

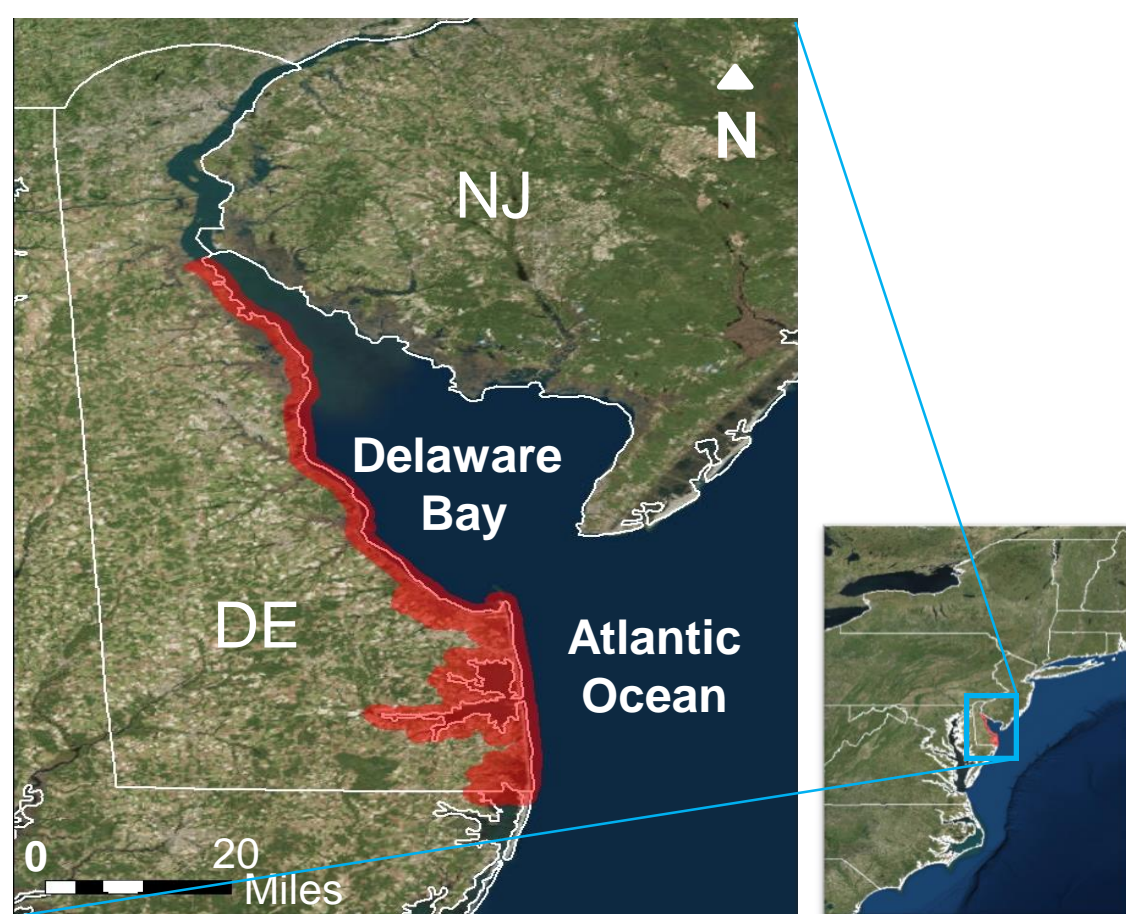
Utilizing NASA Earth Observations to Assess Coastline Replenishment Initiatives and Shoreline Risk Along Delaware's Coasts

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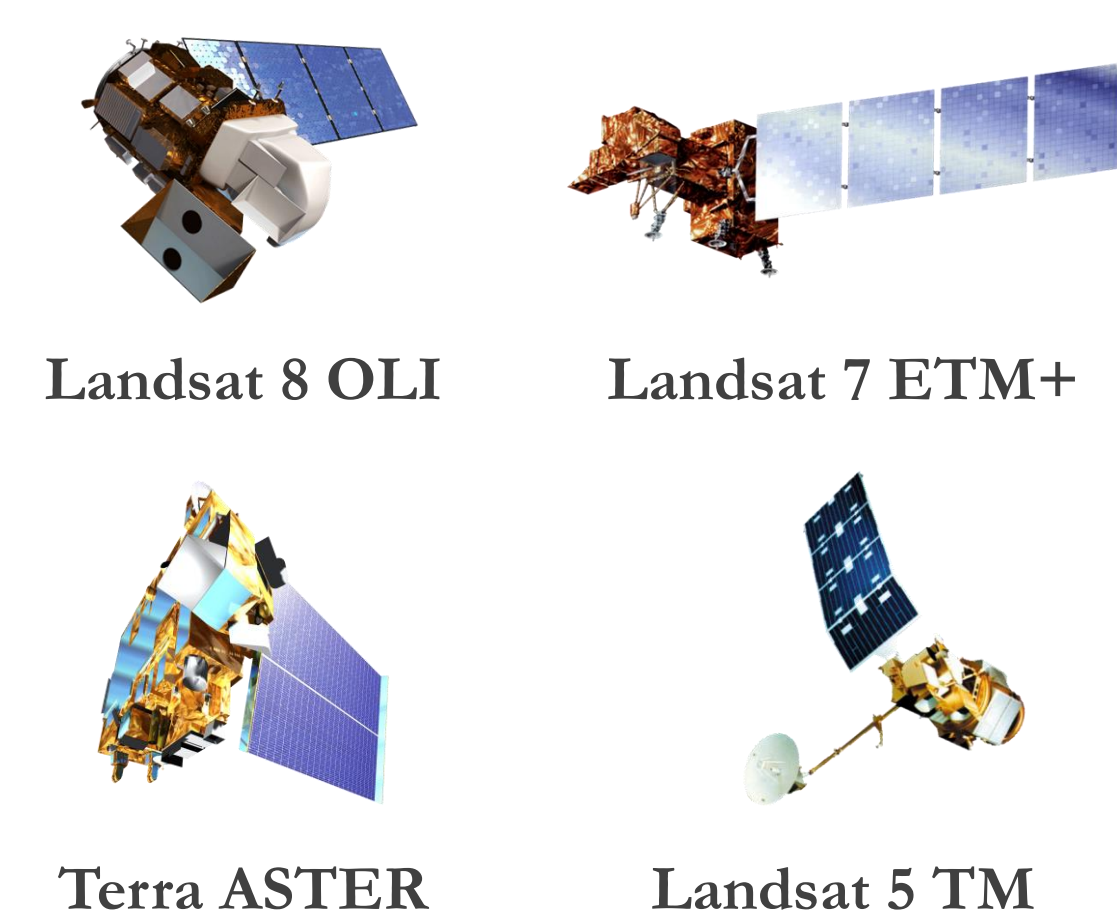
Overview

Delaware's coastline is a vibrant tourist destination and unique habitat for many vulnerable species. Yet, with the **lowest mean elevation of any state**, this stretch of land is threatened by geological and climatic forces, including **coastal erosion, sea level rise, storm surge, and subsidence**. The state's Department of Natural Resources and Environmental Control (DNREC) has served as a diligent combatant of coastal land loss since the 1950s. In partnership with the DNREC, this team utilized several NASA Earth Observations in combination with ancillary datasets to create a suite of **time-series maps** that identified shoreline extent changes in response to management projects and to generate a **coastal land loss susceptibility map**. Analyses of coastline change across time were performed using quantifiable measures derived from the time-series maps.

