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GEOG 462

Assignment 2

Question 1: What are the spatial distribution patterns for the areas with high population density?

The spatial distribution shows a sort of clustered pattern. This is especially true in the areas surrounding the towns. Where there is a high density of towns there is a high density of population.

Question 2: What are the spatial distribution patterns for the areas with high clinics density?

The spatial pattern of the areas with high clinic density also showed clustering around the high density of towns. The majority follows along the coastline.

Question 3: What are the spatial distribution patterns for the areas with high density of nasty water?

This shows little to no spatial distribution. There is only one area that has a high nasty water density which is along the coastline next to an area of high town density. This spot seems random with no specific correlation to the pattern trend.

Question 4: Are there some areas that have a higher ratio than others? (Hint: You will want to change the symbology of the map to get a better view (e.g., method, classes.) What does a high ratio mean?

Yes, the south western part of the map has high and medium cluster spots. This could show that the ratio of nasty water is higher when compared to the population density.

Question 5: Are there some areas that have a higher ratio than others? What does a high ratio mean?

Yes, this data shows a higher cluster of high density spots. This means a higher ratio of nasty water than clinics within the area.

Question 6: What is the slope value for the regression line in your Moran scatter plot of nasty water? Have you observed a significant amount of spatial outliers in the plot?

The slope value is .654, and yes there is a significant number of spatial outliers within the plot.

Question 7: What is the slope value for the regression line in your Moran scatter plot of nasty water and population? Have you observed a significant amount of spatial outliers in the plot? What do those spatial outliers indicate?

The regression line value is -.069 and yes there is a significant number of outliers. This means there are data points that do not follow the trend pattern.

Question 8: What is the slope value for the regression line in your Moran scatter plot of nasty water and clinics? Have you observed a significant amount of spatial outliers in the plot? What do those spatial outliers indicate?

The regression line value is -.027 and yes there is a significant number of outliers. This means there are data points that do not follow the trend pattern.

Question 9: Which area(s) show high local spatial autocorrelation of nasty water and what does that mean? (Hint: Use the result of Anselin's Local Moran's I analysis as reference.)

The southern part of the map shows high spatial autocorrelation and it shows where there are high water quality issues clustered together.

Question 10: Which area(s) show high local spatial autocorrelation of population and what does that mean?

The areas with high local spatial autocorrelation are in both the North and South part of the map. It shows where there are high density of populated towns clustered together.

Question 11: Which area(s) show high local spatial autocorrelation of clinics and what does that mean?

Along the coastline and areas with high cluster of towns have high density of clinics. This shows where there is a high number of clinics clustered together in the area.

Question 12: Summarize the entire analytical procedure that you have applied to accomplish this assignment. Your summary must be addressed like this: I did 1, 2, 3,….

