playing fields. All playsets at elementary schools should be in the open, away from wooded areas and creeks that give cover and allow movement of bears, and be clearly visible from school windows. There should be playground supervision when children are playing during school hours (school staff reported that this is the case). Some of the schools were adjacent to neighbourhood situations that presented additional problems with garbage management outside of the responsibility of the school district.

All schools need to remove bear foods, including landscaping attractants, from and immediately adjacent to school grounds. Bear Smart information should be included in the curriculum or presented to students and staff at least twice-yearly (early fall and spring).

The following school listings give individual hazard ratings and, in the spirit of “a picture is worth a thousand words,” two pages of photos follow the table that show the good and not-so-good practices at some of the schools. In addition to conditions and practices on and around the schools, assigned hazard ratings also reflect the level of awareness of school staff of what causes bear-people conflicts and the proactive measures they may be taking to reduce or eliminate the potential for problems.

Table 9. Hazard survey of schools in Port Alberni (SD #70)

School/Address	hazard rating	Comments
Elementary schools		
Alberni Elementary School: K-5 / French Immersion 724-0623 4645 Helen Street, Port Alberni, BC, V9Y 6P6	low to low-moderate hazard in berry season	East edge of school grounds (back) not fenced, lead upslope to RR tracks; slope covered in berries, wild rose (hips). Dumpster at back (east) of school at edge of ball court has plastic lids, not locked; beside it is a Hid-a-bag bin. Also a Hid-a-bag at play area in front of school. Hid-a-bag on ball court on south side of school was locked at back. School grounds very clean, no litter; children eat lunches and snacks indoors. Small amount of bear foods on school grounds (e.g., cotoneaster along front of building with red berries, blackberries and wild roses on north side near fence, and blackberries at back corner near Johnston Rd.). Older play area adjacent to Johnston Rd has two open barrel-type garbage cans, but principal said they are rarely used. This playset and one near front entrance to school both have good visibility from school windows. This school also has a daycare. All children are supervised during play times.

Eighth Avenue School: K-5 723-7631 2941 - 8th. Ave., Port Alberni, BC , V9Y2K5	low to low-moderate hazard in berry season	VP said a bear was sighted a block away about a week and a half ago. Bears occasionally sighted in general area. Dumpster at back of school has metal lids, closed but not locked (VP said they usually are locked). Playset on S side has good visibility around it, but not from school windows (see photo). High chain link fence around most of school, few openings (one near playset), and no fencing at 8th Ave entrance area. Hid-a-bag about 40 ft from playset, between playset and school door. Residential area with a few gardens; across the street is Quality Foods, which has a deli and kitchens, as well as other garbage which could attract bears. 8th Ave entrance has wide row of bearberry (see photo) and four cherry trees. Another Hid-a-bag at ball court at NW corner of school, as well as open barrel garbage cans; also 2 small dogwood trees here. School is within a few blocks of the Dry Creek ravine, a known bear travel corridor.
Gill Elementary School: K-5 723-9311 5520 Beaver Crk. Rd., Port Alberni, BC, V9Y 8H9	low to moderate hazard in berry season	VP said no bears on school grounds in 2 years. All play areas visible from school windows (see photo). No bear foods noted on school grounds, which were very clean. Grounds mostly fenced, but bear foods (blackberries, skunk cabbage) outside of fence between Mary Street and Josephine St cemetery area. Gaps in fence on this side. Hid-a-bag beside ball court at back of school, close to school door. Dumpster located well away from play area; has plastic lids and is kept locked (see photo).
John Howitt Elementary: K-5 723-7521 3867 Marpole St., Port Alberni, BC, V9Y 6Y3	low hazard	School is close to the northeast edge of town, where bears are normally more prevalent than in other locations; school grounds very clean; mostly fenced, but fence is only about 4 ft high chain link; play field at back only partially fenced and there is a densely wooded area on a rise behind school with no fence; did not see any bear foods around school, but there were fruit trees and birdfeeders at a few residences on both sides of school. 1st playset behind school adjacent to parking lot is open, but has good visibility from school windows; 2nd playset at side of school partially fenced and has no visibility from school. Outside are three Hid-a-bag garbage bins well-bolted to concrete pad, but the backs were all unlocked, allowing bears access to garbage bags; dumpster has metal lids and was locked (see photo).
Maquinna Elementary, K-5 724-0512 3881 Bruce St., Port Alberni, BC, V9Y 1J6 smanson@sd70.bc.ca	moderate hazard	School is across the street from the “Maquinna Woods” (see photo), which borders on the forest at the southeast edge of town. School is well fenced, but openings at the front would allow bears access if one was roaming nearby streets looking for garbage, and there is an opening on the east side near the dumpster (see photo). No bear foods on school grounds except for cherry tree right in the middle of the playset area (see photo). Play time is supervised. Dumpsters are emptied by the city. A Bear Aware program was delivered last fall (a year ago) by Crystal McMillan, Bear Aware Coordinator for Ucluelet.
Wood Elementary School: K-5 724-1132 4111 Wood Ave., Port Alberni, BC, V9Y 5E8	low to moderate hazard	Dumpster in parking lot has metal lids, locked. Playset on N side of school is in the open, but there is no visibility from school windows. Children are always supervised during playtime, plus at least 2 staff rove around the school during lunch and recess. Multi-height chainlink on N side, with openings; no garbage cans near playset. Hid-a-bag at back on ball court, back was open. No bears have been seen on school grounds for at least the past 2 years. Hid-a-bag at front N parking lot. NE side of school at far edge has blackberries; 5-foot fence ends at berries. School is near NIC, which has bears in the bush and trail behind it. This is possibly an extension of the Roger Creek bear corridor. The school is just east of and open to the Echo Park complex. One potentially high source of bear attractants is the Kendall Street townhouse complex that borders on its east side. This complex is very untidy with lots of barbecues and garbage cans in carports, 4 plastic-lidded unlocked dumpsters.

Middle schools		
EJ Dunn: 6-8 / French Immersion; 723-7522; 3500 Argyle Street , Port Alberni, BC, V9Y 3A8	moderate to high hazard	Office staff stated that there are about 6 or more incidents of a bear on the school grounds each year: "It's pretty common." There were bear foods on the school grounds (blackberries-see photo). Students are supervised on the play areas. School grounds were clean. High fence around ball court, but it is open at one end close to the school. This school is almost surrounded on one side and at the back by the Maquinna Woods, and residential areas (see photo). There were Hid-a-bag bins, but they were all unlocked at the back; small open bins as well.
AW Neill: 6-8; 723-8151; 5055 Compton Road, Port Alberni, BC, V9Y 7B5	low to moderate hazard	Principal said no bear sightings at school in many years. School is across the street from the Kitsuksis Walkway, where bears are known to occur. Dumpster immediately behind school has metal lids and was open. It is situated between the school door and the playset. Custodian said she could lock the dumpster if she had a padlock and a key. Playset is somewhat visible from school windows on west side. Play field at far west of school has small creek, forest on other side of chainlink fence (see photo). Track bordered on north and a bit east has dense bush (bear foods here) and trees; lots of berries growing through the high fence behind the playset and track area. Hid-a-bag beside track. Also Hid-a-bag on courts in front of school entrance. There is also an open, unlocked dumpster at the far side of the staff parking lot, bordering on bush and residential area. School grounds were fairly tidy, free of litter. Front of school is busy street and residential area on other side.
Secondary schools		
Alberni District: 9-12 , 723-6251; 4000 Burde Street, Port Alberni, BC, V9Y 3L6	moderate to high hazard	Bears come to the cafeteria area at the back of the school. Last June a bear was seen jumping on the dumpster. They call the CO fairly regularly. Bear sightings pretty steady each year. Bears come at night, too, and there is a mess to clean up in the morning. There many were haul-all type bins around the school, but they were all open on top and at the back. There were also the open barrel type garbage cans around the school. The inner courtyard was clean, visibility is good here, and there are no bear foods here. The playfields at the back border onto Dry Creek, which is a bear travel corridor (see photo). While the school is mostly fenced, the adjacent residential area has a lot of gardens, fruit trees, and available garbage cans. There are cherry trees on the school grounds. There was a fair amount of litter around the school. The dumpster at the back was wide open and full (see photo) and not locked. Did 2nd visit and same conditions found.

Photos above: 8th Avenue School: playset not visible from school windows; photo top left next page: bearberry used as landscaping in front of school.

Photos below [l and r]: Gill School: play areas visible from school windows; dumpster well away from play area, kept locked, but has plastic lids.

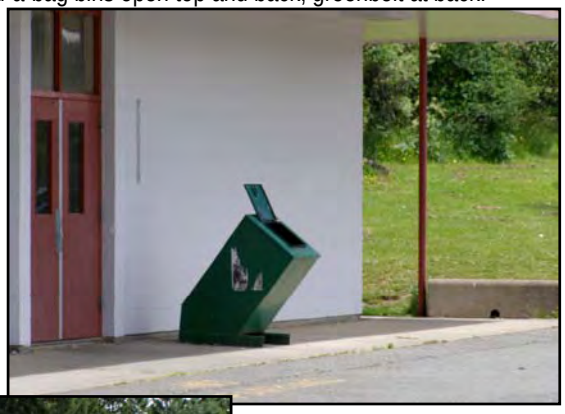
Photo below: John Howitt: Dumpster has metal lid and is kept locked.

Photos below: Maquinna: Maquinna Woods across the street; cherry tree for shade in middle of playset area, also shows M'akola Housing across street, where there are a lot of reports about bears in garbage; dumpster near opening in fence, lids open, near play area.

Photos below: EJ Dunn: [l] blackberry patch on school grounds; [r] Maquinna Woods and residential area behind school.

Photos below: AW Neill: [l] play field at back near creek; [r] playset visibility good, unlocked dumpster between it and school.

Photos below: ADSS: open dumpster is full and has plastic lids, Hid-a-bag bins open top and back; greenbelt at back.



In addition to conducting assessments, I also provided each school with a copy of the following checklist so they could conduct their own periodic "bear aware" assessments and monitoring activities.

