



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 report was initially generated in November, 2007, and updated in November, 2008.

The purpose of the following report is to aid future Bear Aware initiatives (or initiatives of related agencies) by providing insight on how to achieve the most effective geographical allocation of bear management strategies (such as public education, outreach, and waste management) within Kimberley. For example, the report discusses the potential for certain areas to experience future increases in bear activity due to rapid rates of urban development; thus, pre-emptive bear/human conflict reduction strategies could be focused in such areas.

The report begins by providing background on the Bear Aware program and how it operates (with some specific reference to the Kimberley division). The report then describes general trends in bear activity occurring between 2005 and 2008 within the community of 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 within 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 bear/human 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, become 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 his/her winter sleep. Since a bear's diet is incredibly varied, many human products have the potential to attract a bear. Bears have a sense of smell that is over 2,000 times more sensitive than a human's; therefore, a resident in a bear-inhabited region should not underestimate 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 may exhibit aggression toward people because they could 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., reduce 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 8 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.

2008 was a particularly light year in terms of problem bear activity, and no problem bears were destroyed in Kimberley during the year. Problem bear activity in 2005 was similar to that of 2008, and only one bear was destroyed in Kimberley during 2005. In contrast, 2007 and 2006 experienced heavy problem bear activity. In 2007, one bear was destroyed on-site and eleven bears were trapped (and then destroyed). In 2006, six bears were destroyed on-site and four bears were trapped. The numbers of trapped/destroyed bears in Kimberley during the years Bear Aware has been active range between zero and thirteen.

Discrepancies in problem bear activity from year to year are heavily influenced by local temperature and weather. To exemplify, in-town bear activity in Kimberley during 2006 and 2007 was very heavy, and much of reason for the heavy activity was the summers in 2006 and 2007 were particularly dry. Dry summers cause poor moisture conditions in natural areas leading to a low yield of wild fruit crops. Therefore, 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. In contrast, the summer of 2008 experienced more

precipitation than 2007 (and likely 2006); thus, wild food sources for bears were more abundant during 2008 and bears were less tempted to seek out food within the community of Kimberley.

In addition to temperature/weather factors, the presence of Bear Aware appears to reduce the potential for occurrences of problem bear incidents. New, temporary, and permanent residents have used the Bear Aware program for consultation on how to coexist with bears and for strategies aimed at reducing bear attractants. Bear Aware is a program valued by the community of Kimberley and should be continued past 2008.

Bear Incident Report Data Collected between 2005 to 2008

The majority of the bear incident report data has been compiled from reports that are archived in the Ministry of Environment (Cranbrook, BC); however, some of the data reflect bear incidents that have been reported to the local RCMP offices, the City of Kimberley, and Kimberley Bear Aware. All bear incidents and activity discussed in the following report involve black bears because the Kimberley area rarely experiences grizzly bear activity.

Monthly Trends in Bear Incidents

The highest number of bear incident reports for most years occur during the Fall (late August to October). 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 typically ceases in late-November/early-December because bears have entered their dens. Residents of Kimberley should prepare for an impending increase in bear activity during Spring and Summer months through methods such as pruning their fruit trees.

In contrast to the bear activity trend discussed above, the month experiencing the highest number of bear incident reports in 2008 was June (see Figure 4). 2008 appeared to experience a late snow melt in Spring; therefore, the availability of natural foods could have been interfered with by snow cover. Bears that were having difficulties finding food due to the late snow melt could be tempted to search for food within human developed areas of Kimberley.

Table 3 illustrates bear incidents were particularly high during the month of September in 2007 (n=55). As mentioned in “Background”, much of the high 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 a lack of available natural foods. Consequently, residents of Kimberley should be extra careful when managing bear attracts during a year with an especially dry summer.

Table 1. Monthly numbers of bear incidents reported in 2005.

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

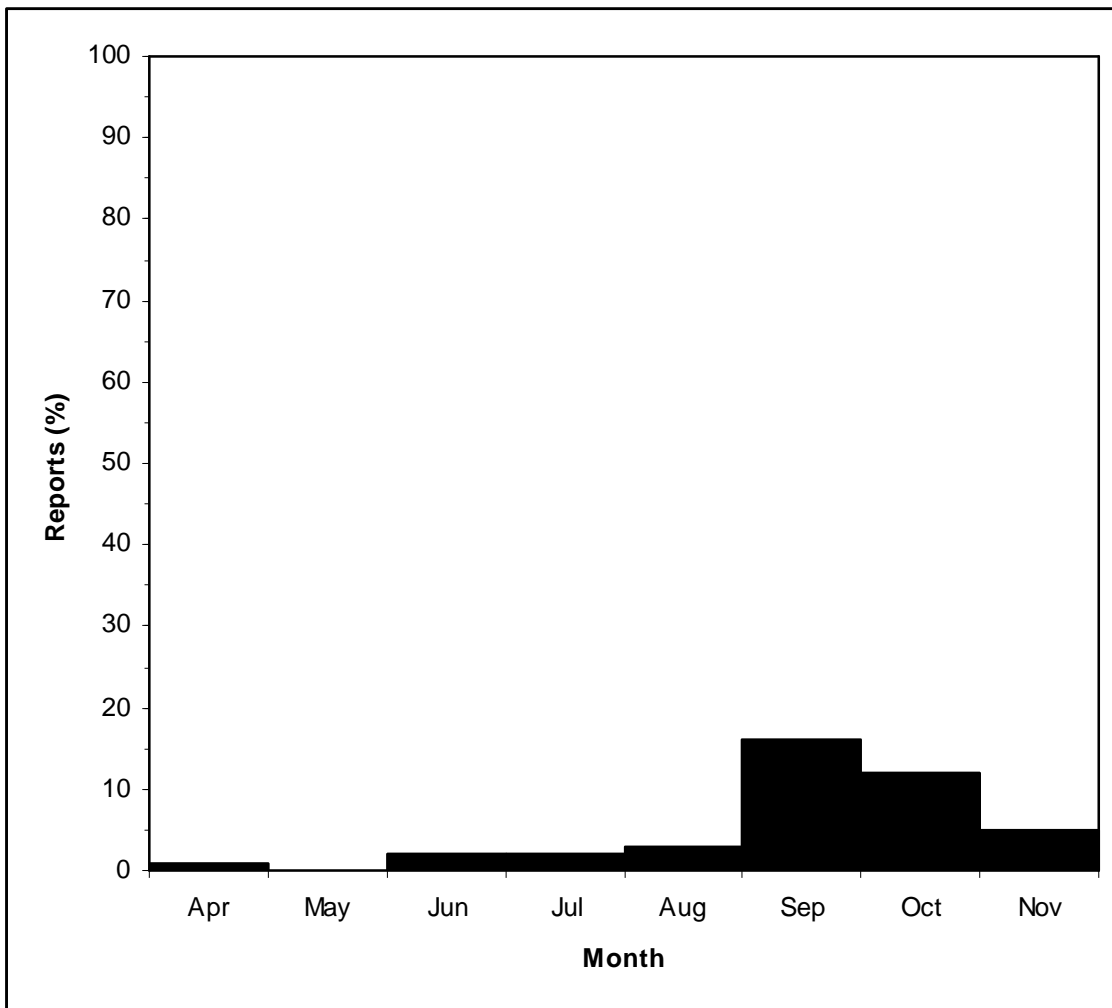


Figure 1. Monthly percentages of bear incident reports in 2005.

Table 2. Monthly numbers of bear incidents reported in 2006.

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

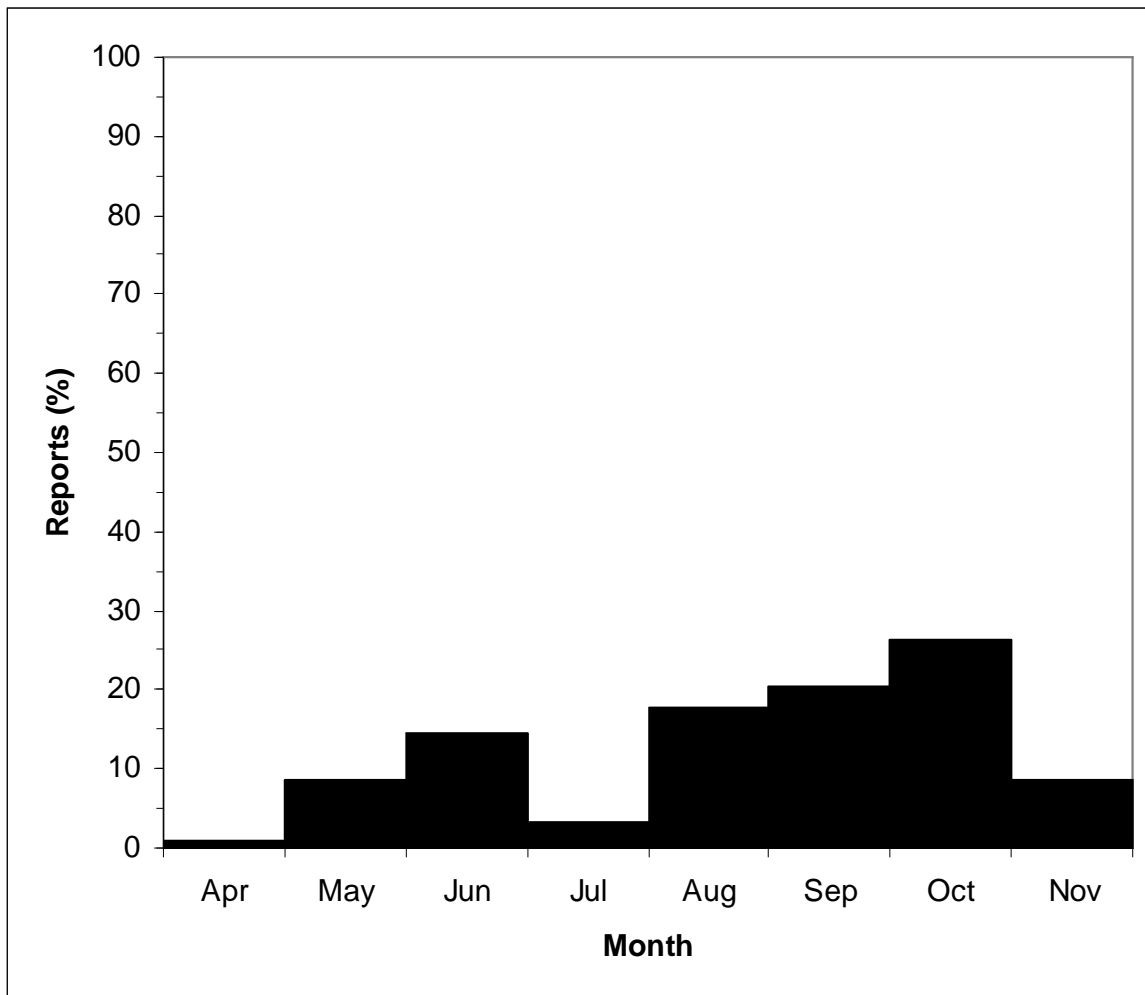
**Figure 2.** Monthly percentages of bear incident reports in 2006.

Table 3. Monthly numbers of bear incidents reported in 2007.

