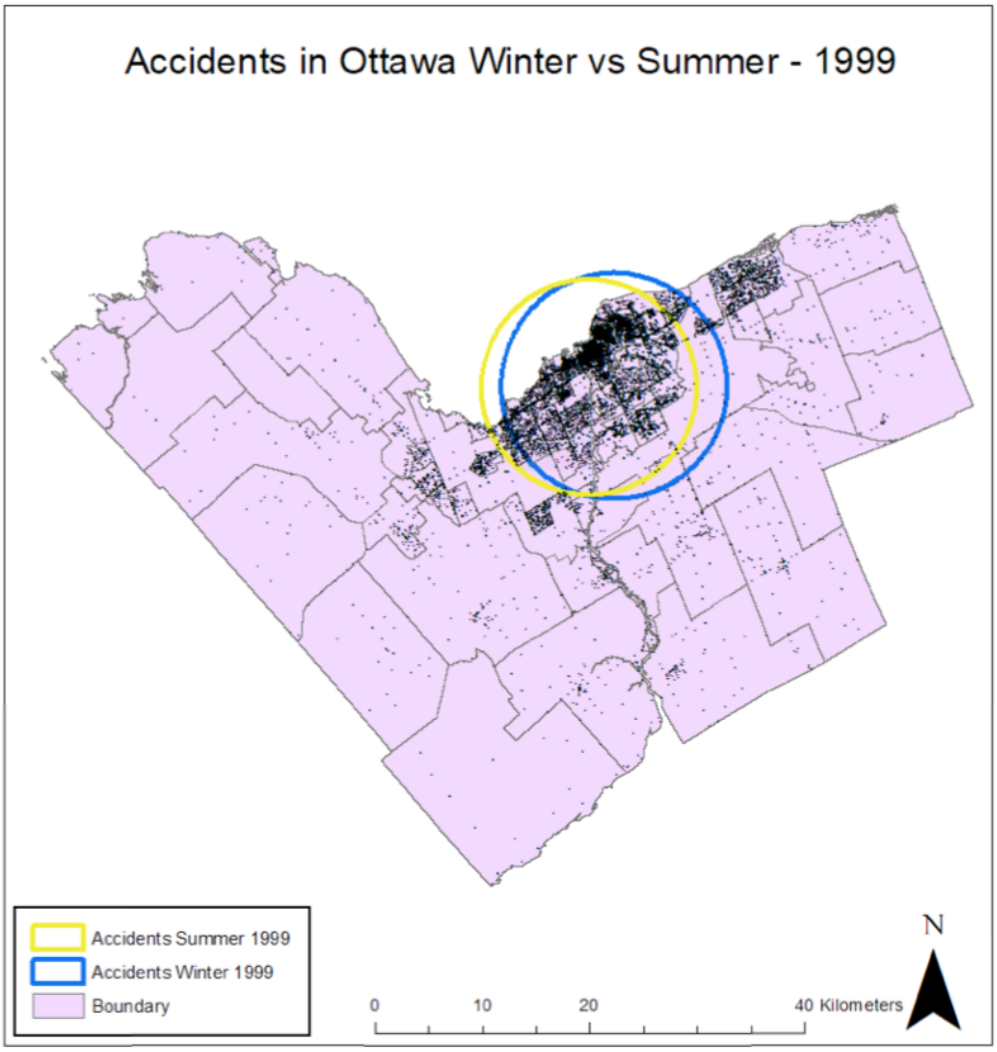
Assignment #3

Matthew Langlois - 7731813

Mar 12, 2018

Question 1



Map comparing accidents in the Winter of 1999 vs the Summer of 1999

Based off of the data displayed on the map it is possible to conclude that the area which the accidents occur in grows during the winter. This is likely due to the suburban streets being plowed/salted later than the core downtown region. It also appears that accidents during the summer are shifted closer towards Kanata. This is likely due to people driving & to work from that area in the summer, thus causing more accidents in that area. Furthermore there are still plenty of accidents occurring in the winter in the downtown region (as seen below).