Port Alberni Bear Hazard Assessment
Checklist for Schools

- ☐ Cut back blackberry bushes (and other bear food plants) around school perimeter and near dumpsters and garbage cans.
- ☐ Consider removing fruit trees from school grounds and replacing them with tree species that do not attract bears (no fruit or nut trees).
- ☐ Monitor or patch holes in perimeter fences.
- ☐ Trim back vegetation along and overhanging fences.
- ☐ Remove bear foods from school or ornamental gardens.
- ☐ Remove bear foods from understorey on trails near school and from landscaping at front of schools.
- ☐ Move playsets to open, visible areas, or remove plants that block visibility from school windows. Always make sure play times are supervised.
- ☐ Don't locate garbage cans on or next to playset areas.
- ☐ Keep dumpsters locked & emptied frequently.
- ☐ Monitor small garbage cans, either take indoors or empty at end of day, especially in warm weather. Preferably, install bear-proof garbage cans on school grounds and keep them locked (except for where garbage goes in to them).
- ☐ Remove garbage cans from play areas.
- ☐ Consider getting students to do litter patrols.
- ☐ Consider more security (fencing and closeable gates) at perimeter.
- ☐ Consider (for schools with moderate to high hazard ratings) having "bear drills" to familiarise students and staff with wildlife (bears, cougars, etc.) safety procedures.
- ☐ Invite a Conservation Officer and a Bear Aware speaker to address whole school, preferably at beginning of school year, possibly again in late spring.
- ☐ Actively encourage neighbours to be more Bear Aware.

For more information, please contact Maggie Paquet, 723-8802, maggie_paquet@telus.net.

3.5.3 Select residential, commercial, and industrial locations

This section contains two tables. The first is of "other areas," and includes daycare centres, housing developments with playsets, and "wild" areas and ravines. The second table contains my assessments of selected commercial and industrial areas within the city. Again, pages of select photos follow the tables.

Table 10. Hazard survey of other areas (daycare centres, housing developments, greenbelts, etc.)

Name/Location	garbage can or dumpster	hazard rating	Description, potential bear hazards
Kiwanis Hilton Centre 2500-block 10th Ave	Hid-a-bag at play area	low	Across the street from 11th Ave park. Completely fenced (4 ft chain link), small trees, no understorey, visibility good, surrounded by residential area (see photo).
Ship Creek Ravine	n/a	low to moderate	Densely wooded ravine (see photo) runs from Anderson St down to harbour. Ship Creek has fish; in berry and fish seasons, may be attractive to bears. Nearby resident said rarely sees bears.
Townhouses on Kendall Street and back of Wood Street Elementary School	dumpsters open	moderate to high	This is a very messy neighbourhood. Four dumpsters, all plastic lids, none locked, garbage cans in carports. Outdoor barbecues, furniture, buckets and boxes of "stuff," all sitting outside doors fronting on parking lots. On north side of this, which shares north border of school, is a footpath from Kendall Street leading west beside school and to Echo Park complex, etc. There is dense bush at the Kendall Street end along the north side of this path that has lots of bear foods, including wild rose hips, blackberries.
New housing being built at top of Roger Street to south of NIC, McKnight Street	didn't see any	moderate to high [at first, especially]	More than a dozen new homes. The back (east) and side (north) has dense bush and strip of forest on south side of Roger Creek and along Powerline Trail behind NIC; a known bear movement corridor, connects to Roger Creek, another bear corridor. Also, the "College Heights" townhouse development, on the south edge of this development; same comments (see photos).
M'akola Housing 3777 Argyle Way	2 dumpsters partially enclosed; fitted with a latching ring by the city	moderate to high	This non-profit housing society operates three developments in Port Alberni. This location has lodged numerous complaints with the Conservation Officer Service. It is surrounded on two sides by the Dry Creek ravine (see photo), a well-used bear travel corridor that runs from the Harbour near the paper mill right up to the eastern edge of town and into the forests (mostly recently logged) beyond. The two dumpsters have metal lids and are not kept locked, in spite of notices to residents to latch them closed after depositing garbage. A bear had been into the garbage that morning and the caretaker had to clean up a big mess. The dumpsters are enclosed in a 6-foot high concrete block enclosure on two and a half sides, but there is no gate or full enclosure around them so the city works crew can slide them out to empty. At the request of the caretaker, the city fitted two dumpsters with metal rings to make it easier for residents to latch the lids closed (see photos). Some residents don't bother doing this, making it easier for bears to access the garbage. Currently, one of the dumpsters has been replaced by the city and it does not have one of these special latches. The company representative on site said that the city only empties these once a week on Fridays (my visit was on a Thursday and both dumpsters were overfull with lids propped open by garbage, although the caretaker said they are usually closed—see pics). They can phone for an extra pickup, which costs $36 each time ($18/dumpster). She said the other two developments have twice-weekly pickup, but only one dumpster each. She also said they report each bear sighting to the CO

			Service, but no one ever attends or responds. A log is kept on complaints reported. The playset area is immediately behind the dumpster enclosure. This development has a low wood fence between it and the ravine, but there are openings in it. School kids go through the woods here (which has salal, Oregon grape, fungi, and other bear foods—see pics)) on their way to ADSS and into town. "Transients" also use the area and there is some degree of litter and garbage strewn around on the footpaths. Residents are advised to keep their barbecues clean and stored away; I didn't see any around the units. There is a picnic table slightly off to one side closer to the ravine and about 100 feet away from the playset area. I saw no other garbage receptacles outdoors. This development seems to be continuously dealing with bears and are frustrated trying to get effective garbage pickup and compliance by residents. They already removed at least five ornamental fruit trees and keep the grounds very clean and devoid of landscaping plants that attract bears. The tenant relations staff indicated they would like to work with authorities in the COS and in the city to solve their problems and increase safety for residents.
M'akola Housing 3737 Bruce Street across from Maquinna Elementary School	1 dumpster	moderate	City empties dumpster here twice weekly (Tuesday and Friday); dumpster was open (metal lids); barbecues seen in front and behind some units; directly across the street from Maquinna Elementary School, backed by Maquinna Woods; across Bruce Street in residential area was a low fence completely overgrown with grape vines.
M'akola Housing Neill Street (near Ship Creek and 3rd Ave)	dumpster at back and side	moderate	Playset in area fenced on two sides, open at 3rd and where building is. Chain link fence along Ship Creek Rd is mostly overgrown with blackberries. Visibility to upper play area is good from building; visibility to lower play area near 3rd is not so good, but there is no understorey anywhere in play area; all structures in the open (see photo). Right across the street from the Ship Creek ravine, which is a bear travel corridor.
3100-blk McNaughton near top of Argyle	garbage cans along street	moderate to high	This residential street ends at the Dry Creek ravine. A mowed strip between residences and ravine is much-used by local children for play. One resident living at the end of the street says he has seen bears walk right by children and that the children ignore the bears and the bears seem to ignore the kids. He also said bears are seen frequently in the area; a long-standing problem. Residents here have many fruit trees, gardens, grape arbours. Most seem to have fences around these, but one resident said bears break through these all the time, regardless of barbed wire and other obstacles. There is a new residential development immediately to the east (further up Argyle, see photo) of this older neighbourhood that is adjacent to the forest and ravine. There were numerous bear foods on city property, including blackberries. Garbage pickup had occurred earlier on the day of my visit and the street was lined with empty garbage cans late in the day (see photo).
Top of Argyle Street across from and east of Rugby Field	didn't see any	moderate	This is another edge of town where there are many new residential areas being developed (see photo). All of these are immediately adjacent to forested areas that have considerable understorey, particularly at the outer edges, that have blackberries, salal, Oregon grape, and other bear foods present.
Dry Creek corridor and "10th Avenue Dip"	Hid-a-bag bins at both ends of "Dip"	moderate to high	This section of 10th Ave has numerous reports about bears in all seasons and in every year of this study. It spans Dry Creek, a known and well-used bear travel corridor.

Roger Creek and corridor tributaries	Primary sources of garbage are dumpsters at mall at top of city, residential garbage through town, estuary at Victoria Quay		The malls at the top of Johnston Rd at the entrance to town both report problems with bears; residents down the corridor and past Roger Creek Park and Southgate St also report problems with bears. At the bottom, where Roger Creek empties into the Somass Estuary and Alberni Inlet, is Victoria Quay, a linear park that has a number of garbage bins.
Residential area on both sides of the Kitsuksis Walkway (see write-up on city parks), from Spencer Street, across Gertrude and west to Indian Ave	dumpsters at condo and apt complexes, single cans and bags at houses; only 1 duplex shows use of bear-proof cans	moderate	Kitsuksis Creek and tributaries flow year-round throughout this entire area. The creek has chinook and coho in it and is lined pretty much the whole way (3+ km round-trip footpath) with blackberries and other bear foods (see photos in Parks section p. 36). Many residences have gardens and fruit trees, mostly not fenced. There are also some "wild" areas on the west side, and the north end is mostly "wild." School kids from AW Neill Middle school regularly use the area for running and other physical activities, always supervised by at least two teachers, and the footpath is in continual, year-round use by the public (on foot, skateboards, roller skates, bicycles, and in wheelchairs and adult and baby strollers), many of whom pick blackberries in season and many of whom bring their dogs for exercise (most are on-leash). There is frequent evidence (scat) of bear use throughout the area, and raccoons are also present.

Photo right: Kiwanis Hilton Daycare Centre: well fenced, good visibility around play areas; children supervised.

Photo below: Dense riparian vegetation along Ship Creek.

Photos below: M'akola Housing, Neill St at 3rd Ave, adjacent to Ship Creek, upper and lower play areas have good visibility, but fence area should be cleared of bear foods.

Photo below: New residential development near McKnight St

Photo below: Top of Argyle St, east of rugby field

Photos below: M'akola Housing 3737 Argyle Way, show Dry Creek ravine behind residences, concrete enclosure around dumpsters, and latching ring fitted to dumpster by City Works crew.

Photos below: 3100 block McNaughton, shows back of new residential development at top of Argyle, garbage cans on street.

