

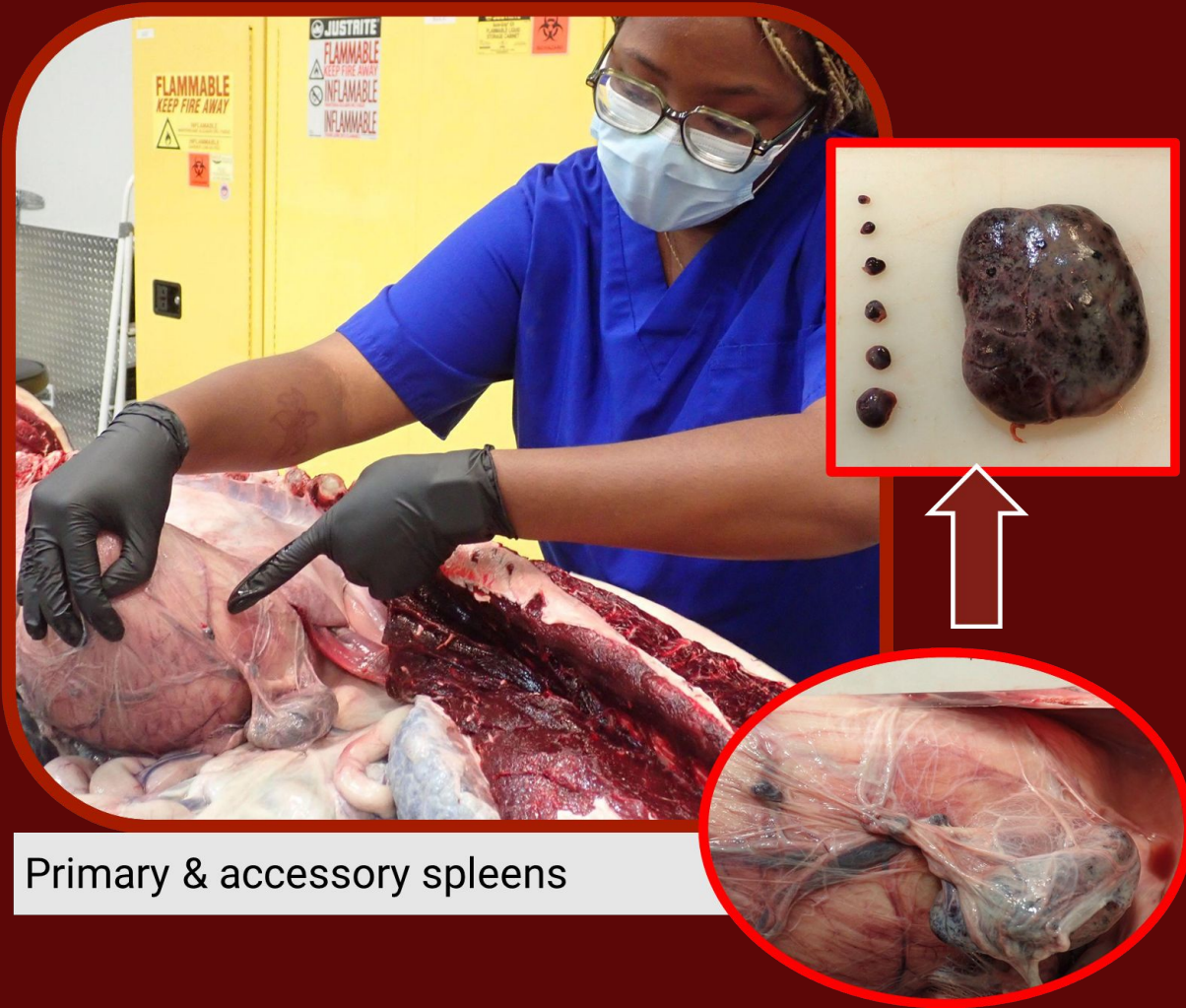
The Hot New Accessory:
Bottlenose Dolphin (*Tursiops truncatus*)
Splenic Relationship to Estuarine Stressors

