



# **KIMBERLEY BEAR AWARE**

## **Risk Assessment for Bear/Human Conflict in Kimberley, British Columbia**

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## Preface

The Kimberley division of Bear Aware has prepared a report assessing the risk of bear/human conflict occurring in various areas of Kimberley, BC. The purpose of the report is to aid future Bear Aware (or related agencies) initiatives by providing insight on how to achieve the most effective geographical allocation of bear management strategies (*i.e.* public education, outreach, waste management) within Kimberley. In addition, the report discusses the potential for certain areas to experience future increases in bear activity in due to rapid rates of urban development.

The report begins by providing background on the Bear Aware program and how it operates with specific reference to the Kimberley division. The report then describes general trends in bear activity for the last three years within Kimberley (and surrounding area). The subsequent section and the bulk of the report qualitatively assesses the risk of bear/human conflict occurring in various regions in Kimberley. The report concludes with figures displaying fruit tree (*i.e.* bear attractants) densities throughout Kimberley.

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## Background

The Bear Aware Program is committed to reducing human/bear conflict from a preventative angle. More specifically, Bear Aware aims to reduce the amount of bears that rely on human products for food and (consequently) are aggressive toward people. Bear Aware achieves reduction in conflict through the use of waste management policies, public outreach, educational programming, and volunteer-based projects. Essentially, the Bear Aware Program is a bear management initiative that operates *via* altering human behaviour in a manner that favours a reduction in human/bear conflict.

Bears are omnivorous with an appetite for a wide variety of foods and will consume items such as insects, fruit, roots, seeds, fungus, rodents, carrion, *etc.* A bear needs to maximize caloric intake to sustain his/herself and prepare for the slumbering season in the winter. Since a bear's diet is incredibly varied, many human products have the potential to attract a bear. Bears have a sense of smell approximately 7 times more sensitive than a greyhound's; therefore, a resident in a bear-inhabited region should not overestimate the power a potential attractant has for enticing a bear. A bear that succumbs to the temptation of an attractant can quickly become a "problem bear" (a bear that is habituated to people and reliant on human products) and may choose to reside in human territory. Problem bears can show aggression toward people because they may view humans as nuisances in their feeding areas.

The objective of the Bear Aware program is to prevent bears from residing and feeding in human populated areas (*i.e.* occurrences of problem bears). Bears that forage in natural areas will live healthier lifestyles and are less likely to be involved in conflict with humans. Kimberley Bear Aware achieves its objective when bears that enter the city of Kimberley promptly leave without interest of loitering or feeding within town.

Since the establishment of the Bear Aware program approximately 7 years ago (in 2000), Kimberley has experienced a substantial reduction in human/bear conflict. In the late 90s, over 60 bears were eliminated in the Kimberley area due to the threat they posed to humans. Through the efforts of Bear Aware and allies in bear management, the numbers of exterminated problem bears has dramatically decreased.

Problem bear exterminations have decreased from the days before Bear Aware was implemented in Kimberley; however, the number of exterminations have been relatively (to other Bear Aware years) high over the last two years. In 2007, one bear was exterminated on-site and eleven bears were trapped. In 2006, six bears were eliminated on-site and four bears were trapped. In previous Bear Aware years, exterminations generally ranged from zero to ten.

The increase problem bear exterminations could be attributed to climate change and influx of seasonal residents. Climate change has brought about particularly dry summers over the last two years in the Kootenays (especially in 2007). Dry summers cause poor moisture conditions in natural areas leading to a low yield of wild fruit crops. In seasons of scarcely available natural fruit, bears have less in the way of natural foods to sustain themselves and, thus, are more likely to rely on human products for sustenance. To lesser degree, part of the increase in bear activity could be attributed to increased construction of new housing developments which may attract seasonal residents that are not entirely familiar with proper methods for coexisting with wildlife. However, Bear Aware does have initiatives that educate many of the seasonal residents and, currently, increase in bear/human conflict caused by influx of temporary residents is relatively minor.

Albeit 2007 exterminations of problem bears were higher than in other Bear Aware years, problem bear deaths in Kimberley could be considered low in relation to other Kootenay Mountain communitys (such as Creston). Bear activity was particularly high throughout the

Kootenays this year; therefore, the numbers of problem bear exterminations potentially could have returned to levels equal to (or higher than) those of late 1990s. Conclusively, even though problem bear exterminations have been relatively high in Kimberley in the last two years, the presence of Bear Aware appears to reduce the potential for occurrences of problem bear incidents and, thus, reduces risks of bear/human conflict.

## **Bear Incident Report Trends Observed over the Last Three Years**

The majority of the trend data has been compiled from reports archived in the Ministry of Environment (Cranbrook, BC). Some of the data reflect sightings that have been reported to the local RCMP offices, the City of Kimberley, and Kimberley Bear Aware.

### *Monthly Trends in Bear Incidents*

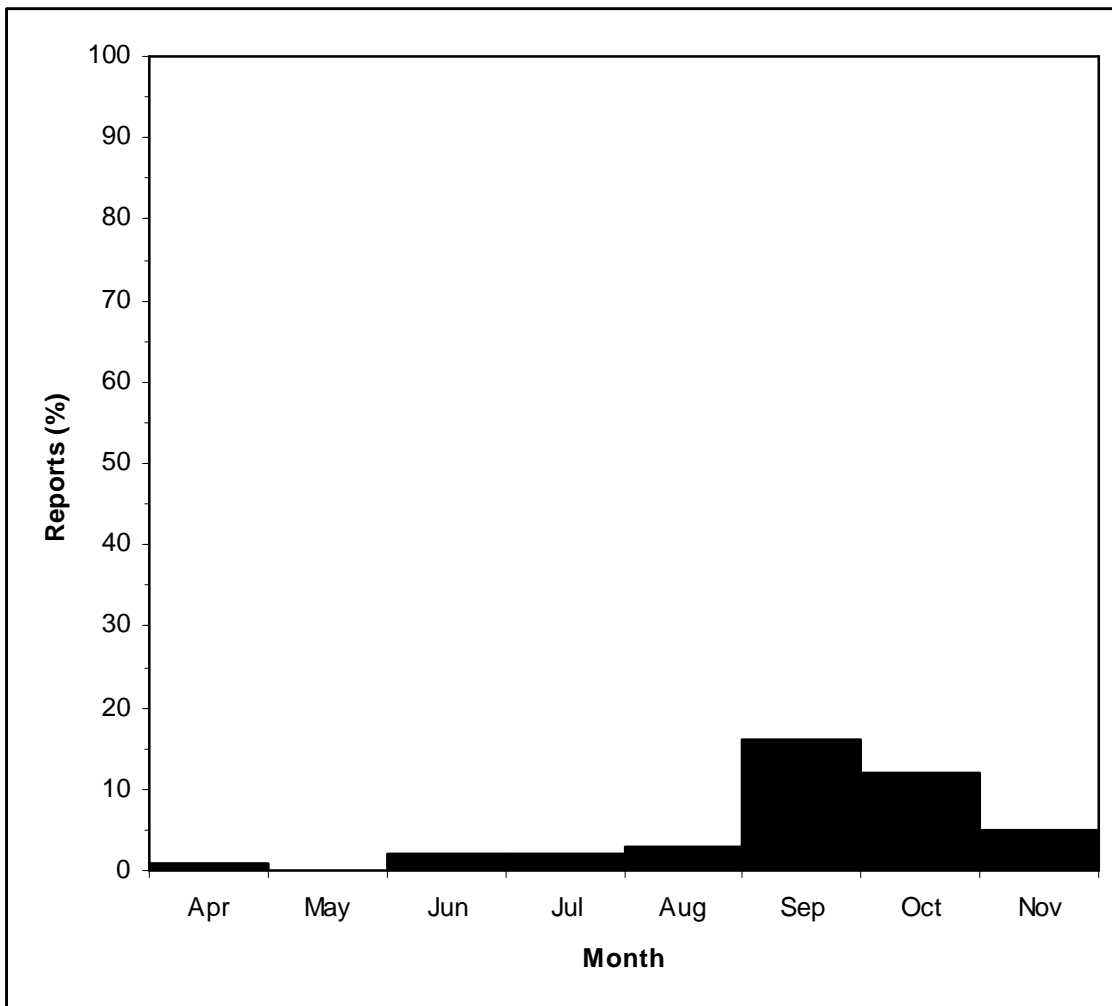
As would be expected, the highest number of bear incident reports occurred during the fall seasons (late August to October) of the last three years. Generally speaking, bear activity is highest in fall because bears are increasing their caloric intake in preparation for their winter sleep. Bear activity in Kimberley appears to cease in late-November/early-December because bears have entered their dens. Residents of Kimberley should prepare for an impending increase in bear activity during the spring and summer months (*i.e.* prune trees).

Bear incidents were particularly high during September in 2007. Table 3 displays the highest monthly number of bear incident reports occurred in September, 2007 (n=55). As mentioned in “Background”, much of the increased bear activity can be attributed to the dry summer and poor yield of wild fruit crops. During late August, domestic apple trees begin to produce fruit; therefore, bears are enticed to feed on domestic fruit due to lack of natural foods. Consequently, residents of Kimberley should be extra careful when managing bear attracts during a year with an especially dry summer.

Reported bear incidents decreased in October, 2007, which was a phenomenon noted in other areas of the East Kootenays (such as Fernie). The decrease in activity correlated with an increase in precipitation; however, whether higher precipitation is the direct cause of reduction in in-town bear activity is uncertain.

