

# Cumulative Shoreline Length and Marine Area in Ocean, Coastal and Great Lakes Parks



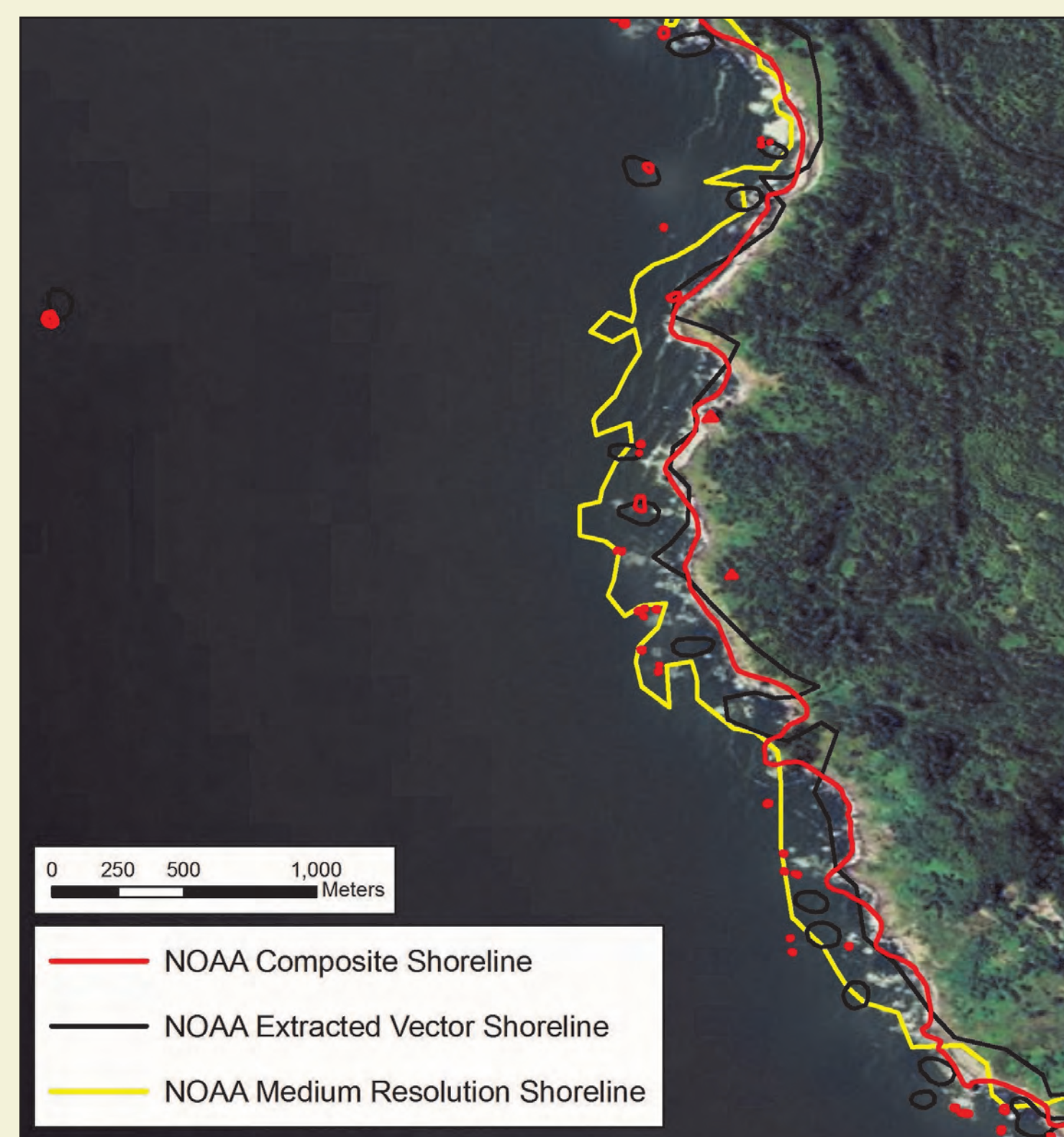
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## Summary

