

Sasquatch Habitat Analysis

{ Locating the best Sasquatch viewing habitat in Oregon, Washington, and Idaho

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Ecological Niche Modeling

"The basic premise of the ENM approach is to predict the occurrence of species on a landscape from georeferenced site locality data and sets of spatially explicit environmental data layers that are assumed to correlate with the species' range." J.D. Lozier, et al.

Datasets



Forests



Highways



Lakes

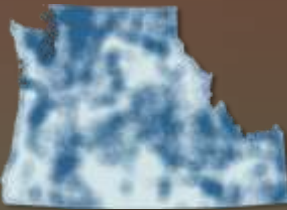


Population Density

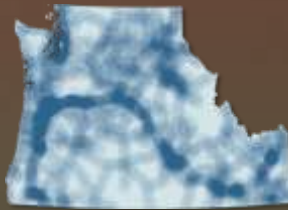


Rivers

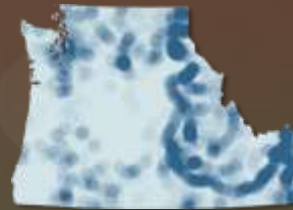
Point & Line Density



Forests



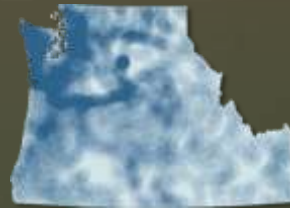
Highways



Lakes



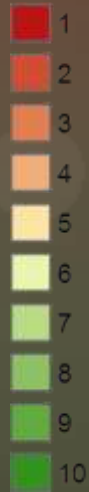
Population Density



Rivers

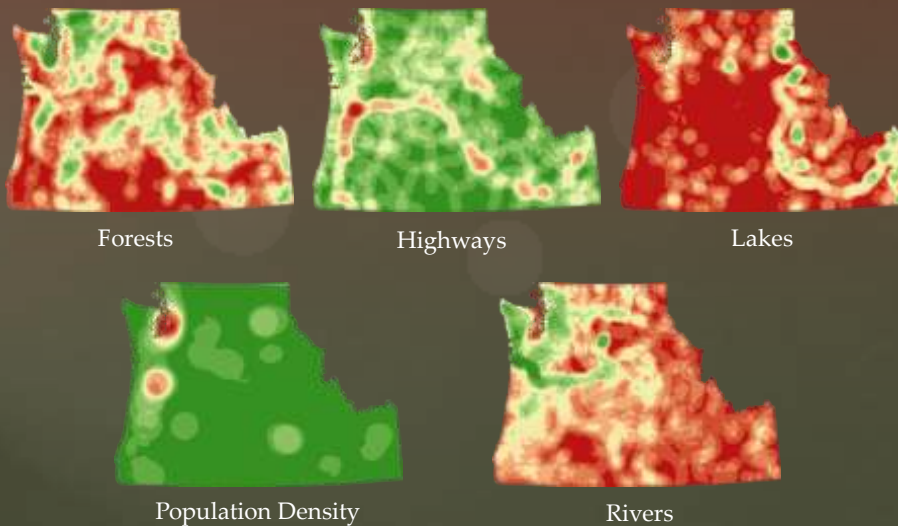
Reclassification

Value



- Density data was reclassified into 10 classes
- Suitability for Sasquatch ranges from a low of 1 to a high of 10
- No “expert” testimony or input available for how to classify
- Employed the BG Model TM
-- aka, best “guesstimation”

Reclassification



Analysis

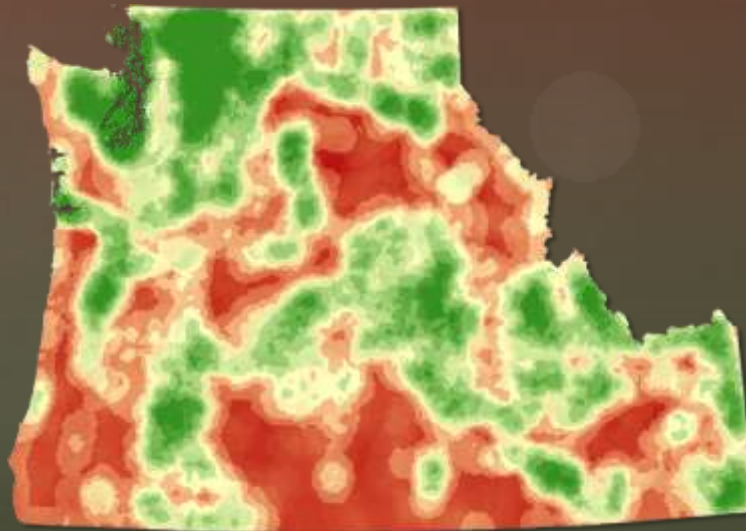


Variable Weight:

Forests 40%
Highways 10%
Lakes 10%
Pop Density 30%
Rivers 10%

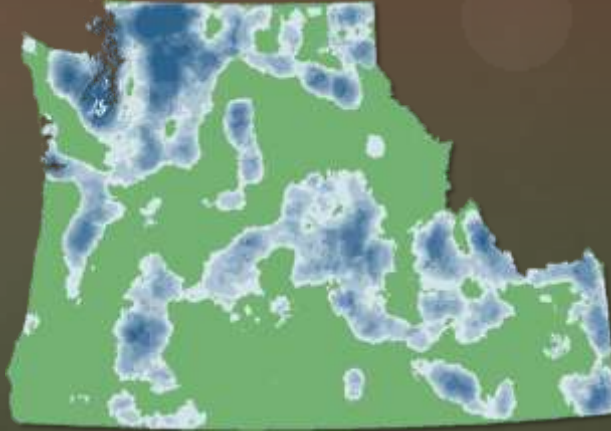
`"forest" * .40 + "highways" * .10 + "lakes" * .10 + "pop_den" * .30 + "rivers" * .10`

Raster Calculator Output



Reclassification of Habitat

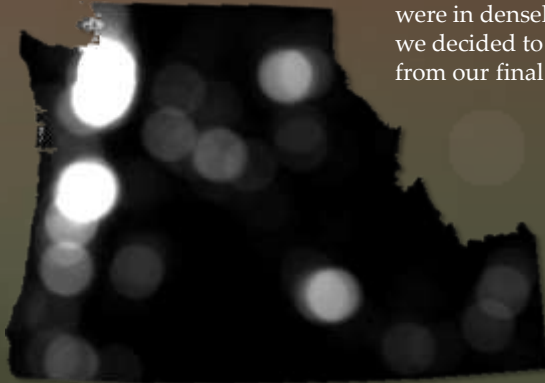
Raster Calculator produced an output with classes of 1.5 – 9, we reclassified the output and excluded (through use of NoData) 1.5 through 4.9 while keeping 5 through 9



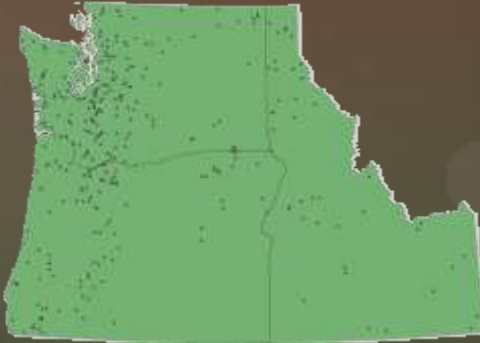
Cities as Anomalies

"If a Sasquatch walks in a forest and no one is around to see it, does it exist?"

Of 370 sightings we worked with, 196 were in densely populated areas. Therefore, we decided to exclude sightings in urban areas from our final analysis.