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

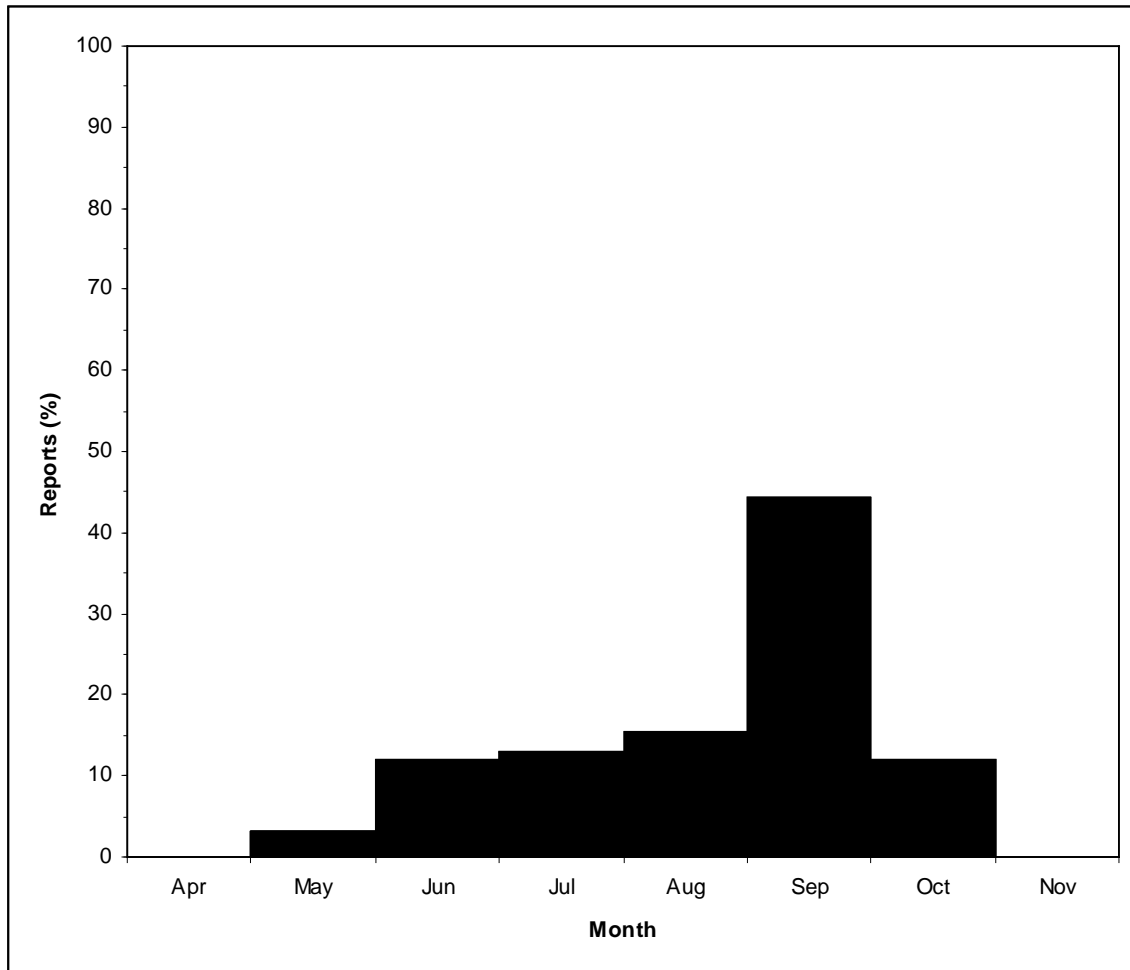


Figure 3. Monthly percentages of bear incident reports in 2007.

Table 4. Monthly numbers of bear incidents reported in 2008.

Month	Bear Reports
Apr	3
May	9
Jun	17
Jul	5
Aug	2
Sep	6
Oct	11
Nov	1
Total	54

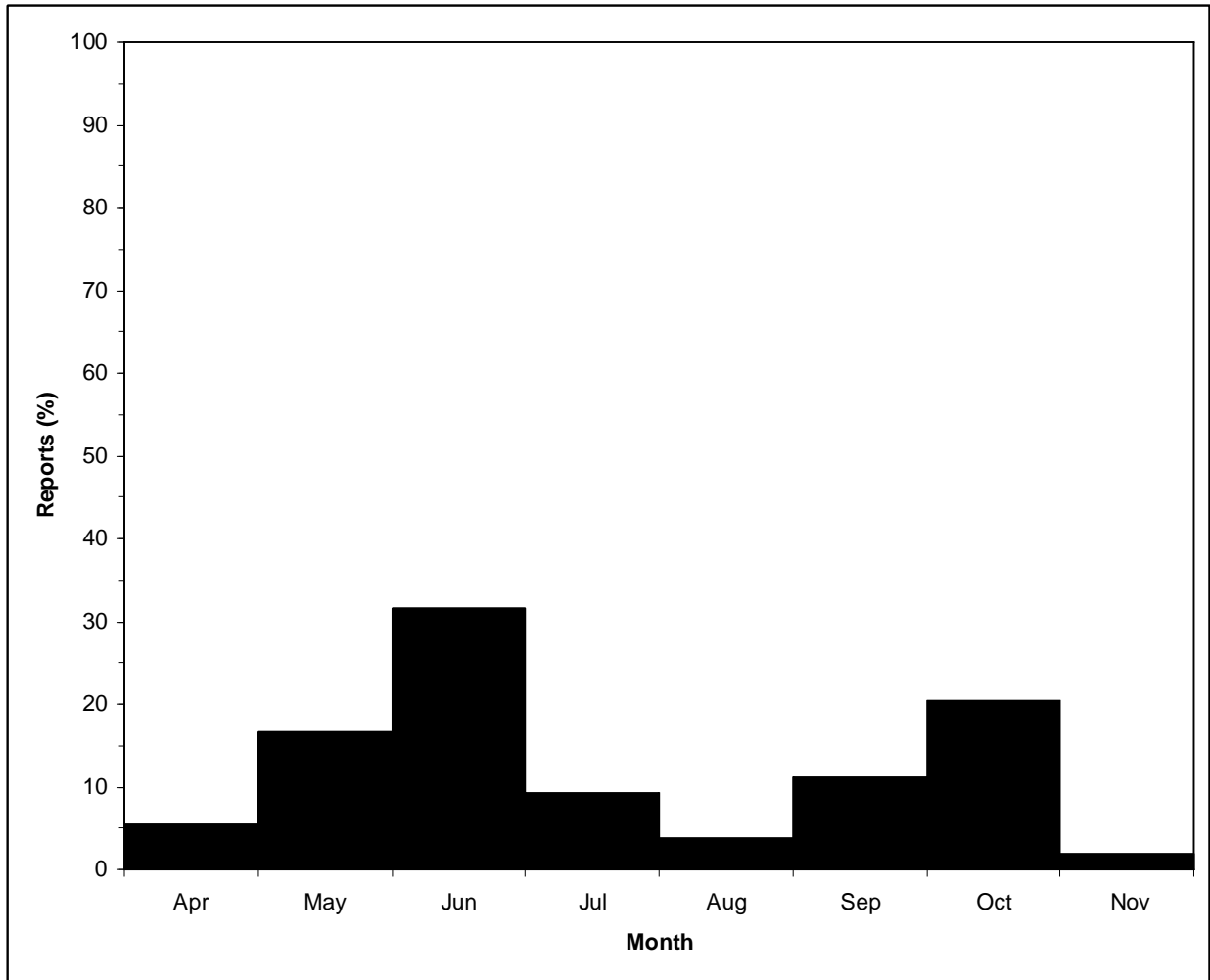


Figure 4. Monthly percentages of bear incident reports in 2008.

Nature of Bear Incidents

The majority of reported bear incidents between 2005 and 2008 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 numbers of reported nuisance wildlife incidents were higher in 2006 and 2007 than in 2005 and 2008; however, the percentages of total reports of which nuisance wildlife comprises are relatively similar from year to year between 2005 and 2008. Consequently, nuisance wildlife incidents appear to increase when the amount of in-town activity increases. Such an observation represents the intuitive conclusion that, when higher bear activity occurs in a town or city, a higher rate of bear/human conflict coincidentally occurs.

The number of reported trapped bears was highest in 2007 and lowest in 2008 (when examining the four year period between 2005 and 2008). Bear traps are set by Conservation Officers when bears have visited a human property repeatedly and, thus, are displaying fidelity to the property. In accordance with bear management policies in the Kootenays, the vast majority of trapped bears are destroyed. Consequently, the years with the maximum and minimum trapping rates correspond with the fact that twelve bears were destroyed in Kimberley in 2007 and no bears were destroyed in 2008.

Table 5. Nature of bear incident reports in 2005.

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

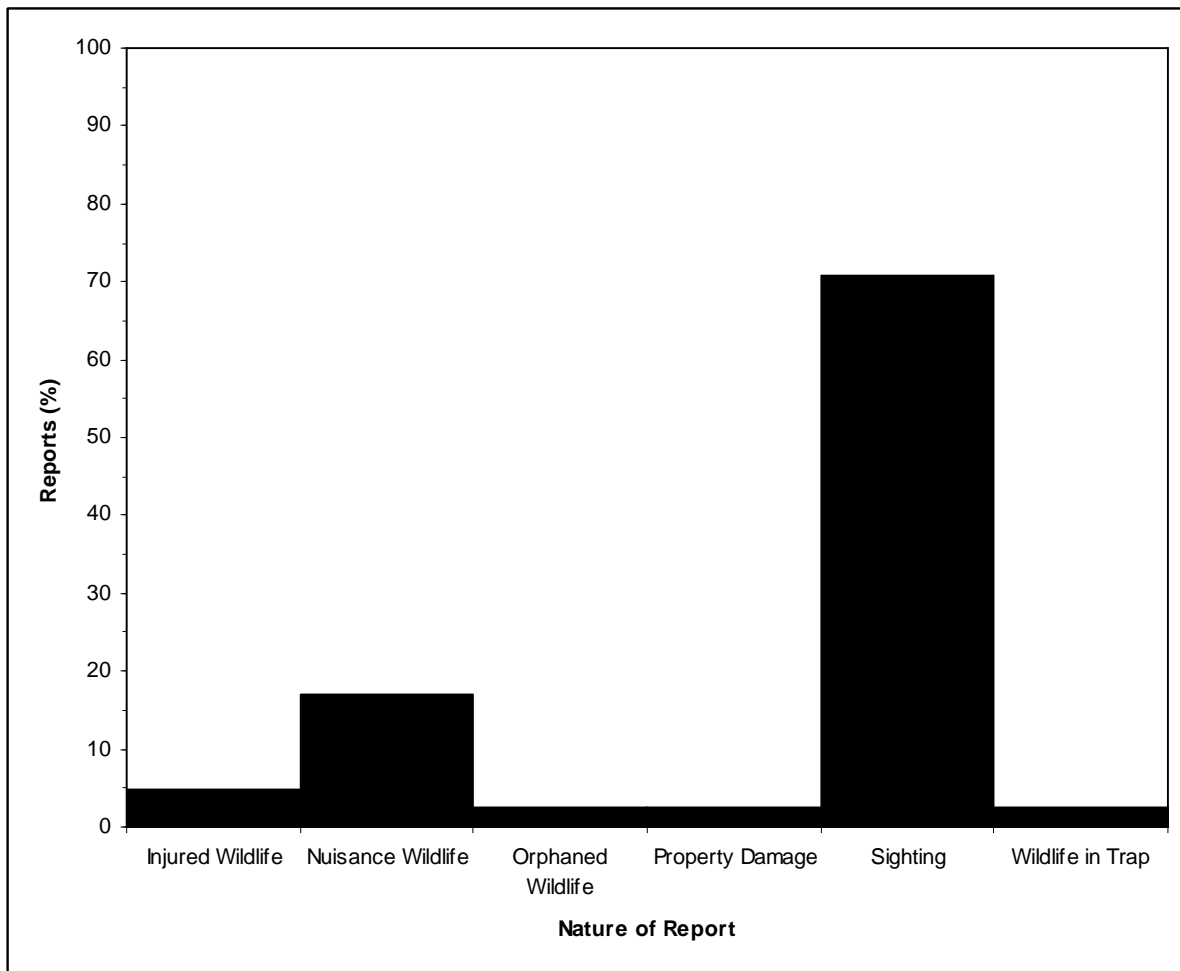


Figure 5. Percentages of the nature of bear incident reports in 2005.

