

Aquaculture

in the

US Virgin Islands



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Aquaculture history

- Rust-op-twist artificial upwelling mariculture project, St. Croix
- 1970's
- Deep nutrient-rich water pumped to surface from pipes
- Grew algae and several species of shellfish
- Operated by Columbia University and the University of Texas

Aquaculture History

- UVI aquaponics program, St Croix
- Jim Rakocy
- Integrated hydroponics/aquaculture
- Recirculating freshwater systems
- Training course, international scope
- ~30 years
- Currently one company is interested in aquaculture in the USVI

USVI Aquaculture Law

- Act 6471
- Passed 2001
- Created a Virgin Islands Commission on Aquaculture and Mariculture to study and develop a comprehensive plan for aquaculture in the USVI
 - Encourage new businesses or firms to locate to the Territory

CZM Permits

- Alteration of the shoreline or submerged lands;
- Construction of new structures for commercial or private use;
- Discharge or disposal of waste materials;
- Enlargement or expansion of existing structures;
- Land clearing, grading or excavations;
- Placement of permanent or temporary structures on submerged lands (e.g. moorings, docks, etc.).
- Major projects require an extensive application form, an Environmental Assessment Report (EAR), public notices/hearings and a decision by the appropriate committee of the CZM Commission (a citizen board appointed by the Governor and confirmed by the Legislature).
- DFW is part of the major permit review team

184 - 43. Aquaculture Projects

Permit requirement. Discharges from “aquaculture projects” (as defined in Section 184-2) are subject to the TPDES* permit program through section 318 of CWA, and in accordance with 40 CFR part 125, subpart B

*Territorial Pollutant Discharge Elimination System

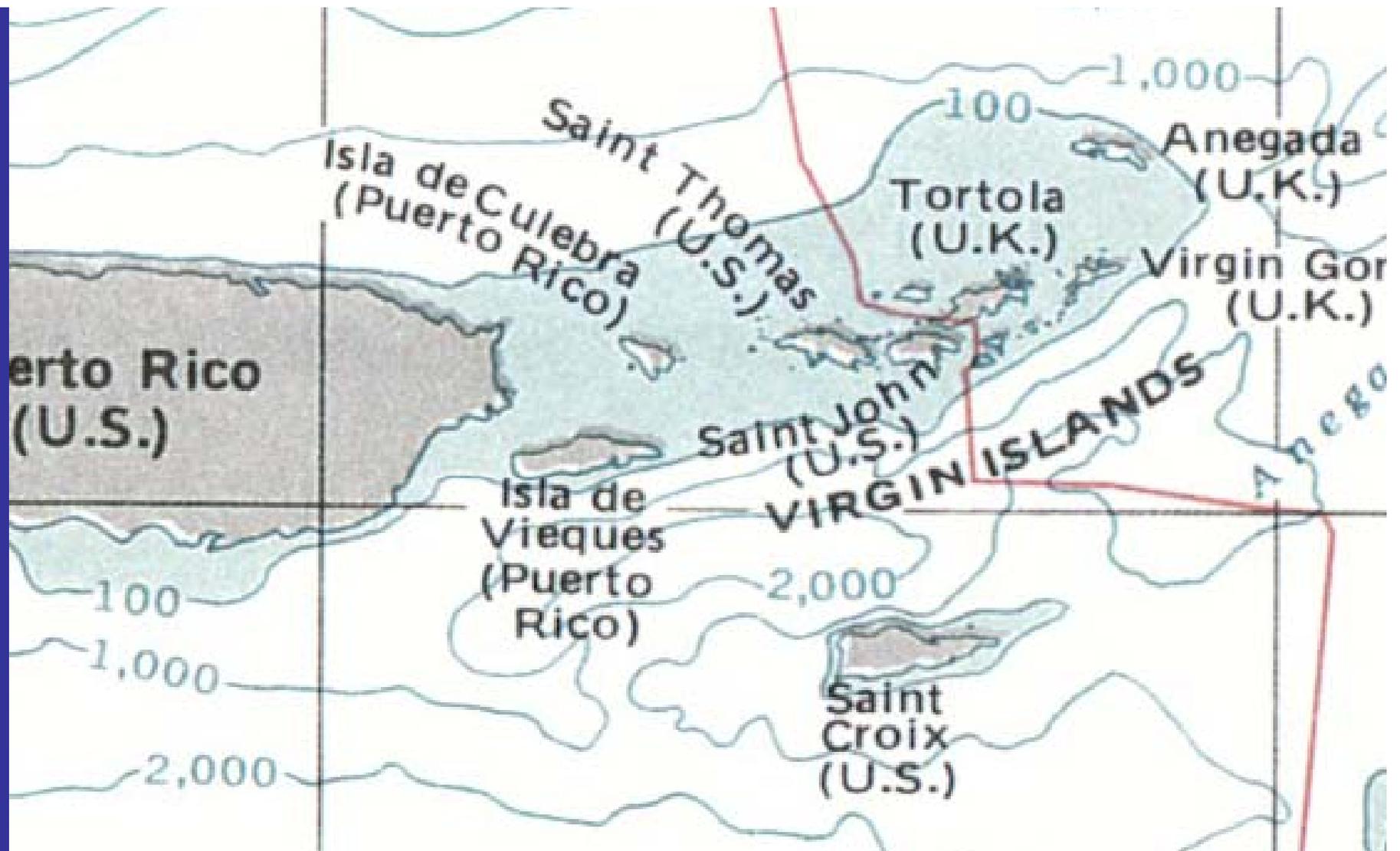
Challenges/opportunities

- High labor costs
- High land costs
- High shipping costs

- High sunlight levels
- Constant temperature
- Good water quality
- Deep nutrient-rich water close to shore

USVI aquaculture issues

- Bathymetry
- Weather (hurricanes)
- Closed areas (limit locations to conduct aquaculture)