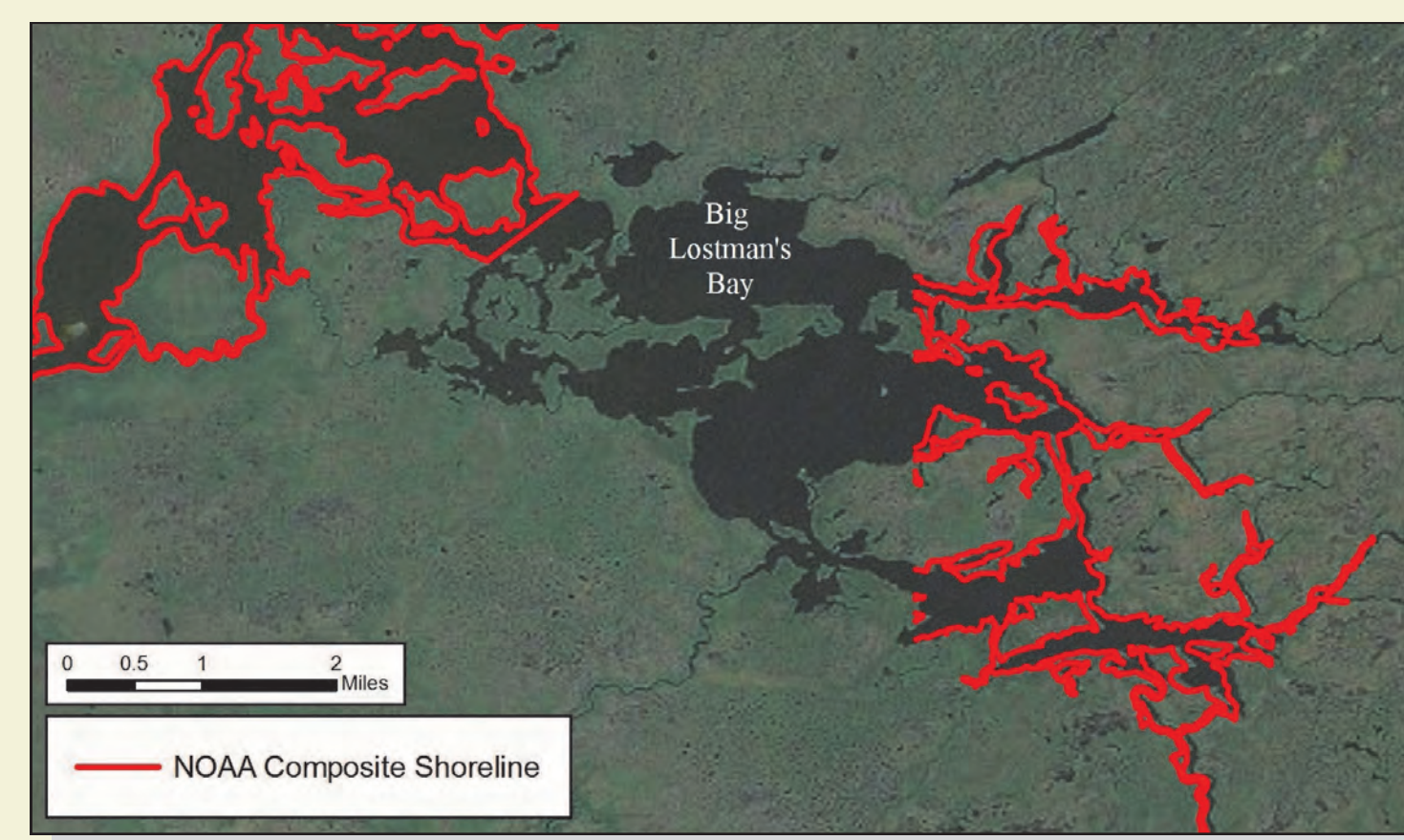
The National Park Service (NPS) has published widely varying statistics on shoreline miles and water acres in ocean, coastal and Great Lakes NPS units. This project was undertaken to address the inconsistency in the numbers reported and to more accurately report the cumulative shoreline miles and marine/estuarine acres managed by the NPS using a geographic information systems (GIS) framework.

## Initial Challenges - Shoreline Data

Shoreline data had significant quality or consistency issues.



A comparison of three NOAA shoreline datasets in Redwood National Park, California.



An example of missing shoreline data in the NOAA Composite Shoreline dataset (red lines), in Everglades National Park, Florida.



The NOAA Extracted Vector Shoreline dataset depicts shoreline (magenta lines) in interior mountainous terrain in Glacier Bay National Park & Preserve, Alaska.

## Initial Challenges - Boundary Data

Some legacy NPS boundaries were out of date or spatially inaccurate.



Example of an offset legacy NPS boundary at Rosie the Riveter WWII Home Front National Historical Park (RORI\*) in San Francisco Bay, California.

\*The Land Resources Division is currently involved in a multi-year effort to review and approve NPS boundaries. The RORI boundary has been updated since this figure was created.

