

Florida Department of Environmental Protection



Office of Coastal and Aquatic Managed Areas

Seagrass Monitoring in Southwest FL: Charlotte Harbor and Estero Bay Aquatic Preserves, Tidal Caloosahatchee 4/25/13

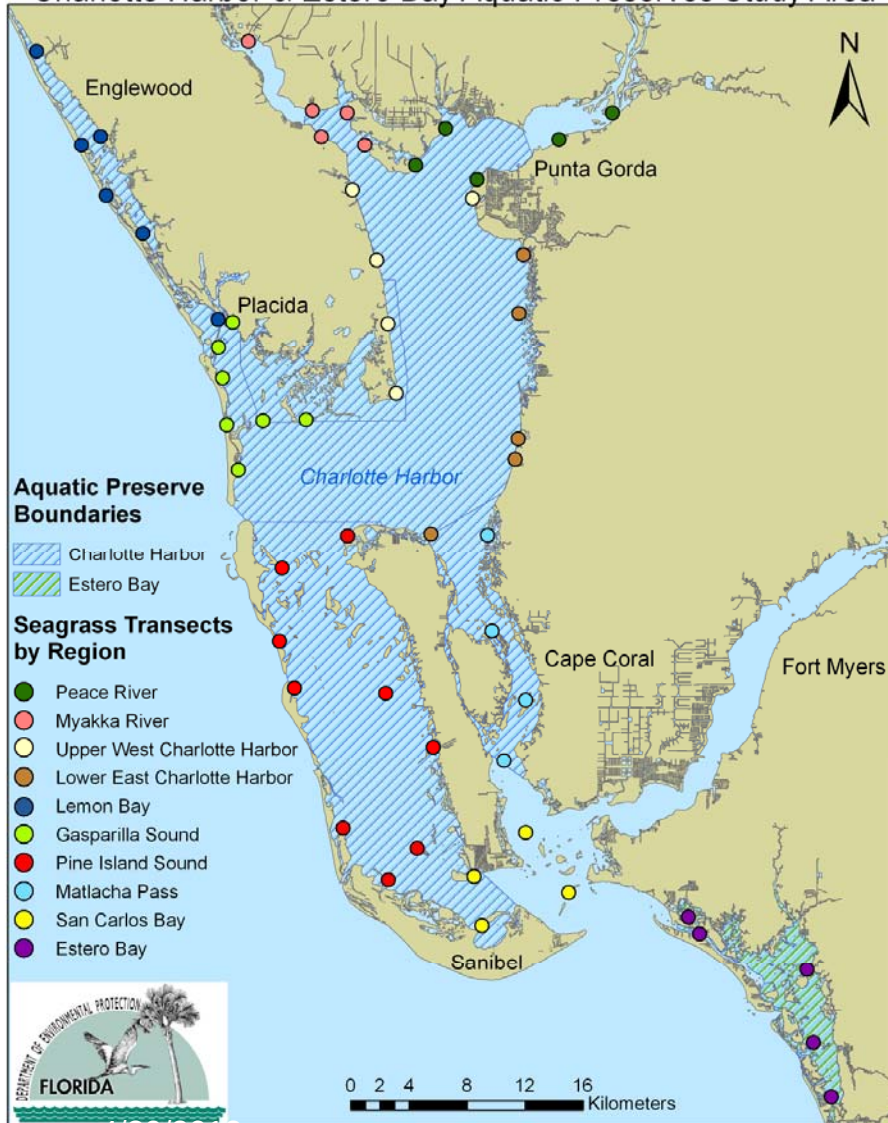
Melynda Brown- Charlotte Harbor Aquatic Preserves





CHAP and EBAP

Charlotte Harbor & Estero Bay Aquatic Preserves Study Area



Charlotte Harbor AP:

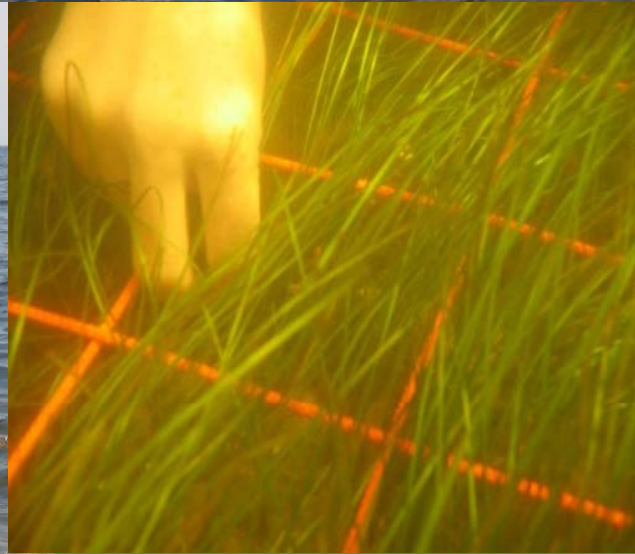
- Began in 1999
- 50 transects
- Annually; Aug-Oct.

Estero Bay AP:

- Began in 2002
- 5 transects
- Biannually; Feb and August



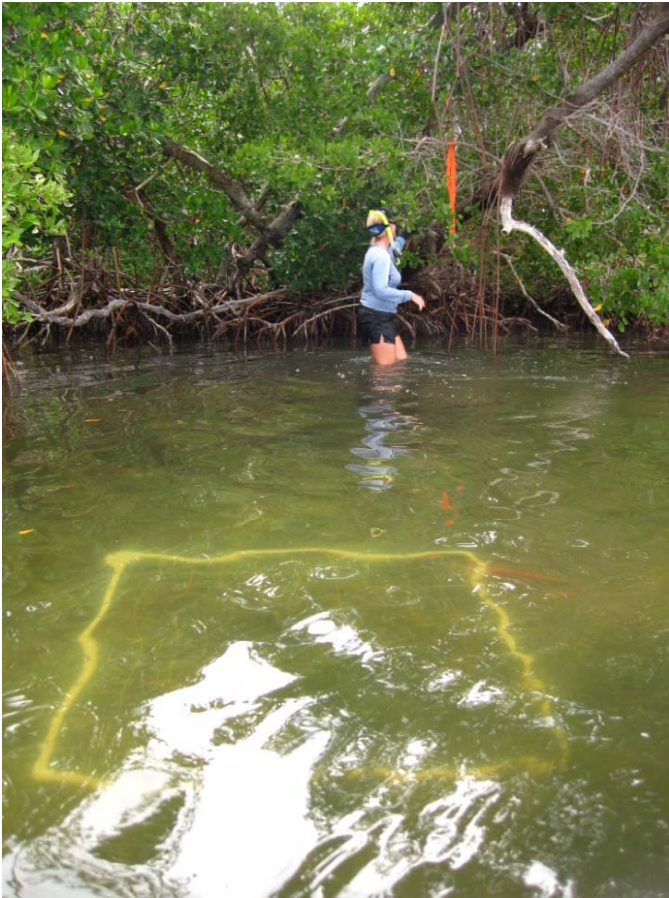
Annual Field Training



4/30/2013



Transects



- Transect found w/flagging and GPS
- Beginning and end of bed are monitored, varies from year to year
- 0 station (1999) monitored
- Repeat stations (every 10 or 50m) are found (transect heading & GPS)
- Some transects are up to 700m long with 14 repeat stations.
- Tide start and end recorded to convert field depths to mean water



Parameters measured

Each station; using a meter by meter quadrat

- Water Depth (cm)
- Sediment (muddy sand, shelly sand, muck, sand)
- Seagrass Species
- Total and Species Abundance
using BB abundance scale (0-5)
- 5 blade lengths per species
- Epiphyte type and density
- Shoot count per species-
pattern based on BB abundance