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Introduction



Primary & accessory spleens

- Estuaries are dynamic habitats that **expose wildlife to stressors**:
 - freshwater influx,
 - pathogens that cause disease,
 - human interaction (HI)
- **Spleen & Accessory Spleens**
- Bottlenose dolphins are **sentinel species**

Methods

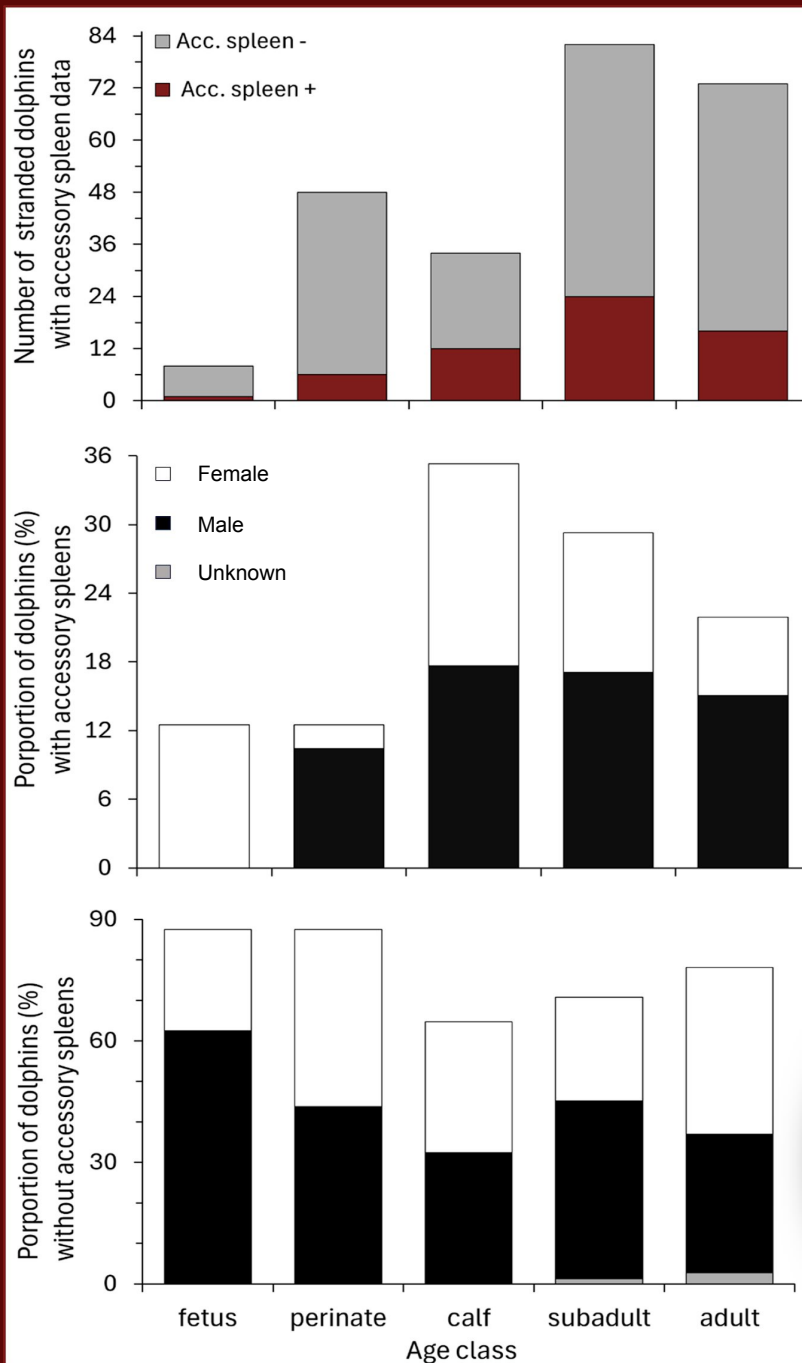


- Data provided by ALMMSN (2011-2024)
- Necropsied, spleen examined = 245
- **Factors investigated:**
 - Stranding location
 - Accessory Spleen +/-
 - Cause of Death (COD)
 - Human Interaction (HI)
 - Freshwater Exposure



