

Fisheries-Independent Monitoring in the Estero Bay Estuary

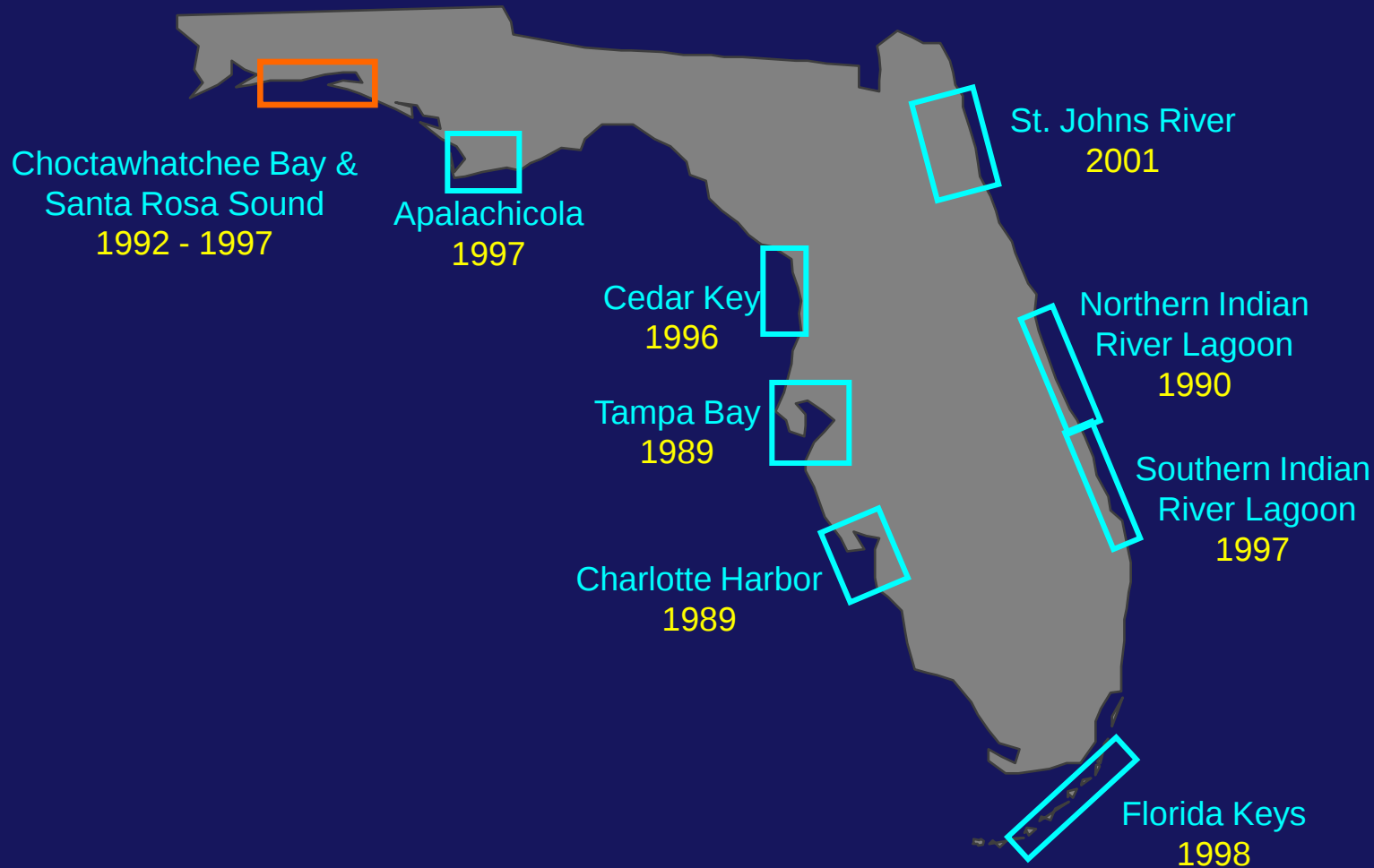
project funded by the South Florida Water Management District

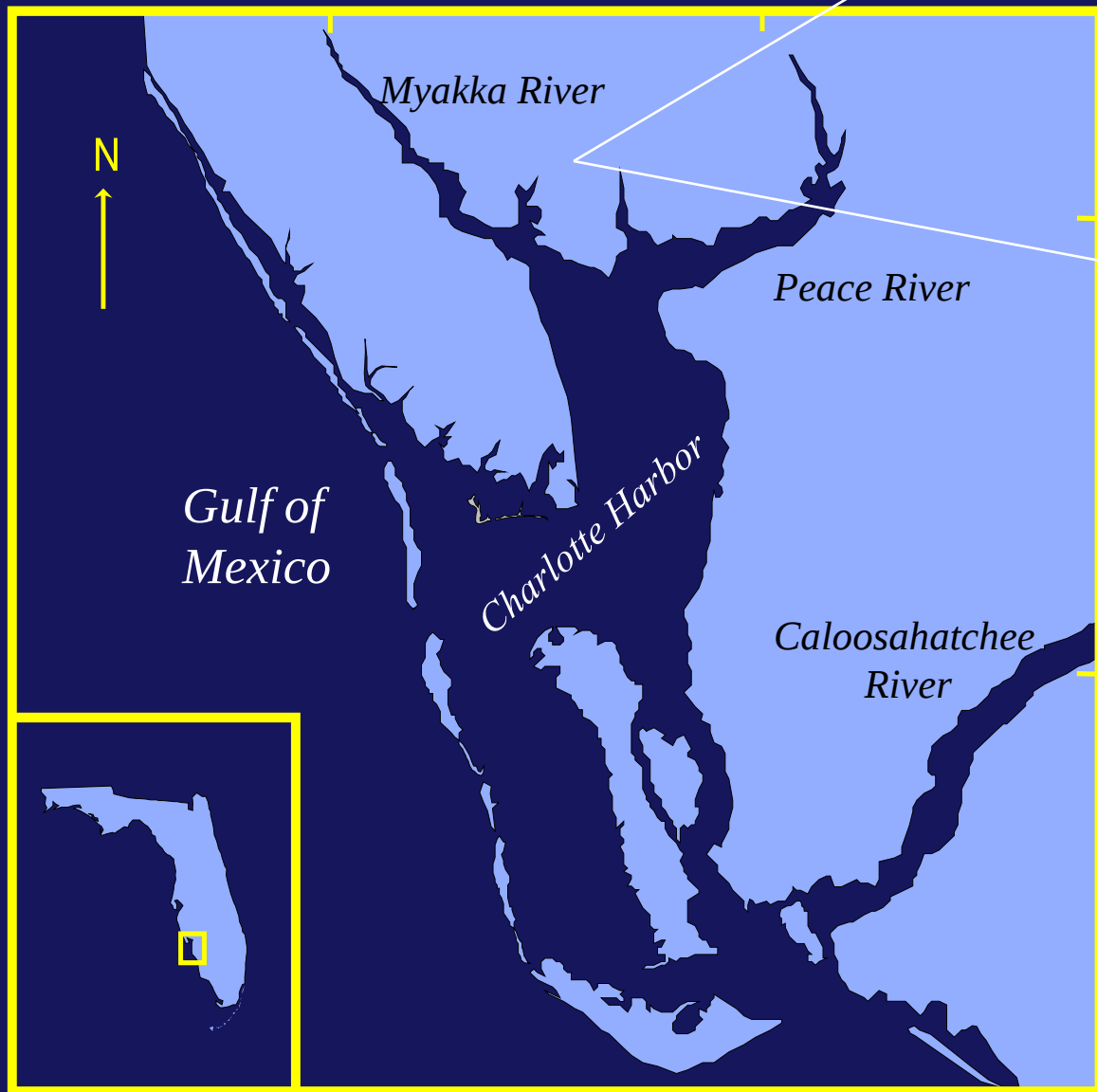
Philip Stevens, Bob McMichael, Marin
Greenwood, and Tim MacDonald

Florida Fish and Wildlife Conservation
Commission, Fish and Wildlife Research Institute,
Charlotte Harbor Field Laboratory



