

Analysis of Bear Sightings in Prince George

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Introduction –

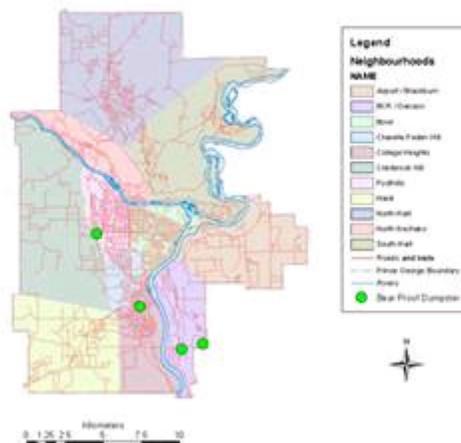
Wildlife sightings are a part of everyday life in northern B.C. and seeing bears in, and around, Prince George is to be expected. When wild berries have a poor season, hungry bears tend to move into town in their search for food. Garbage tends to be the main attractor, and sadly, the result is the bear having to be destroyed.

My objective was to study how the bear problem in and around Prince George has grown or fallen over the last ten years and to determine whether the campaign to improve garbage storage has helped.

Data Source –

What I started out with was the location of reported bear sightings over the last ten years and where and when countermeasures were placed. What I received was data from 1994 to 2003 on bear sightings and a sample of data on conservation efforts. The locations of bear proof dumpsters apply to the year 2000 through to 2003.

Prince George Neighbourhood Boundaries
And locations of Bear Proof Dumpsters in 2000

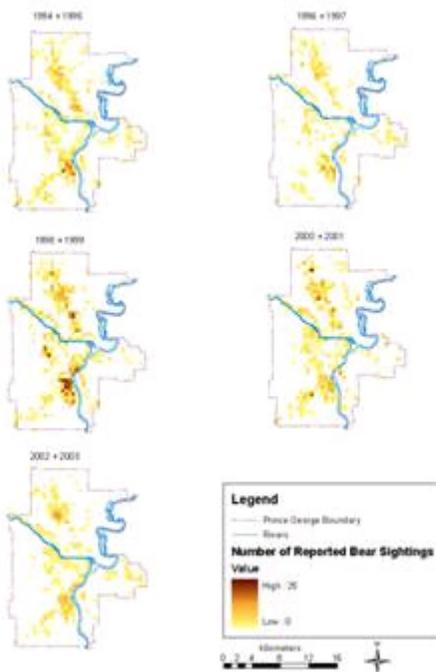


Click image for larger view.

Data Manipulation –

I immediately rasterized the point data I received. Each cell of the raster images is 500 m by 500 m. Each cell's value is based on the number of points that fell into that dimensions of that cell. I then paired each year with the next, summing the values together. I did this to improve value of the numbers for analysis purposes to give the cells value a bit more meaning. Each year, numbers could vary dramatically and my hope was to smooth the curve out a bit.

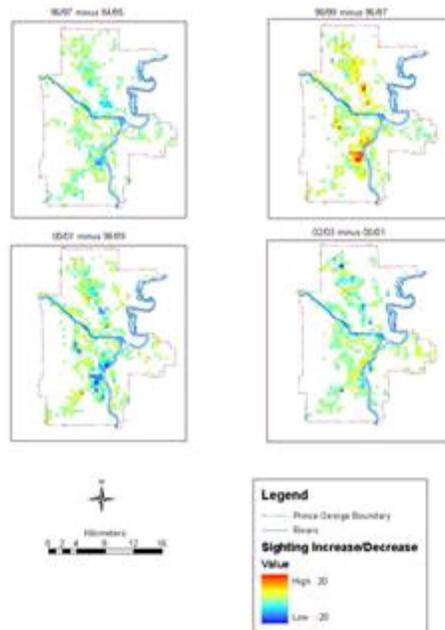
I also plotted the locations of the bear proof dumpsters in hope of seeing a difference in bear sightings.



Click image for larger view.

Spatial Analysis Method –

I measured the difference between each pairing. For example, 96/97 subtract 94/95 gave me one set of data. If the resultant value was negative, that meant there was a drop in sightings at that cell, positive meant an increase, and obviously zero means no change. I used the “stretch” method of symbology and set a minimum and maximum for the values at -20 and 20 respectively. The result was that the data for each year was drawn on the same scale so I could visualize the change.



Click image for larger view.

Analysis Results –

The difference between the pairings of 96/97 and 98/99 was overall a large increase in bear sightings. Then, the difference between pairings of 98/99 and 00/01 saw an overall drop in bear sightings. Several measures to repel bears were put into place in 2000 (possibly as a result of the large increase seen over the previous few years). At first glance, it looks like these efforts worked. The difference between 00-01 and 02-03 also appeared to be on average down again, though not quite as dramatically. The immediate areas of the bear proof dumpsters showed good decreases in bear sightings, and did not go up again, but the surrounding cells of the rasters didn't show a similar effect as some rose and some fell.

Conclusions –

I was given data on only seven bear proof dumpsters that were placed in the year 2000. My analysis leads me to believe that while the intentions were good, this is not enough to make a large scale difference. The year interval of 98/99 appears to simply be a spike in the data. While less bear activity occurred in the immediate vicinity of the dumpster, you can see the bears simply moved down the street. The location of some of these bear proof dumpsters is also not terribly adequate, if that location is based on the

data provided. There were relatively fewer bear reports in the BCR/Danson neighbourhood, yet four of the dumpsters were placed there. Though, being on the outskirts of town, I would expect this to be the most beneficial placement as bears are much more likely to be found further than people. It should be noted that these four dumpsters didn't produce much difference in the number of sightings in the whole area.

Future Developments –

Information such as population density would work well to weight the data I think. The locations of dumpsters, fruit trees and other major attractors would also be of interest. Data on wild berry production in the forests surrounding Prince George for each year would also be good to correlate to this data. The bear sighting data would work well as supplementary data to, for example, the tracking of a tagged bear or other such projects.

Reference –

[PG Community Bear Map Project](#)