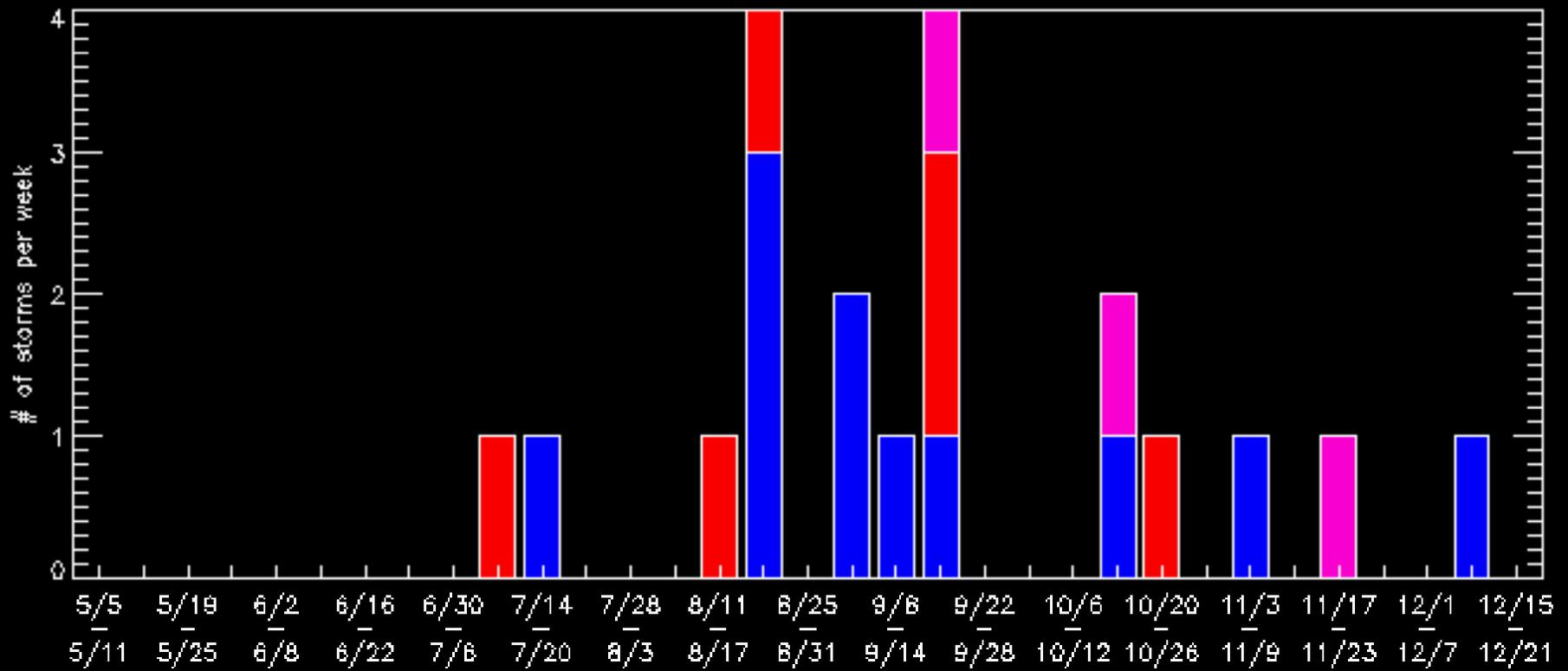


USVI territorial waters—extend to 3 miles offshore

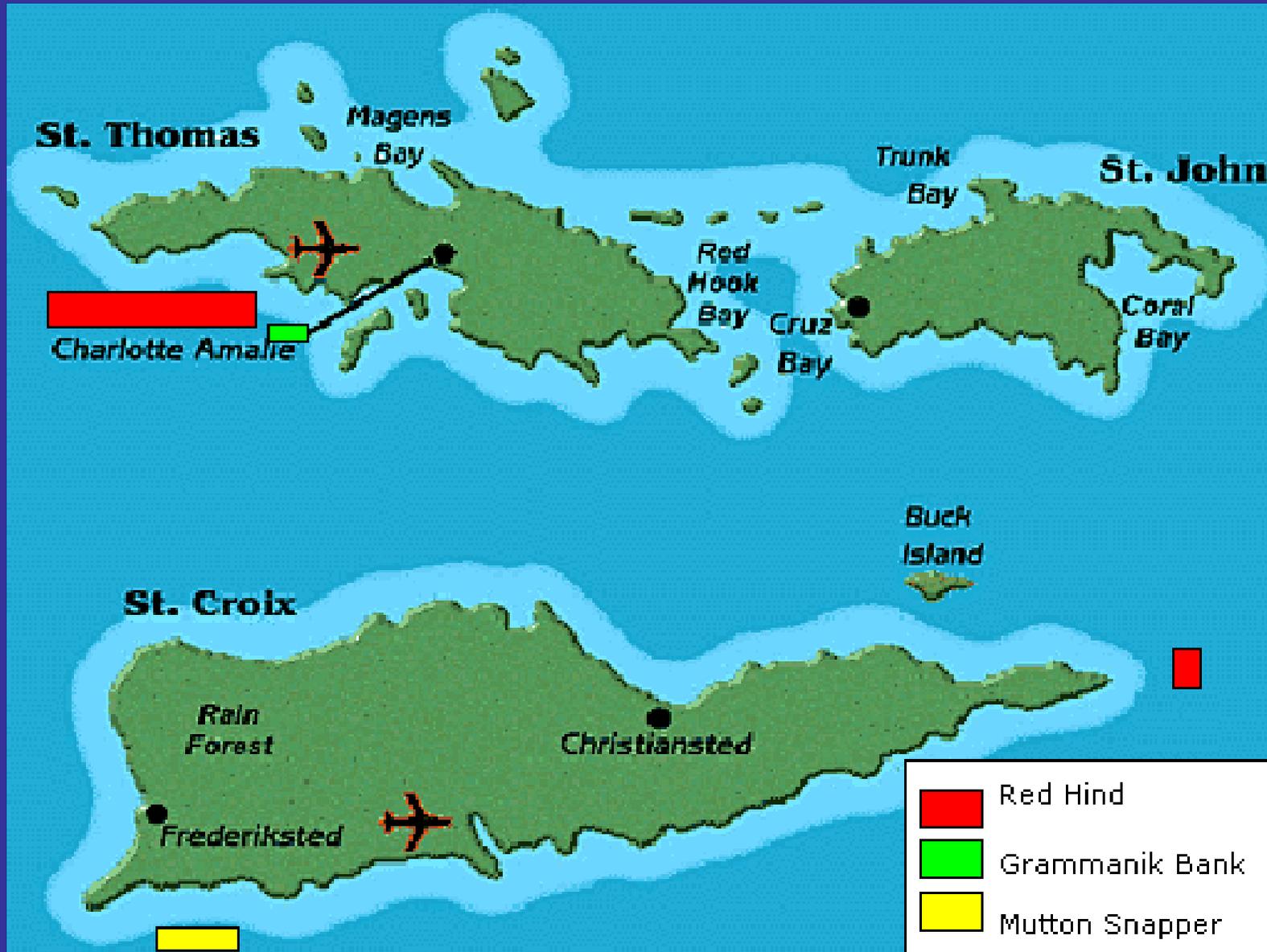
St. Croix, USVI

Period: 1944 - 2008

