

INTRODUCTION

NOAA CCMA's Biogeography Branch has developed analytical protocols to map benthic habitats throughout all U.S. jurisdictions, States, and Territories, including the U.S. Caribbean. NOAA, in partnership with the U.S. National Park Service, has generated both shallow-water and moderate-depth benthic habitat maps of the coral reef ecosystems surrounding St. John, U.S. Virgin Islands (Figure 0.1). The synthesis of existing geospatial data and collection of new data provides the most contemporary compilation of remotely-sensed and *in situ* data within the network of NPS-managed marine Ocean Parks. These products provide a fine-scale assessment of the status, abundance, and distribution of marine habitats in and around the VICRNM, giving the NPS an increased technical capacity for ocean exploration, management, and stewardship. Direct management implications specifically include: (1) evaluating the efficacy of management actions, (2) improving the spatial framework for monitoring activities, (3) enhancing the assessment of human-use impacts, and (4) enabling the use of marine spatial planning to support protected area boundary alternatives.

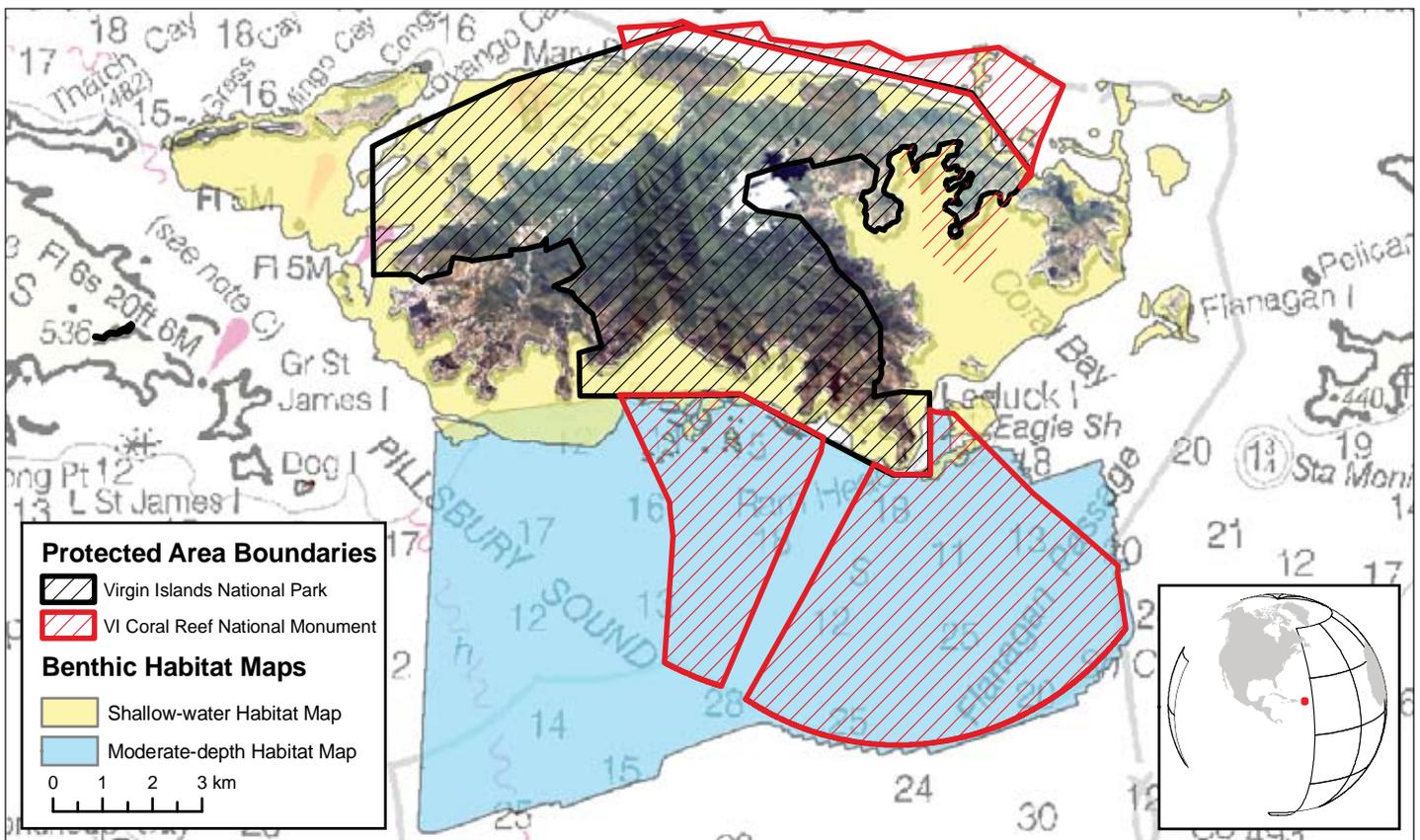


Figure 0.1. Overview of the benthic habitat maps produced in 2009 for St. John, U.S. Virgin Islands.

