Virginia Coast Reserve
Seagrass Blue Carbon Project

VIMS | William & Mary
Virginia Institute of Marine Science

DEQ
Virginia Department of Environmental Quality

The Nature Conservancy
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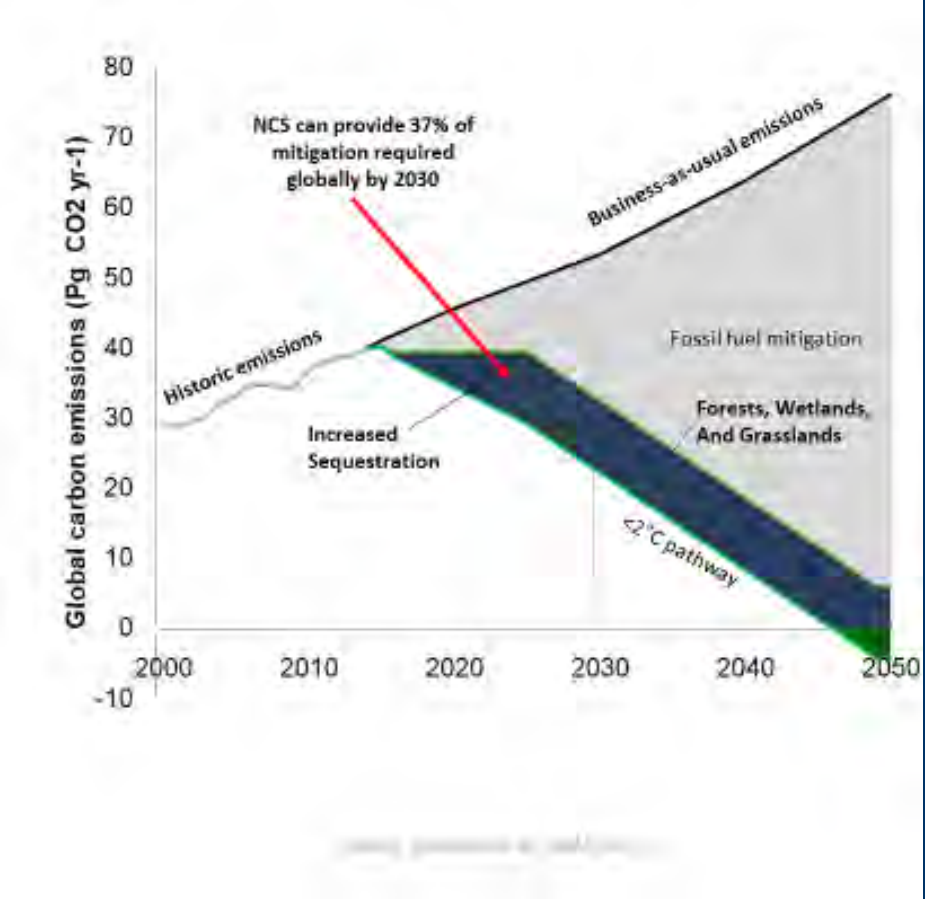
TerraCarbon®

University of Virginia 1819

Natural Climate Solutions



What are *Natural Climate Solutions*?

Conservation, restoration and improved land management that increases carbon storage and avoids greenhouse gas emissions.

What is *Blue Carbon*?

Carbon that is stored in coastal and marine ecosystems:

- ***Seagrass Meadows***
- ***Mangroves***
- ***Coastal Wetlands***

What is a Carbon Offset Project?

- *Land management that removes CO2 from the air*
- *Following a strict protocol to quantify the C02 removals*
- *Legal commitment with an approved registry*
- *Third party audits of the project*
- *Commitment to maintain the project over time (10 - 100 years)*

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Role of the Commonwealth

2020 legislation authorizing DEQ to participate in carbon markets for submerged aquatic vegetation *(§10.1-1186.6)*

- Revenue resulting from sales goes toward SAV monitoring/research and any administrative costs
- Allows DEQ to enter into agreements for implementation

Courtesy Sharon Baxter (DEQ)

21 Years of restoration

515 volunteers

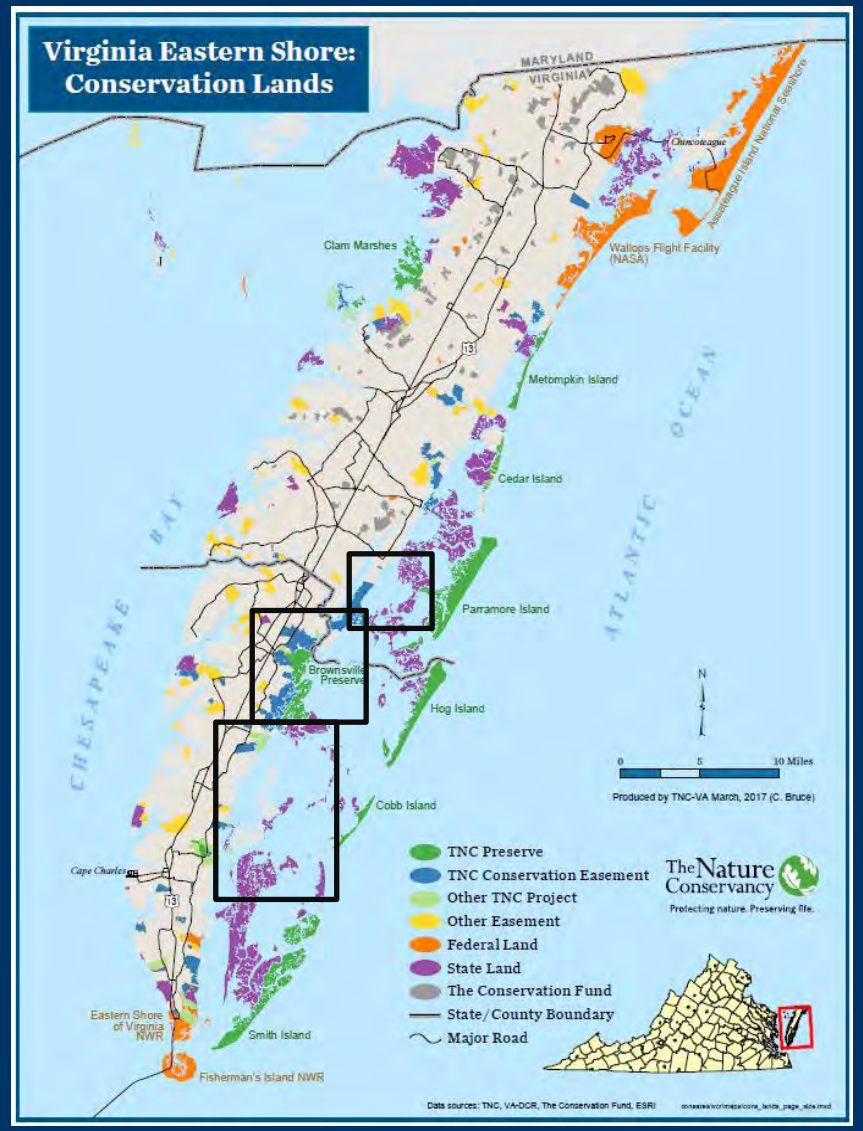
4000 hours collecting seeds

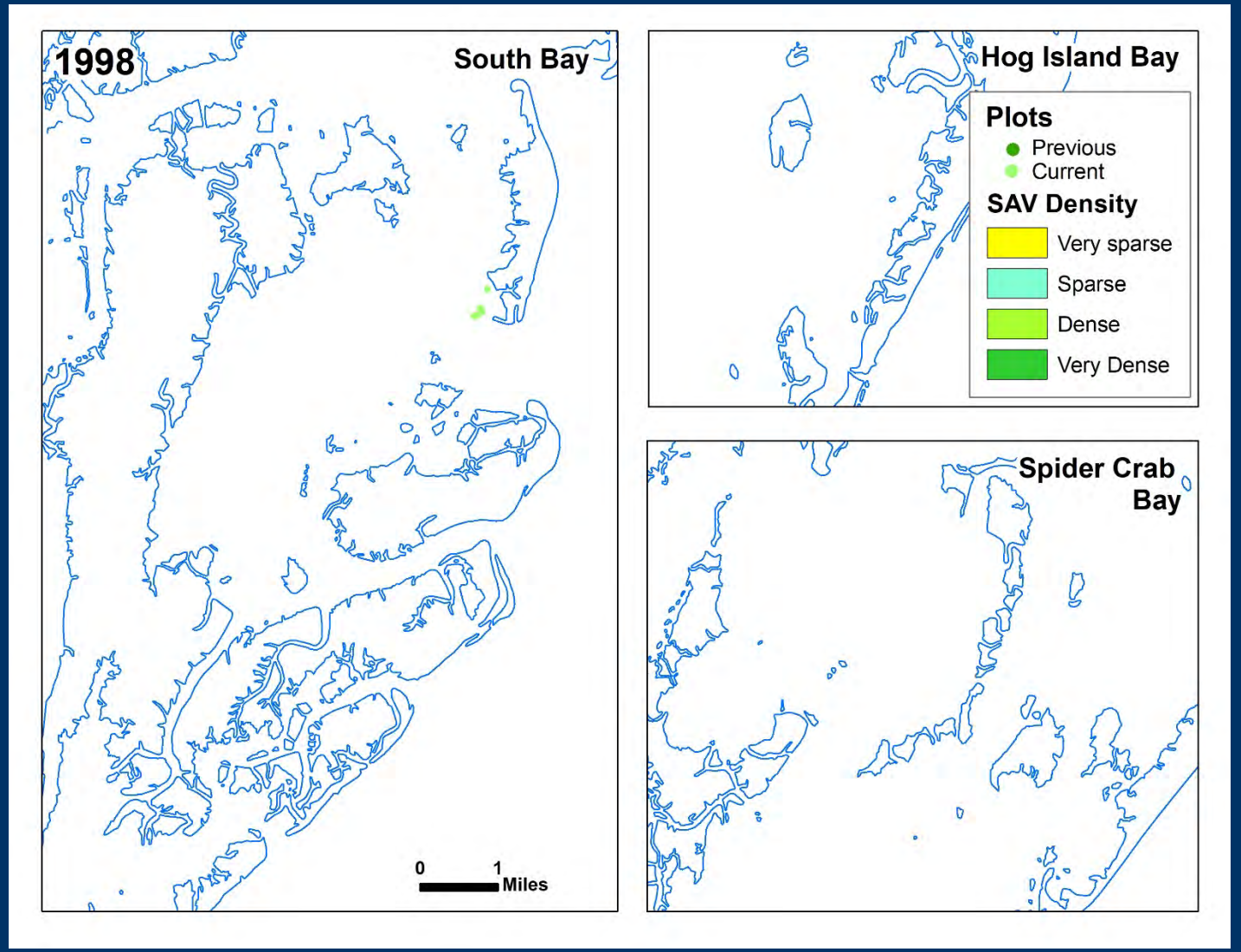
80 million seeds collected

~600 acres seeded

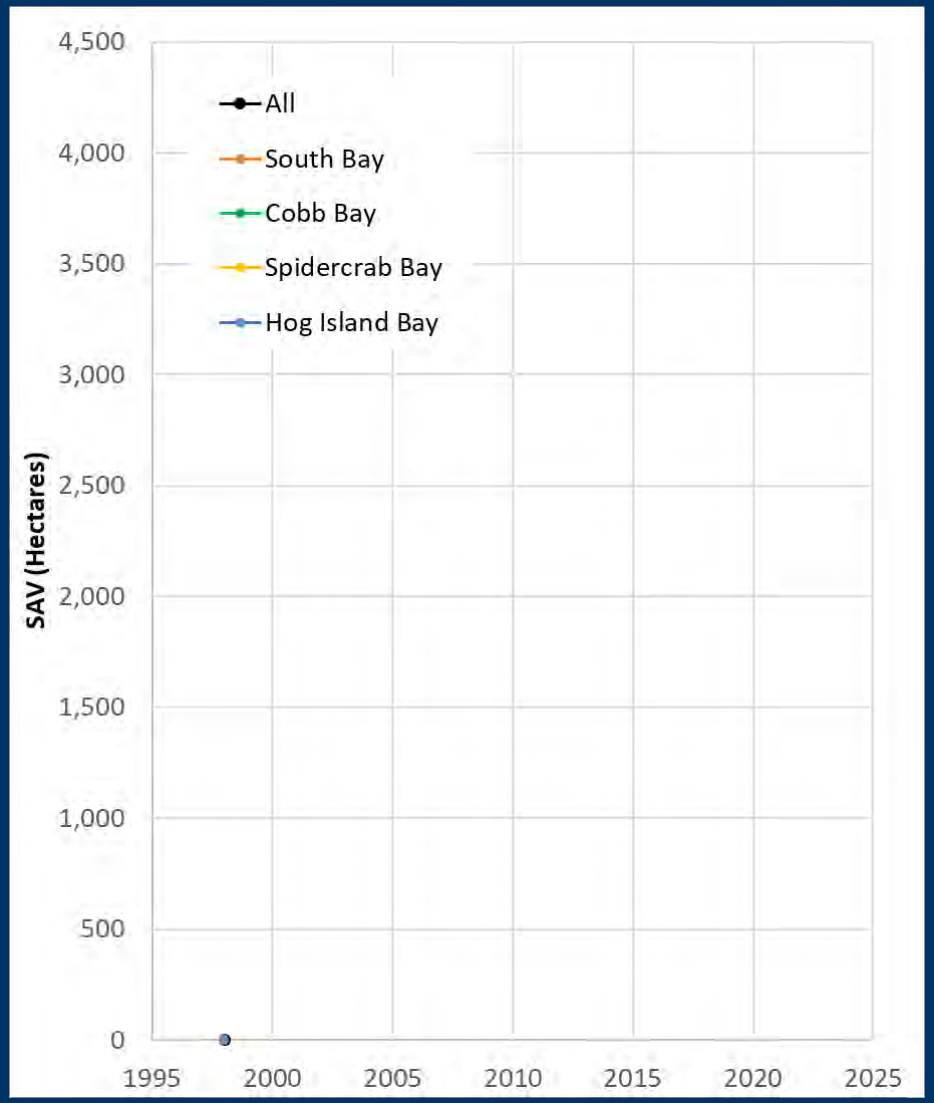
The largest successful seagrass restoration in the world:
9,600 acres and expanding!

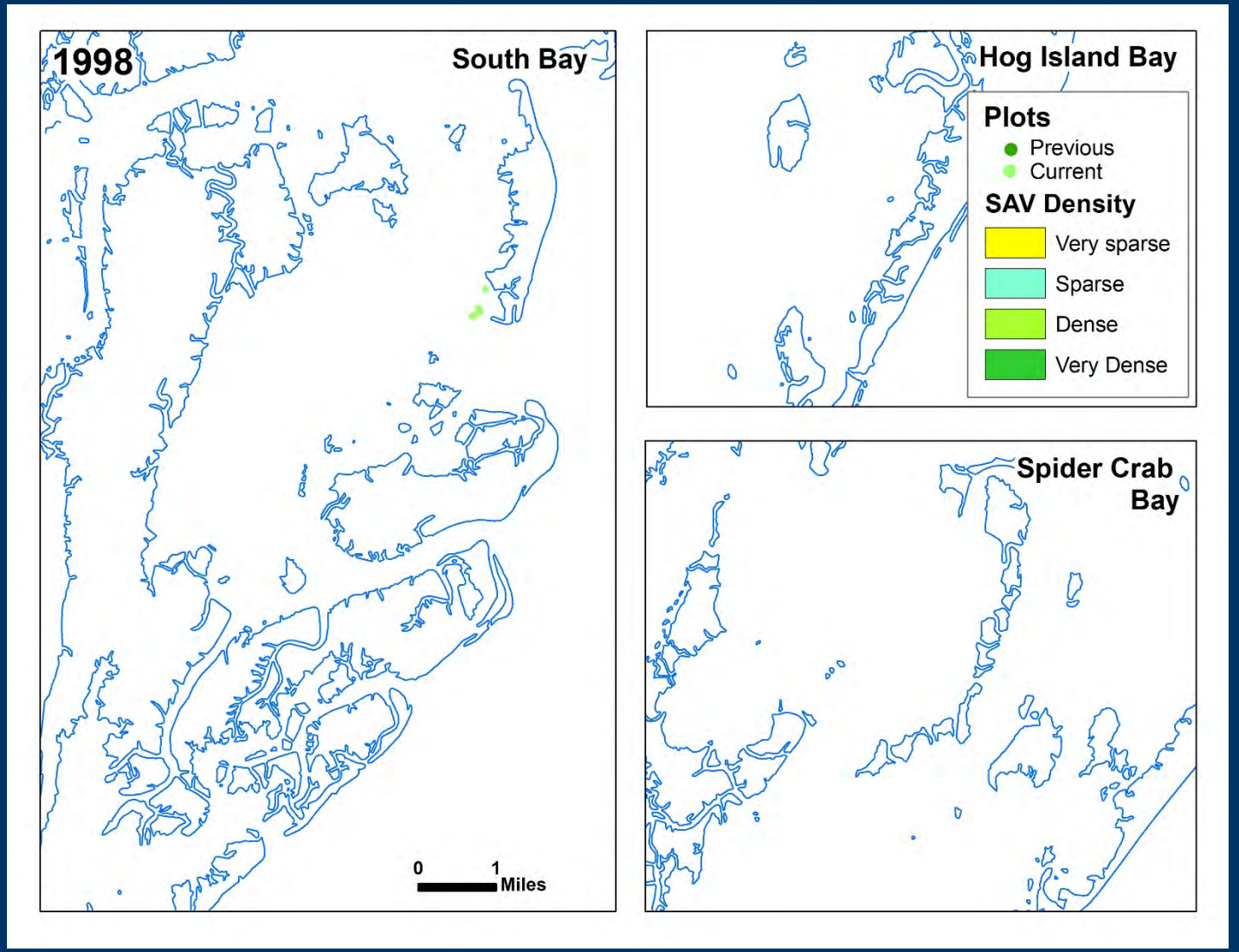
World's First SEAGRASS Blue Carbon Project





Courtesy of David Wilcox, VIMS





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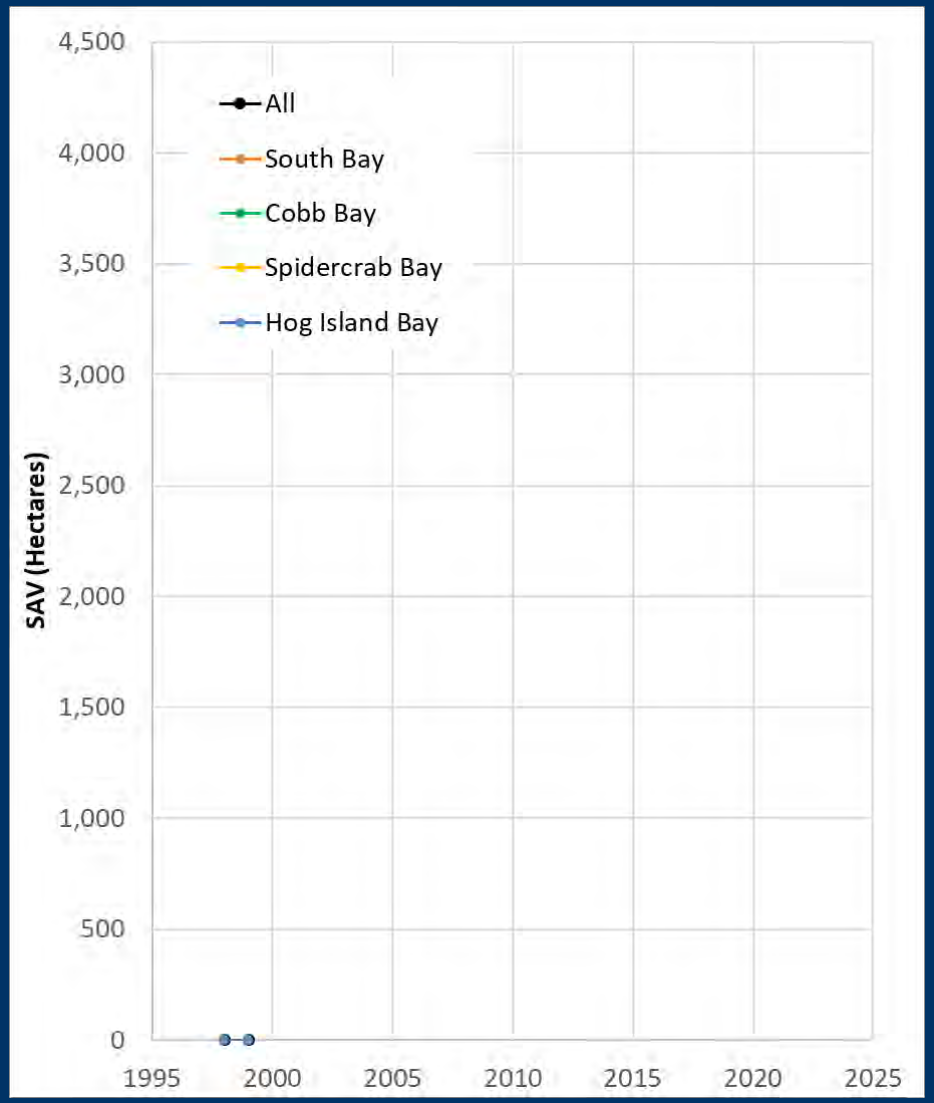

