

# **Predator and Meso-Predator Abundance: A Discussion of Trends and Solutions for Blue Crab Management?**

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# Purpose—

To stimulate discussion on:

- Current observations in predator trends
- Interplay with habitat availability
- Possible management strategies?

## Perry et al. 2022—Post-settlement predation

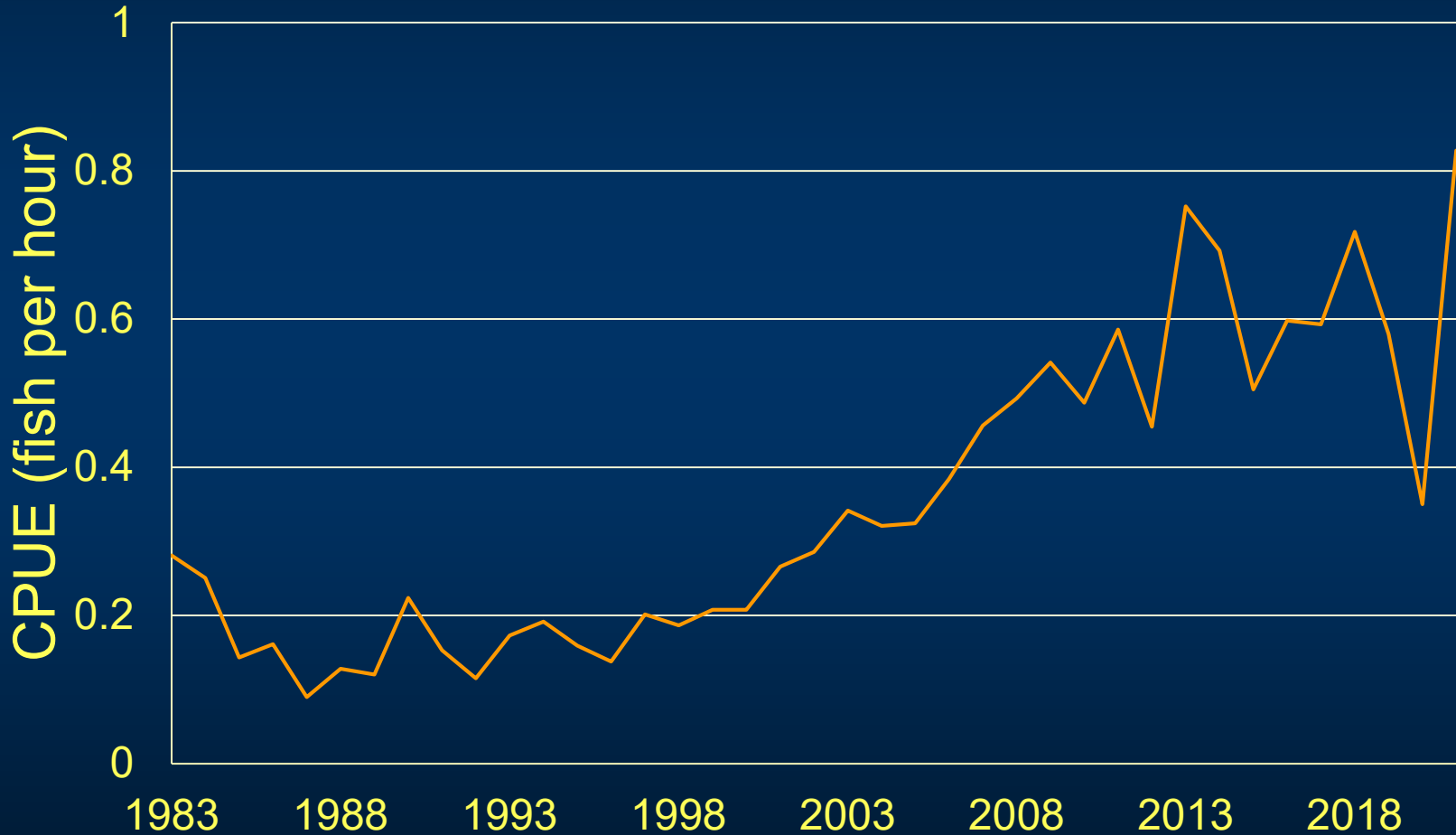
- High diversity of predators, few refugia from predation, year-round predation on Blue Crabs (e.g., Heck et al. 1995)
- Elevated salinities = greater predation rates(?) (e.g., Heck et al. 1995)
- Loss of vegetative habitat may contribute to predation issue (e.g., Stedman and Dahl 2008)
- Loss of oyster reef may increase blue crab predation (Byers et al. 2017)

# 10 most common species in TPWD Gillnet surveys (Spring 2021—Aransas Bay)

| <b>Species</b>   | <b>Percent Total</b> |
|------------------|----------------------|
| Gafftopsail      | 25.92%               |
| Hardhead         | 17.91%               |
| Red drum         | 9.28%                |
| Spotted Seatrout | 8.74%                |
| Gizzard Shad     | 7.89%                |
| Black drum       | 7.63%                |
| Alligator gar    | 5.97%                |
| Spotted gar      | 4.03%                |
| Longnose gar     | 2.85%                |
| Ladyfish         | 2.78%                |