**Table 1.** Number of bear incidents reported monthly in 2005.

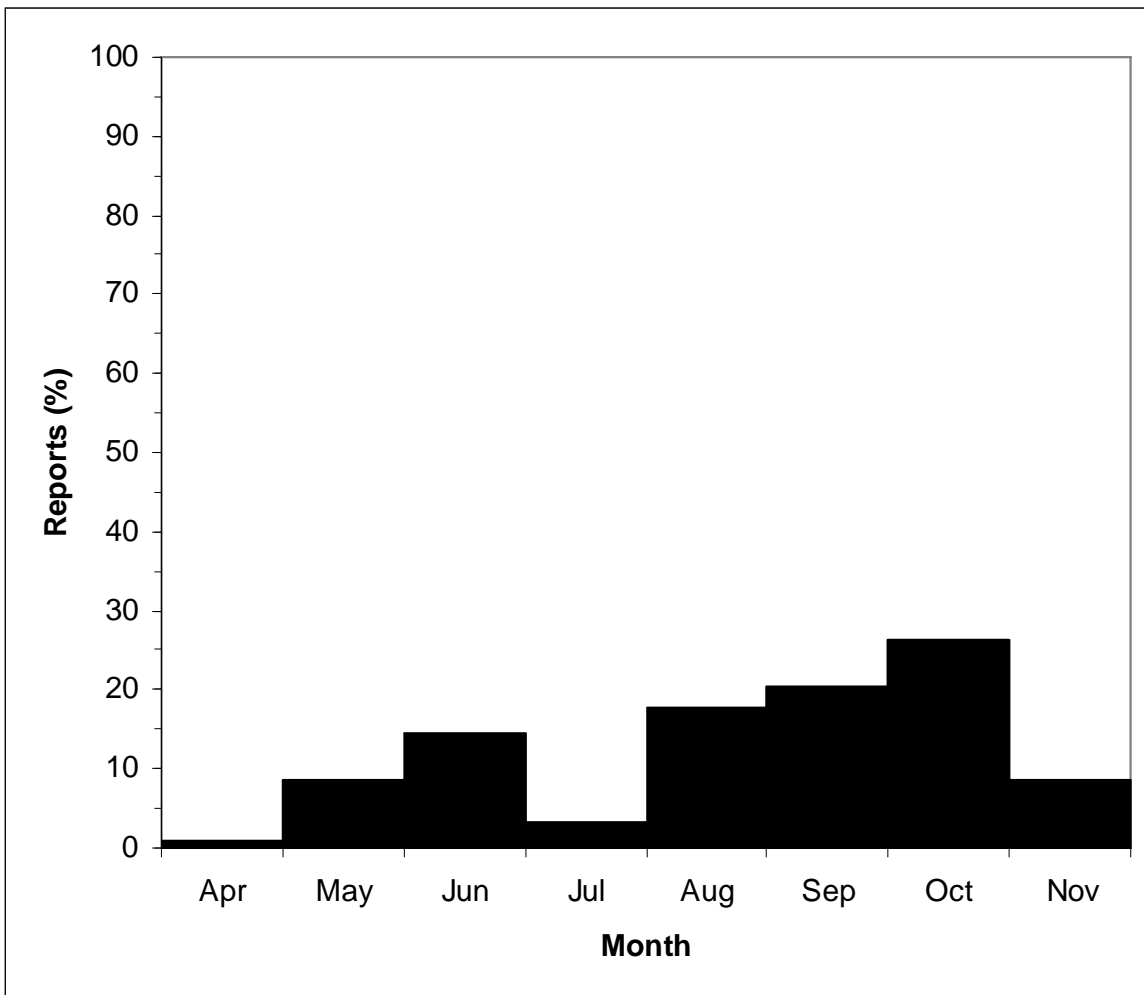
Month	Bear Reports
Apr	1
May	0
Jun	2
Jul	2
Aug	3
Sep	16
Oct	12
Nov	5
Total	41



**Figure 1.** Histogram display monthly percentages of bear incident reports in 2005.

**Table 2.** Number of bear incidents reported monthly in 2006.

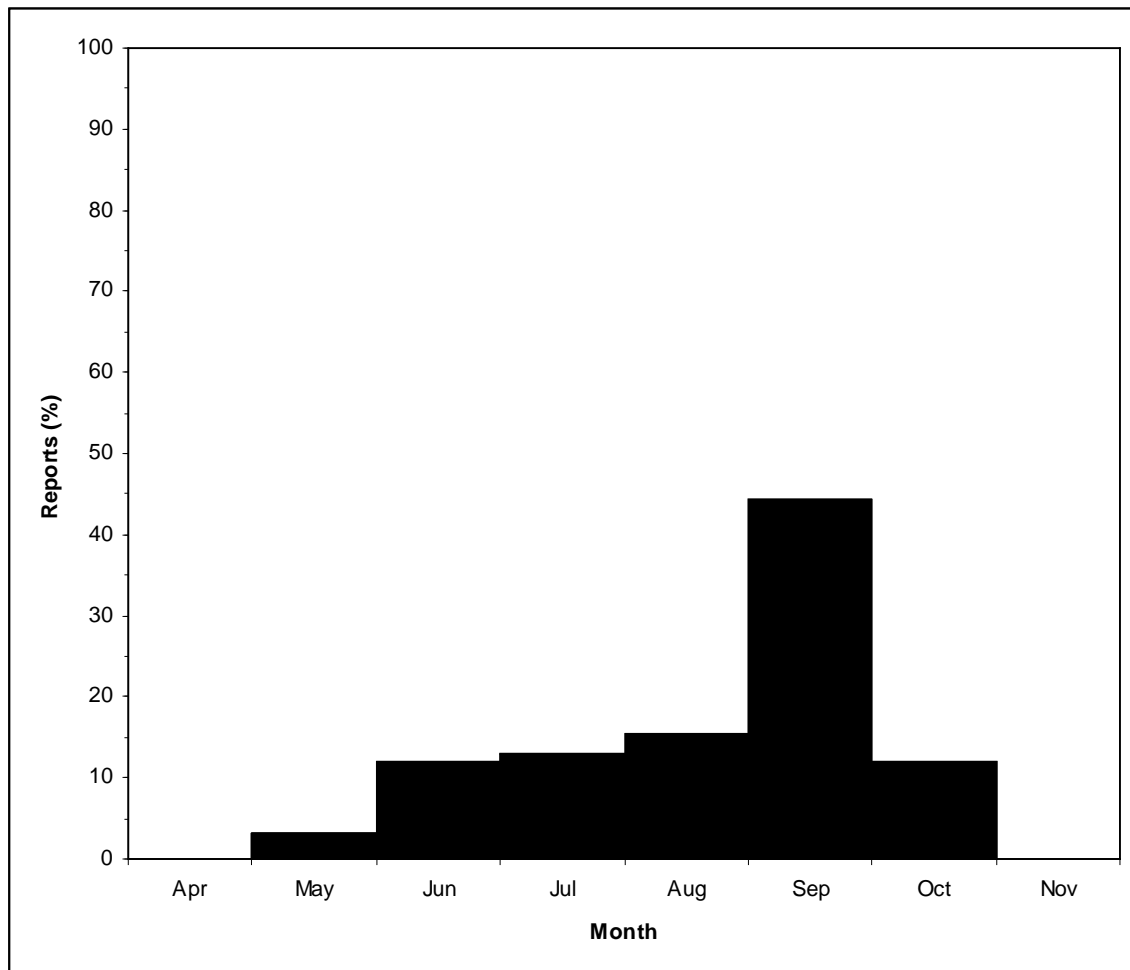
Month	Bear Reports
Apr	1
May	10
Jun	17
Jul	4
Aug	21
Sep	24
Oct	31
Nov	10
Total	118



**Figure 2.** Histogram display monthly percentages of bear incident reports in 2006.

**Table 3.** Number of bear incidents reported monthly in 2007.

Month	Bear Reports
Apr	0
May	4
Jun	15
Jul	16
Aug	19
Sep	55
Oct	15
Nov	0
Total	124

**Figure 3.** Histogram displaying monthly percentages of bear incident reports in 2007.

### *Nature of Bear Incidents*

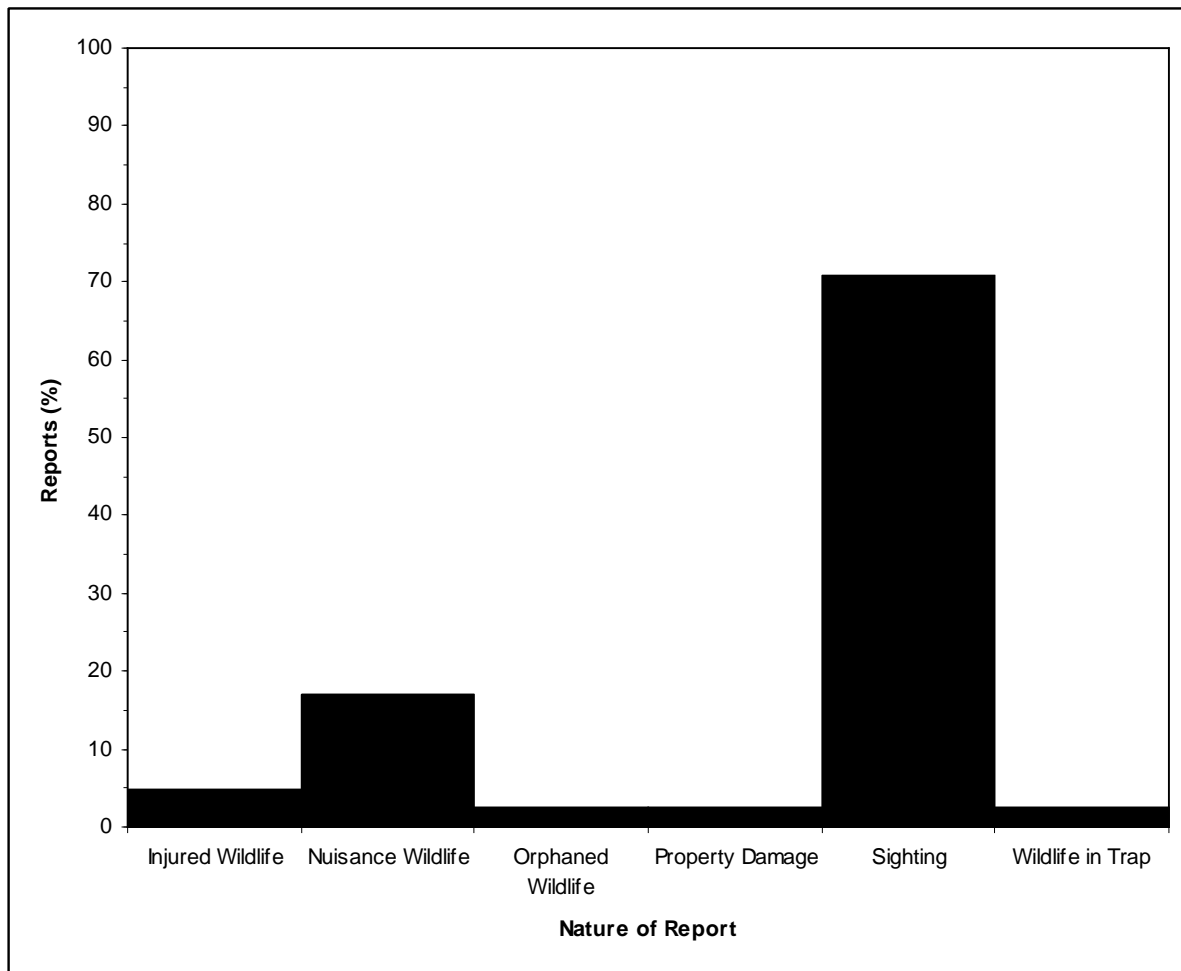
The majority of reported bear incidents over the last three years involved bear sightings without any form of conflict occurring (categorized as “Bear Sightings”). The next most common type of reported bear incident is categorized as “Nuisance Wildlife” which refers to bears that are feeding upon human products or are spending an abnormal amount of time on human property. Other types of bear incidents were reported in relatively low numbers

The number of reported nuisance wildlife incidents has increased over the last two years (from 2005); however, proportions of nuisance wildlife reports to total reports are relatively similar from 2005 to 2007. Therefore, nuisance wildlife incidents likely have increased over the last two year simply because the amount of bears in-town has increased. The increase of bears foraging in-town is a probable result of the recent scarcity in wild fruit (previously discussed).

The number of reported trapped bears increased in 2007. Bear traps are set by Conservation Officers when bears have visited a human property repeatedly and, thus, are displaying fidelity to the property. Bear Aware often provided advice on how to manage or remove attractants to terminate repeated visits from a bear to residents experiencing reoccurring bear issues, and, in most case, bears vacated areas where food was no longer available. However, on occasion, a bear will continue to return to an area even when food products are inaccessible to him/her. In cases such as these or when bears are noted to be particularly aggressive, traps are set. The majority of trapped bear incidents (over the last three years) occurred in September, 2007. Some of the bears (before trapped) continued to visit an area even after multiple failed attempts at accessing a food source (*i.e.* trying to open a garbage bin). Such desperation in foraging efforts is indicative of scarcity in wild food sources.