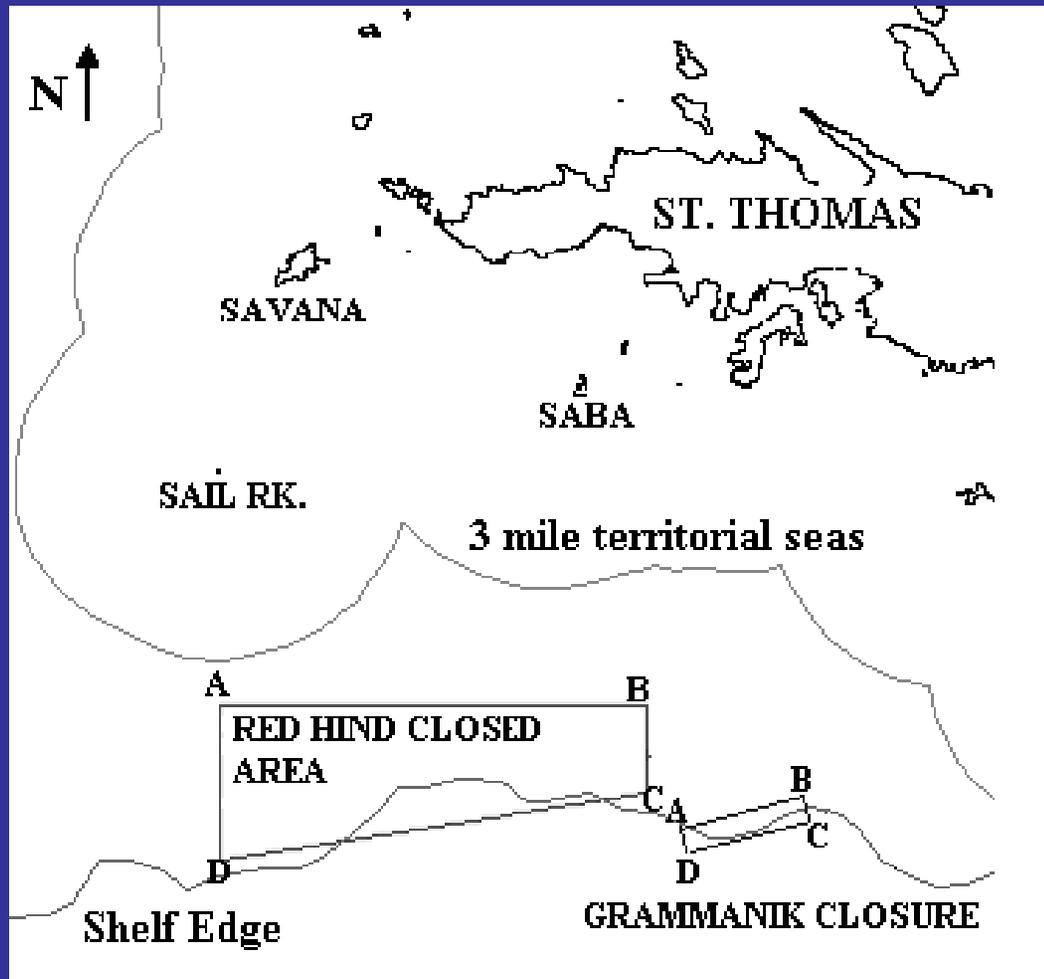
category 3-5 hurricanes: purple; category 1-2: red; tropical storms: blue



Permanent and Seasonal Closures



Red Hind Marine Conservation District (STT)