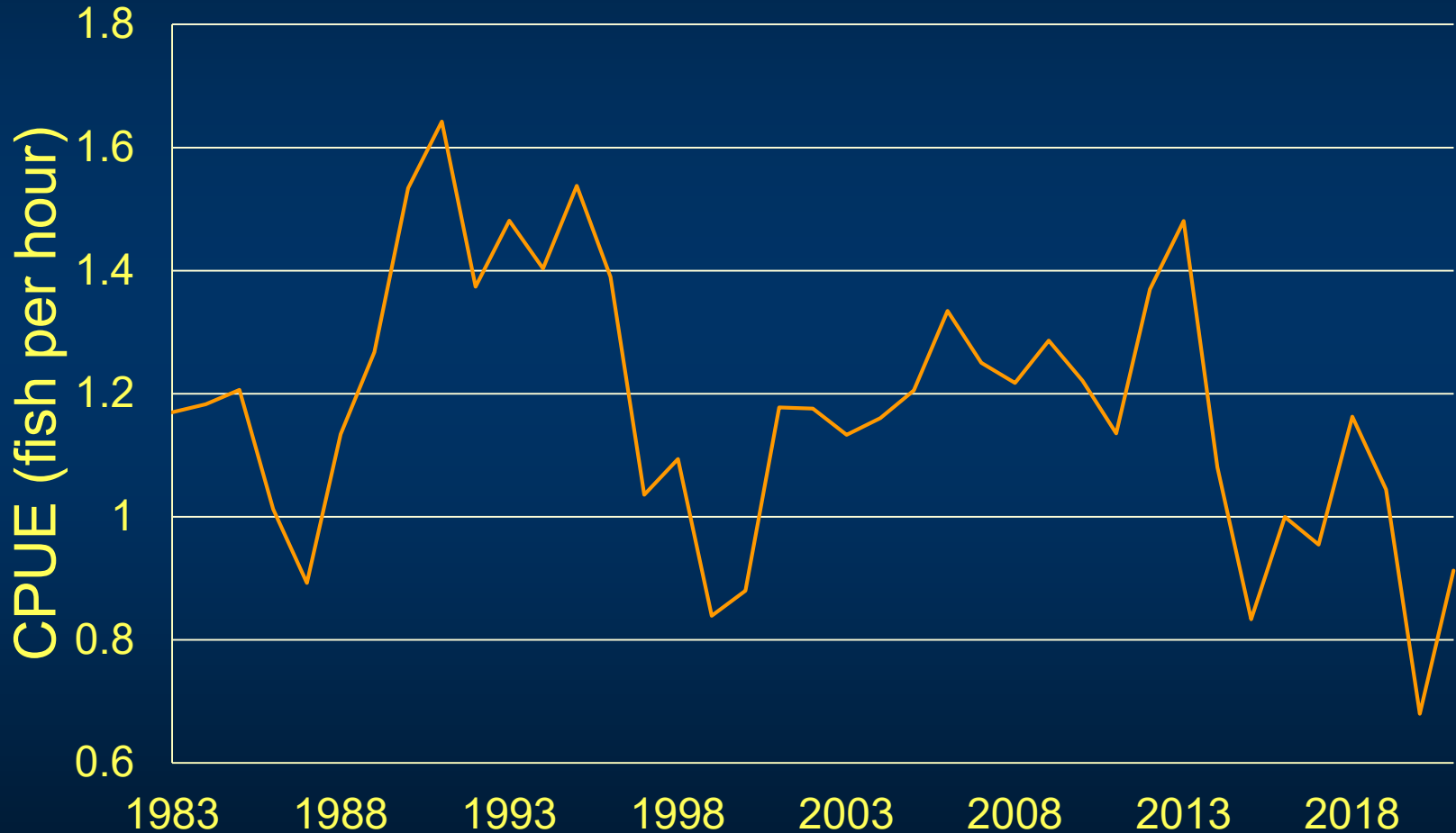
# Gafftopsail Catfish (*Bagre marinus*)

TPWD gill net surveys (1983-2021)