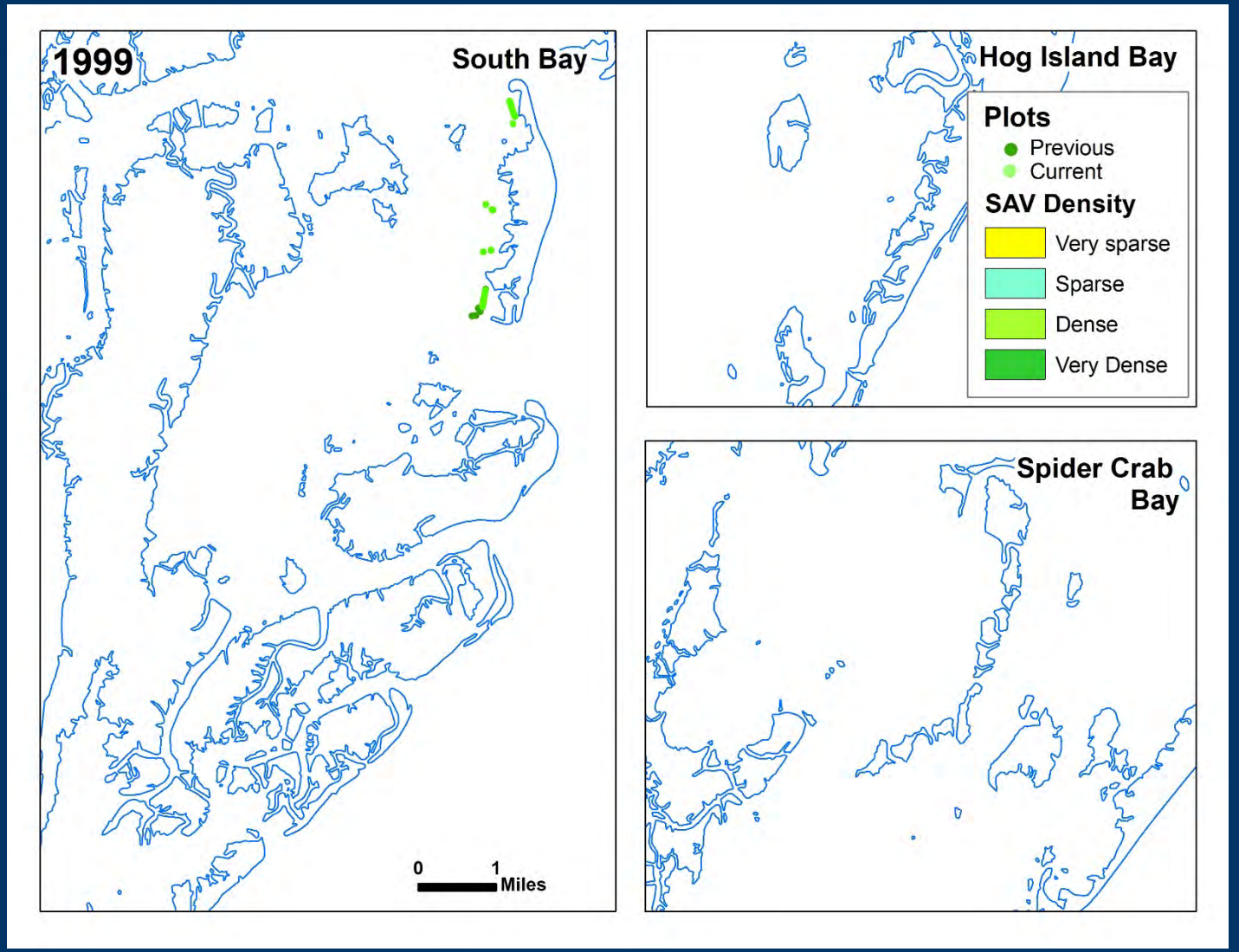

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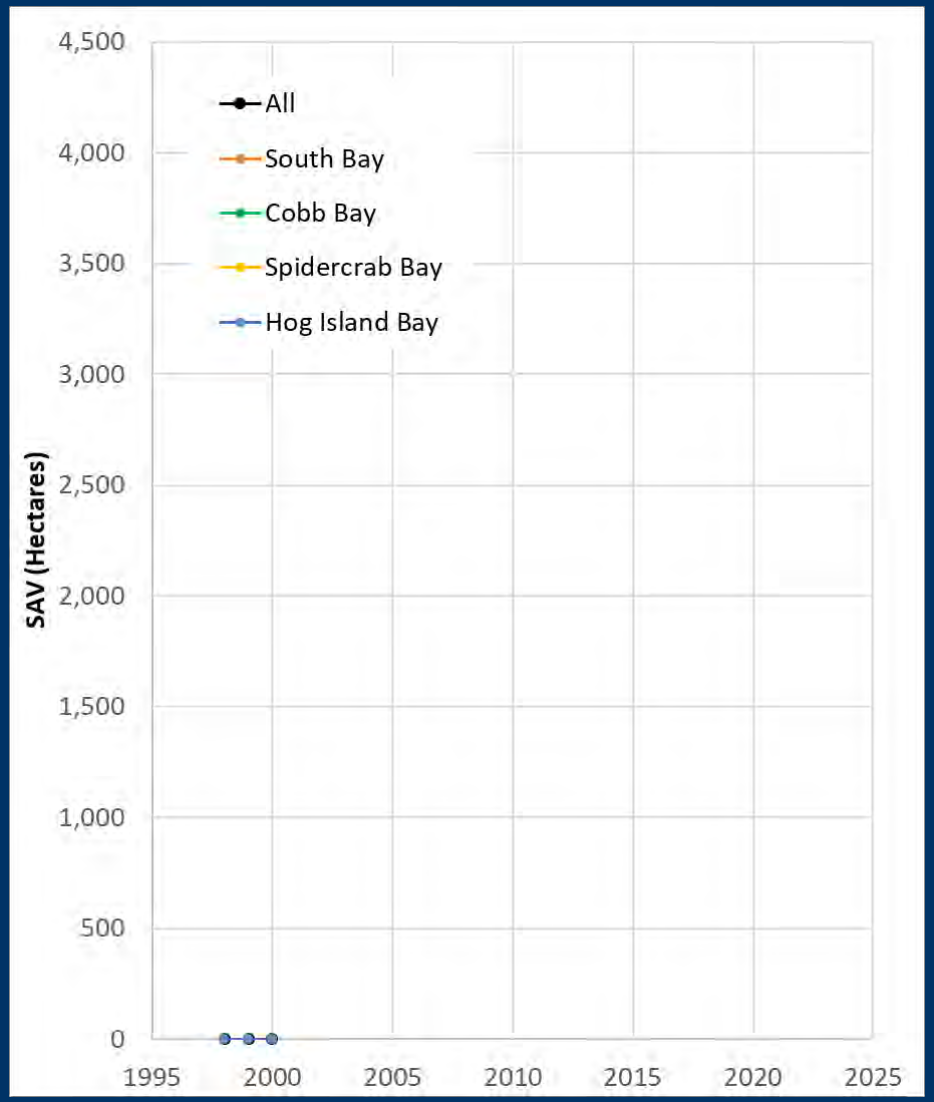

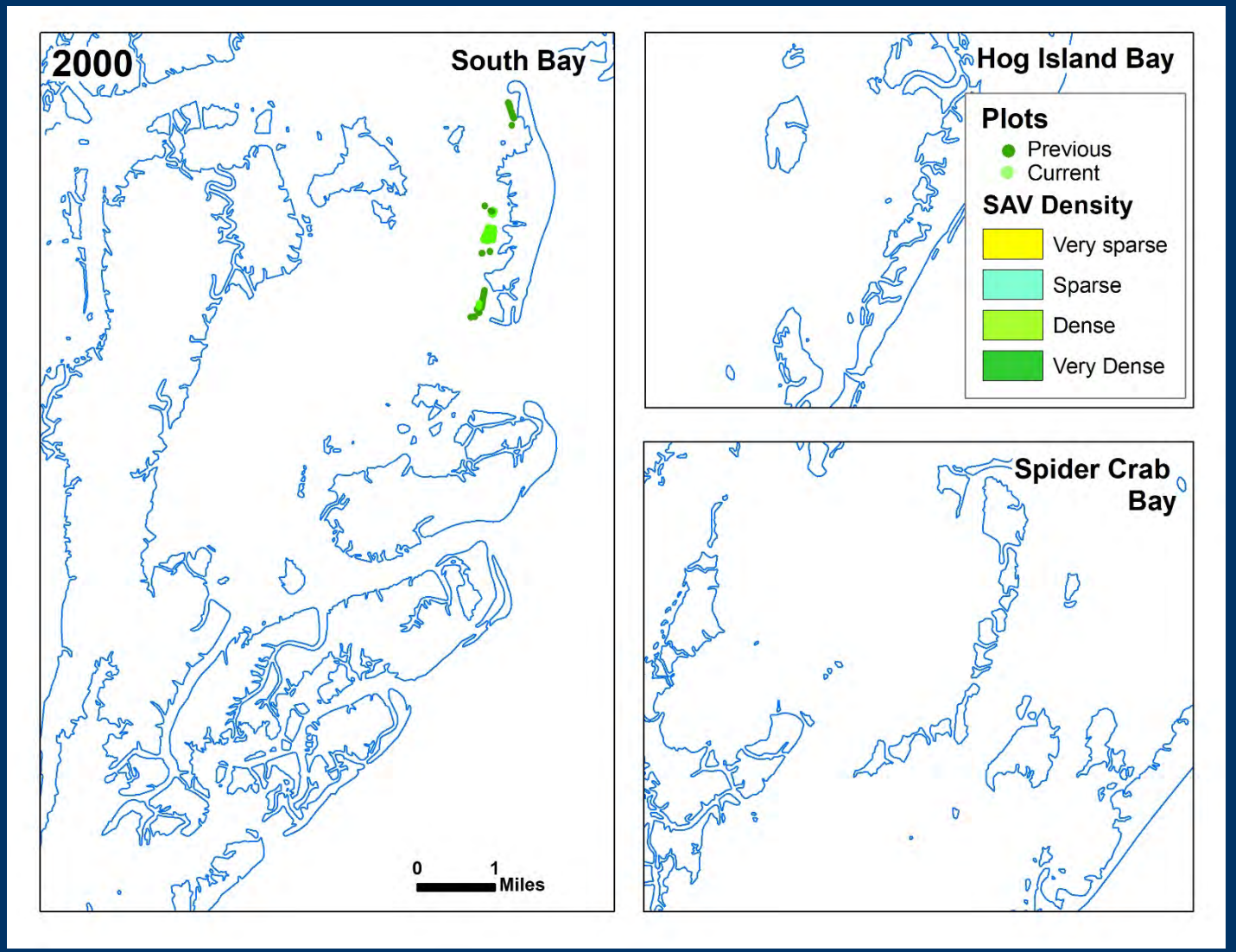

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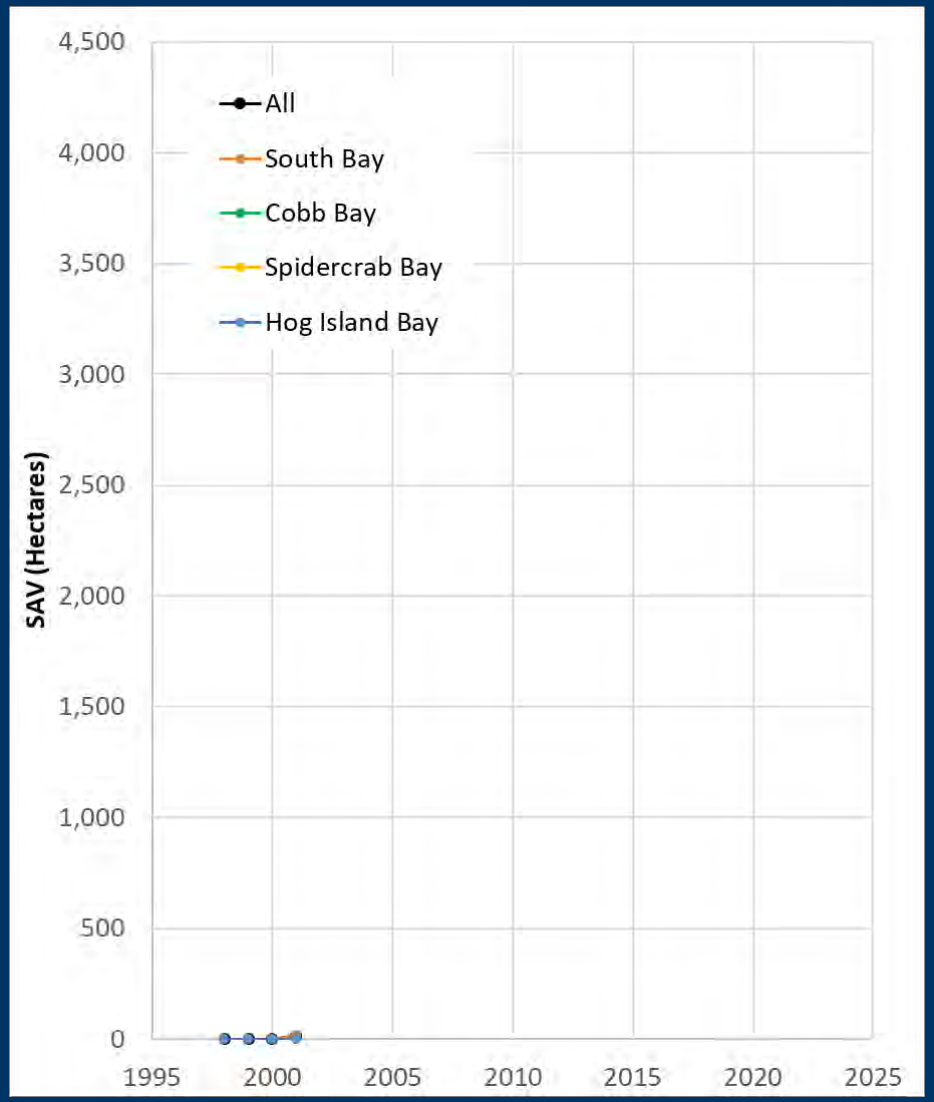

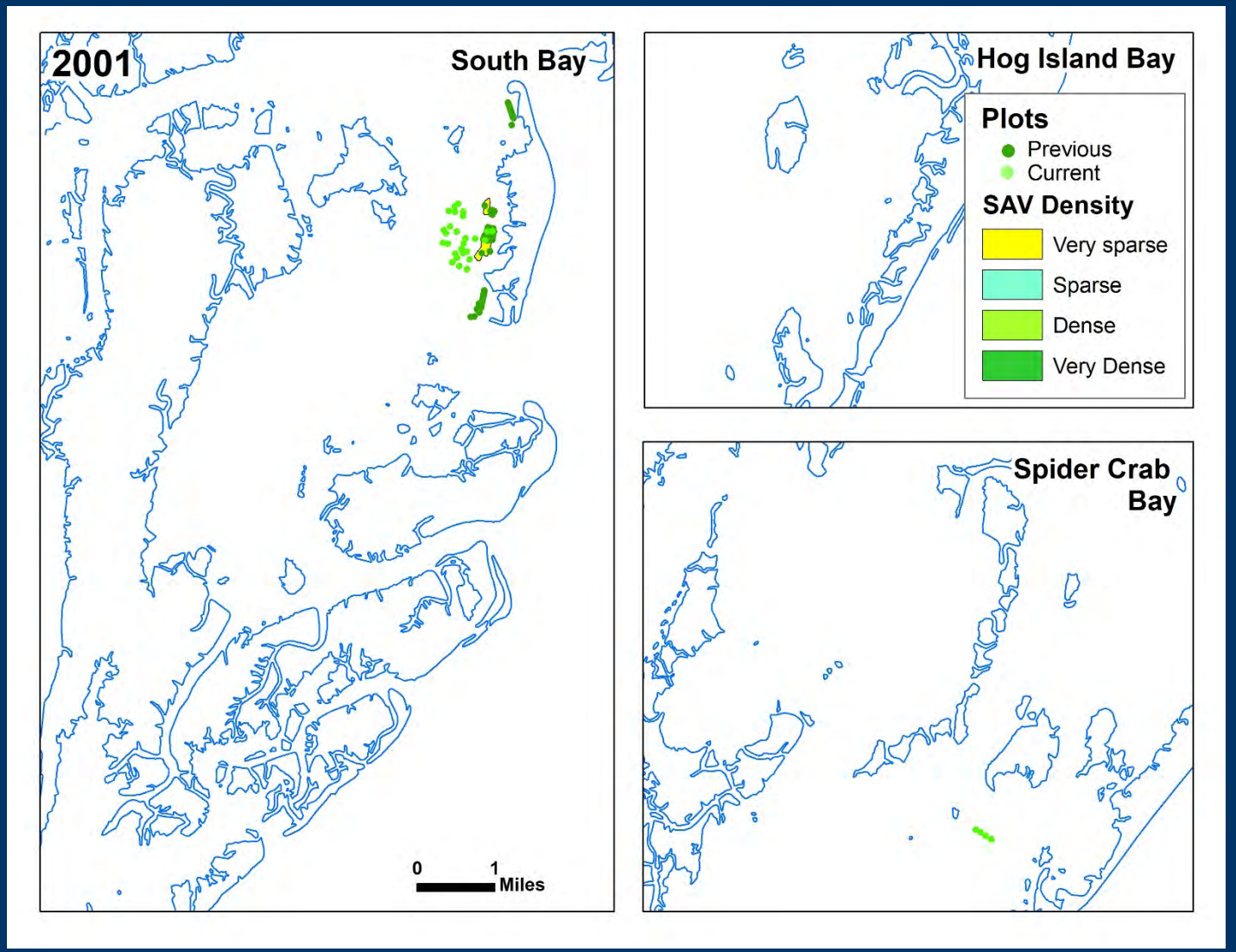

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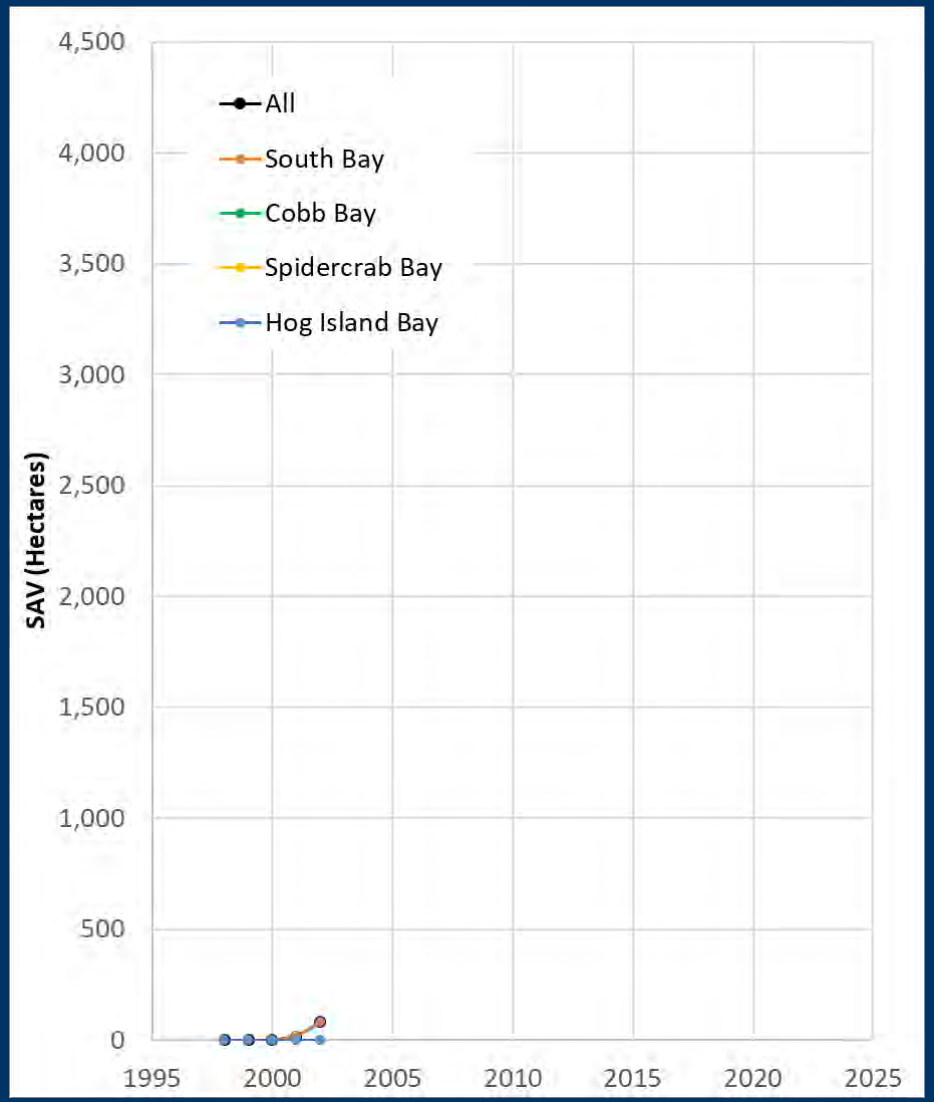

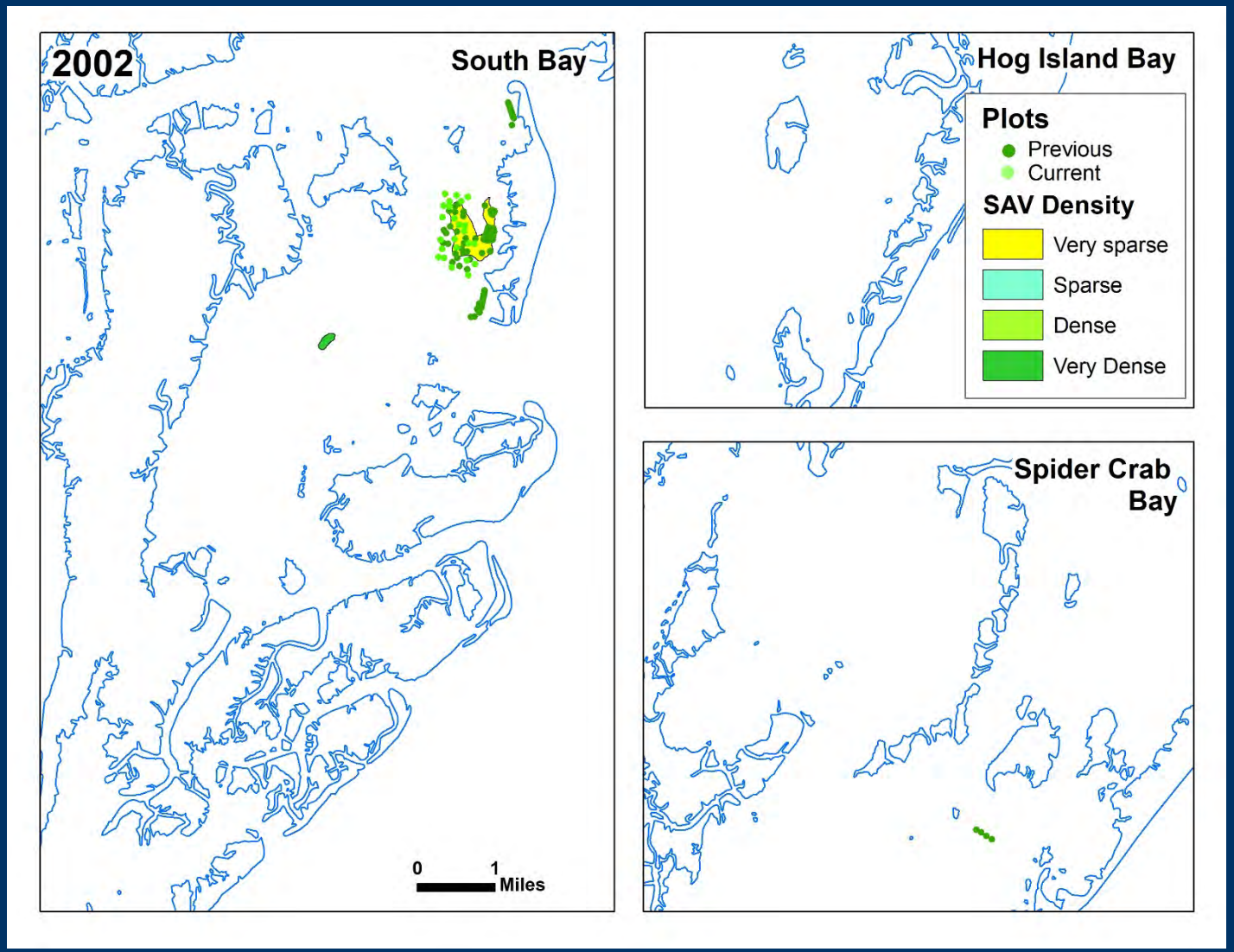

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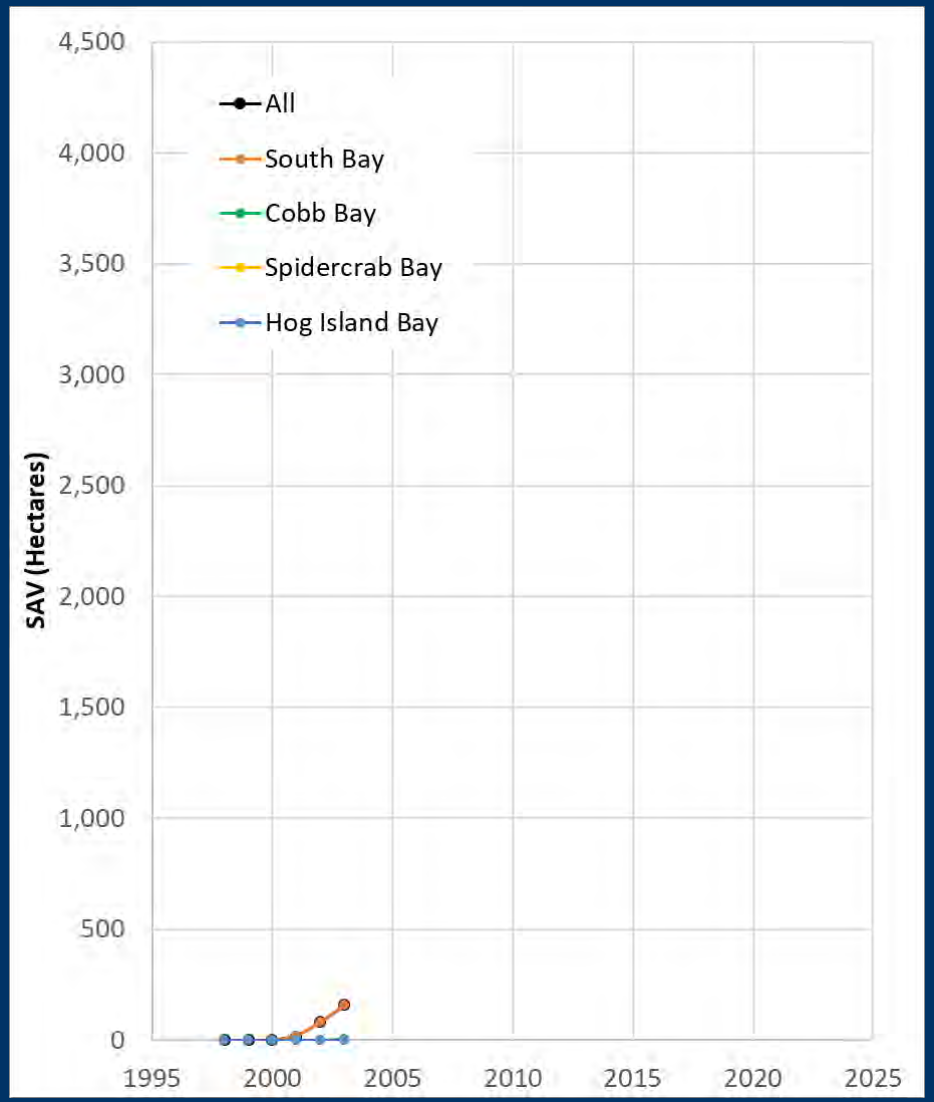