As a result of the U.S. Ocean Action Plan, the National Park Service developed an Ocean Park Stewardship Action Plan to focus organizational and scientific capacity on conserving marine, estuarine, and Great lakes resources. The Ocean Park Stewardship Action Plan aims to prevent the loss of productive fisheries, habitats, and wildlife, and continue to conserve ocean resources and recreational activities for park visitors. The National Park Service manages and protects more than 250,000 acres of coral reef in ten National Park units, two of which are located in St John. The Virgin Islands Coral Reef National Monument includes 12,722 acres (51.4 km²) of federal submerged lands off the coast of St. John. These waters contain some of the most biologically rich and economically important coral ecosystems in U.S. waters, supporting a diverse and complex system of coral reefs, shoreline mangrove forests, and seagrass beds. Additionally, the Virgin Islands National Park includes 5,637 acres (22.8 km²) of submerged federal lands to protect and conserve a rich but fragile coral reef seascape. As part of the ocean stewardship effort, the Ocean Park Stewardship Action Plan serves to improve scientific capacity in order to better understand ocean ecosystems and the impact of humans on ecosystems. This includes providing improved spatial products to better inform resource managers of the current distribution of benthic habitats.

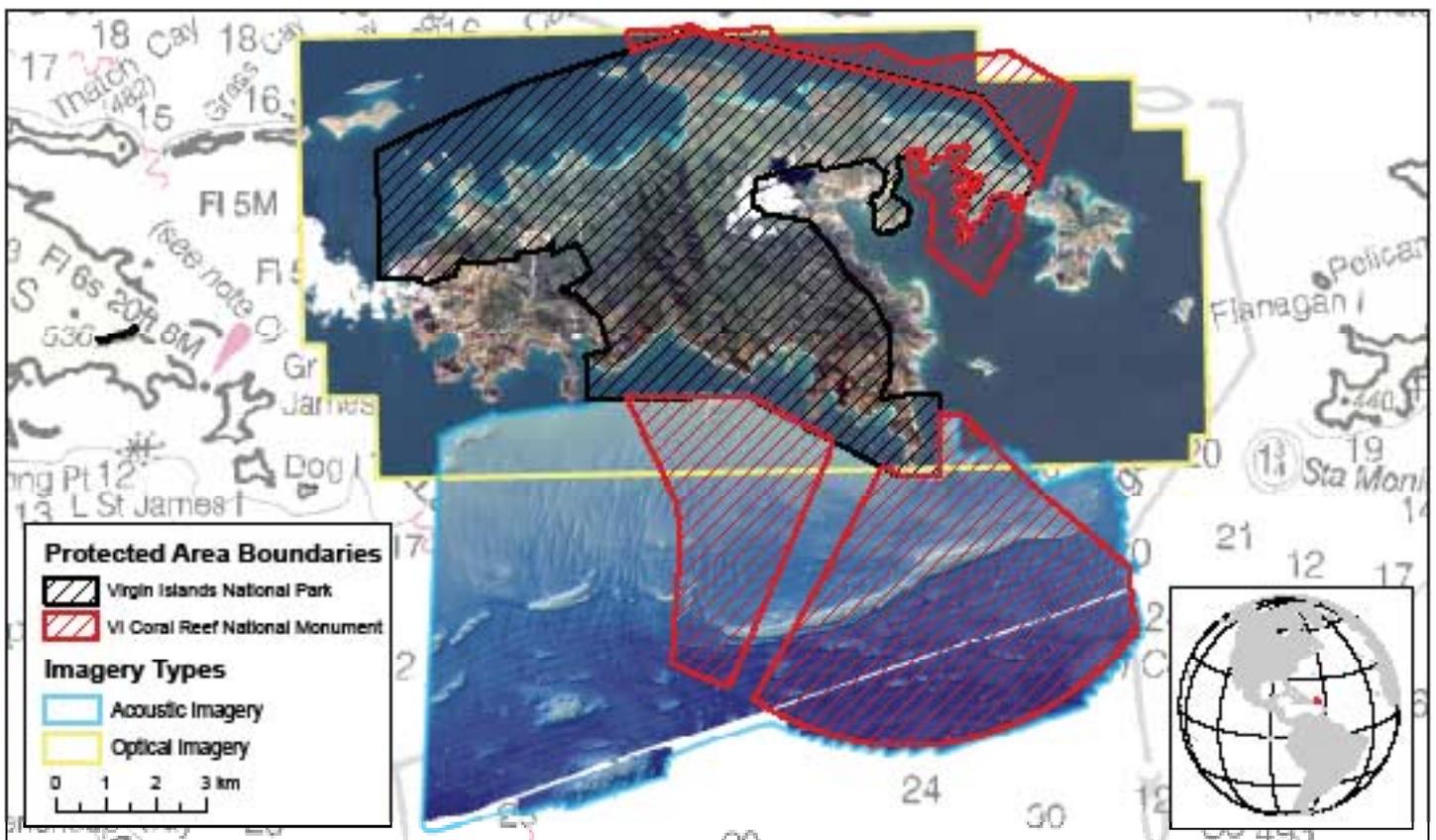


Figure 0.2. Optical and acoustic imagery sources that were used to produce the NOAA 2009 shallow-water and moderate-depth benthic habitat maps (respectively) for St. John, U.S. Virgin Islands.

NOAA's effort to map the moderate-depth benthic habitats of St. John has resulted in a suite of spatial products. The project deliverables specifically include:

- Primary data sources, including acoustic imagery, ground validation field data, and accuracy assessment field data
- Derived datasets, including GIS files of benthic habitats
- Classification manual
- Description of the methods used to create the habitat maps
- Assessment of the thematic accuracy of the maps

This moderate-depth mapping effort compliments a recently completed NOAA project, which mapped the shallow-water (< 30 m) benthic habitats of St. John. These two benthic habitat maps represent one of the first attempts to spatially integrate products developed from acoustic and optical imagery (Figure 0.2), as well as from using manual and semi-automated classification techniques.