

Predictive nest site mapping of the White Throated Sparrow.

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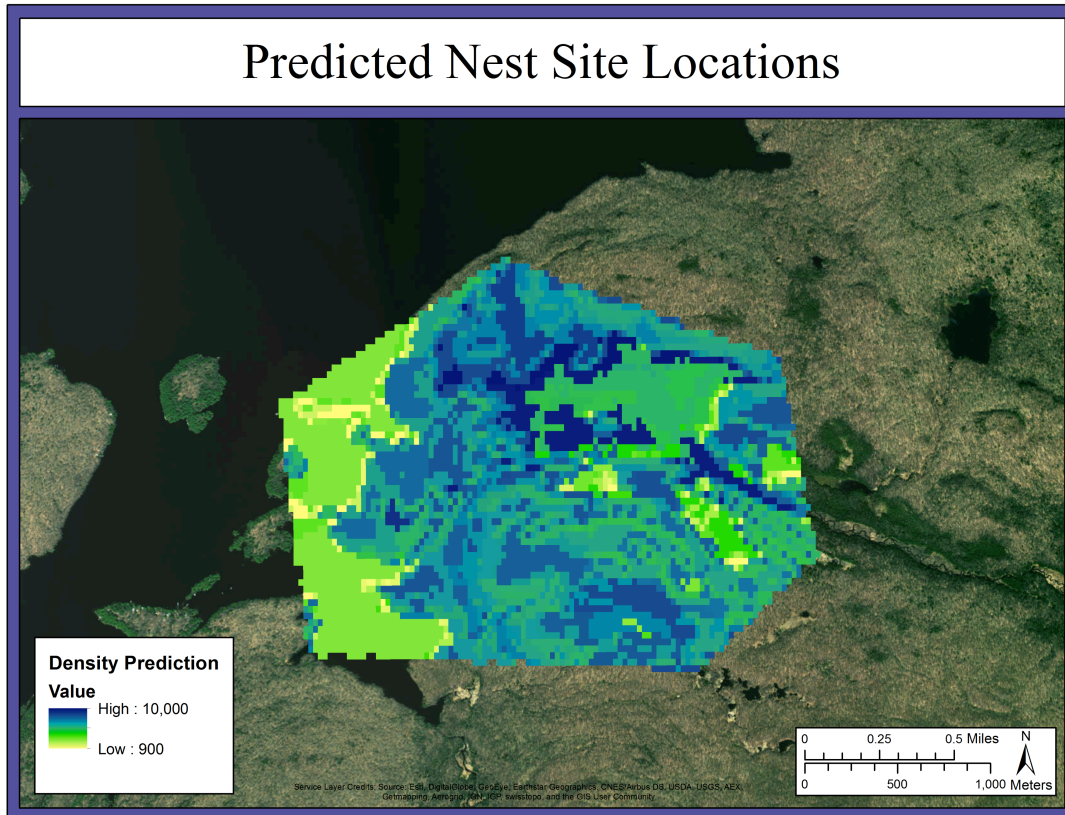


Figure 1: Predictive Map of possible nest sites. Stochastic model demonstrating high probability areas (dark blue) and low probability areas (light green).

Overview:

- Predictive mapping of nest sites can lead to significantly decreased time and money spent looking for nests.
- Fine scale models have the capability to look at microenvironments and which ones will most likely have nests in them.

Background: Nest sites of white-throated sparrows are measured and recorded each breeding season from May to August at Cranberry Lake Biological Station in New York. The bird population here is measured by sightings of individuals and from these sightings and behaviors nests are found. Nest finding is not 100% reliable and many field hours to accomplish. To reduce the time spent finding them, a model is being developed to isolate nest sites quickly and easily with a probability map which would limit the area that needs to be searched.

Methodology: ArcMap is being used to isolate important physical characteristics that are used in nest site selection of

white-throated sparrows. Physical characteristic layers were obtained from USGS and USDA which include elevation, soil, and land cover. Nest site data was then used to isolate the physical characteristics that were most common in the area. Statistics will be run to measure the accuracy of the map (currently underway).

Results/Discussion: Statistics are being run on the model to validate or invalidate its accuracy. Currently, it appears to demonstrate an ability to rule out areas they cannot inhabit i.e. water. The model exceeds at showing the variation and the microhabitats that exist on this 5km area.

Future Directions: Additional variables will be added in as well as the refinement of the statistics that create the model. The goal is to get a highly sensitive, accurate model that depicts locations most suitable to white-throated sparrows. Application of this model will be used in a different location using the isolated physical characteristics obtained at this site to test its accuracy.

Funds: Funds were used to support my summer field season (\$440) and purchase a GPS receiver battery (\$310).