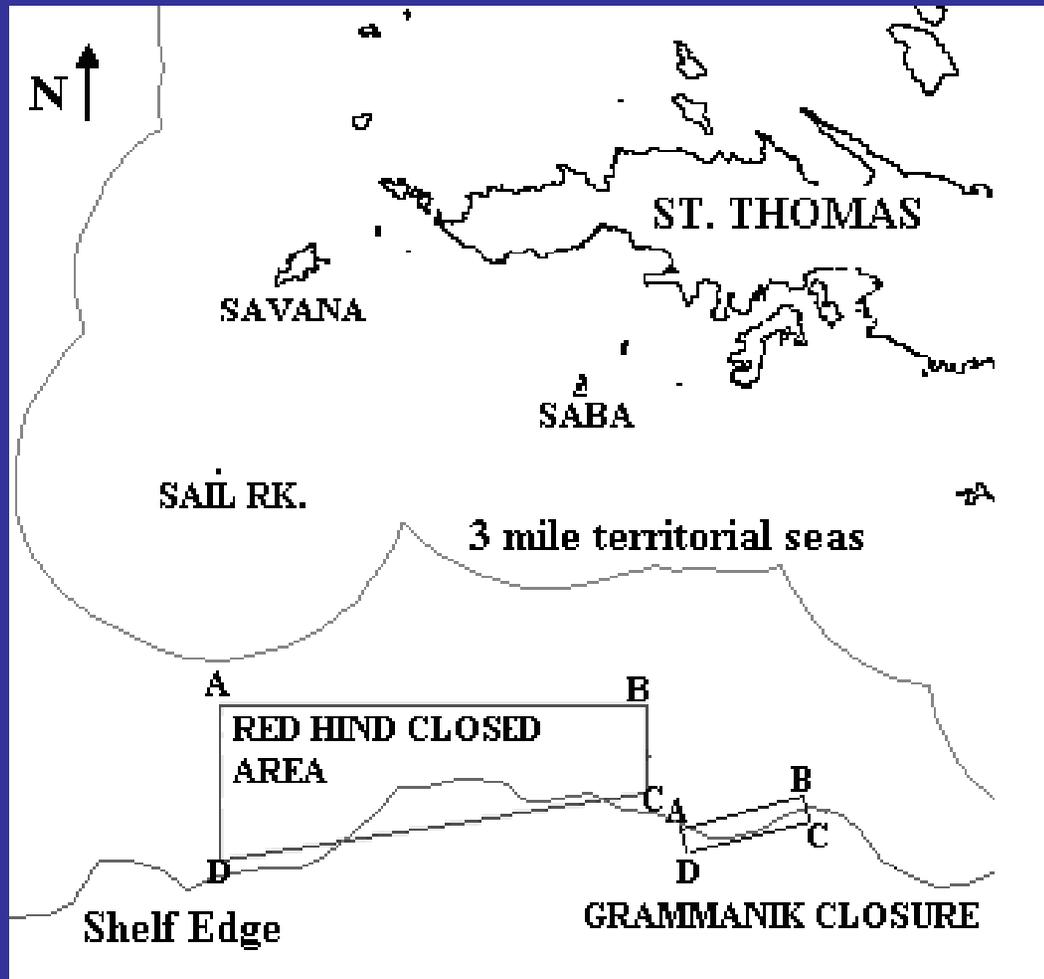
-NOAA/CFMC

-Est. 1989

(seasonal)/1999 (year-round)

-No harvest/no anchoring

Grammanik Bank Seasonally Closed Area (STT)



-NOAA/CFMC

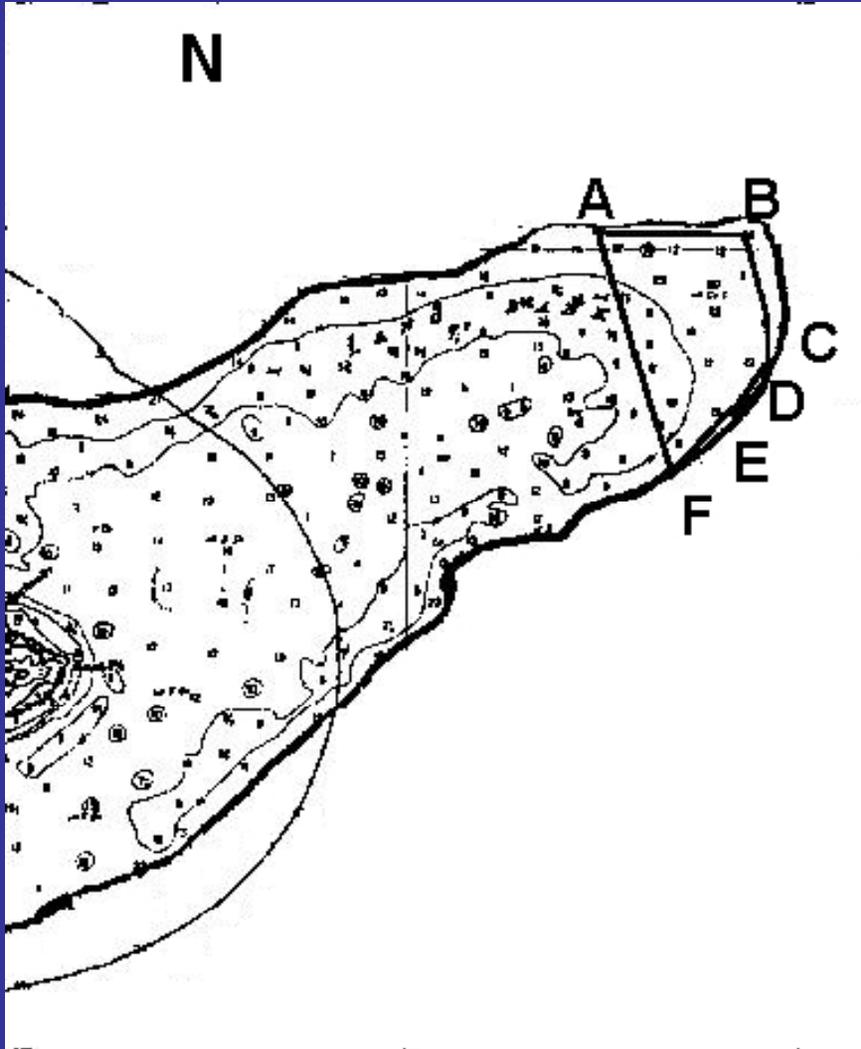
-Est. 2005

-Closed to all fishing
February 1 to April 30

-Rest of year: No
fishing with traps,
pots, bottom long
lines, gill or trammel
nets. Pelagics OK

Red Hind

Seasonally Closed Area (STX)