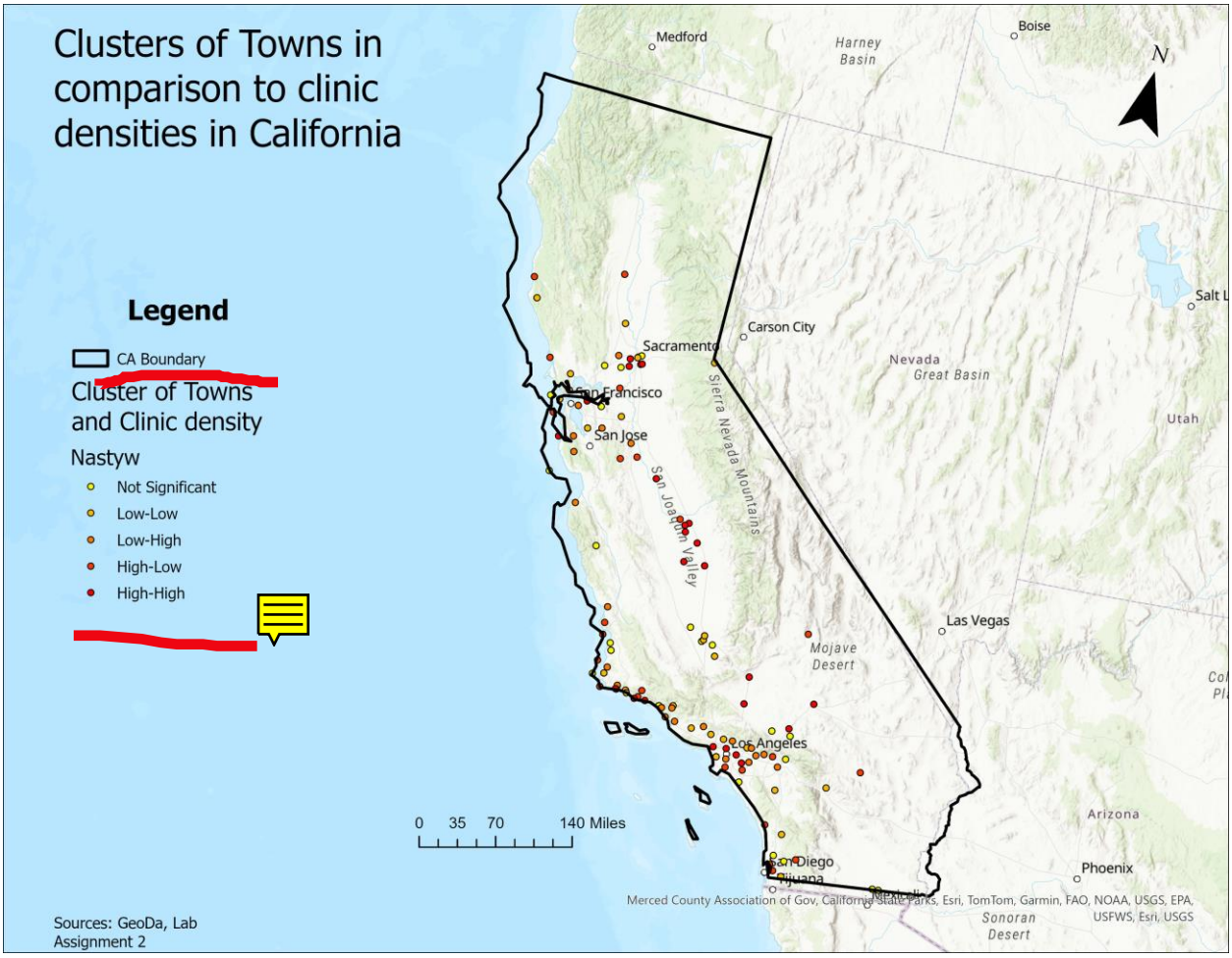
I first added all the data to arch gis in order to create a density analysis of the populations, clinics, and nasty water in relation to the towns. The next step was to reclassify to create the classes with natural breaks in order to properly represent the data. After this I used the raster calculator to analyses the nasty water density divided by the population density. I did this a second time with nasty waster and clinics as my variables. Once this was complete I was now able to input my data into GeoDa to use the spatial autocorrelation analysis by calculating the Moran's I values. At this point I was able to create a lisa map for the three variables: population, clinics, and nasty water.