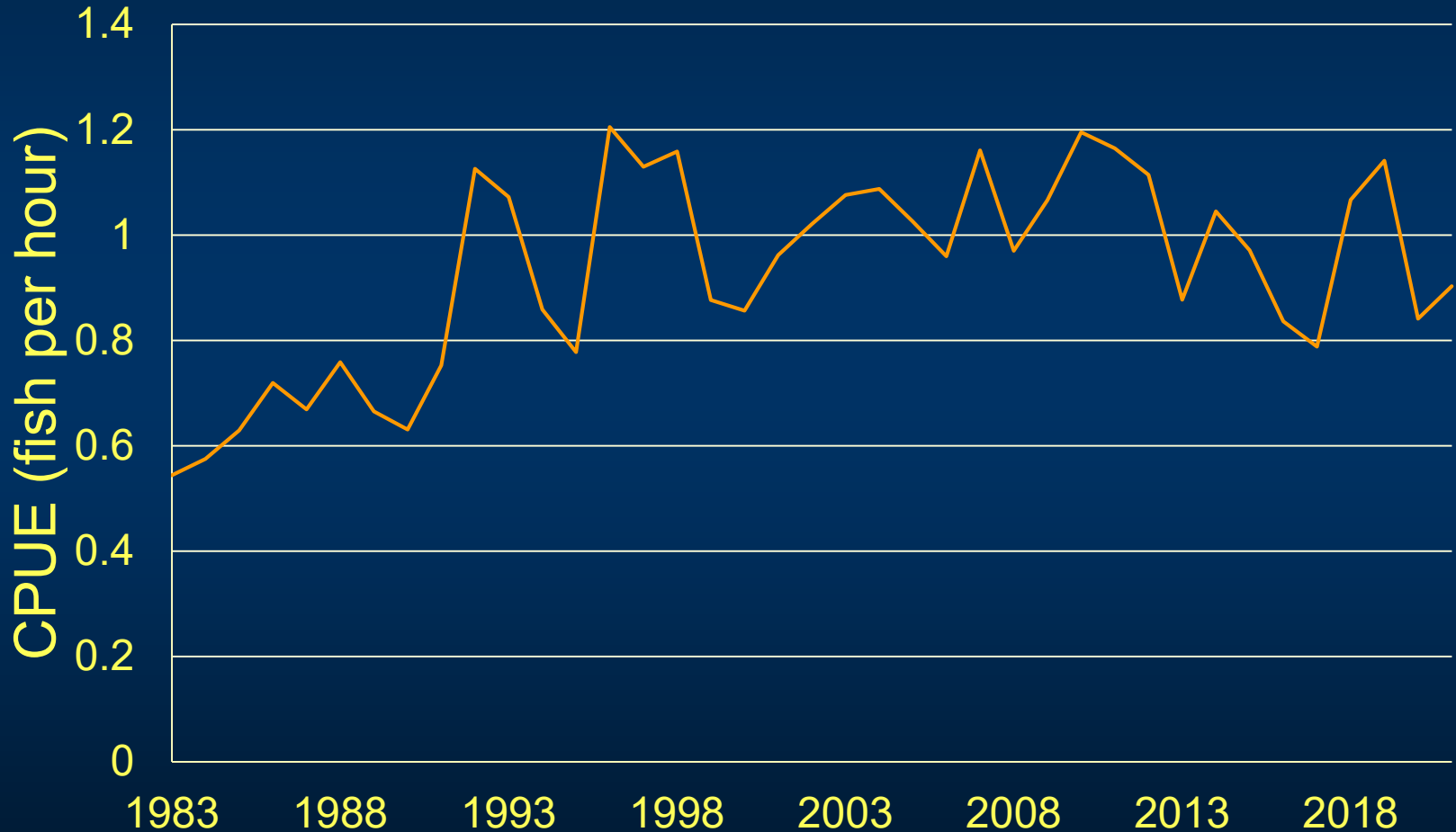
# Hardhead Catfish (*Ariopsis felis*)

TPWD gill net surveys (1983-2021)