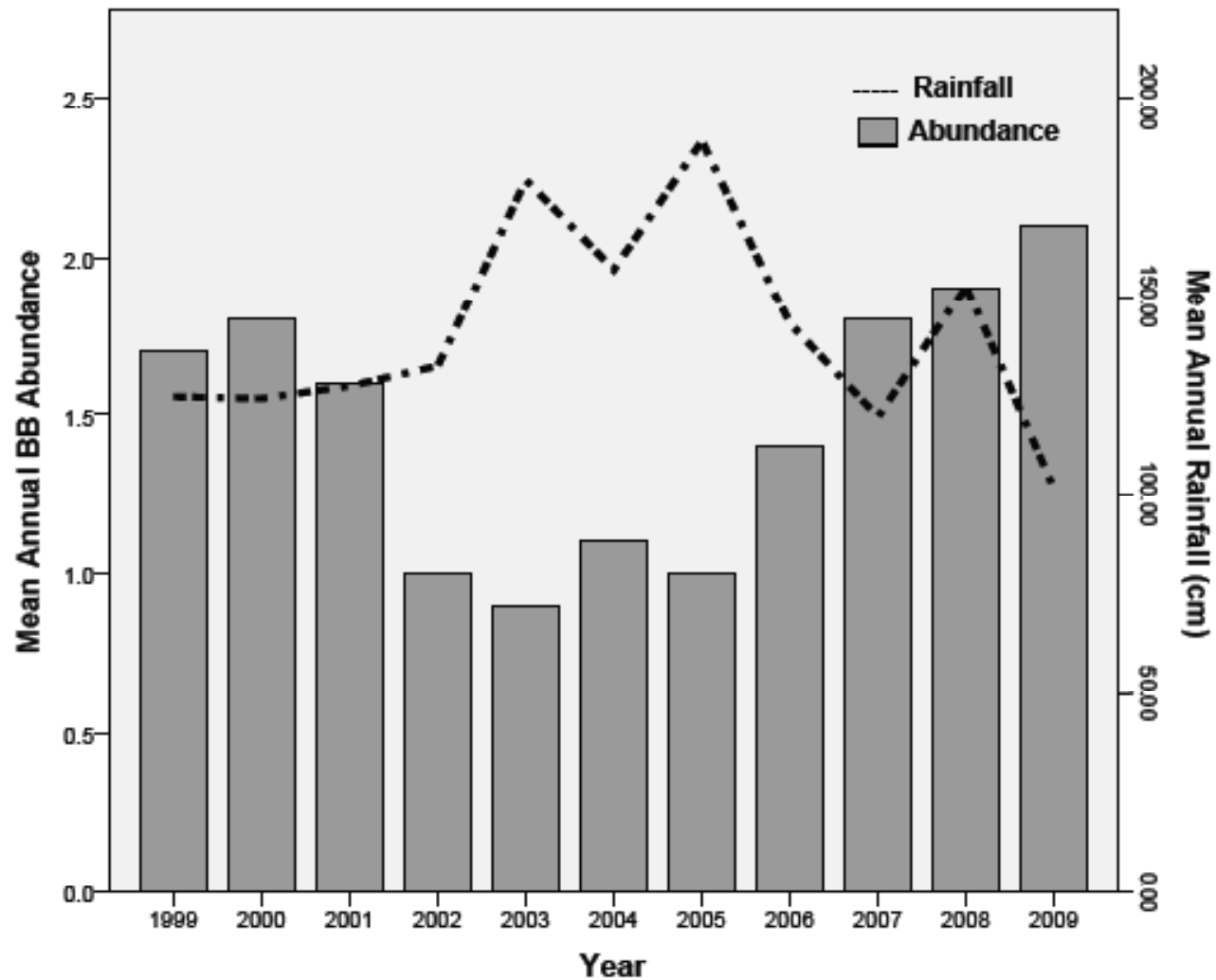
1999-2009 Results

- Published in Florida Scientist 2013
“Results of the Florida Department of Environmental Protection Charlotte Harbor Aquatic Preserves’ Seagrass Monitoring Program from 1999-2009”

Trends in abundance and density are adversely influenced by freshwater- flow or rainfall



Halodule mean abundance and rainfall



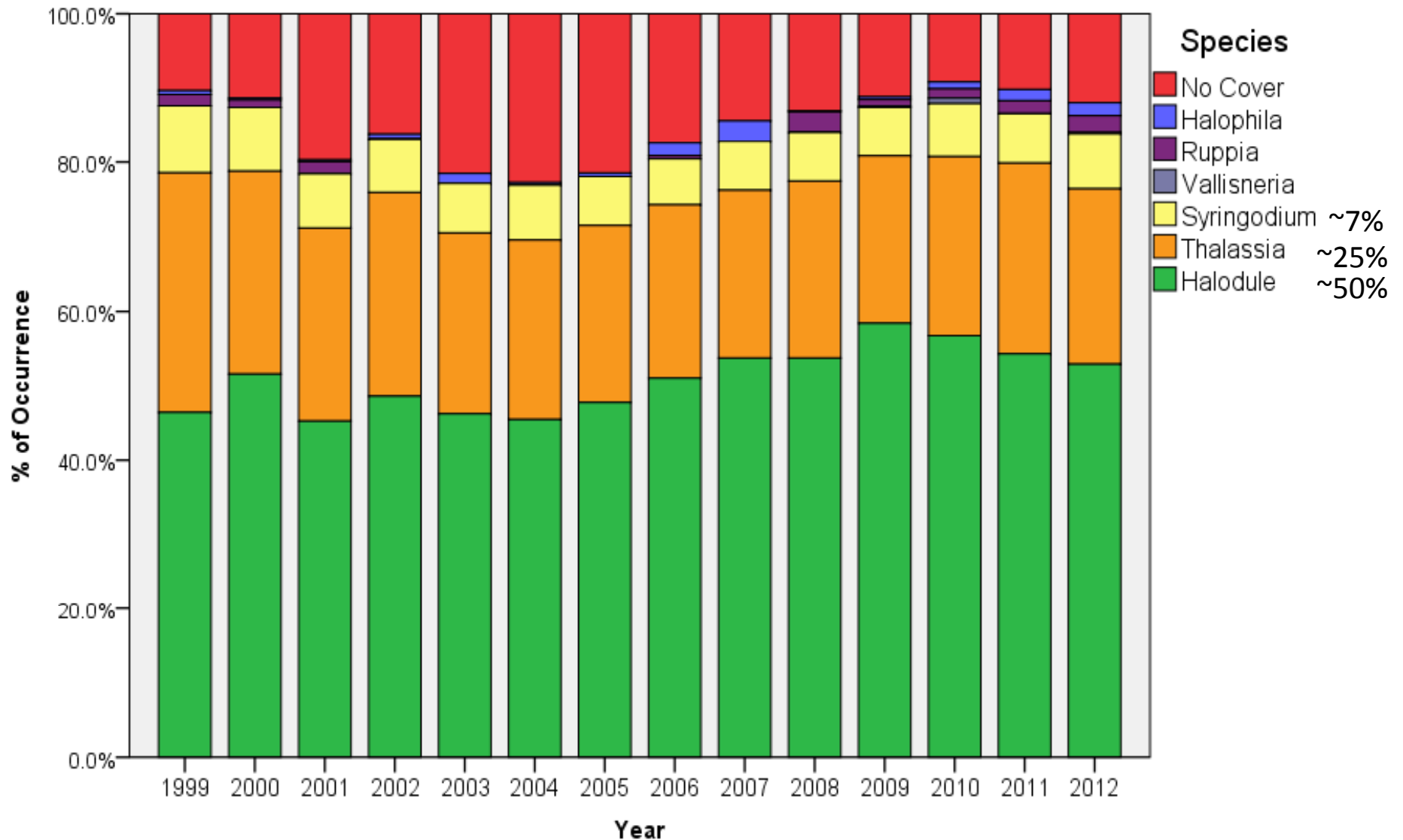


1999-2012 Summaries

- Sites split into hydrologic regions
- Graphed by Region, Year, and Season
In Season: July-Nov/Dec. Off: Jan-June
- Repeat Stations Used
 - Increased accuracy
 - Regular Intervals