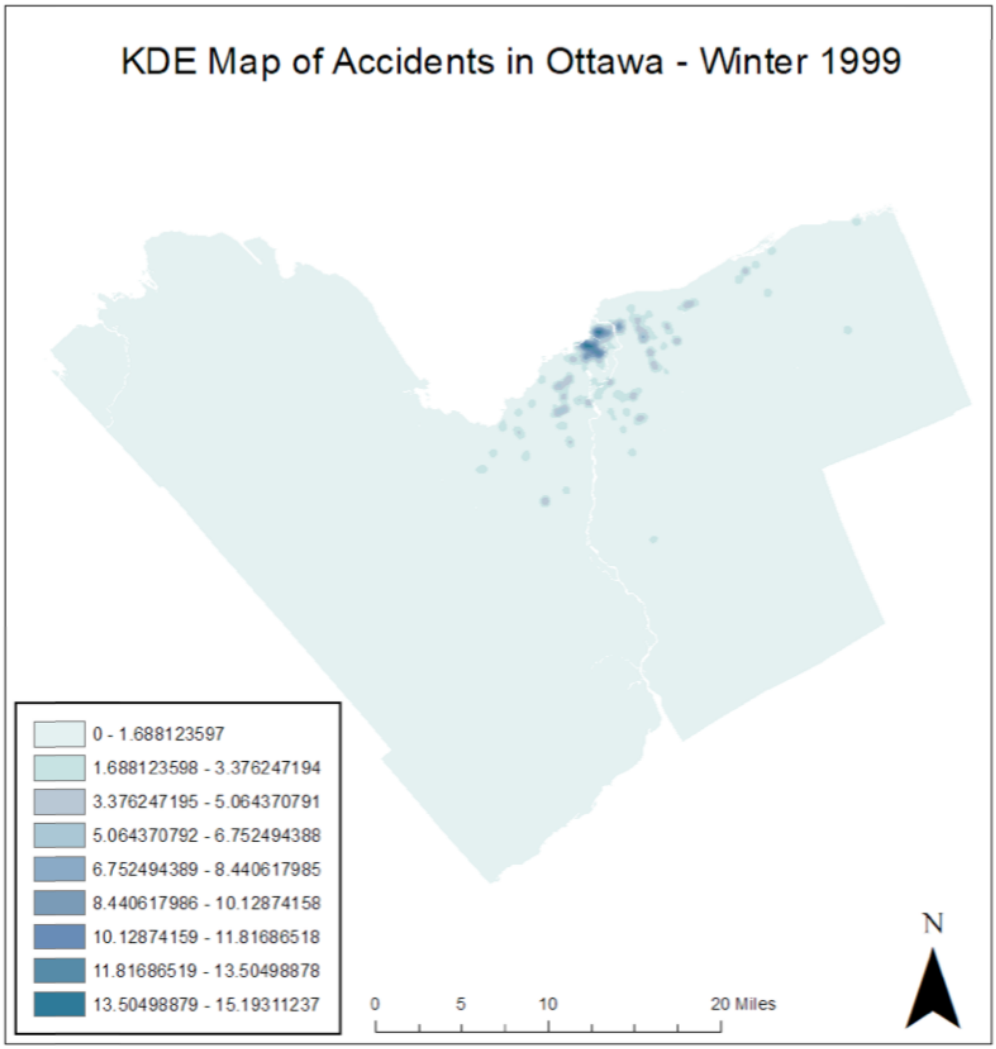
The following queries were used:
Winter Data:

```
SUMMARY = 'Accident' AND OCCDATE >= date '01/01/1999' AND OCCDATE <
↪  date'03/01/1999'
```