**Table 4.** Nature of bear incident reports in 2005.

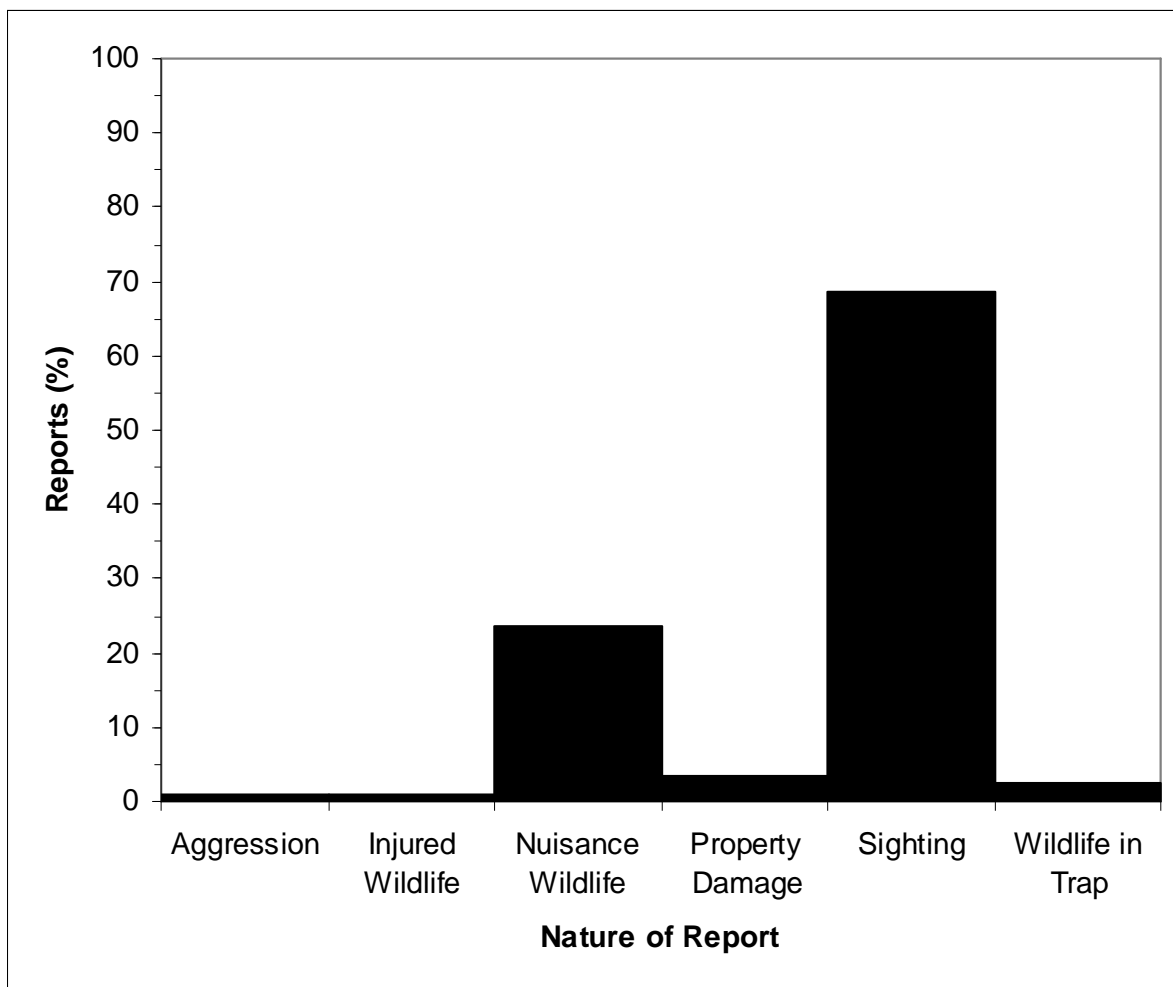
<b>Nature of Report</b>	<b>Bear Reports</b>
Injured Wildlife	2
Nuisance Wildlife	7
Orphaned Wildlife	1
Property Damage	1
Sighting	29
Wildlife in Trap	1
<b>Total</b>	<b>41</b>



**Figure 4.** Histogram displaying percentages of the nature of the bear incident reports in 2007.

**Table 5.** Nature of bear incident reports in 2006.

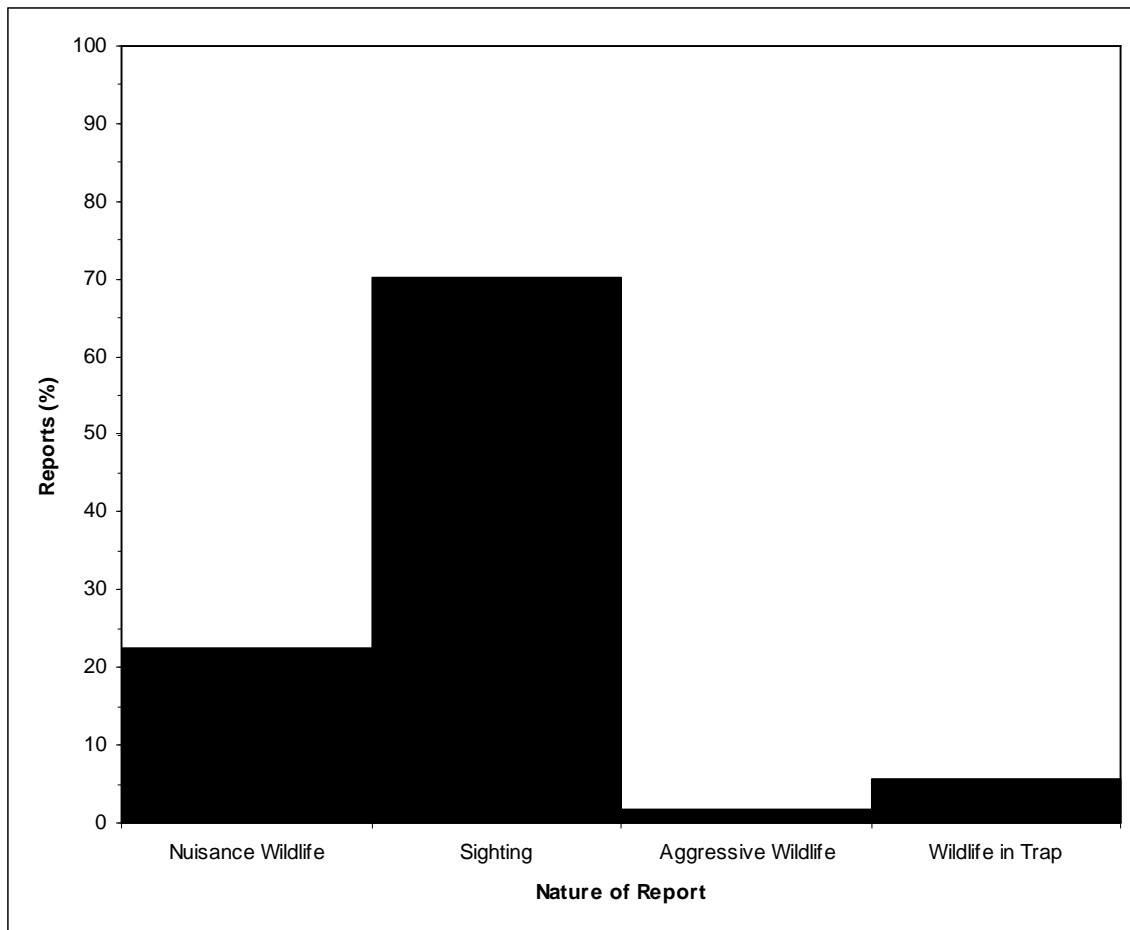
<b>Nature of Report</b>	<b>Bear Reports</b>
Aggressive Wildlife	1
Injured Wildlife	1
Nuisance Wildlife	28
Property Damage	4
Sighting	81
Wildlife in Trap	3
<b>Total</b>	<b>118</b>



**Figure 5.** Histogram displaying percentages of the nature of the bear incident reports in 2006.

**Table 6.** Nature of bear incident reports in 2007.

<b>Nature of Report</b>	<b>Bear Reports</b>
Nuisance Wildlife	28
Sighting	87
Aggressive Wildlife	2
Wildlife in Trap	7
<b>Total</b>	<b>124</b>



**Figure 6.** Histogram displaying percentages of the nature of the bear incident reports in 2007.

*Attractants Noted at Sites of Bear Incidents*

The vast majority of reported bear incidents do not note any observable bear attractants within the vicinity of the incident. The lack of identification of bear attractants in a bear incident report does not necessarily mean the site of the incident is devoid of attractants because, perhaps, vicinal attractants were located in an unobservable area. However, for the purposes of the current report, the “None Mentioned” category will refer to reported incidents where a bear has not been enticed by a human product such as garbage or domestic fruit. Such an assumption about the “None Mentioned” category is fairly safe because the presence of most fruit trees is noticeable and garbage that has been accessed by a bear is obvious (because the garbage is strewn about the site of the bear incident).

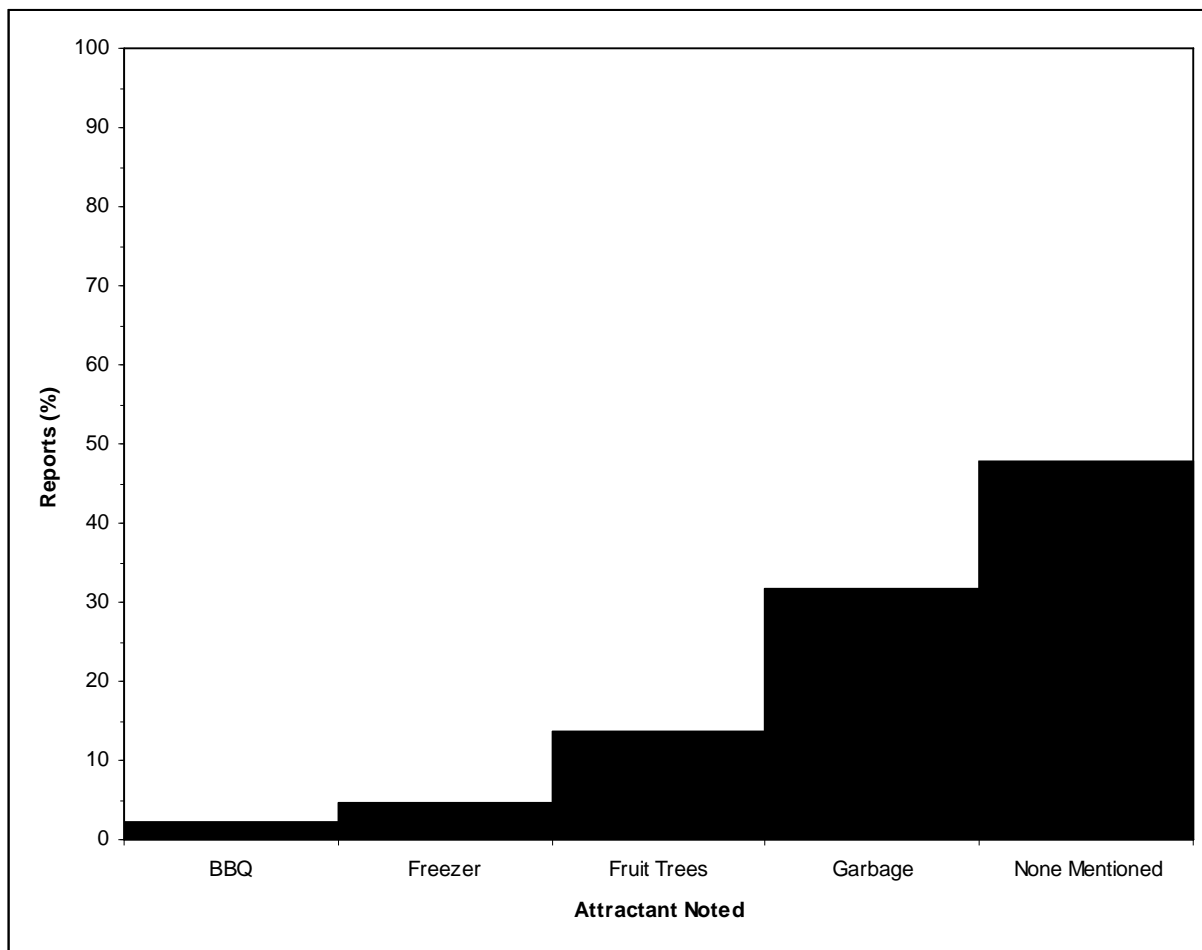
The item that appears to most frequently attract bears is garbage indicating a major cause of problem bear occurrences is unsecured waste. Kimberley operates under a bylaw stating garbage must be secured (*i.e.* indoors or in a bear resistant container) until the morning of garbage pick-up. Residents that do not comply with the bylaw are allowing waste to be accessible to bears; thus, bears may associate such residents’ properties with easily accessible food. Situations of bears feeding upon waste items often occur in neighbourhoods with newer or seasonal residents of Kimberley that are unfamiliar with proper waste management strategies. Report incidents of bears feeding on garbage have decreased in the current year (from 2006); therefore, public education strategies concerning waste management may have a significant impact on new and seasonal residents.