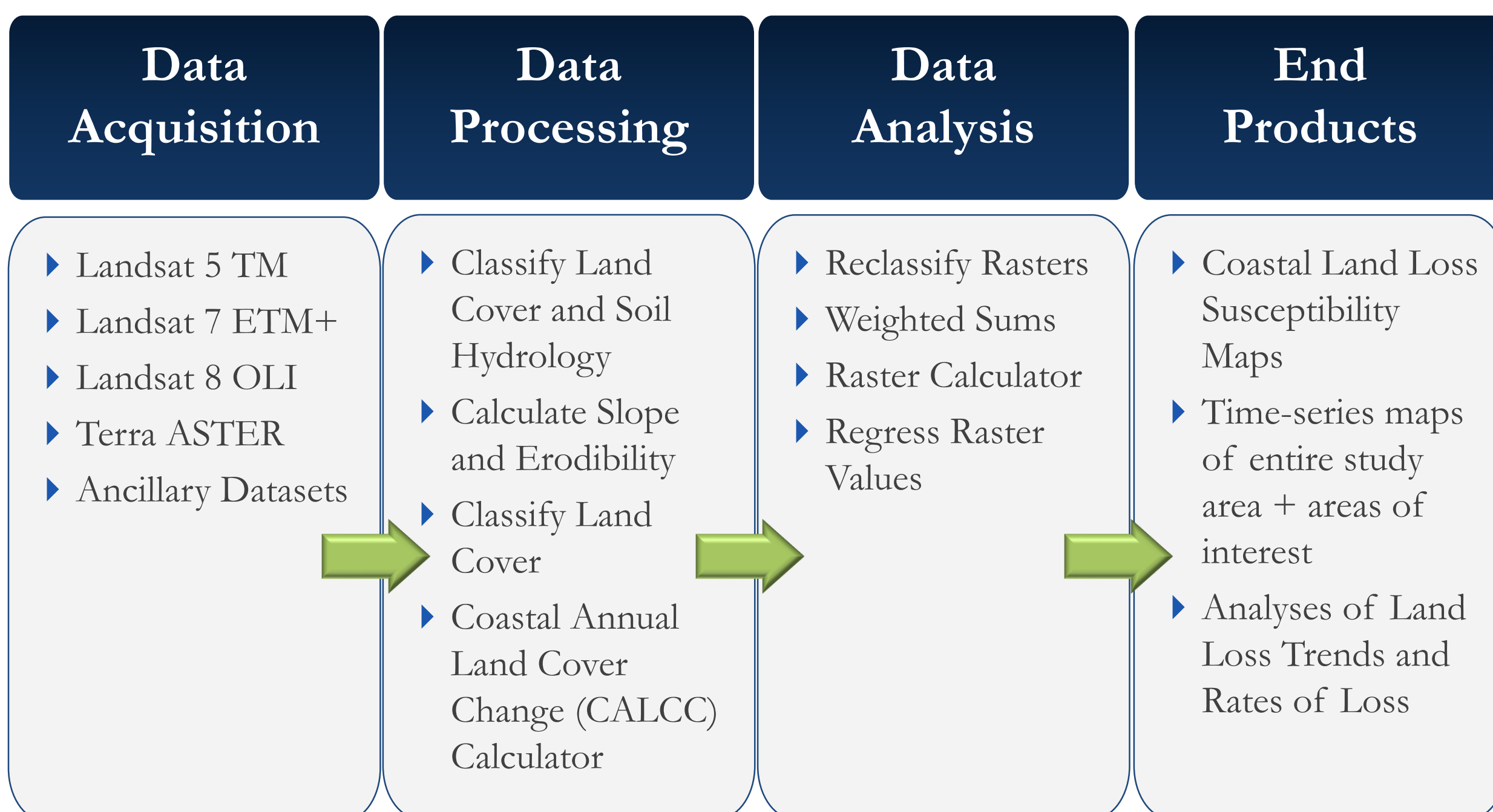
Study Area



Earth Observations



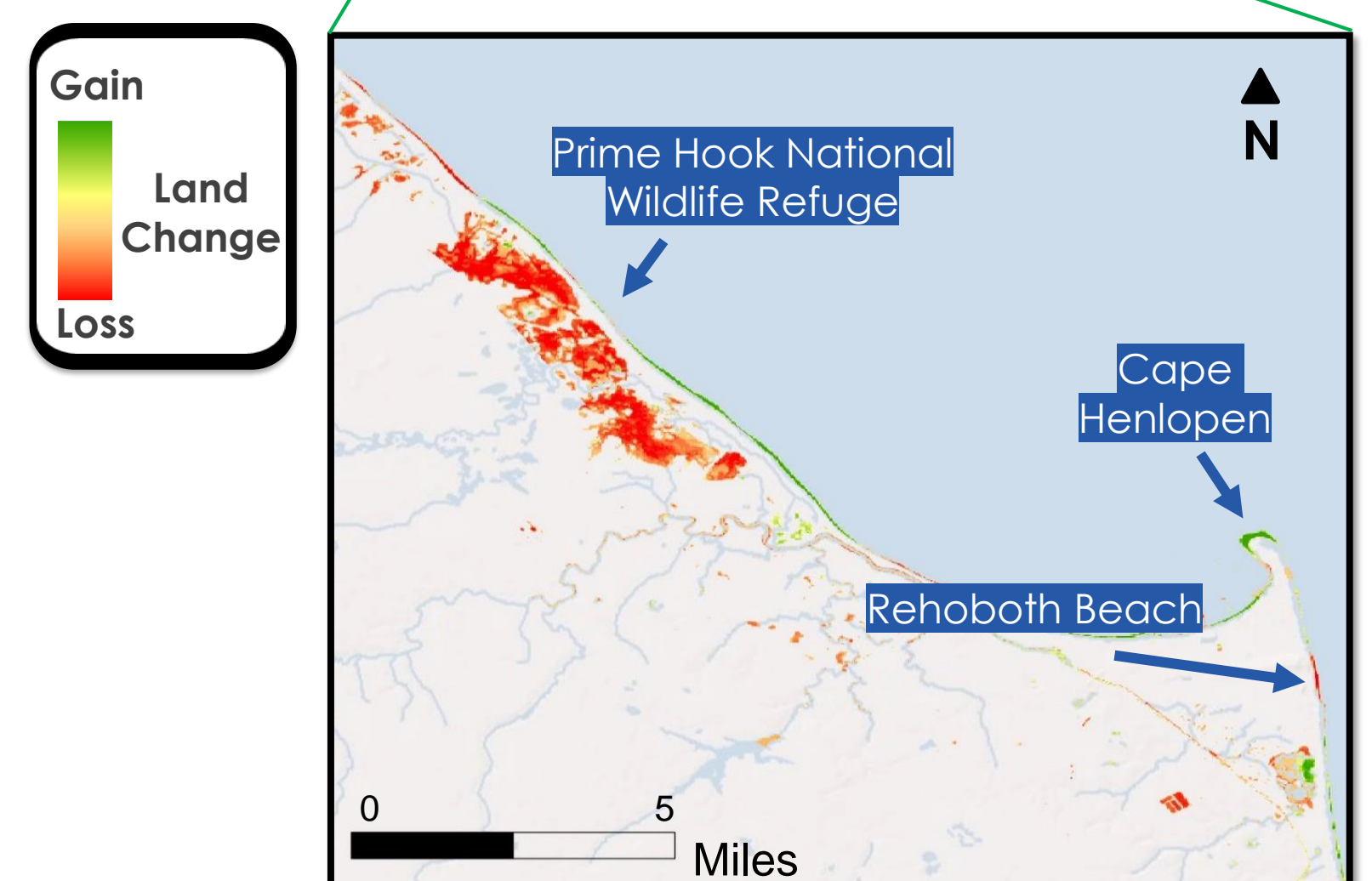
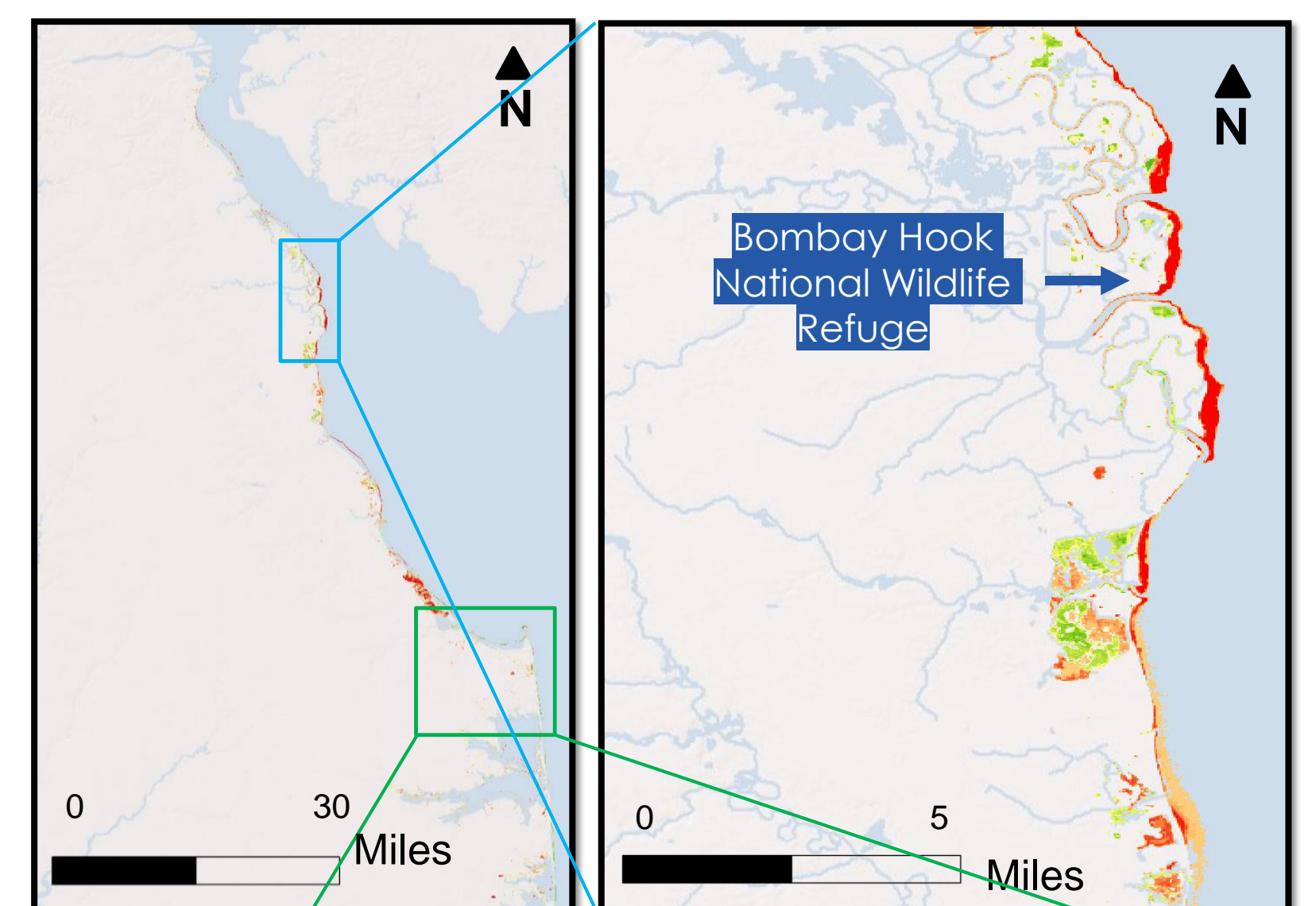