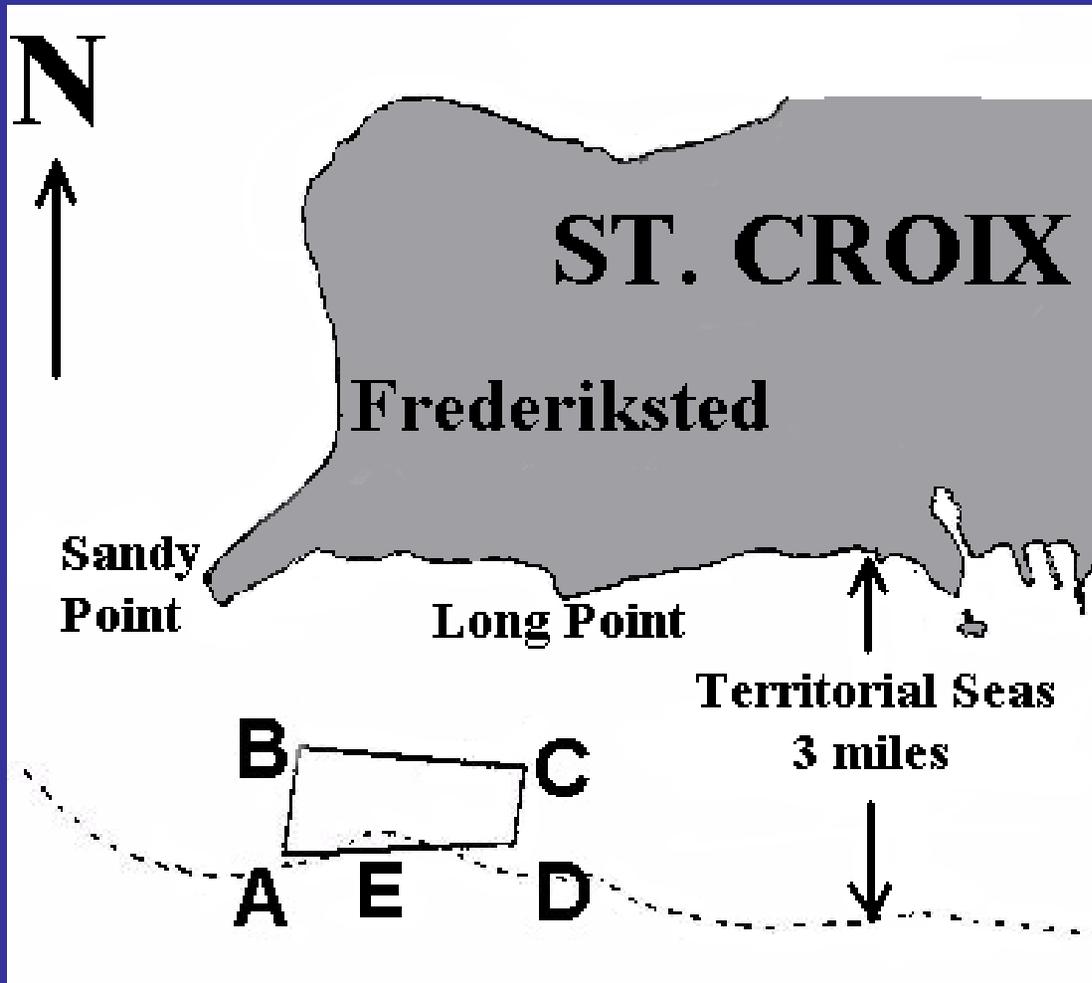
-NOAA/CFMC

-Est. 1993

-All fishing prohibited
December 1 to February 28

-Rest of year: No fishing
with traps, pots, bottom
long lines, gill or trammel
nets. Pelagics OK

Mutton Snapper Seasonally Closed Area (STX)