Table 6. Nature of bear incident reports in 2006.

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

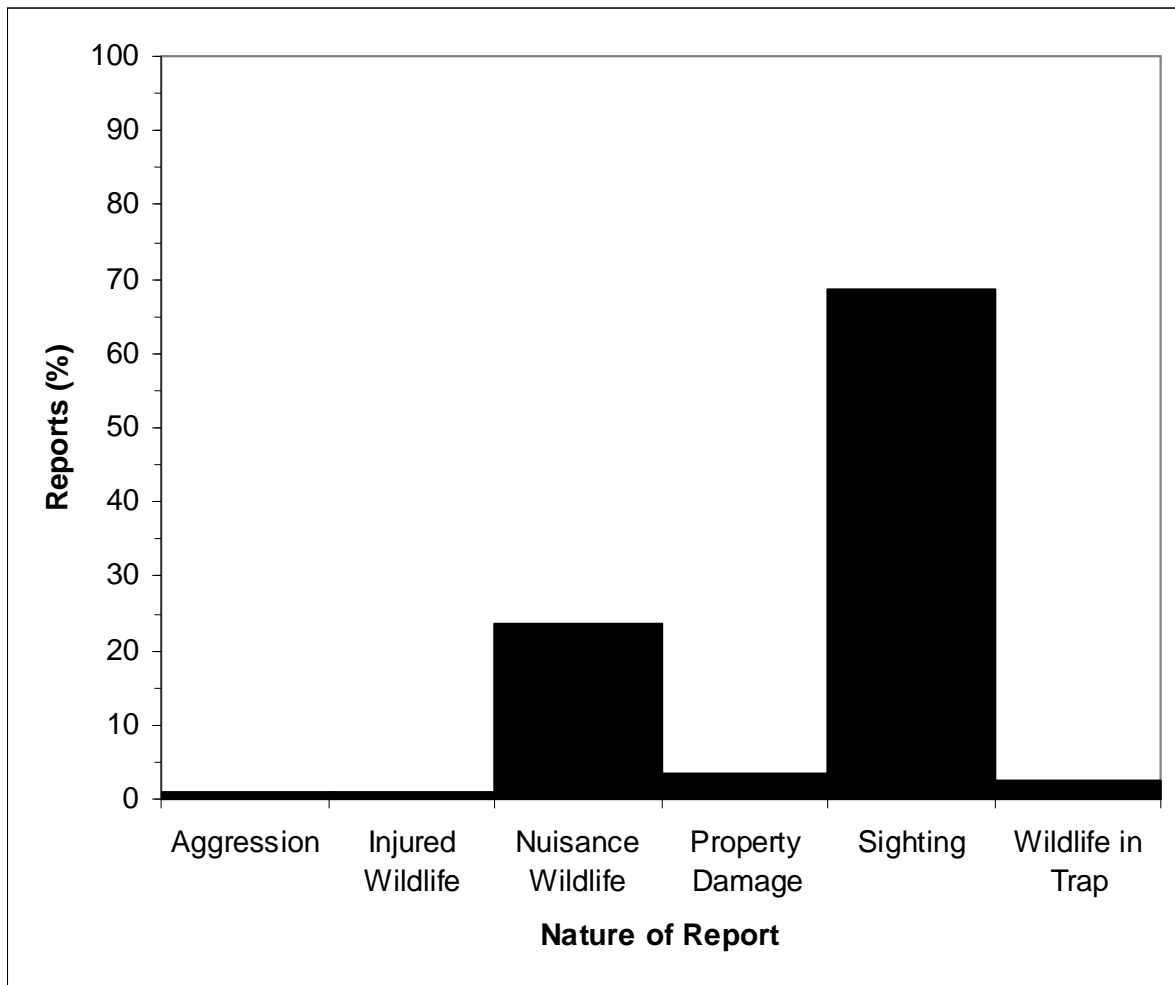


Figure 6. Percentages of the nature of bear incident reports in 2006.

Table 7. Nature of bear incident reports in 2007.

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

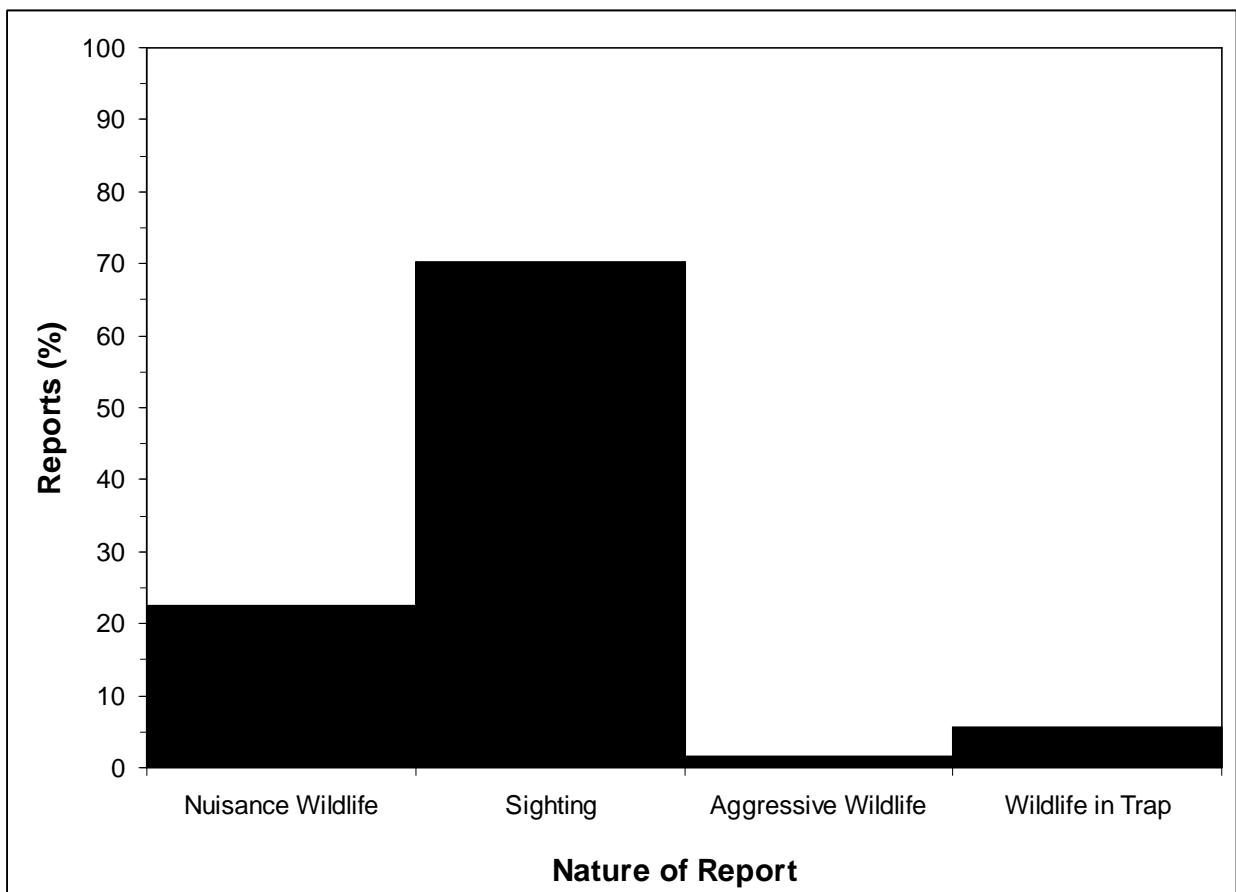


Figure 7. Percentages of the nature of bear incident reports in 2007.

Table 8. Nature of bear incident reports in 2008.

Nature of Report	Bear Reports
Nuisance Wildlife	14
Property Damage	1
Sighting	39
Total	54

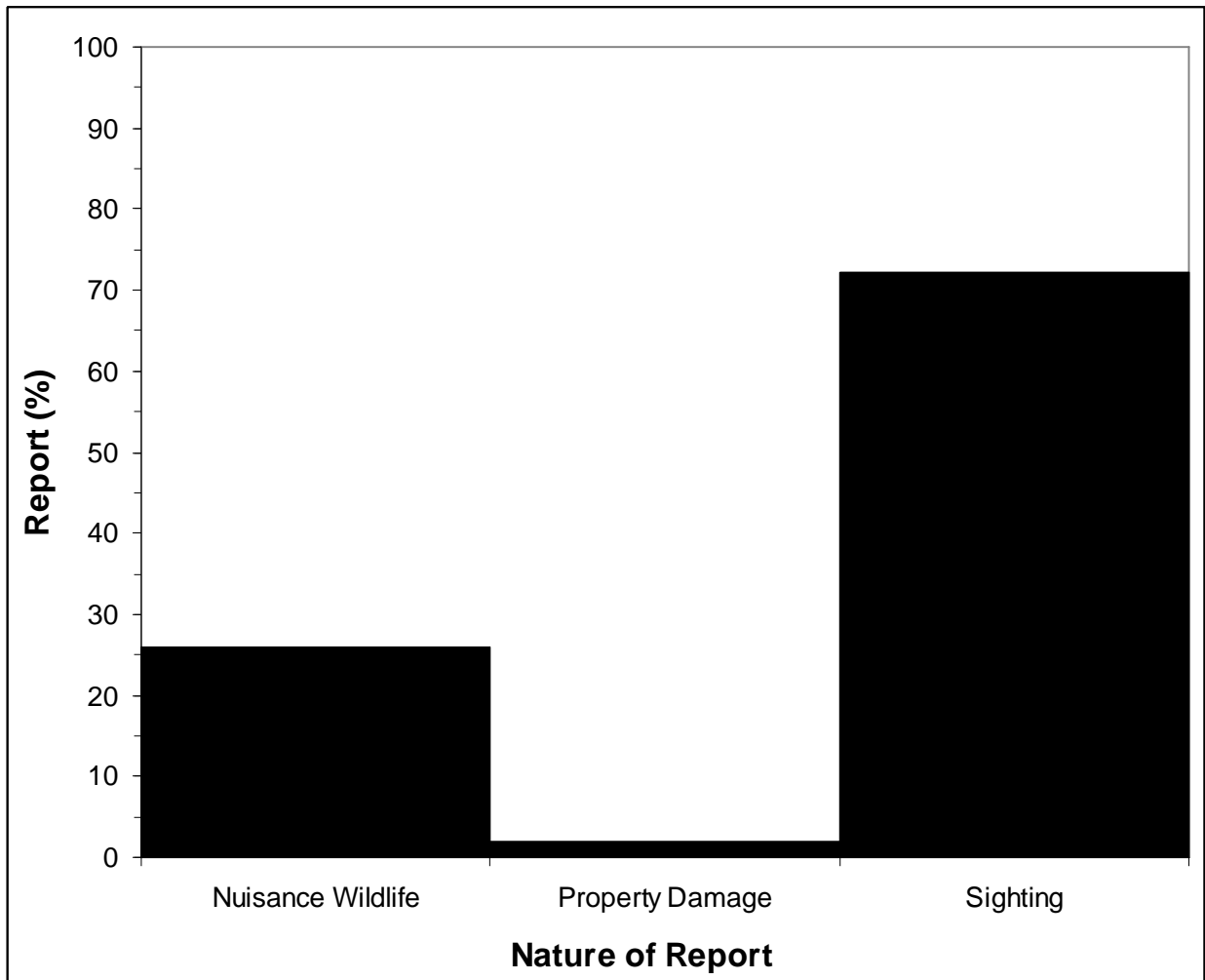


Figure 8. Percentages of the nature of bear incident reports in 2008.