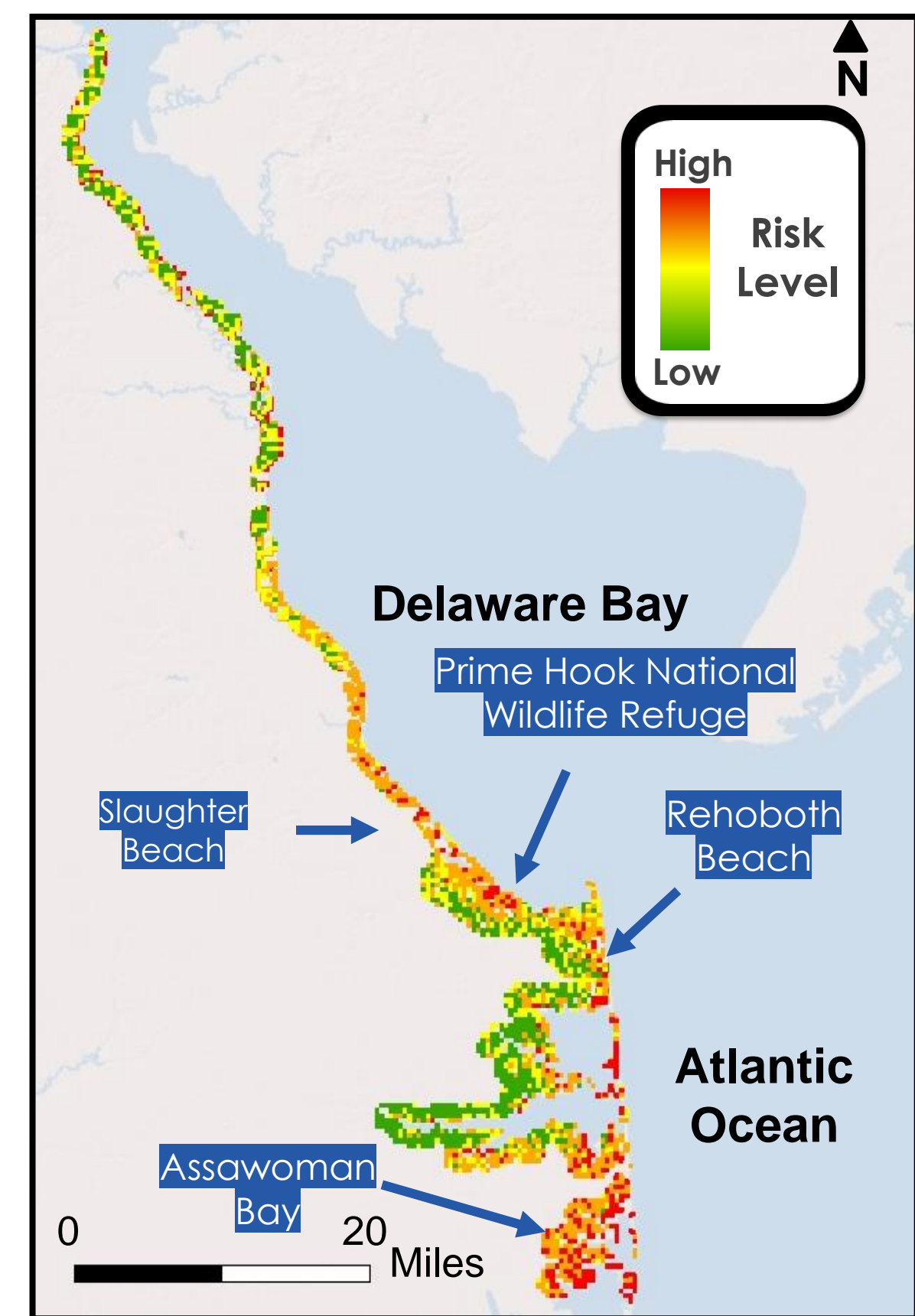
Methodology



Conclusions

- ▶ According to NASA Earth observations, Delaware's coast has experienced land loss since 1988; however, there was no detected trend in the rate of land change.
- ▶ Prime Hook National Wildlife Refuge, Slaughter Beach, Rehoboth Beach, and Assawoman Bay are the most susceptible areas to land loss.
- ▶ Prime Hook and Bombay Hook National Wildlife Refuges experienced the greatest amount of land loss from 1988 – 2018.

Key Findings



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