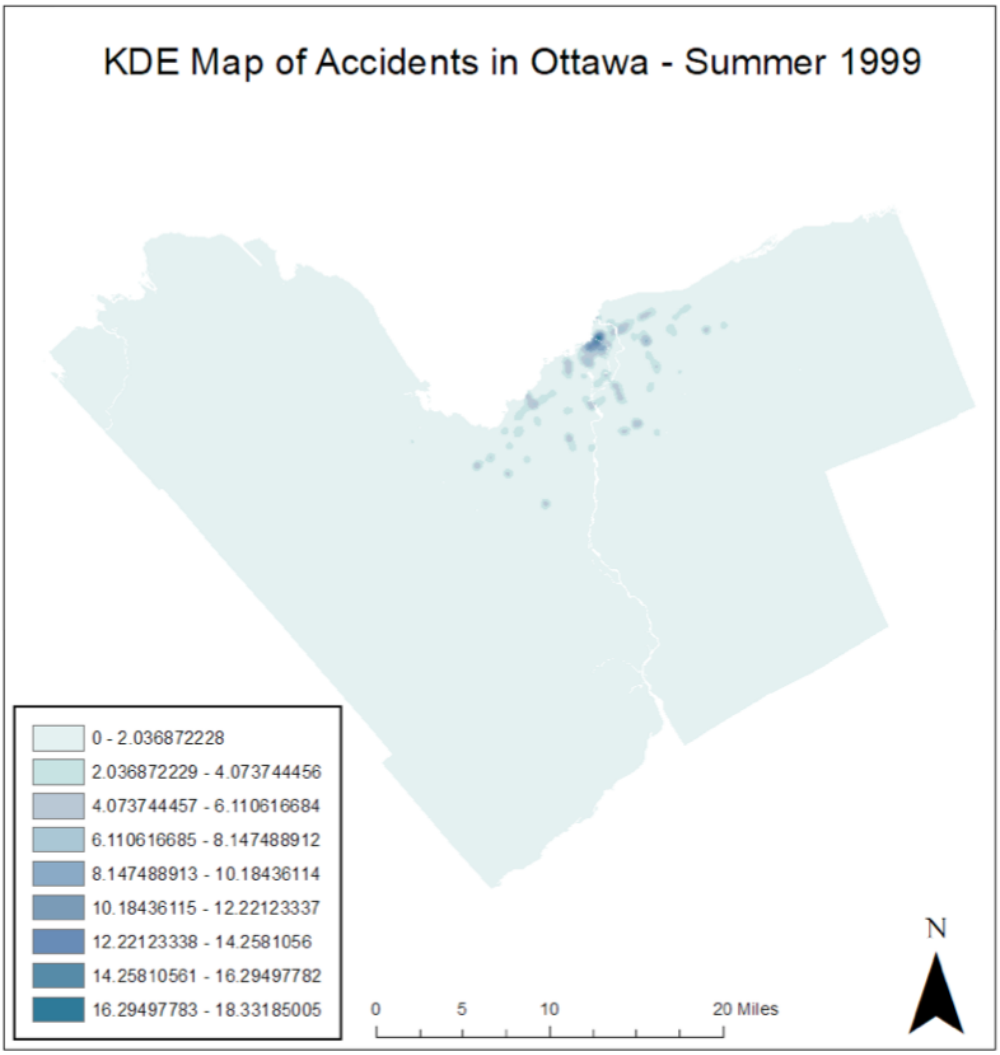
Summer Data:

```
SUMMARY = 'Accident' AND OCCDATE >= date '07/01/1999' AND OCCDATE <
↪  date'09/01/1999'
```