FIM program Field Labs





Research vessel - mullet skiff



Sampling gears used by the FIM program

Small fish sampling gears



21-m Seine

6.1-m Otter Trawl



Example of a small fish sample



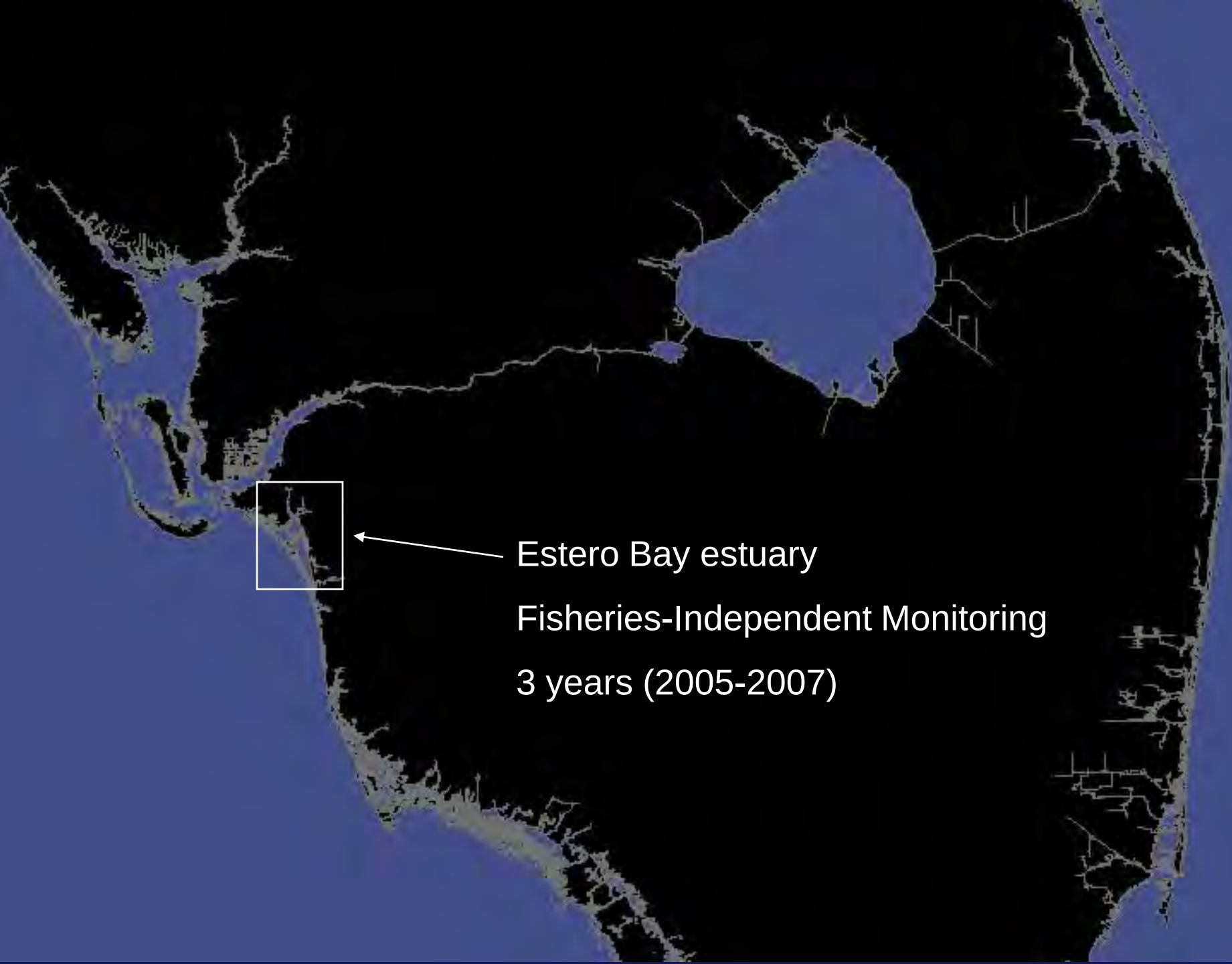
Large fish sampling gears



183-m Haul
Seine

Examples of a large fish sample



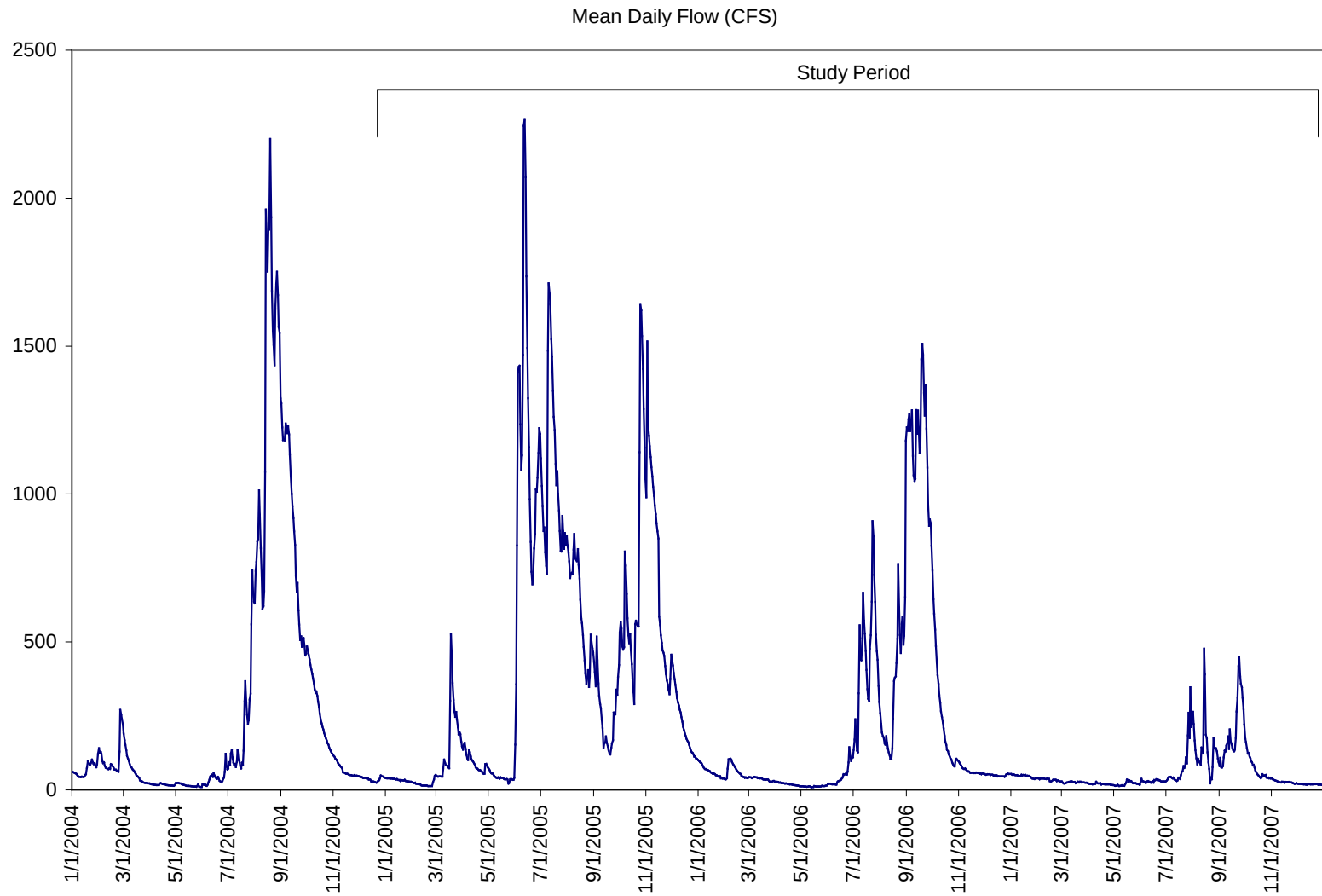


Estero Bay estuary

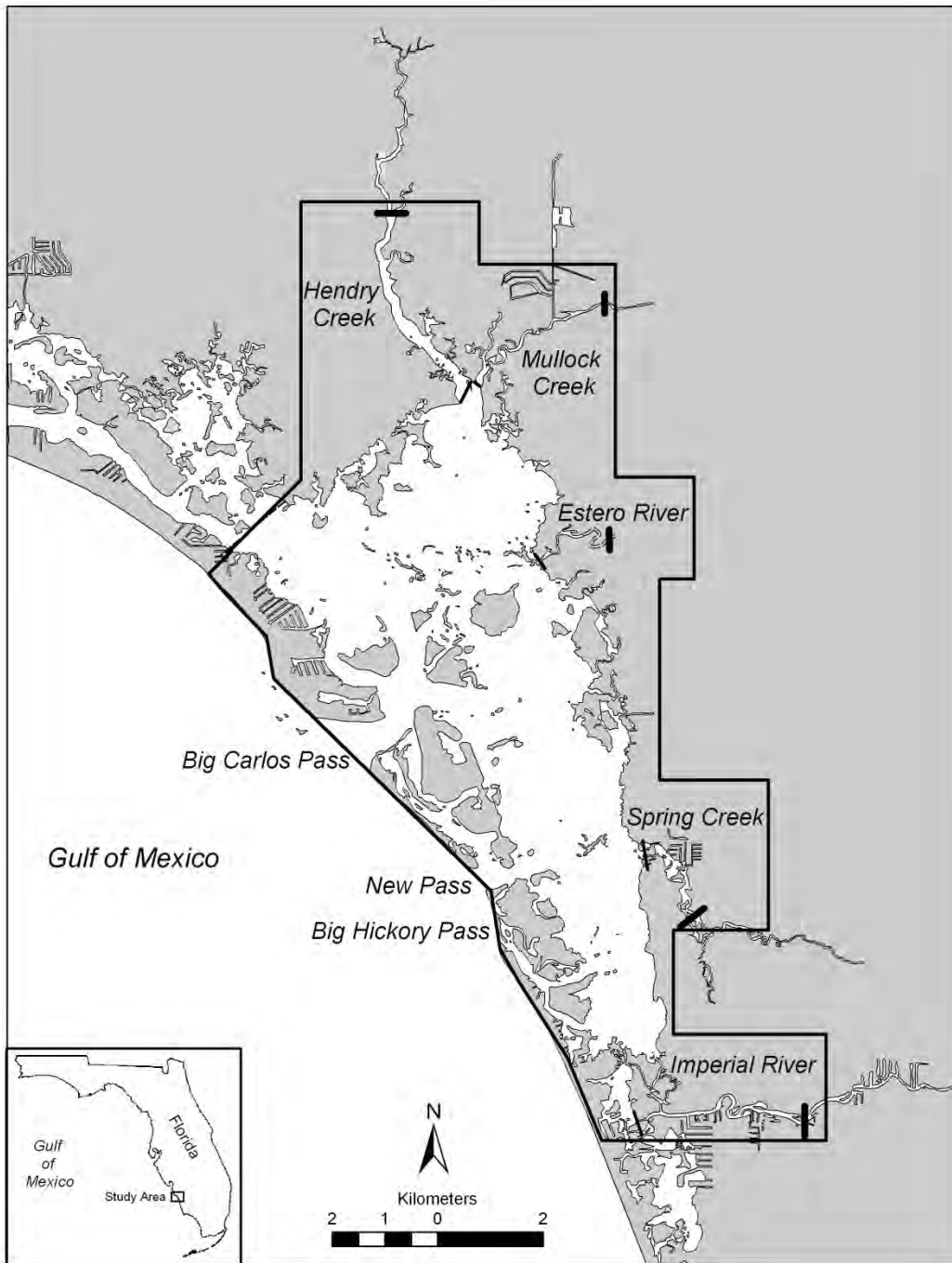
Fisheries-Independent Monitoring

3 years (2005-2007)