Fruit trees are the next commonly noted attractant. Most reports involving fruit attracting bears occur during the fall when trees are producing fruit and bears are particularly hungry. Residents should be advised to prune fruit trees in the summer to avoid enticing hungry bears during the fall.

**Table 7.** Attractants noted at sites of reported bear incident in 2005.

<b>Attractant</b>	<b>Bear Reports</b>
BBQ	1
Freezer	2
Fruit Trees	6
Garbage	14
None Mentioned	21
<b>Total</b>	<b>44</b>

\*Some callers noted more than one attractant; thus, n does not equal 41\*

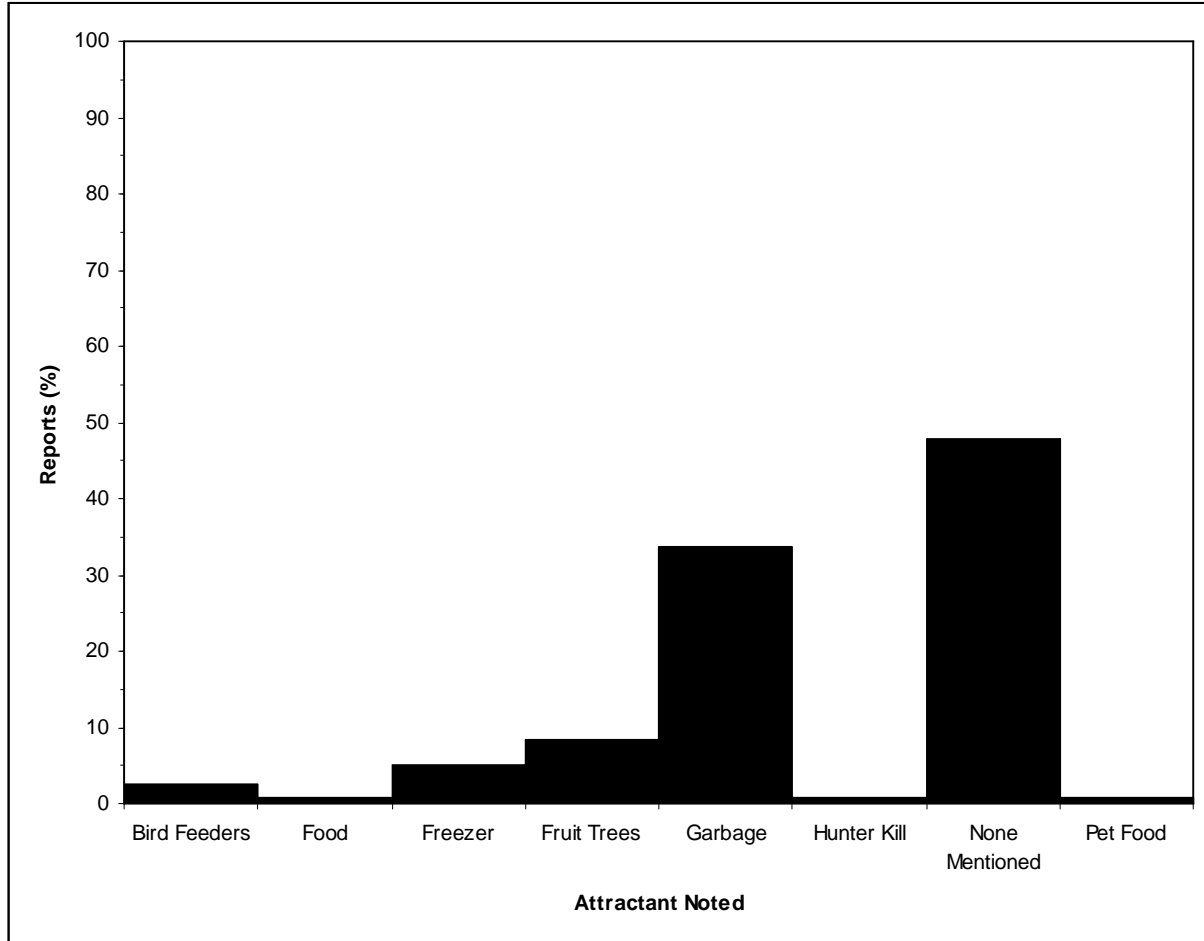


**Figure 7.** Histogram displaying percentages of attractants noted at the sites of reported bear incidents in 2005.

**Table 8.** Attractants noted at sites of reported bear incident in 2006.

<b>Attractant</b>	<b>Bear Reports</b>
Bird Feeders	3
Food	1
Freezer	6
Fruit Trees	10
Garbage	40
Hunter Kill	1
None Mentioned	57
Pet Food	1
<b>Total</b>	<b>119</b>

\*One caller noted more than one attractant; thus, n does not equal 118\*

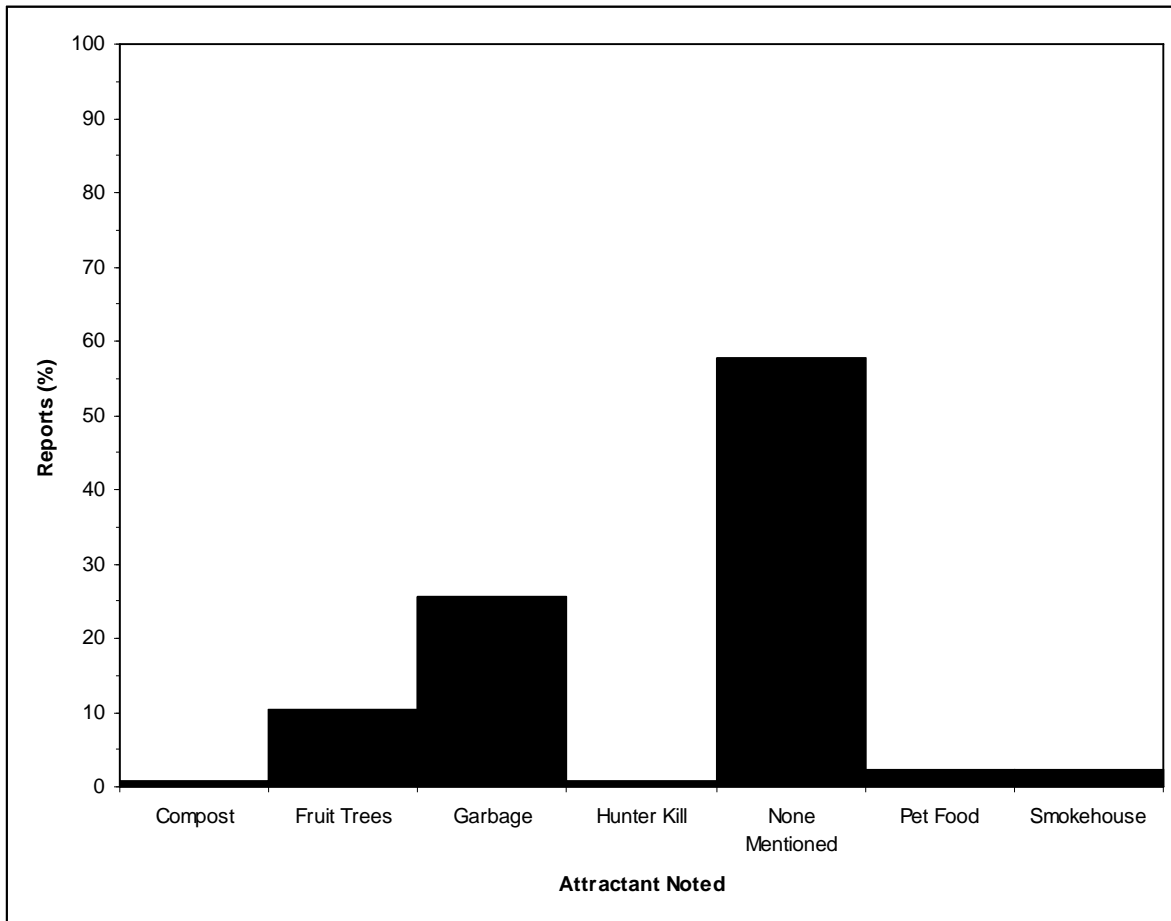


**Figure 8.** Histogram displaying percentages of attractants noted at the sites of reported bear incidents in 2006.

**Table 9.** Attractants noted at sites of reported bear incident in 2007.

Attractant	Bear Reports
Compost	1
Fruit Trees	13
Garbage	32
Hunter Kill	1
None Mentioned	72
Pet Food	3
Smokehouse	3
Total	125