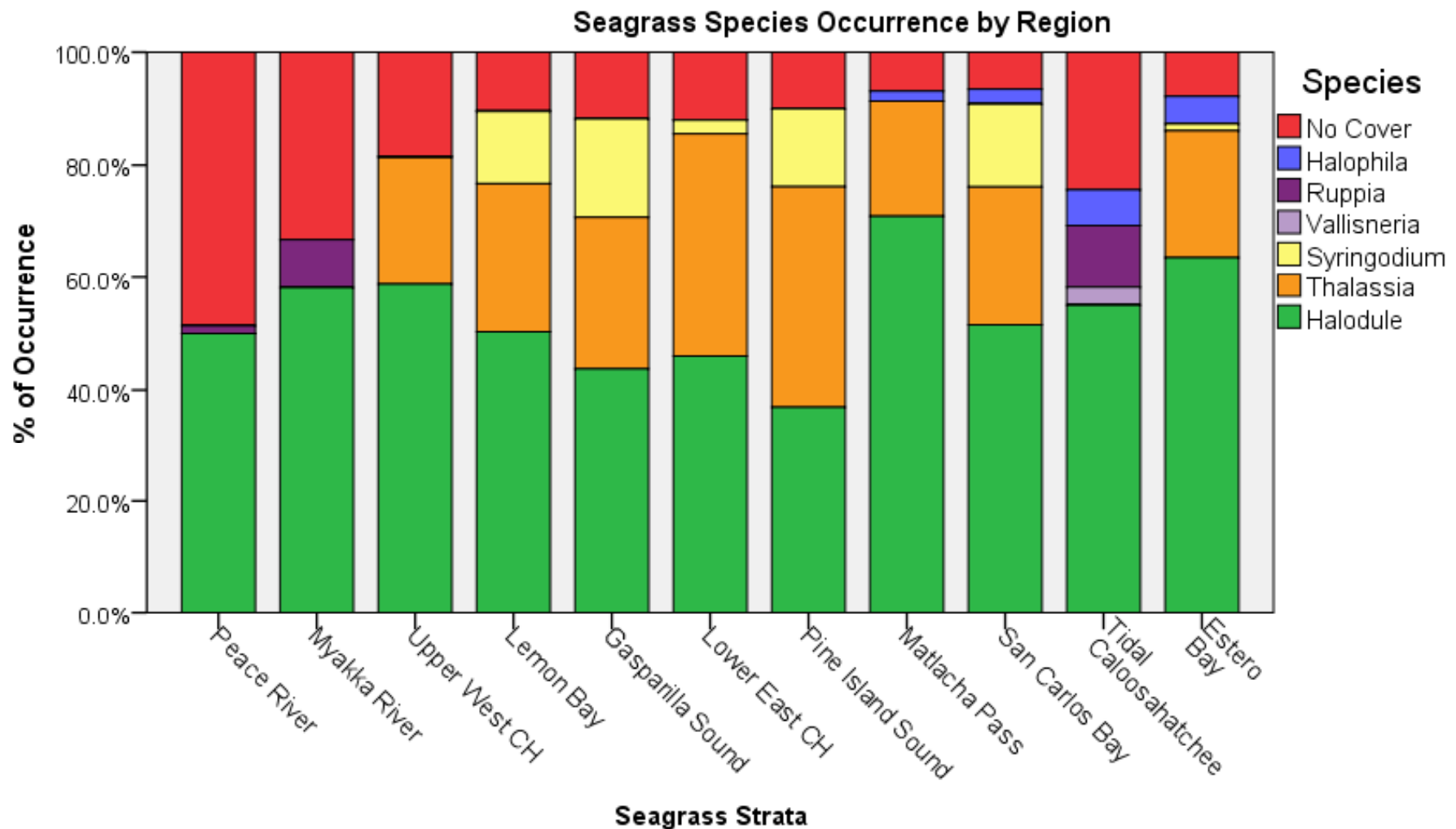


Seagrass Species Occurrence





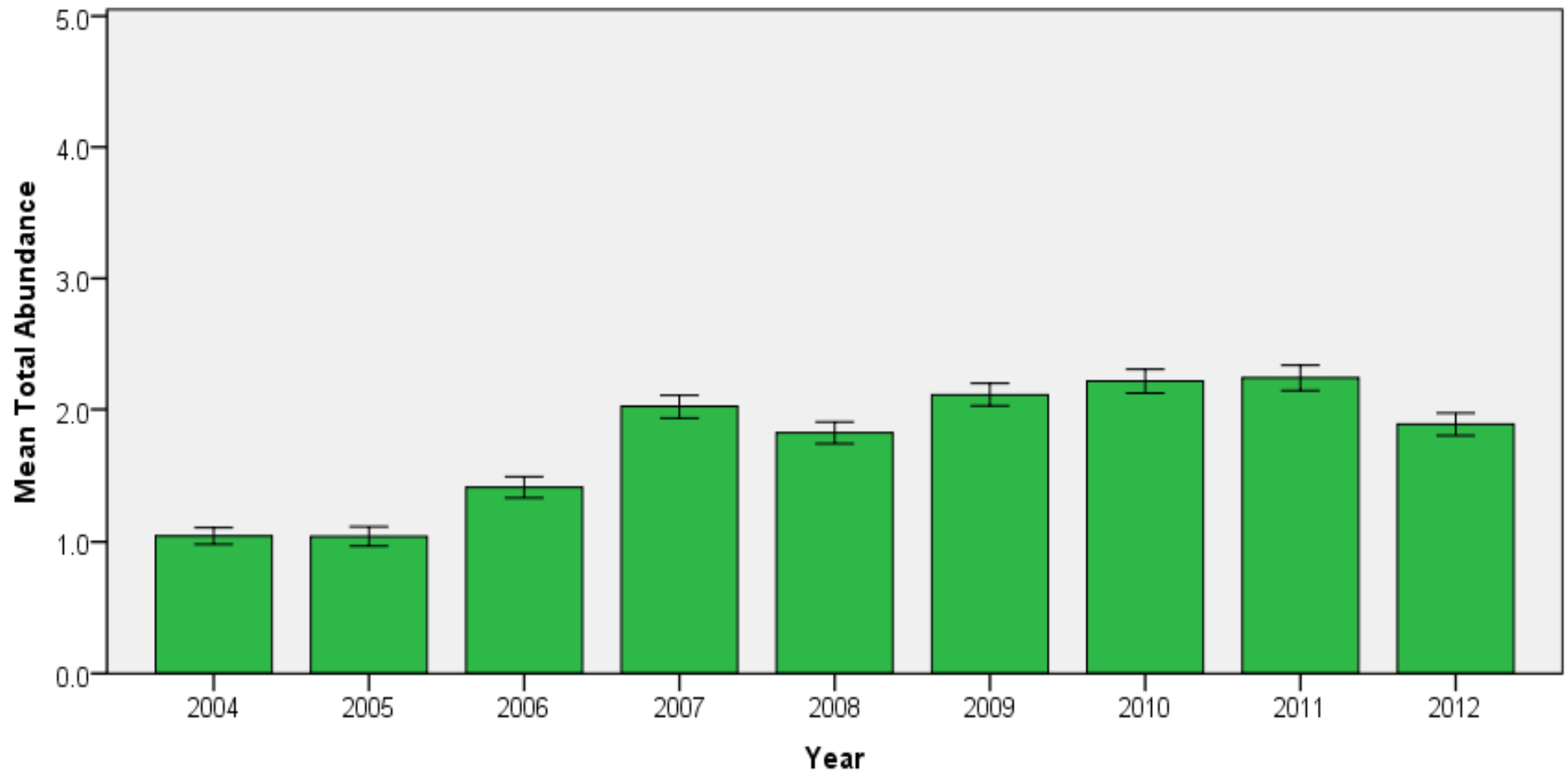
Seagrass Species by Region





CHAP Total Abundance

CHAP Total Abundance by Year

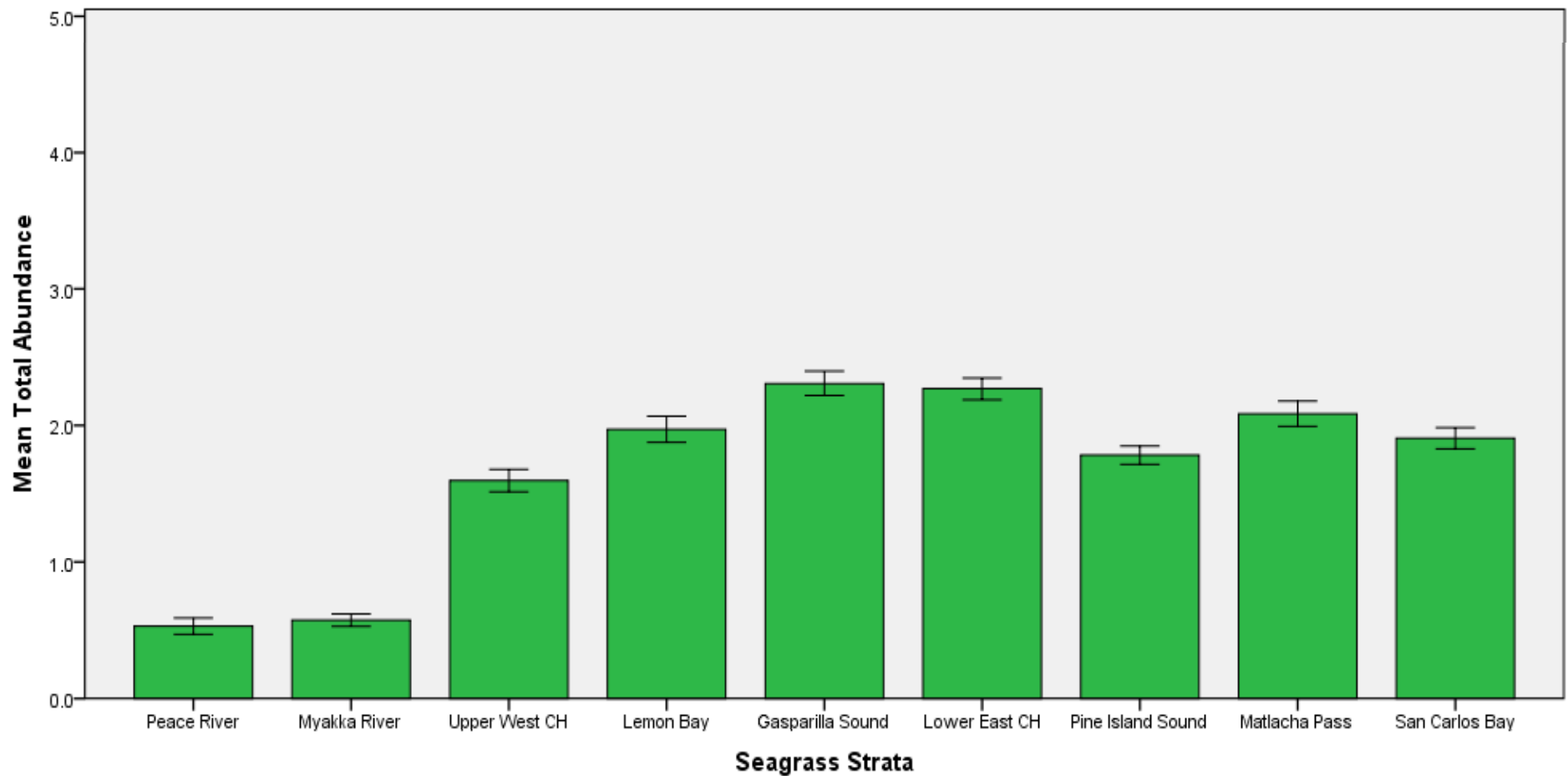


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CHAP Total Abundance by Region

Total Abundance by Region (2004-2012)

