

KARA CASSANO – NASA DEVELOP/TEXAS A&M UNIVERSITY

STATEMENT OF PURPOSE:

The methods to create our datasets can be replicated to assess site suitability of wind farms in other areas worldwide. This work can assist in the sustainable development of the growing renewable energy sector, while simultaneously mitigate conflict by providing scientific support for decision making. Parameters and datasets can be changed to include as many datasets as necessary. These data can potentially be improved to include more datasets and produce a more accurate assessment of site suitability depending on geographic location and scale of the study area. Our data can help scientists understand the complexity of site suitability by visualizing many datasets simultaneously in our map layers. These data can help scientists understand how many considerations need to be considered in renewable energy development, and can be done through site suitability using GIS.

DESCRIPTION OF DATA SETS:

NASA Shuttle Radar Topography Mission (SRTM) v4 for elevation data to determine site suitability of wind farms considering wind power potential. NASA Suomi National Polar-orbiting Partnership (NPP) to estimate population to determine site suitability of wind farms considering social factors. Natural Heritage New Mexico's Golden Eagle and Lesser-Prairie Chicken distribution data to determine site suitability considering ecological factors. Data was requested and permission was granted by Natural Heritage New Mexico to use in analysis, but raw data was not authorized to be show. 2011 National Land Cover Dataset (NLCD) to determine site suitability considering wind power potential. Data was downloaded from their website, which provides data to the public. NASA Surface Meteorology & Solar Energy (SSE) to calculate wind power potential. NASA Socioeconomic Data and Application Center (SEDAC) to supplement Suomi-NPP data and assess site suitability of wind farms considering social factors. Department of Defense Flight Information Publication (FLIP) Planning Books to identify locations of Air Force Bases and Special Use Airspaces for site suitability considering social factors.