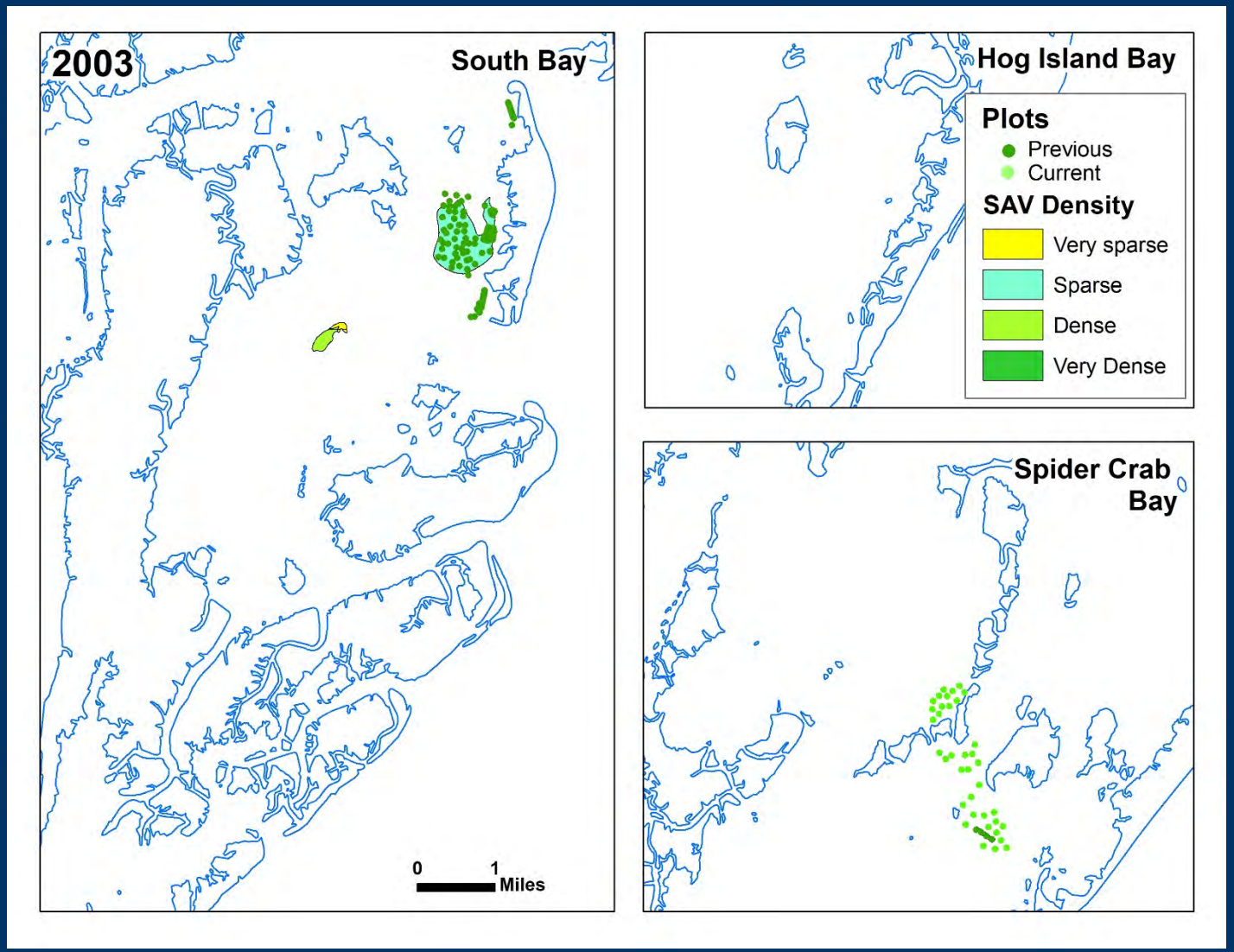

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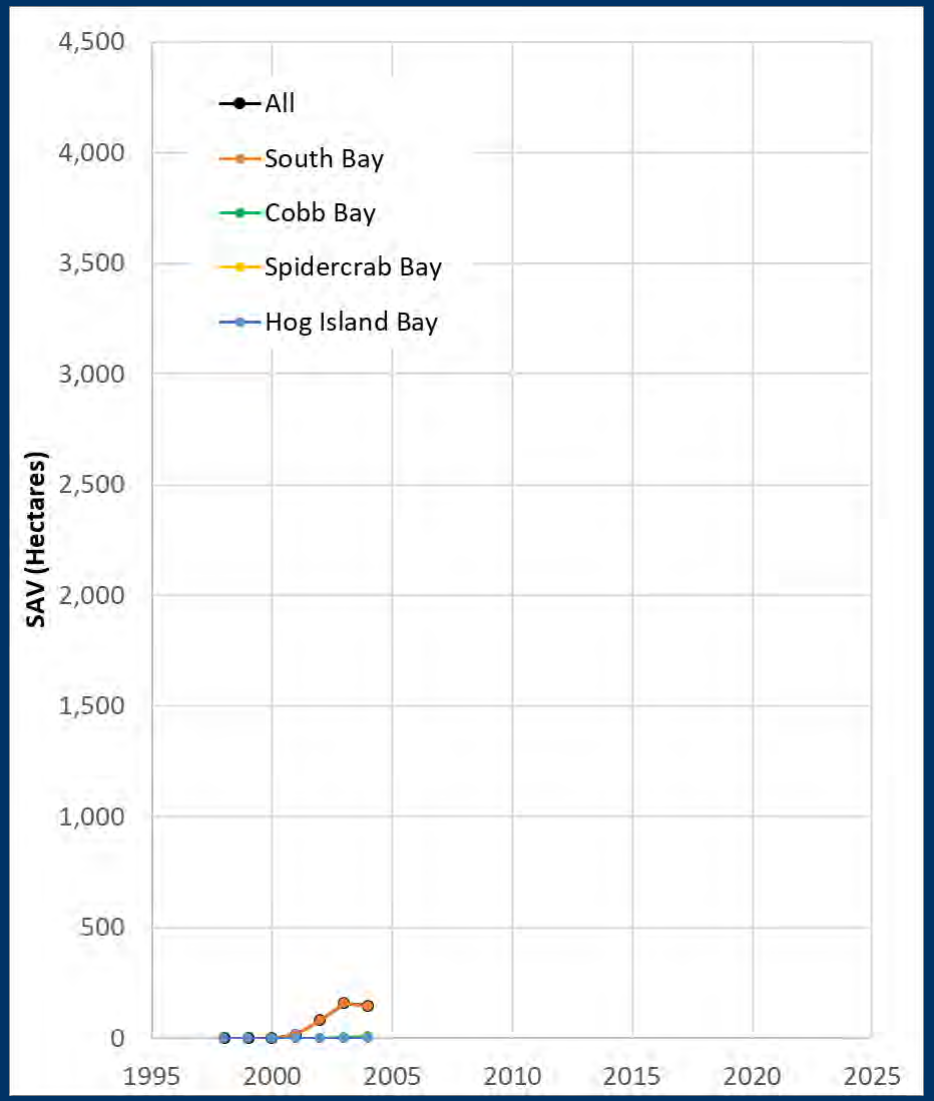

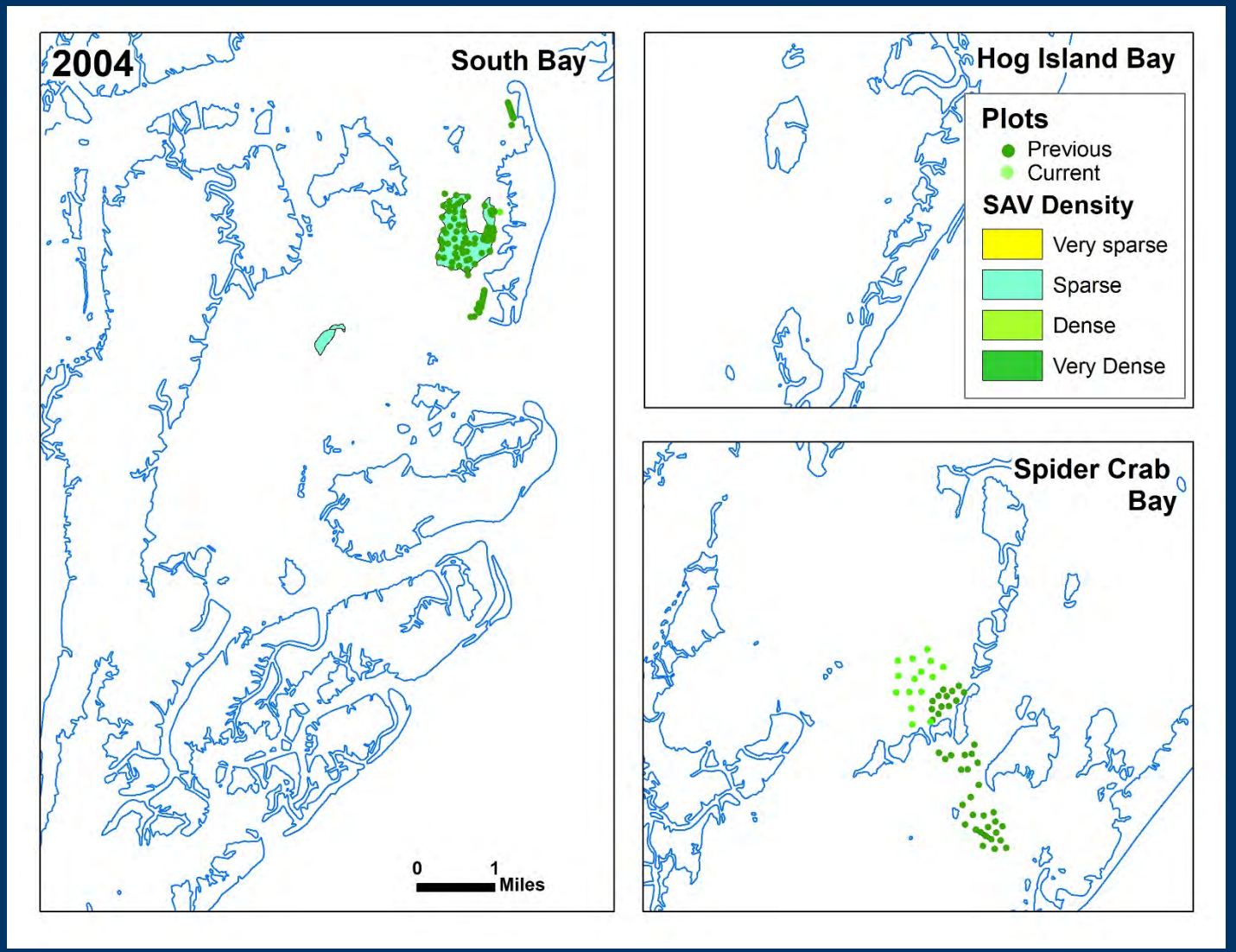

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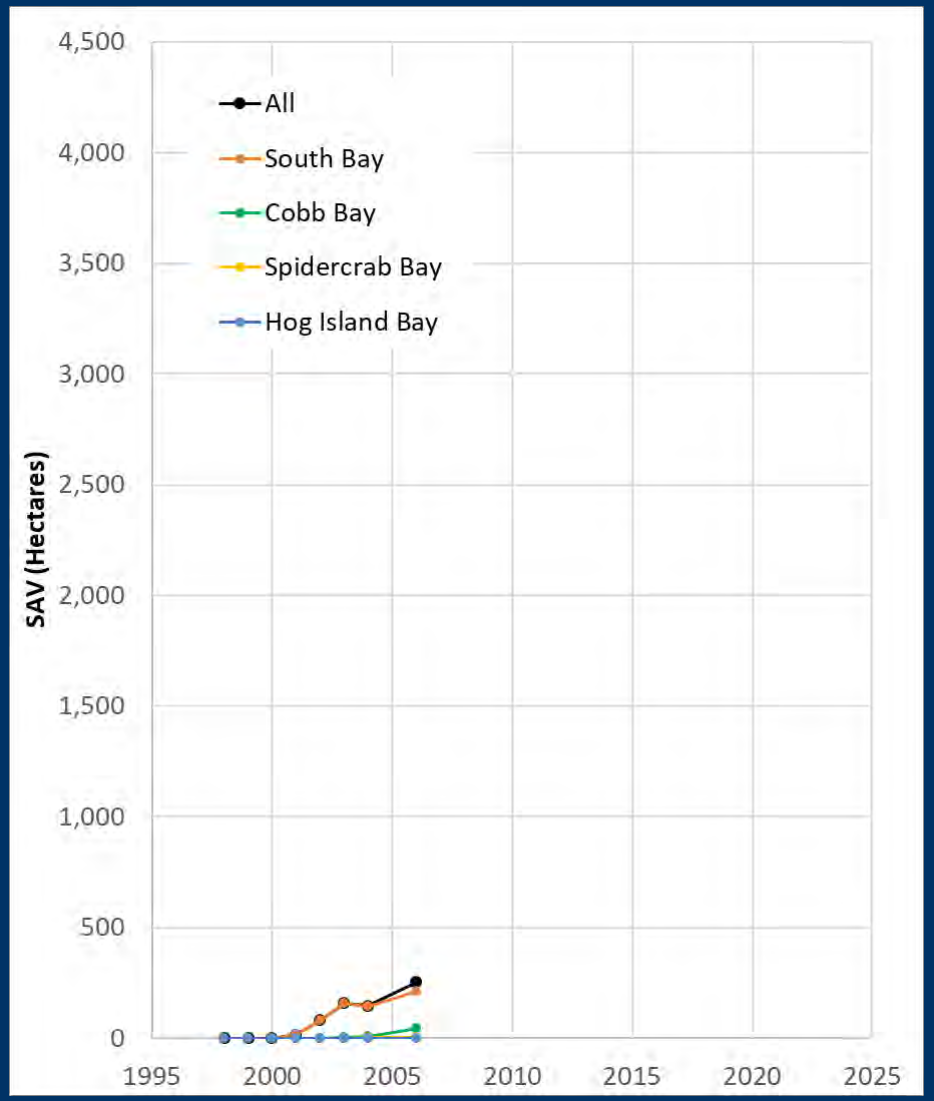

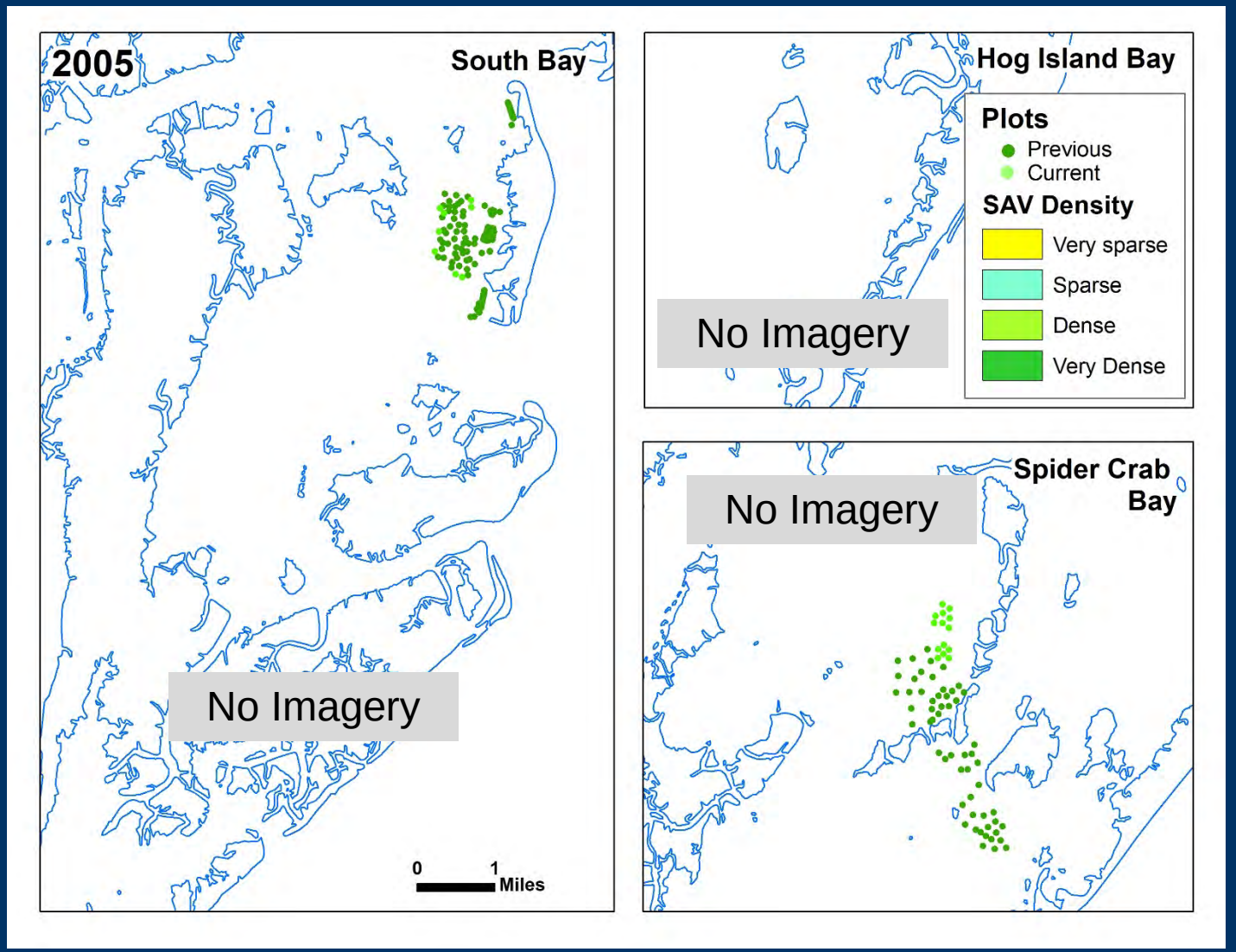

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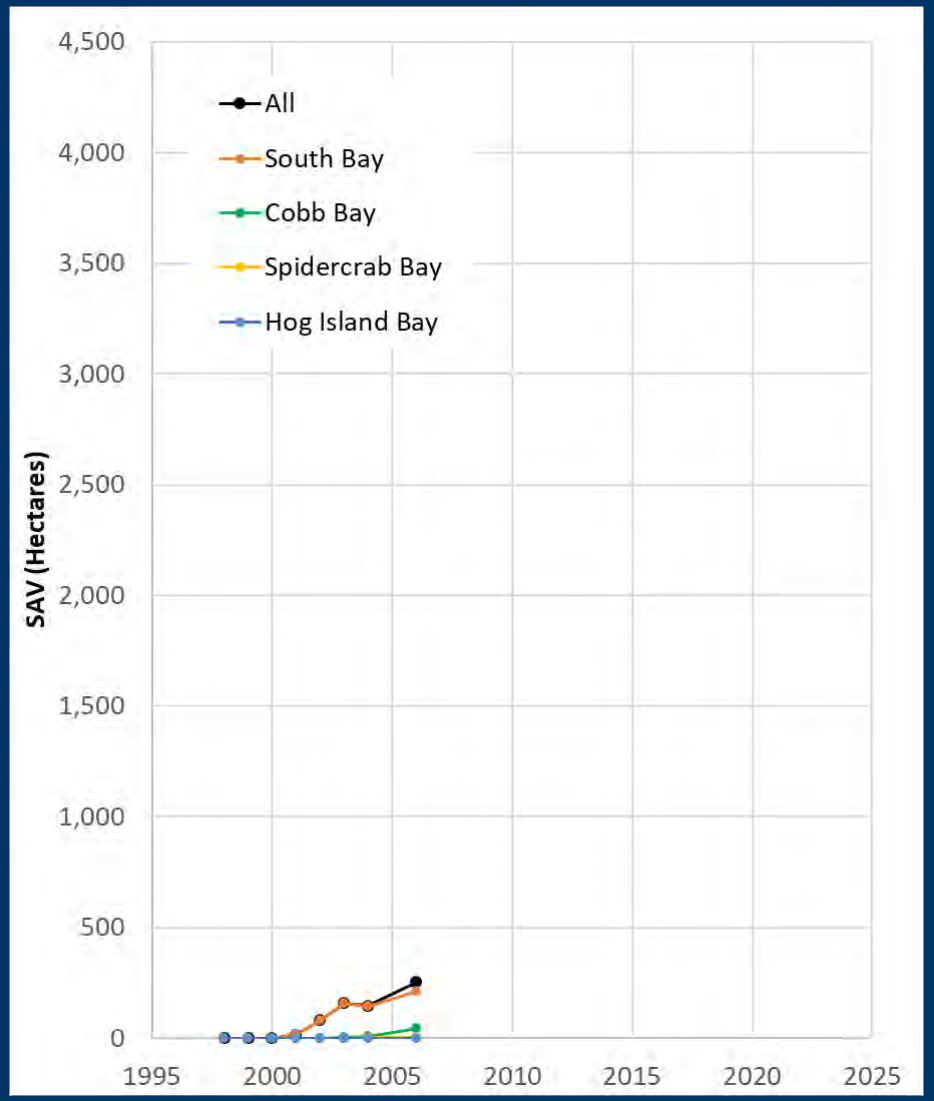