Table 11. Hazard survey of select industrial and commercial areas

Name/Location	garbage can or dumpster	hazard rating	Description, potential bear hazards
Behind Dairy Queen on E side of 3rd Ave Burde to Dunbar Sts	1 grease bin, 1 dumpster for card-board, 1 dumpster for other garbage, all plastic lids, none locked; no enclosures	moderate to high	The hazard rating for this location is high in large part because of the location adjacent to Dry Creek corridor and because there are other restaurants nearby. Bears are frequently sighted in the general area. Smells from this restaurant are very strong and would attract bears throughout the area. There are neighbourhood fruit trees along the alley behind these dumpsters (see photo).
City Recycling Depot on 4th at Napier	rows of dumpsters for paper, tins, glass, cardboard, some open, some locked, some with plastic lids; whole depot open access (not enclosed); no compactors.	moderate to high	The depot is directly across the street (E side) from Dry Creek Park, an area known to be used by bears (see photos), and from the "Bottle" recycling depot, which stores large amounts of pop and beer cans and bottles. While most of these will have been rinsed out, not all will be and the smells from those will attract bears. In theory, there are no food attractants at this site, but there are very likely food smells that bears could detect; especially true if people don't rinse out all the glass and tins put into the bins. Site is across the street (N side) from alleyway behind Dairy Queen.
Behind Smitty's on W side of 3rd Ave	dumpster, grease bin, cardboard recycling bin	moderate to high	Smitty's is adjacent to the greenbelt between the harbour and 3rd Ave, and across the street from the Huu-ay-aht Treaty Office, where fish containers are sometimes stored. A block away is the Dairy Queen. All the containers here have plastic lids, unlocked.
"South Port" Downtown area, Dunbar to Mar and between 5th and 2nd streets	a variety of dumpsters, compactors, cardboard recycling bins, residential garbage cans, none were bear-proof.	moderate	There are a number of different kinds of commercial businesses, mixed in with a few residences. Behind Sears were 2 dumpsters, lids open; behind Zellers was a large closed compactor; both areas were very neat around the dumpsters. In the alley behind Ralph's Men's Wear, the music and tobacco shops, were open dumpsters and the ground beneath them was very messy. Behind Alberni TV were 2 locked metal bins and area was very neat. Behind the Ink Spot/real estate company were two dumpsters with metal lids, but they were open; area was kept neat. Behind the complex with Gramma's Antiques, on both sides of the alley, were dumpsters with plastic and metal lids, all locked; area neat. On the other side of 3rd Ave, behind the pizza factory were 2 dumpsters, one with plastic lid, one with metal lid, both locked. Further south along the alley were 3 plastic lidded bins, not locked. On the NW corner of Mar and Angus was a dumpster with a plastic lid, locked.
3rd Ave between Redford & Burde	variety of garbage cans, dumpsters, and cardboard recycling bins	low to moderate	There are a number of different types of businesses along this portion of 3rd Ave, including 3 restaurants, auto sales and repair, electronics, florist, all of which have dumpsters and cardboard recycling bins. A drive through the alley behind these showed that most had plastic lids and most were unlocked.
Stamp/Gertrude/3rd Ave area from Johnston to Redford streets	variety of garbage cans, dumpsters, and cardboard recycling bins	moderate to high	This is also a commercial corridor, about half of which fronts the Catalyst paper mill to the west side. The east side is backed by the railroad tracks, which are lined with wild blackberries and good cover for bears. Above the railroad tracks, at the south end of this strip, are residences that report problems with bears. The north end of this corridor has restaurants, a service station, medical offices, and other businesses. The Roger Creek riparian corridor dissects it about halfway along, and Roger Street, also in about the middle, ends at Victoria Quay. There are a high number of bear conflict reports from this area. Waste management practices through here are inconsistent, plus there are some bear foods

Bottom of Argyle Street before entrance to Harbour Quay	Behind the south	low to moderate	There are restaurants on both sides of the street (Swale Rock Café, hotels with both beer parlours and restaurants, etc.). Also the Alberni historic train station. The dumpsters behind the station were open, but not full. There were 2 dumpsters with metal lids, locked, behind the Swale Rock Café complex, and there was one grease bin with a plastic lid.
N end of Bird Street on N. side of Argyle St at bottom	mostly large dumpsters, some metal, some plastic, none bear-proof	moderate	This is an industrial area that has boat-building companies, Alberni Engineering, Port Fish, and other companies. Alberni Engineering has overfull dumpsters on both sides of building; staff there said they don't see any bears around; Port Fish area is very stinky area, with dumpsters for general garbage and cardboard, but factory garbage looks like it comes out of a high chute into a large semi-trailer. Did not talk to anyone there to see if they've ever had problems with bears climbing the high fences to get inside the enclosure. (See photos)
Quality Foods, 10th Ave at China Creek Rd.	2 grease bins, compactor	low	The whole area behind the store was very clean. The compactor door was open, but manager said it is usually closed. The cardboard recycling baler is indoors. The two grease bins have metal lids. 8th Ave Elementary school is across the street.
Redford St at 10th Ave, both sides of both street	variety of dumpsters, grease bins, compactors, metal and plastic lids		This is a "mini-mall" area, also has three gas stations that sell food, etc., two large grocery stores, and a variety of other businesses. There were a mix of metal and plastic-lidded containers, some locked, some not.
Johnston St between Adelaide St. and River Road, both sides of street	variety of dumpsters, compactors, metal and plastic lids	low to moderate	The south side of this commercial corridor is close to the Roger Creek riparian area, a known bear travel corridor. There are a variety of businesses, including a restaurant, gas station, grocery store, hair salon, health food store, and others. Again, there was a variety of dumpsters, some with metal, some with plastic lids, most were not locked, but most areas were very tidy.
Johnston St at top end between Tebo and Broughton streets	dumpsters, some residential garbage cans	moderate	This area is mostly commercial, but some residential, also. McDonalds is here, and had numerous problems with bears getting into their dumpster. Not aware if the problem has been fixed.

Photos below: grease pit and dumpsters behind Dairy Queen. Notice cherry trees behind dumpsters.

Photo right: Recycling Depot, looking across 4th Ave to Dry Creek Park, beside Bottle Depot

Photos below: l and r: Open, full, plastic-lidded dumpsters on both sides of Alberni Engineering. While these may not contain materials bears would want to eat, the visual cue of the plastic bags will still attract bears to the dumpsters.

Photos below, l and r: row of dumpsters beside Port Fish; these have metal lids and don't look like they hold any garbage bears would be attracted to. High fence enclosure around plant. While area was smelly, I couldn't see where a bear would be able to get in to the plant area.

3.5.4 Ahahswinis, a reserve of the Hupacasath First Nation in Port Alberni

The Hupacasath First Nation's Ahahswinis Reserve occupies 37 hectares along the east side of the Somass River, roughly between River Road and Compton Road (east-west), and Indian Ave and Josephine St (north-south). Beaver Creek Road bisects it in the north, and Lugrin Creek (and an associated wetland) bisects it in the south. Much of the area is good bear habitat. In addition to the main office and cultural centre, there are roughly 60 dwellings housing approximately 100 residents. The reserve is currently expanding the number of residential units.

The reserve has two dumpsters on site that are emptied once a week on Fridays. Collection is contracted to a private operator. One dumpster, which has a plastic lid but is kept locked, is located near a children's play area, although visibility is good. The inset picture shows bear pawprints on the side of this dumpster. Al Ross, Hupacasath Fisheries and Wildlife Steward, informed me that there is a plan to build an enclosure around this dumpster. He submits bear education information for publication in the monthly Bulletin (see example below) to remind community members to be bear aware. When bears are sighted on the reserve, residents either chase them away with noise-making, or they call the Conservation Officer.

Fish, fish smokers, and fish nets are also attractants found at Ahahswinis, as are outdoor freezers and barbecues. The community bulletin also contains information on these attractants and how to prevent conflicts.

Bear Aware

While most of us enjoy beautiful BC's wildlife, we don't want bears in our backyards! Both people and bears would be better off if there were fewer bears in our towns. Because bears are simply animals seeking whatever food they can find, the onus is on us to prevent conflicts. If we all took more responsibility for our garbage, tree fruit and kitchen compost the bear "problem" would largely disappear, as it has in many jurisdictions. Bears take advantage of whatever food that is available in their home range. They are attracted by sights, sounds, memories, and particularly smells. Bears can smell garbage from a mile away and if they are rewarded with an easy meal they learn very quickly to repeat behaviors. In effect we teach them to come into our towns. Wild bears normally have a fear of people. If they are allowed to forage for food near us, they can quickly become habituated to our presence and become more bold in their actions. Soon enough someone will feel threatened by a black bear. Once a bear learns to forage near people, it is usually too late to discourage the bear and.....that is how ***a fed bear becomes a dead bear.*** A bear that is dead has learned nothing; killing it does not solve the problem. We people fail to recognize our errors and do not change our habits. Once the bear is killed our problem seems to be solved. No longer does that "problem bear" tear the branches off the fruit trees, or spread garbage across the lawn. We go back to leaving our garbage outside and neglecting to harvest our fruit; it's business as usual. We even let the grease build up on our barbecues. Sooner or later all of these scents draw another bear. "Why don't the bears ever learn?" we wonder. We can live more compatibly with bears. Bear Aware has been successful in many communities, educating and motivating people to adopt and establish new habits that show greater respect for our communities and the bears that live nearby. Please be Bear Aware: help to bear-proof your property and your community. Keeping bears out of the town keeps everyone safer. For more information please visit:

Bear Aware British Columbia
www.bearaware.bc.ca

3.6 Discussion of Public Information and Education Activities

One of the requirements of the Bear Smart Community Program is that there be either a well-organised community-based group working with the Conservation Officer Service and doing public education and monitoring of bear sightings, or a dedicated, paid-for Bear Aware Coordinator active in the community. Currently, there is no volunteer group engaged in public education or bear monitoring activities in Port Alberni, as there are in a number of other communities in the province. Nor does Port Alberni have a full-time Bear Aware Coordinator under the co-sponsorship of the BC Conservation Corps and the local government. Over the past number of years, however, there has been considerable coverage in local media about the exploits of bears in the city. Some of these articles are included in Appendix 8.

Local governments, such as Gibsons, Coquitlam, the district municipalities of North and West Vancouver, and others throughout the province, have developed excellent bear-people conflict prevention information on their websites. Examples of some of these are in Appendix 8. The regional district set aside funding in 2007 to enable Crystal McMillan, Bear Aware Program Supervisor for Vancouver Island & Lower Mainland, to extend limited delivery of the Bear Aware Program to Port Alberni. Crystal's activities include a signage project for Victoria Quay and Harbor Quay, volunteer outreach, developing educational material for Hwy 4, for inserts into city mailings, writing media articles, and carrying out targeted neighbourhood door-to-door information campaigns (see Appendix 8 for samples). A good start to public education here would be for the city to publish and mail out a checklist for residents, schools, restaurants and food outlets, realtors, and others to enable them to do their own bear hazard assessments (see Appendix 9).

This past year, the Alberni Valley Tourism Association adopted a motto to help "brand" the city as a tourism destination. The motto: "Bear Tracks and Lumberjacks," focuses on viewing bears along the west bank of the Somass River, opposite Victoria Quay, where these two photos were taken. The bear in the bottom photo has just caught a spawning salmon and is dragging it off to eat it.

While not within the city limits, a number of marinas, campgrounds, and resorts in the Alberni area have lodged numerous complaints with the CO Service. Many of these ultimately resulted in the destruction of habituated bears; in some, more than one bear had to be destroyed in each season. The attractants at these were primarily garbage, fish (and fish entrails), and unsecured campers' food and coolers. Because of the bears and tourism focus, it would be useful for the city to include these visitor facilities in any future public education or Bear Aware programs.

3.7 Discussion of Waste Management Practices

There is no doubt that garbage is the single most important factor that brings bears into conflict with people in urban areas. In recognition of this, the Bear Smart Community Program requires waste management, including garbage collection, recycling, and landfill operations, to be as bear-proof as possible. For many communities, and Port Alberni is no exception, this means amending garbage collection bylaws. These may require the use of bear-proof residential receptacles, neighbourhood drop-off points to be fully fenced, and the timing of when garbage can be put out to the curb for collection.