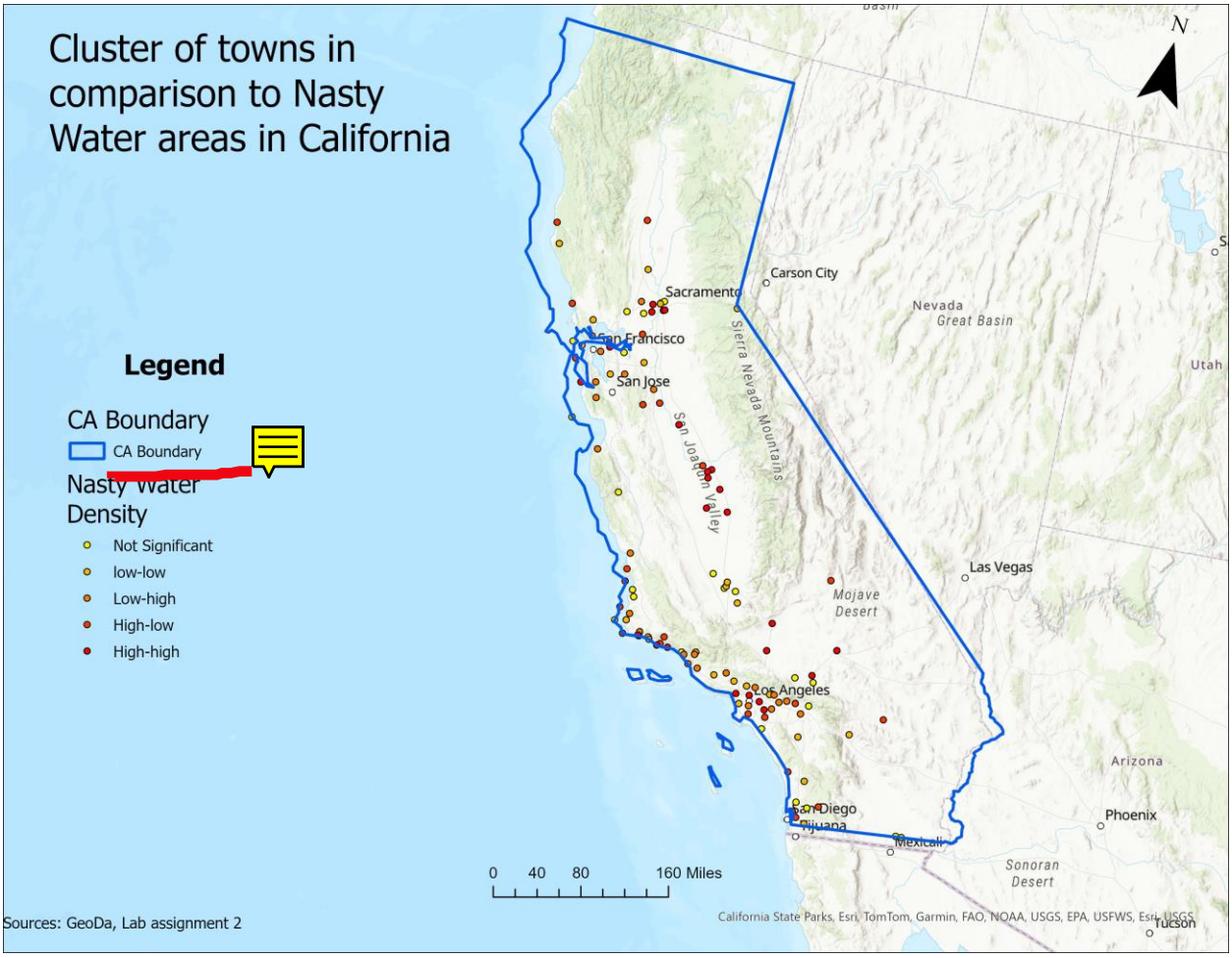
Question 13: How many industries are listed in the table, assuming each industry has an unique physical address?