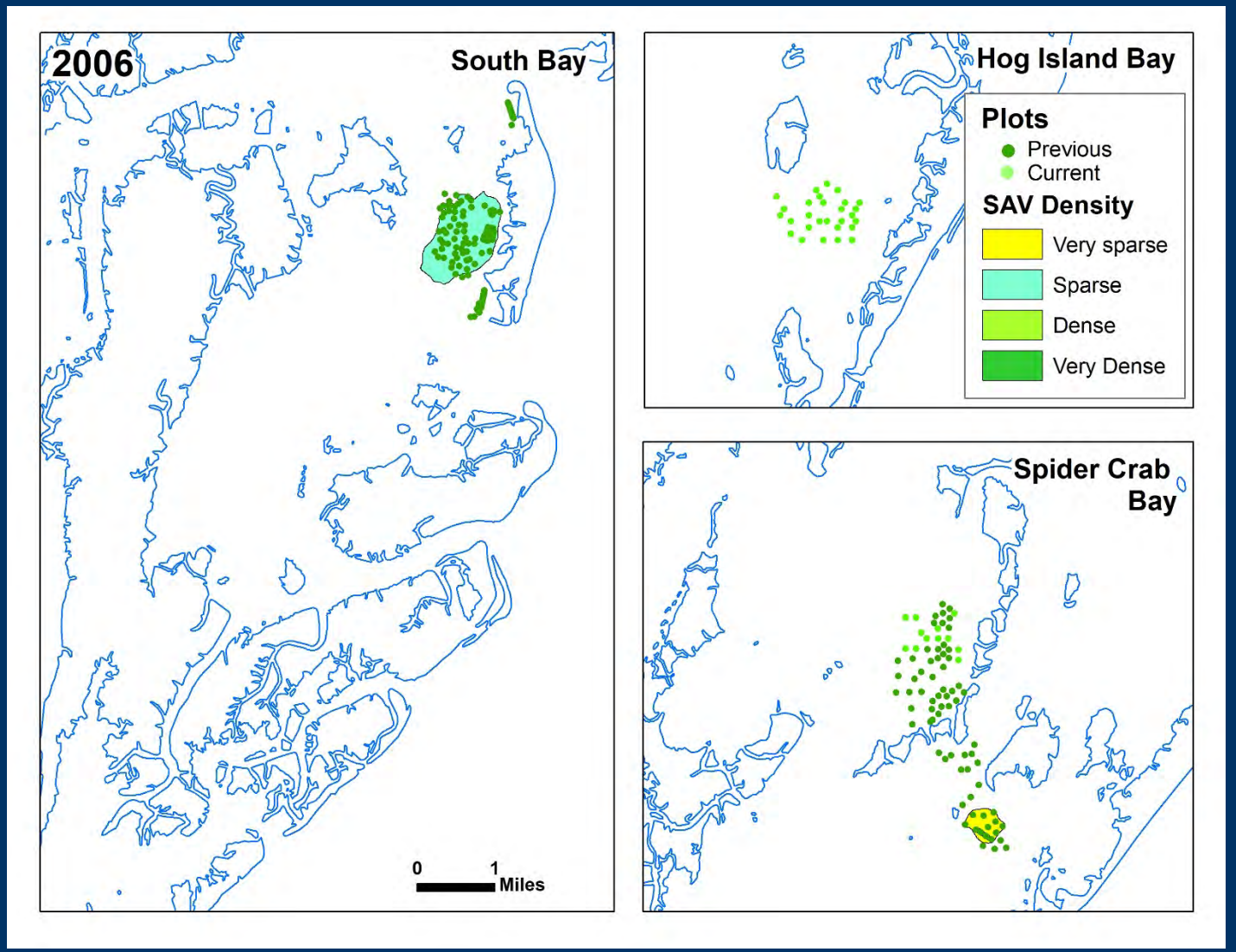

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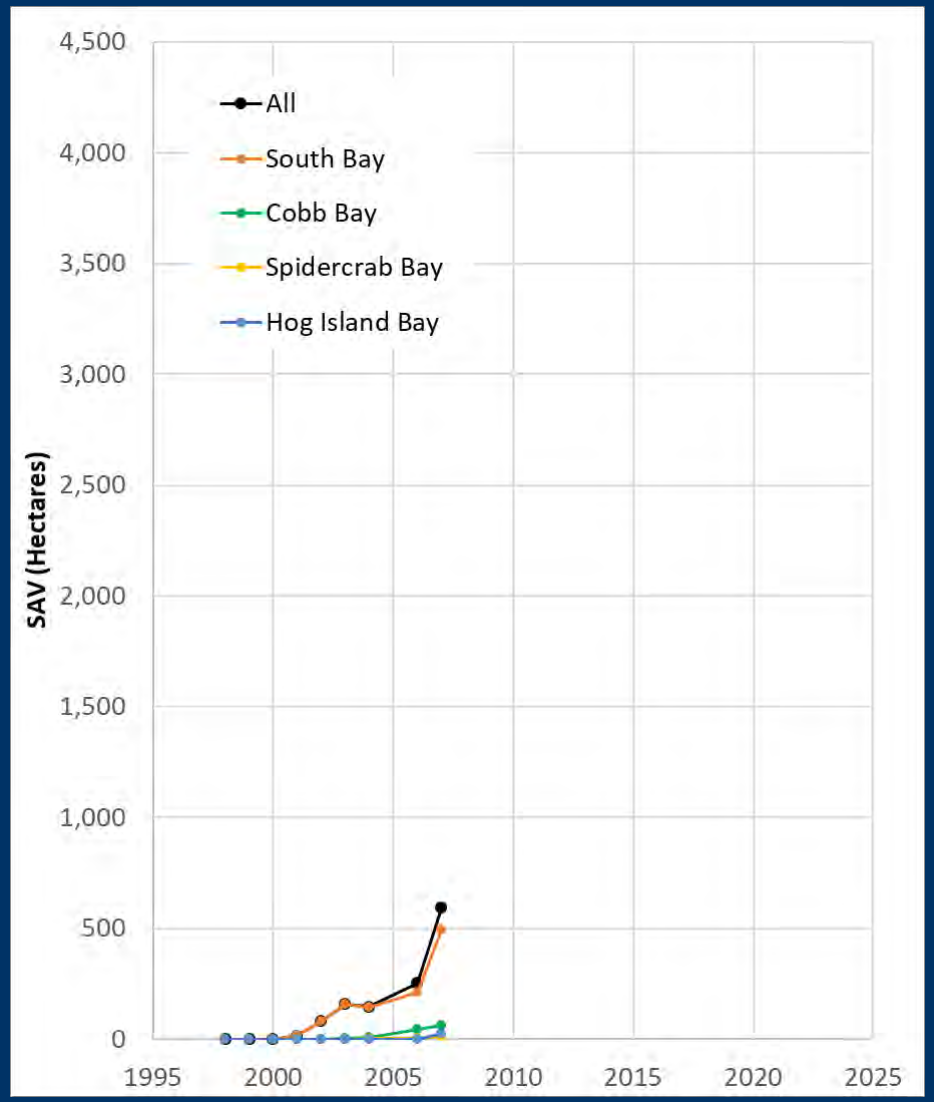

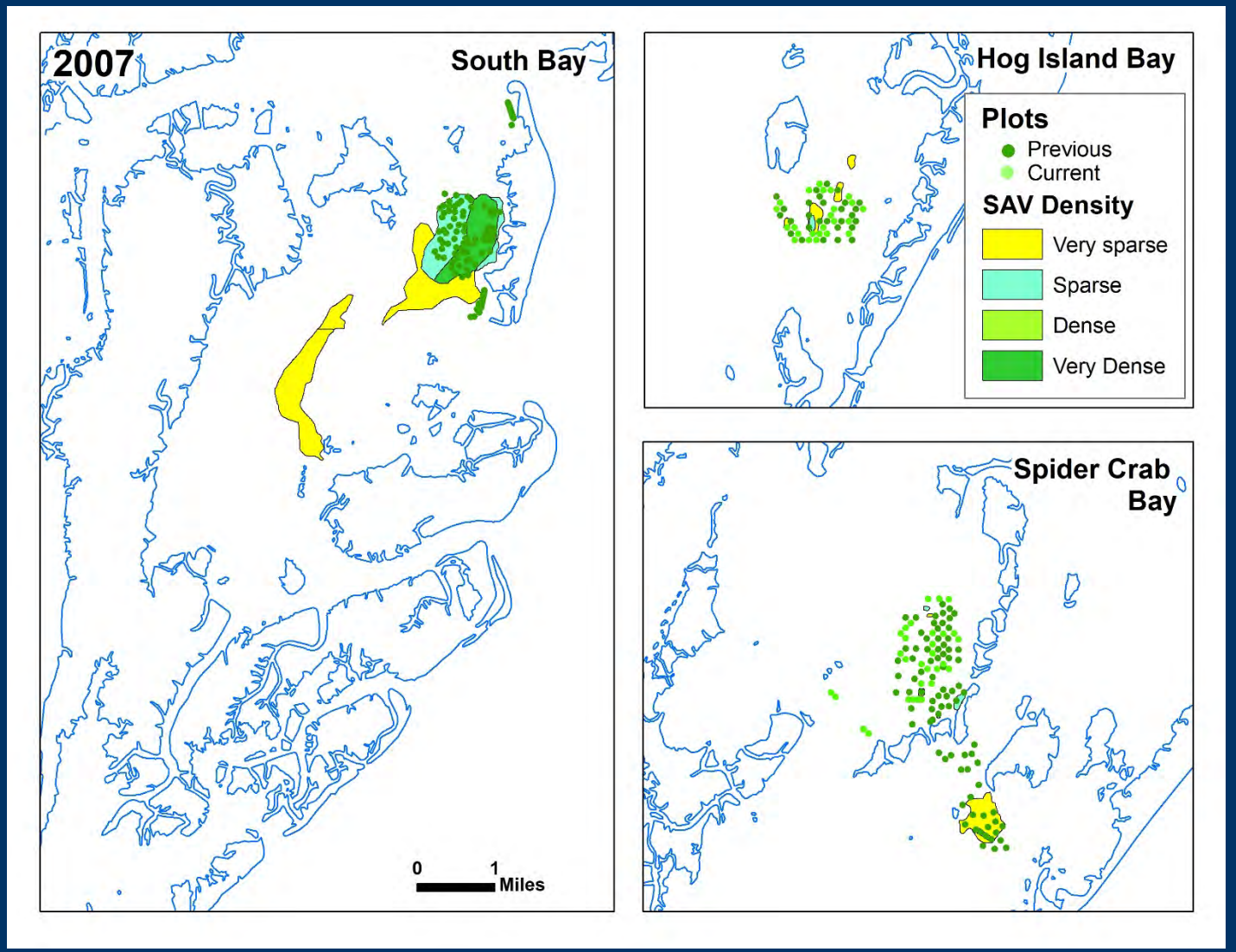

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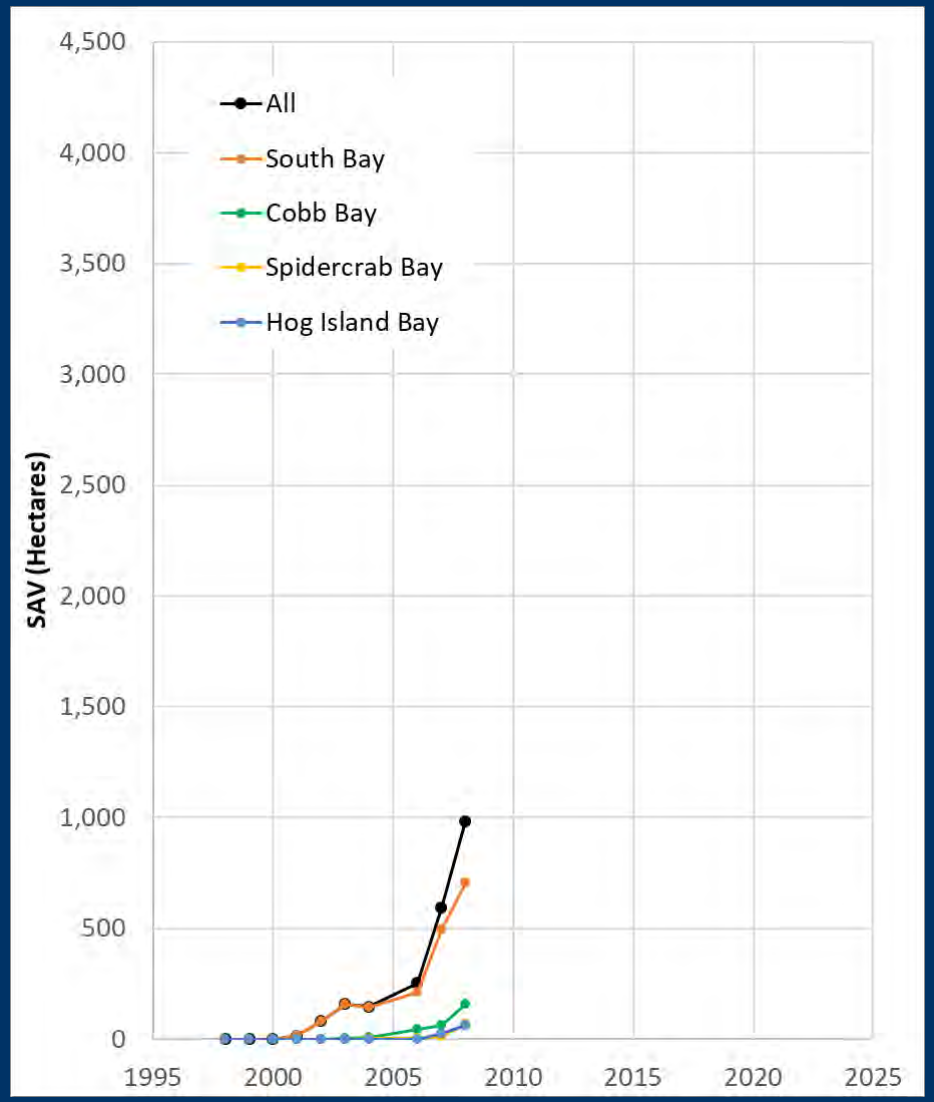

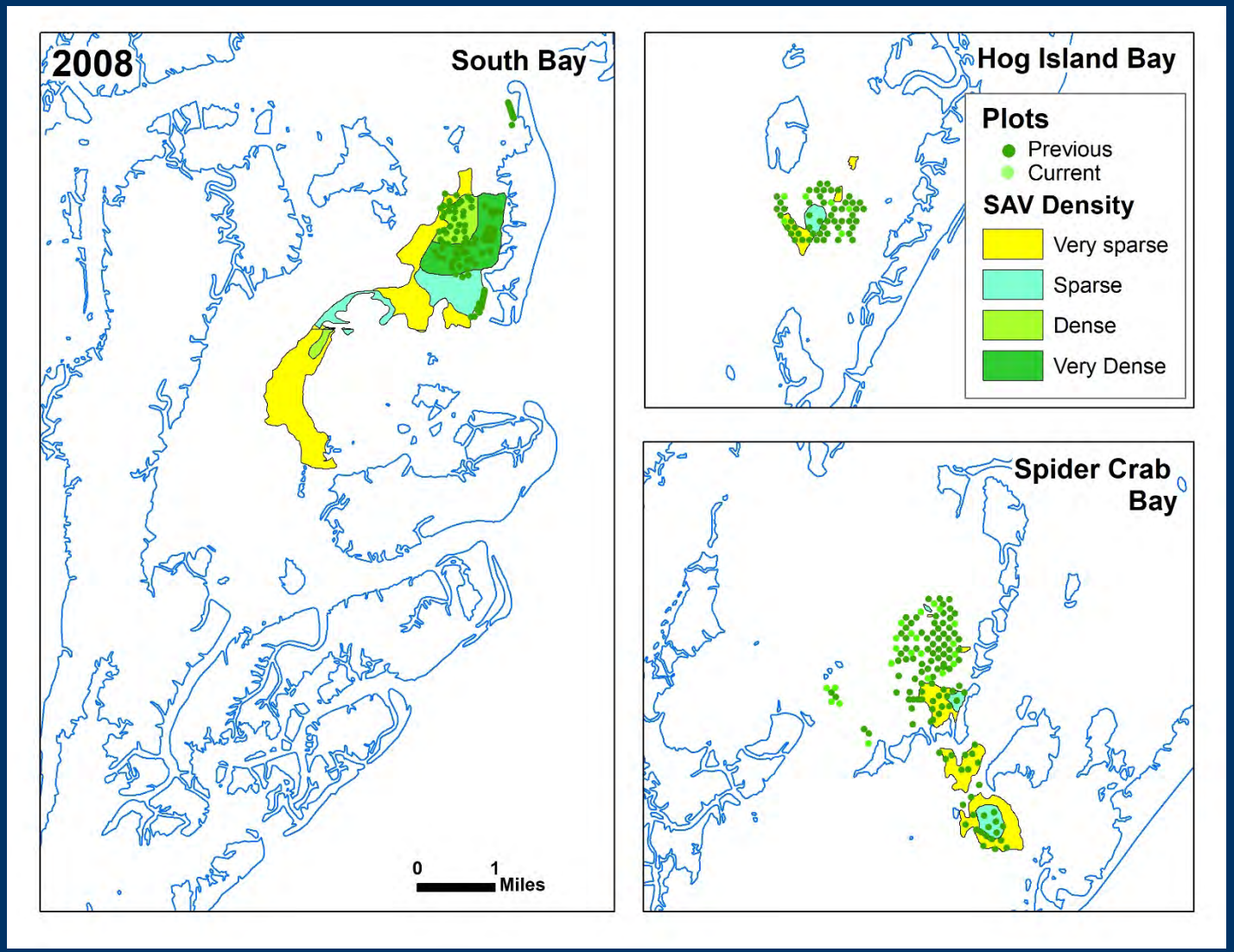

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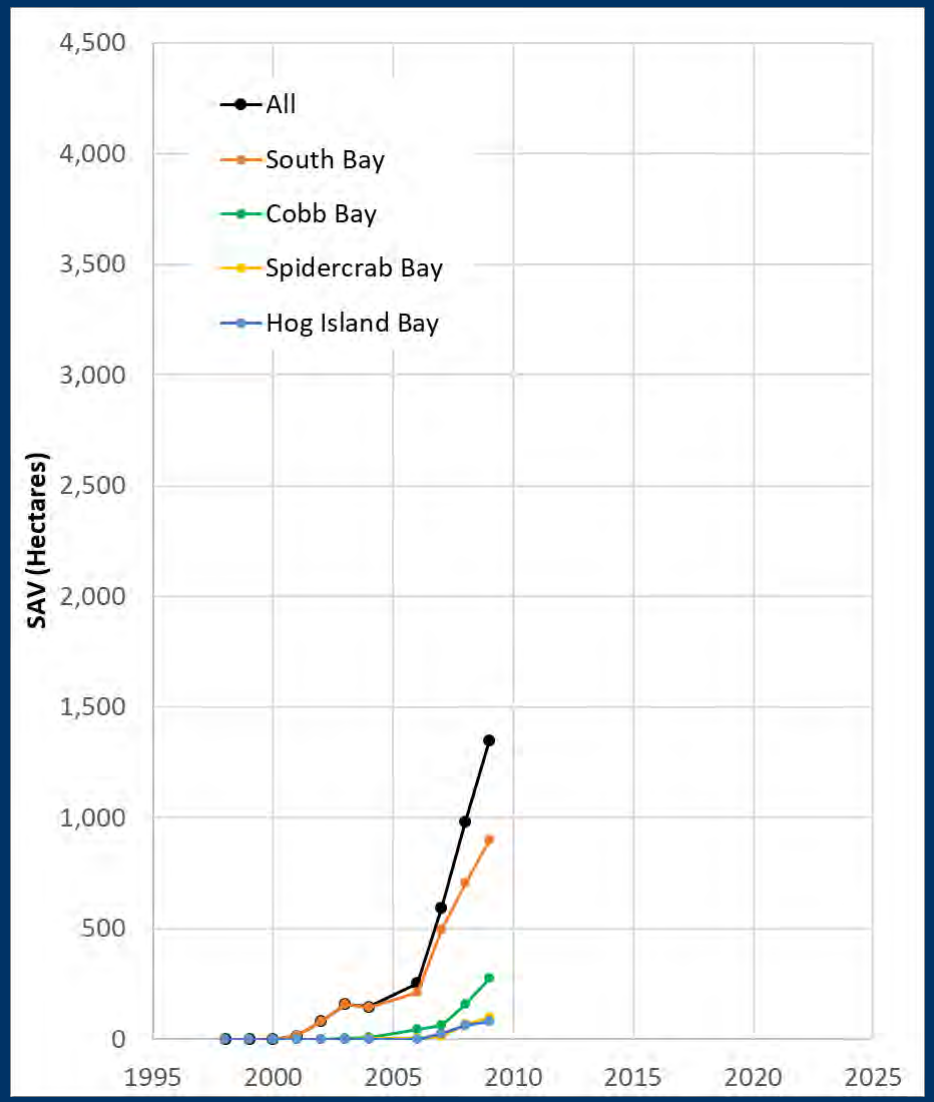

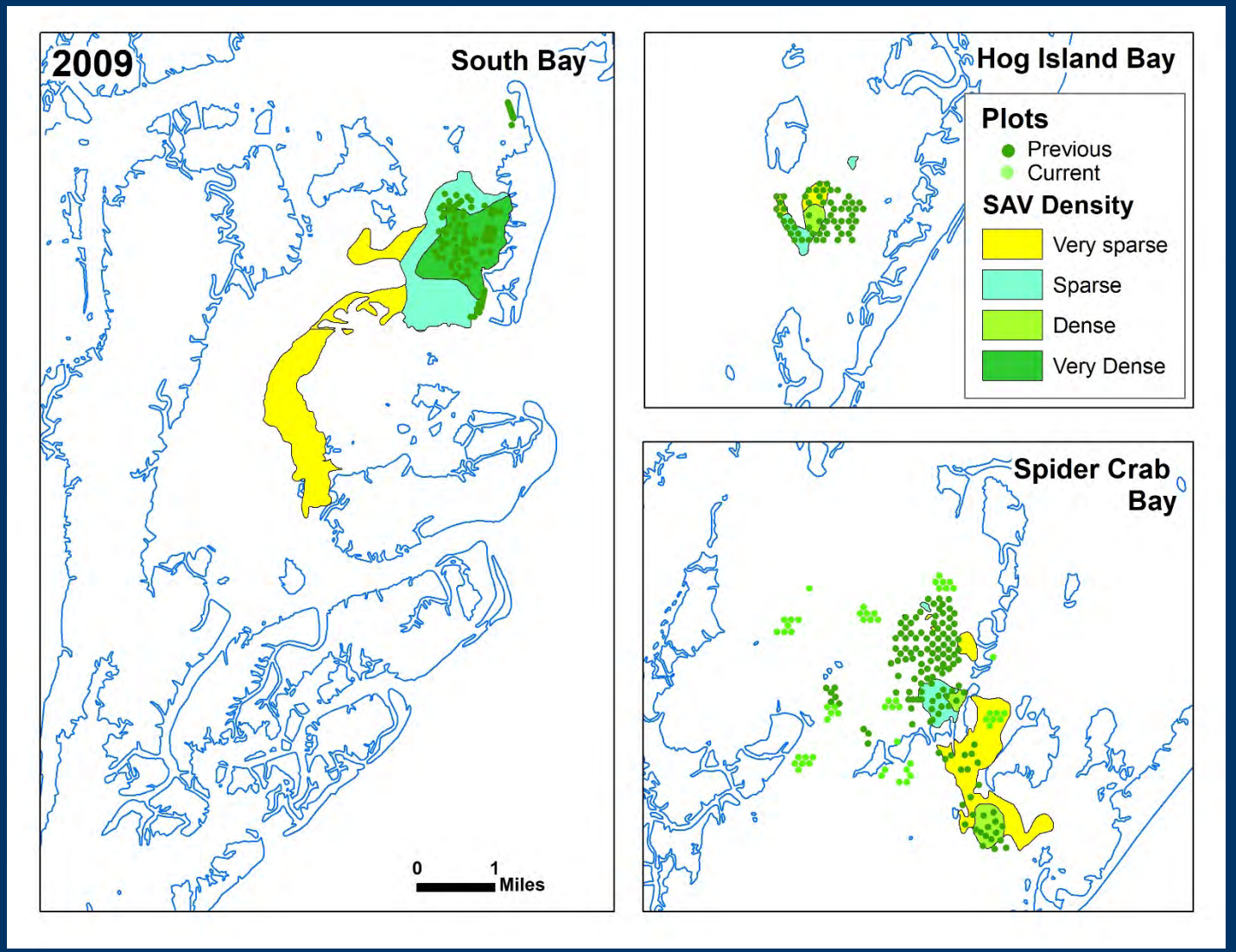

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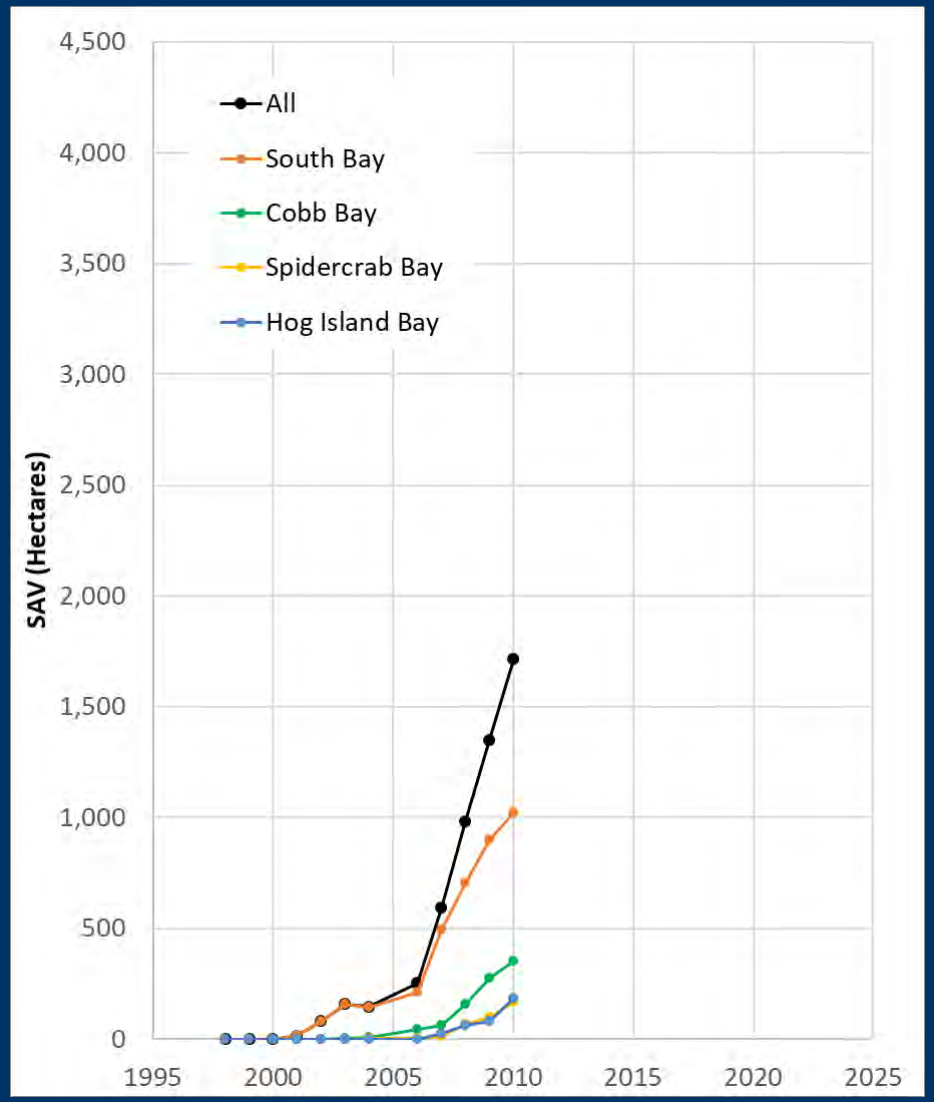