Port Alberni provides weekly garbage collection for city residents. Commercial, multi-family housing complexes, and institutional garbage pickup is arranged through contracts, either with the city or with private companies. The city's website states:

> The City operates a commercial dumpster type collection service as well as residential collection. Solid waste is taken to the Alberni Valley Landfill operated by the Regional District of Alberni Clayoquot.
>
> City crews collect about 6600 tonnes per year of solid waste from both residential and commercial customers.
>
> **Residential Service**
>
> Residential service is provided weekly to all single family residences in the City at an annual cost of $95 or $1.83 per weekly pickup. Up to 2 bags or cans may be placed out for collection each week. Additional bags or cans may be set out if extra collection stickers are purchased and affixed. These may be purchased at City Hall at a cost of $2.00 each.
>
> Crews begin collection at 7:00 a.m. so cans should be placed out before this time to ensure collection.
>
> Please do not place hazardous materials such as hypodermic needles, broken glass, etc. loose in the cans which may injure our collection staff.
>
> **Commercial Collection**
>
> The City offers solid waste collection service to commercial customers in two formats: commercial loose and dumpster service.
>
> Commercial "Loose" Service is provided on the same basis as residential service (2 cans/week for $95/year).
>
> Commercial "Dumpster" Service is available with pickups on a scheduled basis…*
> Extra service pickups may be requested…**
>
> *Minimum scheduled service of one pickup per month.
> ** Bins with loads in excess of 1000kg will be charged at double these pickup rates.

The city also provides a recycling drop-off location on 4th Avenue at Napier Street.

The Alberni-Clayoquot Regional District provides a regional landfill that is enclosed in an electrified fence all around its perimeter. According to the contractor/operator, no bears have breached the fence for the past two years and the location where they had been getting in has been repaired.

It is clear that designing a bear-proof waste management system will be a challenge for the City of Port Alberni. Deciding on one that will work—and be accepted by residents and be enforceable—in the mix of urban, commercial, industrial, institutional, and agricultural settings, will likely require some kind of public consultation and possibly one or more pilot projects based on the neighbourhood hotspots. The results of any pilot projects will be very important in helping the city decide on the best ways to significantly reduce bear-people conflicts. Whatever system is developed, while it may be considered expensive to initiate, it must prove to be affordable over time. Certainly a key factor in the success of any bear-proof system will be consistent enforcement.

Survey of waste management companies, equipment and systems

Getting reliable information on bear-proof systems and designs (what works, what doesn't work, or what only partially works) has only yielded partial confidence in the results. Among the research, I have looked at the varieties and types of bear-proof equipment available, information on testing equipment, the track record of equipment and companies, the practicality of use in a given setting, and, where possible, costs. Table 8 summarises this research. (For more detailed explanations, refer to Section 6.2. See also Appendix 10.) I contacted as many companies as I could find on the internet, and sent the following query by email:

1. Can you please tell me the range of products your company offers, including:
   a) their basic specifications (size/capacity for each)
   b) the initial cost, including costs for large orders (and your capacity to fill large orders)
2. What infrastructure (including trucks that empty dumpsters and residential garbage cans) would a community need to purchase in order to use your equipment? What is the unit cost?
3. What is an estimate of long-term maintenance (or replacement) costs?
4. Can you please tell me about a couple of locations where your system/equipment is currently in use so I can compare with information on the size of community served?

I have listed Canadian companies, plus a few US companies that deal extensively in Canada and whose products are known to be effective in reducing bear-people conflicts. The review was somewhat confounded because some companies contacted were reluctant to provide information (particularly on costs and design specifications) for fear of their information falling into competitors' hands.

Claims of bear-proof capabilities by some companies were felt to be over-stated and therefore suspect. In the case of one, what they told me contradicted information I obtained from the Interagency Grizzly Bear Committee's testing program at the Living With Wildlife Foundation's testing facility in Montana.

Another source of information is to look at what other communities are doing and whether or not they are successful in increasing safety and reducing bear-people conflicts. Notable successes include Canmore, Alberta and Vail, Colorado (see Appendix 12); most of the provincial and national parks in the Rocky Mountains; Furry Creek (south of Squamish); and, to a limited extent, in Whistler (see section 6.2).[30]

[30] Also described fully in bear hazard assessment reports (for RMOW, Squamish, Lions Bay, etc.) listed in Section 8.0.

The following is from interviews, emails, and internet research. [n/av = not available]. **Important**: prices change and may not be as set out below.

Table 12. Review of companies that manufacture or sell bear-proof garbage receptacles of various sizes, or infrastructure/equipment requirements.

Name, location of company	item type (s) company provides	initial cost	long term costs	infrastructure required	where used	# people served	Recommendations/ comments (community acceptance rate, etc.)
Rollins Machinery Ltd., 21869 56th Ave, Langley, BC V2Y 2M9; 604-533-0048; Fax: 604-533-3820; cell: 604-833-3428; toll-free: 1-800-665-9060; email: jeff@rollinsmachinery.ca; website: www.rollinsmachinery.ca	provides Haul-All equipment, incl automated trucks, residential and commercial dumpsters, single residential polycarts. See section 6.2 and printouts in Appendix 10.	high initial costs, 64-gal IPL bins $169; 95-gal bins $185; discounts for bulk orders; trucks: dumpsters:	very durable equipment & infra-structure; cost-effective over time.	semi-automated and automated trucks (LaBrie)	many locations throughout BC and elsewhere, notably national and provincial parks, in Whistler, other south coast communities, Canmore, etc.	unknown	Brochure says reinforced polybins are certified by the Living with Wildlife Fdn; drawback is that the locking clasps must be undone by residents at time of being set out for collection in order to enable emptying by automated or manual means. Locking clasps may be difficult for some people to use; risk of not being kept latched shut, rendering them not bear-proof. However, a new larger clasp has recently been used, but I have not had any test results. Other equipment and infrastructure this company supplies is highly effective and durable.
BearSaver Canisters, 1390 S Milliken Ave, Ontario, CA 91761; 909-605-1697; www.bearsaver.com; Steve Thompson email: steve@bearsaver.com	provides Haul-All Hid-A-Bag type single and double trash cans and enclosures; also provides 32-, 68-, and 95 gallon residential poly carts of the "Otto" variety of manufac-ture; product seems quite durable. See section 6.2 and Appendix 10.	US$ prices for black bear model 32 gal: $121.44 for 1-300; $115.21 for 301-1000: $110.54 for 1001-5000; $105.87 for 5000+ will tailor payment plan for local governments and/or individual residents if they buy in bulk; company agree-able to bulk pricing.	depends on # of items purchased, how used and where located; equipment is very sturdy	depends on system in place; can be used for manual pickup or semi-automated	In many parks, rural areas, and communities in both the US and Canada; specific locations available on request to company.	n/av	32-gal residential bin meets most local government limits for household pickup. Larger bins useful in public settings (parks, arenas, housing complexes). Website says residential polycarts employ "one-finger unlatching," with snap-shut lid; designed for manual and semi-automated collection systems. Smaller bins (32-gal) have not yet been submitted to LWWF testing program, but most of BearSaver's equipment usually passes the tests with grizzlies. See printouts in Appendix 10. Finger-latch bin tested in pilots in Coquitlam and Port Alberni show very favourable results. New, improved design on 32-gal bin ensures latching when lid is simply dropped. This equipment is recommended.
Haul-All Equipment Systems, 4115 18th Ave North, Lethbridge AB T1H 5G1; toll-free: 1-800-661-1162; 403-328-7788; Fx: 403-328-9956; email: solutions@haulall.com; website: www.haulall.com/english/	supplies residential and commercial equipment, including automated trucks, commercial/ residen-tial dumpsters, and single & double trash cans and enclosures	6 cu yd self-dumping with concrete platform & spacer pads costs $6,175; Hid-A-Bag trash can + concrete pad costs $945	n/av	automated trucks; single/double cans need fixing into a concrete base	Canmore, Whistler, other communities throughout Canada and the US, some Nat'l & Prov parks	n/av	Quote dated 13 Jul 2005 based on bulk purchase of 100 dumpsters and 50 hid-a-bag cans: total estimate for 100 dumpsters/platforms is $617,500; 100 Hid-A-Can containers/platforms is $93,000; and 50 Hid-A-Bag cans/platforms is $47,250, for total quote of $757,750 + taxes. This equipment is recommended. High initial costs, lower maintenance costs; equipment durable. See section 6.2 and printouts in Appendix 10.
Wasteline Containers Ltd., 2141 Queen St, Abbotsford, BC, V2T 6J3, 604-852-5614, or 1-800-663-1772; Attn Don Howes, www.wastelinecontainers.com; info@wastelinecontainers.com	provides dumpsters & compactors of various types, including one called "Bear Proof Lid"	n/av	n/av	n/av	n/av		This BC company appears to have a well-designed bear-proof dumpster design; drawback is they seem to only be available on a "made-to-order" basis. There were none available for me to view. See Section 6.2 and product printouts in Appendix 10.