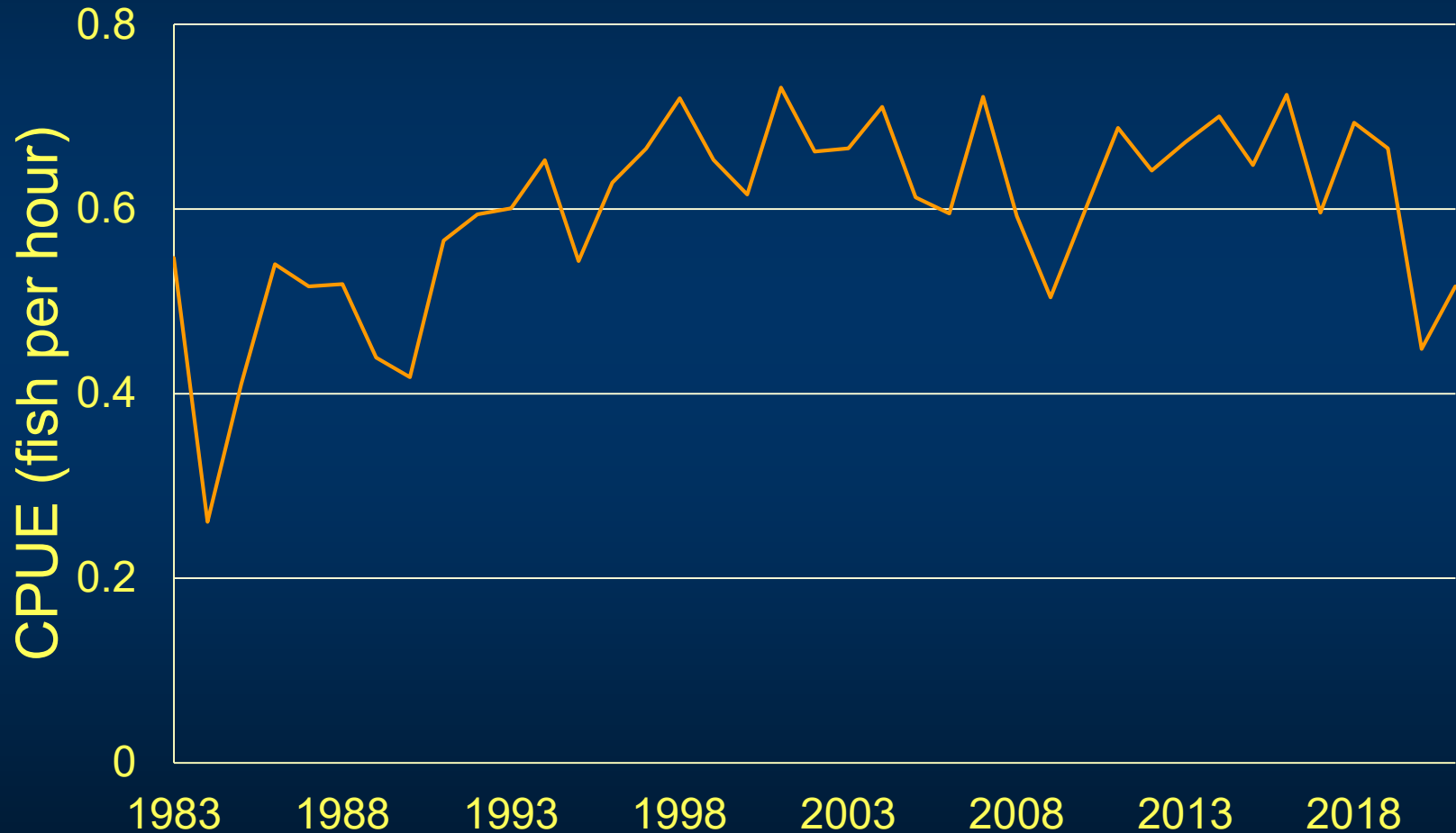
# Red Drum (*Scianops ocellatus*)

TPWD gill net surveys (1983-2021)



# Spotted Seatrout (*Cynoscion nebulosus*)

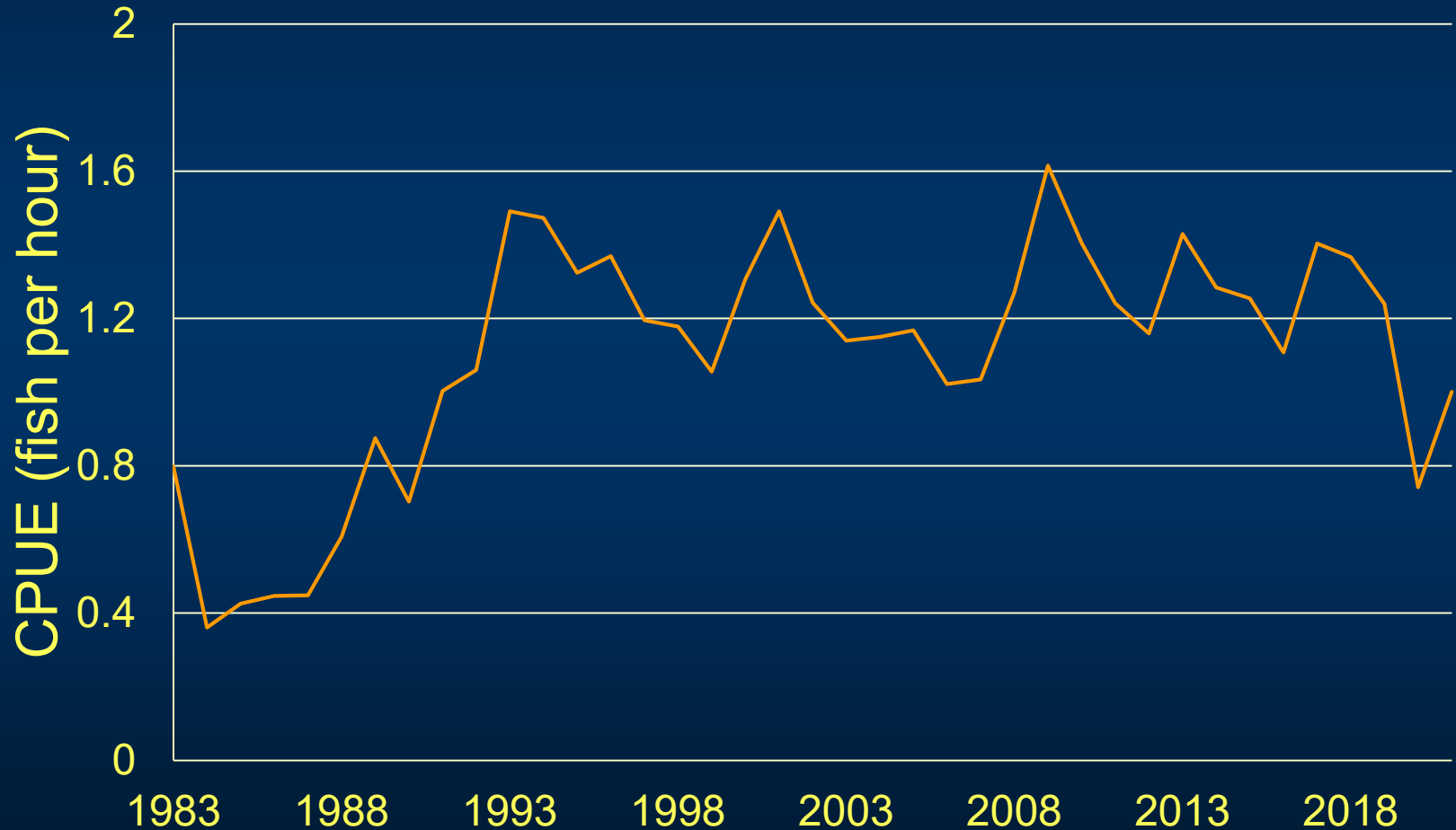
TPWD gill net surveys (1983-2021)





