

TNGIC Webinar - February 25, 2021: Utilizing Species Distribution Modeling for Conservation Management in the Tennessee Landscape

Helpful Data Sources and Links

Occurrence Data:

- iNaturalist: <https://www.inaturalist.org/>
 - Includes data on all types of organisms.
 - Citizen science platform used to map global biodiversity.
- Global Biodiversity Information Facility (GBIF): <https://www.gbif.org/>
 - Includes data on all types of organisms.
 - Derives occurrence data from many sources, including everything from museum specimens collected in the 18th and 19th century to geotagged smartphone photos shared by amateur naturalists in recent days and weeks.
- Early Detection and Distribution Mapping System: <https://www.eddmaps.org/about/>
 - Includes data on only species that are invasive to the United States.
 - Combines data from other databases and organizations as well as volunteer observations.
- VertNet: <http://www.vertnet.org/index.html>
 - Includes data on only vertebrates from natural history collections around the world.
 - Global data on vertebrate specimens.
- SouthEast Regional Network of Expertise and Collection (SERNEC): <http://sernecportal.org/portal/>
 - Includes data on only plants from herbariums.
 - Herbarium specimen data from 233 herbaria in 14 states in the southeastern USA.

Georeferencing Software and Service:

- GEOLocate: <https://www.geo-locate.org/>
 - Many specimens only contain locality descriptions, this website translates textual locality descriptions associated with biodiversity collections data into geographic coordinates.

Environmental Variables:

- USDA Geospatial Data Gateway: <https://datagateway.nrcs.usda.gov/GDGOrder.aspx>
 - provides access to a map library of over 100 high resolution vector and raster layers
- Global Climate Data: <https://www.worldclim.org/bioclim>
 - 19 variables based on monthly rainfall and temperature values
- Land Cover Data:
 - National Land Cover Database (NLCD) (from 2001, 2006, 2011, and 2016): https://www.usgs.gov/centers/eros/science/national-land-cover-database?qt-science_center_objects=0#qt-science_center_objects
 - GAP Land Cover Data (from 2011) is derived from NLCD, but with finer categories: https://www.usgs.gov/core-science-systems/science-analytics-and-synthesis/gap/science/land-cover-data-download?qt-science_center_objects=0#qt-science_center_objects
- Solar Radiation: <https://worldclim.org/version2>

- Gridded Soil Survey Geographic (gSSURGO-10) Database for the Conterminous United States: <https://nrcs.app.box.com/v/soils>
- Elevation Data:
 - USGS “The National Map” DEM download portal: <https://viewer.nationalmap.gov/basic/?category=ned>
 - Tennessee DEM Directory and other data: <https://www.tn.gov/finance/sts-gis/gis/data.html>
 - Once you download data for your study area, you will have to mosaic all of the tiles together in ArcGIS using the “Mosaic to New Raster” tool.
 - Slope, aspect, and curvature can be derived from the elevation data in ArcGIS.
 - *This data will likely require the most hard drive space out of all the parameters!
- Wetland Data (National Wetland Inventory): <https://www.fws.gov/wetlands/Data/Data-Download.html>

Modeling Software

- MaxEnt: https://biodiversityinformatics.amnh.org/open_source/maxent/
- openModeller: <http://openmodeller.sourceforge.net/>

Helpful Tutorials and Videos:

- A MaxEnt Model v3.3.3e Tutorial (ArcGIS v10): http://ibis.colostate.edu/webcontent/ws/coloradoview/tutorialsdownloads/a_maxent_model_v7.pdf
- A Brief Tutorial on Maxent: https://biodiversityinformatics.amnh.org/open_source/maxent/Maxent_tutorial2017.pdf
- Applications of Spatial Data and Ecological Niche Modeling, MaxEnt Introduction: https://www.youtube.com/watch?v=qUlqYdSSyik&t=0s&list=PLRyq_4VPZ9g-iDZNdJ1d4WgnR662kZG1C&index=8

Contact Us:

Nyssa Hunt:

nyssa-hunt@utc.edu

Courtney Alley:

alleycourtney8@gmail.com