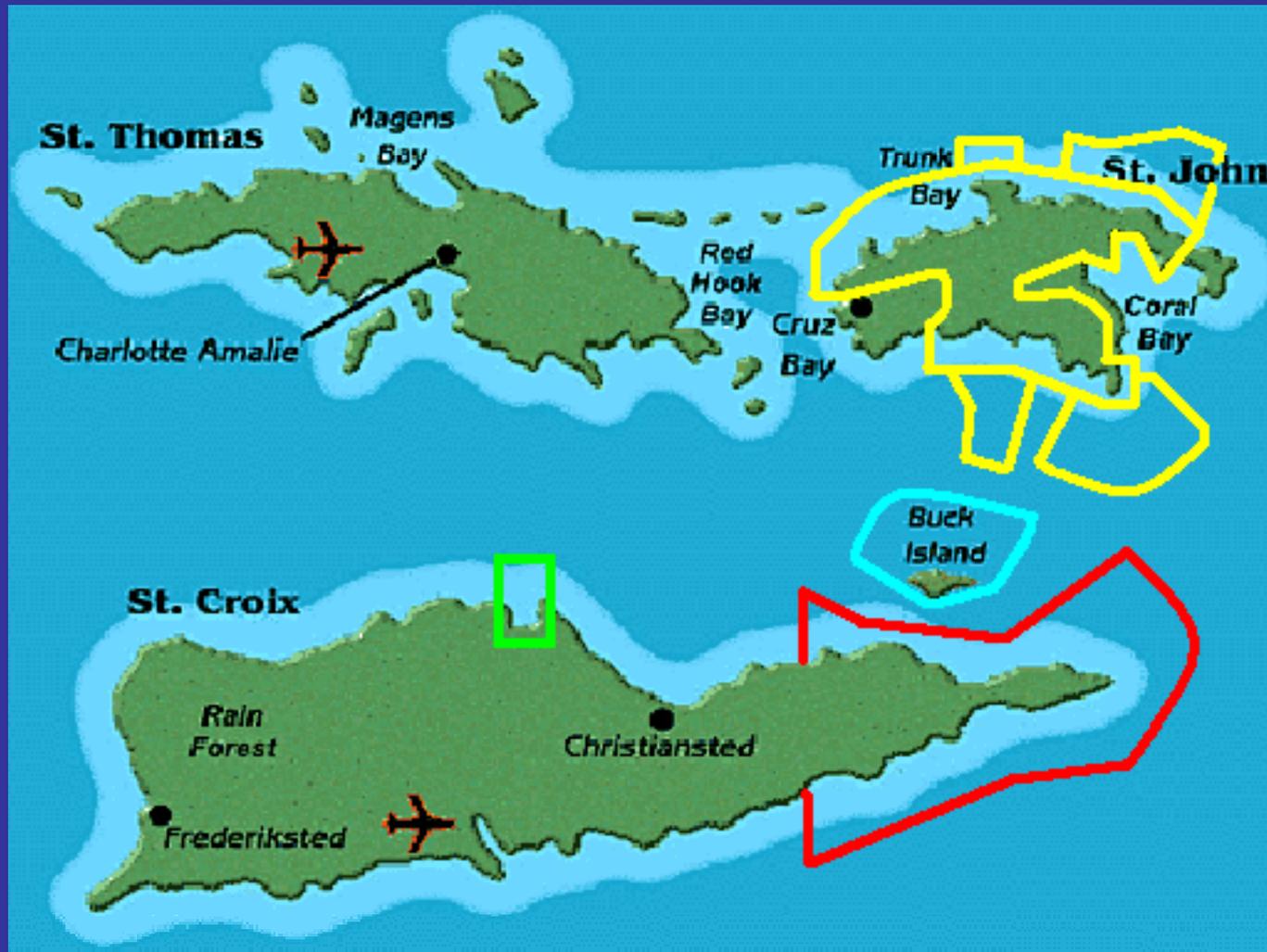
-NOAA/VI Gov

-Est. 1993

-No harvest of any species March 1 to June 30

-Rest of year: No fishing with traps, pots, bottom long lines, gill or trammel nets.
Pelagics OK

National Marine Monuments, Historical and Ecological Reserves, and Marine Parks

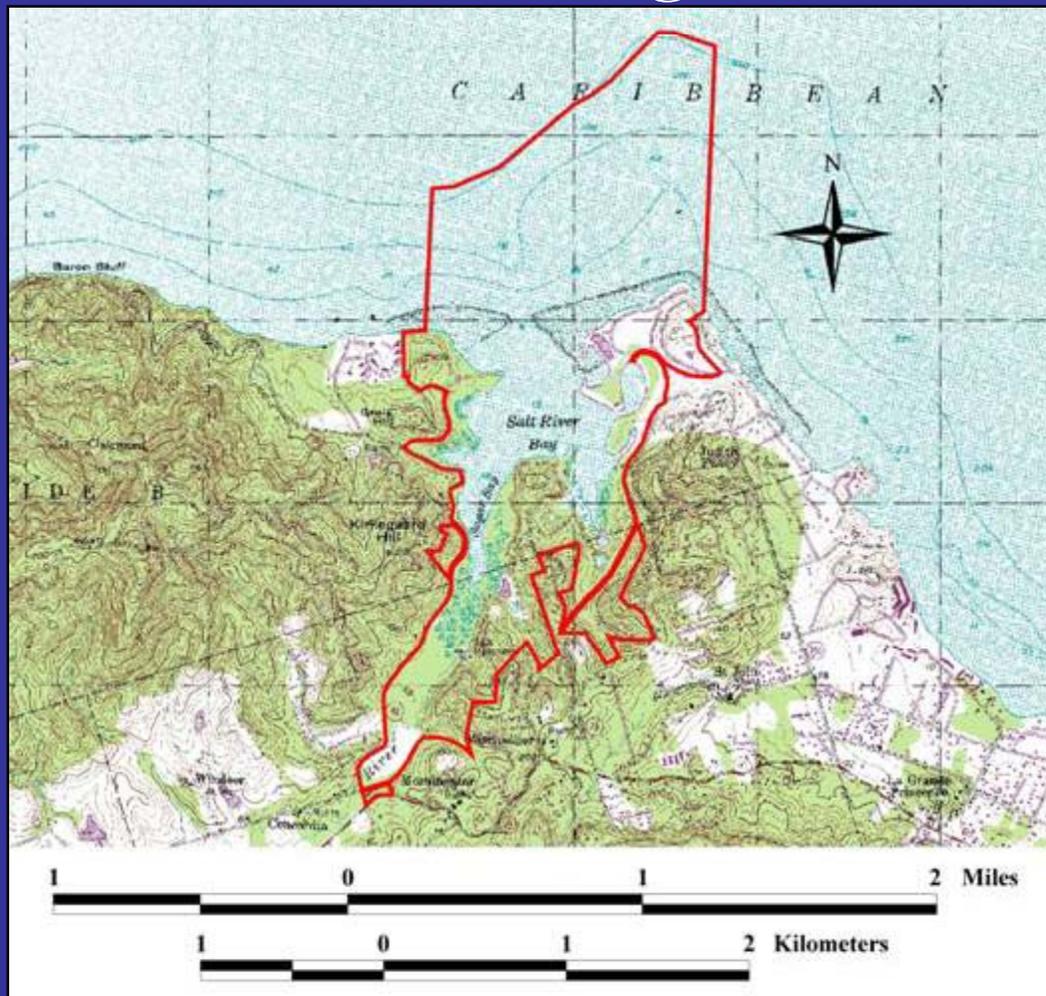


Coral Reef National Monument and National Park
Salt River Bay National Historical Park and Ecological Reserve

Buck Island Reef National Monument
St. Croix East End Marine Park

Salt River MR&WS (DPNR)

Salt River Bay National Historic Park and Ecological Preserve (NPS)



-NPS (land - 224 acres)/DPNR (water) collaboration

-Est. 1992(NPS) and 1995(DPNR)