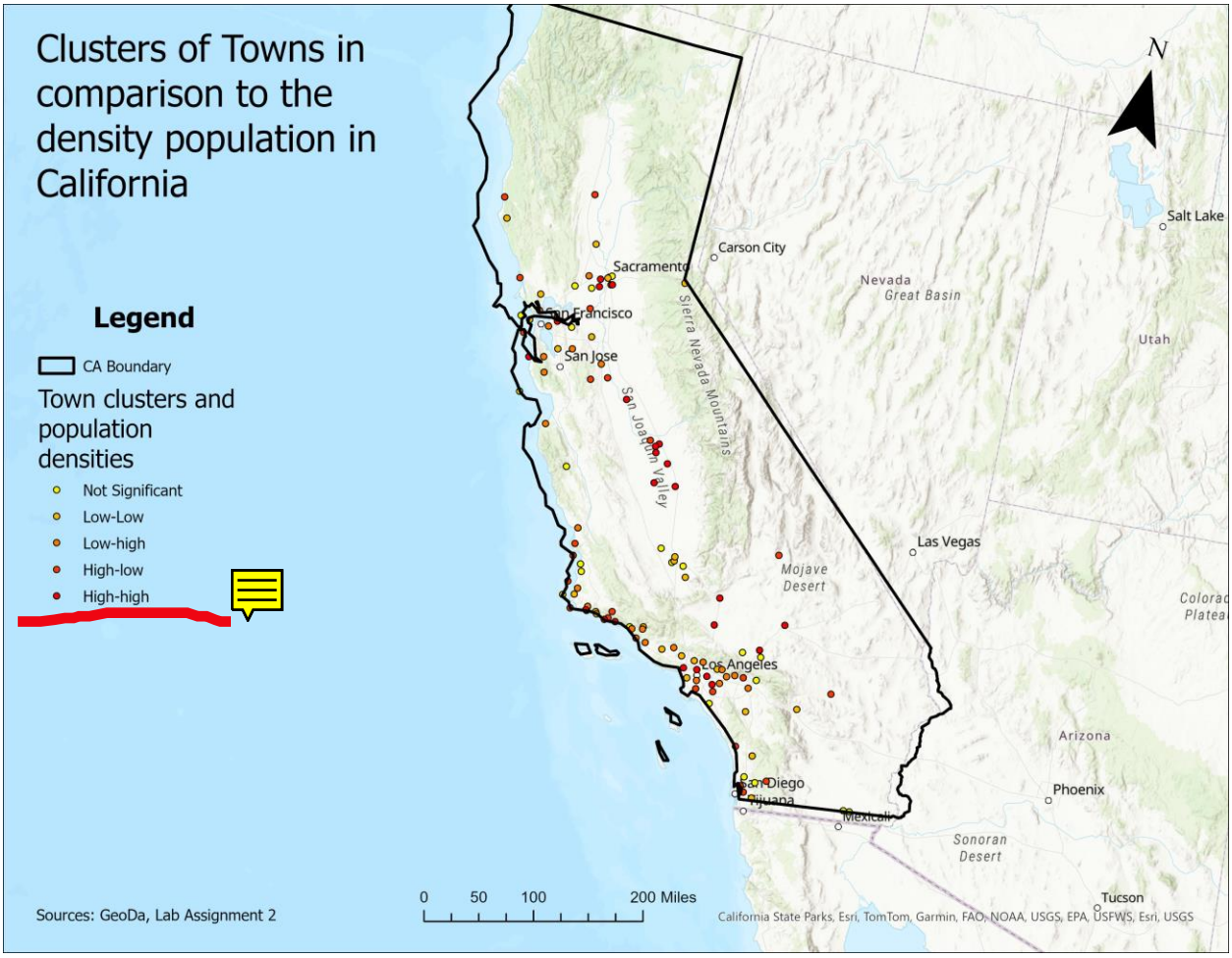
There are 348 industries listed in the table.

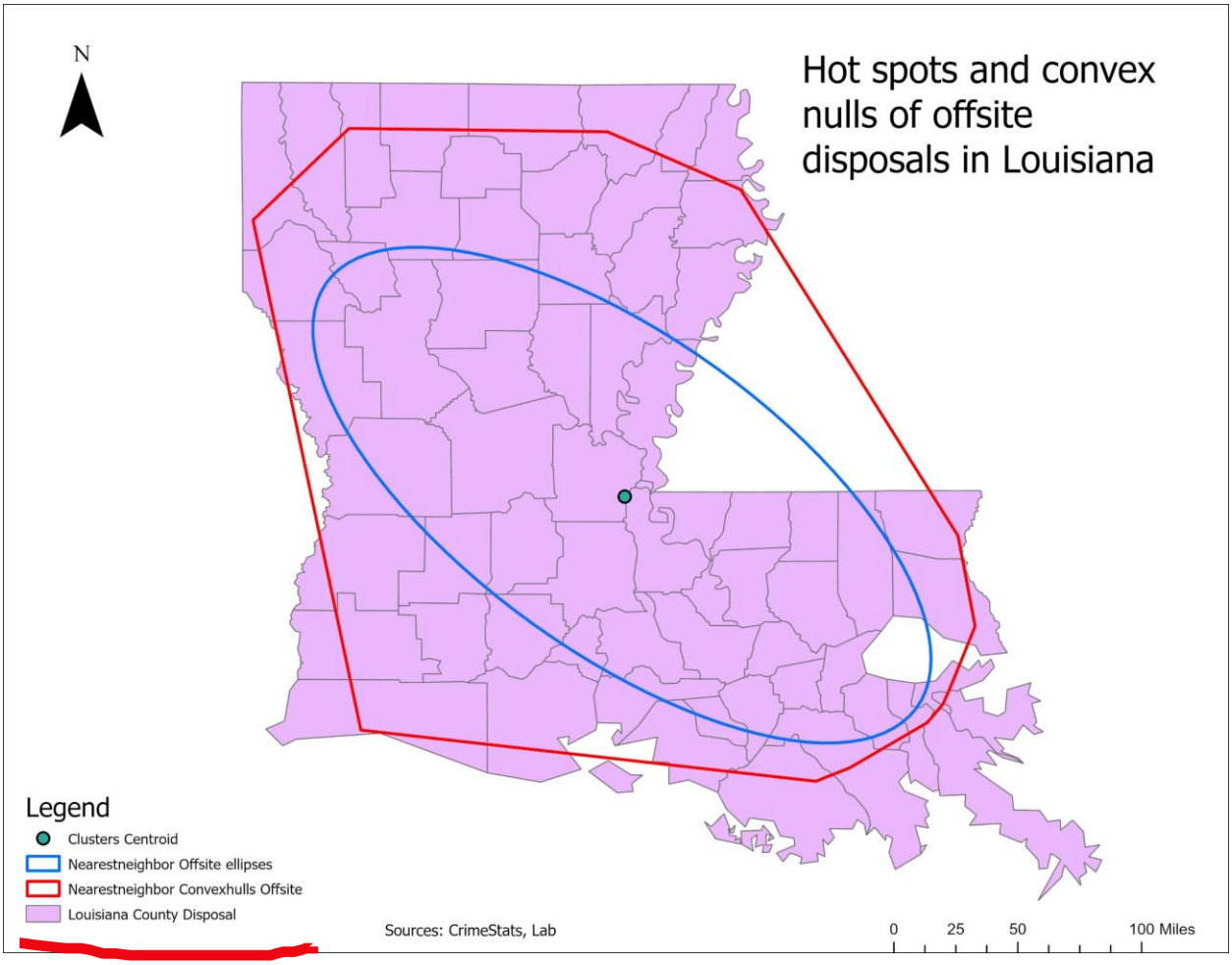
Question 14: Discuss the differences among two layout maps in regard to the spatial distributions of ellipse hot spots in Louisiana.