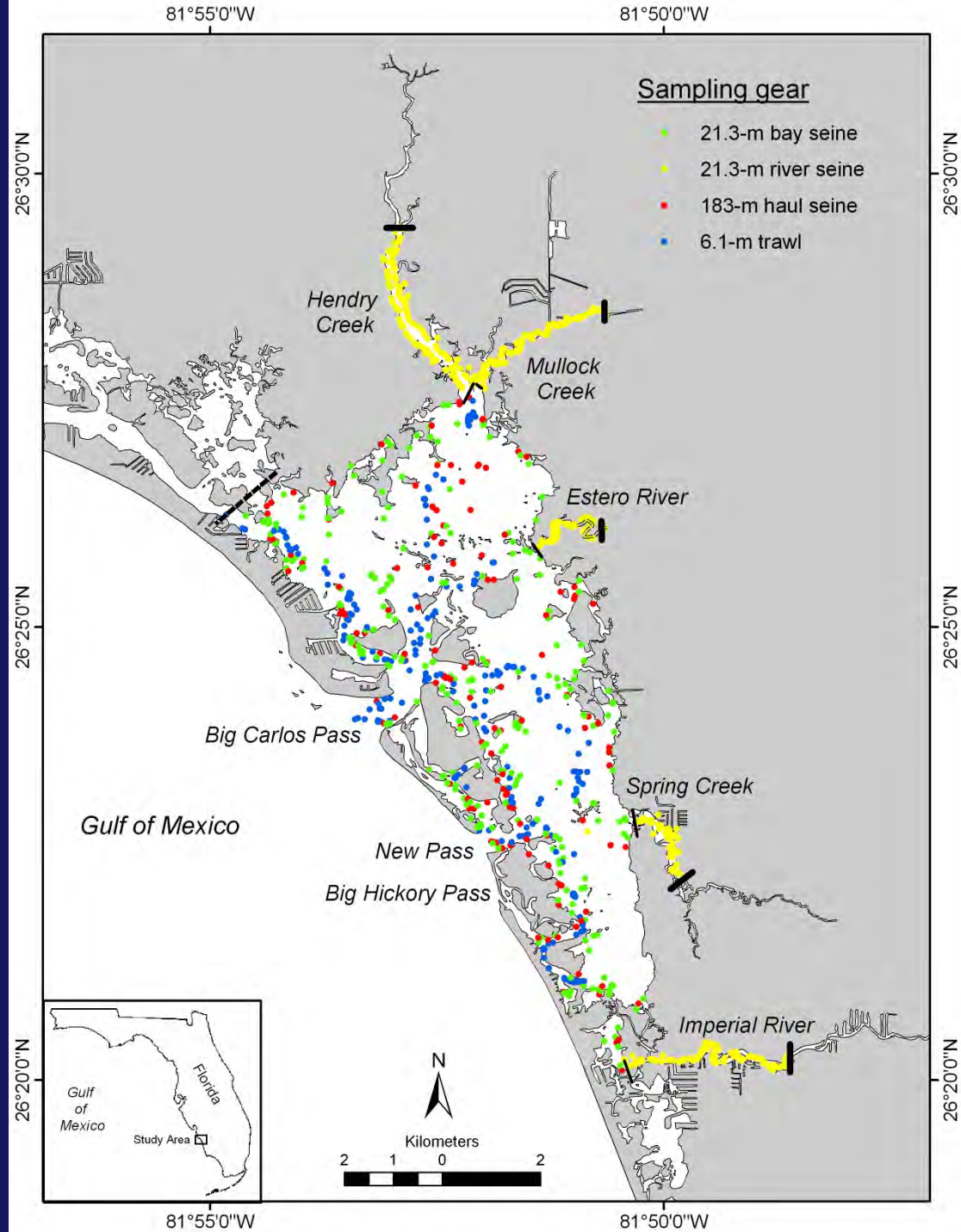
Freshwater Inflow



Study Design



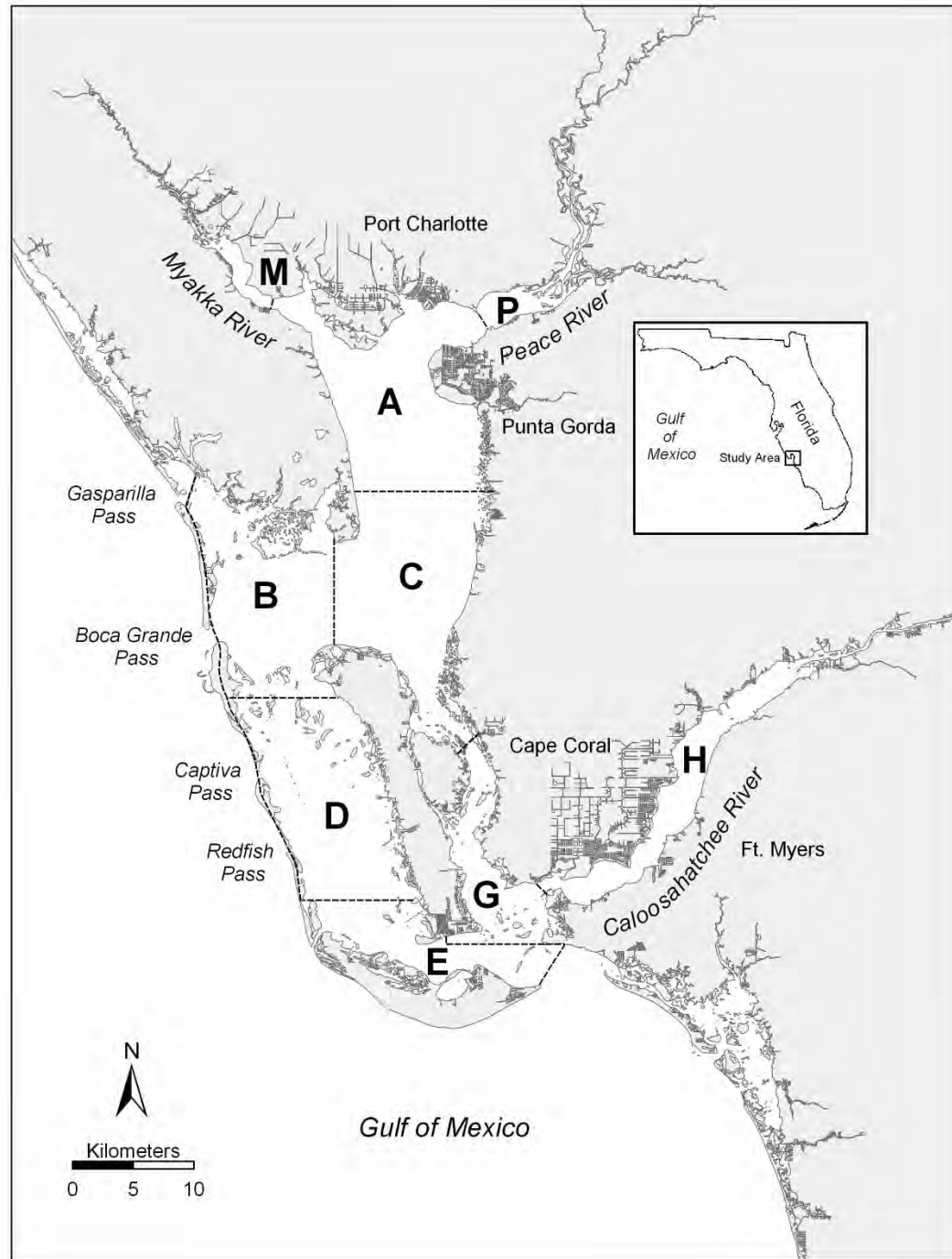
Study Design



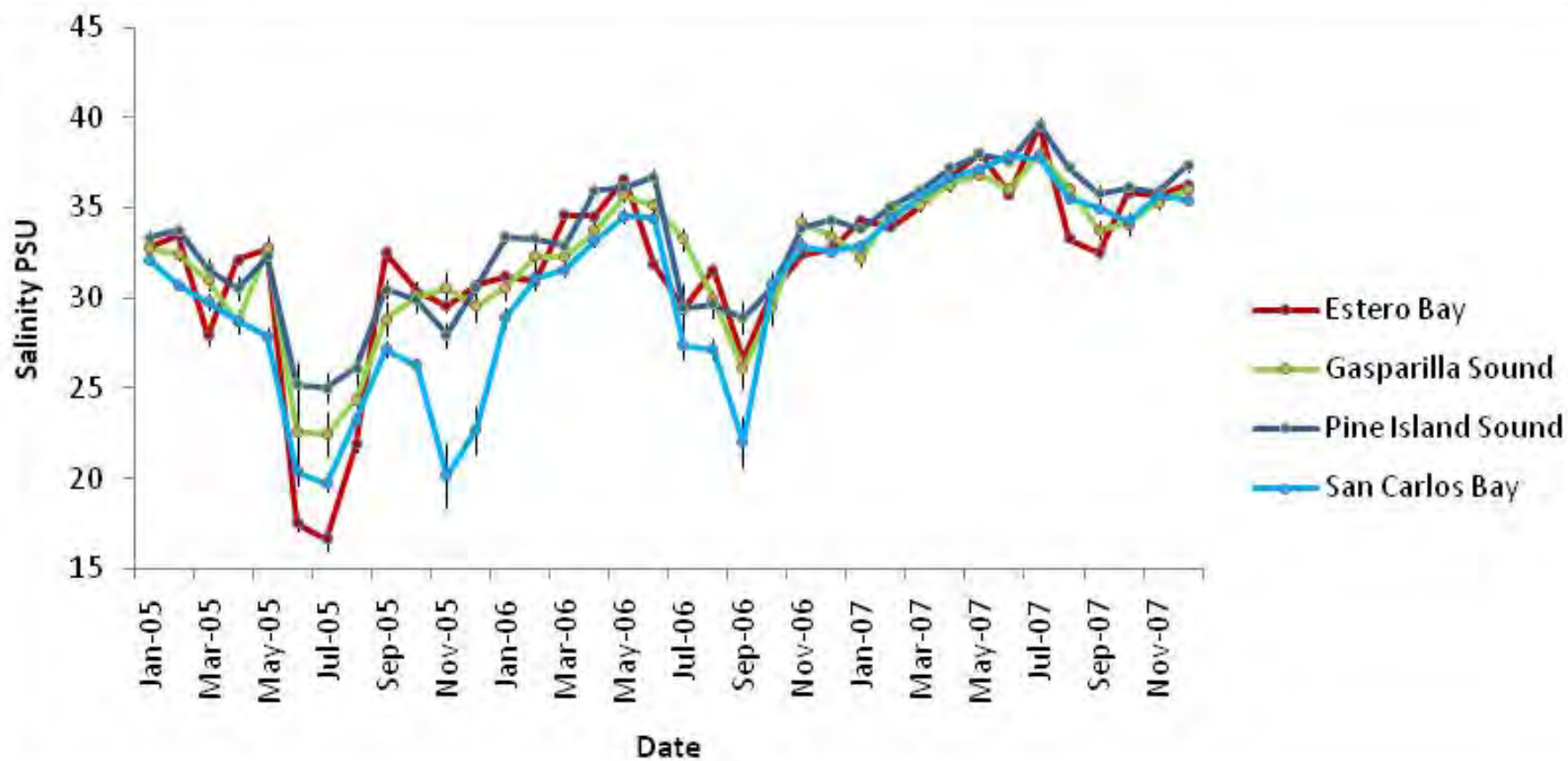
158 Fishes and Swimming Invertebrates



Multi-bay Comparison



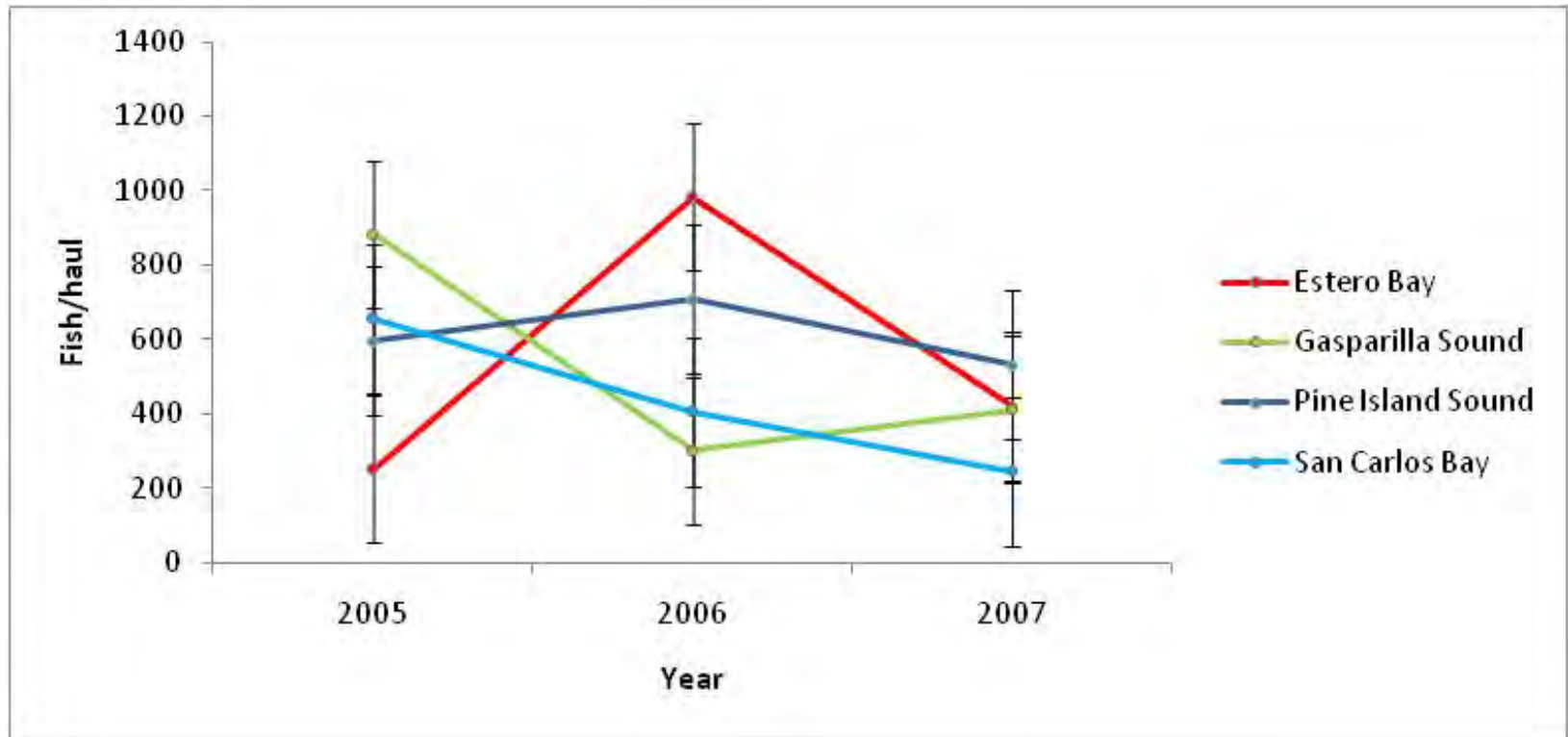
Multi-bay Comparison



Multi-bay Comparison



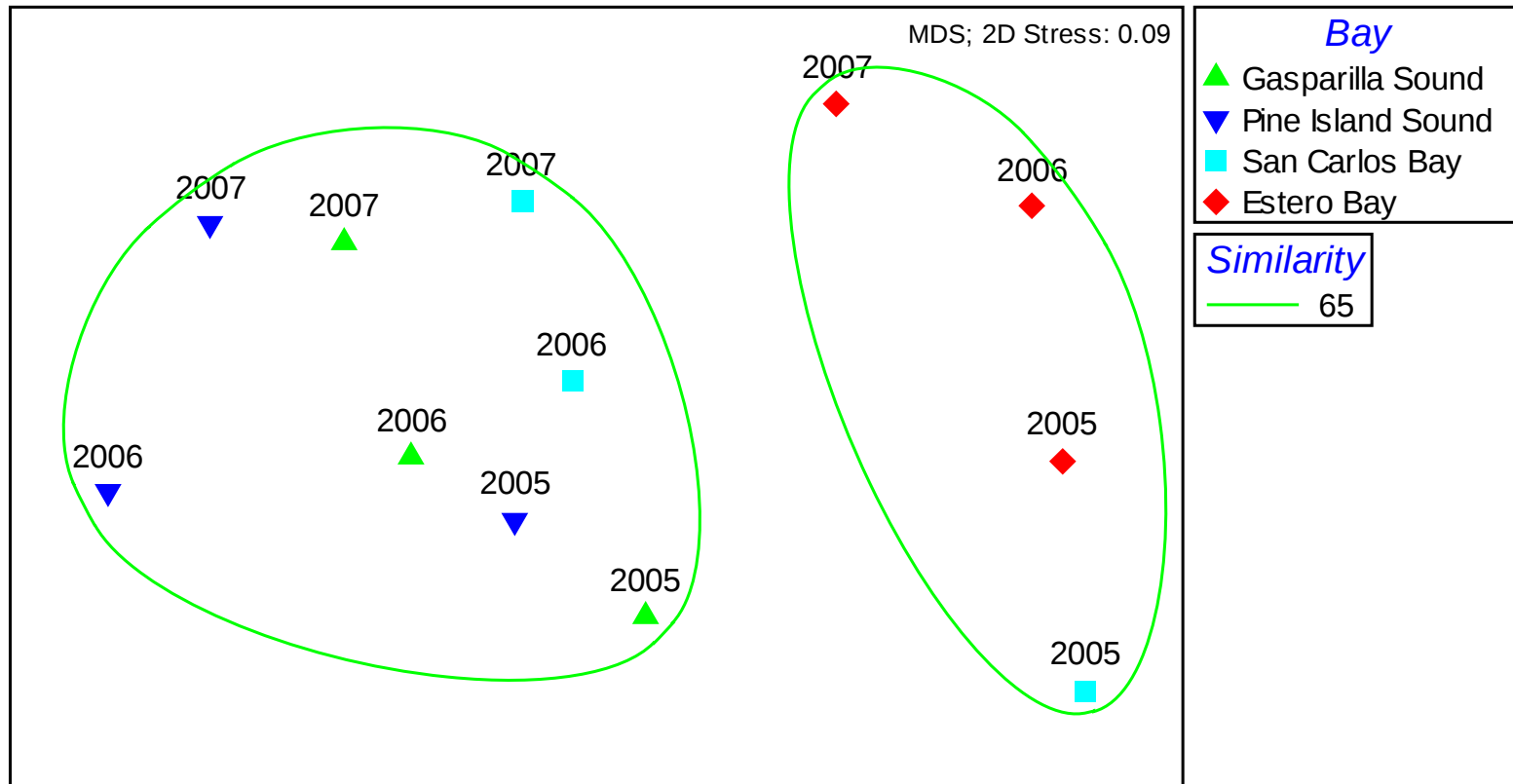