Attractants Noted at Sites of Bear Incidents

The vast majority of bear incidents reports 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 areas difficult to observe. 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 reliable because the presence of most fruit trees is noticeable and garbage that has been accessed (i.e., strewn) by a bear is obvious.

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. 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 (and the city bylaw). Reported incidents of bears feeding on garbage have decreased steadily from 2006 to 2008, which may be evidence that public education strategies concerning waste management are impacting new and seasonal residents significantly.

Fruit trees are the next most commonly noted attractant. Most reports involving fruit trees attracting bears occur during the Fall when trees are producing large amounts of fruit and bears are particularly hungry. Residents should be advised to prune fruit trees in the Summer to avoid enticing hungry bears in the Fall.

Table 9. Attractants noted at sites of reported bear incident in 2005.

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

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

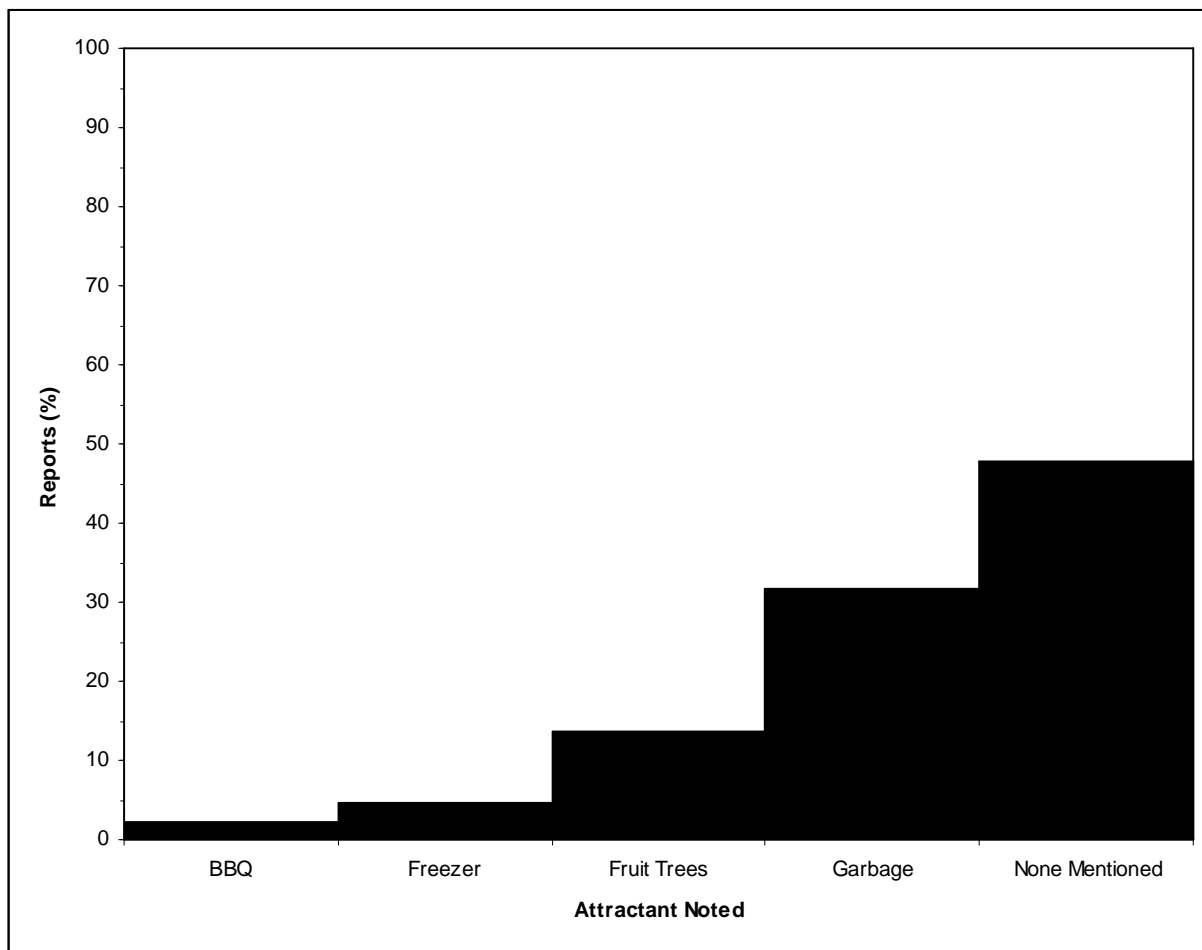


Figure 9. Percentages of attractants noted at the sites of reported bear incidents in 2005.

Table 10. Attractants noted at sites of reported bear incident in 2006.

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

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

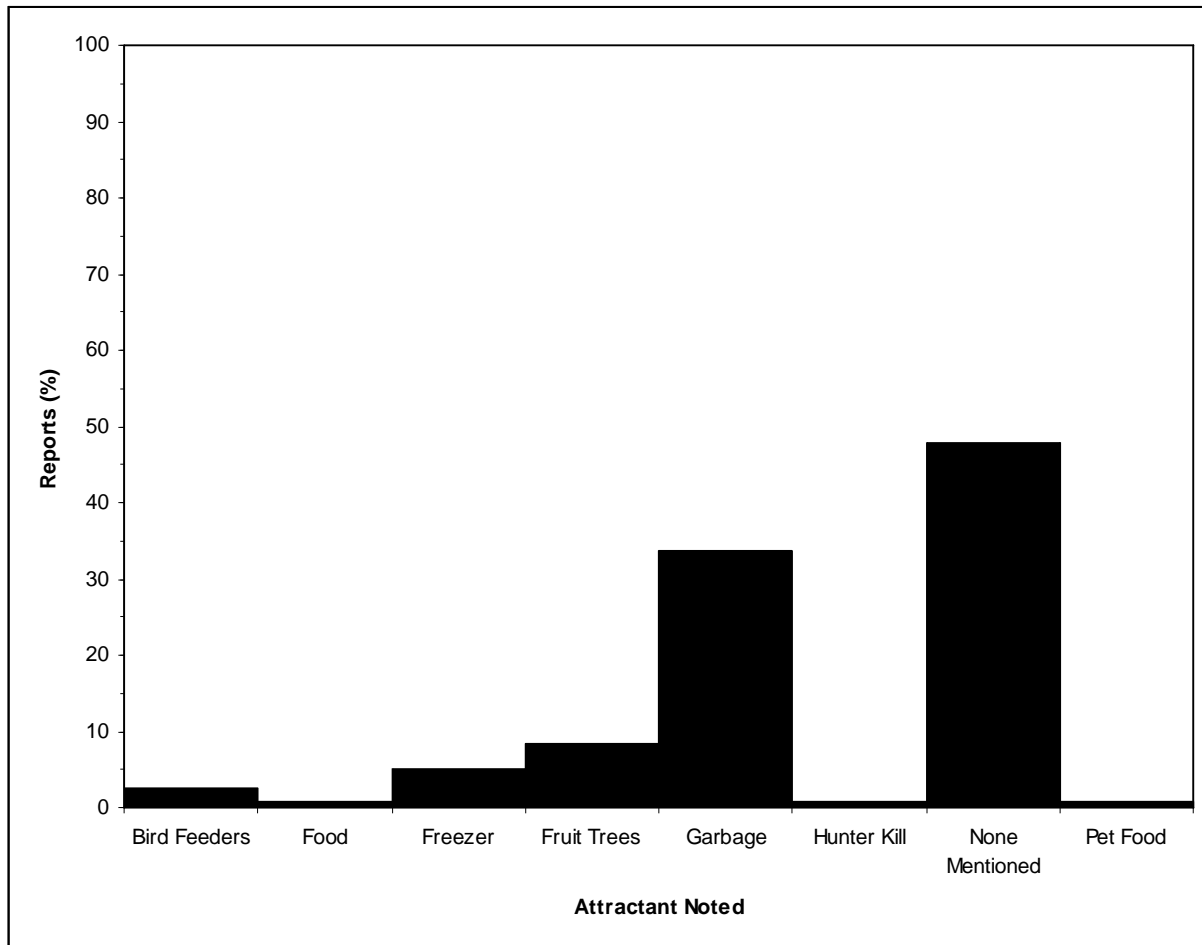


Figure 10. Percentages of attractants noted at the sites of reported bear incidents in 2006.