Question 2



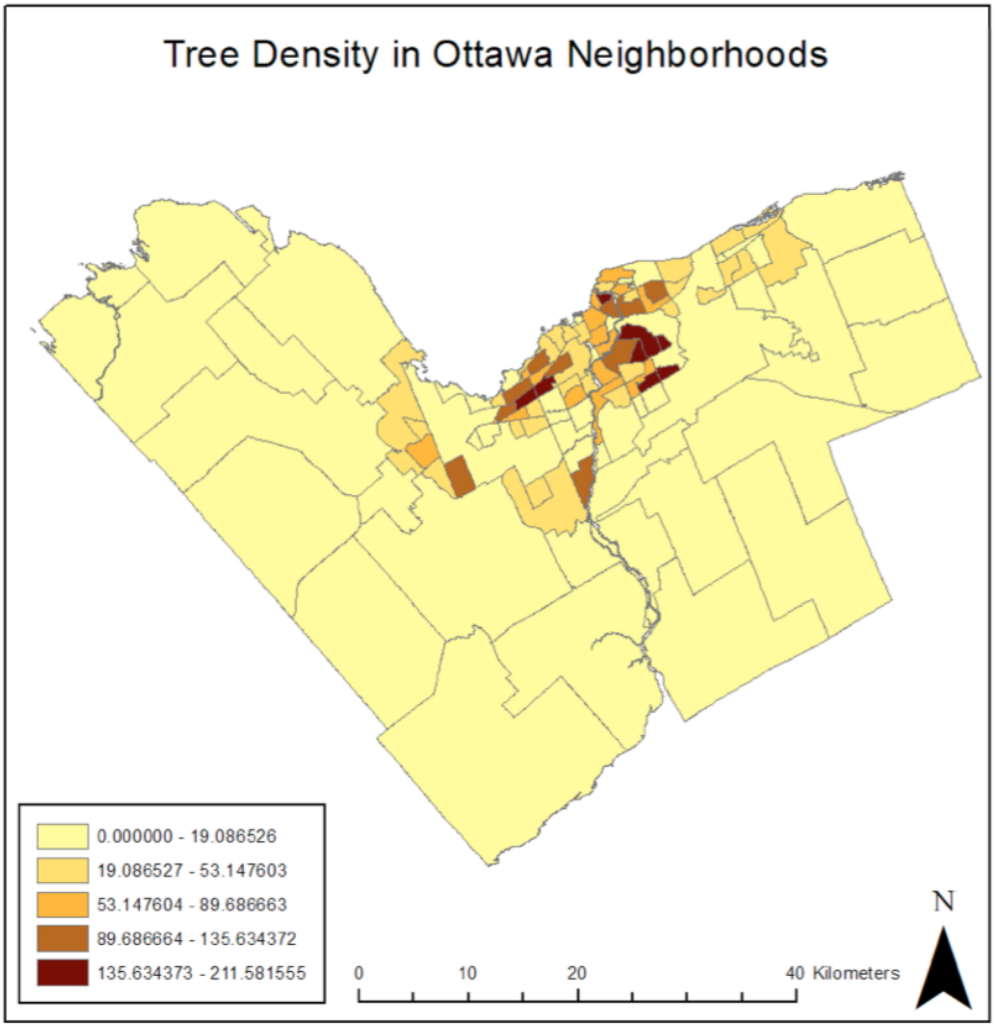
Kernel Density Estimation of Accidents in Winter of 1999



Kernel Density Estimation of Accidents in Summer of 1999

Based off of the data shown in the estimates it appears that in the Winter there are more accidents overall. However there are also quite a few accidents in the downtown core. This is probably due to icy roads and a higher density of cars driving in that area.