## Methods

### ESTABLISH LIST OF "COASTAL PARKS"

- Must include Great Lakes shoreline; or
- Must include ocean shoreline; or
- Must include estuarine shoreline

### DETERMINE BEST AVAILABLE NPS BOUNDARY DATA

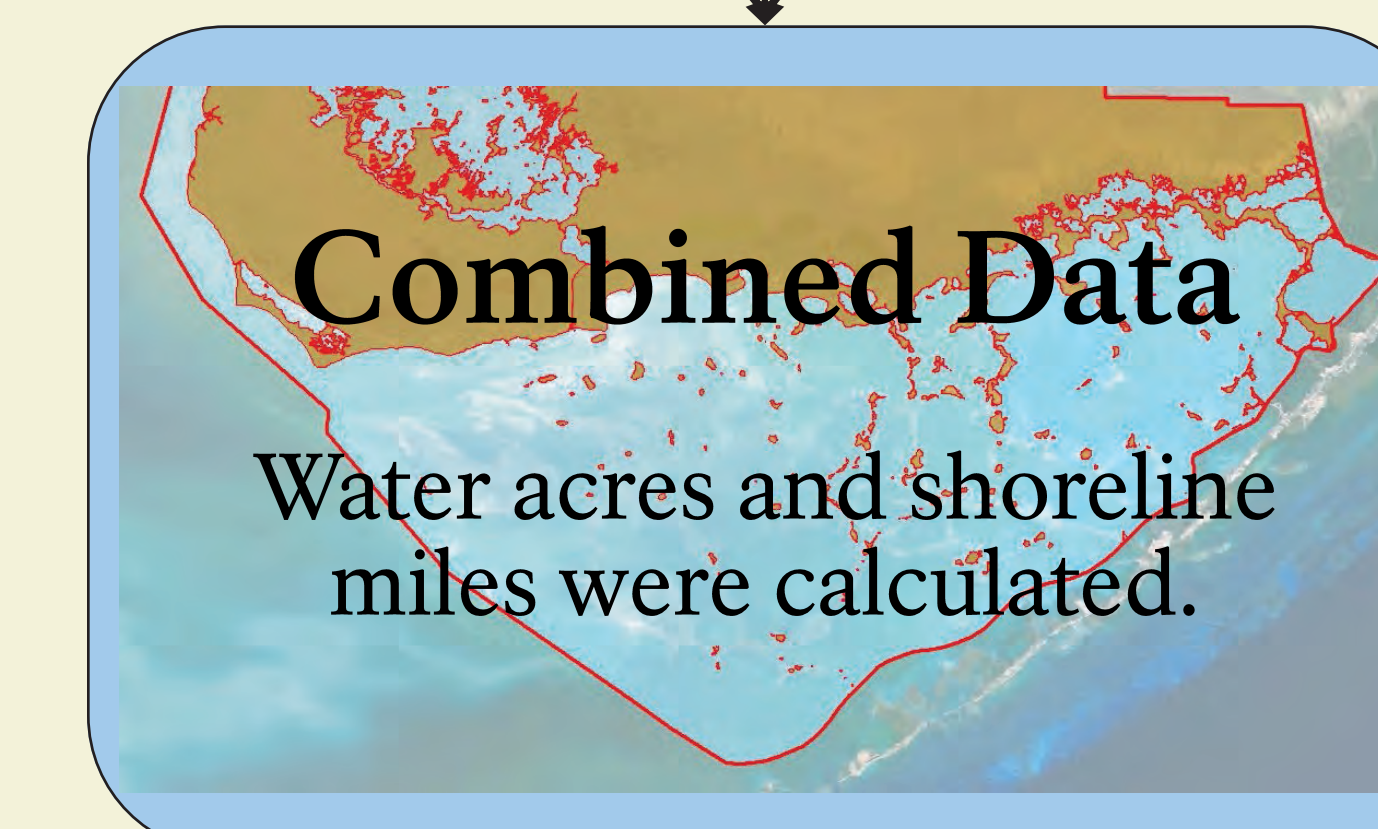
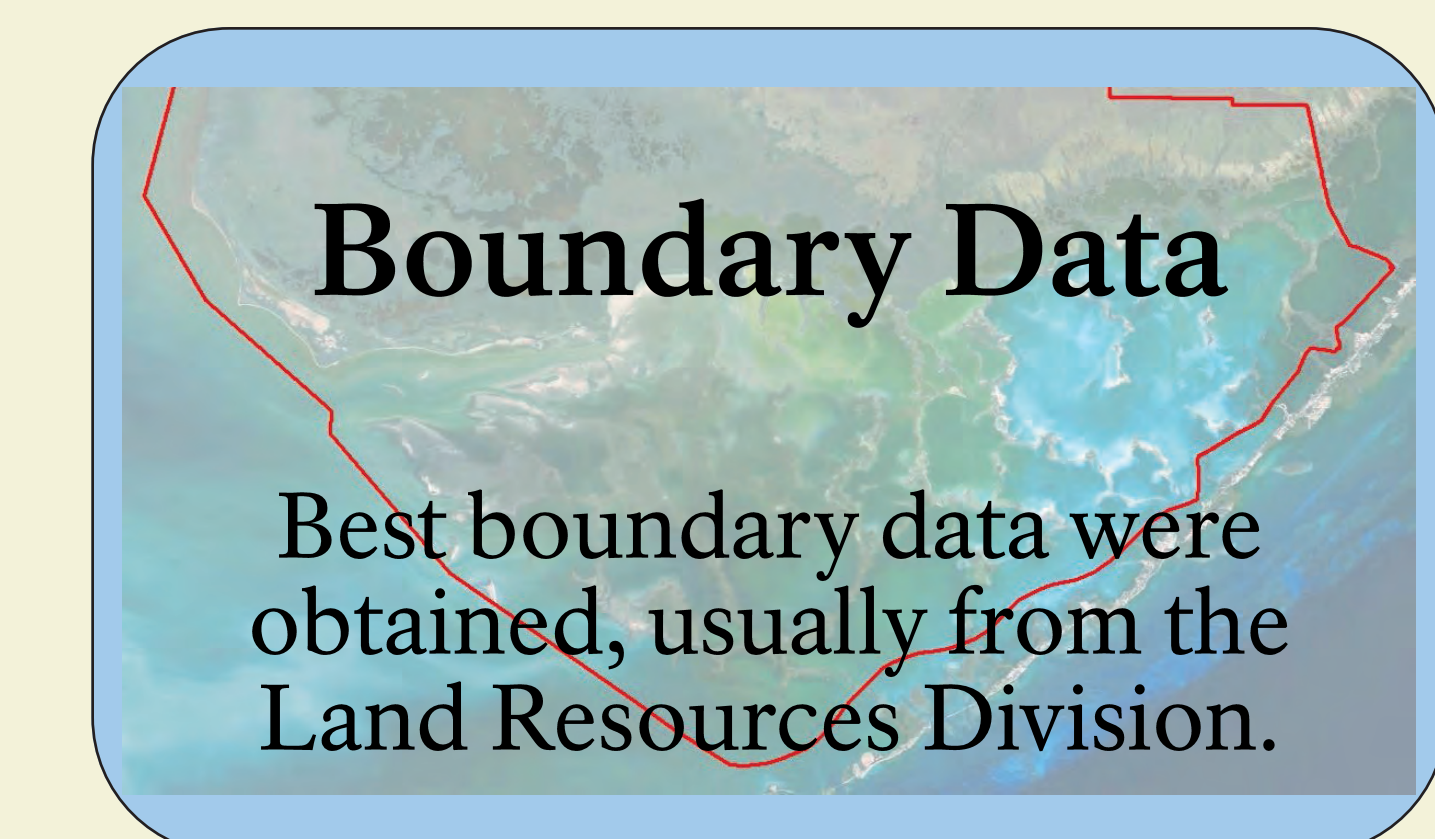
- From NPS Land Resources Division
- From Individual Parks
- Use Reference Imagery