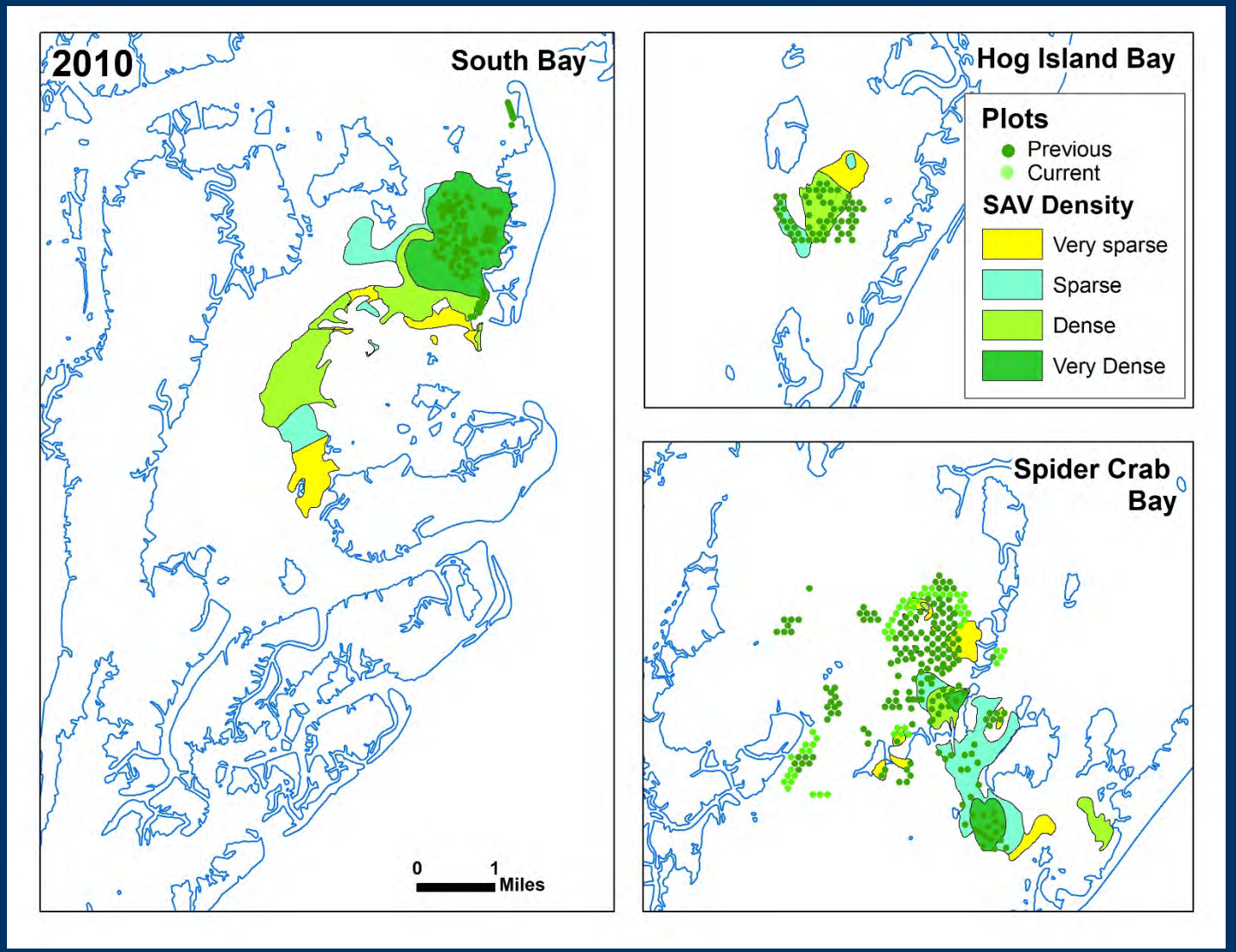

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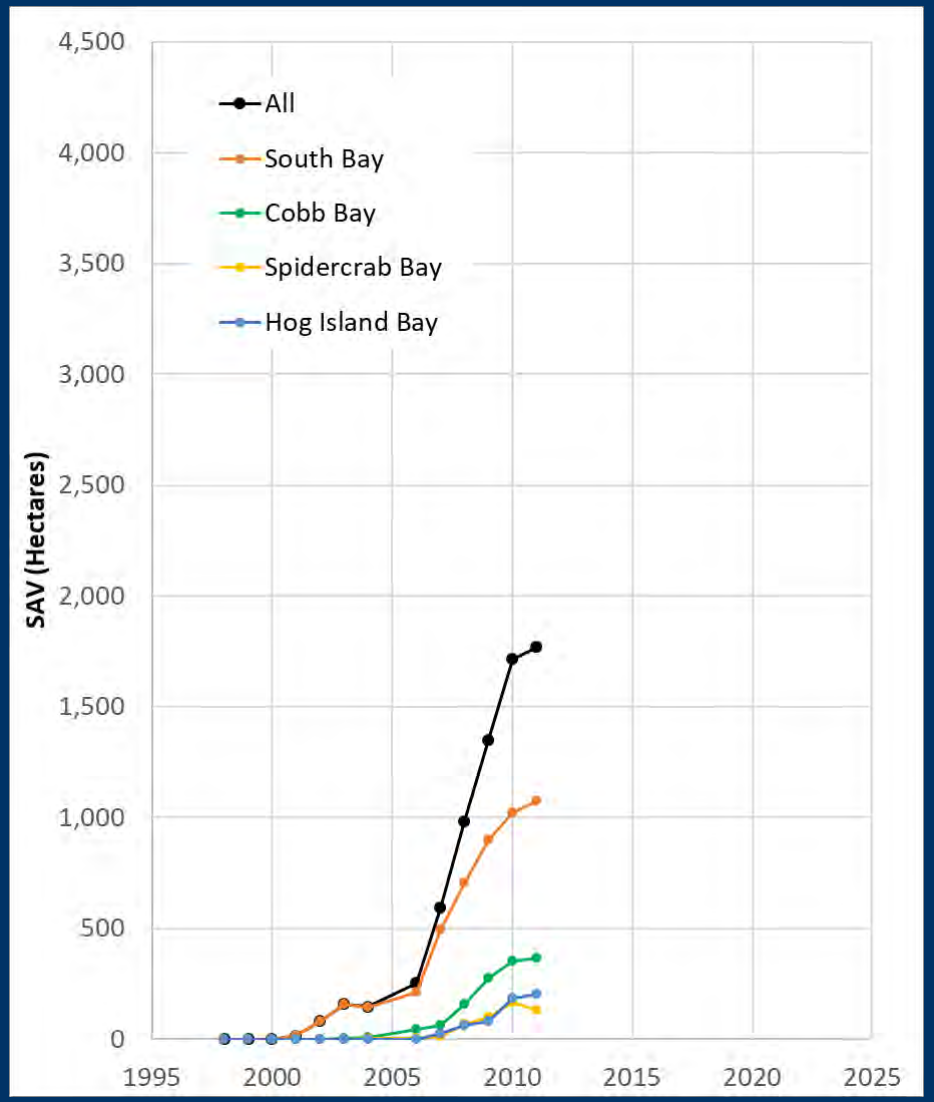

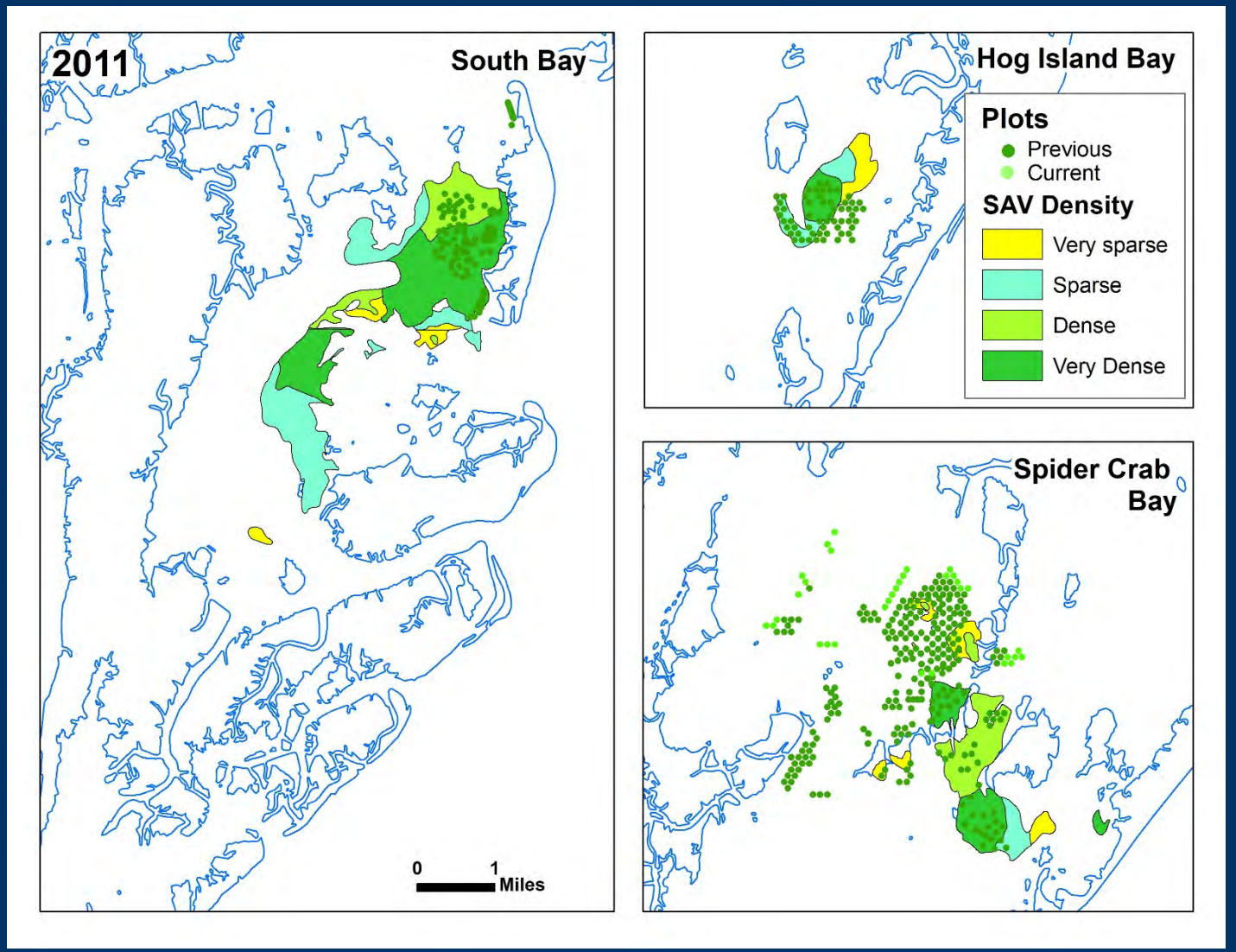

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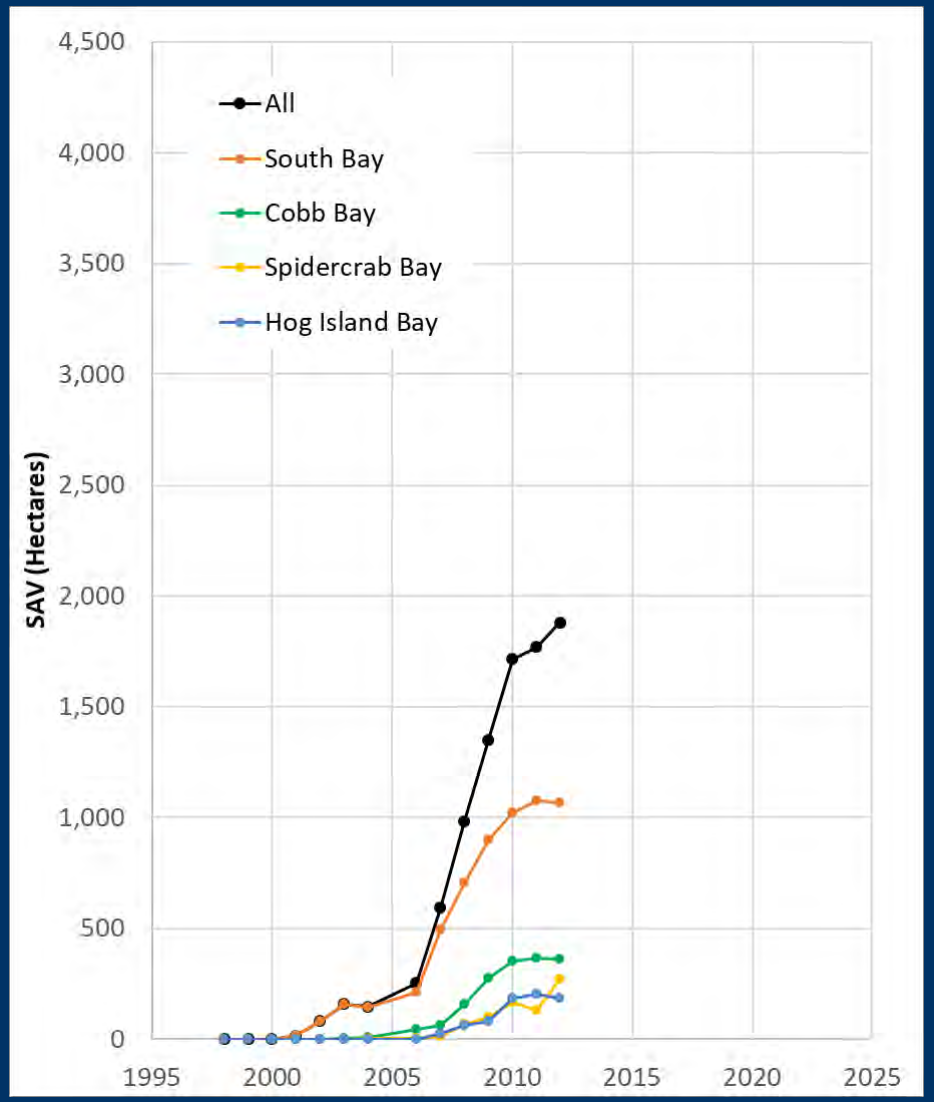

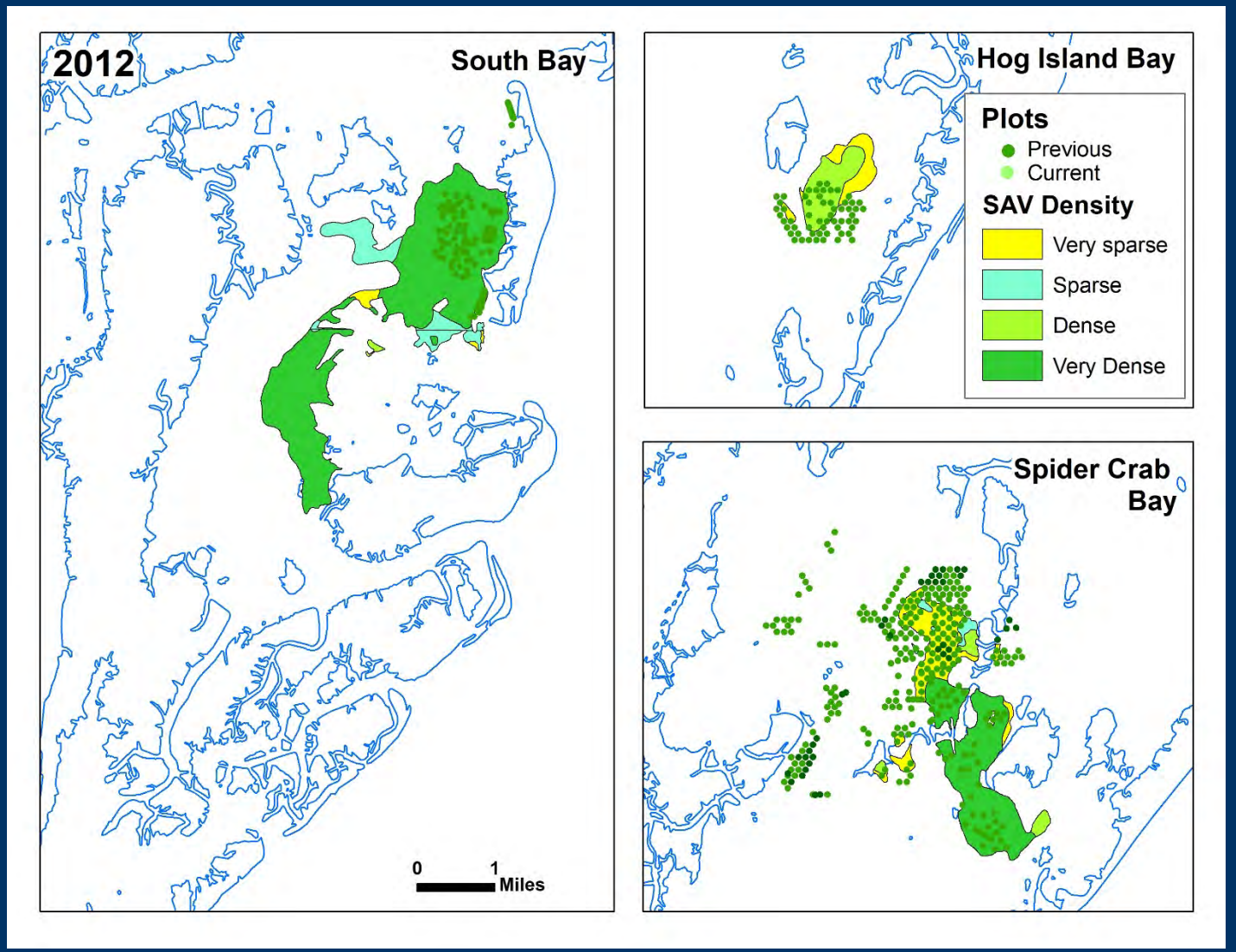

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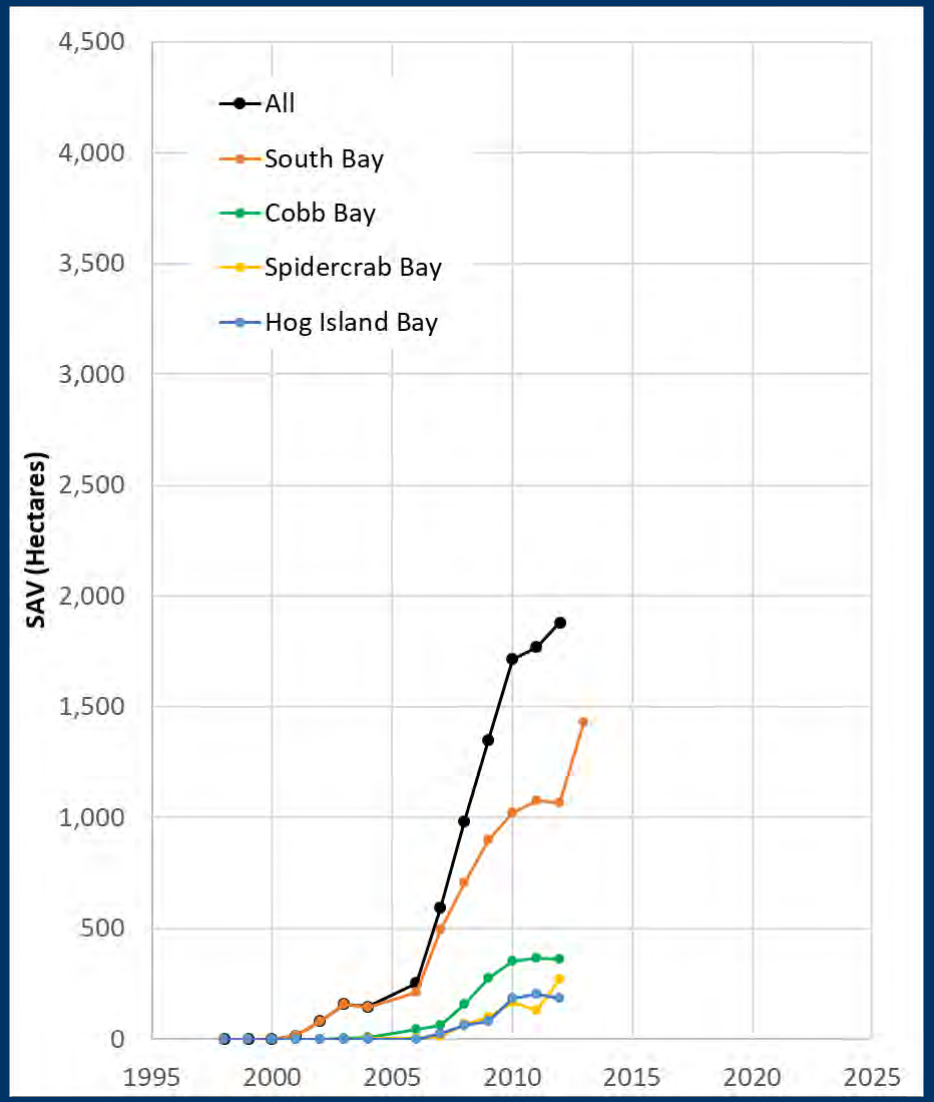