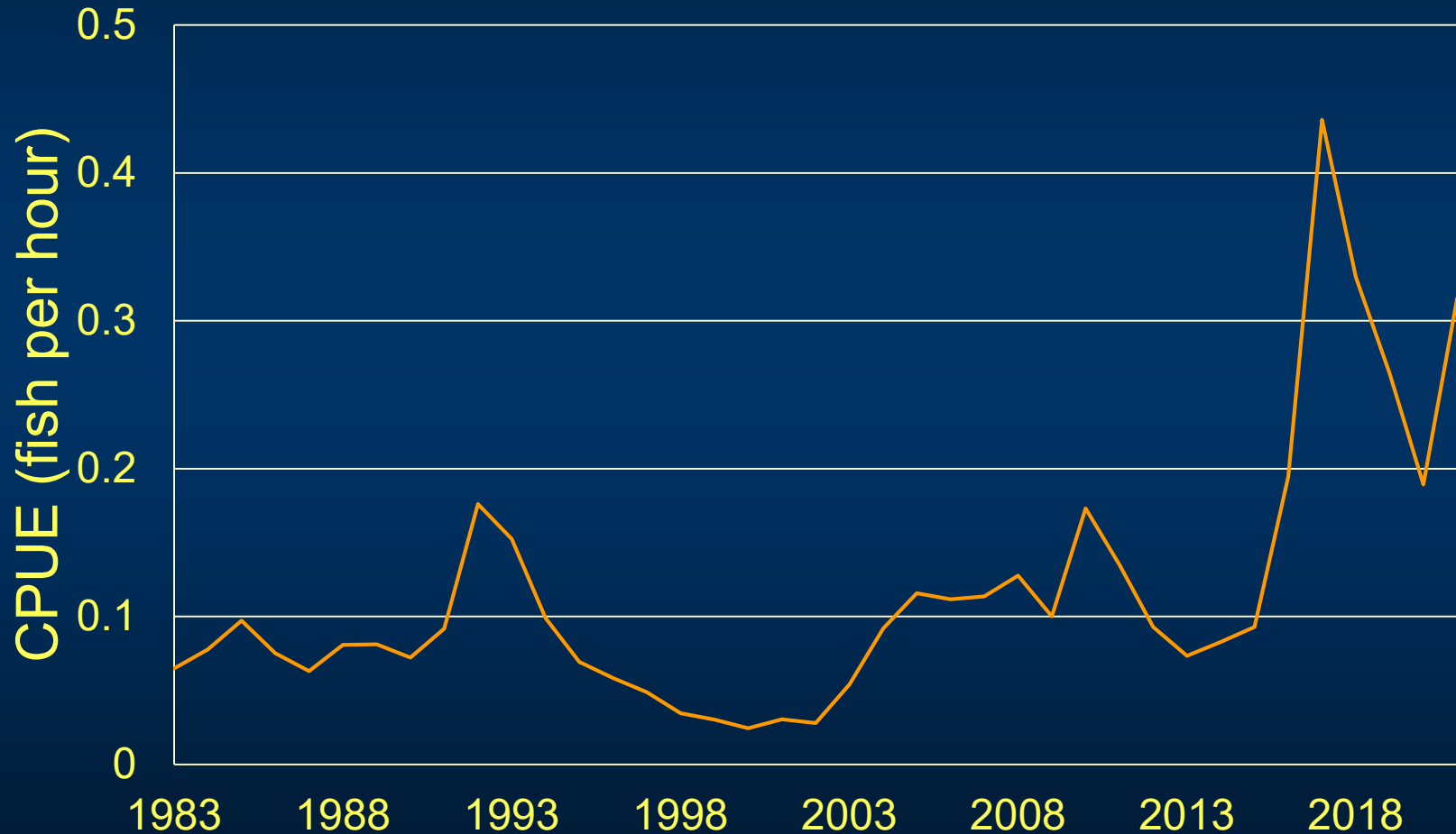
# Black Drum (*Pogonias cromis*)