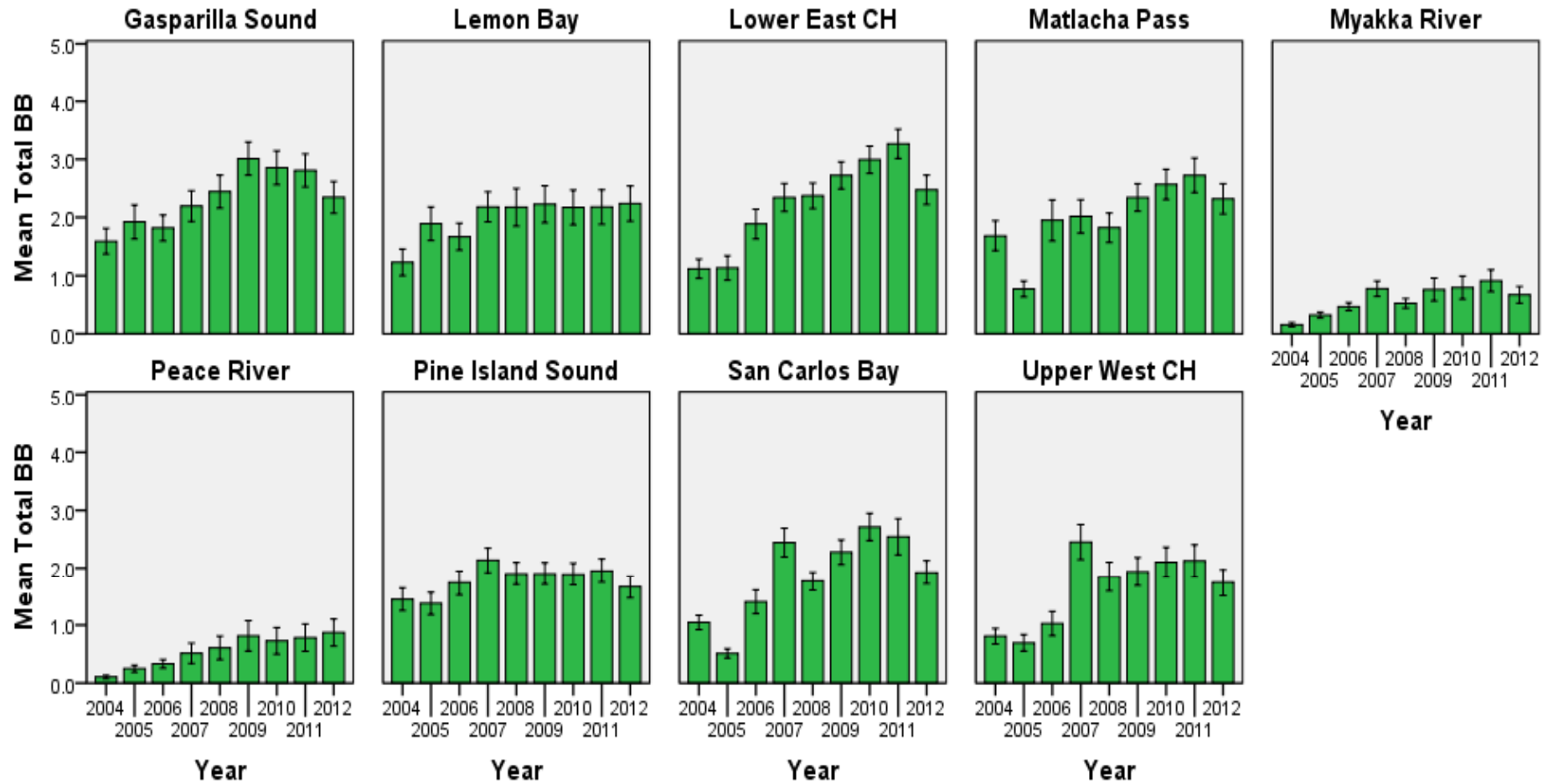


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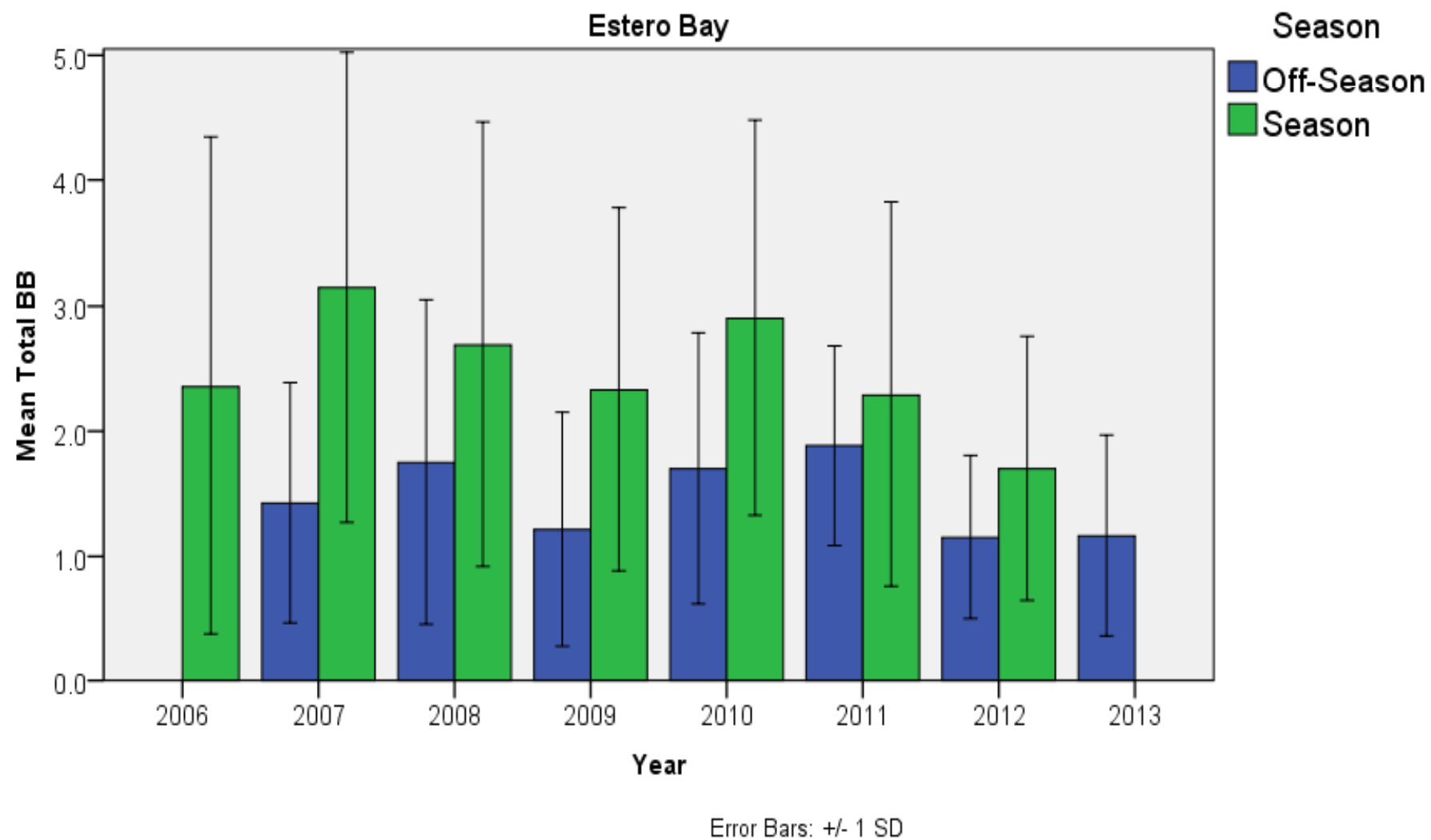