Name, location of company	item type (s) company provides	initial cost	long term costs	infrastructure required	where used	# people served	Recommendations/ comments (community acceptance rate, etc.)
Bear Necessities, BN Waste (Bearbins) Lori Hogarth, 210 Lady Macdonald Dr., Canmore AB T1W 1H3; P: 403-678-6304; F: 403-609-3508 or 403-451-1465 email: info@bearbins.com; website: www.bearbins.com	provides bins from 40 gal to 8 cu yd; website shows metal bins, large and small, similar to Haul-All, but with different opening design. See sec 6.2.	n/av	n/av	n/av	Fernie, Canmore, Prince George, USFS, Parks Canada, others.	n/av	This company is actively engaged in designing a bin and is in the process of getting prototypes tested at LWWF/IGBC testing station in Montana. So far, has not passed. A new lid design involves hardware that may be difficult to use in cold weather. Sample currently being tested in Coquitlam pilot project. Not currently recommended by this researcher.
UnBearAble Bins, Jay Honeyman, PO Box 1313, Bragg Creek AB T0L 0K0 403-609-2242; Fx: 403-609-2280 email: ubbins@telus.net website: www.unbearablebins.com no toll-free number	Company provides residential carts. My inquiries were not well responded to; was told they deal with US customers; Sec 6.2.	64-gal $219 CDN 95-gal $249 CDN + shipping & taxes	n/av	n/av	Montana, elsewhere in US west; Winnipeg, West Van, Trail BC	unknown	95-gal poly bin passed LWWF grizzly bear test; 64 gal may be okay for black bears. These bins have clasps that, like the Rollins bins, are difficult for some people to use, are not favoured by garbage collection personnel, and when left unlatched at time of being set out, are no longer bear-proof.
Universal Equipment Handling Ltd., 4024 39139 Hwy 2A; Red Deer, AB , T4S 2A8; P: 403-346-1233; F: 403-340-8720 email: charvey@uhecl.com. in BC: Ed Schmidt, Sorrento; toll free: 1-877-843-4105; email: eschmidt@uhecl.com	loaders, waste bulk containers, roll off containers, self dumping hoppers, stationary compactors, products bearproof and non-bearproof	quoted me bulk prices: 100 x 3 cu yd @ $1,306.80; 20 x 4 cu yd @ $1,611	n/av	requires automated trucks; model LM2000 costs $250,000	many locations in BC: Sea-to-Sky, south coast, Vanc. Island, etc.	unknown	bulk prices could include freight; dumpsters have heavy metal lids, but those used by Carney's in Squamish have problems breaking down; info I have indicates the gauge of steel used for these products is not heavy enough to withstand use over time. See section 6.2.
Waste Control Services, 604-935-9777 (North Van), makes and provides residential and commercial dumpsters with front locking bar; website: www.wastecontrolsystems.com	dumpsters with locking bar prevents lid being raised by bears; people need to keep locked with bar down to render bearproof.	would not tell me anything about costs	n/av	n/av	Squamish, various locations in Sea-to-Sky area	unknown	Owner refused to give me much information; would not give any $$ info at all. I spoke also with one of their truck drivers, who thought this product was superior for keeping bears out of garbage, and it certainly would be if users kept it locked at all times when not being used.
AtSource Recycling Systems 1318 Ketch Court Coquitlam, BC V3K 6W1 Toll Free: 1-877-927-8324 P: 604-523-2926, F: 604-523-2920 Email: info@atsource.ca www.atsource.ca	compactors, balers, and recycling equipment; also public use indoor compactors for restaurants, etc. See Appendix 10	n/a	n/a	n/a	supply to Jimmy Pattison Group of companies; various agencies and municipalities	across western Canada	Does design work with customers to tailor equipment to need. WasTech is one of their companies, through it, operates GVRD transfer stations and Cache Creek landfill. "AtSource looks after equipment requirements." Representative said all their equipment is bearproof when the units are closed.
CritterCan; aka AnimalResistantCan 1-800-914-4771, email: sales@AnimalResistantCan.com; website: www.crittercan.com	yellow heavy cans with deep screw-on lids; this company is in New Jersey.	95-gal $149 US; 20-gal $45 US					may be effective with black bears; major drawbacks: labour-intensive to unscrew lids, unless firmly attached to unmoveable object, bears will carry away.

3.8 Discussion of Bylaws

Currently, there are no specific bylaws or policies in place in the City of Port Alberni that mention prevention of conflicts with bears in relation to garbage or waste management, or in relation to new commercial, residential, or industrial developments. While the city has a permanent, year-round bylaw enforcement officer, he does not deal specifically with bears getting at residential garbage cans.

City Bylaw #4392, "A Bylaw to Provide for the Establishment, Maintenance, and Operation of a System for Collection and Disposal of Waste Products and for Establishing a Scale of Charges," was enacted in 1998. It stipulates the city's right to collect and dispose of waste, including via contractors; the types of containers to be used at single dwelling, multiple dwelling, and commercial locations; the volume and weight restrictions of containers; and the duties of owners to provide containers in which to place their own garbage for collection. Section 11.5 states, *Every owner shall set out standard containers for collection and ensure that they are readily accessible for emptying by collectors between the hours of 7:00 a.m. and 7:00 p.m. on the specified day of collection*. Section 11.8 stipulates that containers must be removed from the curbside pickup location within 24 hours of being emptied. These and other relevant sections in this bylaw would better-serve to bear-proof Port Alberni's garbage collection system if they were amended to prohibit putting containers out to the curb BEFORE 7:00 a.m., if the type of container were required to be bear-proof, and if there was some consistent enforcement mechanism in place. There also needs to be a way to maintain secure closure of containers on the day of collection. Leaving them unlocked and/or open on collection day makes them accessible to bears. The Bear Aware Coordinator in Coquitlam told me that bears learn which areas have collection on which days and move through the city according to the garbage collection schedule.[31]

Residential and commercial areas in and near green spaces, such as parks and riparian areas, as well as new developments in previously wild lands have a higher percentage of generating bear-people conflicts than other locality types. Bylaws that deal with garbage, recycling, and unsightly premises can help prevent these areas from becoming a "population sink" for black bears. Of course, there should be a phase-in period to enable acceptance of new bylaws, and there should be consistent enforcement for compliance.

In his bear hazard assessment for the North Shore, McCrory describes a population sink[32] as:

> *a biological black hole where bears are constantly drawn into areas of high artificial food sources, become problematic, and are removed from the area or the population in an endless cycle. Management costs addressing these types of situations are high, not to mention property damage, attendant stress on residents as well as the bears and the increased risk of human injury from such close proximity between people and bears.*

He further says:

> *This does not have to be the case if the attractant problems are cleared up once and for all and a greater proportion of the bear population remains in the more wild areas. It is very encouraging that a 1991–1993 BC Wildlife Branch population study of black bears in the Seymour Watershed clearly demonstrated the viability of adjacent wild bear populations on the North Shore that generally avoid the urban areas. The study captured and marked 16 different bears with coloured neck collars and numbered ear tags. Over a two-year period, none of these bears showed up in urban areas and none were reported as "problem" bears. Mean life span of the captured bears was 9 years with the oldest being 14, indicating a healthy lifestyle; likely a much longer life span than bears that enter North Shore urban areas and become habituated and food-conditioned.*

[31] Drake Stephens, personal communication, April 2007.

[32] W. McCrory, 2006. North Shore Bear Hazard Assessment; pp. 7-8.

Bylaws, if coupled with OCP and development plans that recognise the need to keep bears and people separated, will result in fewer bears being destroyed, less property damage, and an increased safety margin for residents of the city.

3.9 Discussion of Official Community Plan and Development Policies

In addition to the easy accessibility of garbage and non-natural food attractants, how we use and develop land, including how we manage our green spaces, has a major influence on whether or not bears come into conflicts with people. Developments that do not take into consideration the prior use of habitat by bears is a major cause of the steep rise in bear-people conflicts over the past number of years. In recognition of this, the Bear Smart Community Program requires that planning and decision-making documents be consistent with a bear-people conflict management plan. In other words, planning documents need to show how bear use areas are kept separate from areas that people use, as much as possible. And where it isn't possible, they need to describe mitigation efforts to help keep conflicts to a minimum, such as a targeted public education program and prescriptive waste management guidelines.

Neither the city's Strategic Plan nor its Official Community Plan (OCP) make mention of policies or practices in relation to keeping bears and people separate, or to deterring bears from getting access to non-natural attractants, including garbage or landscaping plantings. While the OCP and related development plans are currently undergoing a variety of public amending processes, I can see in none of the currently available materials (online, mostly) that this subject matter has been addressed for future modifications of city planning documents. One of this report's primary recommendations will be to incorporate Bear Smart Community practices into the planning language.

Appendix 14 contains excerpts from Port Alberni's Official Community Plan. The yellow-highlighted sections and phrases are places in the OCP where Bear Smart language could be included, or where the topic has relevance for applying Bear Smart principles (environmental and economic sustainability, waste management considerations, parks and recreation considerations, green space management, riparian protection, gardening and agricultural activities, future residential development, etc.).

The maps excerpted from the OCP show the different areas within the city, their position in regard to bear movement corridors (including roads, railroad tracks, hydro lines, ravines, and creeks). They also can be compared with the bear sightings maps (after p. 29) to see how these movement corridors and city "edge" developments dovetail with the "hotspot" neighbourhoods that have the highest number of conflicts with bears. For example, Map 4: Community and School Facilities, shows that the locations of at least three schools (Maquinna Elementary, EJ Dunn Middle, and ADSS) coincide with high bear-people conflict areas in the city. Map 5: Future Residential, shows that development is planned at the current edge of the city in areas that already experience high bear-people conflicts (top of Burde Street, Maquinna Woods area, Cameron Heights-Ship Creek area). Map 6: Commercial Areas, in addition to highlighting where the business areas are in the city, also highlight three coinciding areas of high bear-people conflicts (Johnston Rd-Cherry Creek Rd malls, lower Johnston Rd-Victoria Quay, and 3rd Ave between Redford and Mar streets, down Argyle to and including Harbour Quay).

Also included in Appendix 14 is a printout from the *Globe & Mail* newspaper of an article published on 2 Nov 2007 about "bear-friendly" residential development in Squamish. Since Squamish, which bills itself as the "Outdoor Recreation Capital of Canada" is in competition with Port Alberni in the tourism market, it strengthens the notion that city planning policies need to recognise the importance of the bear habitat protection and waste management possibilities described in the article when issuing development permits.

Recommendations to amend the OCP and planning documents recognise the need for a public consultation process to achieve the necessary changes, as well as the need for sufficient information to help people understand the reasons for the changes and to increase compliance with permit requirements and bylaw changes.

4.0 RECOMMENDATIONS

The following recommendations are listed by topic (public education, parks & trails, schools, waste management, bylaws, OCP, etc.) They are, essentially, a summary of the hazard assessment. Some of them are not within the jurisdiction of the City of Port Alberni; for instance, those that deal with schools and regional waste management issues. Some may require varying amounts of public consultation, such as for amending certain bylaws. This is recognised by the BC Environment ministry, which administers the Bear Smart Community Program. However, these recommendations identify the factors that need to be addressed, some possibly in consultation with the ministry, in order to be in accord with the principles of the Bear Smart Community Program. Finally, these recommendations can be used to form the basis of a Bear-People Conflict Prevention Plan, should Port Alberni decide to progress to Phase 2 of the Bear Smart Community Program.