Table 11. 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

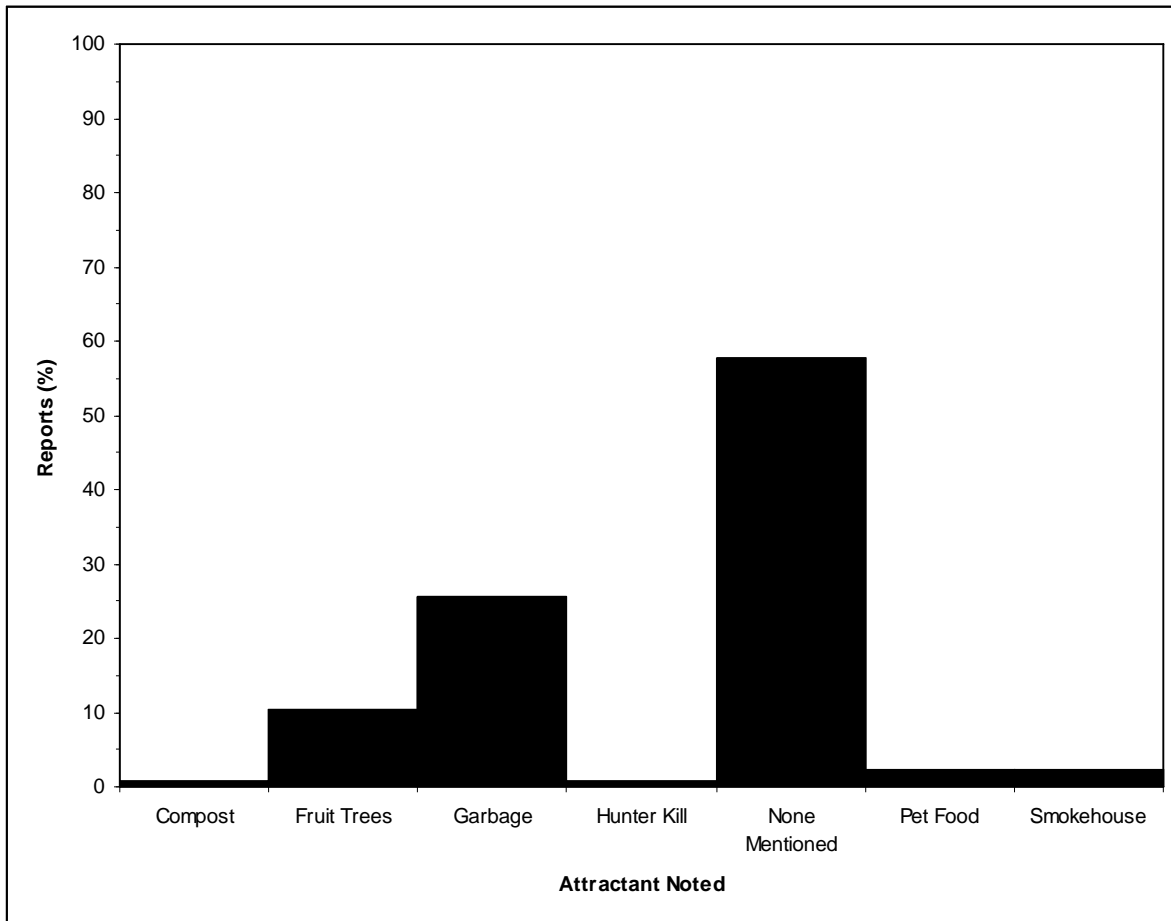


Figure 11. Percentages of attractants noted at the sites of reported bear incidents in 2007.

Table 12. Attractants noted at sites of reported bear incident in 2008.

Attractant	Bear Reports
Bird Feeders	3
Fruit Trees	3
Garbage	20
None Mentioned	28
Total	54

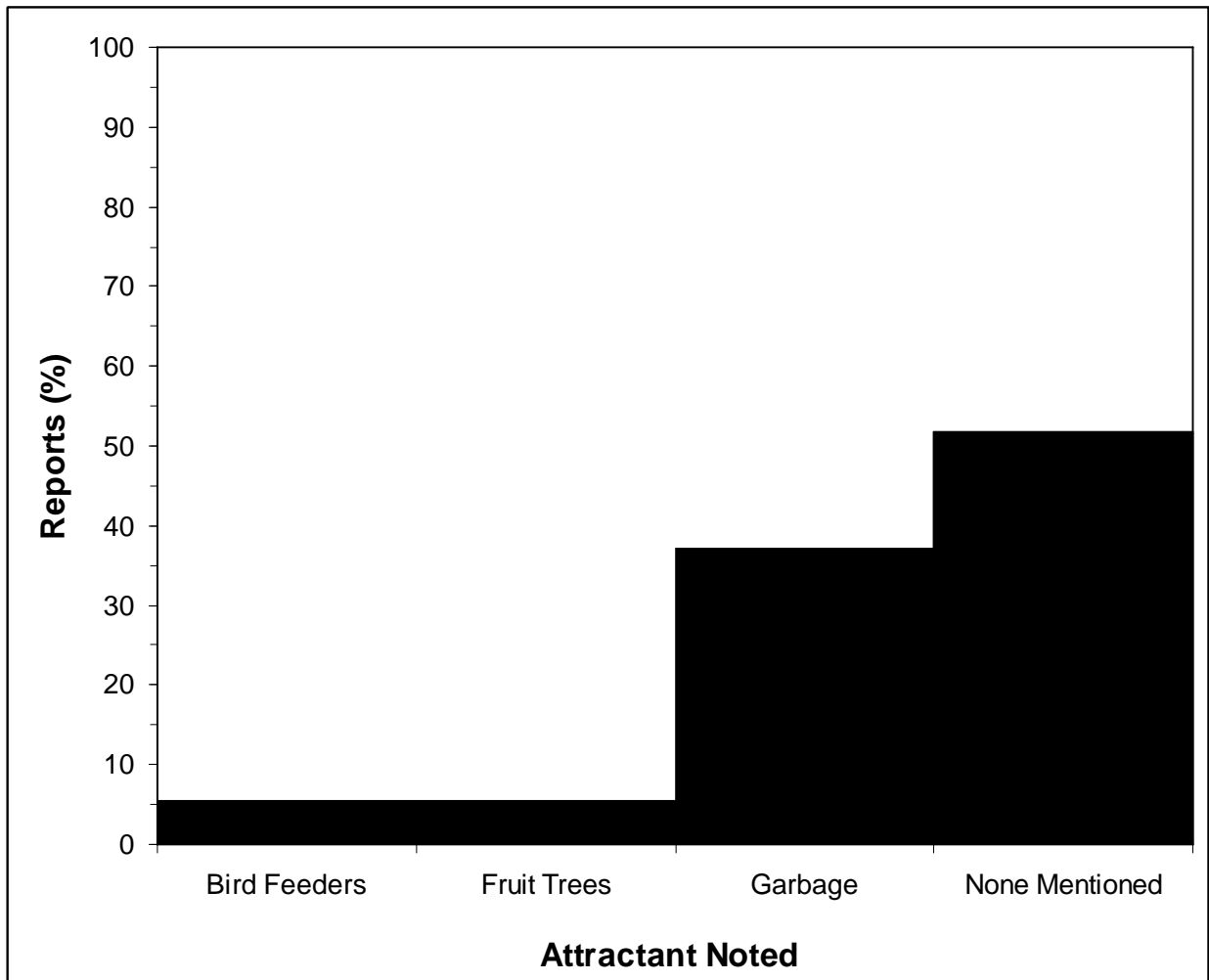


Figure 12. Percentages of attractants noted at the sites of reported bear incidents in 2008.

Actions Taken in Response to Bear Incidents

In most circumstances, no advice was provided to reporters of bear incidents concerning how to avoid or reduce bear/human conflict in response to reports. Advice was not usually provided because the majority of reported bear incidents involved only sightings, and, in such cases, no bear management action is required. Due to Kimberley's proximity to forested area, bears are expected to wander within town. Therefore, concerns about bear activity only arise when a bear wanders into town repeatedly and/or when a bear decides to stay within town because they discover available food. The majority of bear sightings are recorded solely for the purpose of monitoring bear activity, and advice is not provided (and action is not taken) 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 a reported bear is perceived to be a potential threat to human safety (i.e., habituated and aggressive). Coincidentally, the numbers of reports referred to Conservation Officers are highest in the years that problem bear activity is the heaviest (i.e., 2006 and 2007).

Bear Aware is contacted in response to some bear incidents. Bear Aware responds to bear incidents through bear management methods such as providing bear management advice and/or facilitating attractant removal. The numbers of bear incident reports referred to Bear Aware has increased yearly from 2005 to 2008. Such an increase indicates that support from the community of Kimberley for Bear Aware is increasing because the community is increasing Bear Aware's involvement in local bear management issues.

Table 13. 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

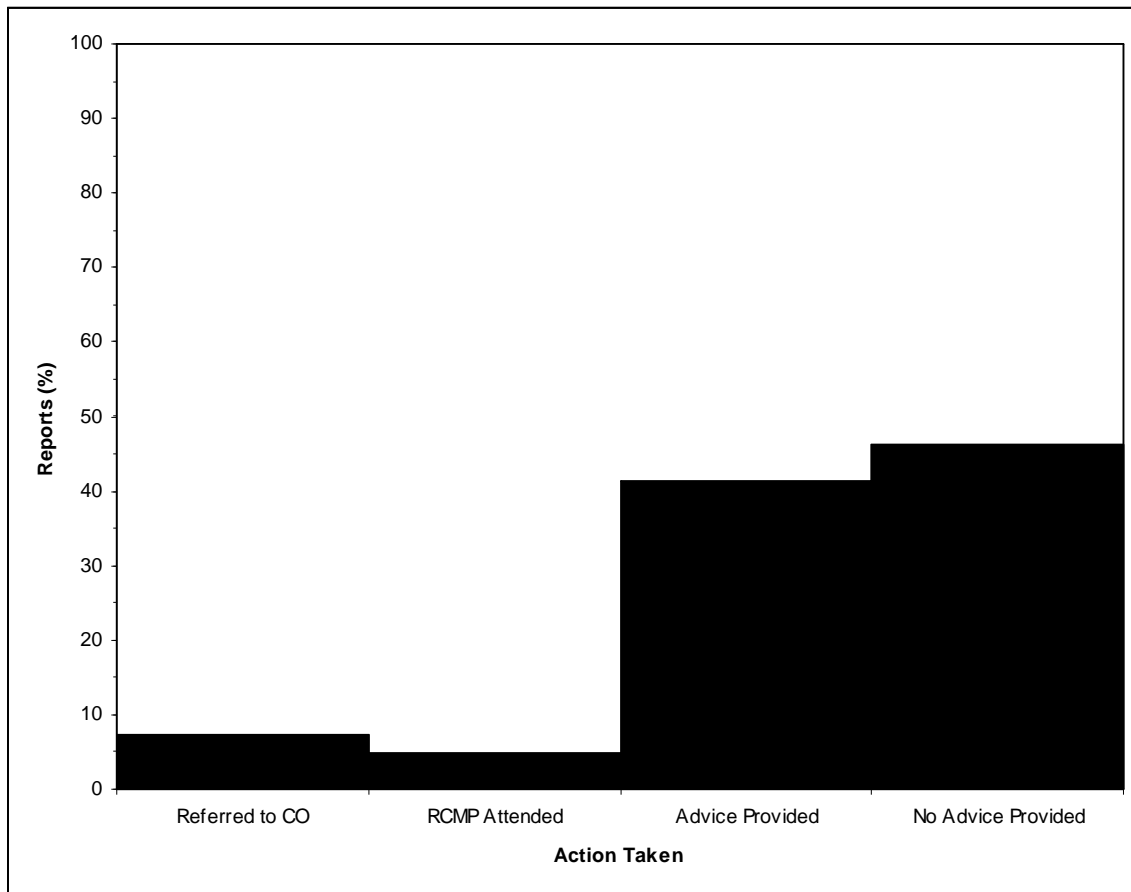


Figure 13. Percentages of actions taken in response to reported bear incidents in 2005.

