Third Place Winner

Team: Old Dominion University Wetlands

Project title: Wetlands and Protected Areas in Hampton Roads

Summary: Wetlands are known as the "world's kidneys" as they purify and reduce water flow into the sea. They also help in controlling floods and reducing water pollution. They are among the most productive ecosystems on the Earth, and even so, they are among our most endangered ecosystems. This project is established to determine the coverage of wetlands in the surrounding area of Hampton Roads, Virginia. We have used ArcGIS pro to study conservation areas and wetlands to target potential wetlands' seriousness or severity, then we use PowerBI for the visualization of the data analysis (Fig 1-5). The primary protocols to develop this project are designed around available GIS data. The principal data layers used in the targeting models are – Wetlands, Conservation Lands, Priority Conservation Areas, and Boundaries of Hampton Roads (Table 1). The project here analyzes the current protection of wetlands in Hampton Roads and is a pilot to develop and analyze the seriousness of the depletion of wetlands. This study will help to understand the dynamics in the wetlands ecosystems and may help establish key steps to achieve innovative management and conservation techniques for coastal ecosystems that are being impacted by climate change. The story map with the project can be found here: https://arcg.is/0fLmyy

Highlights and Recommendations:

1. Less than 35% of the total area of wetlands in Hampton Roads are part of protected land.
2. Only 6% of the total protected/managed area contains wetlands.
3. Virginia Beach has the highest number of Protected Areas with Wetlands.
4. Norfolk, Portsmouth, Williamsburg, and New Kent have the smaller number of Protected Areas with Wetlands.
5. Areas in the counties which are priority conservation and threatened areas need more focus on increased protected areas and restoration efforts. Special focus on low-income areas.
6. Interdisciplinary teams and efforts need to be done for effective management and restoration of these vital ecosystems. Policymakers, scientists, non-profits, and community members, each section needs to be involved to achieve the greatest conservation returns.
7. Continuous monitoring of each area is needed. A possible interesting future item is a time series analysis of the wetland change over a long period of time