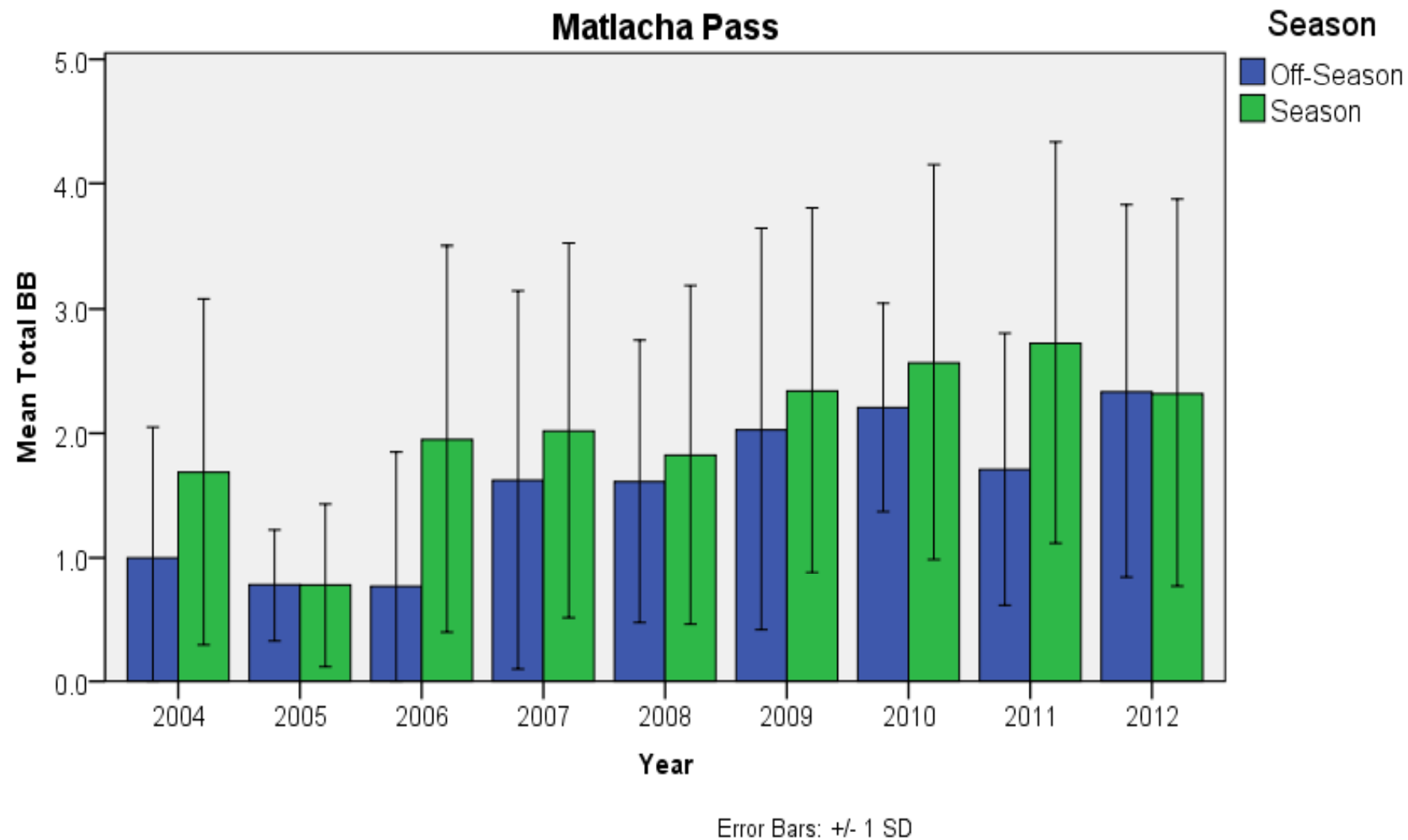
CHAP Total BB by Region

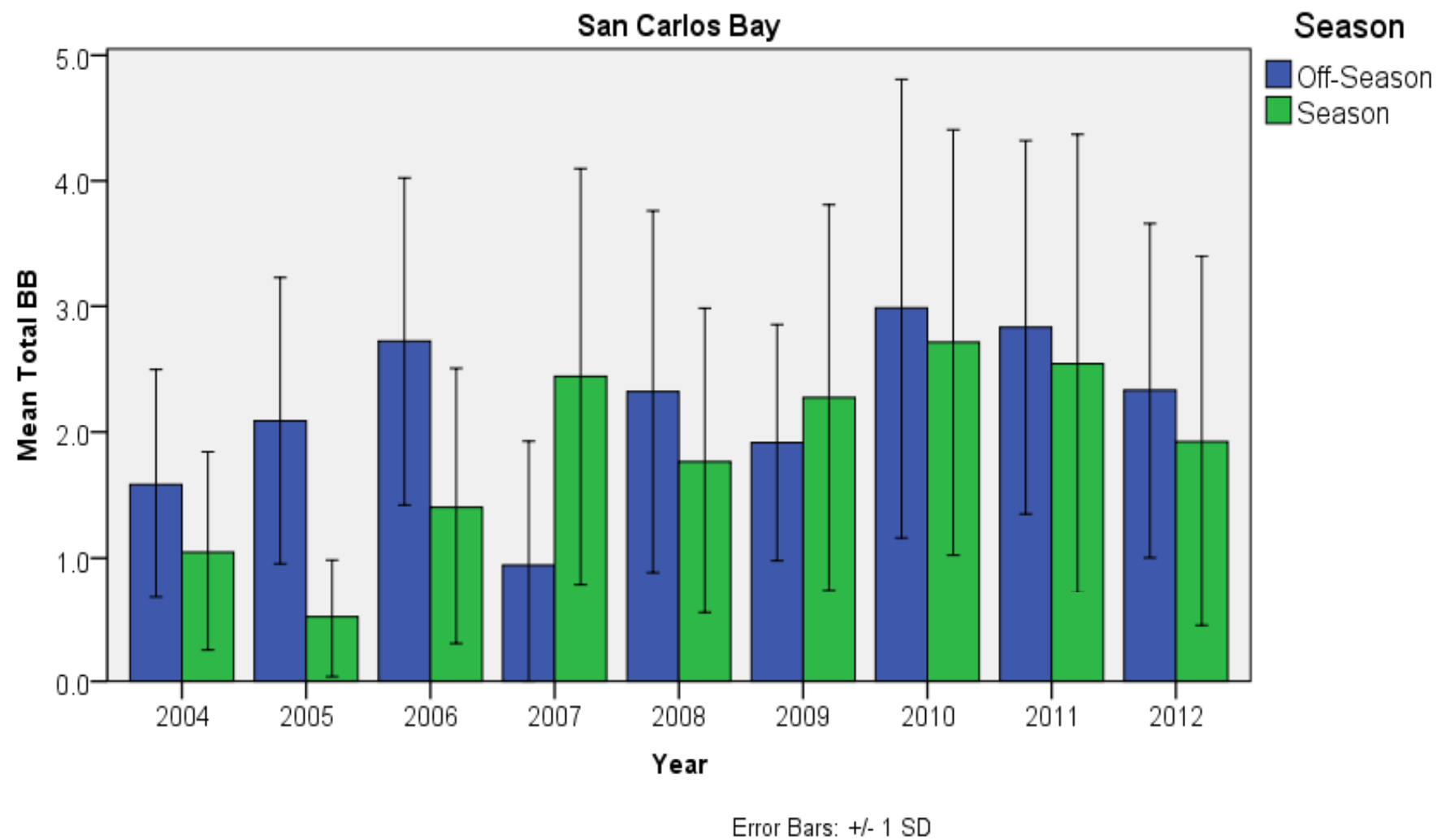
Total Abundance by Region and Year



Error Bars: ± 1 SE



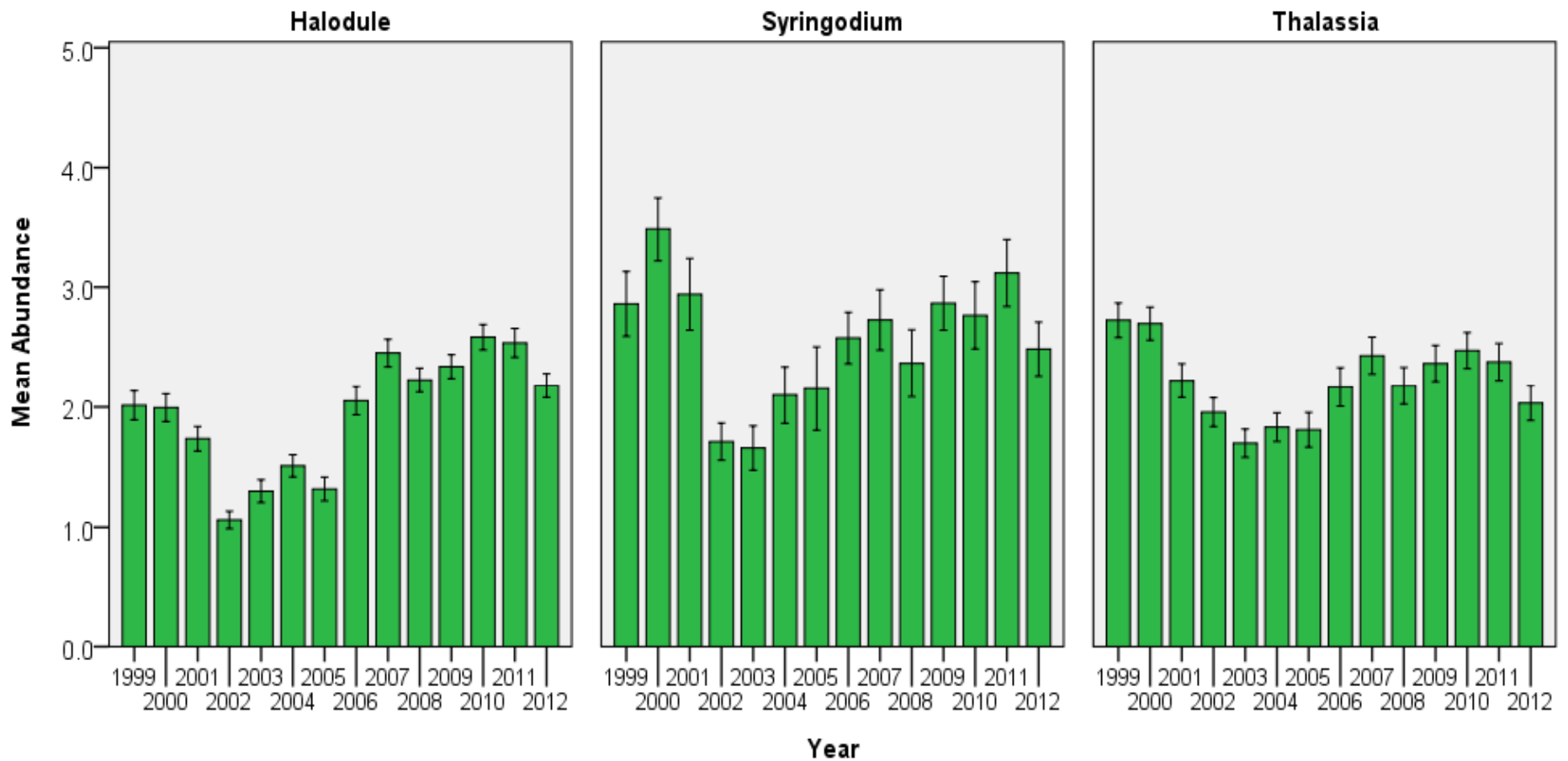






Species Abundance