Model Verification



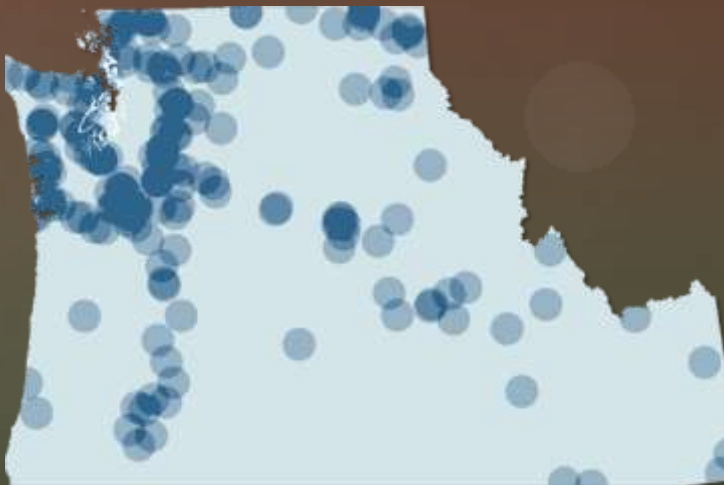
Table

sightings_point

	Shape	lat	long
1 Point	42.117781	-122.282587	
2 Point	42.068189	-122.364547	
3 Point	42.098019	-122.398899	
4 Point	42.104008	-122.354241	
5 Point	42.121339	-111.487039	
6 Point	42.161789	-122.688187	
7 Point	42.165319	-122.582998	
8 Point	42.17208	-111.398333	
9 Point	42.212304	-122.842794	
10 Point	42.244989	-112.249982	
11 Point	42.309519	-122.247738	
12 Point	42.307562	-122.415883	
13 Point	42.381736	-111.208548	
14 Point	42.388334	-121.388188	
15 Point	42.383519	-122.473083	
16 Point	42.392218	-122.447532	
17 Point	42.435889	-122.288177	
18 Point	42.505034	-122.589916	
19 Point	42.578207	-122.433487	
20 Point	42.599543	-122.486404	
21 Point	42.601547	-122.213788	
22 Point	42.618162	-122.648488	
23 Point	42.618989	-122.142974	
24 Point	42.867523	-110.083731	
25 Point	42.998481	-122.213082	

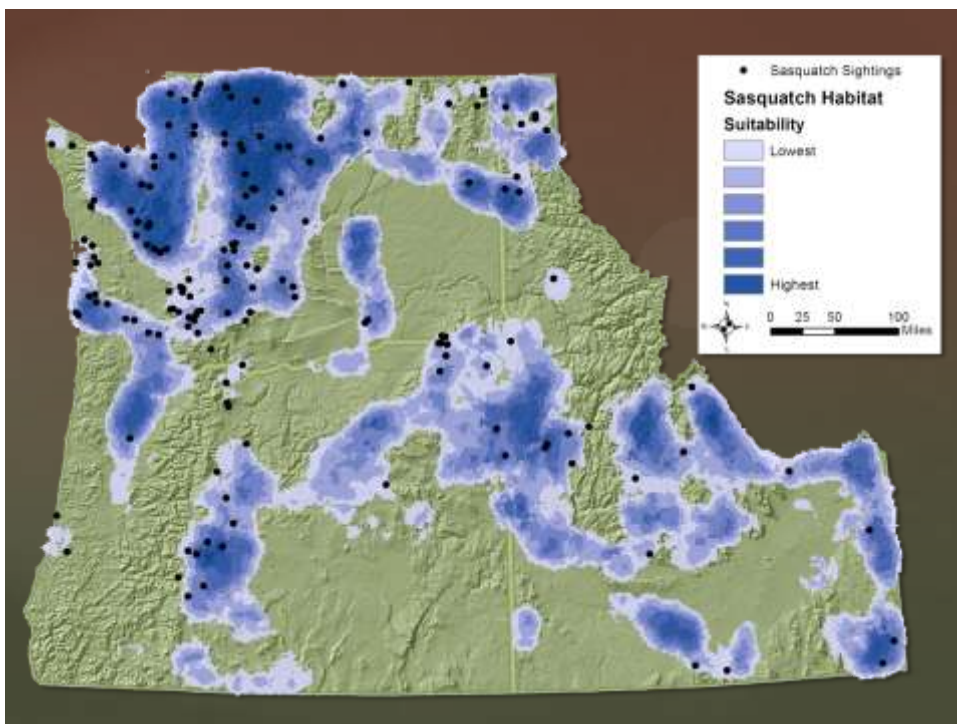
sightings_point

Sasquatch Sighting Density



176 sightings outside of densely populated areas.

How accurate was the model?



Conclusions

- Ecological niche modeling can “prove” anything
- Sasquatch sightings tend to be located around heavily populated areas
- According to our model Sasquatch appears to prefer the habitat of NW Washington state
- Multiple models may be required for large study areas
- This model helps explain Sasquatch sightings, but may not detail its entire range
- Further research is required for more accurate habitat suitability modeling

Questions?



References

Cole C. Belongie

Gray Wolf Habitat Suitability Model and to Assess Wolf Pack Ranges in the Western Upper Peninsula of Michigan

<http://www.gis.smu.edu/GradProjects/BelongieC.pdf>

esri Support

<http://support.esri.com>

Geocomm

<http://geocomm.com>

J. D. Lozier, P. Aniello, and M. J. Hickerson

Predicting the distribution of Sasquatch in western North America: anything goes with ecological niche modeling

Journal of Biogeography (J. Biogeogr.) (2009)

Mangani's Bigfoot Maps

<http://penn.freeservers.com/bigfootmaps>

PSU I Drive

Texas Bigfoot Research Conservancy

<http://www.texasbigfoot.org/index.php/about-bigfoot/articles/67-ecological-patterns>

USGS Seamless

<http://seamless.usgs.gov/>

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