### DETERMINE BEST AVAILABLE SHORELINE DATA

- Evaluate Multiple Sources
- Use Reference Imagery

### COMBINE NPS BOUNDARY AND SHORELINE DATA

### CALCULATE SHORELINE LENGTH AND WATER AREA



## Results / Discussion

- 84 ocean, coastal and Great Lakes parks
- Over 11,000 miles of shoreline
- ~ 2.5 million acres of marine area

Based on these analyses, there are 11,217 miles of shoreline and 2,490,839 marine acres in the 84 ocean, coastal and Great Lakes parks.

Data were lacking for several small parks. Some parks had jurisdictional uncertainty regarding intertidal areas. In addition, pending legal opinions and a shoreline data improvement project in Alaska are likely to

have significant impacts on the statistics reported. Shorelines and park boundaries also change due to a variety of factors including new land acquisitions, erosion, accretion, subsidence, uplift and changes in lake and sea levels. As NPS boundaries and shorelines change, and as the datasets that represent them improve, statistics for NPS shoreline length and marine area will be updated as resources permit.

## Additional Information

The complete report is published in the National Park Service Natural Resource Report Series: Natural Resource Report NPS/WASO/NRR—2011/282.

Natural Resource Information Portal URL: <https://nripinfo.gov/Reference.mvc/Holdings?code=2167293#>

### About the author

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