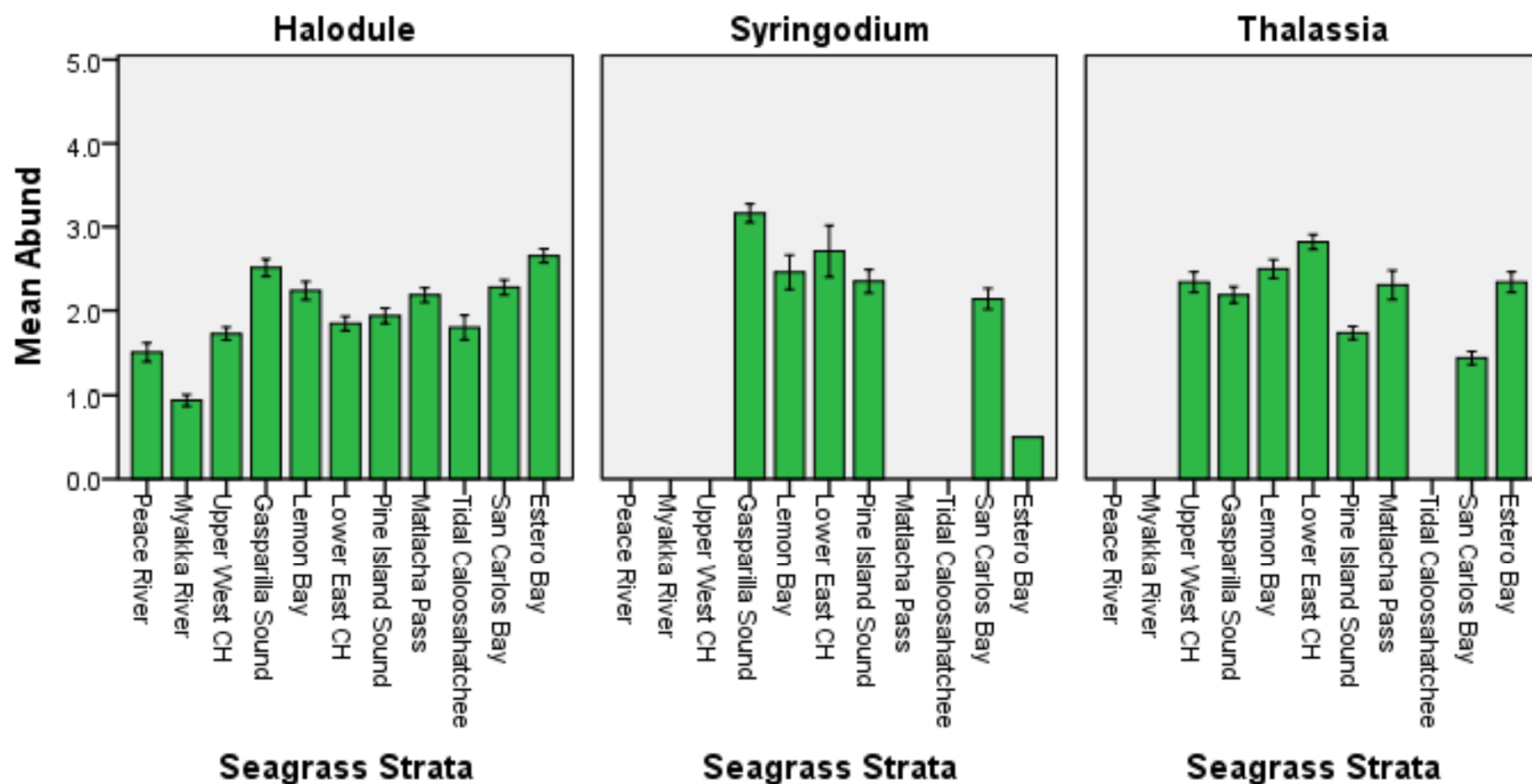
Mean BB Abundance by Species 1999-2013



Error Bars: ± 1 SE



Mean BB Abundance by Species and Region

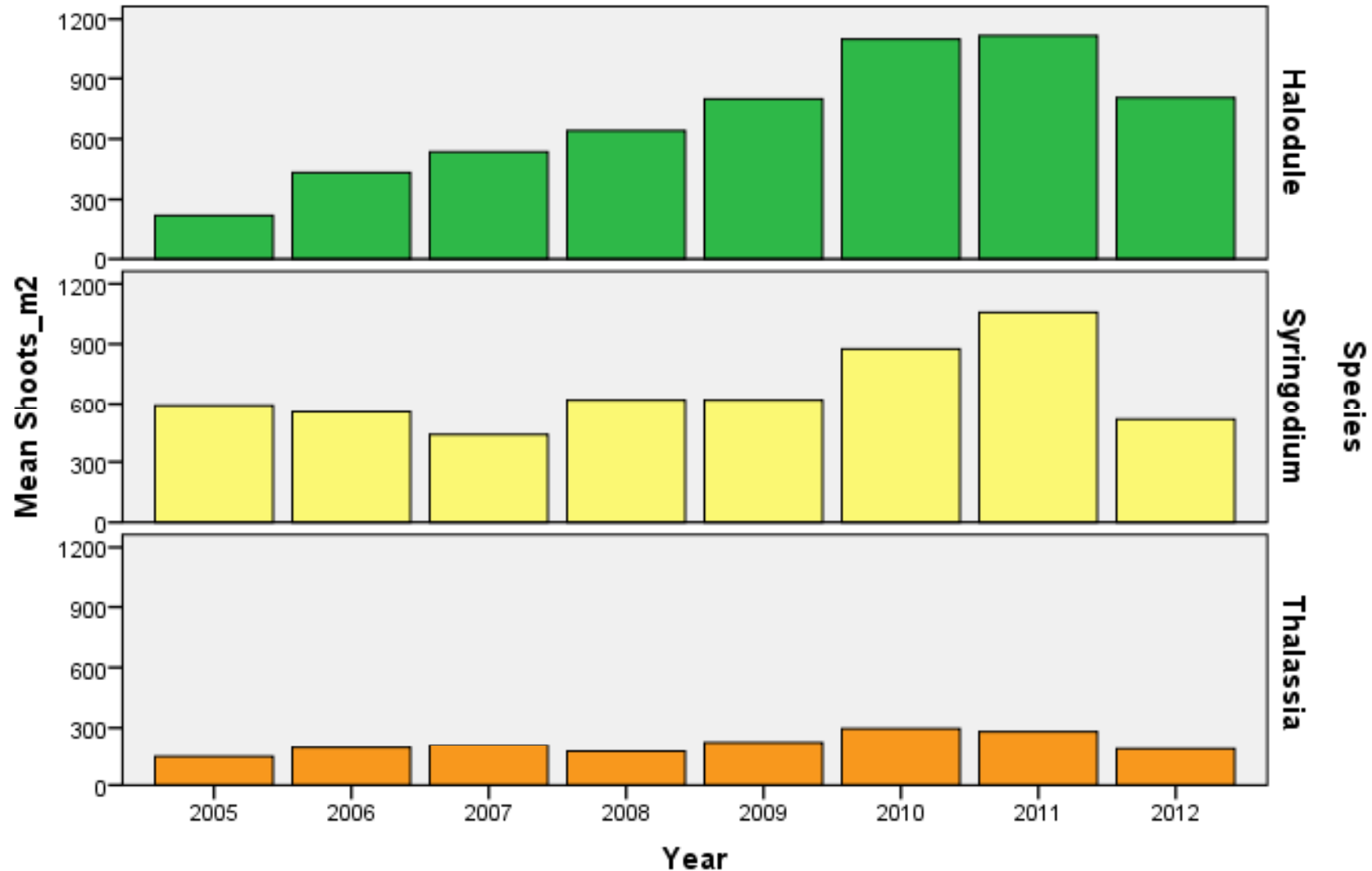