Table 14. 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
Total	117

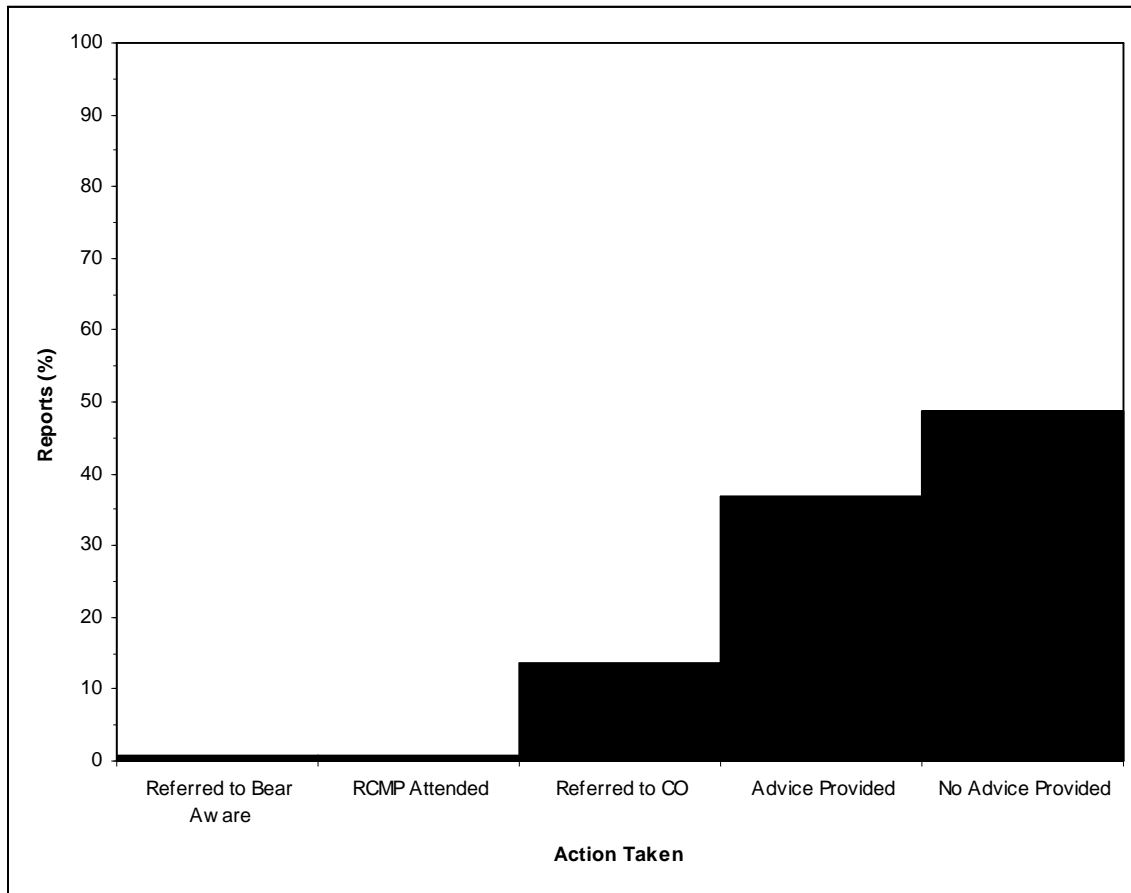


Figure 14. Percentages of actions taken in response to reported bear incidents in 2006.

Table 15. 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
Total	124

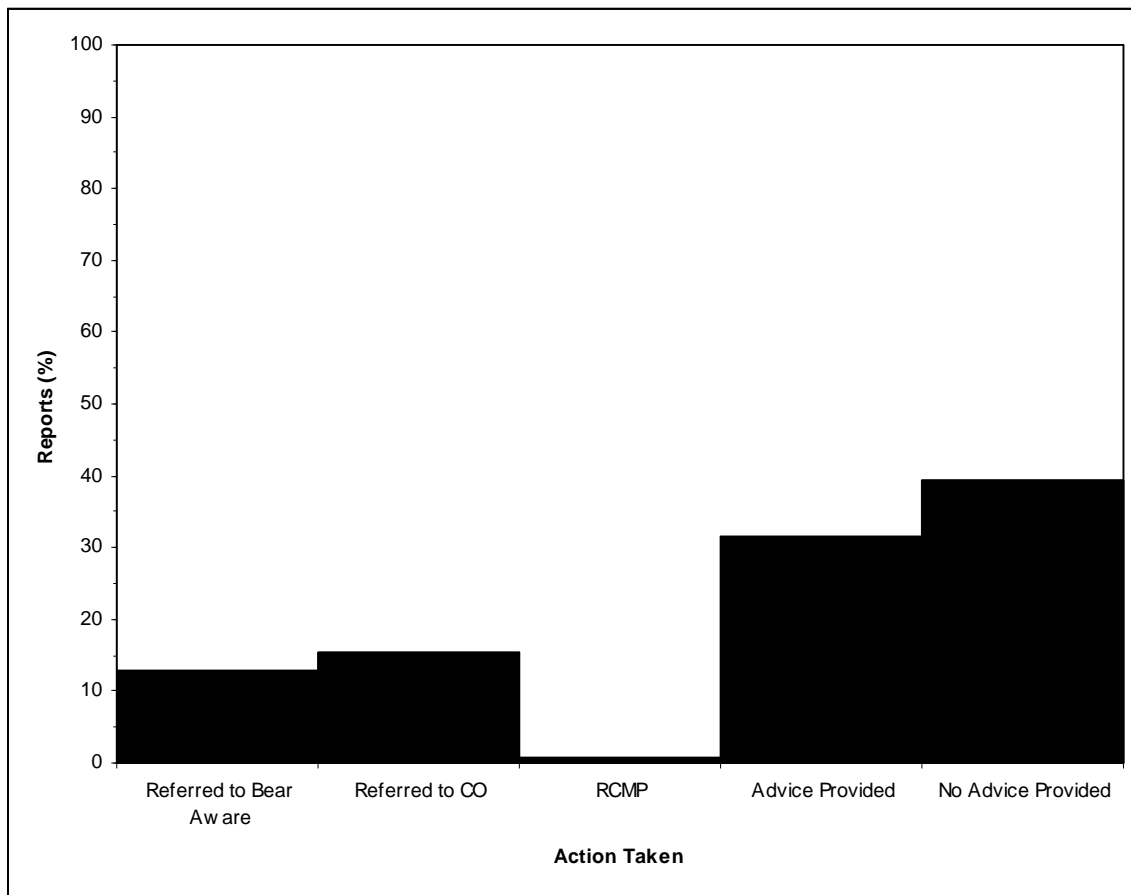


Figure 15. Percentages of actions taken in response to reported bear incidents in 2007.

Table 16. Responses to bear incident reports in 2008.

Action Taken	Bear Reports
Referred to CO	4
Referred to BA	19
Advice Provided	16
No Advice Provided	15
Total	54

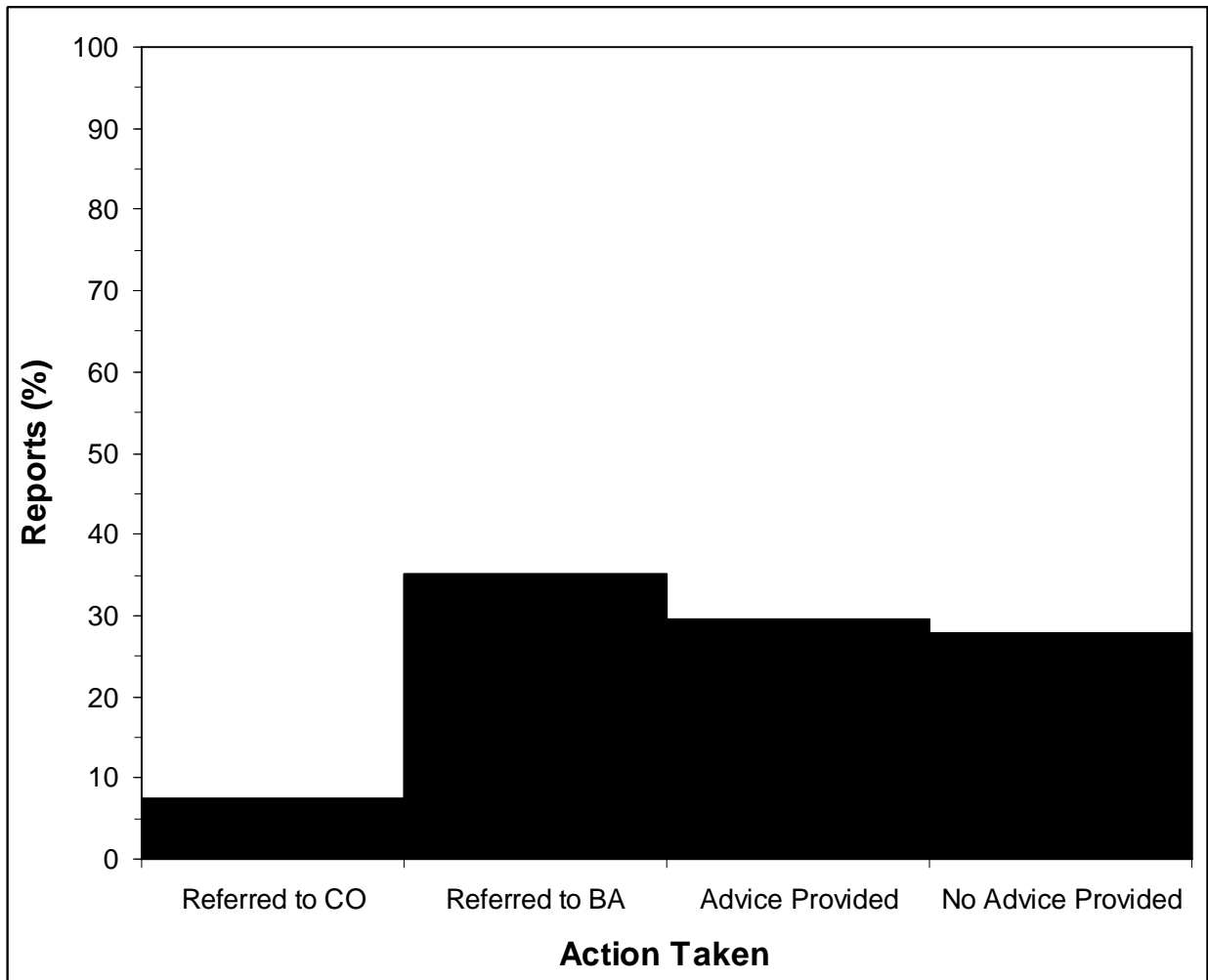


Figure 16. Percentages of actions taken in response to reported bear incidents in 2008.

Risk of Bear/Human Conflict in Various Areas of Kimberley

Table 17. Numbers of reported bear incidents occurring in various areas of Kimberley from 2005 to 2008.

Area	2005	2006	2007	2008
Townsite	4	8	19	7
Ski Hill	2	7	6	1
Inn West	3	6	2	2
Downtown	7	10	11	5
Selkirk Hill	0	0	3	0
Church Ave	0	0	2	0
Meadowbrook	1	5	5	5
Upper Blarchmont	3	15	5	4
Lower Blarchmont	1	22	6	2
Chapman Camp	4	16	13	7
Kimbrook	2	9	4	2
Creekside	0	1	1	2
Forest Crowne	0	1	4	2
St. Mary's Lake	3	1	3	1
North Marysville	5	11	24	12
South Marysville	1	1	7	2

Table 18. Percentages of total reported bear incidents occurring in various areas of Kimberley from 2005 to 2008.

Area	2005	2006	2007	2008
Townsite	11.1	7.1	16.5	13.0
Ski Hill	5.6	6.2	5.2	1.9
Inn West	8.3	5.3	1.7	3.7
Downtown	19.4	8.8	9.6	9.3
Selkirk Hill	0.0	0.0	2.6	0.0
Church Ave	0.0	0.0	1.7	0.0
Meadowbrook	2.8	4.4	4.3	9.3
Upper Blarchmont	8.3	13.3	4.3	3.7
Lower Blarchmont	2.8	19.5	5.2	7.4
Chapman Camp	11.1	14.2	11.3	13.0
Kimbrook	5.6	8.0	3.5	3.7
Creekside	0.0	0.9	0.9	3.7
Forest Crowne	0.0	0.9	3.5	3.7
St. Mary's Lake	8.3	0.9	2.6	1.9
North Marysville	13.9	9.7	20.9	22.2
South Marysville	2.8	0.9	6.1	3.7

Townsite

Townsite is the northern most neighbourhood of Kimberley. The majority of the neighbourhood consists of residential housing; however, a school, a clinic, a retirement home, and a visitor's 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.