-Proposed Rules/Regs

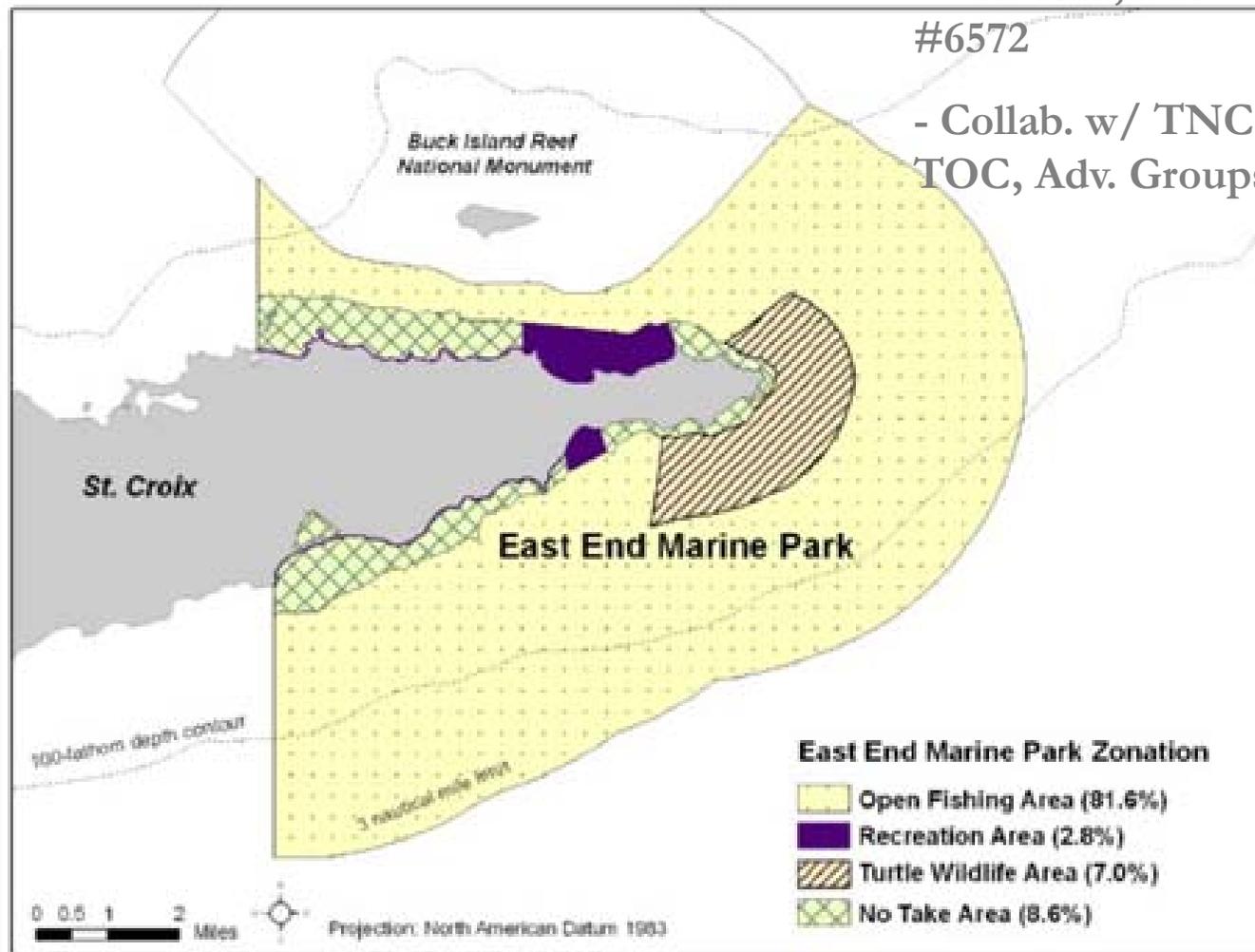
-No harvest of any species

-No anchoring outside of designated areas

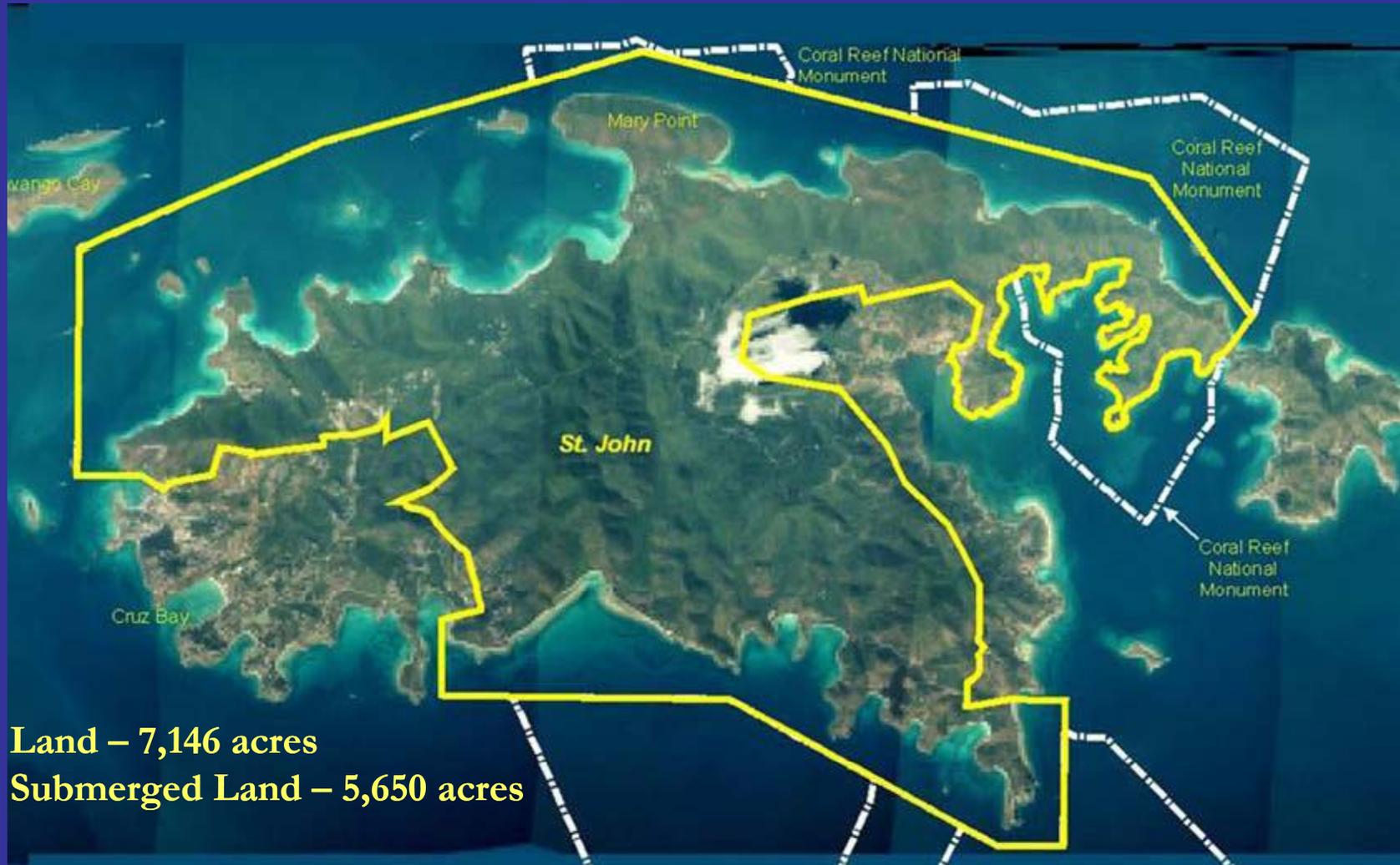
St. Croix East End Marine Park (STXEEMP)