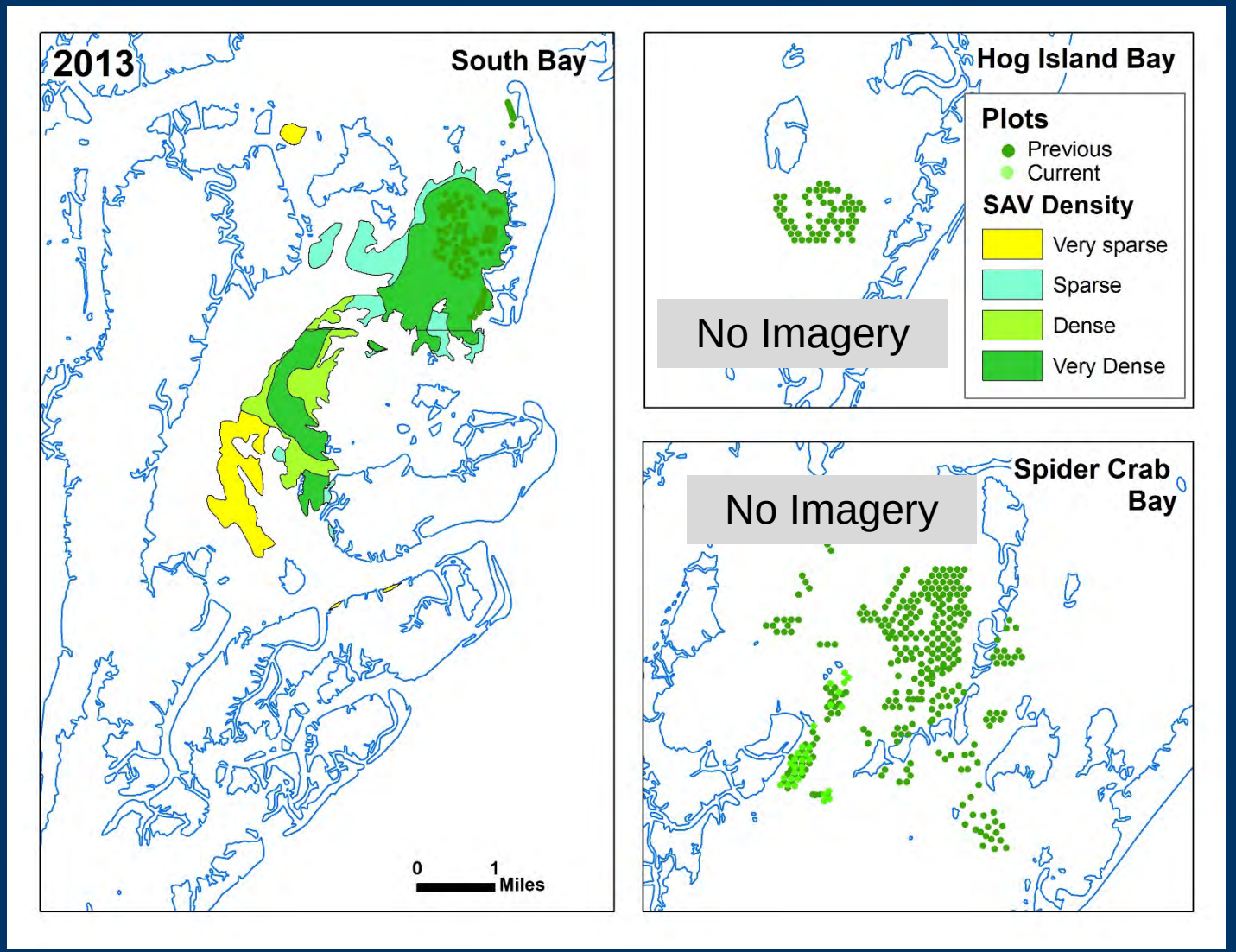

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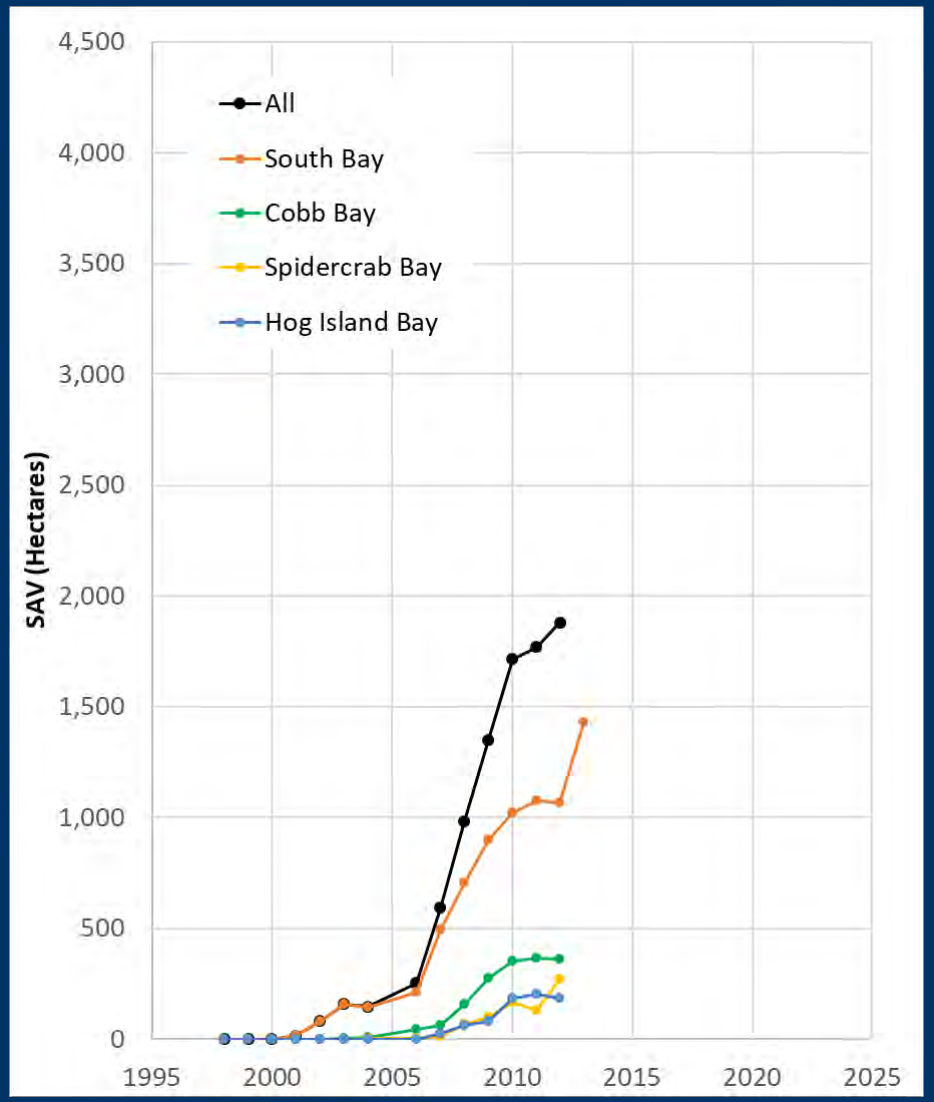

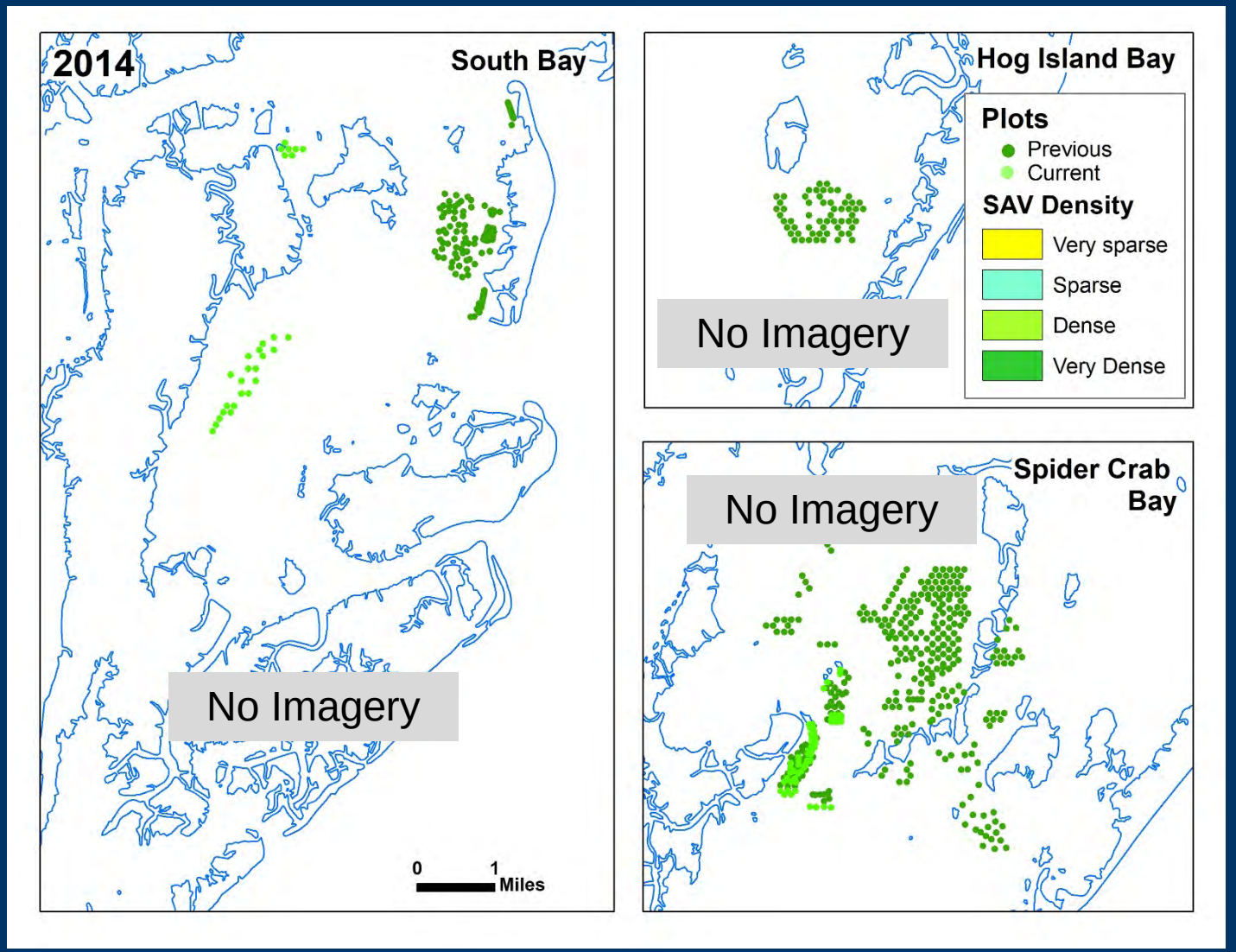

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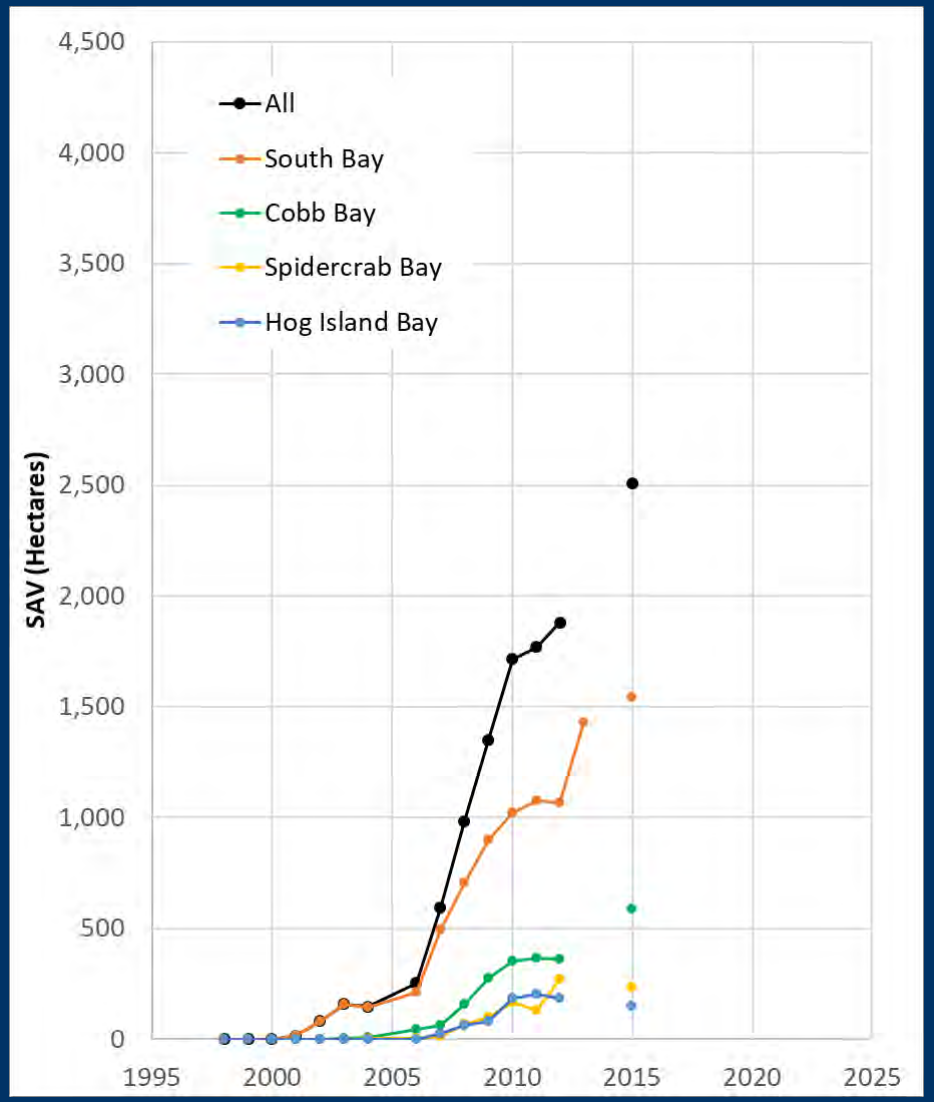

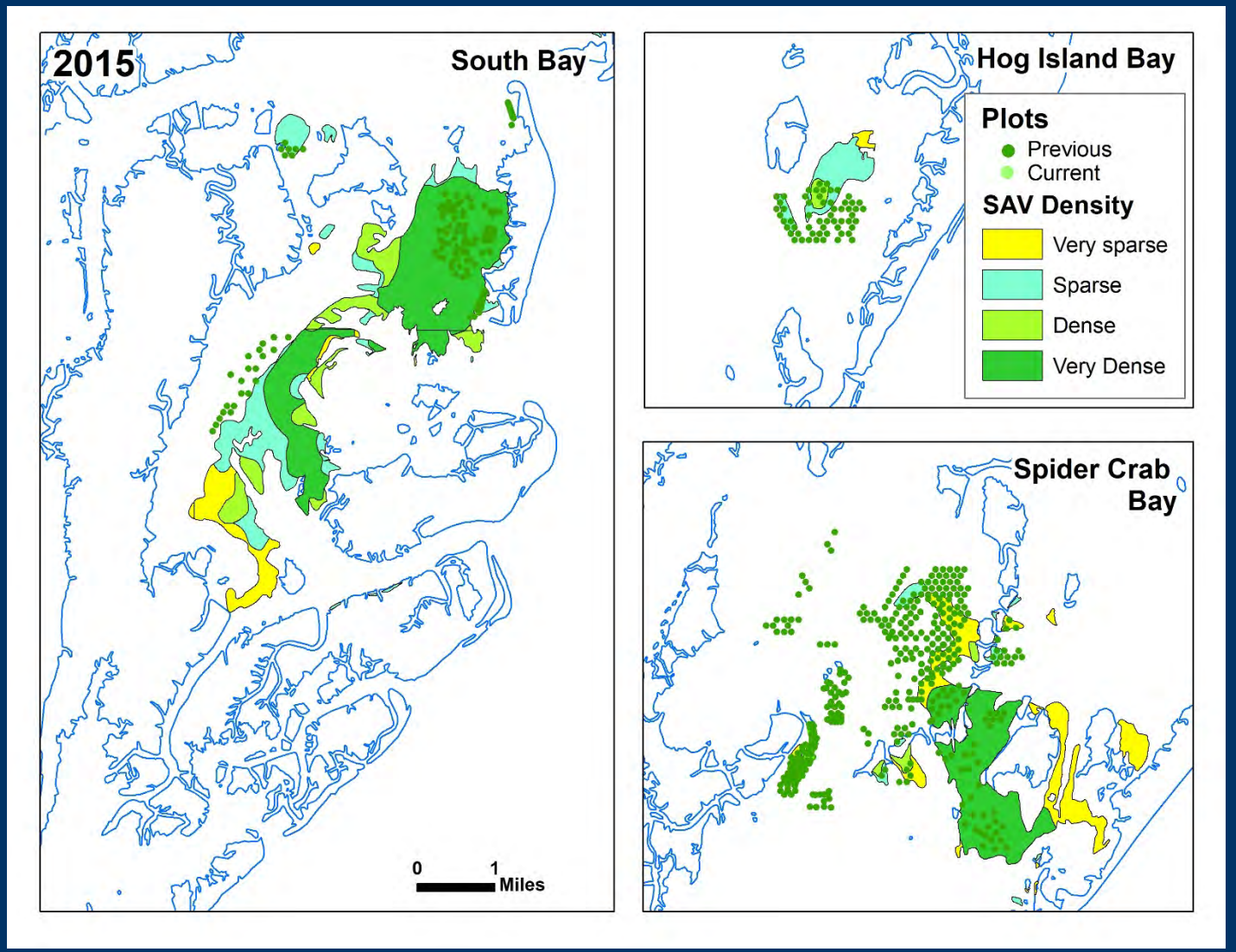

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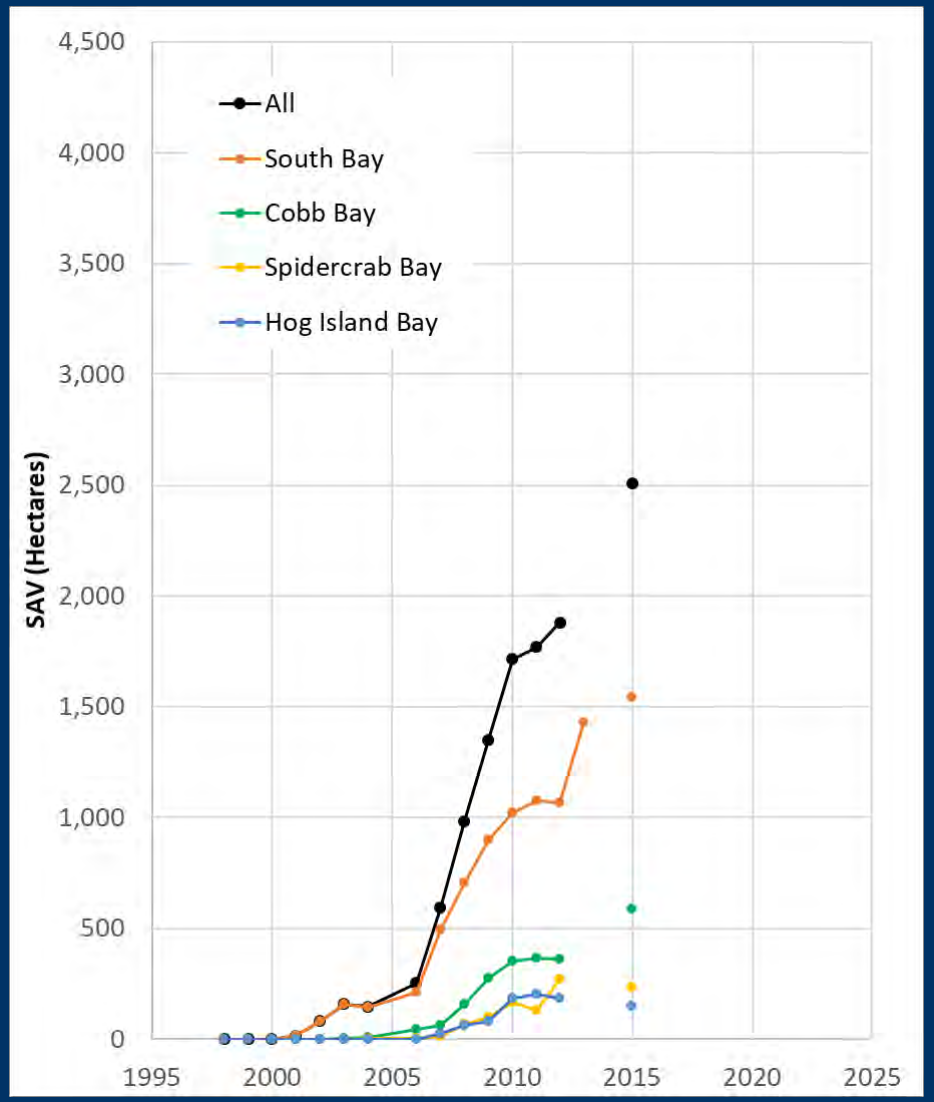