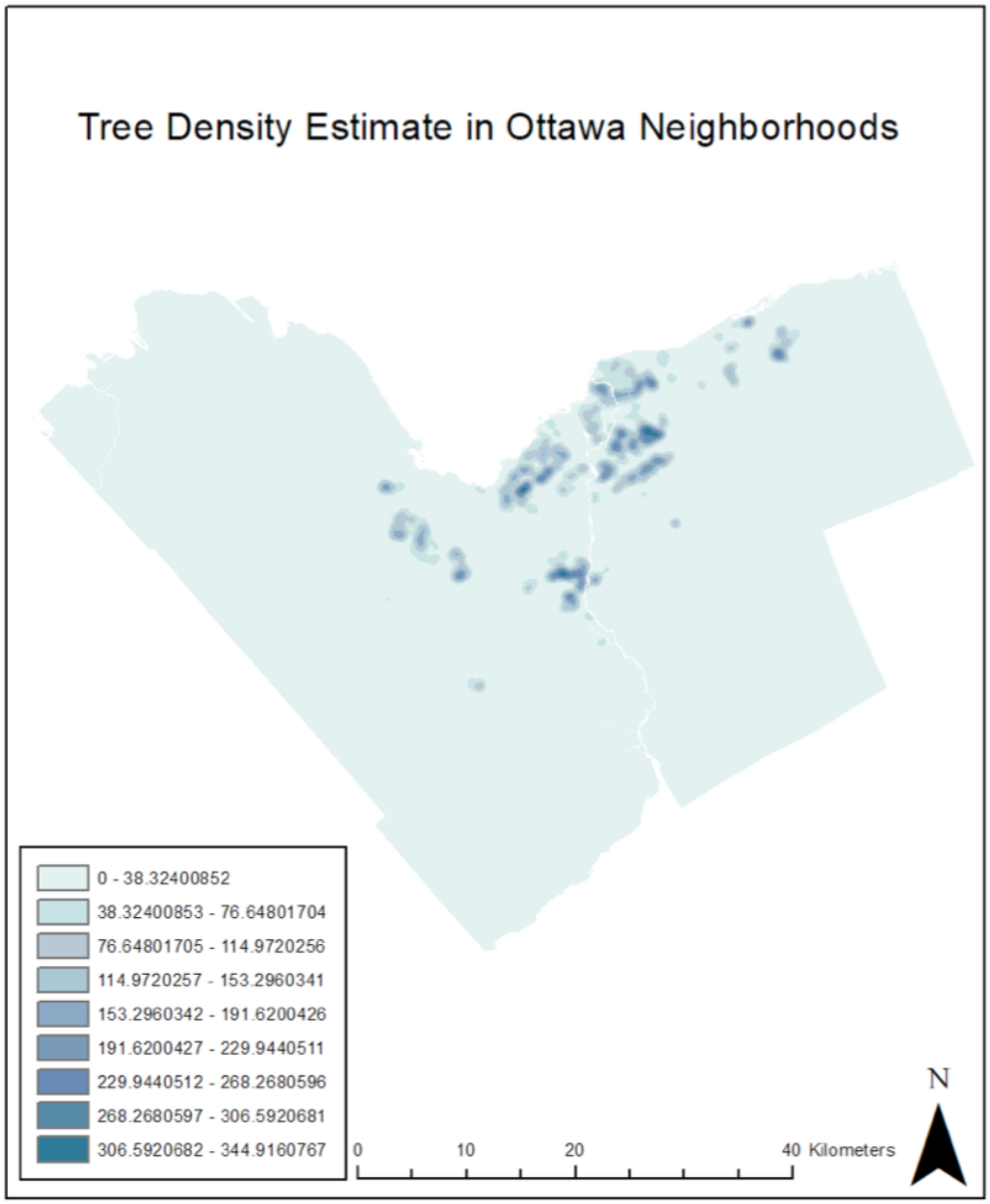
Question 3



Kernel Density Estimation of Accidents in Summer of 1999

Based off of the data provided in the graph I would recommend that the City of Ottawa manager to inject areas of densely populate ash trees. So in this case the data would suggest that Iris, Lowertown, and Hunt Club Park would all be areas of interest to spray. Furthermore based off of the map I would suggest any of the dark brown areas as they have a high concentration of Ash trees.

Question 4



Kernel Density Estimation Ash trees in Ottawa

The estimation is roughly the same (at least in the concentrated areas). Some difference include outer areas of the map. This is due to the estimation focusing on the more densely populated areas.

Question 5

Ran out of time.