Small Seines – Total Fish



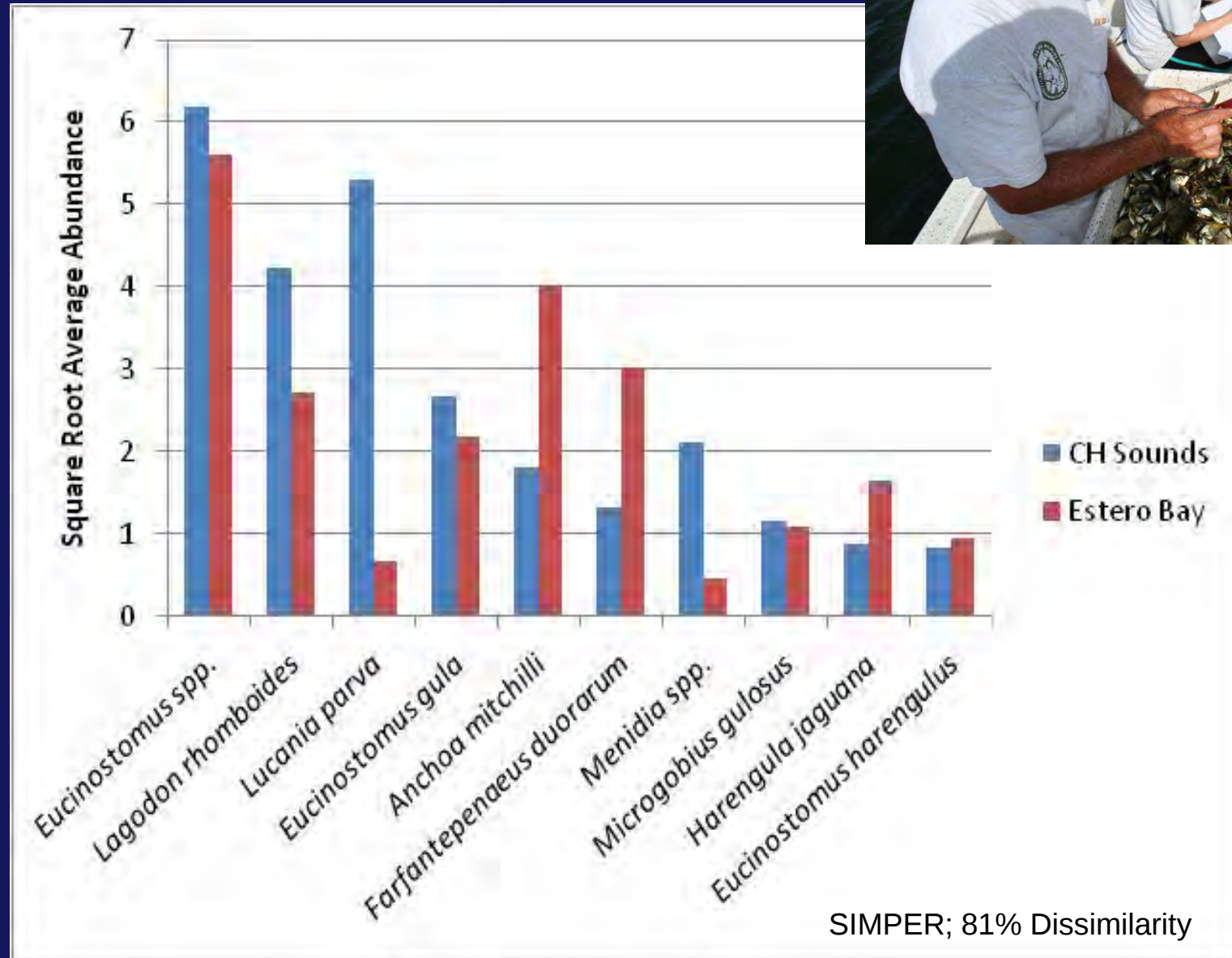
Multi-bay Comparison



Small Seines



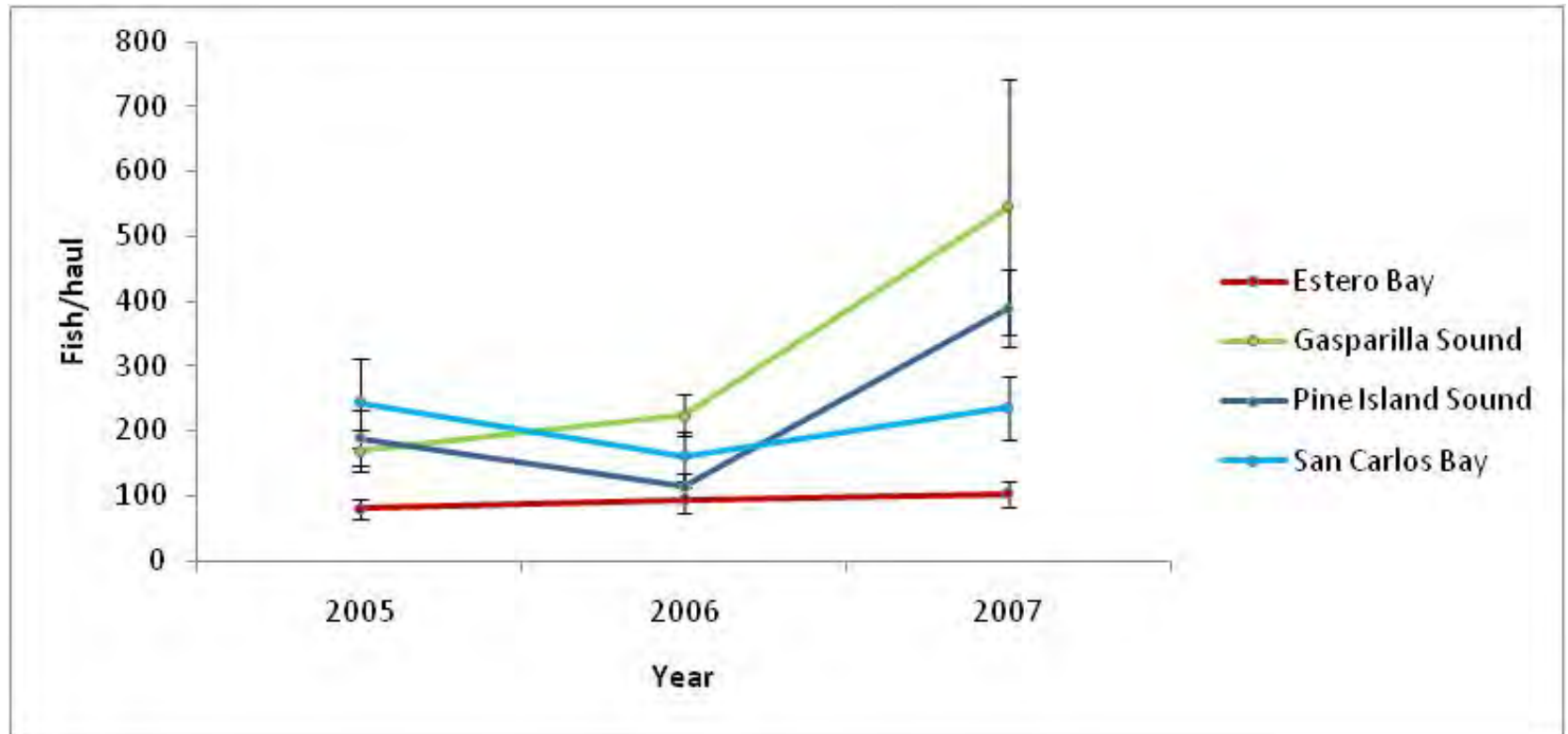
Small Seines



Multi-bay Comparison



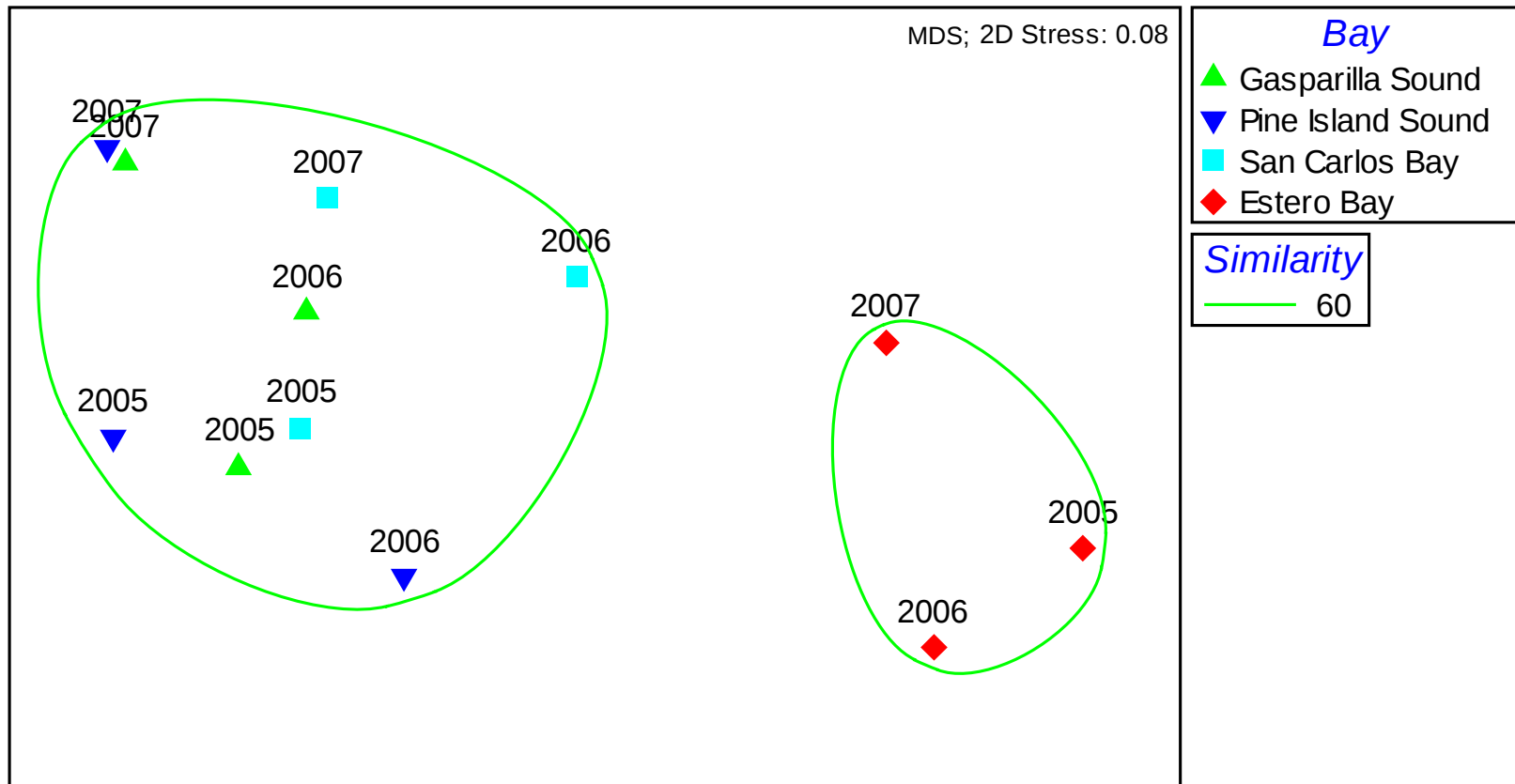
Large Haul Seines – Total Fish



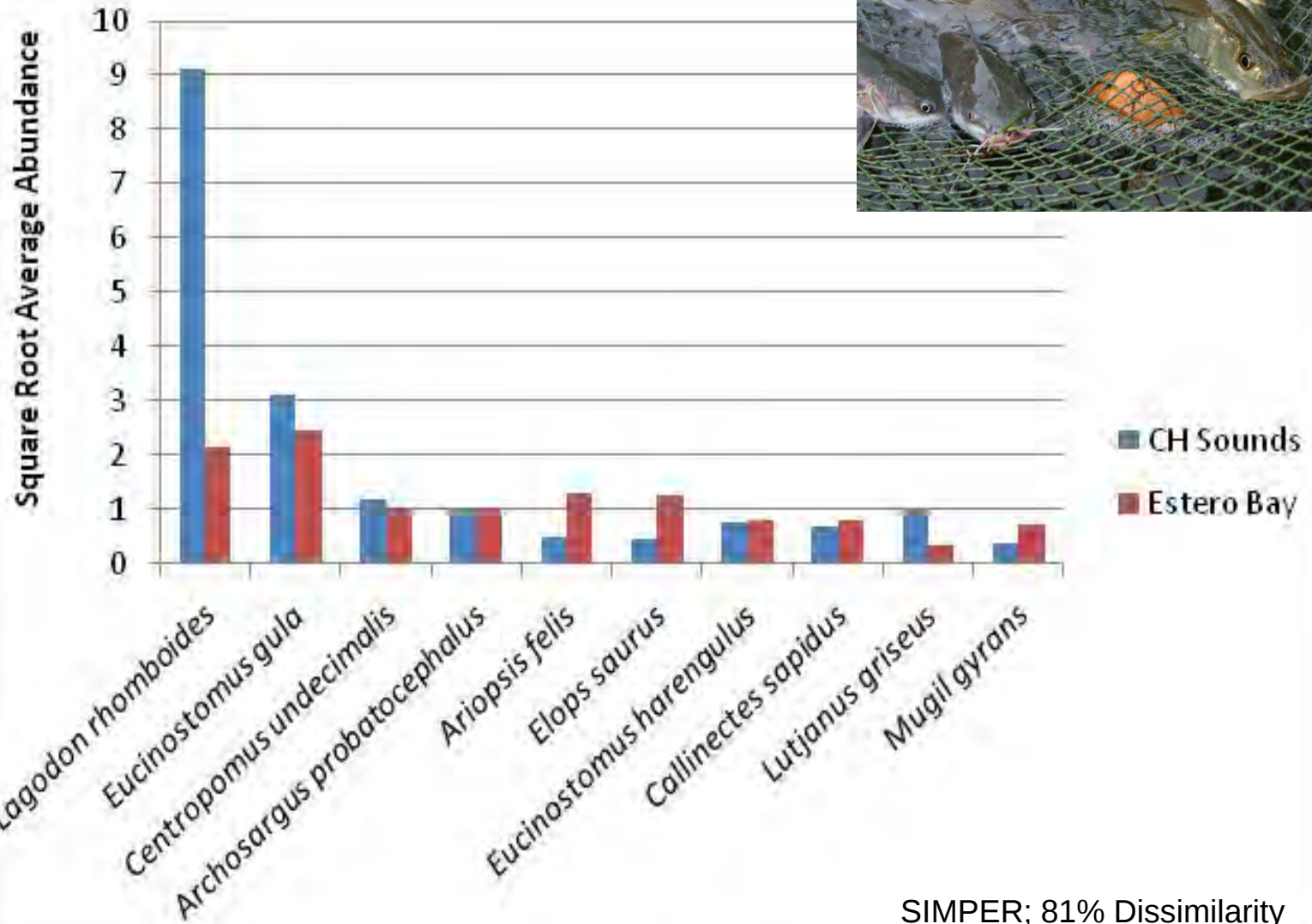
Multi-bay Comparison



Large Haul Seines



Large Haul Seines