TPWD gill net surveys (1983-2021)



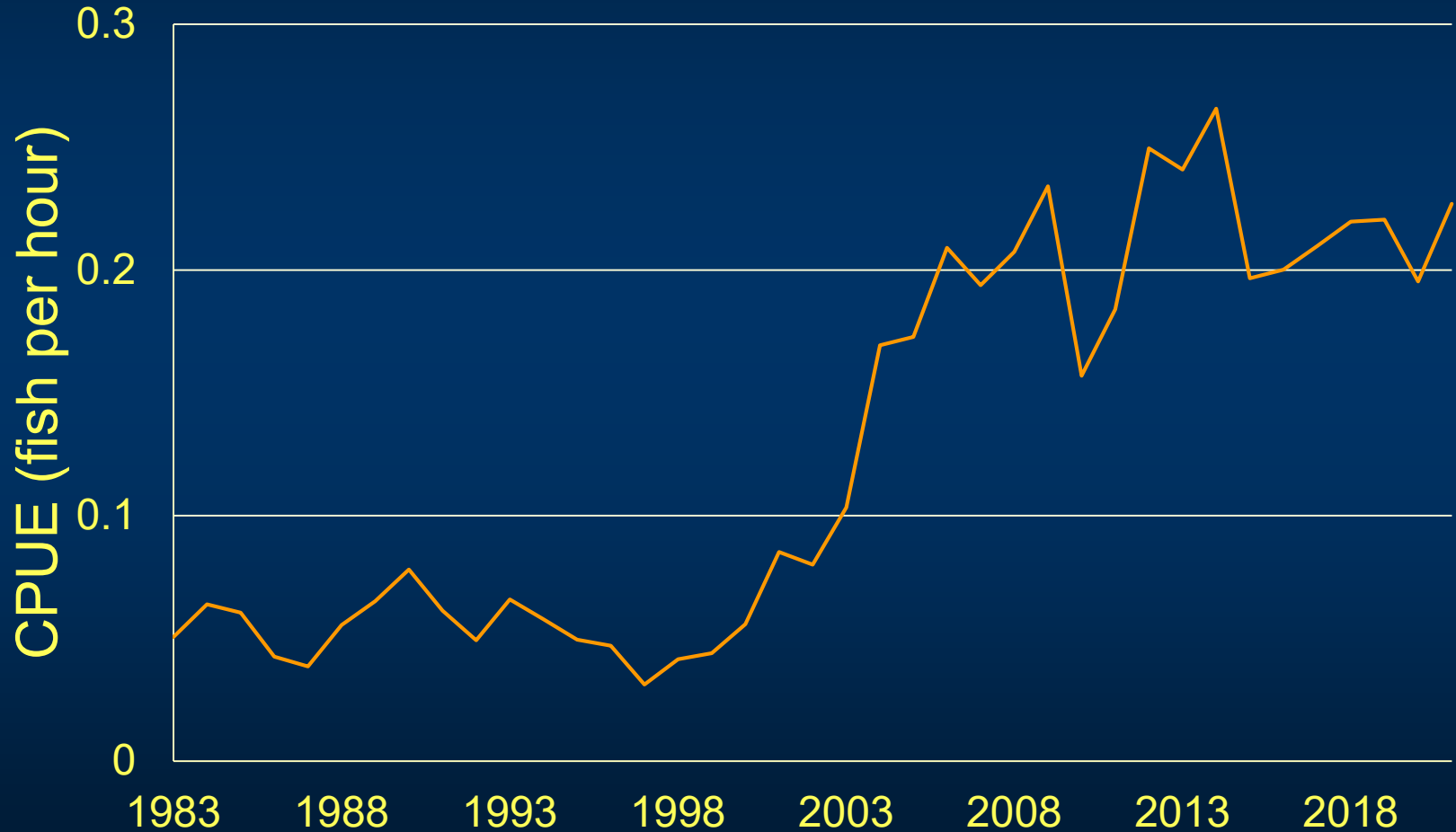
# Alligator Gar (*Atractosteus spatula*)

TPWD gill net surveys (1983-2021)