Table 18 indicates that Townsite experienced the second highest level of reported bear activity during 2007 and 2008 (although, in 2008, Townsite's bear activity level was similar to Chapman Camp's). A high risk of human bear conflict is associated with Townsite because the area contains a high density of human dwellings in close proximity to 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 exists that human products (such as fruit trees and garbage) will be made available to bears in Townsite.

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, a bear was trapped near the school because of said concern. In both 2007 and 2008, Bear Aware has worked with volunteers to remove fruit from trees near Lindsay Park Elementary.

- Lois Creek Park is ideal black bear habitat because the park contains forests with trees sparsely enough distributed that shrubs receive enough sunlight (i.e., shrubs are associated with items bears like to eat). The park is directly adjacent to residential neighbourhoods; therefore, any attractants left out by locals have a high potential to attract the appetites of bears. In 2008, Bear Aware removed a large amount of waste from Lois Creek Park (near 7th Avenue) that likely was dragged into the park by local bears.
- Cominco Gardens is a tourist attraction open to the public viewing without an admission fee. 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 exists of the elderly and infirm coming in contact with a bear enticed by garbage. In 2008, Bear Aware donated a bear resistant garbage can to Cominco Gardens to reduce such a risk.

The majority of Townsite residents are familiar with strategies for preventing wildlife from entering their property; however, in 2007 and 2008, Bear Aware attended several sites where newer residents clearly had made food items accessible to bears. New residents of Townsite often have moved from urban environments (i.e., Vancouver or Calgary) and, thus, were unfamiliar with practices used for coexisting with wildlife. Whether Townsite will continue to experience an influx of people moving from urban settings 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 harbours the Kimberley Alpine Ski Resort and many seasonal housing units. Very few permanent residences are located on the ski hill.

Between 1% and 7 % of total bear incident reports from the duration of 2005 to 2008 have involved bear activity on the ski hill (see Table 18), which is a fairly low number in relation to the size of the area. Currently, the ski hill is not associated with a high risk of bear/human conflict because the majority of heavy human traffic in the area occurs during 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 non-permanent 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 frequently. 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 has a high potential to 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. To reduce the rate of problem bear occurrences, all developers of new condominium complexes should consider implementing communal waste bins

in the complexes for waste disposal rather than allowing residents to use curbside waste pick-up. In addition, owners of complexes that currently are using curbside pick-up should consider adopting communal waste systems.

Inn West

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

According to Table 17, numbers of bear reports involving Inn West in the last two years have been relatively few: two reports in both 2007 and 2008. Of course, the reported number (likely) does not include all bear incidents in Inn West because many incidents (likely) have not been reported; however, bear activity relative to the rest of Kimberley can be inferred from reports. Consequently, the current report recognizes that bear activity occurs in Inn West; however, the neighbourhood likely is not an area of high problem bear activity relative to other neighbourhoods in Kimberley.

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 edible human products will be made accessible to the foraging bears in Inn West. 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 nearby housing developments on the ski hill.

Downtown

The downtown of Kimberley consists of a plaza (referred to as the Kimberley Platzl) 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 Platzl. Residential buildings are located on the outer edges 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 18). Although, downtown has not been the hub of bear activity since 2005, percentages of bear incident reports have been significant (approximately 10 %) in 2006, 2007, and 2008. 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 forests 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 park patrons.

Evidence to support this concern arose in the Fall of 2008 when a bear obtained garbage from one of the park waste receptacles.

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 that a human is present in the area. A quiet traveler may startle a bear foraging or resting near the stairway, and such a situation may result 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.

The only reported bear incidents associated with Selkirk Hill (between 2005 and 2008) occurred in 2007, and the three reports in 2007 refer to sightings of one bear wandering around the area (see Table 17). 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 the areas with fruit may be unfavourable to bears. Selkirk Hill is adjacent to commercial areas of downtown and Highway 95A. In addition, 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 human-grown fruit. Currently, the area does not appear to be of 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 houses 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 forested area around Church Avenue, 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 17) 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 eventually was 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 (an observation provided to Bear Aware by the manager of the retirement center). 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 17 depicts 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 communication to Bear Aware from Meadowbrook residents). Theoretically, Meadowbrook should be an area of high risk for bear/human conflict because the area consists of residential homes immersed in bear habitat (i.e., forest); however, most people that choose to live in Meadowbrook appear to be familiar with practices concerning coexisting with wildlife. More specifically, most residents appear to be well versed in methods of properly securing waste, and, since the city does not pick up garbage in Meadowbrook, garbage is never made available to wildlife (i.e., 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 in Upper Blarchmont during 2006 (in comparison to the other years of the 2005 to 2008 duration). The majority of the activity in Upper Blarchmont during 2006 occurred between late-August to late-October (approximately 75% of the year's reports concerning Upper Blarchmont were in that time period). 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 and 2008 because residents of Upper Blarchmont were more diligent in removing fruit from their yards after experiencing heavy bear activity in 2006.

Albeit numbers of bear incident reports have decreased in 2007 and 2008, Upper Blarchmont should be considered a high risk area for bear/human conflict. Upper Blarchmont 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 to feed on human-grown 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 north-eastern end of the neighbourhood contacts the trailhead of a pathway leading to McKim Middle School.

Like Upper Blarchmont, Lower Blarchmont's highest level of (reported) bear activity occurred 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 and 2008, 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 incidences of bears stashing garbage from Lower Blarchmont have occurred on more than one occasion. Consequently, some of the bear activity in 2007 and 2008 could have been a result of behaviour bears learned in 2006 (in terms of where and how to collect garbage).

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 and a startled/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 north-eastern end of the neighbourhood is a favourable place for bears to reside. The current report recognizes reported bear activity in Lower Blarchmont has decreased in 2007 and 2008 (from 2006); however, the reasons for decrease in activity 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 Blarhmont. Chapman Camp primarily consists of residential buildings; however, a building that serves as a daycare and school is located in the south-eastern 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 in the years of the 2005 to 2008 duration lie between 10% to 15% (see Table 18). 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. The presence of a school/daycare and residences in an area of high bear activity designates Chapman Camp a high risk area for bear/human conflict.

An incident in 2007 supported the reasons (mentioned above) that a risk of bear/human conflict exists in Chapman Camp. A bear spent approximately nine hours in a Chapman Camp resident's backyard. 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 destroyed 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 occurrences of problem bear activity. The residents practicing poor waste management left Kimbrook Crescent and bear activity has decreased in the area since 2006.

Bears likely will continue to enter the neighbourhood because of its proximity to forested area and the odours produced by a communal waste bin (at the southern end of the crescent); however, much of the previous problem bear activity that occurred in Kimbrook Crescent was a result of a single household's poor waste management (in 2006). Considering the tenants of the household have vacated the neighbourhood, Kimbrook Crescent could be considered a low to moderate (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 in the 2005 to 2008 have referred to activity in Creekside Park; however, the current report considers the neighbourhood a high risk area for two reasons:

- Creekside Park residents use curb-side 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 available space for indoor waste storage is limited may attempt to construct an outdoor storage unit for waste. Home-constructed sheds generally are not durable enough to combat the strength of an adult bear searching for food. In 2008, Bear Aware engaged in discussion with the manager of Creekside Park regarding the possibility of implementing a communal waste system in the neighbourhood; however, the discussions have not yet produced any bear management action.
- Creekside Park is located in between a creek and a forested area. Bears wishing to rest near water bodies to avoid overheating 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. Due to a regulation preventing the construction of fences on properties, few barriers (i.e., fences) exist between wildlife territory and human properties in Forest Crowne. 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 curb-side pick-up.

Even though Forest Crowne essentially is immersed in a forested area, the neighbourhood can be considered a 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 in search of unsecured garbage. 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 presentations in Forest Crowne during the Summers of 2007 and 2008 to advise new residents on how to manage attractants. A continual delivery of bear management education to the residents of 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 lakeshore and the road leading to the lake. The area is heavily forested, and residential properties within the area are rural. Riverside Campground is located near St. Mary's Lake Road (nearer to Kimberley than St. Mary's Lake).

In 2007, Bear Aware engaged residents of St. Mary's Lake in discussion concerning local bear activity to examine the potential for increase in bear/human interactions that 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, none of the other residents mentioned that they experienced any form of negative bear activity on or near their property.

The majority of the current residents of St. Mary's Lake likely are familiar with how to cultivate a peaceful coexistence between people and 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 in practices for 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 summers of 2007 and 2008, Bear Aware canvassed Riverside Campground during the Accordion Festivals and delivered presentations to campers on the August long weekends of both years (2007 and 2008). Such public education and outreach strategies 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. Ultimately, Riverside Campground does not appear to be 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 (such as holiday weekends and the Kimberley Accordion Festival).

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 304th Street, and North Marysville refers the area of Marysville that is located north of 304th Street. North Marysville is mostly residential; however, commercial establishments and an arena are located on the northern side of 304th Street. In addition, 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 percentage of bear incident reports in 2007 and 2008 refer 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. Consequently, North Marysville should be considered a high risk area for bear/human conflict.

South Marysville

South Marysville is located south of 304th Street in Marysville. The area is mostly residential; however, commercial establishments are located on the south side of 304th Street. In addition, an Elementary School and two golf courses 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 304th 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 courses. 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. In 2008, Bear Aware provided Kimberley golf courses with signage featuring details on how to reduce one's chances of entering into conflict with a bear when on a golf course.

- 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.

Summary

The above examination of the risk various neighbourhoods in Kimberley experience concerning bear/human conflict is summarized in Table 19. The “Current Risk” column displays the risk of bear/human conflict that exists in a neighbourhood (or area) based on its current characteristics (i.e., residences, fruit tree density, etc.). The “Predicted Future Risk” column indicates the potential risk a neighbourhood could experience in future years based on factors such as influx of new residents and development of seasonal housing.

Table 19. Summary of risk of bear/human conflict in various areas of Kimberley.

Area	Current Risk	Predicted Future Risk
Townsite	moderate to high	moderate to high
Ski Hill	low	high
Inn West	low	moderate to high
Downtown	moderate to high	moderate to high
Selkirk Hill	low	low
Church Ave	low	low
Meadowbrook	low	low
Lower Blarchmont	high	high
Upper Blarchmont	high	high
Chapman Camp	high	high
Kimbrook	low to moderate	low to moderate
Creekside	high	high
Forest Crowne	low to moderate	moderate to high
St. Mary's Lake	low	high
North Marysville	high	high
South Marysville	moderate	moderate

Fruit Tree Mapping

Table 20. 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

In 2007, Bear Aware 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 20, 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.

The majority of the fruit-related bear incidents in Kimberley appeared to involved the second and third most common type of fruit trees: apple and crab apple.