\*One caller noted more than one attractant; thus, n does not equal 124\*



**Figure 9.** Histogram displaying percentages of attractants noted at the sites of reported bear incidents in 2007.

*Actions Taken in Response to Bear Incidents*

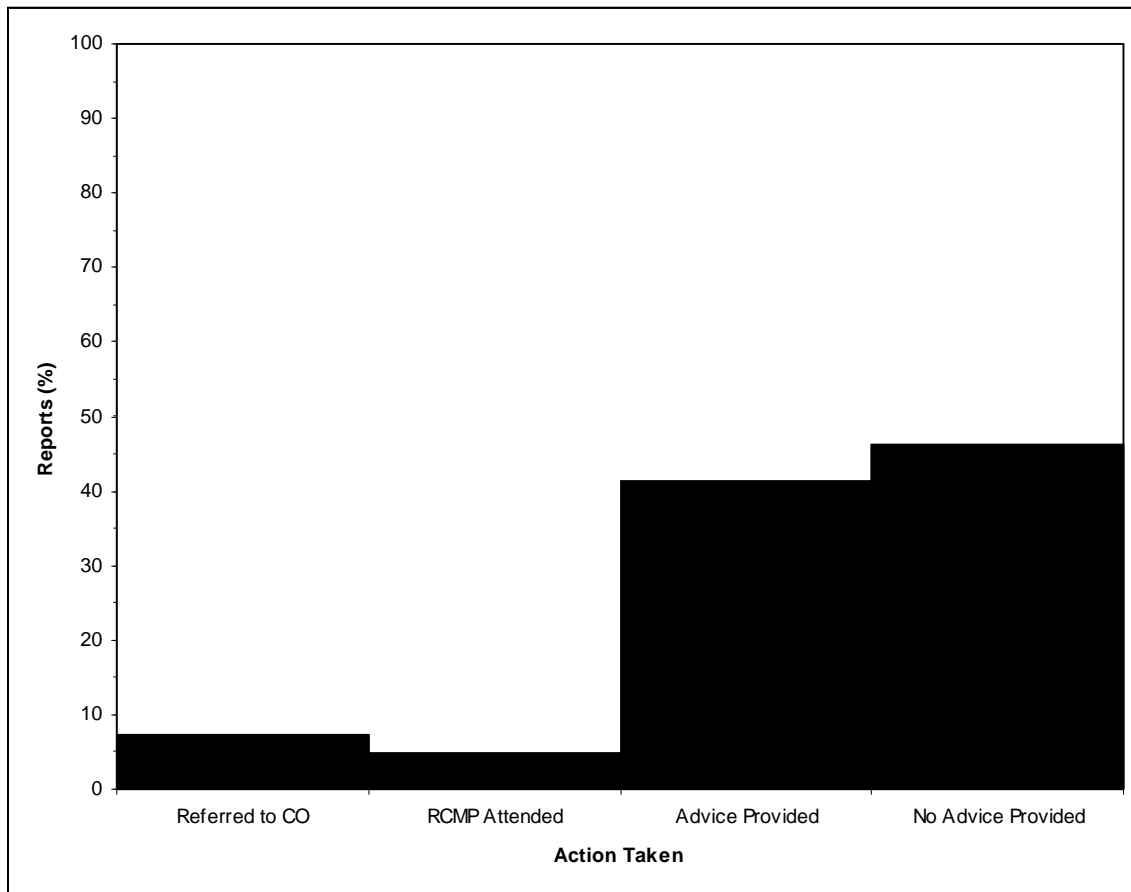
No advice was provided to the caller on how to avoid or reduce bear/human conflict in response to most of the reports collected and archived by the Ministry of Environment. Advice was not usually provided because the majority of reported bear incidents involved only sightings. Because of Kimberley's proximity to forested area, bears are expected to wander within town. Concerns about bear activity arise when a bear wanders into town repeatedly and/or when a bear decides to stay within town because they discover available food. Consequently, bear sightings often are collected solely for the purpose of monitoring bear activity and advice is not provided unless evidence exists that the sighted bear is or is becoming a problem bear.

On occasion, bear reports are referred to the Conservation Officer Service. Such an action is taken when the bear involved in the report has become a potential threat to human safety (*i.e.* habituated and aggressive). The amount of reports referred to Conservation Officers has increased from 2005. Since bears have been searching for alternatives to the scarce natural food sources over the last two years (see "Background"), a higher number of bears have been foraging in-town. A bear that frequently forages in human territory poses a threat to humans because a higher potential exists that a person will agitate the bear. Therefore, Conservation Officers are contacted to respond accordingly to such threat.

Bear Aware is contacted in response to some bear incidents. Bear Aware responds to bear incidents through non-lethal methods such as providing advice and/or facilitating attractant removal. Many bear incident reports were delivered or referred to Bear Aware in 2007 which indicates the community of Kimberley supports Bear Aware because the community is willing to involve Bear Aware in bear management issues.

**Table 10.** Responses to bear incident reports in 2005.

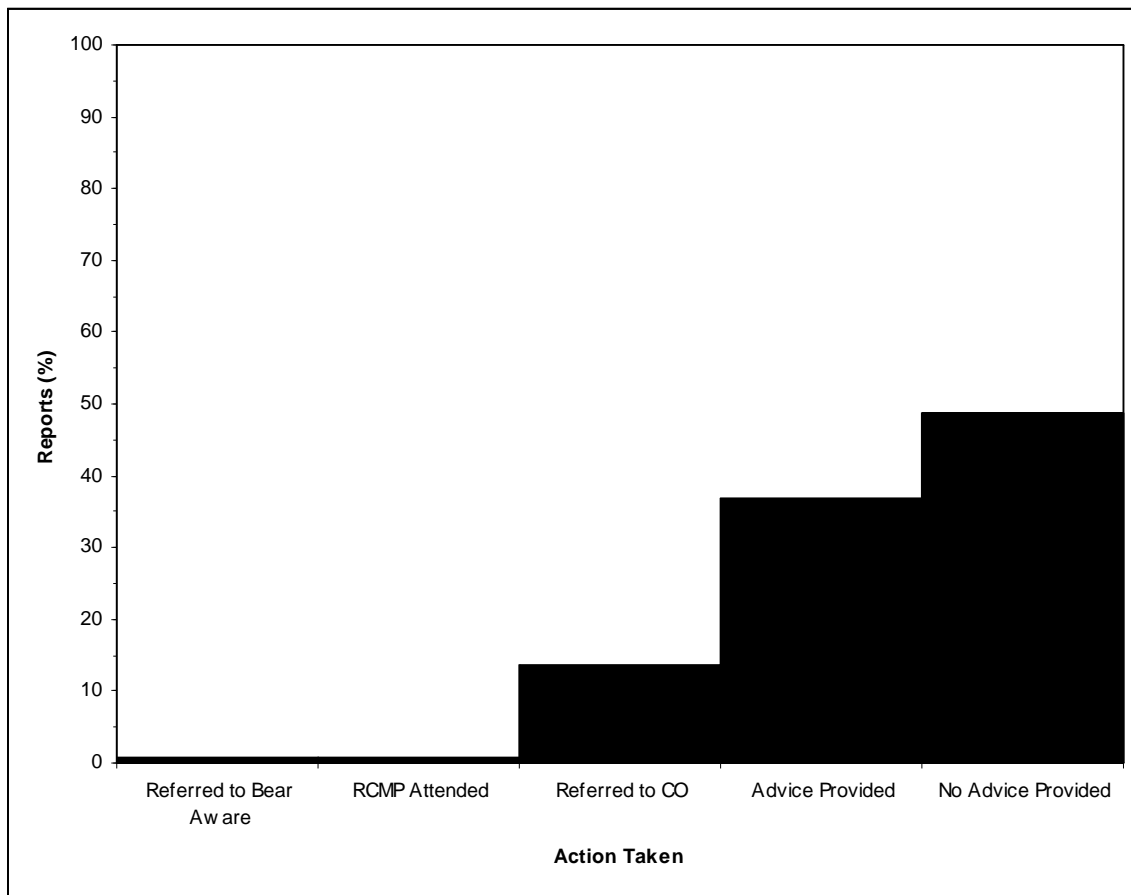
Action Taken	Bear Reports
Referred to CO	3
RCMP Attended	2
Advice Provided	17
No Advice Provided	19
Total	41



**Figure 10.** Histograms displaying percentages of actions taken in response to reported bear incidents in 2005.

**Table 11.** Responses to bear incident reports in 2006.

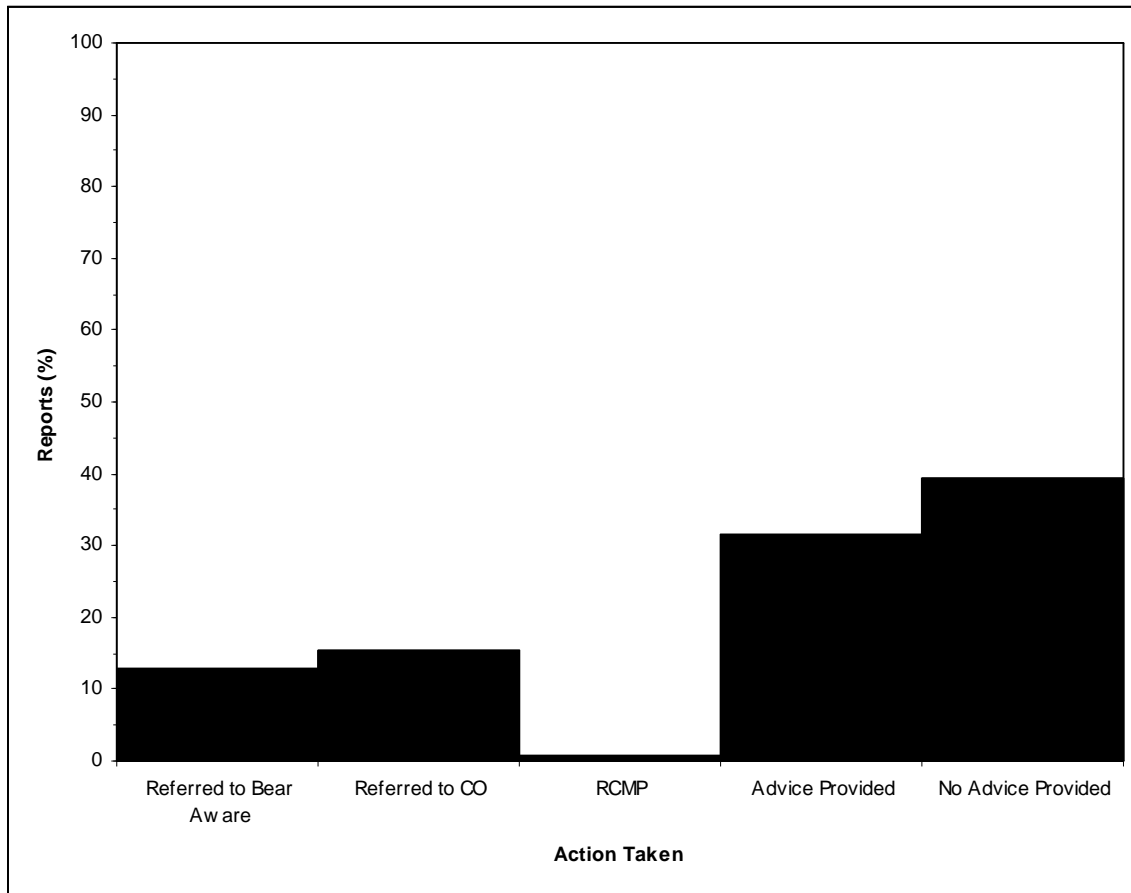
Action Taken	Bear Reports
Referred to Bear Aware	1
RCMP Attended	1
Referred to CO	16
Advice Provided	43
No Advice Provided	57
<b>Total</b>	<b>117</b>



**Figure 11.** Histograms displaying percentages of actions taken in response to reported bear incidents in 2006.

**Table 12.** Responses to bear incident reports in 2007.

Action Taken	Bear Reports
Referred to Bear Aware	16
Referred to CO RCMP	19
Advice Provided	39
No Advice Provided	49
<b>Total</b>	<b>124</b>



**Figure 12.** Histograms displaying percentages of actions taken in response to reported bear incidents in 2007.

### Risk of Bear/Human Conflict in Various Areas of Kimberley

**Table 13.** Number of reported bear incidents occurring in various areas of Kimberley over the last three years.

Area	2005	2006	2007
Townsite	4	8	19
Ski Hill	2	7	6
Inn West	3	6	2
Downtown	7	10	11
Selkirk Hill	0	0	3
Church Ave	0	0	2
Meadowbrook	1	5	5
Upper Blarhmont	3	15	5
Lower Blarhmont	1	22	6
Chapman Camp	4	16	13
Creekside	0	1	1
Kimbrook	2	9	4
St. Mary's Lake	3	1	3
Forest Crowne	0	1	4
North Marysville	5	11	24
South Marysville	1	1	7

**Table 14.** Percentages of total reported bear incidents occurring in various areas of Kimberley over the last three years.