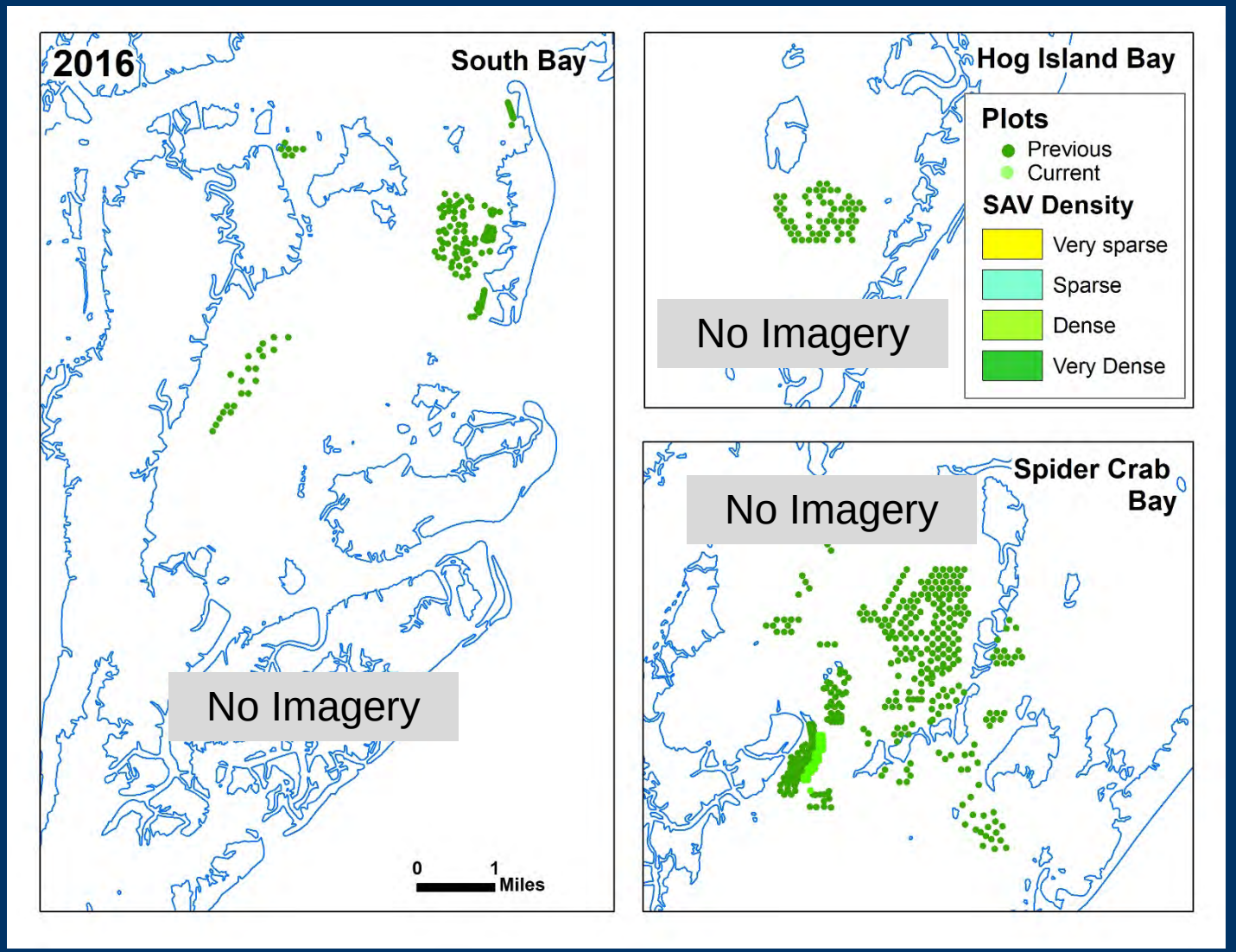

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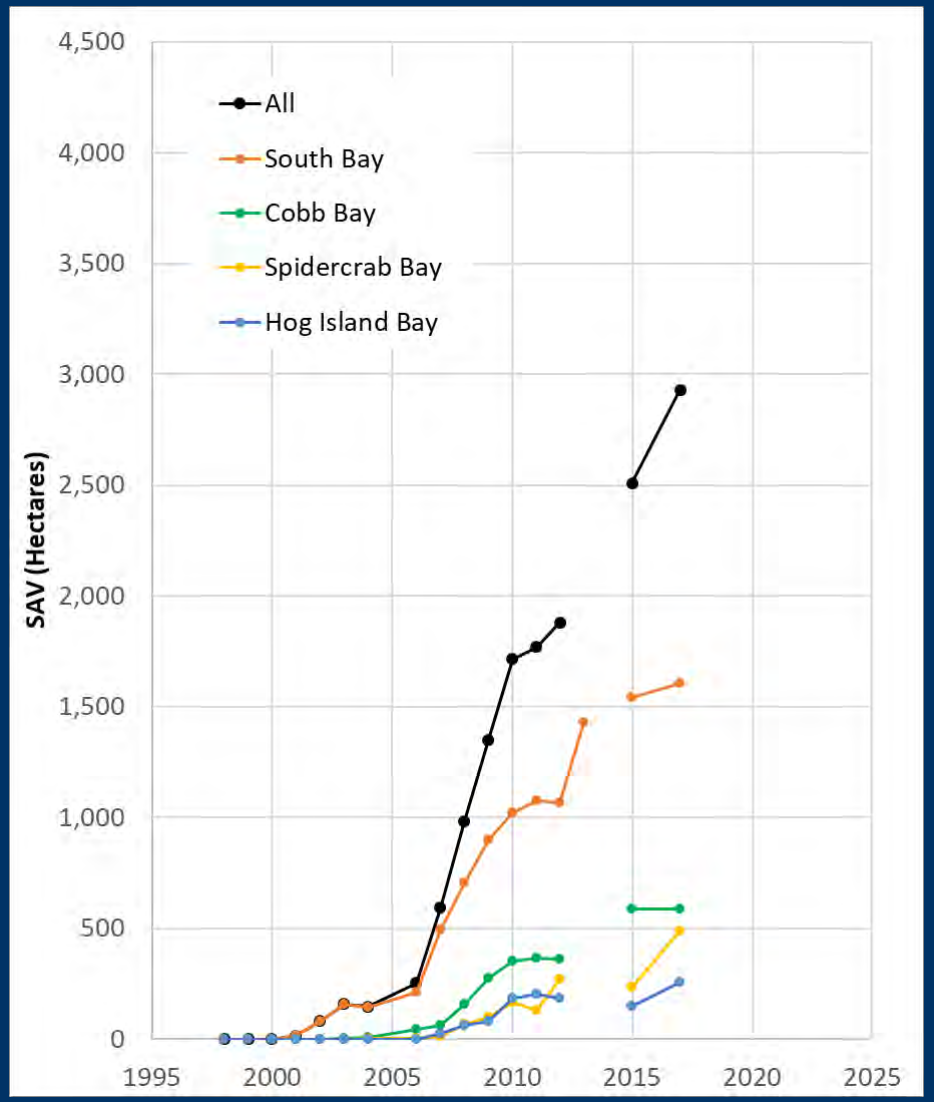

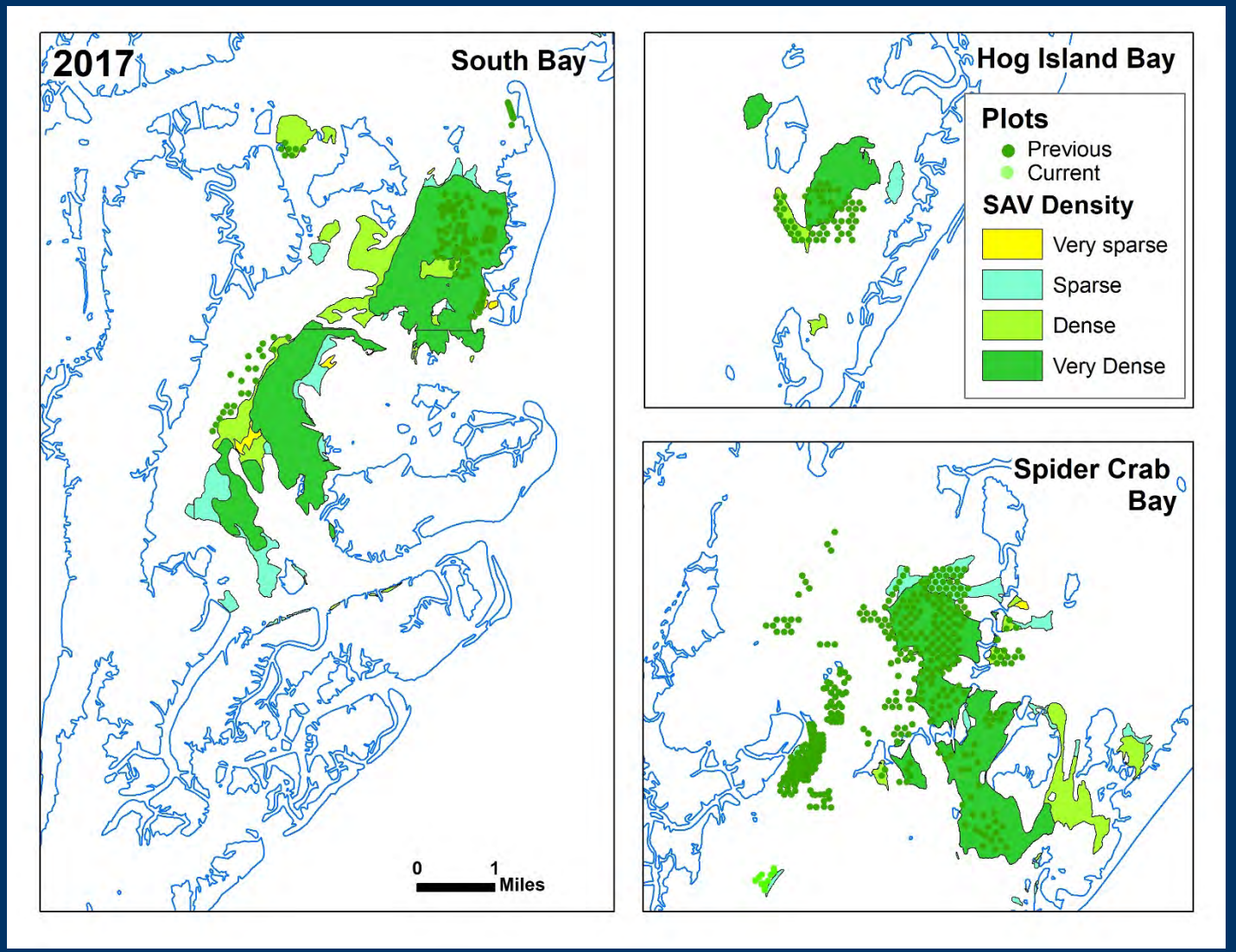

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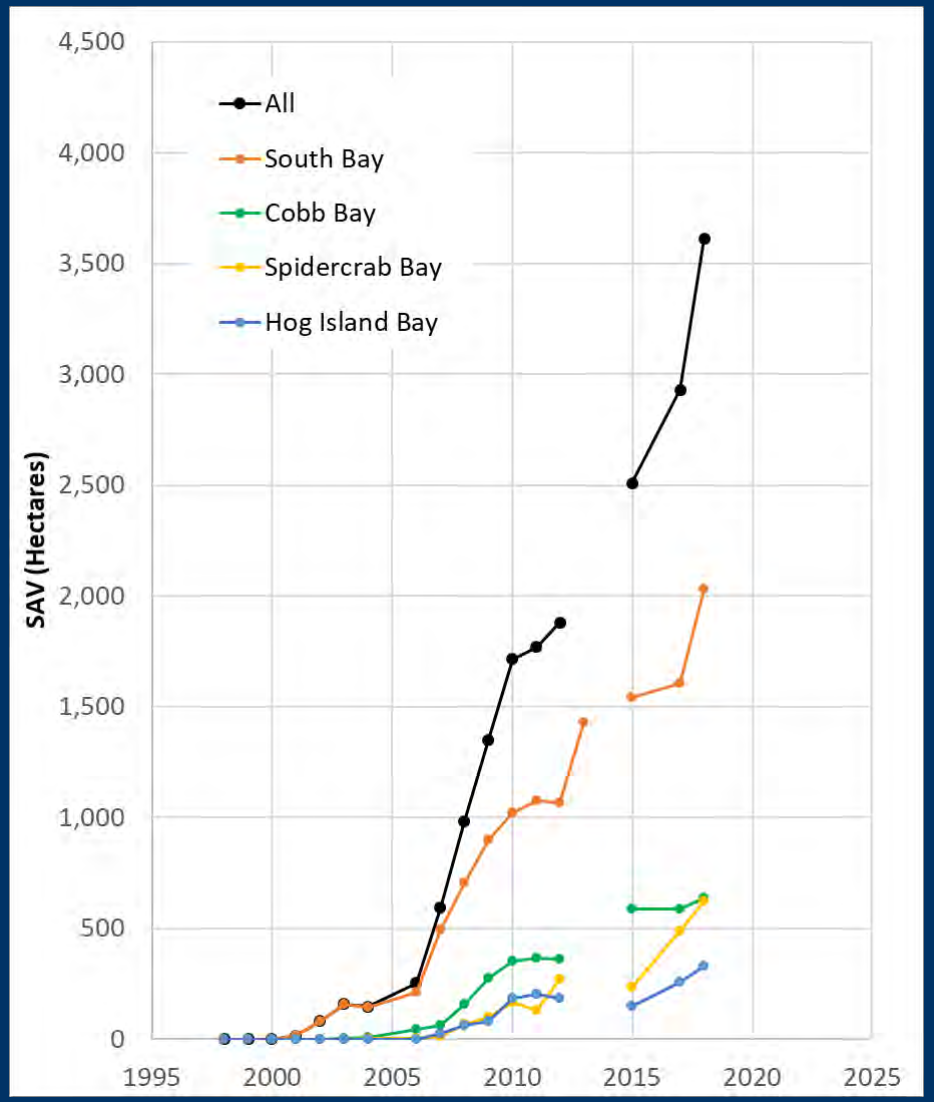

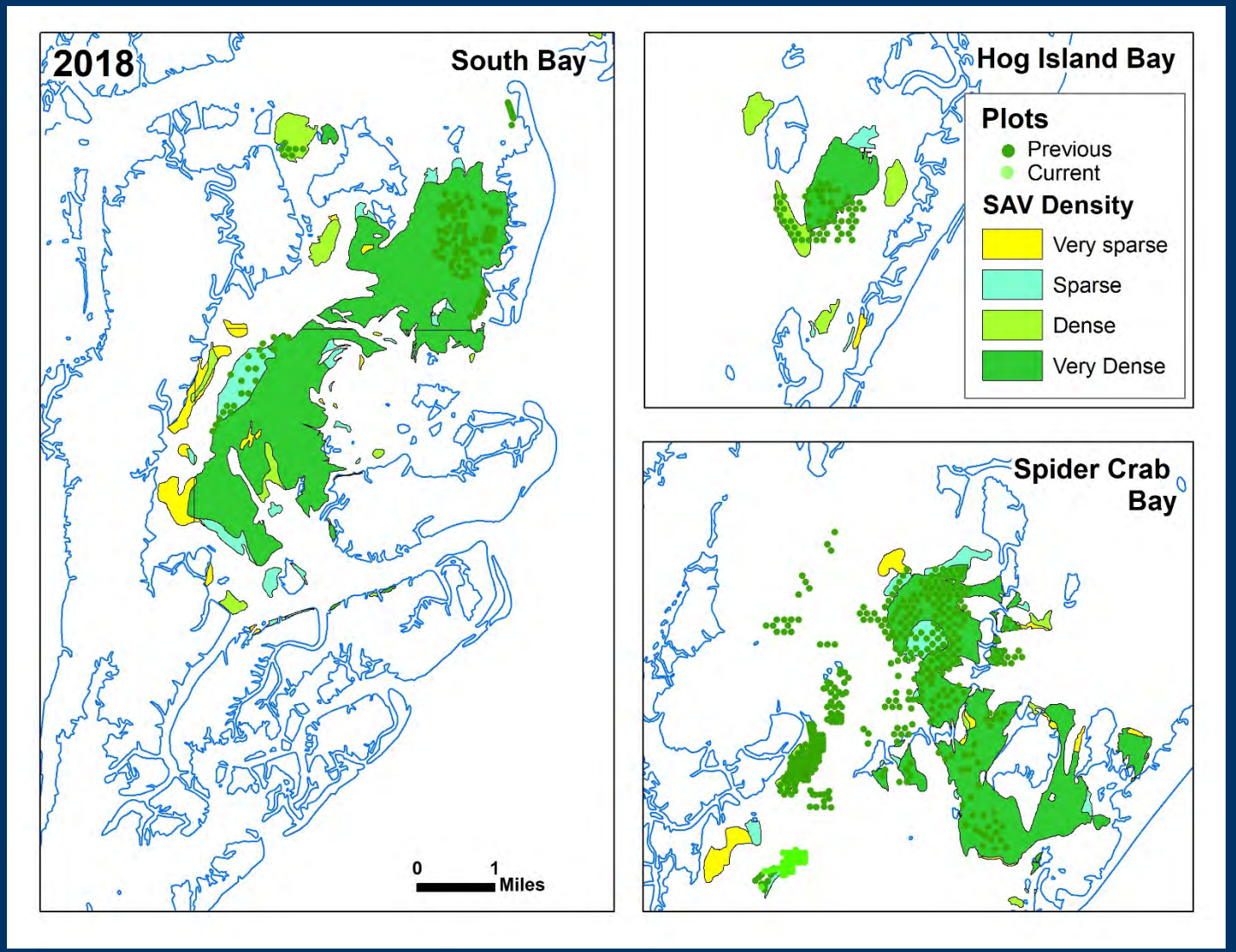

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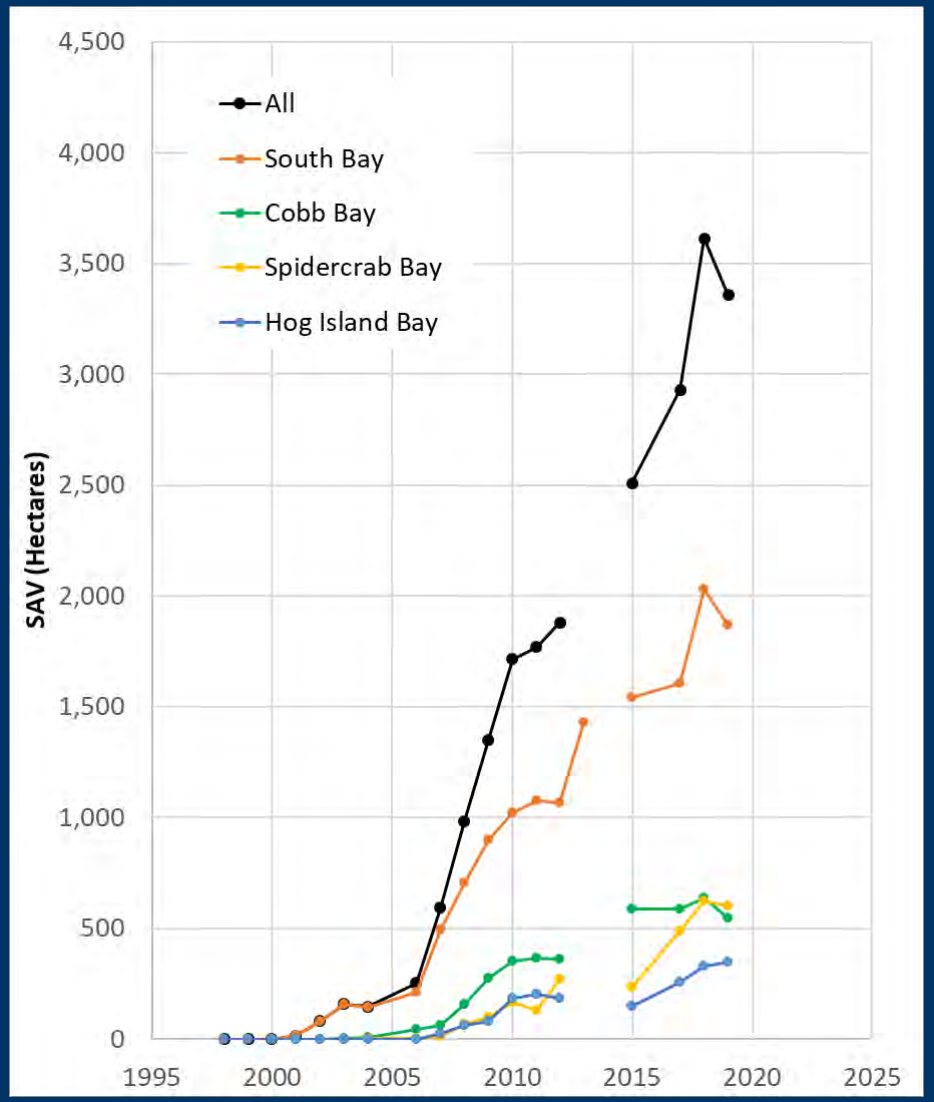

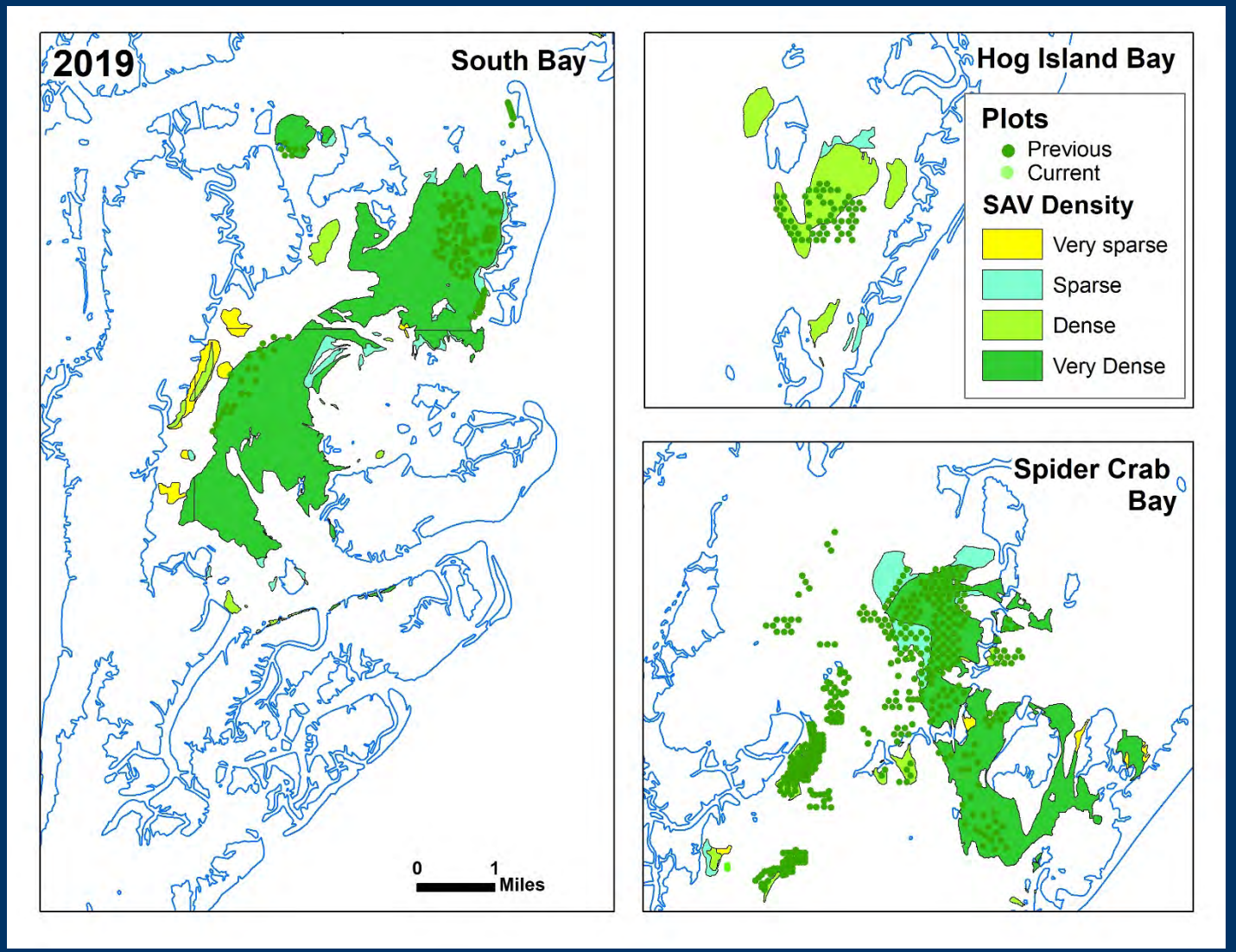

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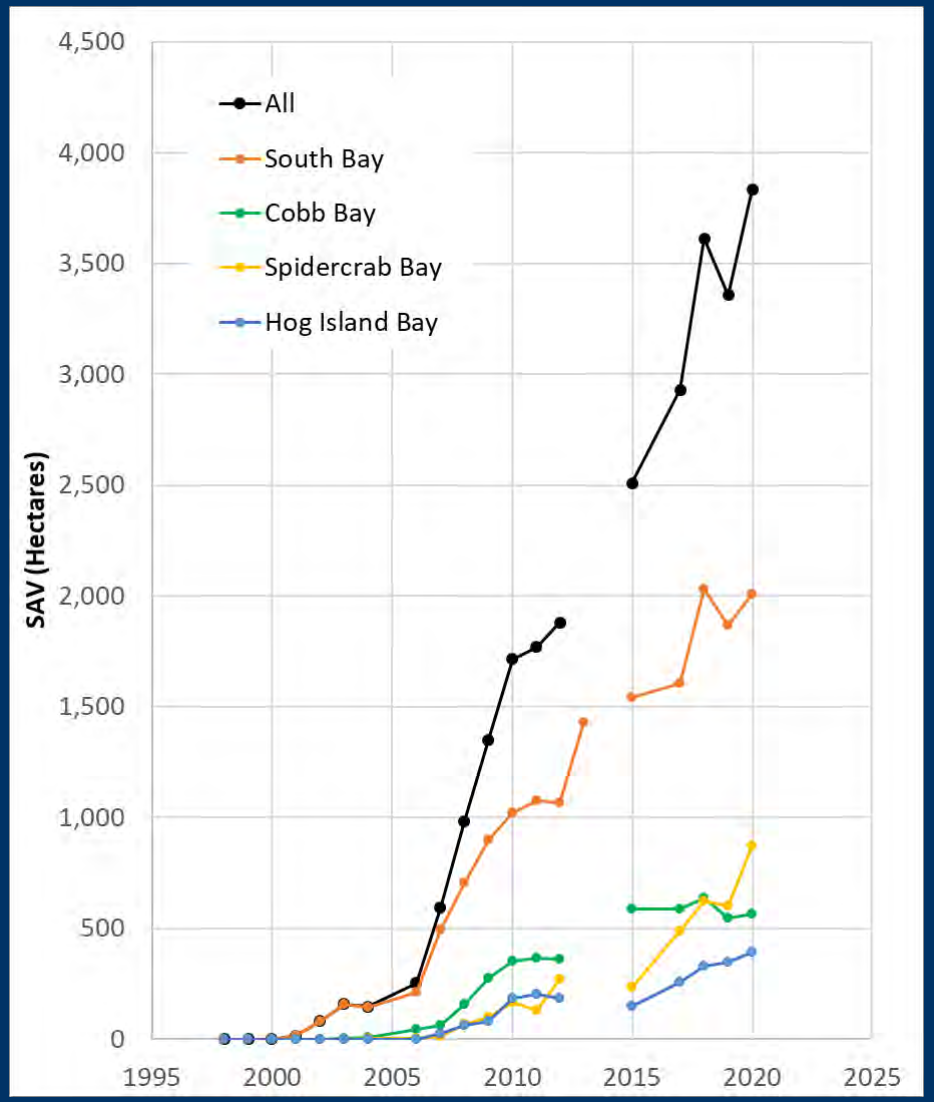