For Public Education/Information Activities

1. Engage the public in adopting bear-proof waste management throughout Port Alberni, including for commercial, institutional, and industrial sites. This includes holding community consultations and, using information presented in this report, propose methods/systems that will work best in specific neighbourhoods.
2. Sponsor a dedicated public education program, such as Bear Aware. Support the development of a volunteer community-based "bear watch" group. Carrying out continuous communication to the public during "bear season" is important, particularly about what constitutes attractants and about safety issues when near a bear. Public education needs to emphasise the fact that while Vancouver Island black bears have rarely exhibited aggressive behaviour towards people, any bear has the potential to become dangerous.
3. Encourage any "bear watch" group that forms in the area to maintain a liaison with the BC Conservation Corps' Bear Aware Program (if not already a part of that program), and with any regional Bear Aware groups, such as the ones in Tofino and Ucluelet, and those on the lower mainland (e.g., the North Shore Black Bear Network).
4. Work with District Conservation Officers, a Bear Aware Coordinator if one is hired for Port Alberni, and any community-based "bear watch" group to develop a systematic monitoring program that includes recording all complaints and conducting a periodic analysis in order to respond to local situations.
5. Encourage local businesses and community organisations to embrace Bear Smart principles. Where funding is a consideration, encourage an "Adopt-a-Can" program for sponsoring purchase of bear-proof garbage containers.
6. Develop targeted public information programs for new residential, commercial, and industrial developments, including information for realtors and new residents so newcomers can be informed about being in "bear country" and the need to prevent bears getting access to garbage and other non-natural attractants (e.g., gardens, landscaping plantings). An educational message should also be developed specifically for people living adjacent to greenbelt areas and known bear travel corridors. These messages need to include a reminder that a bear can be encountered at any time in these areas, including in parks, city streets, and along area trails and walkways.
7. Support the development of a community-based program to reduce bears' access to fruit trees and other non-natural attractants, whether in residential yards, downtown areas, or industrial settings. This may include such activities as picking fruit and distributing it to the food bank or local institutions and agencies.
8. Encourage residents and property owners to prune (or remove) shrubs and trees in order to reduce the cover available to bears in neighbourhoods.

9. Educate residents on safe ways to carry out low-level hazing practices on their own properties, such as by banging pots and pans, using an air horn, or generally scaring bears away, but **always—and only—from a safe vantage point**.

For City Council

10. Maintain a high degree of coordination of Bear Smart-related practices and policies throughout the city, and urge the regional district to implement these in the adjacent regional district electoral areas (Beaver Creek, Cherry Creek, etc.).
11. In addition to the desire to increase safety for people and property, and support the intent of the BC Wildlife Act in not providing non-natural attractants to carnivores, another incentive for local governments to bear-proof their communities as much as possible could be the BC Occupiers Liability Act. I recommend the City have its legal department look into the possible ramifications of this legislation, which states:

> **BC OCCUPIERS LIABILITY ACT**
> **[RSBC 1996] CHAPTER 337**
>
> Application of Act
>
> 2. Subject to section 3 (4), and sections 4 and 9, this Act determines the care that an occupier is required to show toward persons entering on the premises in respect of dangers to them, or to their property on the premises, or to the property on the premises of persons who have not themselves entered on the premises, that are due to the state of the premises, or to anything done or omitted to be done on the premises, and for which the occupier is responsible by law.
>
> Occupiers' duty of care
>
> 3. (1) An occupier of premises owes a duty to take that care that in all the circumstances of the case is reasonable to see that a person, and the person's property, on the premises, and property on the premises of a person, whether or not that person personally enters on the premises, will be reasonably safe in using the premises.

For Schools, Community Use Areas, Parks, and Trails

12. Schools, public use areas (e.g., the library, Echo Centre, Penny Lane, Farmers Market, Harbour Quay, Victoria Quay), parks and walkways should ensure that all pedestrian-type garbage cans are bear-proof and are emptied frequently, particularly in locations adjacent to greenbelts, fish-bearing streams, etc., and in warm weather, when odours increase and more easily attract bears.
13. All dumpsters at schools and public use areas should be bear-proof and kept locked at all times.
14. Schools should ensure that all areas on school grounds have good visibility from school windows to playsets and playfields. Playsets at schools should be located close to school buildings and within clear view of school windows.
15. Schools should ensure that there are no landscaping plants or unfenced gardens and composters that will attract bears.
16. Have an in-school monitoring system so that any bears, cougars, or other predators in the vicinity are reported and children can be kept in or closely watched when outdoors.

17. Playsets, whether at schools or in parks, should be located well away from dense shrubs, trees, and other things that obstruct visibility and that offer cover for bears. If they cannot be moved to at least 50 meters away from bear cover, they should be enclosed in a sturdy fence that is high enough to deter bears and that is spaced well away from adjacent vegetation.
18. In areas where bears have previously been observed, play areas should be posted with permanent bear warning signs.
19. Parks and public walkways should have signs about the importance of controlling dogs in bear habitat.
20. All public walkways and trails should be brushed out to improve visibility (e.g., along the railway tracks near Stamp Ave, in Maquinna Woods, etc.). If garbage cans are located on or adjacent to them, they should be bear-proof garbage cans and emptied regularly.
21. All public walkways and trails should be posted with small bear warning signs.
22. New public trails and walkways should not be developed along riparian corridors that bears are known to use. Existing walkways (e.g., Kitsuksis Walkway) should be posted with bear information signs.
23. Plans for new parks and trails should be thoroughly assessed for potential impacts on bear use areas in all seasons, including impacts that may be caused by increased human use of the area.
24. Port Alberni's Parks Department should develop a procedure (if it doesn't already have one) for emergency closure of parks, walkways, and other facilities, in cooperation with the District CO Service (and possibly the RCMP), when a hazardous wildlife-related situation is reported or identified.

For Waste Management

25. Consider bulk purchase of bear-proof residential garbage cans for distribution to city residents on an "at cost" basis. Bulk purchase helps to ensure that residents can afford the garbage cans AND that the equipment is consistent across the city to facilitate municipal garbage collection.
26. The primary recommendation for reducing hazards, including at schools, parks and trails, and residential neighbourhoods, is to install bear-proof garbage and recycling receptacles and a city-wide Bear Smart waste management system.
27. Port Alberni's Parks Department should consider public education targeting the use of garbage bins and cans in parks and along walkways as being particularly unsuitable for household garbage. While this is recognised as an infraction of the municipal waste collection bylaw, and is acknowledged to be difficult to enforce, helping the public understand how this practice increases the possibility of "food-conditioning" bears and encourages bears to lurk near parks and walkways, and increases the likelihood of someone encountering a bear.
28. Consider bear-proof neighbourhood-based drop-off installations for suitable "hotspot" areas, particularly for housing complexes where people don't have garages, sheds, or other secure places to store their garbage cans and recycling boxes.
29. Where secondary and "illegal" rental suites occur, require owners to allow tenants to use the city's garbage collection system.
30. Bear-proof waste management practices and systems should be phased-in over a number of years (3 to 5) and be accompanied by a public education/information program, including public open houses where feedback is obtained that can help refine the system and increase compliance.
31. Recycling and compost depots should be inside a bear-proof enclosure. They should be regularly inspected to ensure garbage isn't scattered on the ground.

For Bylaws

32. Port Alberni should amend its Waste Collection bylaw, and encourage the regional district to do the same, to prevent people putting residential garbage cans out on the night before collection day. For residents who have good reasons why they can't comply with the bylaw, consider alternatives that are amenable to both the resident and the city's garbage collection staff.
33. Bylaws need to include all attractant issues, including landscaping plants that attract bears; the use of electric fences for gardens, fruit trees, and composters; and control of dogs on public walkways and trails that are located in bear-use areas.
34. Implement a zero-tolerance policy for enforcement/compliance of bylaws.

For the OCP and Future Development Plans

35. Develop a community vision statement that includes language to better coexist with bears that will result in greater public safety, reduced bear-people conflicts, and fewer bears being killed.
36. Review the OCP with the intent to amend it to include specific bear-friendly language.
37. New homes being developed adjacent to green spaces (including riparian corridors, rail and power lines, etc.) that are known to be used by bears, should consider installing perimeter fencing sturdy enough to deter bears.
38. Require multiple-dwelling and commercial complexes to include Bear Smart principles on waste management and landscaping in their strata council bylaws.
39. Community planning should include the development and use of a detailed bear habitat and travel corridor map so that bear (and other wildlife) concerns can be adequately addressed when planning new developments.
40. Inform developers about bear-safe requirements, including bear-proof garbage collection methods and landscaping requirements to prevent attracting bears into newly developed areas and thereby habituating them to human-use areas.
41. Ensure future planning and new developments are done according to Bear Smart principles at the earliest possible planning and design stages.
42. Pedestrian corridors should be located and designed to maintain separation between bear- and people-use areas, wherever possible. Safety considerations include type of landscaping plants used, visibility, bear-proof garbage cans, and use of temporary or permanent signage when bears are known to be in the area.
43. Ensure all municipal landscaping (including "streetscaping") uses species and varieties of trees and shrubs—whether native or horticultural varieties—that do not provide food for bears (e.g., salal, Oregon grape, mountain ash, bearberry (*uva-ursi*), apples, cherries, roses, clover). See Appendix 6 for list.
44. Where the OCP or any development plans refer to riparian setbacks and habitat use corridors for fish, these terms should be defined and include specific recommendations to maintain safe separations between bear use areas (including travel corridors) and residential and commercial developments. This recommendation holds for all the development plans throughout the city.

These recommendations are just that. Local circumstances may be such that modifications are quite acceptable to the Bear Smart Community Program and the achievement of Bear Smart Community status. People have a strong tendency to resist change. Time and consultation—and in some cases, compromise—will help the city to develop a plan that enables it to become Bear Smart.

5.0 CONCLUSION

Like so many communities carved out of south coast forests, Port Alberni has many forested nooks and crannies, even a few with remnants of large, old 2nd-growth trees and dense understorey replete with bear foods such as salal, huckleberries, salmonberries, Oregon grape, various fungi, and the ubiquitous invader, Armenian blackberry. Many of these nooks are adjacent to fish-bearing creeks, some now dry, some buried under development, and some—thanks to the enhancement efforts of many volunteers—still sporting annual runs of salmon (albeit reduced from historical numbers). The valley Port Alberni now occupies has been prime black bear habitat for many thousands of years.

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. BC Conservation Officer Service photo.

As a species, black bears have a high capacity to learn and remember, and exhibit tolerance of humans. People, however, have low tolerance for bears. They have a general perception that bears are dangerous. Indeed, bears do represent potential safety risks to people and property. Public tolerance for black bears, however, is increasing. People are starting to learn that it is possible to co-exist with black bears when certain "rules" are maintained. This report sets out what those rules are in the hope that we can all work to maintain a sustainable local environment, as well as reduce the number of bears that are destroyed

In the past, authorities either killed a bear that came into conflict with people or moved it to an area away from human settlement. When a bear is destroyed because it has become habituated to non-natural attractants, another bear will soon take its place. Relocating and destroying bears are reactive measures that do little to prevent conflicts between bears and people, and don't teach bears or people anything about learning to live in relative harmony with each other.

We now know there are more proactive ways to reduce the potential risks associated with people living in "Bear Country" and to reduce the negative effects on bear populations by providing artificial attractants (e.g., garbage) to bears and by continually moving or destroying bears.

The Bear Smart Community Program has been designed specifically to increase safety for both people and bears, and to enhance our own experience of living in harmony with the other animals that share our environment.