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Density by Year

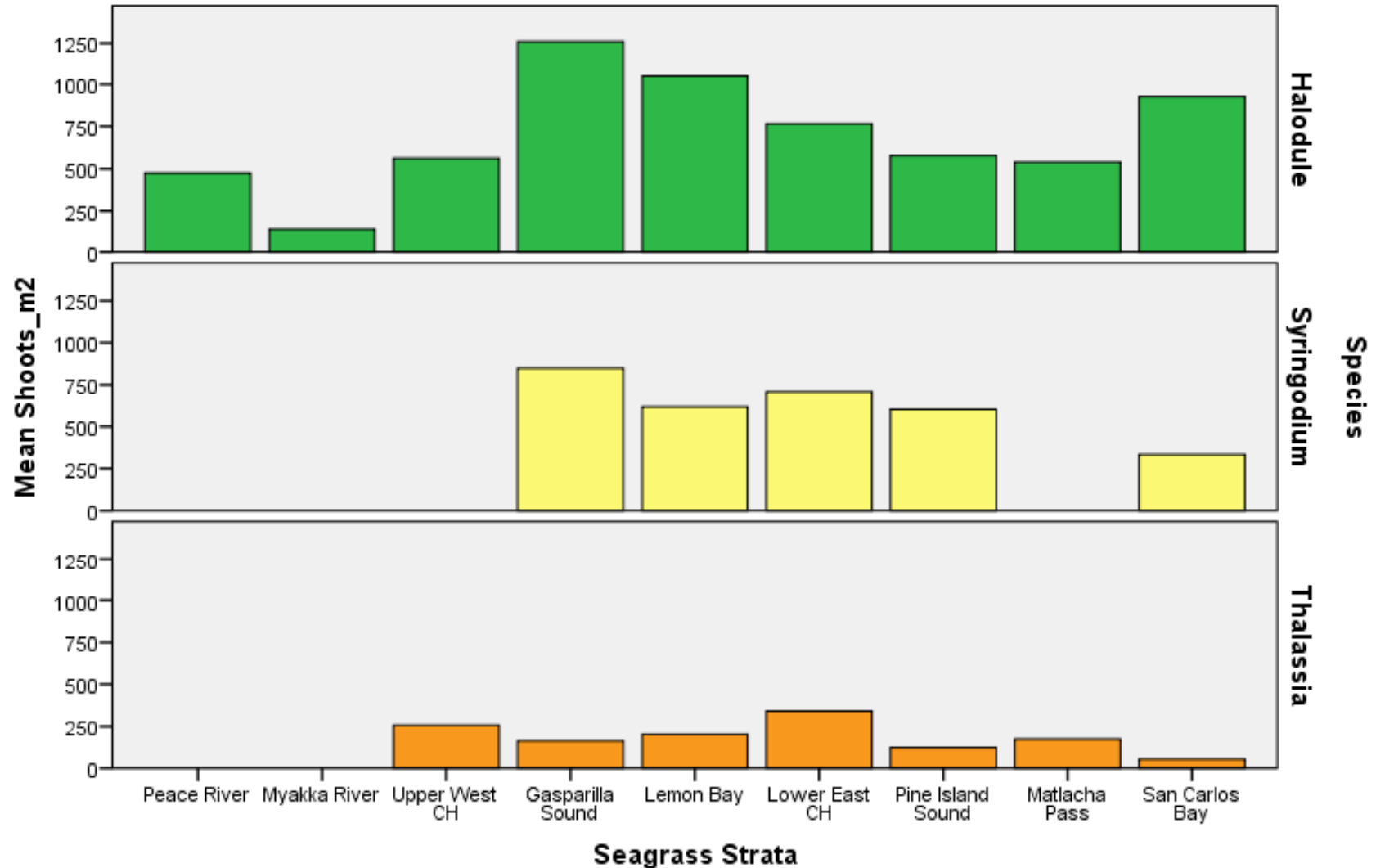
CHAP Seagrass Species Densities





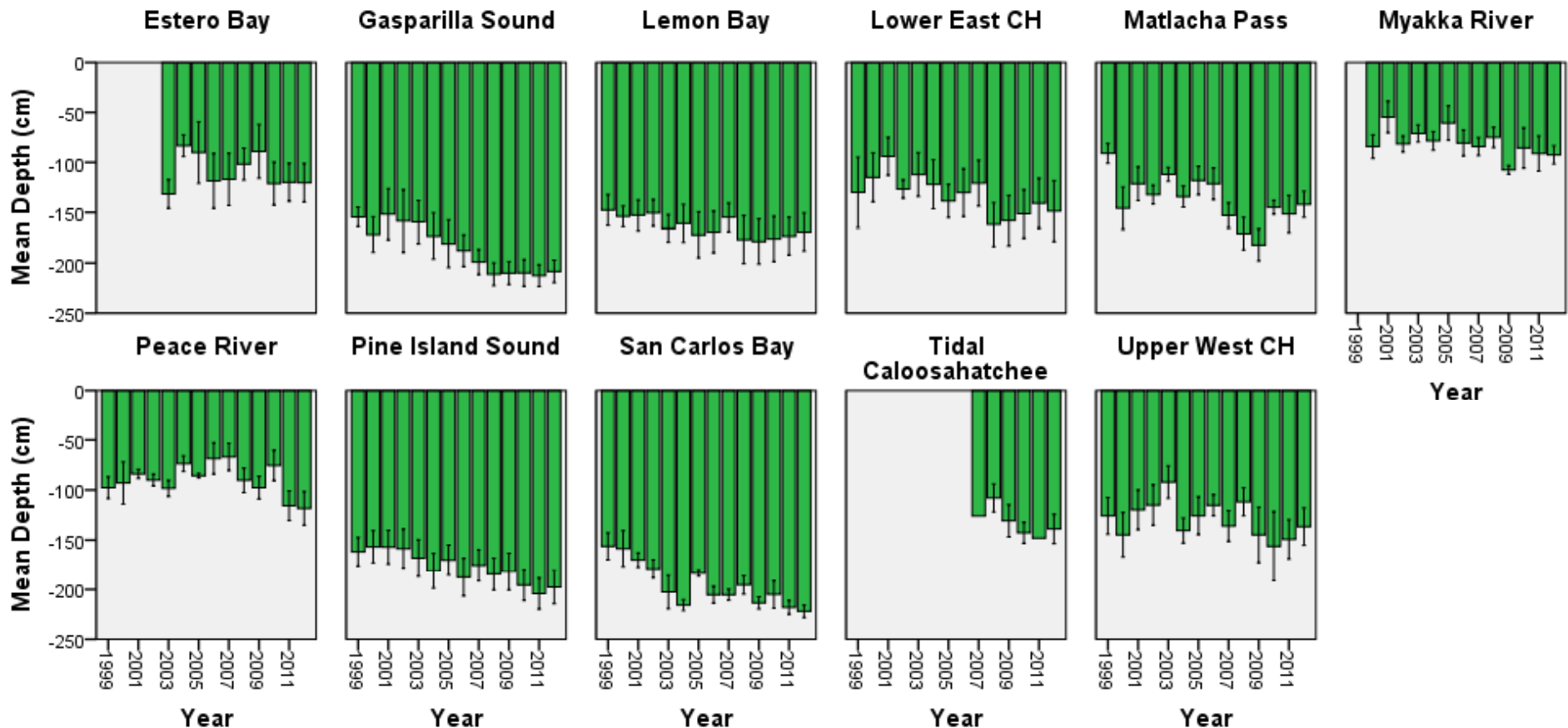
Density by Region

CHAP Densities by Region (2005-2012)





