

GIS Vegetation Mapping



Location:
Barbuda, Antigua & Barbuda

Contracting Party:
Private Sector Partnership:
Investors & Real Estate
Developers

Project Dates:
October 2017-November 2018

Services Provided:

- Ecological Surveys
- Geographic Information Systems (GIS) Mapping
- Underserved Community
- Environmental Planning
- EIA Compliance

Key Outcome:

A detailed GIS vegetation map based on field surveys, mapping software and custom-flown drone imagery for a planned development and restoration area covering c 2,000 acres. Results were used to design a land use and conservation strategy. Project engaged local community members and captured traditional knowledge.

Project Summary:

To support the ecological-based planning effort for a proposed development and restoration we conducted a comprehensive vegetation survey, produced a detailed report, and, using mapping software and custom-flown drone imagery, developed a GIS vegetation map for almost 2,000 acres of the Palmetto Peninsula. Our team identified over 120 plants, including endemic species, and evaluated ecosystem health based on species composition, abundance, spatial distribution, and land use. Using this information, we characterized 16 baseline habitat types and associated plant assemblage, and were able to assess changes over time due to land use, and identify areas with high invasive species density and place of increased vulnerability to climate changes. The GIS mapping allowed our team to develop a strategy for the conservation of native vegetation and development zones. We added local community members with traditional knowledge to our team and were able to provide scientific, common, and local culture names for the plants. Following the surveys were facilitated the hiring of 52 local individuals to clear invasive plants that were covering large areas and spreading rapidly, especially in the aftermath of Hurricane Irma (September 2017). The effort provided employment opportunities and training for members of the local community, most of whom were still recovering from the impacts of the hurricane. With the agreement of our client we made our GIS data available to the local community and government to build knowledge and capacity. Overall, in addition to effectively meeting the needs of clients and their compliance with permitting, our project and team contributed to the environmental data base, captured and recorded local knowledge, improved both environmental and development planning and supported the local community