Area	2005	2006	2007
Townsite	11.1	7.1	16.5
Ski Hill	5.6	6.2	5.2
Inn West	8.3	5.3	1.7
Downtown	19.4	8.8	9.6
Selkirk Hill	0.0	0.0	2.6
Church Ave	0.0	0.0	1.7
Meadowbrook	2.8	4.4	4.3
Upper Blarhmont	8.3	13.3	4.3
Lower Blarhmont	2.8	19.5	5.2
Chapman Camp	11.1	14.2	11.3
Creekside	0.0	0.9	0.9
Kimbrook	5.6	8.0	3.5
St. Mary's Lake	8.3	0.9	2.6
Forest Crowne	0.0	0.9	3.5
North Marysville	13.9	9.7	20.9
South Marysville	2.8	0.9	6.1

*Townsite*

Townsite is the northern most neighbourhood of Kimberley. The majority of the area consists of residential housing; however, a school, a clinic, a retirement home, and a visitor gardens also are located within Townsite. Lois Creek Park is located near the northern end of Townsite which essentially consists of a forested area intersected with walking trails.

Townsite experienced the second highest level of reported bear activity during 2007 (see Table 14). A high risk of human bear conflict is associated Townsite because of the area contains a high density of human dwellings in close proximity with forested area. Essentially, Townsite is a residential zone surrounded by forest; therefore, the area has low vehicular traffic allowing bears to enter frequently without being deterred by automobiles. Furthermore, Townsite contains many residences; thus, a high potential human products (such as fruit trees and garbage) will be made available to bears is associated with the area.

Three areas of particular concern exist within Townsite:

- Lindsay Park Elementary School is located next to a gully where multitudes bears have been observed, and several of the residents near the school have fruit trees on their property. The proximity of the gully and fruit trees to the school is of concern because bears may be tempted (by fruit) to enter the vicinity of playing children. In 2007, Bear Aware has worked with volunteers to remove fruit from the trees near Lindsay Park Elementary; however, a bear was trapped (before fruit removal) near the school due to the threat the animal posed to children.
- Lois Creek Park is ideal black bear habitat because the park is forested with trees sparsely enough distributed that shrubs (associated with items bears like to eat) receive enough sunlight. The park is directly adjacent to residential neighbourhoods; therefore, park trails often are used by local residents.

Consequently, a potential for park patrons to startle and agitate bears residing within Lois Creek Park exists.

- Cominco Gardens is a tourist attraction open to the public without an admission price. The gardens are surrounded by a forested area and many waste receptacles are located on the grounds; therefore, bears often are enticed from the forest into Cominco Gardens by garbage odours. A retirement home and a clinic are located on either side of Cominco Gardens; therefore, a risk of the elderly and infirm coming in contact with a bear enticed by garbage exists.

The majority of Townsite residents are familiar with strategies for keep wildlife from entering their property; however, Bear Aware attended (in 2007) several incidents where newer residents have made food items accessible to bears. New residents of Townsite often have moved from urban environments (*i.e.* Vancouver, Calgary); therefore, many were unfamiliar with practices used for coexisting with wildlife. Whether Townsite will experience a large influx of people moving from urban settings in the future is uncertain; however, if such a trend does occur, bear/human conflict could continue to increase in the area.

### *Ski Hill*

The ski hill has the highest elevation of the developed areas in Kimberley. The ski hill is the site of the Kimberley Alpine Ski Resort and many new seasonal home developments. Very few permanent residences are located on the ski hill.

Between 5 % and 7 % of total bear incident reports over the last three years have involved bear activity on the ski hill (see Table 14). The number is low relative to the size of the area, and, currently, the ski hill is not associated with a high risk of bear/human conflict because the majority of human traffic in the area occurs during the winter when bears are within their

dens. However, the risk for bear/human conflict on the ski hill will increase in future years due to a high rate of temporary housing development. As more temporary and seasonal homes are created and purchased, temporary residents will begin to visit Kimberley's ski hill during summer and fall months more often than in previous years. Temporary residents often are visiting from urban environments (such as Calgary) and, thus, may be unfamiliar with practices used for coexisting with wildlife. Furthermore, temporary residents may visit Kimberley for short periods of time on weekends; therefore, they may not be present for the ski-hill's garbage pick-up day (Thursday), and waste from temporary residents may not be disposed of properly. Improperly disposed waste may attract bears.

Currently, the ski hill does not experience abnormally high levels of bear activity. However, in future years, problem bears occurrences may occur more frequently on the ski hill due the high rate of temporary housing development.

### *Inn West*

Inn West is a residential neighbourhood located between the ski hill and the downtown of Kimberley. A heavily forested area is contiguous with western border of Inn West. The Trickle Creek Golf Course is located near Inn West, and bear activity has been observed on the golf course.

Percentages of total bear incident reports have decreased in Inn West over the last three years (see Table 14). In 2007, only two recorded bear incidents occurred in Inn West. Of course, the reported number does not include all bear incidents in Inn West because many incidents have not been reported; however, bear activity relative to the rest of Kimberley can be inferred from reports. The current report recognizes that residents of Inn West have observed

bear (and problem bear) activity within Inn West, but the majority of Kimberley bear complaints have not be associated with the neighbourhood over the last three years.

Even though Inn West does not currently experience relatively high levels of bear activity, risk of human/bear conflict in the neighbourhood likely will increase in future years. Inn West is relatively close to new ski hill developments; therefore, bears that are enticed into the ski hill area may continue searching for food in areas adjacent to the new developments. Inn West is a residential neighbourhood; therefore, a high chance exists that an edible human product will be made accessible to the foraging bears. Conclusively, even though Inn West currently is not experiencing incredibly high levels of bear activity (relative to other neighbourhoods in Kimberley), bear activity likely will increase in the neighbourhood due to new temporary housing developments on the ski hill.

### *Downtown*

The downtown of Kimberley consists of a plaza (the Kimberley Plaztl) that contains retail outlets, a library, and restaurants. Commercial buildings and public halls are found one to three blocks (depending on direction) outside of the plaza. Residential buildings are located on the outer edge of the downtown area. A baseball diamond and park is situated immediately north of downtown.

In 2005, the area with the highest amount of reported bear incidents was downtown (see Table 14). Although, downtown has not been the hub of bear activity over the last two years, percentages bear incident reports have been significant (approximately 10 %) in 2006 and 2007. Bear incidents generally do not occur within the center of downtown because high human traffic dissuades bears from entering the area. The majority of reported bear incidents occur on the outer edges of downtown where residential zones contact forested areas. A possible reason why

the outer areas of downtown experience relatively high bear activity is because the smells emanating from the restaurants in the downtown center could entice bears into the general vicinity. Bears attracted by vented restaurant odours likely will confine their foraging to the more secluded outer edges of the downtown area to avoid heavy human traffic.

The baseball diamond and park is an area of concern in the downtown region. During the summer months, the park is a popular place for picnic and play; however, the park is surrounded by forested area with residing bears. Waste receptacles are located on the park grounds; thus, bears could be enticed into the area and could potentially come into contact with a park patron.

Other areas of concern in the downtown region are the two stairways that respectively connect downtown to Townsite and Inn West. The stairways run through forested areas where bears have been sighted, and many people travel upon the stairways on a daily basis. People that use the stairways daily may become less conscientious of the potential risk for bear/human conflict and may begin to walk down the steps without generating noise to warn vicinal bears of their presences. A quiet traveler may startle a bear foraging or resting near the stairway travelled upon possibly resulting in the bear executing a defensive attack.

### *Selkirk Hill*

Selkirk Hill is east of downtown. The neighbourhood consists of a secondary school (Selkirk Secondary School) and a residential area.

Few reported bear incidents have been associated with Selkirk Hill. The three reports of Selkirk Hill bear incidents (see Table 13) refer to the sightings of same bear residing. Bear activity would be expected to be relatively high on Selkirk Hill because the neighbourhood has a high density of fruit trees. However, albeit fruit is available in the residential areas of Selkirk Hill, access routes to such areas with fruit may be unfavourable to bears. Selkirk Hill is adjacent

to commercial areas of downtown and Highway 95A, and Selkirk Secondary School is located between the forested and residential areas of the neighbourhood. Consequently, highway traffic, masses of adolescent-sized humans, and downtown traffic could dissuade bears from entering residential areas of Selkirk Hill and feeding upon domestic fruit. Currently, the area does not appear to be high risk for bear/human conflict.

### *Church Avenue*

Church Avenue is a small neighbourhood east of downtown and south of Selkirk Hill. The neighbourhood primarily consists of a row of house aligned with a ravine. A retirement center is located at the southern end of Church Avenue and is surrounded by forested area.

Church Avenue is not a high risk area for bear/human conflict. The ravine area is barren of trees and, thus, is not a common place of residence for bears. In the area of Church Avenue surrounded by forest, no fruit trees are present and waste is stored in a secured metal bin. The proximity of the retirement home to forested area may be a cause for concern in terms of potential bear/human conflict; however, bears appear to exit Church Avenue promptly after entering the neighbourhood because of the lack of available food.

The two reported bear incidents that occurred in Church Avenue during 2007 (see Table 13) involved one bear. An adolescent bear appeared to have difficulties finding food in the forest because he/she continually attempted to access the garbage bin near the retirement center without success. The bear's desperation for food was apparent because he/she would not be deterred from the waste bin by smell of bleach or the lack of success in accessing the garbage; therefore, the bear was eventually trapped by Conservation Officers. Even though the described situation constitutes as a problem bear situation, problem bear occurrences in the Church Avenue area have been rare over the last several years (as mentioned by the manager of the retirement

center during a discussion with Bear Aware). Church Avenue appears to be a relatively low risk area for bear/human conflict.

### *Meadowbrook*

Meadowbrook is a rural area located outside of Kimberley city limits along Highway 95A (toward the east). The area consists of both forested and grassy terrain.