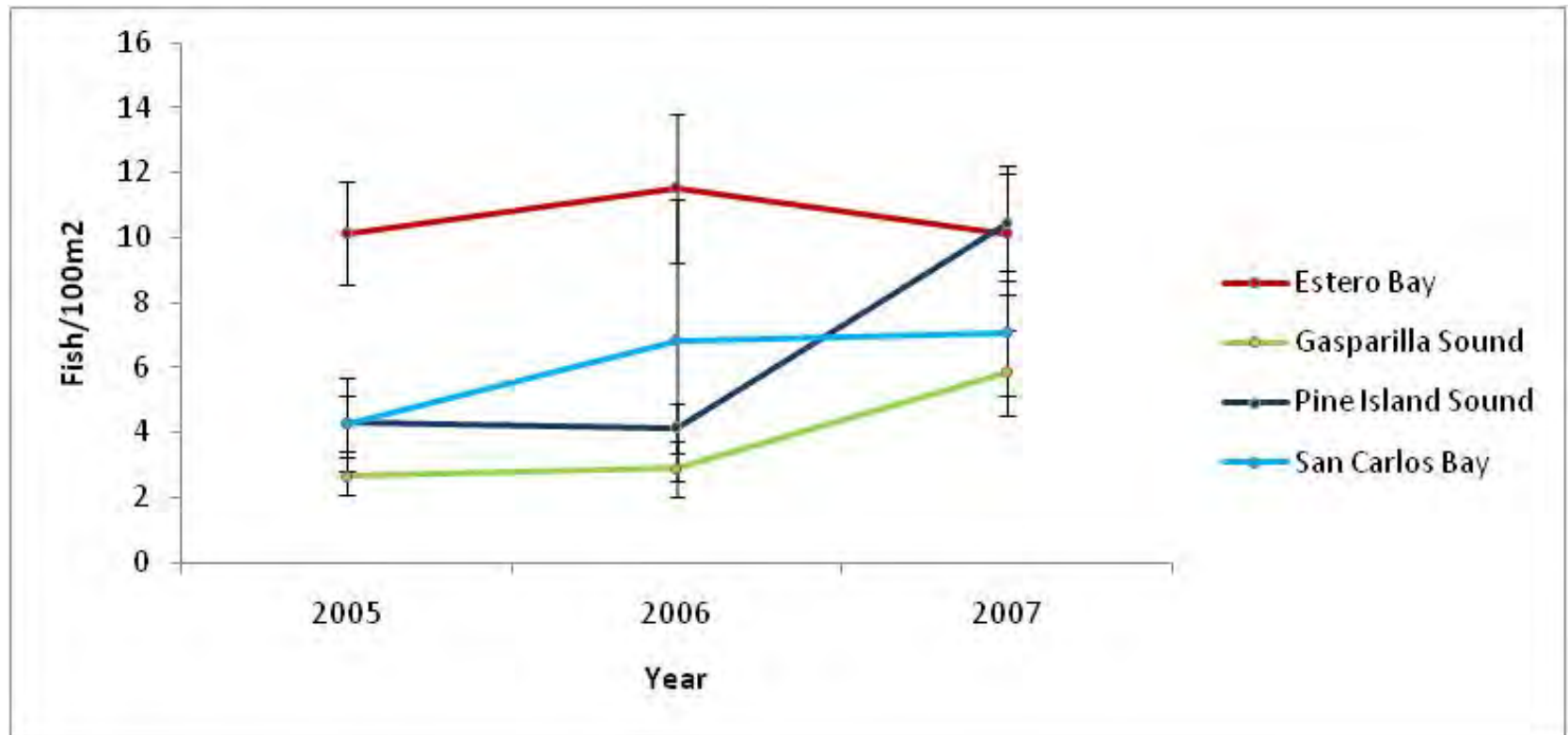


SIMPER; 81% Dissimilarity

Multi-bay Comparison



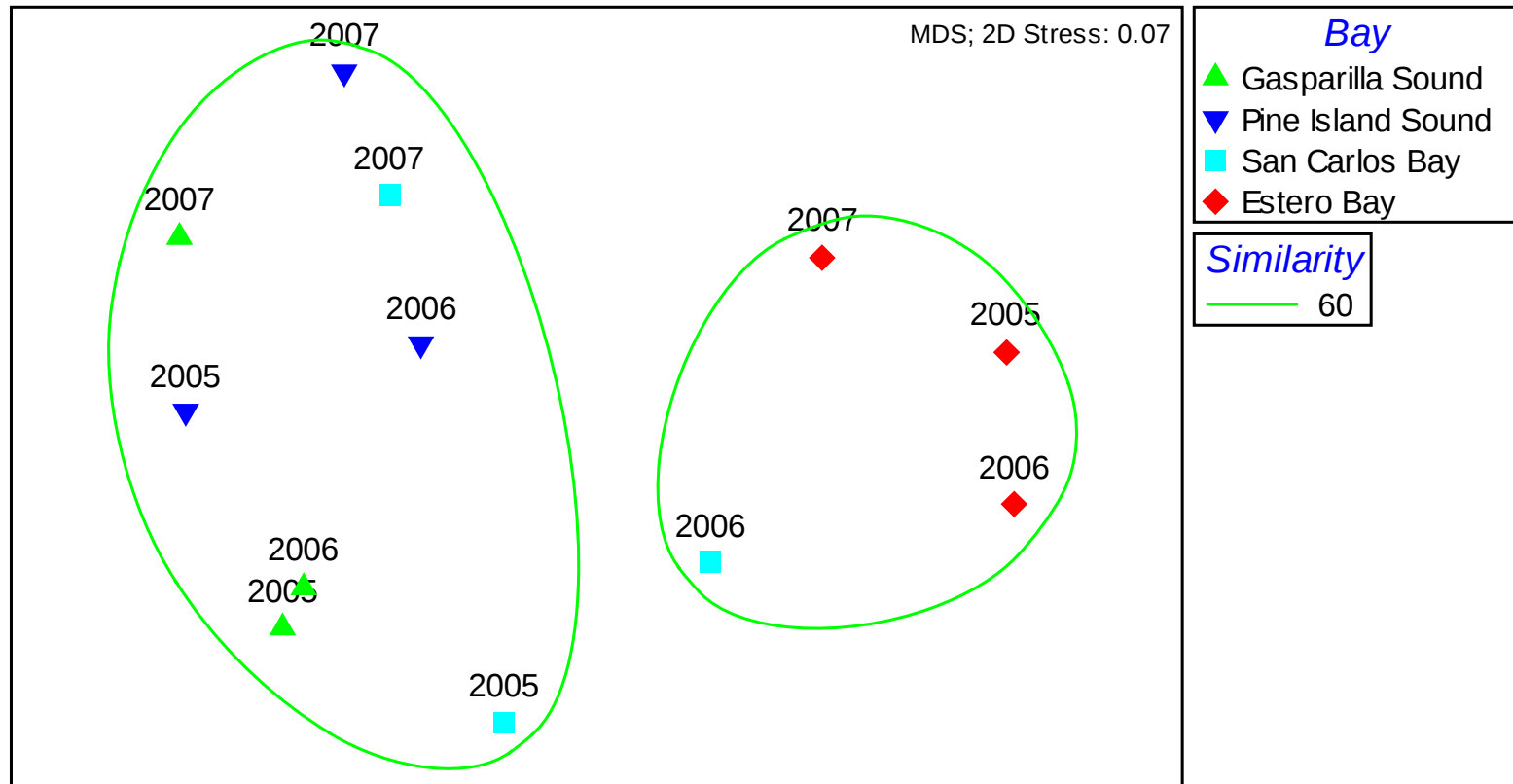
Trawl – Total Fish



Multi-bay Comparison

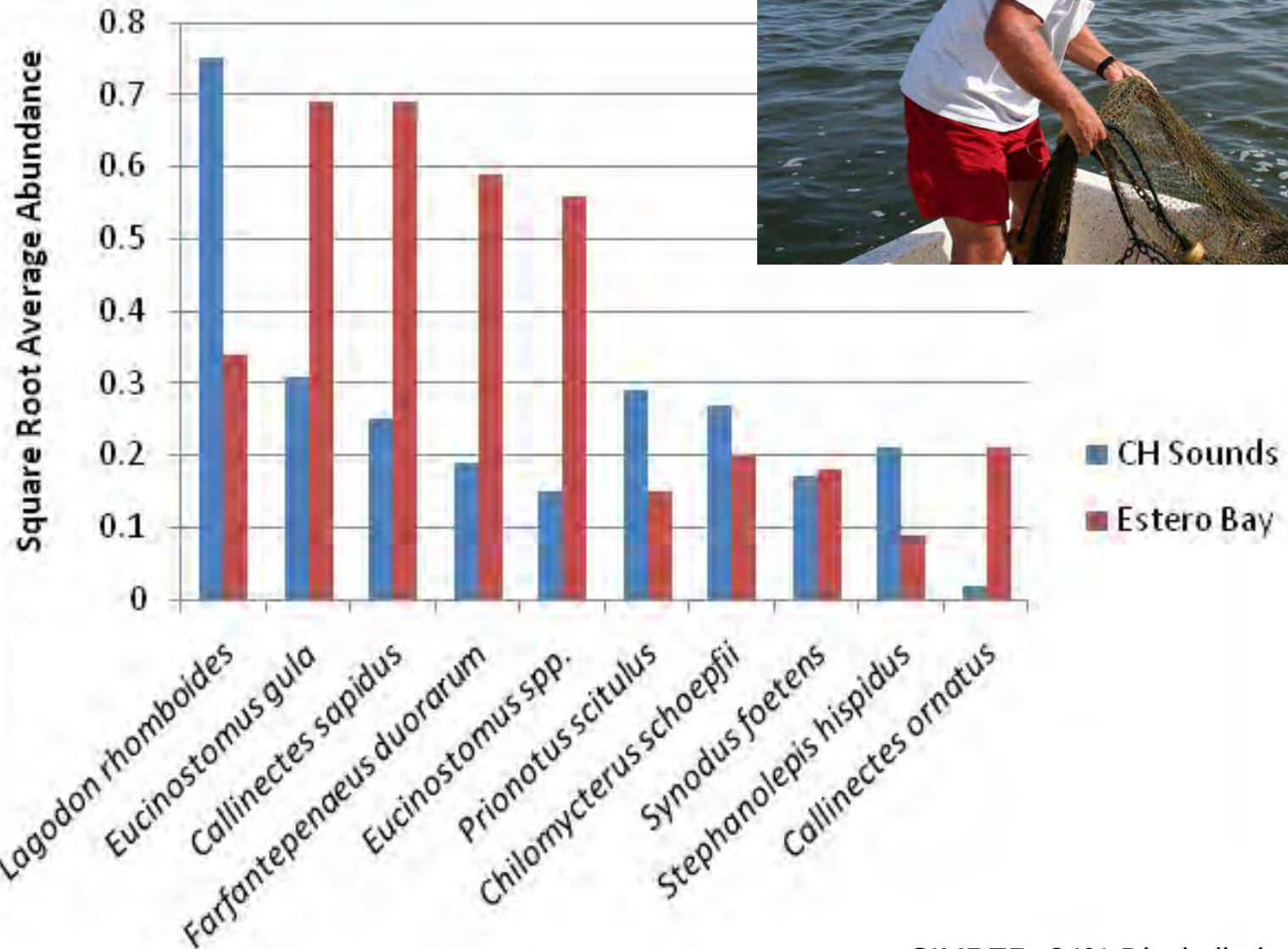


Trawl



Multi-bay Comparison

Trawl



SIMPER; 84% Dissimilarity

2D Stress: 0.14

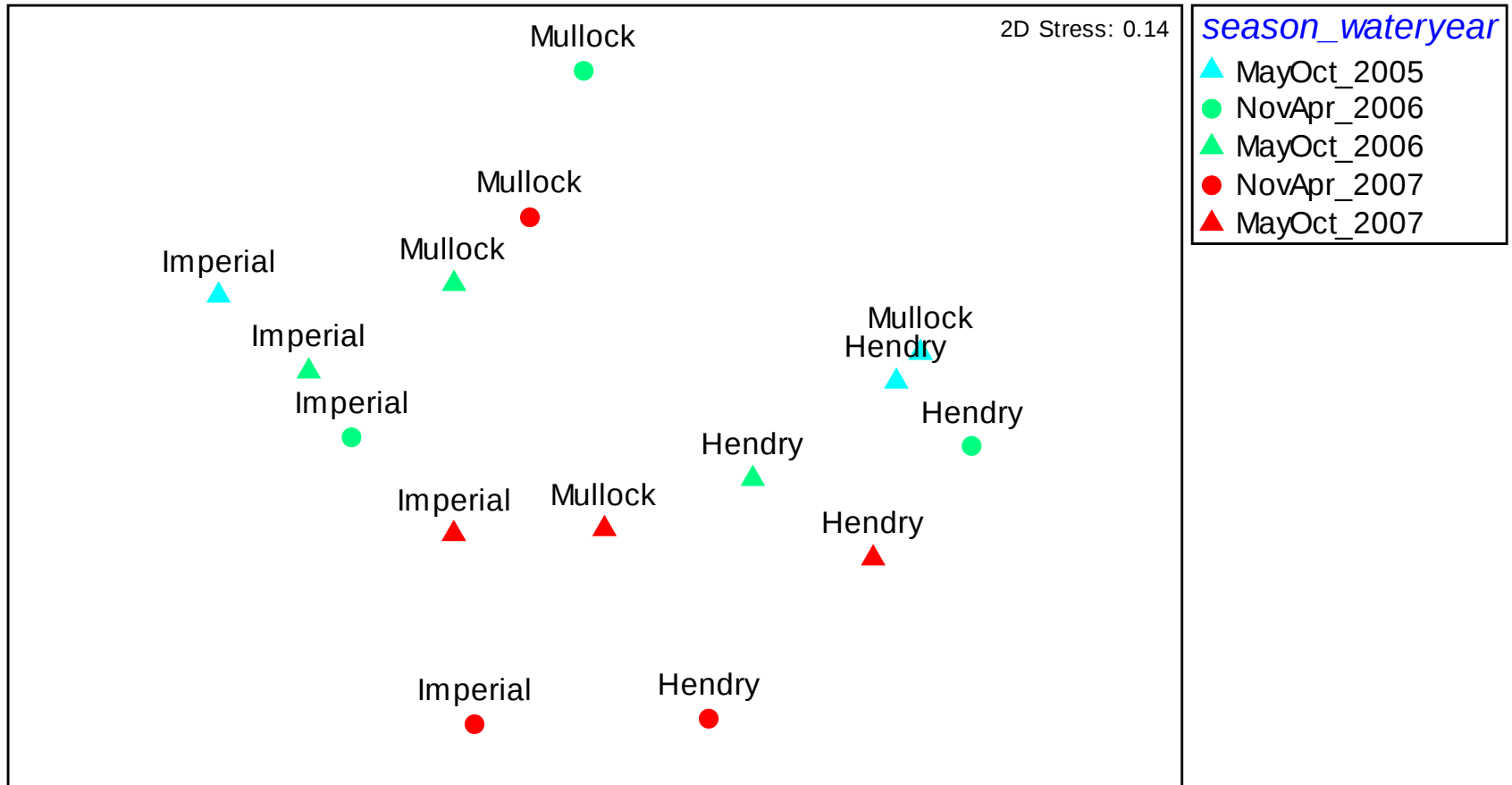
season_wateryear

- MayOct_2005
- NovApr_2006
- MayOct_2006