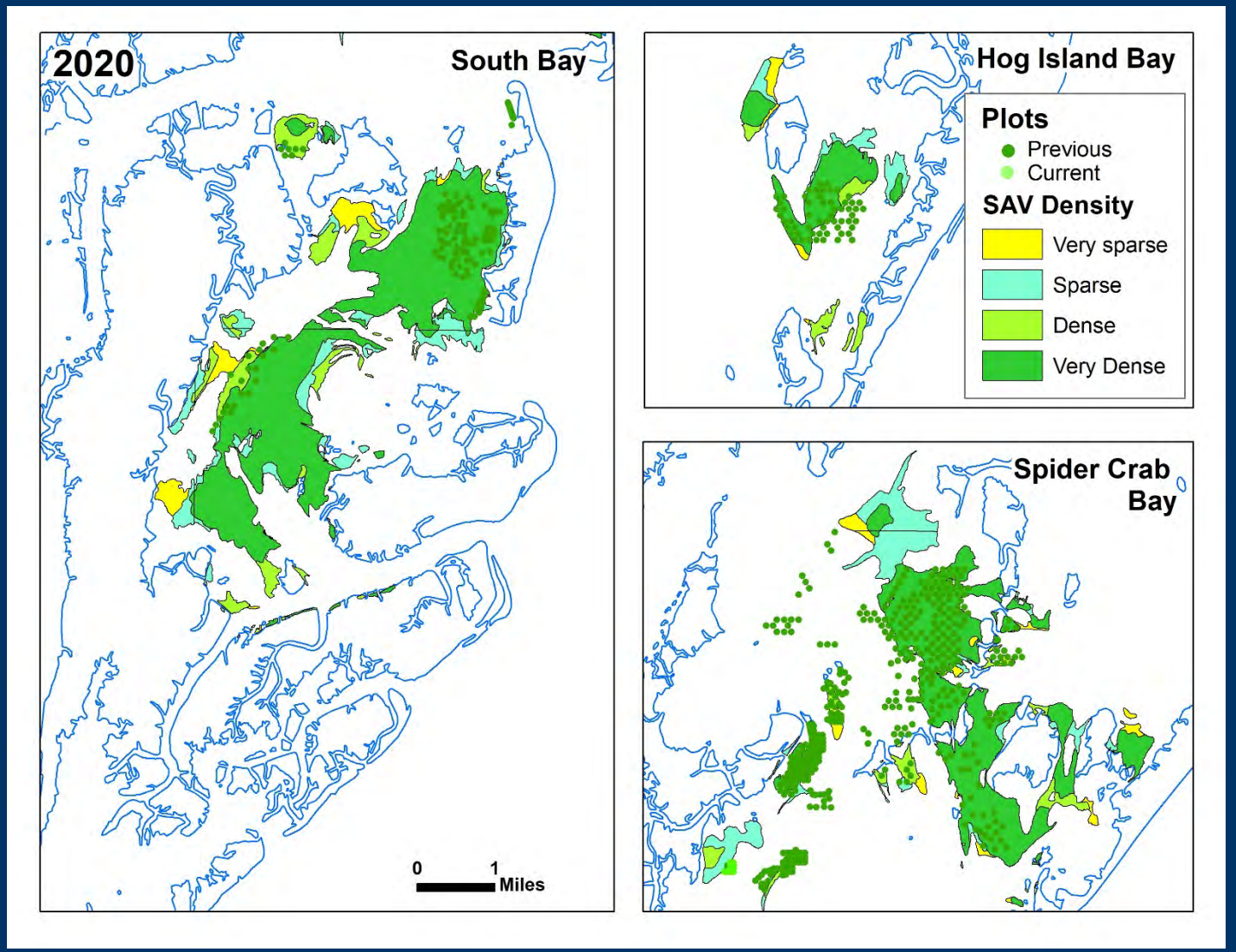

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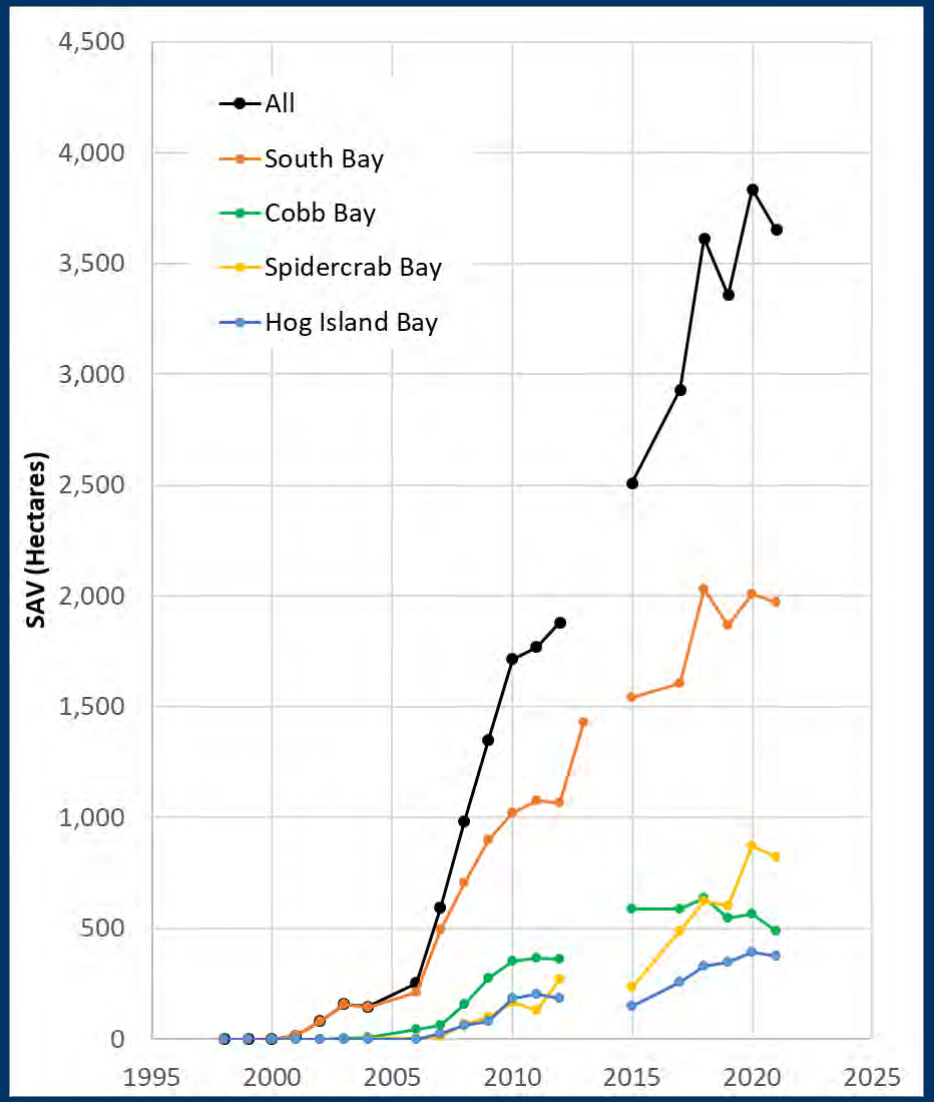
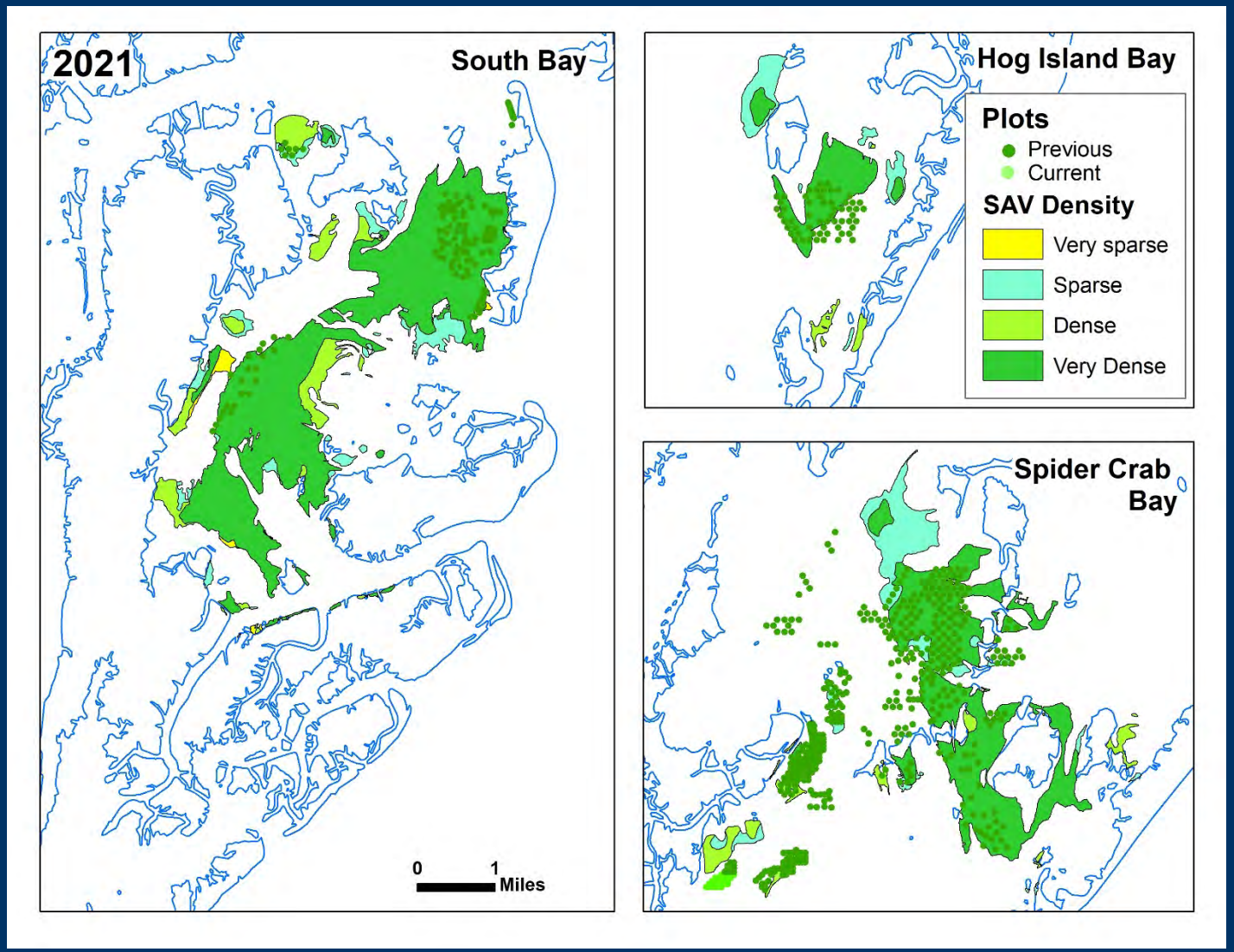
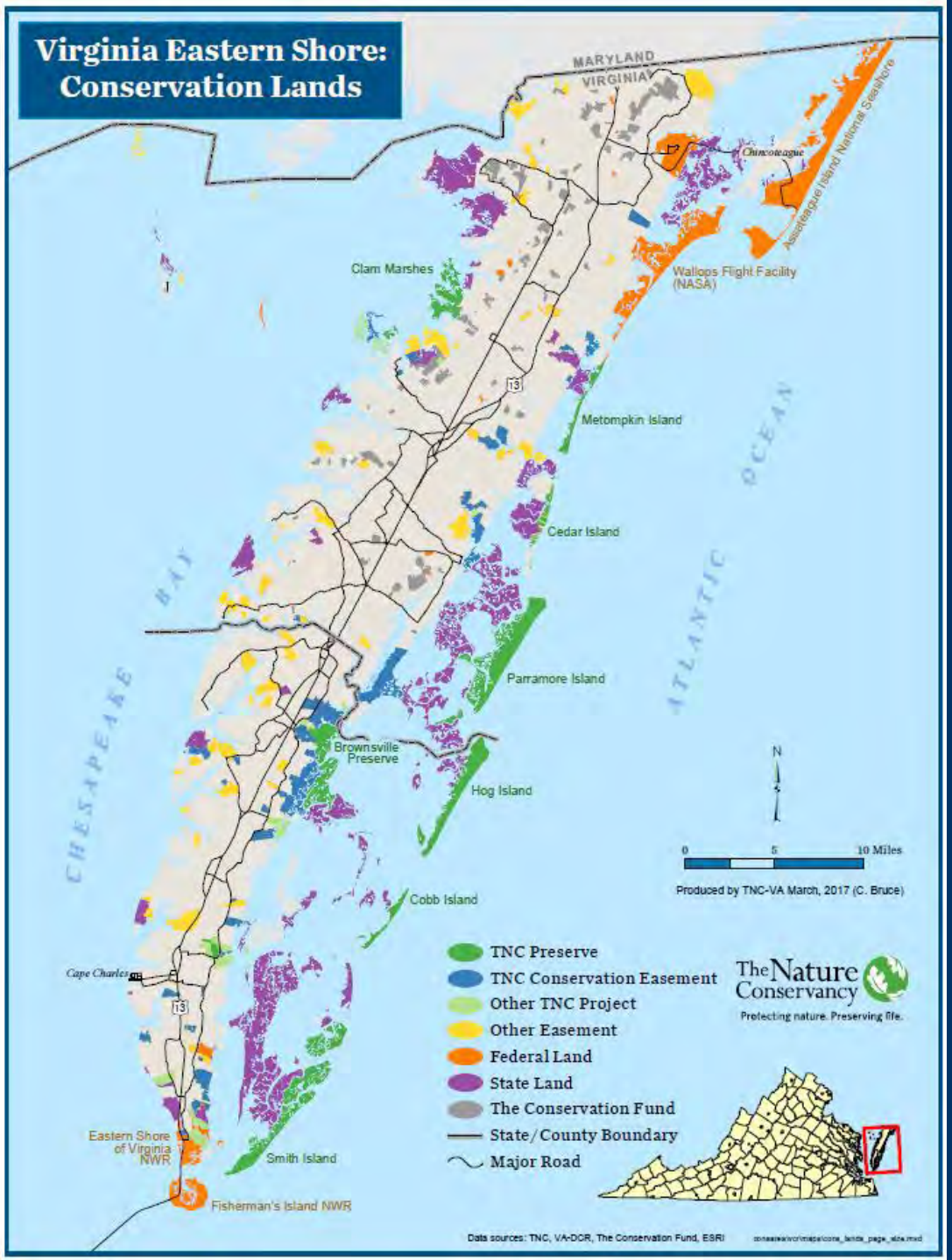




Courtesy of David Wilcox/ Karen McGlathery

In 20 years, seagrass meadows have captured 5000 tons carbon



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Legacy of Land Conservation:

Largest stretch of coastal wilderness on the East Coast of the U.S.

Additional Enabling Conditions Include:

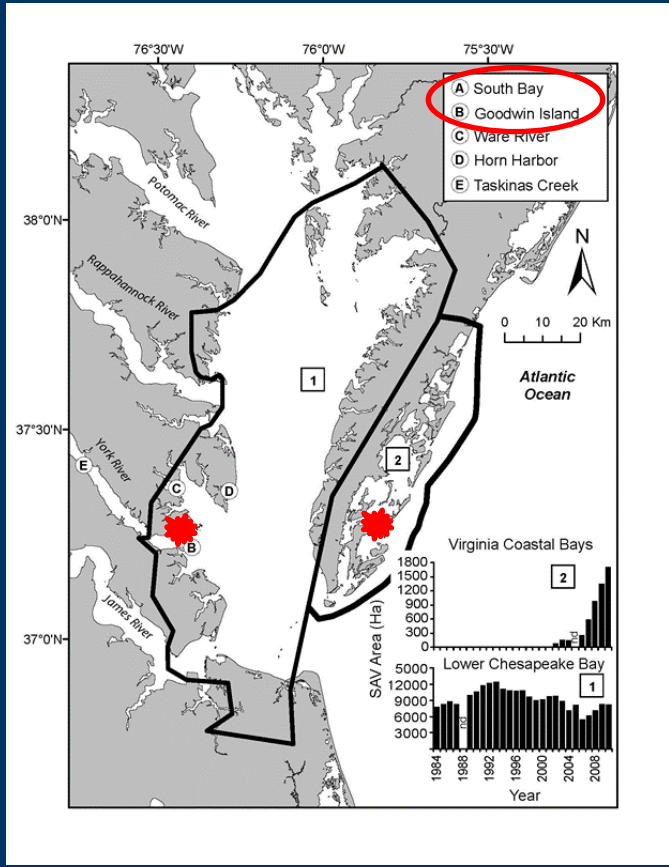
Political Will and State Level Support

Development of Methodology

Long-term Research and Monitoring

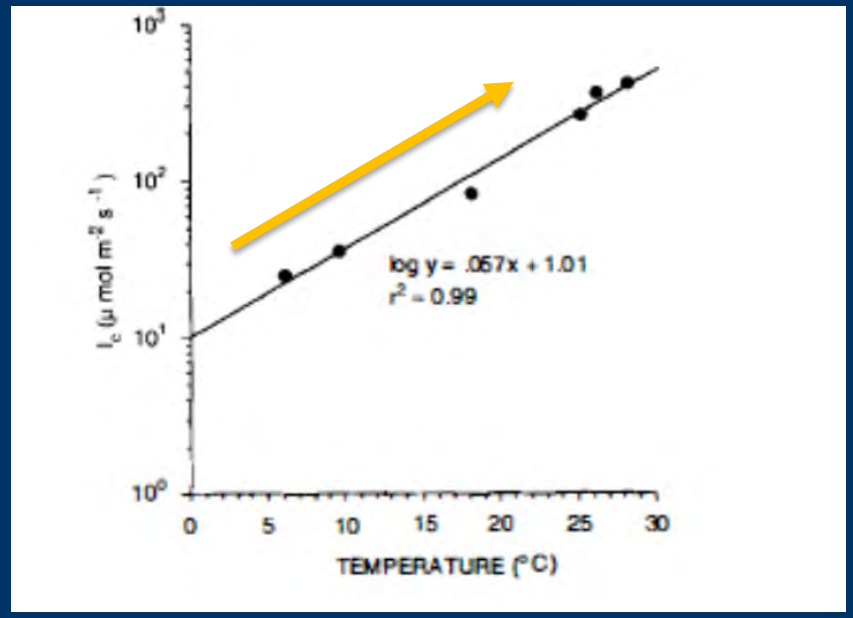
Why has Seagrass Restoration continued to be successful at VCR?

Comparison of WQ conditions at South Bay vs comparable Chesapeake Bay sites using in situ continuous monitoring



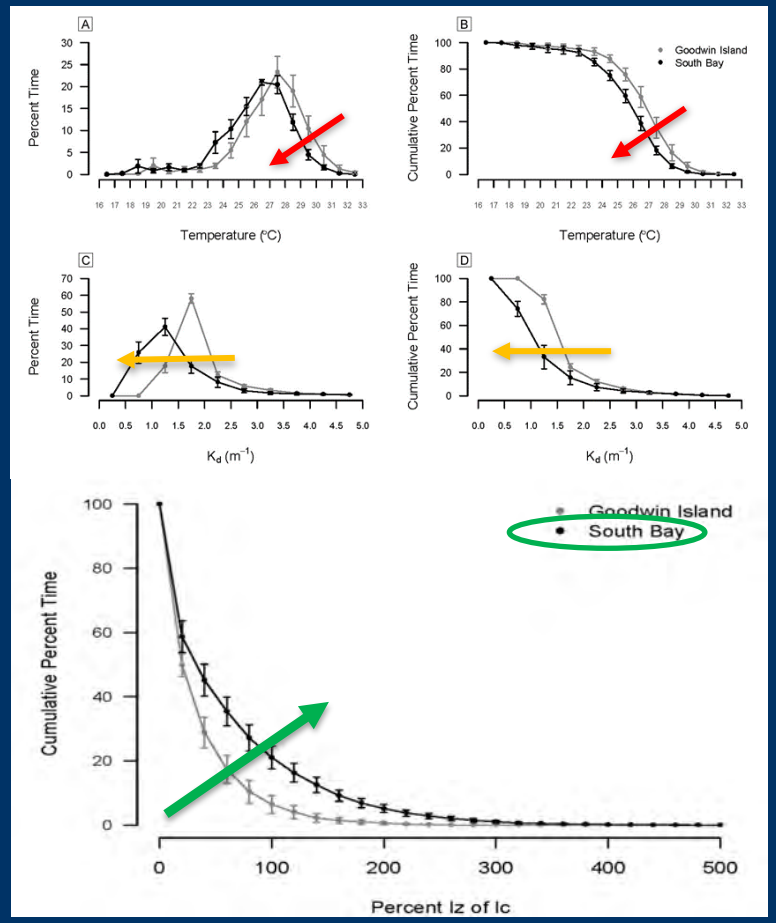
Moore et al. 2012 MEPS

Light required for eelgrass survival (I_c) increases dramatically with temperature



Moore et al. 1997 JEMBE

South Bay site has cooler summertime water temps and clearer water resulting in much greater percent of time light (I_z) exceeds minimum (I_c) needed for growth



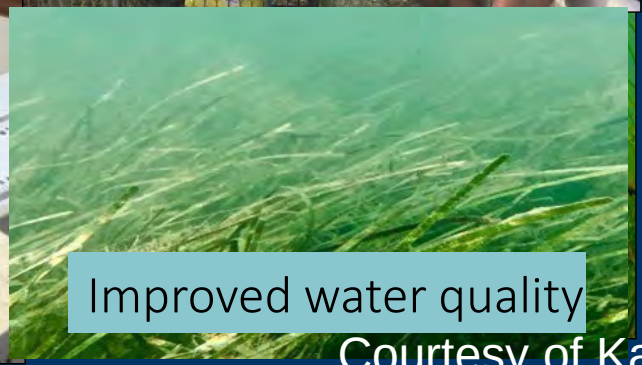
Moore et al. 2012 MEPS

Restoration for carbon sequestration has important co-benefits

Scallops are returning

Fish 5x more abundant

Higher crab densities



Improved water quality

Courtesy of Karen McGlathery

VCR project development timeline

Project Start

Feasibility study

Development of VCS PD and MIR (2015-2019)

State review and approval, agreement on carbon rights, coordination of project boundary around shellfish permits

Project validation and first verification

Currently in public comment/start of validation

Global Opportunity: Proof of Concept

Collaboration on a Grand Scale

Virginia Institute of Marine Science

The University of Virginia

TNC's Global Oceans Team and Virginia Chapter

Commonwealth of Virginia

TerraCarbon


QUESTIONS?