Table 13 and 14 depict Meadowbrook as an area of low bear activity; however, the reality is a minority of the bear sightings in the area are actually reported (as discovered *via* personal conversations between residents and Bear Aware). Theoretically, Meadowbrook should be an area of high risk for bear/human conflict because residential homes are immersed in bear habitat (*i.e.* forest); however, most people that choose to live in Meadowbrook appear to be savvy with practices concerning coexistence with wildlife. More specifically, most residents appear to be familiar with methods of properly securing waste, and, since the city does not pick up garbage in Meadowbrook, garbage is never made available to wildlife (through leaving waste outside on the morning of garbage pick-up). Risk of bear/human conflict would increase to levels of concern in Meadowbrook with a dramatic increase in real estate development; however, currently, the area is not high risk in terms of bear/human conflict.

### *Upper Blarchmont*

Upper Blarchmont is located south of downtown. The neighbourhood is primarily residential, and the western side is bordered by a heavily forested area.

Reported bear activity was highest (over the last three years) in upper Blarchmont during 2006. The majority of the activity in Upper Blarchmont during 2006 occurred between late-August to late-October (approximately 75 % of the year's reports for the area). Upper

Blarchmont contains a high density of apple and crab apple trees which generally begin to produce fruit in August. The fall reports of bear activity in 2006 could have been a result of foraging bears being tempted by domestic fruit. Perhaps, reports of bear incidents decreased in 2007 because residents of Upper Blarchmont were more diligent in removing fruit from their yards after experiencing heavy bear activity in the previous year.

Albeit numbers of bear incident reports have decreased in 2007, Upper Blarchmont should be considered a high risk area for bear/human conflict. The neighbourhood is quiet and residential with low vehicular traffic; thus, bears are not discouraged from roaming through the area. In addition, Upper Blarchmont consists of a high density of fruit trees in a close proximity to forest areas; therefore, bears may be enticed from forested areas to enter the neighbourhood by nearby available fruit.

#### *Lower Blarchmont*

Lower Blarchmont is located south of Upper Blarchmont. Commercial buildings are located on the main road that bisects Lower Blarchmont (Warren Avenue); however, the remainder of the neighbourhood is residential. The western border of Lower Blarchmont is contiguous with the Kimberley Nature Park. The northeastern end of the neighbourhood contacts the trailhead of a pathway leading to McKim Middle School.

Like Upper Blarchmont, Lower Blarchmont experienced the highest amount of (reported) bear activity during 2006 with approximately 13 % of the year's reports generated from the area. A possible explanation for the high amount of bear activity in 2006 is the neighbourhood is located in close proximity to the Nature Park. Many residences of the western side of Lower Blarchmont are adjacent to Nature Park grounds; therefore, hungry bears residing within the Nature Park can obtain residential waste items with ease and stash them as caches within

forested area (*i.e.* the Nature Park). In 2007, Bear Aware entered the forested land adjacent to Lower Blarchmont to remove garbage caches compiled by bears. Bear Aware discovered both fresh caches and caches that were at least a year old indicating that incidents of bears stashing garbage from Lower Blarchmont has occurred on more than one occasion. Consequently, some of the bear activity in 2007 could have been a result of learned behaviour (in terms of where and how to collect garbage) by bears in 2006.

In addition to west Lower Blarchmont, another area of concern is the trail leading to McKim School. The trail often is used for travel by middle school students and Lower Blarchmont residents. Bears have been observed foraging near the trail likely because the trail is surrounded by trees and is adjacent to a creek (a place where overheated bears can cool down). Bear activity near the trail is a cause for concern because a middle school student or a resident of Kimberley may startle or agitate a bear when using the trail. A startled or agitated bear may attack in a defensive manner.

Lower Blarchmont should be considered a high risk area for bear/human conflict because the western side of the neighbourhood is contiguous with the Kimberley Nature Park and the McKim trail opening at the northeastern end of the neighbourhood is a favourable place for bears to reside. The current report recognizes reported bear activity in Lower Blarchmont has decreased from 2006 to 2007; however, the reasons for activity decrease is uncertain, and, thus, to be prudent, Lower Blarchmont is described as a high risk area.

#### *Chapman Camp*

Chapman Camp is located east of Lower Blarchmont. Chapman Camp consists of residential buildings and a daycare is located in the southeastern portion of the neighbourhood.

Patches of forest run along the east boarder of Chapman Camp, and trees are heavily interspersed throughout the neighbourhood.

Chapman Camp has experienced a relatively high level of bear activity throughout the last three years. The percentages of total bear reports that occur in Chapman Camp during the last three years lie between 10% to 15% (see Table 14). Chapman Camp contains a high density of fruit trees; thus, hungry bears could be enticed to enter the area. Furthermore, trees (fruit and non-fruit) are interspersed throughout the neighbourhood allowing bears to wander under the comfort of shade. A combination of tree cover and available fruit is a possible cause for high levels of bear activity in Chapman Camp, and the area should be considered at high risk for human/bear conflict.

An incident in 2007 illustrated the concerns for risk of bear/human conflict mentioned above. A bear spent approximately nine hours on a Chapman Camp resident's property. The bear was reluctant to move because several crab apple trees within the yard were providing him/her food and a large coniferous tree was providing him/her with shade. The combination of shade (*i.e.* avoid overheating) and available food generated a favourable environment for the bear.

### *Kimbrook Crescent*

Kimbrook Crescent occupies the smallest geographical space of the communities discussed in the current report. The neighbourhood is located at the northern end of the highway stretch that runs between Marysville and Kimberley. The majority of the neighbourhood disposes of their waste through city-run curbside pick-up; however, an apartment complex near the southern end of the street relies on a communal waste bin for waste disposal which is emptied by a private company.

Kimbrook Crescent experienced a disproportionately large amount of bear activity in 2006. The neighbourhood comprises about 0.2 % of the residential space in Kimberley; however, in 2006, 8 % of bear incident reports were associated with the area, and several bears were exterminated in Kimbrook Crescent during that year. The root cause of the problem bear incidents appeared to be poor waste management within one residence at the southern end of the neighbourhood. A large amount of unsecured waste was placed around the residence which attracted a number of bears leading to cases of problem bears.

The tenants practicing poor waste management left Kimbrook Crescent and bear activity has decreased in the area. Bears likely will continue to enter the neighbourhood because of its proximity to forested area and the odours produced communal waste bin (at the southern end); however, much of the worrisome bear activity that occurred in Kimbrook Crescent over the last three years was a result of a single household's poor waste management. Considering the tenants of the household have vacated the neighbourhood, Kimbrook Crescent could be considered a low to medium (due to proximity to forest) risk area for bear/human conflict.

#### *Creekside Trailer Park*

Creekside Trailer Park is located east of Kimbrook Crescent. The neighbourhood is entirely residential consisting of a group of stationary trailer units. Creekside Park is bordered by forest on the east and a creek on the west.

Few of the bear reports over the last three years have referred to activity in Creekside Park; however, the reported incident this year involved a case of a bear exhibiting signs of aggression toward people. Albeit low percentages of a year's bear incident reports occur in Creekside Park, the current report considers the neighbourhood a high risk area for two reasons:

- Creekside Park residents use curbside pick-up as their mode of waste disposal; therefore, residents must store garbage within small trailer units for a week before disposing (unless garbage is taken directly to transfer station). Residents that feel limited space is available for indoor waste storage may attempt to construct an outdoor storage unit for waste. Both home-constructed sheds and walls of a trailer are not durable enough to combat the strength of an adult bear searching for food. Bear Aware has provided an option to the residents of Creekside Park of purchasing bear resistant containers; however, no resident has taken the option yet likely because the containers are fairly expensive.
- Creekside Park is located in between a creek and a forested area. Bears wishing to avoid overheating by resting near water bodies may access the creek by travelling through Creekside Park. Consequently, during warmer months, Creekside Park may experience traffic of uncomfortably hot (thus agitated) bears.

### *Forest Crowne*

Forest Crowne is located between Kimberley and Marysville. The neighbourhood is surrounded by forested area, and few barriers (*i.e.* fences) exist between wildlife territory and human properties. The majority of Forest Crowne uses communal waste bins for garbage disposal; however, residents of a cul-de-sac on the eastern side of the neighbourhood use curbside pick-up.

Even though Forest Crowne essentially is immersed in forested lands, the neighbourhood is of low risk for bear/human conflict. Most of the neighbourhood's garbage is stored in a metal bin which is isolated from human property; therefore, wildlife is not encouraged to approach individual residences due to waste odours. In addition, the neighbourhood is relatively new in development; therefore, few fruit trees have been planted in the yards of residences.

Risk for bear/human conflict will increase in Forest Crowne as more residents move into the neighbourhood due to additional attractants brought in by new residents. Bear Aware delivered a presentation in Forest Crowne during the summer of 2007 to inform new residents how to manage attractants, and continuing to deliver education on bear management in Forest Crowne should combat dramatic increases in risks of bear/human conflict.

### *St. Mary's Lake*

St. Mary's Lake Road extends from Kimberley to St. Mary's Lake. Residences are situated along both the road leading to the lake and the lakeshore. The area is heavily forested, and residential properties within the area are rural. Riverside Campground is located off St. Mary's Lake Road (nearer to Kimberley than St. Mary's Lake).

Bear Aware discussed local bear activity with St. Mary's Lake residents to assess the increase in bear/human interactions that potentially could result from the rapid real estate development occurring in the area. Two of the contacted residents claimed they have not seen a bear on or near their property in 2007. Three of the residents claimed they had seen a few bears (one to five) on or near their property in 2007. Two of the residents claimed they have sighted bears on or near their property frequently during 2007. One of the residents that claimed to have frequent bear sightings experienced problem bear incidents involving fruit trees; however, the rest of the contacted residents did not seem experience any form of negative bear activity on or near their property.

The majority of the current residents of St. Mary's Lake likely are knowledgeable in methods practiced for peaceful coexistence with wildlife because problem bear incidents appear to occur in relatively low numbers in the area. However, the potential for problem bear occurrences does exist in the St. Mary's Lake region as demonstrated by the problem bear

activity associated with the property of the resident with fruit trees. Therefore, if housing development continues to increase around St. Mary's Lake, risk of bear/human conflict may increase dramatically due to influx of residents that are inexperienced at coexisting with wildlife (*i.e.* seasonal residents from urban environments). Real estate development west of St. Mary's Lake would be of particular concern because the one contacted resident living west of the lake claimed to observe a large amount of bear activity on his property (sightings almost every day during July) even though he had not allowed attractants to be accessible to wildlife.

The Riverside Campground experiences low levels of problem bear activity. However, during a long weekend or special event (such as the Kimberley Accordion Festival), visitors to the campsite dramatically increase and, consequently, risk of human bear conflict increases. In the summer of 2007, Bear Aware campaigned in Riverside Campground during the Accordion Festival and delivered a presentation to campers on the August long weekend. Such public education and outreach increases awareness in visitors (who may not be familiar with coexisting with wildlife strategies) of local bear activity and, thus, diminishes risk of bear/human conflict. Conclusively, Riverside Campground is not a high risk area for bear/human conflict; however, agencies concerned with problem bear issues (*i.e.* Bear Aware) should be vigilant of bear activity in the area during times of high visitation.

### *North Marysville*

Marysville is a community incorporated into the city of Kimberley; however, the area is geographically separated from the rest of Kimberley. Therefore, for the purposes of the current report, Marysville is described as located south of Kimberley (*i.e.* the non-Marysville portion of Kimberley). Highway 95A passes through Marysville as 304<sup>th</sup> Street, and North Marysville refers the area of Marysville that is located north of 304<sup>th</sup> Street. North Marysville is mostly

residential; however, commercial establishments and an arena are located on the northern side of 304<sup>th</sup> Street. The garbage transfer station is located in the northern most area of Marysville.