- NovApr_2007
- MayOct_2007

Imperial

Mullock

Hendry



Species Profiles

A map of the Gulf of Mexico coastline, showing the states of Texas, Louisiana, Mississippi, Alabama, and Florida. The water is a light blue, and the land is a darker blue. The species names are listed in white text over the map, centered in the Gulf of Mexico.

Blue crab

Red drum

Striped mullet

Pink shrimp

Common snook

Striped mojarra

Bay anchovy

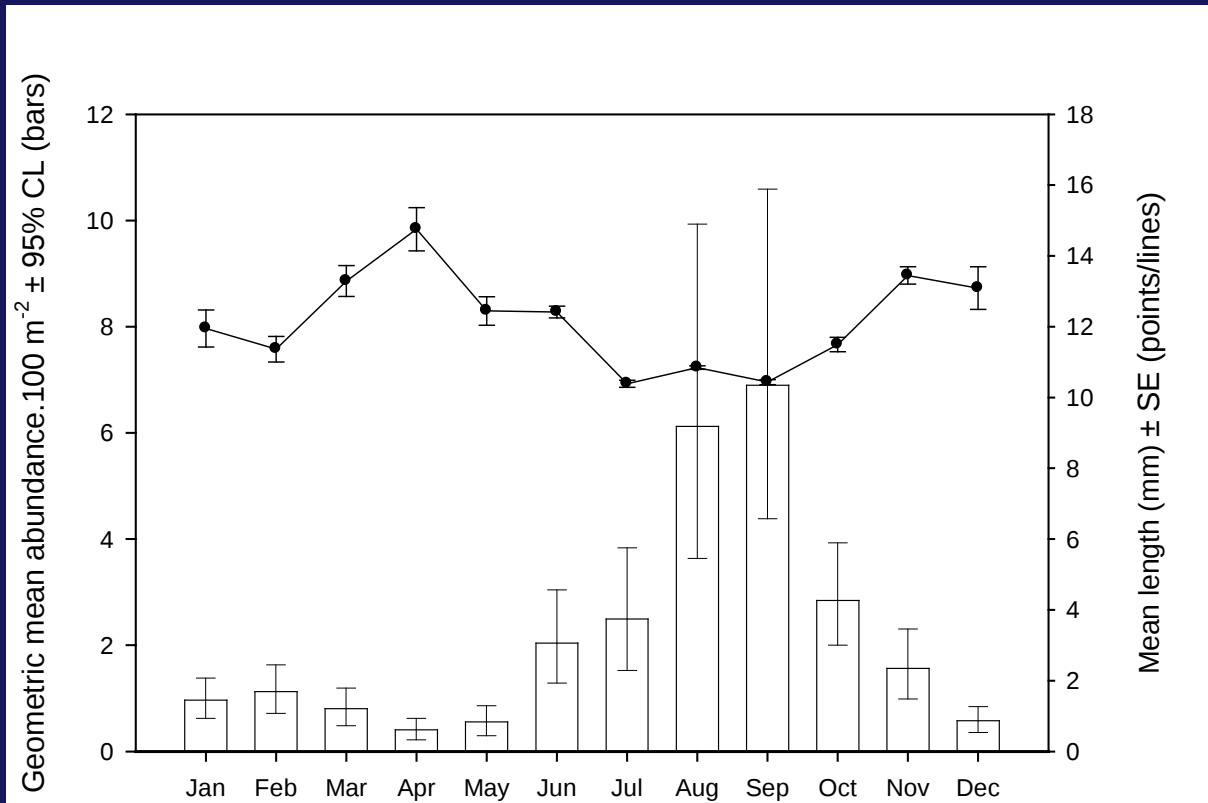
Hogchoker

Southern kingfish

Pinfish

Species Profiles

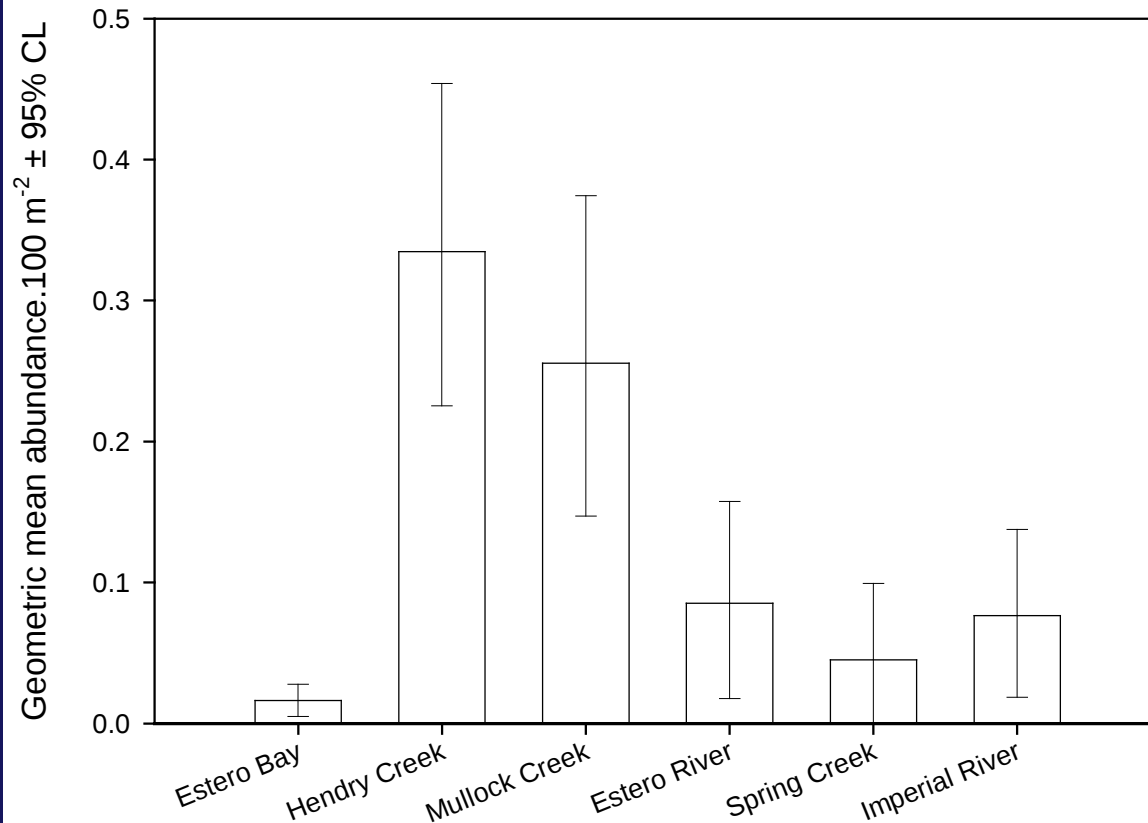
- When are species present?



- e.g., pink shrimp from the Estero Bay estuary (21.3-m seines)

Species Profiles

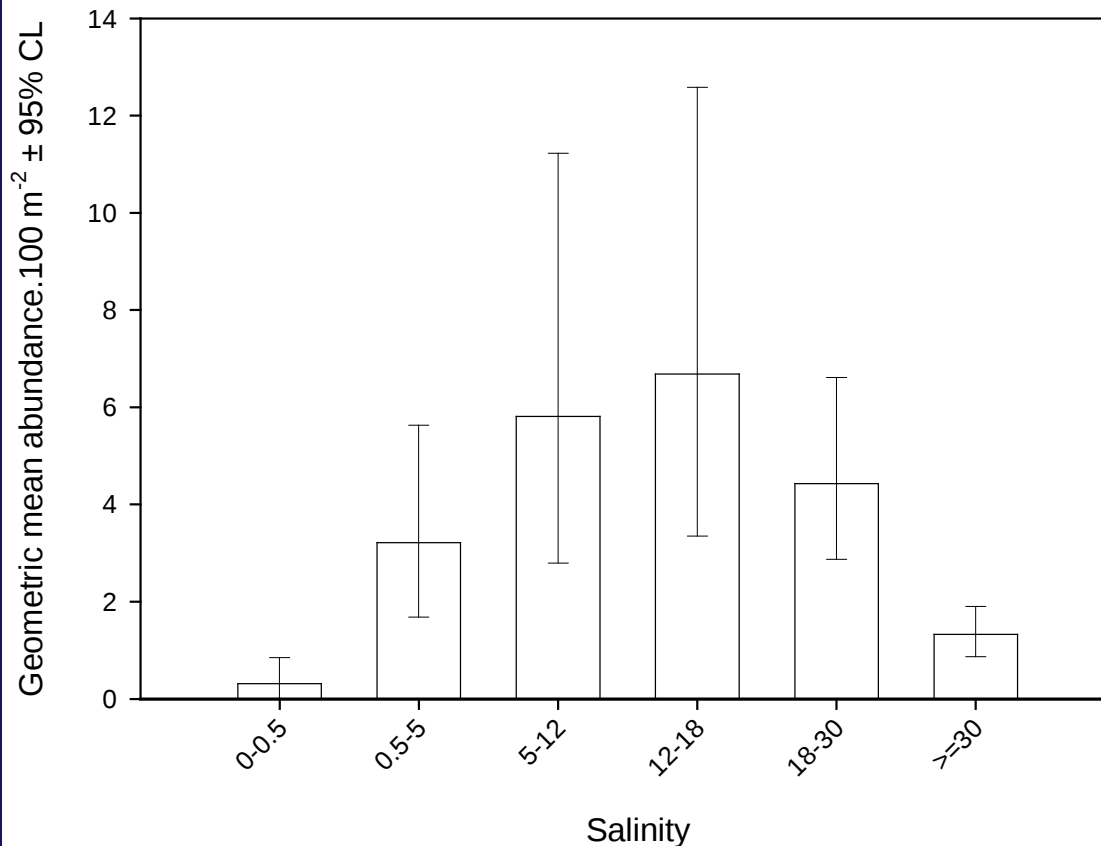
- Where are species found?