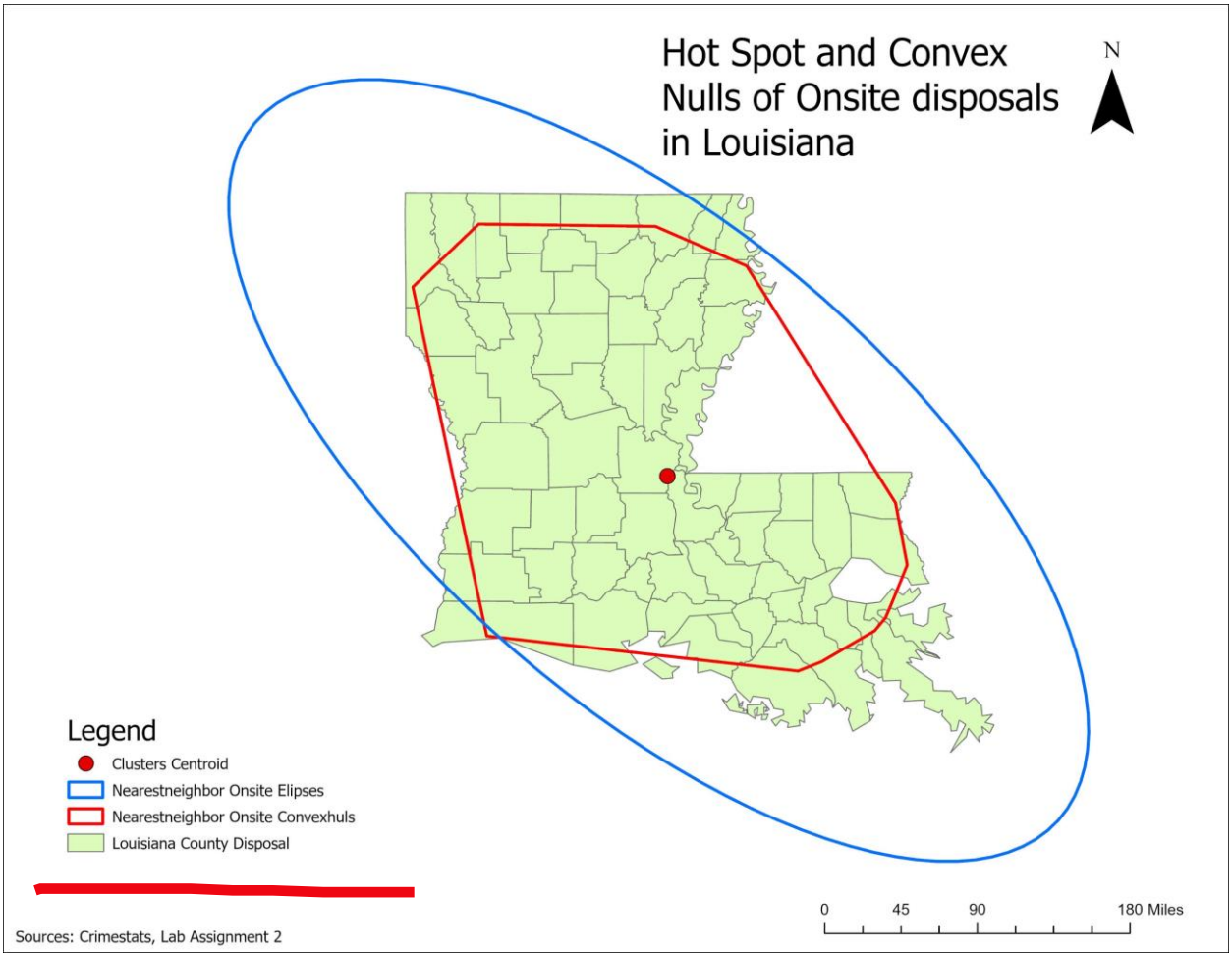
When it comes to the ellipse hot spot for offsite disposal the distribution is relatively smaller than that of onsite disposal. The off site covers the mid area of California whereas the onsite basically has full coverage of California.