It's important to consider that the City of Port Alberni "is not an island." Any bear-people conflict reduction efforts by the city, while commendable, have great potential to be thwarted by lack of effort in the surrounding areas. Movements of bears into and through the city are through the regional district settlements of Beaver Creek, Beaufort, Cherry Creek, China Creek, Sproat Lake, the area around McCoy Lake, the area north of the city on the western flank of Mt. Arrowsmith, and the Hupacasath and Tseshaht Indian Reserves along the Somass River. Until quite recently, some of these areas were covered by older second-growth forest, which offered shelter and denning areas (at the very least) for bears.

The remaining areas are largely agricultural and rural settlements, and have been for many decades. Reports on the province's Wildlife Occurrence database show that these areas, too, have been experiencing an increase in bear-people conflicts. While there is a steady influx of new residents to some of these areas, many of whom have moved from highly urbanised environments and are not accustomed to encountering wildlife such as bears, long-time residents here express few official concerns about problems with bears (except those who have livestock). Local government representatives from at least two of these areas have publicly stated that their residents "know how to deal with the situation. They see a bear, they shoot it. No problem." Other local government representatives, especially in those areas seeing the most new residents from "outside," have explicitly stated their support for a public education program on how to prevent bear-people conflicts. Only time will tell if the Alberni Valley will have an integrated program to successfully address the situation.

The information contained in this report can be used to enhance Port Alberni's desire to be recognised as a tourism destination, and in this respect, has important economic, as well as environmental and sustainability ramifications.

When this preliminary bear hazard assessment report has been accepted by City Council, Port Alberni will have completed the work required in Phase I of the Bear Smart Community Program. When the City formalises public education and monitoring activities in the city, develops a bear-proof waste management system that includes enforcement mechanisms, includes Bear Smart language in planning documents (including the City's Official Community Plan), and completes a Bear-Human Conflict Management Plan, they will be well on their way to completing Phase II of the program and can be designated a Bear Smart Community.

The preferred picture is one in which black bears and people can appreciate and respect each other's needs to thrive in safety for both species. BC Conservation Officer Service photo.

6.0 EXPLANATORY NOTES

6.1 Ecosystem Classification Systems

The Ecoregion Classification System was developed to provide a systematic view of ecological relationships in BC. This classification system is based on climatic processes and landforms, and brings into focus the extent of critical habitats and their relationship 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 recognizing small-scale ecosystems in British Columbia.

Ecoregion classification helps us to understand and depict the great habitat diversity of BC. The system is used to stratify BC's terrestrial and marine ecosystem complexity into discrete geographical units at five different levels. The two highest levels—Ecodomains and Ecodivisions—are very broad and place British Columbia globally. The three lowest levels—Ecoprovinces, Ecoregions, and Ecosections—are progressively more detailed and narrow in scope, and relate segments of the province to one another. They describe areas of similar climate, physiography, oceanography, hydrology, vegetation, and wildlife **potential** (http://srmwww.gov.bc.ca/ecology/ecoregions/). Within each terrestrial ecoregion, climatic zones occur where specific soils, plant and animal communities, and aquatic systems develop because of the interaction of climate with the land surface and surficial materials. These zones are best defined within the Biogeoclimatic Ecosystem Classification system (see below).

Since 1985, the Ecoregion Classification system has been revised three times to reflect more detailed mapping. The fourth edition of Ecoregion units was originally mapped at 1:250,000 using Landsat, topographic, biogeoclimatic, and marine ecosystem information.

Biogeoclimatic zones are a Ministry of Forests classification system, largely developed to its current state by V. Krajina, K. Klinka, D. Meidinger, J. Pojar, and others. See map on following page. The Coastal Western Hemlock zone (which covers most of the study area of this report) occurs along the entire coast of British Columbia at elevations from sea level up to about 900 metres above sea level (asl) in the south. Using both classification systems together enables a progressively more detailed description and understanding, of the ecological potential and processes of a given location (www.for.gov.bc.ca/hfd/library/documents/treebook/biogeo/biogeo.htm).

Understanding these classification systems is important to understanding how to use habitats in a sustainable way so that the wildlife and habitats that our social systems value can be maintained. Understanding them also enables us to see how the various animal species interact with the 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, salmon, and forest ecosystems, we can better appreciate the value of this species (see Appendix 7).

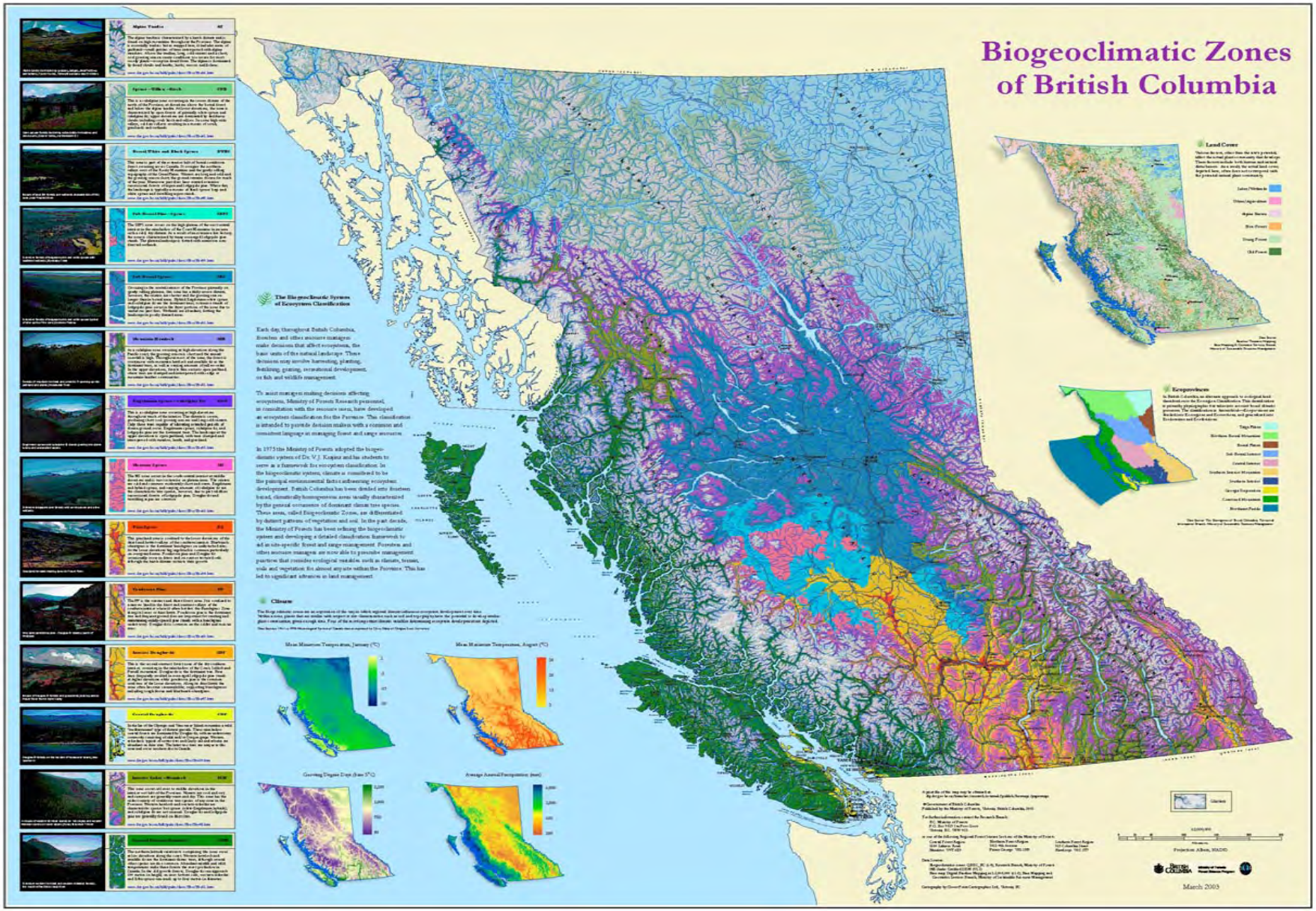


Figure 15. Ministry of Forests map of Biogeoclimatic Zones. The area shaded dark green indicates Coastal Western Hemlock zone. The light purple interspersed within it indicates the Mountain Hemlock zone that occurs at higher elevations; and the light grey indicates the Alpine Tundra zone, which occurs at the highest elevations.

6.2 Waste Management Companies and Equipment

An important research step was to look at how other communities have been successful—or not—at reducing bear-people conflicts through the use of certain types of equipment and approaches to bear-proofing food attractants. Bear biologist Wayne McCrory developed community models for bear-proofing garbage and recycling collection methods. Please keep in mind that the success of any model is dependent on the specific characteristics on the local area. Some are more conducive to centralised neighbourhood-types of waste management solutions and some are more successful using individual residence/commercial garbage containment.

The most successful models he found in western Canada were at Furry Creek, south of Squamish, and at Canmore (see Appendix 12) and Peter Lougheed Provincial Park in Alberta. These involved modifications of a central drop-off system, and most used Haul-All equipment. A strength of this type of system is that it consolidates garbage and recycling in centralised locations that can be fenced to keep bears out. A major drawback is that users require transportation to get their garbage and recycling to the drop-off stations. Whistler offered only partial results due to problems with some of their bear-proofing. The North Shore area of Vancouver offered insights into the limitations of plastic household bins for curbside pick-up, even with strong enforcement of the curbside bylaw.

One of the most successful models for residential garbage collection found to date is in the US town of Vail, Colorado, a well-known winter recreation destination (see Appendix 12).

Central "One-Stop" Drop-off Depots for Recycling and Garbage

One option is to install "one-stop" centralised drop-off depots for both garbage and recycling materials. This is the system that has been used by the Resort Municipality of Whistler (RMOW) since about 1996. At that time, RMOW decided not to implement a residential garbage collection service because of concerns about wildlife, snow removal, and population fluctuations. Instead, two central "one stop" garbage/recycling depots were established, one at Nesters and the other at Function Junction. People bring their garbage to either depot, where it is compacted. In 1998, the compactor sites accounted for about 10% of RMOW's total waste (Whistler Black Bear Task Team 1998). However, this system has only proven to be partially effective in reducing garbage feeding by bears in Whistler. Problems with this system identified by the Whistler Bear Task Team in 1998 persist today and are considered to be the prime "loopholes" in a system that still allows access to garbage and other artificial foodstuffs by bears (McCrory 2005). The problems with this system (as currently in operation in RMOW) include:

a) Residents who do not own a car have difficulty taking their garbage to the depots since some live a fair distance away and can't take their garbage by bus. Some are forced to store their garbage on their balconies for short and long periods, which attracts bears. This contributes to a fair number of the bear complaints in Whistler annually. Despite suggesting that a 1-800 pick-up service be implemented, this has never been put in place. In 2005, the Whistler Bear Working Group decided to have Haul-All come in an study the strategic locations for neighbourhood dumpsters to address this problem.

b) Garbage is left piled in the depot while the compactors are hauled away to be emptied.

c) Because the sites are not bear-proofed, bears still obtain food at them. In 2005, I observed on two occasions where black bears were taking plastics from the large plastics recycling bins into the adjacent woods. In 2005, the Bear Response Officer reported that one of the compactor sites was "a regular bear buffet with bears learning to open the doors, garbage being left outside, etc. Also, recycling at these sites was not treated as garbage and the bears regularly attacked recycling bins" (because of food odours and food residue, such cooking oil, not having been rinsed off recycled materials).