North Marysville experiences a relatively high amount of bear activity. The highest number of bear incident reports in 2007 referred to activity occurring in North Marysville. A possible explanation for the high level of reported bear activity is the proximity of the transfer station to residential neighbourhood. The Kimberley transfer station has been constructed in such a manner that bears can not access the waste inside; however, the odours emanating from the waste in the station may attract bears regardless of the accessibility of the garbage. Bears that have been attracted by odours may be discouraged by the inaccessibility of the transfer station waste and, thus, may forage in adjacent areas (such as the residential area of North Marysville) to satiate their whetted appetites. In summary, the current report suggests the garbage transfer station attracts bears to the North Marysville area; however, bears are unable to enter the station and, thus, forage in nearby residential neighbourhoods. North Marysville should be considered a high risk area for bear/human conflict.

### *South Marysville*

South Marysville is located south of 304<sup>th</sup> Street in Marysville. The area is mostly residential; however, commercial establishments are located on the south side of 304<sup>th</sup> Street. An Elementary School and two golf courses also are located in the area. A nature trail running along Mark Creek to Marysville falls can be accessed from South Marysville.

South Marysville appears to experience much less bear activity than North Marysville. A potential explanation for the discrepancy in levels of bear activity is the presence of highway traffic (on 304<sup>th</sup> Street) may deter bears from wandering from North Marysville to South Marysville. The highway runs in between South Marysville and the garbage transfer station;

therefore, bears enticed by waste odours may remain in North Marysville to avoid approaching heavy vehicular traffic.

South Marysville can be considered a medium risk area for bear/human conflict. Bear activity appears to be relatively low in the area; however, some risk is associated with South Marysville for two reasons:

- Two golf courses are located in South Marysville, and bears often wander from forested areas onto to golf course. Golf tourists may not know how to react to the presence of a bear (because they may be visiting from a more urban area); thus, a potential for bear/human conflict exists on golf courses.
- Bears often wander or reside near the trail leading to Marysville Falls. The trail runs adjacent to Mark Creek; therefore, bears may rest or forage near the trail (by Mark Creek) to avoid overheating on particularly warm days. Kimberley tourists and residents using the trail may startle and/or agitate a bear resting near the creek; thus, a potential for bear/human conflict exist on the trail.

## Fruit Tree Mapping

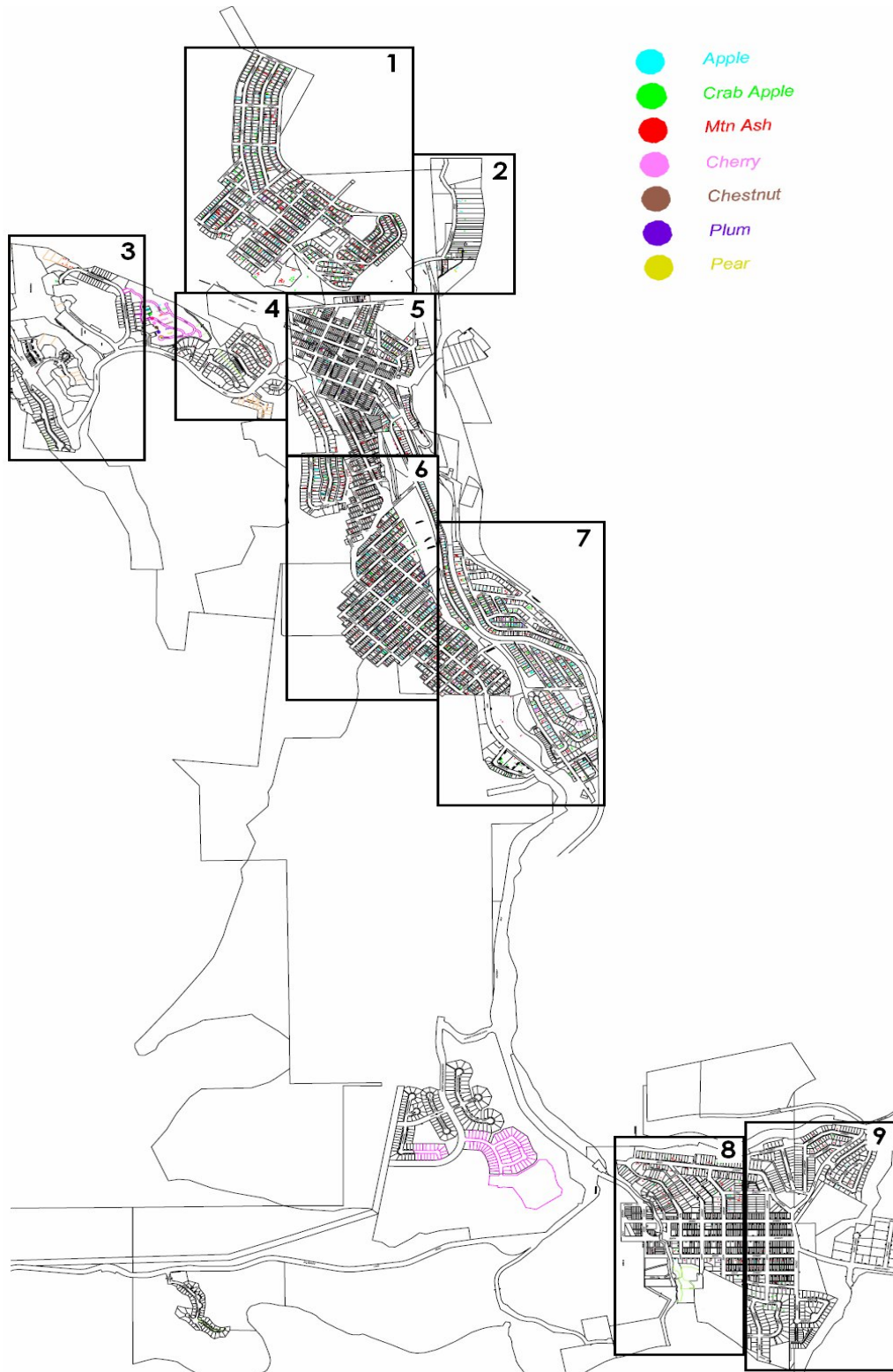
**Table 15.** Estimated number of fruit trees in Kimberley.

Fruit Tree	Estimated Amount
Mountain Ash	1023
Apple	546
Crab Apple	355
Choke Cherry	260
Plum	69
Chestnut	29
Pear	15

Bear Aware has identified the locations of various fruit trees in Kimberley. As previously mentioned, fruit is a major bear attractant and many trees begin to produce fruit in late-summer when bear activity begins to increase. Determining the relative densities of fruit trees in Kimberley provides insight on where high levels of in-town bear activity may occur.

As displayed in Table 15, the most common form of fruit tree is the mountain ash. The majority of problem bear incidents relating to fruit do not involve mountain ash trees; however, mountain ash berries have been observed in bear scat and bears previously have been seen to climb into mountain ash trees (such as in an incident occurring outside Fernie city hall in the fall of 2006). Consequently, the current report recognizes that mountain ash berries may not be the most powerful bear attractant of mapped fruits but should be included in the fruit tree map, regardless.

Many of the fruit-related bear incidents reported or observed in 2007 involved crab apple and apple trees. In the “Risk of Bear/Human Conflict in Various Areas of Kimberley” section, potential for high in-town bear activity is associated with high densities of crab apple and apple trees because of bears’ affinity for the trees’ fruit.



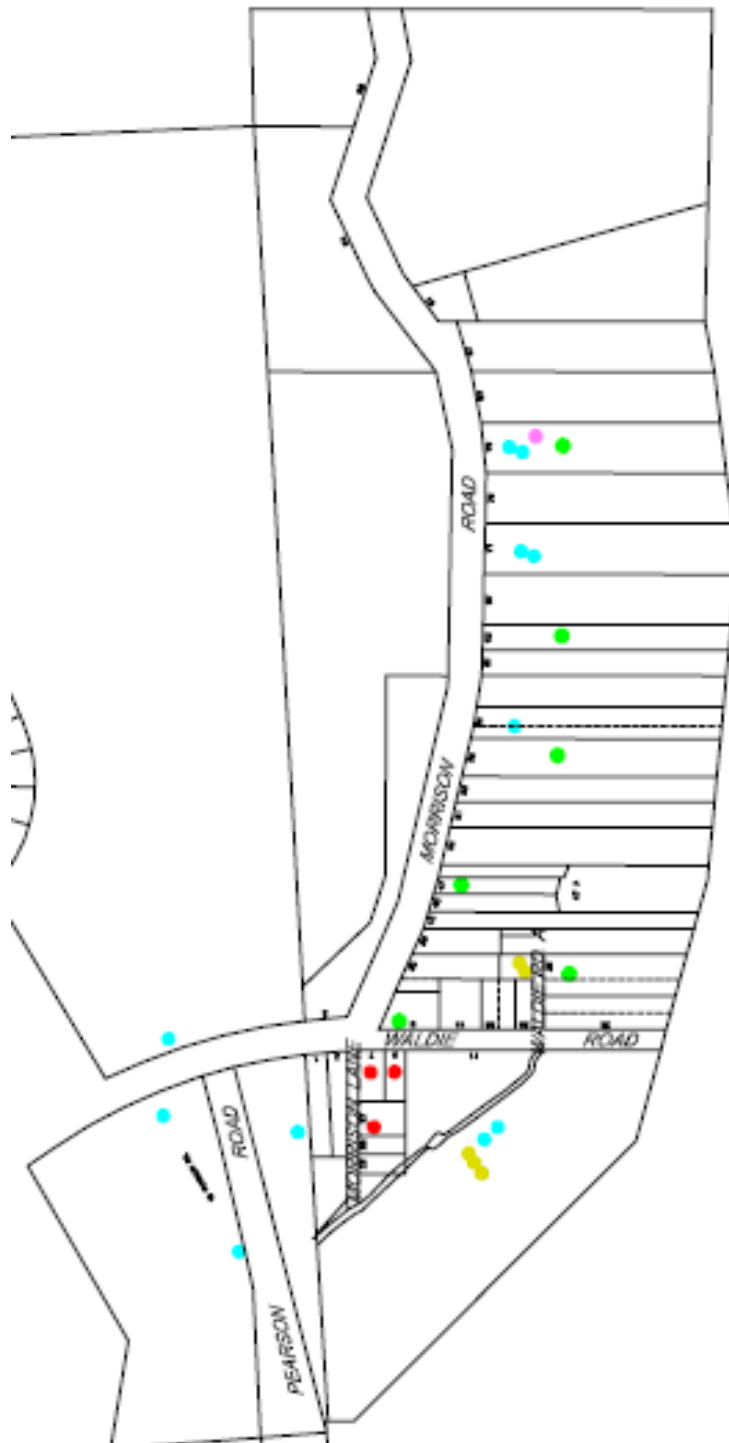
**Figure 13.** Map of fruit tree densities in Kimberley.

\*Numerically labelled sections may be observed below\*

\*\*The “Cherry” label in the legend refers to both cherry and choke cherry plants”



# 2



# 3



# 4





# 6





# 8