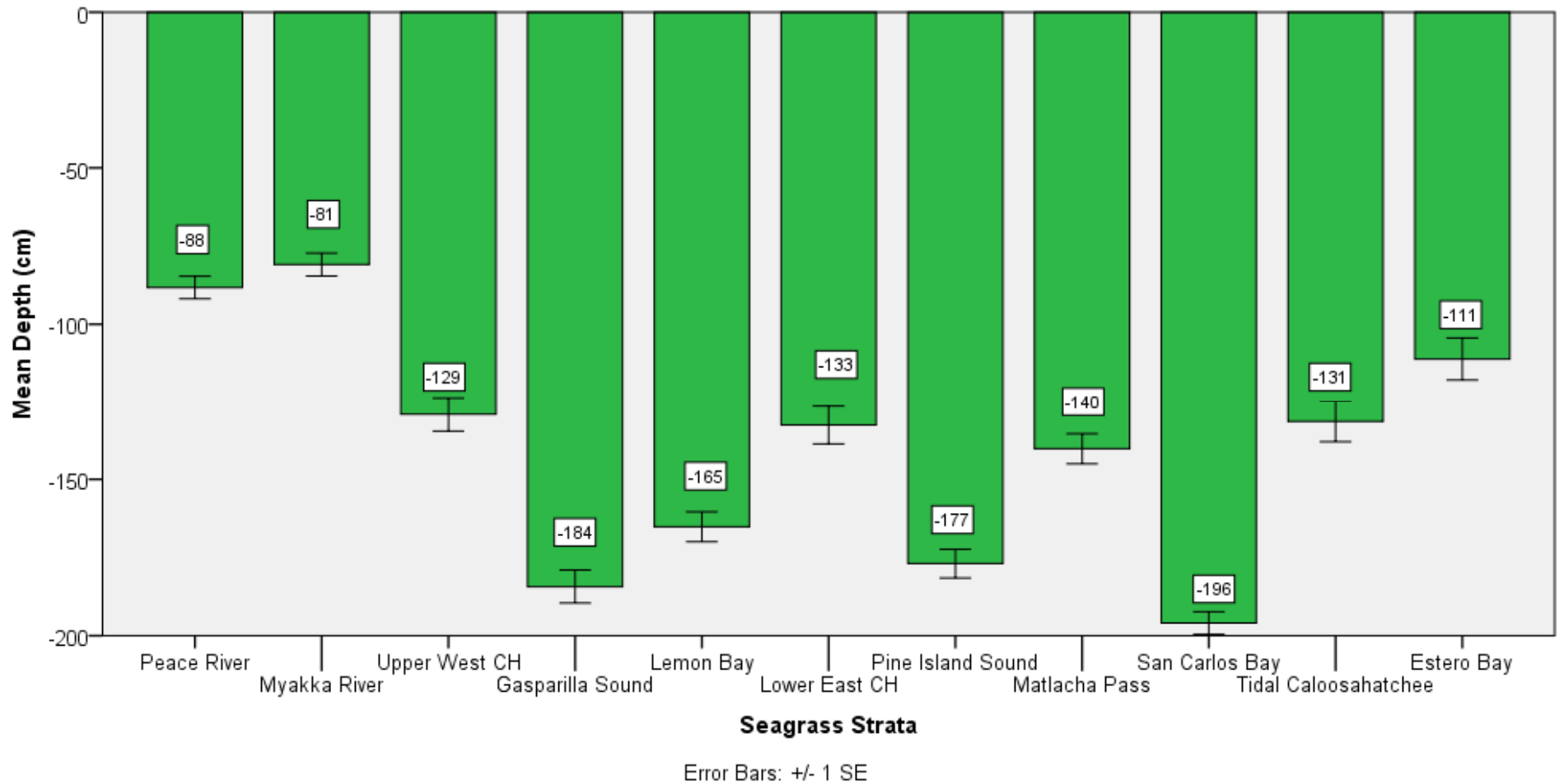
Deep Edge 1999-2012



Error Bars: ± 1 SE

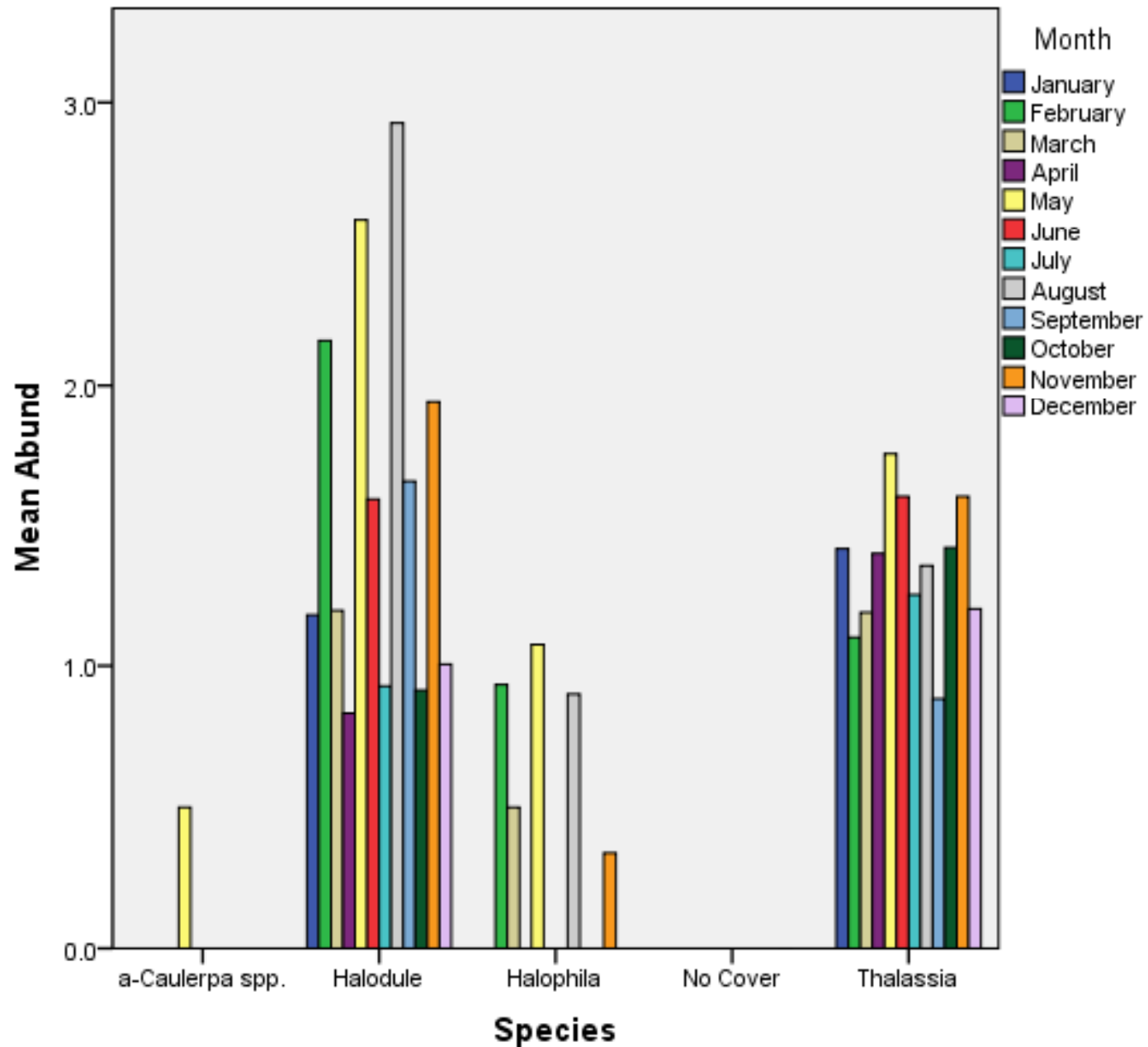


Deep Edge by Region



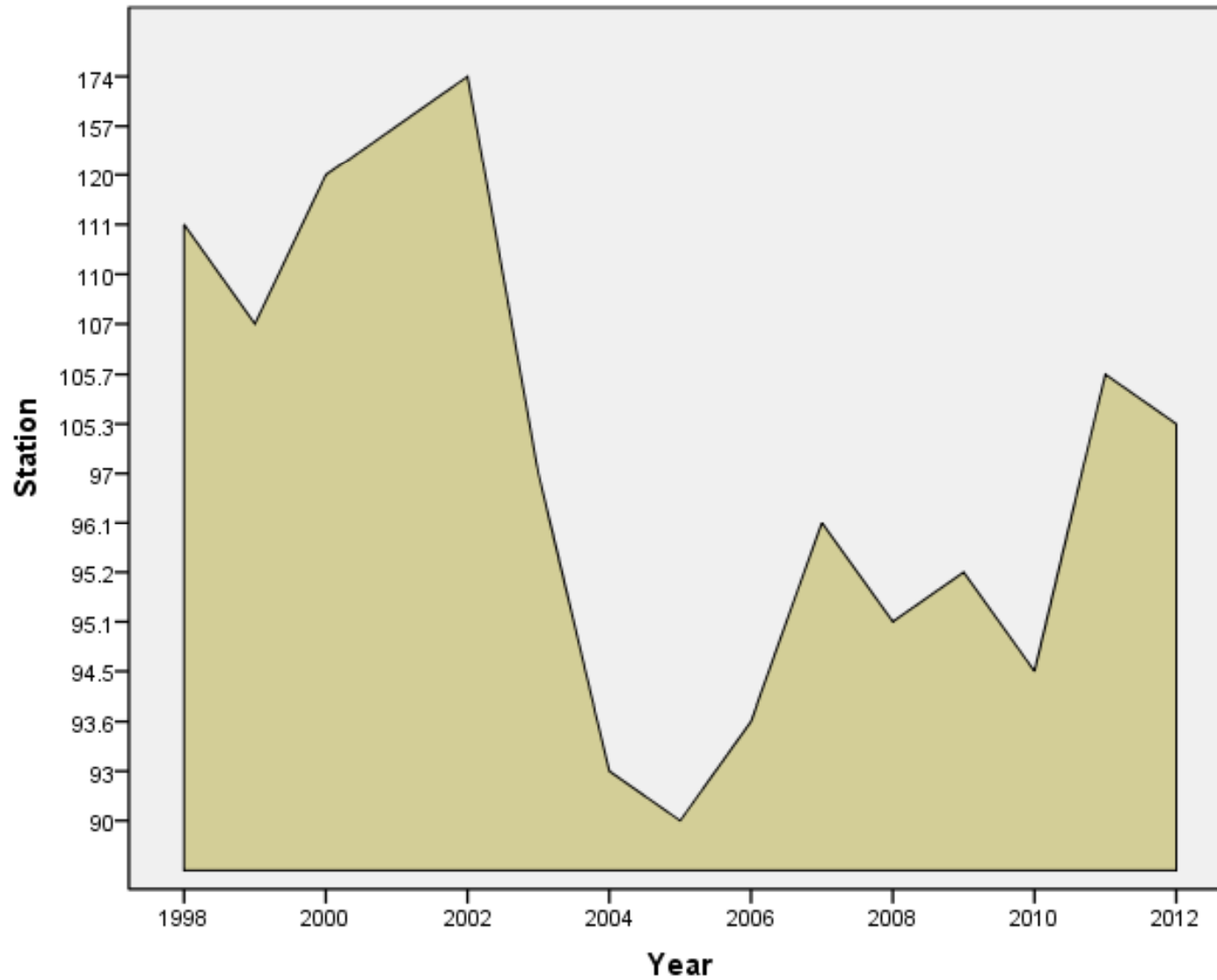


MP05 mean abundance by month (2002-2012)





ICW01- End of Bed





Questions?

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