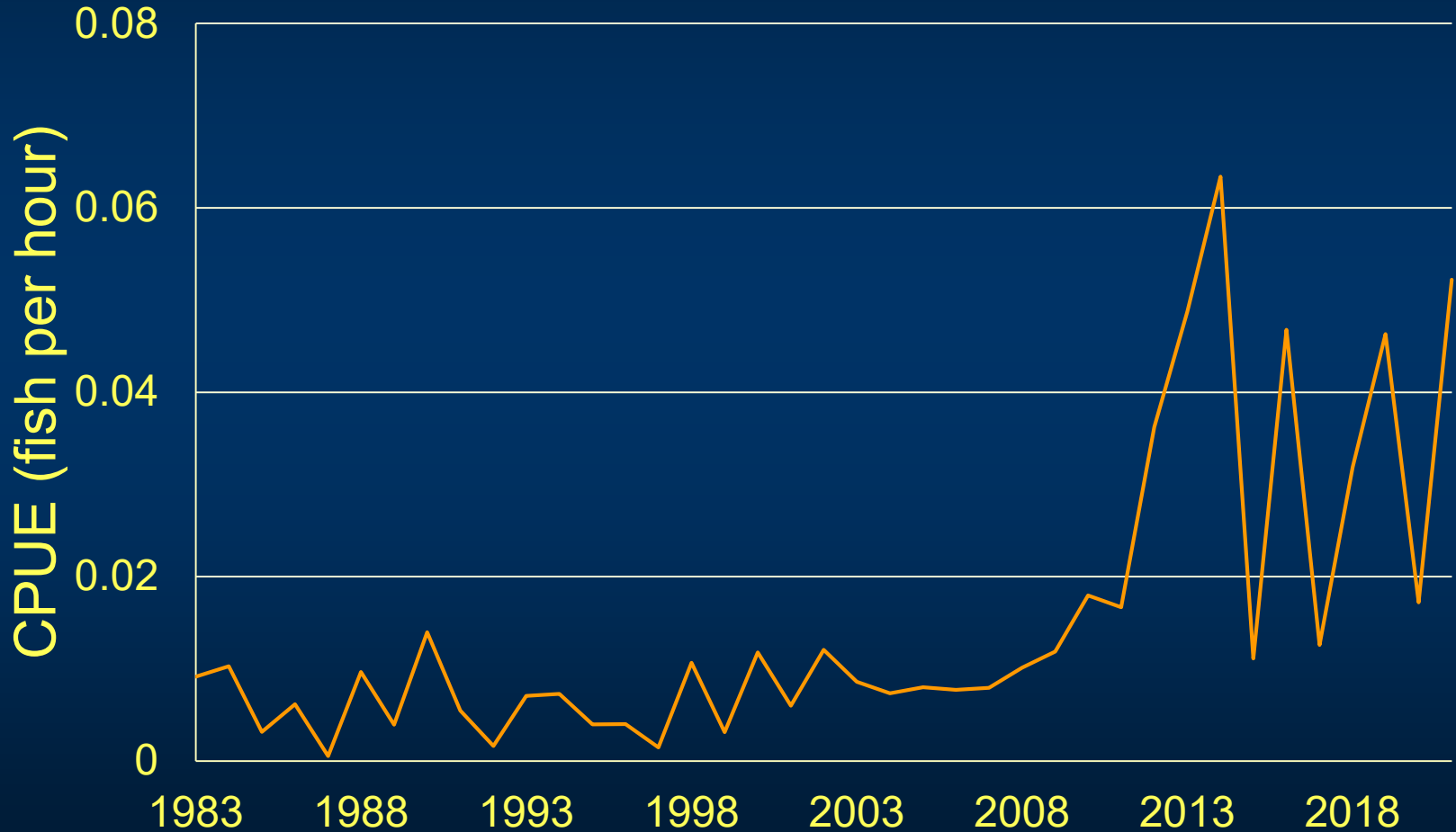
# Ladyfish (*Elops saurus*)

TPWD gill net surveys (1983-2021)