- e.g., common snook from the Estero Bay estuary (21.3-m seines)

Species Profiles

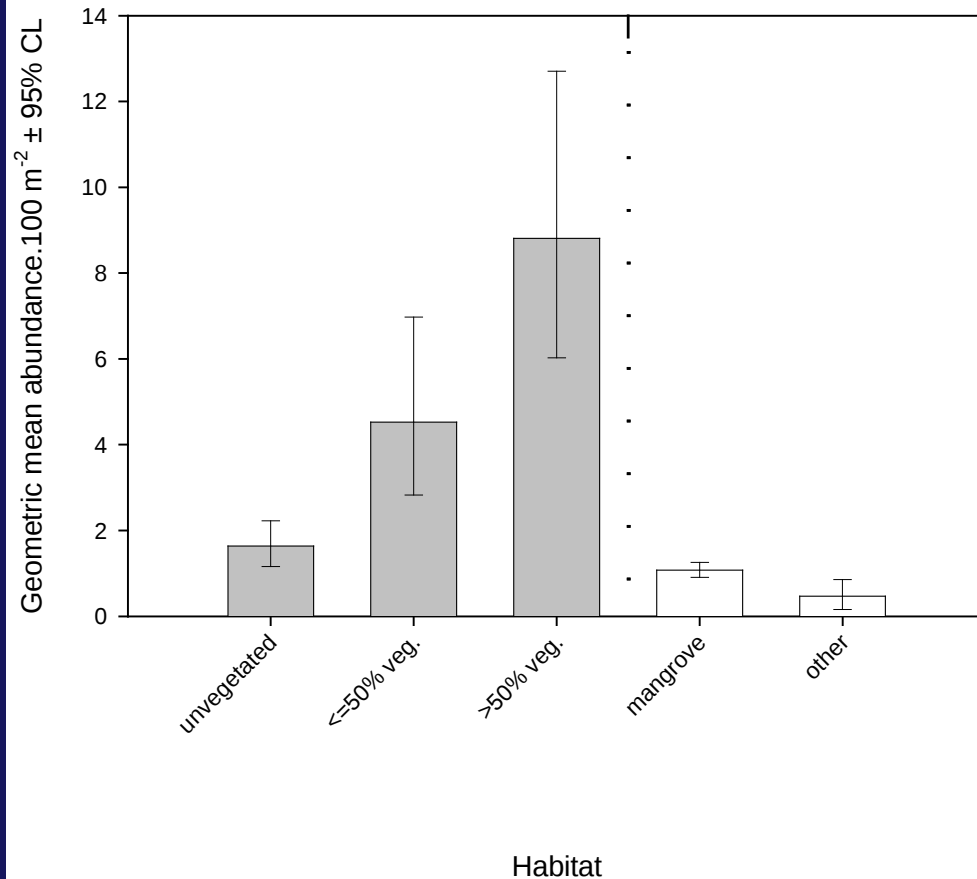
- At what salinities are species found in the river?



- e.g., Striped anchovy from the Estero Bay estuary (21.3-m seines)

Species Profiles

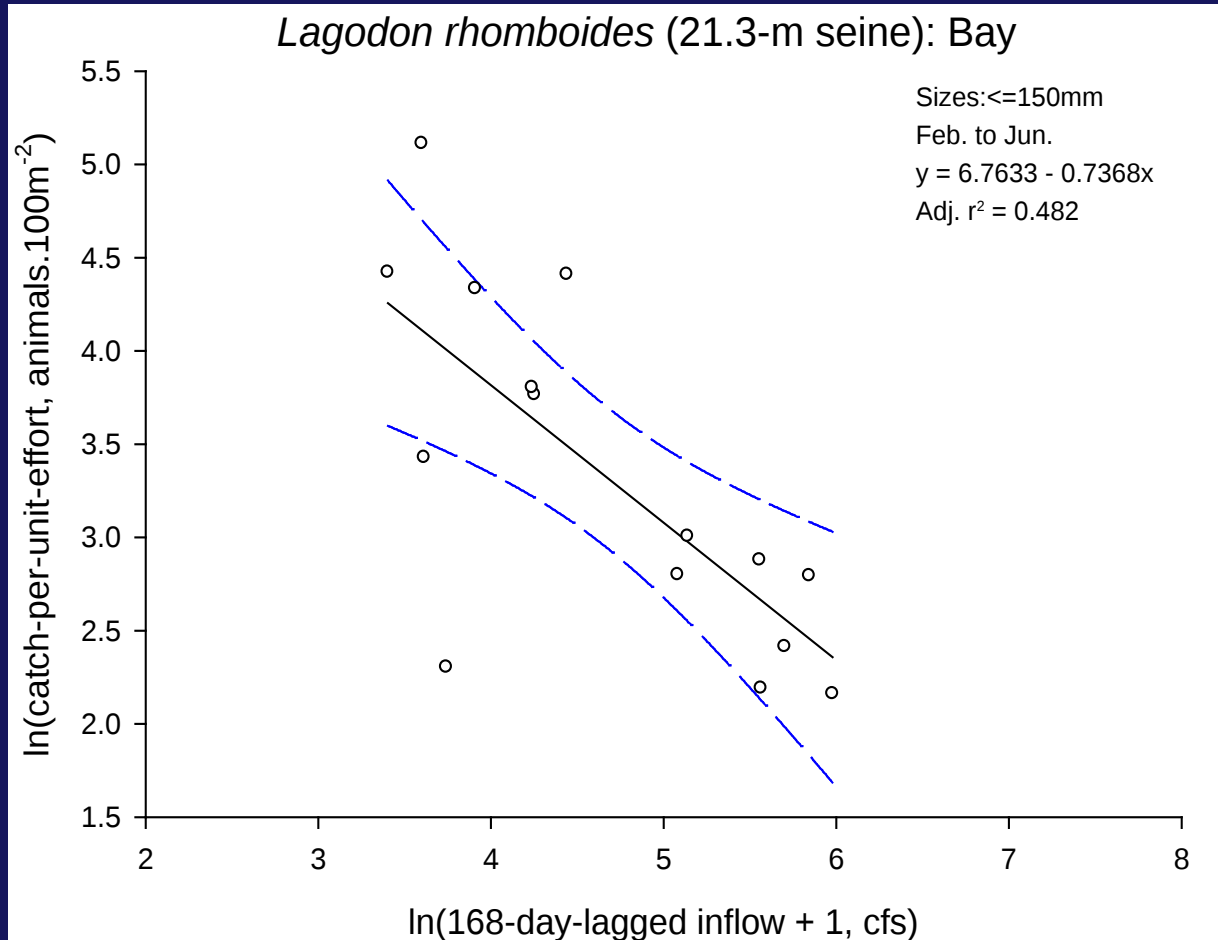
- What habitats do they occupy?



- e.g., pink shrimp from the Estero Bay estuary (21.3-m seines)

Species Profiles

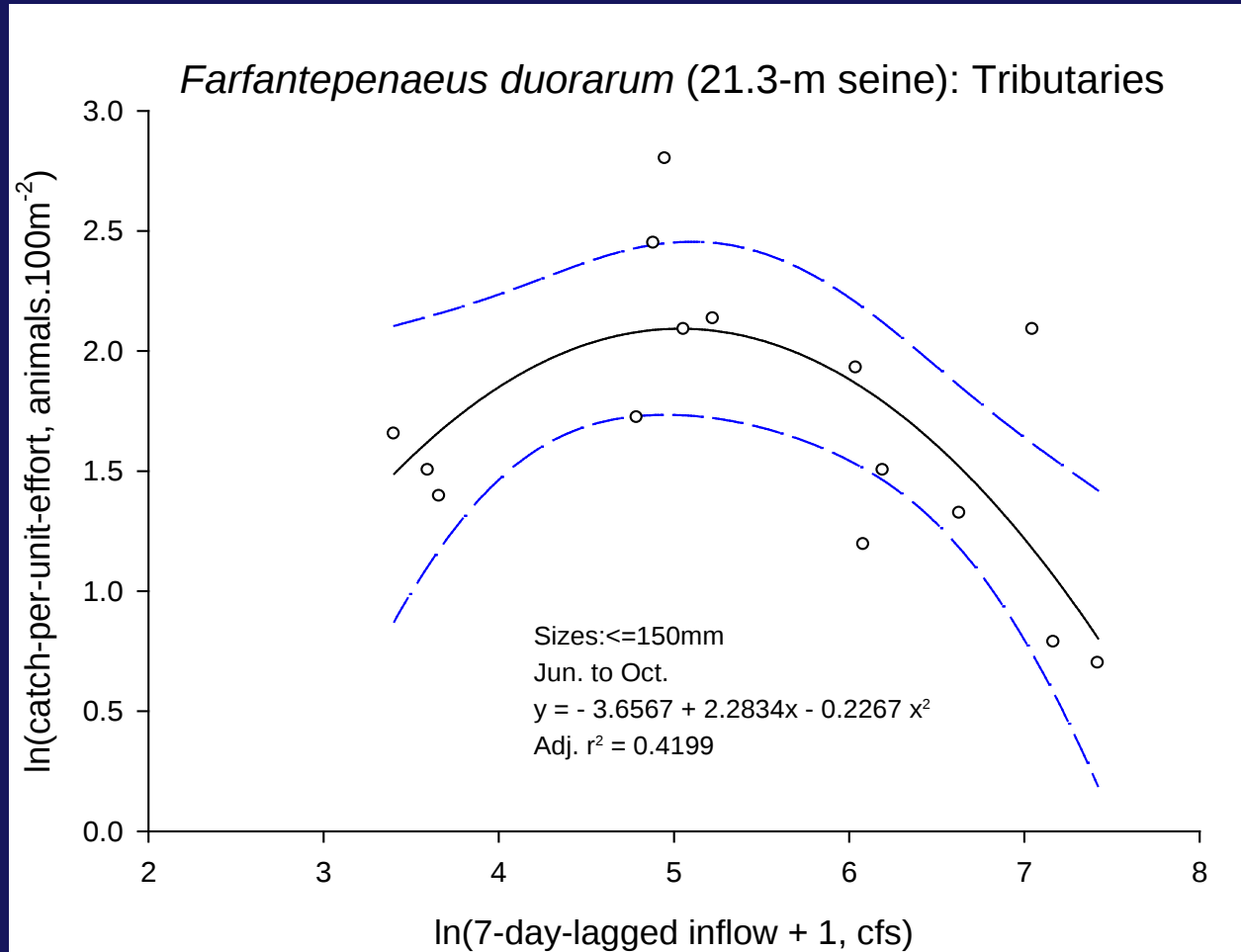
•Response to Inflow?



•e.g., pinfish in the Estero Bay (21.3-m seines)

Species Profiles

•Response to Inflow?



•e.g., pink shrimp in the Estero Bay tributaries (21.3-m seines)



Estero Bay estuary

Current Knowledge

Fish assemblages under current water management
Baseline indices of relative abundance for important species
Distribution and abundance of exotic fishes
Fish health background levels
Stochastic events regional or specific to river

Thank you!
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