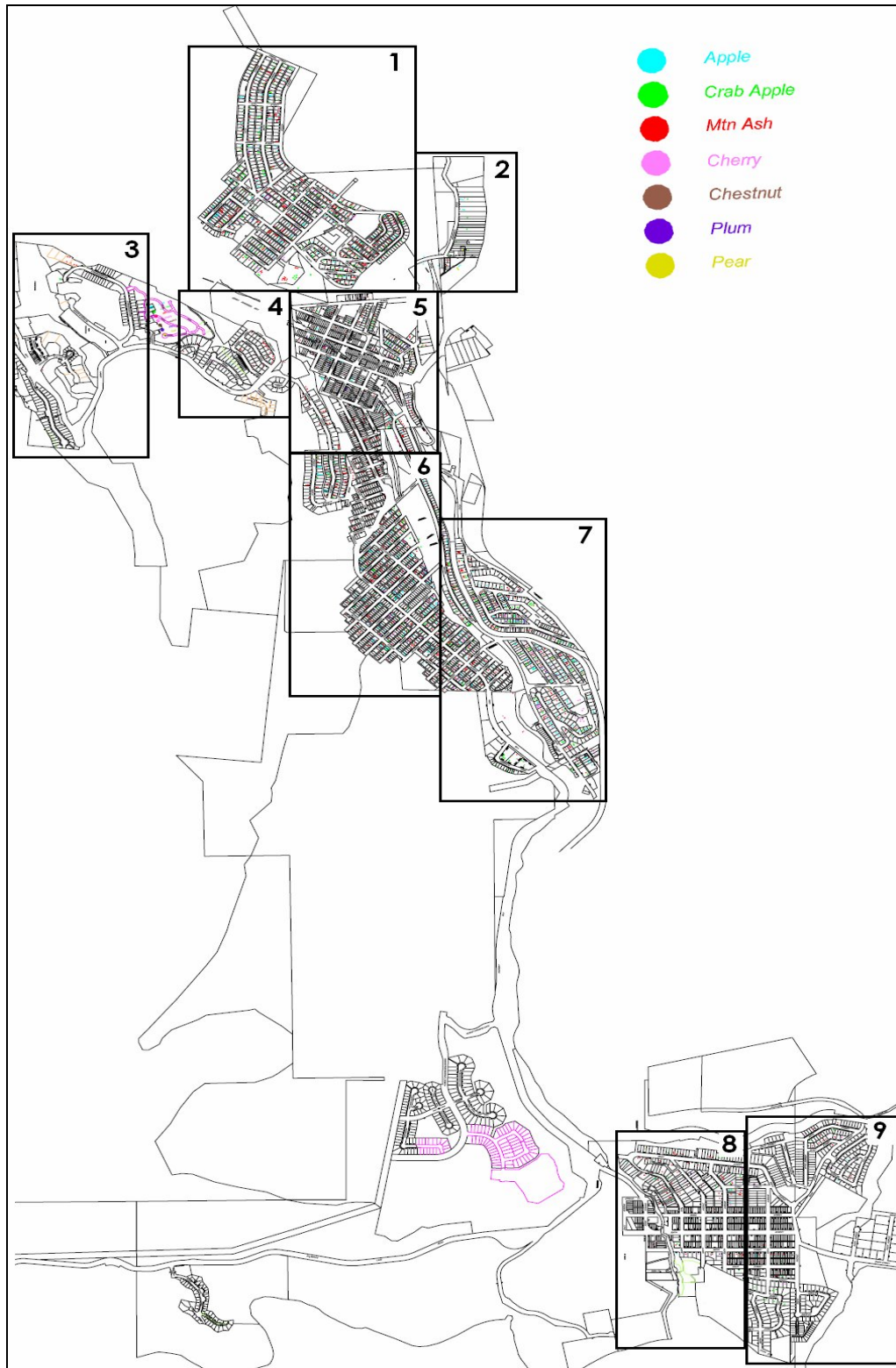
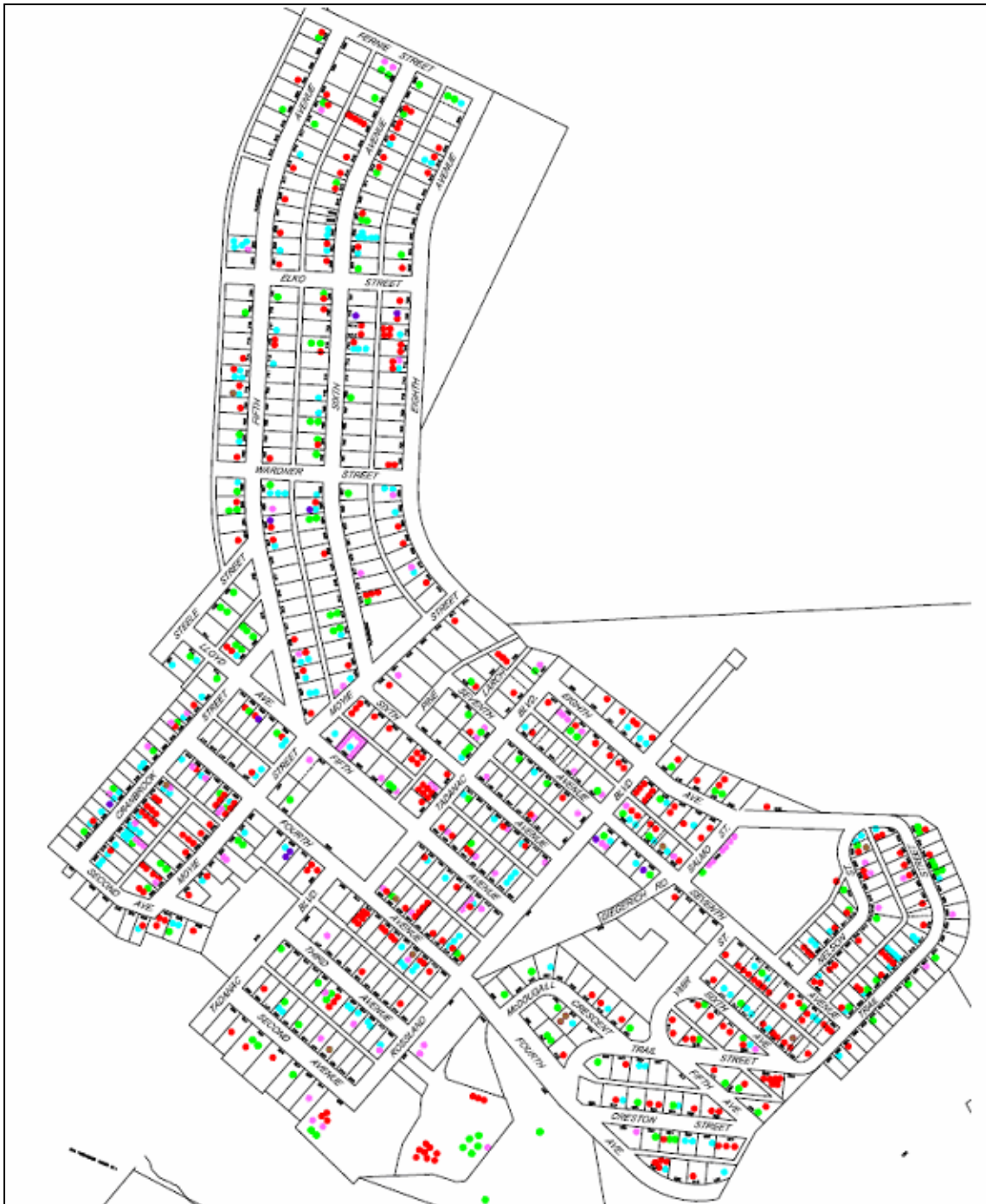


Figure 17. Map of fruit tree densities in Kimberley.

Numerically labelled sections may be observed below

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

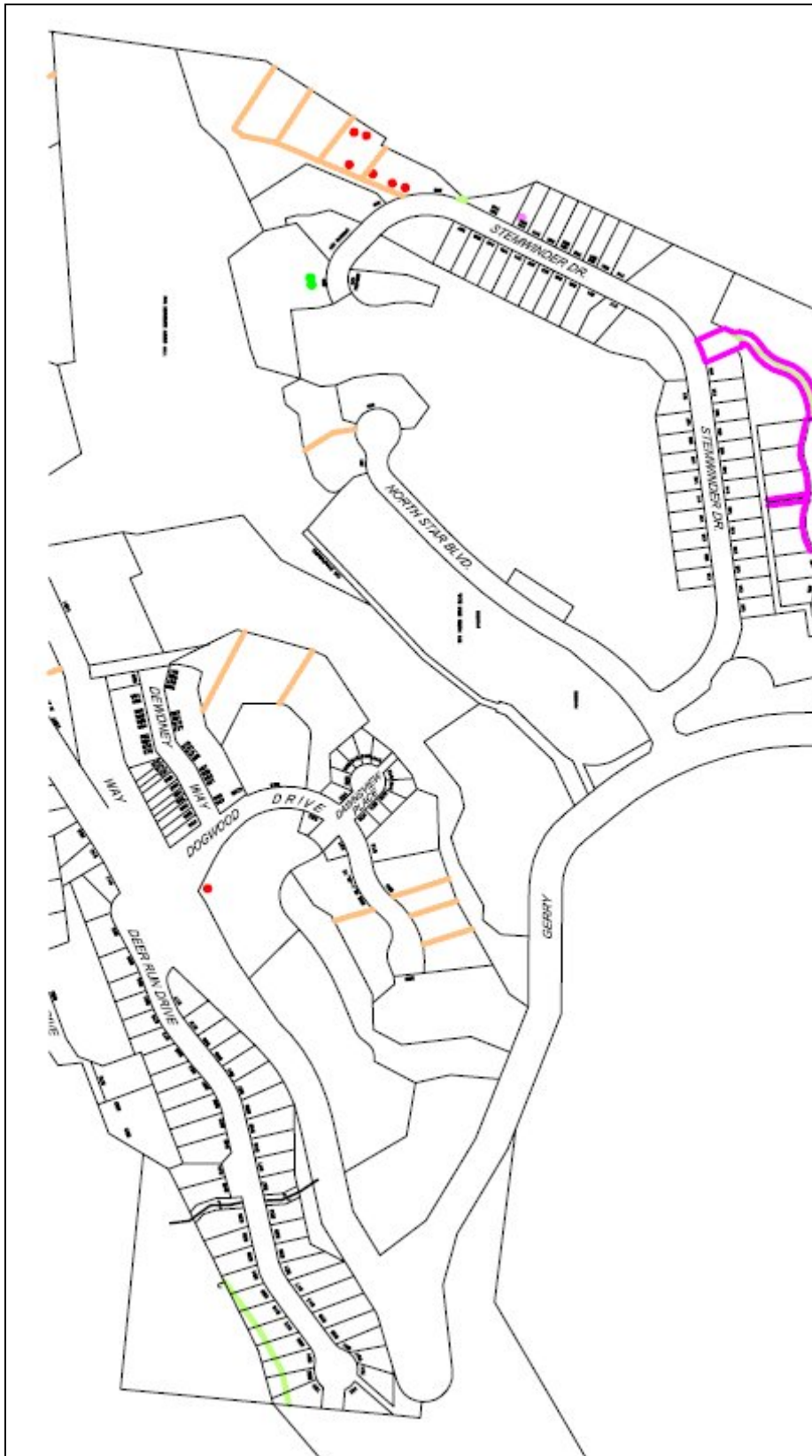
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