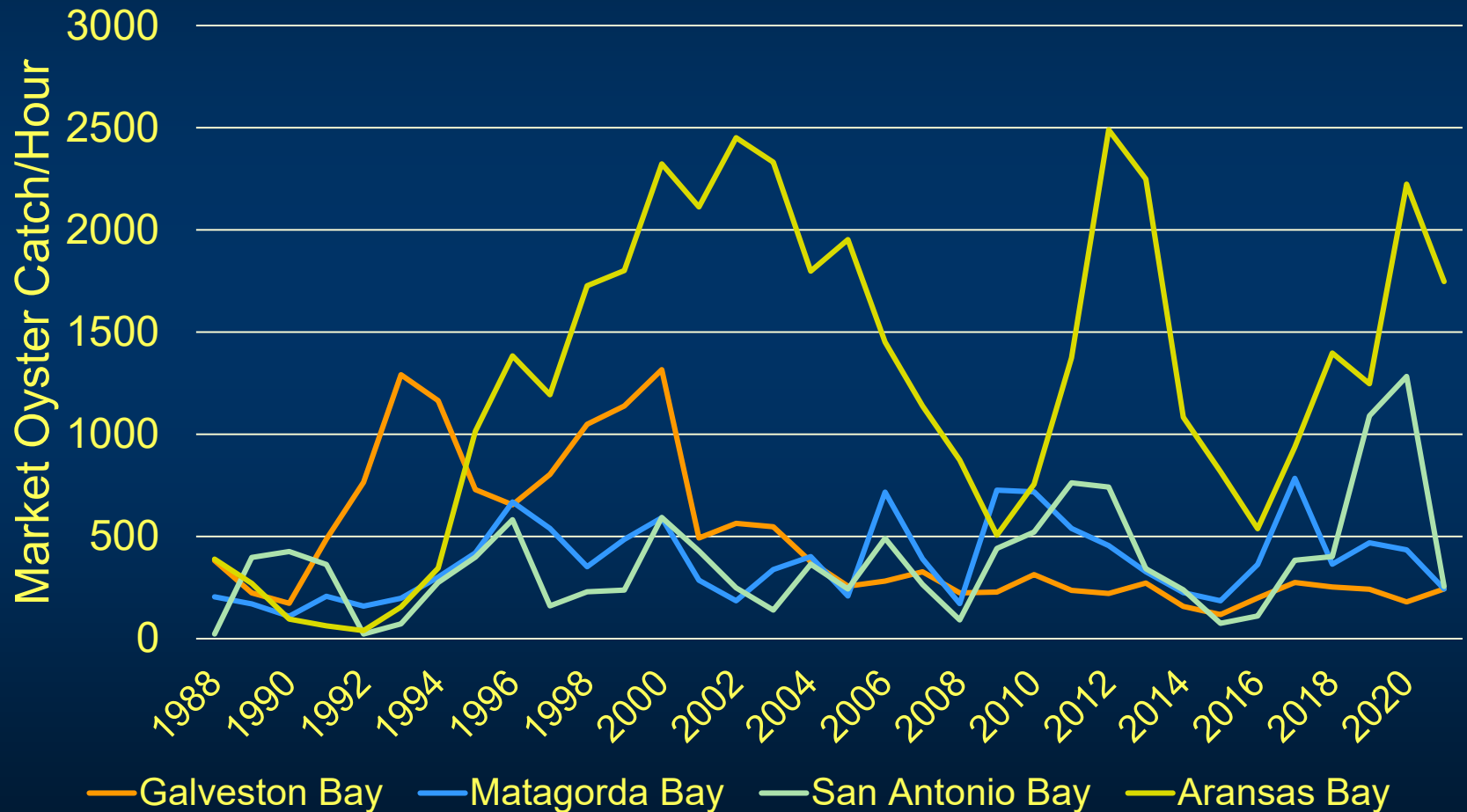


# Bonnethead Shark (*Sphyrna tiburo*)

TPWD gill net surveys (1983-2021)

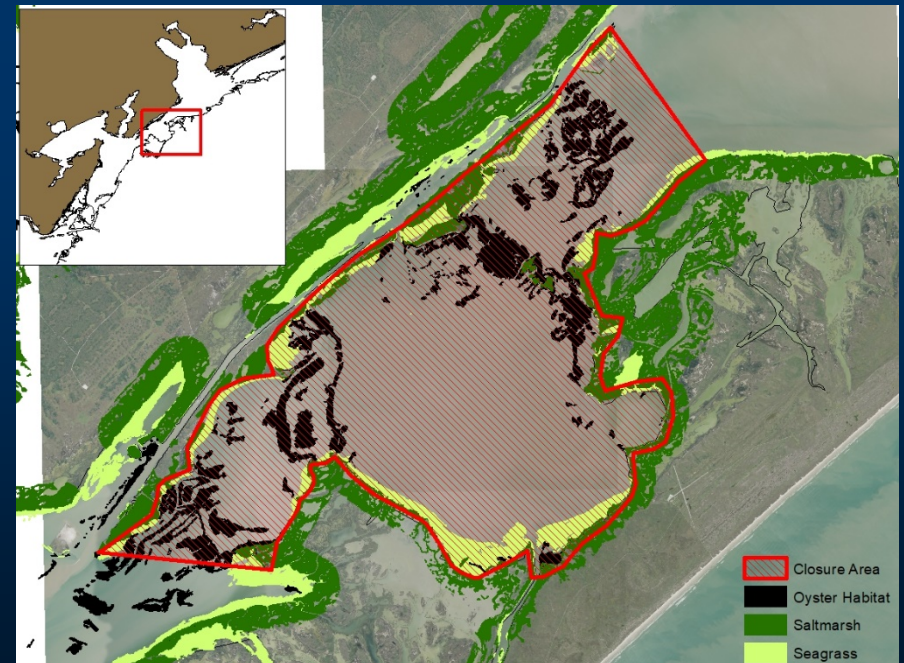


# Predatory impacts vs Habitat Impacts— Two sides of the same coin?



# Ecosystem-Based Management Strategies

- Predator management?
  - Promoting alternative fisheries?
- Habitat management/restoration
  - Nursery protection/restoration
    - Tidal pass proximity
    - Other?





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