Placing garbage compactors at recycling depots appears to be a viable option, provided the above-mentioned problems are adequately addressed.

Commercial metal dumpsters

Universal Equipment Handling dumpsters

Most of this company's metal dumpsters are not bear-proof. Even if all of them were designed to be bear-proof, they have serious problems that defeat any bear-proofing investment and public education by communities because they are not sturdy enough to resist the strength of black bears bending up the corners of the lids; the latches also have chronic malfunction problems.

This was well-documented in Wayne McCrory's Bear Hazard report for Whistler (McCrory 2004) where, in 1998, some 360 commercial dumpsters were installed. Even though the Whistler Bear Task Team worked closely with the local waste management provider to improve these large metal bins to make them more bear-proof, site surveys in 2004 showed many of the bins were still not being properly maintained in as bear-proof a condition as possible. After a full 2005 field season of dealing with bear problems in Whistler, the Bear Response Officer considered the dumpsters not sturdy enough to be consistently bear-proof and gave this report:

> *[these] bins [seem to be] .... an attempt to rebuild a system that works with a system that is cheaper. The only problem is that these bins are easier to flip, they move, the lids malfunction on a regular basis and require repairs, the lids are being pulled open, latches don't always work... then there is this issue of the carabiner locking the lid to the body, the drivers have a bad habit of not relocking it.*

During field surveys in 2005, McCrory also observed malfunctioning lids on this company's bear-proof type bins in Britannia Beach Development and at Furry Creek.

Bylaw Services from Whistler recently visited Canmore and is now having Haul-All do a survey in Whistler to determine the placement, viability, and costs of neighbourhood bins in each of the various subdivisions at locations that are accessible to both pedestrians and people with vehicles.

Haul-All Equipment Systems

This company has the best track record of any that were researched, including long term success in a number of provincial and national parks (Pacific Rim, Banff, Jasper), in the Town of Canmore, and in Peter Lougheed Provincial Park in Alberta. In 1997, Canmore implemented both a curbside and neighbourhood communal waste collection system, but curbside collection proved to be problematic with bears during a poor berry year in1998. After this, the community went through an intensive public review process to consider a neighbourhood drop off system using Haul-All bear-proof dumpsters. One of the problems was that some residents were opposed to having dumpsters placed on streets in front of their homes. The public review process greatly assisted the municipality in gaining acceptance of the new system. In May 1999, the curbside collection system was eliminated and the residents of Canmore had the communal waste containers only. Throughout that summer, the success of the completely animal-proof waste-handling system became evident. There were several sightings of bears in and around Canmore ,but there were zero bear/waste incidents in 1999 and 2000. This is a model of what other areas should consider implementing to replace their current non-bear-proof garbage pick-up

systems. A neighbourhood communal waste management system using Haul-All (or equivalent) equipment has a high start-up cost, compared to cheaper dumpsters, but their equipment is sturdy and has longevity that pays off over time, both in its "bearproofness" and cost-reductions due to reduced maintenance.

Haul-All equipment, including single and double garbage bins, dumpsters, and various types of automated trucks, are serviced and supplied in the South Coast/Lower Mainland region of BC by Rollins Machinery Ltd. (aka Bear-Proof Containers: www.bearproofcontainers.com) in Langley, BC.

Single household-size garbage receptacles

There are a variety of totes, or plastic bins on the market, some of which have been tested and some of which have dubious effectiveness. One effective product is provided by Rollins Machinery in Langley, BC (photo right). This tote is manufactured by IPL Industries of Quebec using a process that gives exceedingly good strength. When fitted with the metal latch hardware manufactured by Solid Waste Systems of Parker Colorado to make it bearproof, it passes the grizzly bear test at the IGBC facility in Montana. This latch is a type of "hook-and-eye" contraption that requires a degree of manual dexterity to use, and can be particularly difficult in cold weather or by people who don't have fairly strong, well-coordinated hands. Rollins has recently re-designed the latching system, but I have yet to see it in operation. Rollins provided the following information: 1 bear-resistant IPL tote costs $169 plus delivery and taxes. 1 non-bearproof tote costs $90, etc. An order for 5,000 bear-resistant IPL totes would bring the unit cost down to between $135 and $150, depending on the fluctuating price of crude oil. Such an order could be filled in between 2-3 months.

An improved polycart is available from BearSaver (photo left; see Table 8 and printouts in Appendix 10). This sturdy tote (of which I have been successfully using two samples at my home here in Port Alberni in an interface area that has bears living in it) has an easy-to-use mechanism to unlatch and is re-latched simply by dropping the lid. BearSaver is a US company based in Ontario, California, and will make any bear-proof container to suit. Their 32-gallon rolling polycart has steel-reinforced side rails, back corners and lid, and features a push-to-close latching system designed for manual and semi-automated collection systems where the lid is easily unlatched by garbage collection personnel. I have tested this cart at my home in the Alberni Valley, where we previously had bears get into our garbage, and it has effectively stopped them. Importantly, the city personnel providing manual pickup in my neighbourhood have no problem using this cart. List prices for the black bear model (minimum order is 20 units): Qty 20-299 $121.44 each; Qty 300-999 $115.21; Qty 1000-4999 $110.54; Qty 5000+ $105.87.

A number of other companies in Canada and the US are actively engaged in designing truly bear-proof residential bins. The problem with most of these household type totes, however, is that even if they are fitted with bear-proofing hardware, they still require the latches to be kept properly secured while sitting outdoors at households; surely some people will forget to do this or leave them unsecured on purpose so children and people with manual dexterity problems can more easily use them. Most also require owners to remove or open the latches on the day they leave the bins out curbside for emptying. This is the weak link in this chain and significantly reduces the effectiveness of a bear-proof residential waste

management system. One company, Bear Necessities, of Alberta, has designed a rollout cart that has a large knob on the lid that is turned to open the latch. While this model has passed the grizzly bear tests for sturdiness, there is concern that (a) the knob is difficult to turn for some people and children, (b) the complex mechanism under the lid has greater potential to break down, especially in freezing weather, and (c) municipal or contracted garbage collectors will find it too time-consuming to use. The City of Coquitlam is currently running a year-long trial of three models of household bins: the BearSaver model, the Rollins model, and the Bear Necessities model; all in the 32-gallon capacity range. The results of this trial will be invaluable in helping other municipalities decide on which type of bin to recommend (or provide) to residents. Another consideration is that during hot summer weather, bins will gather a week's smelly garbage and still attract bears to households, especially where people continue to store the bins outdoors. In Whistler and the North Shore, these types of totes are called "Meals on Wheels" by the Conservation Officers who deal with the bear problems associated with them.

The Living With Wildlife Foundation (LWWF) is a US charitable organisation formed in 2003 to assist communities and wildlife agencies in identifying sources of human/wildlife conflict and creating effective, practical, and affordable solutions. They test products primarily for their ability to resist grizzly bears, and consider that surpasses the requirements to resist black bears. Contact them at PO Box 1152, Swan Valley, Montana 59826, Patti Sowka, Executive Director; 406-754-0010; email: info@lwwf.org; website: www.lwwf.org. If your municipality, agency, or organisation wants to know the bottom line about how effective any of this garbage container equipment is for deterring bears, please contact them. In a recent conversation with Patti Sowka, she agreed with me that since the vast majority of US and Canadian users of this equipment only need to deter black bears, it makes sense to devise a series of tests to determine effectiveness with black bears only, and not the more rigorous strength required for normally heavier grizzly bears. This may result in a higher number of products passing their tests and being qualified for areas that have only black bears, and also help keep costs as low as possible, since products approved to resist black bears may likely cost less than heavier, stronger products designed to resist grizzly bears.

7.0 LIST OF CONTACTS

- Wayne McCrory, RPBio, Bear Biologist, New Denver, BC
- Mike Badry, Wildlife Conflicts Prevention Coordinator, BC Environment Ministry
- Sean Sharpe, RPBio, Wildlife Biologist, BC Environment Ministry, Smithers, BC
- Helen Davis, RPBio, Artemis Wildlife Consultants
- Ben York, District Conservation Officer, Alberni
- Mike Stern, Conservation Officer, Alberni
- Steve Ackles, Conservation Officer, Nanaimo Zone
- Bob and Ann Collins, farmers and campground operators, Arrowvale Farm
- Ken Watson, City Manager
- Russell Dyson, City Clerk
- Jacob Colyn, Parks Operations Supervisor/Horticulturist, City of Port Alberni
- Jack Payne, Bylaw Enforcement Officer, City of Port Alberni
- Cara Foden, Mapping and Planning Technician, City of Port Alberni
- Randy Fraser, Streets Superintendent, Engineering Department, City of Port Alberni
- Drew Hadfield, Manager, Environmental Services, Alberni-Clayoquot Regional District
- Lori Wilson, Computer and Mapping Technician, Alberni-Clayoquot Regional District
- Crystal McMillan, Supervisor for Vancouver Island, BC Conservation Corps
- Steve Thompson, Director of Marketing & Sales, BearSaver
- Vic and Jeff Rollins, Rollins Machinery Limited (sells Haul-All and other equipment)
- John Nesbitt, Wastelines Containers, Abbotsford
- Drake Stephens, Bear Aware Coordinator for City of Coquitlam
- Sandra (last name not given), Tenant Liaison, M'akola Housing, a non-profit society with three housing developments located in various areas in Port Alberni
- Principals, vice-principals, and other staff in all city schools (SD #70 Alberni)
- Al Ross, Wildlife Manager, Hupacasath First Nation
- Aaron Hamilton, Director of Operations, Hupacasath First Nation
- Rita LaJeunesse, Port Alberni resident
- Frank Stini, Port Alberni resident
- Patti Sowka, Living With Wildlife Foundation, Swan Valley, Montana
- Detective Ryan Millbern, Police Department, Vail, Colorado
- Sylvia Dolson, Get Bear Smart Society, Whistler
- Bryan Peterson, Bear Smart Program Developer, Durango, Colorado
- City residents who choose to remain anonymous

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