- Est. 2003, Act
#6572

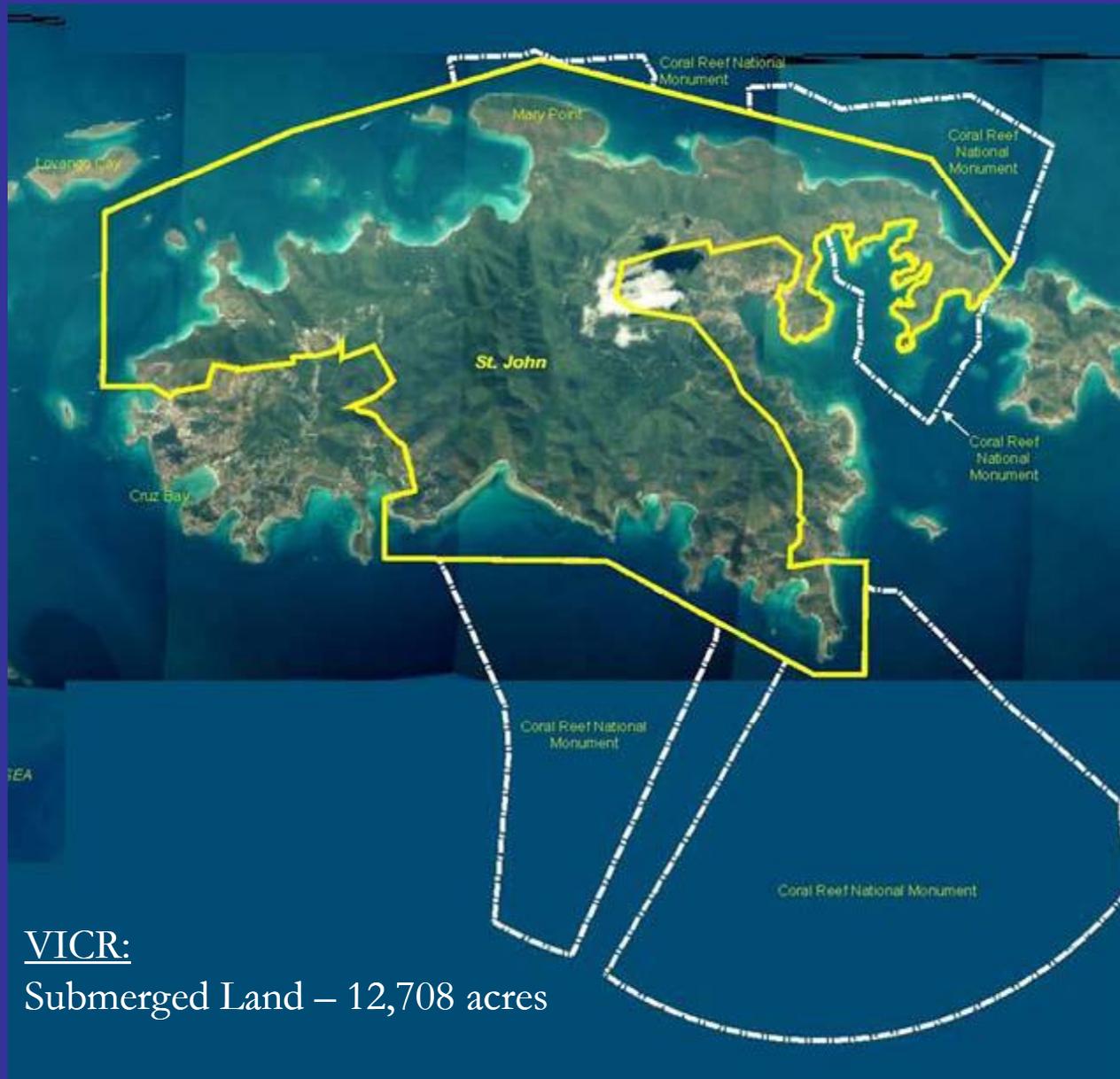
- Collab. w/ TNC,
TOC, Adv. Groups



Virgin Islands National Park – VIIS



V.I. Coral Reef Nat. Monument – VICR



VICR:

Submerged Land – 12,708 acres

Buck Island Reef National Monument - BUIS



Aquaculture—Way Forward

- Aquaculture--Opportunity waiting to happen
- Economic constraints may limit feasibility
- Implement Aquaculture Act to develop aquaculture plan for the USVI

Thank you