Clusters of Towns in comparison to clinic densities in California
Legend
CA Boundary
Cluster of Towns and Clinic density
Nastyw
Not Significant
Low-Low
Low-High
High-Low
High-High
Medford
Harney Basin
Boise
N
Carson City
Sacramento
San Francisco
San Jose
Sierra Nevada Mountains
San Joaquin Valley
Nevada Great Basin
Utah
Las Vegas
Mojave Desert
Los Angeles
0 35 70 140 Miles
San Diego
Tijuana
Phoenix
Arizona
Sonoran Desert
Merced County Association of Gov, California State Parks, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, Esri, USGS
Sources: GeoDa, Lab Assignment 2


Cluster of towns in comparison to Nasty Water areas in California
Legend
CA Boundary
CA Boundary
Nasty Water Density
Not Significant
low-low
Low-high
High-low
High-high
N
Carson City
Sacramento
San Francisco
San Jose
Sierra Nevada Mountains
San Joaquin Valley
Nevada
Great Basin
Utah
Las Vegas
Mojave Desert
Los Angeles
Arizona
San Diego
Tijuana
Mexicali
Phoenix
Sonoran Desert
Tucson
0 40 80 160 Miles
Sources: GeoDa, Lab assignment 2
California State Parks, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, Esri, USGS


Clusters of Towns in comparison to the density population in California
Legend
CA Boundary
Town clusters and population densities
Not Significant
Low-Low
Low-high
High-low
High-high
N
Salt Lake
Carson City
Sacramento
Nevada
Great Basin
San Francisco
San Jose
Utah
Sierra Nevada Mountains
San Joaquin Valley
Las Vegas
Mojave Desert
Los Angeles
Arizona
San Diego
Tijuana
Mexicali
Phoenix
Sonoran Desert
Tucson
0 50 100 200 Miles
Sources: GeoDa, Lab Assignment 2
California State Parks, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, Esri, USGS


N
Hot spots and convex nulls of offsite disposals in Louisiana
Legend
Clusters Centroid
Nearestneighbor Offsite ellipses
Nearestneighbor Convexhulls Offsite
Louisiana County Disposal
Sources: CrimeStats, Lab
0
25
50
100 Miles


Hot Spot and Convex Nulls of Onsite disposals in Louisiana
N
Legend
Clusters Centroid
Nearestneighbor Onsite Elipses
Nearestneighbor Onsite Convexhuls
Louisiana County Disposal
0
45
90
180 Miles
Sources: Crimestats, Lab Assignment 2