Results

- 24% of dolphins for which spleen data were available had accessory spleens (Acc. Spleen)
- Fetuses and perinates had the **lowest** proportion *with* accessory spleens
- Males and females were equally represented

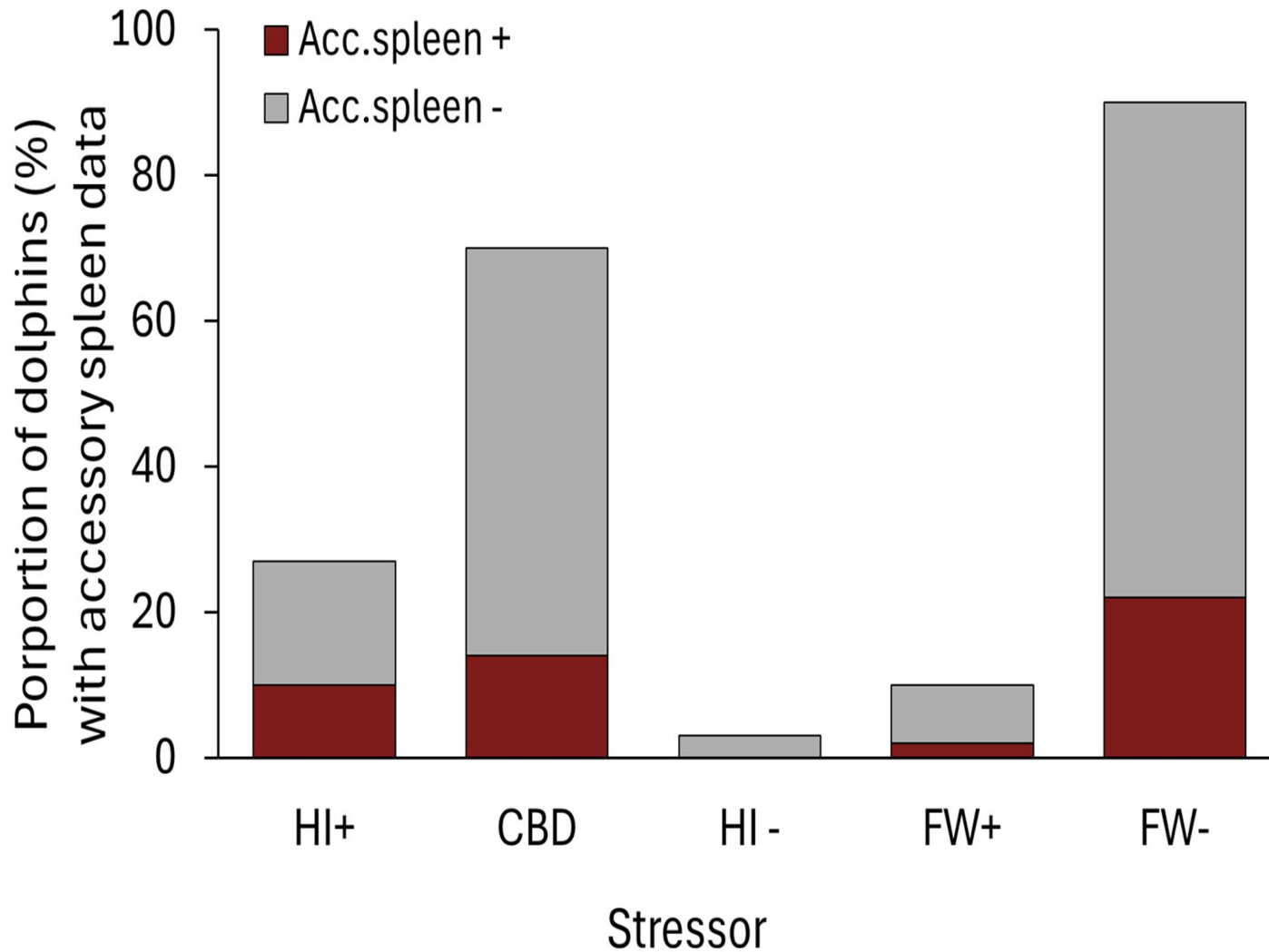


Dolphins
without
accessory
spleens
(n=186)

Dolphins
with
accessory
spleens
(n=59)

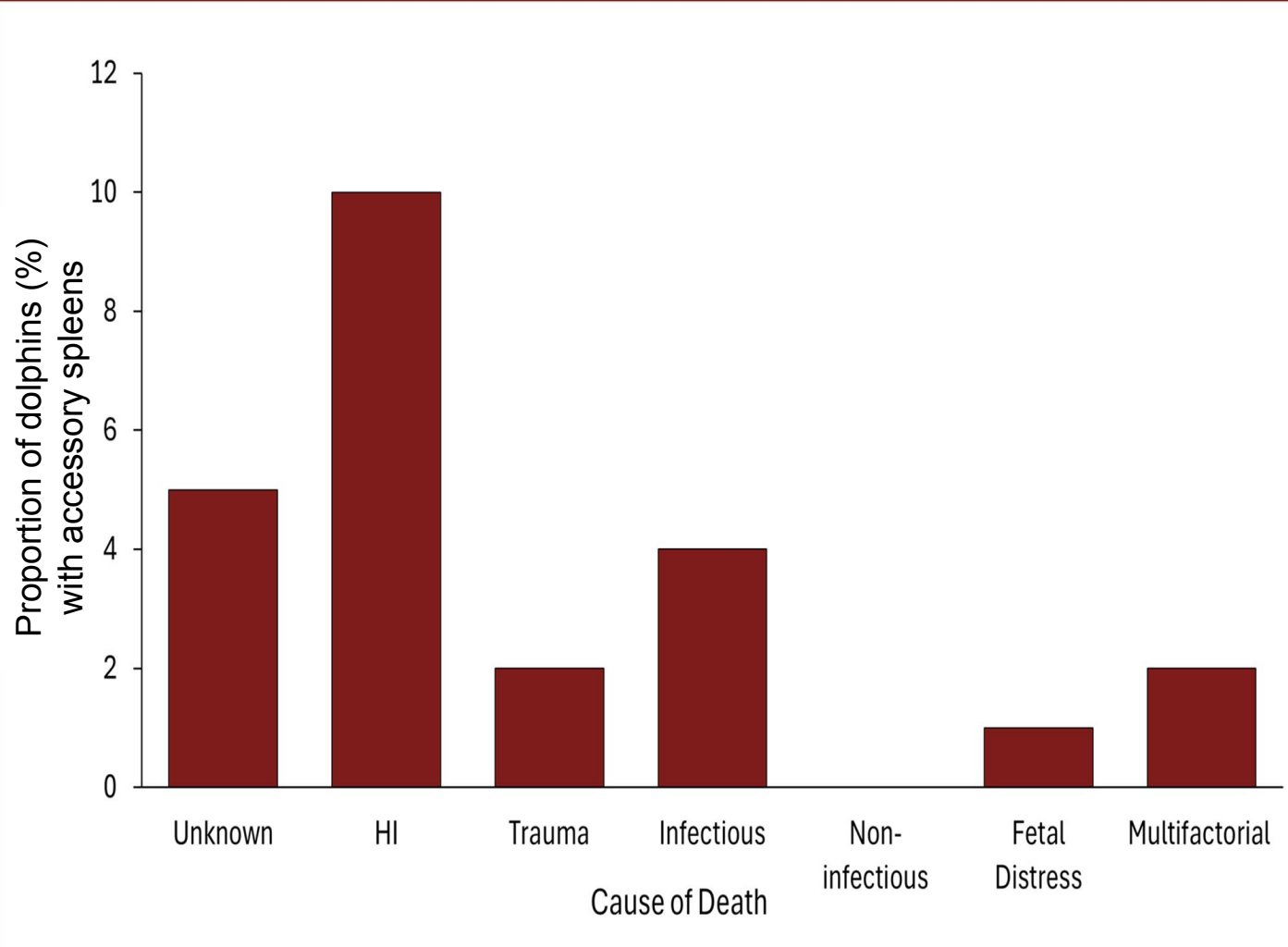
- Males and females were equally represented

Results



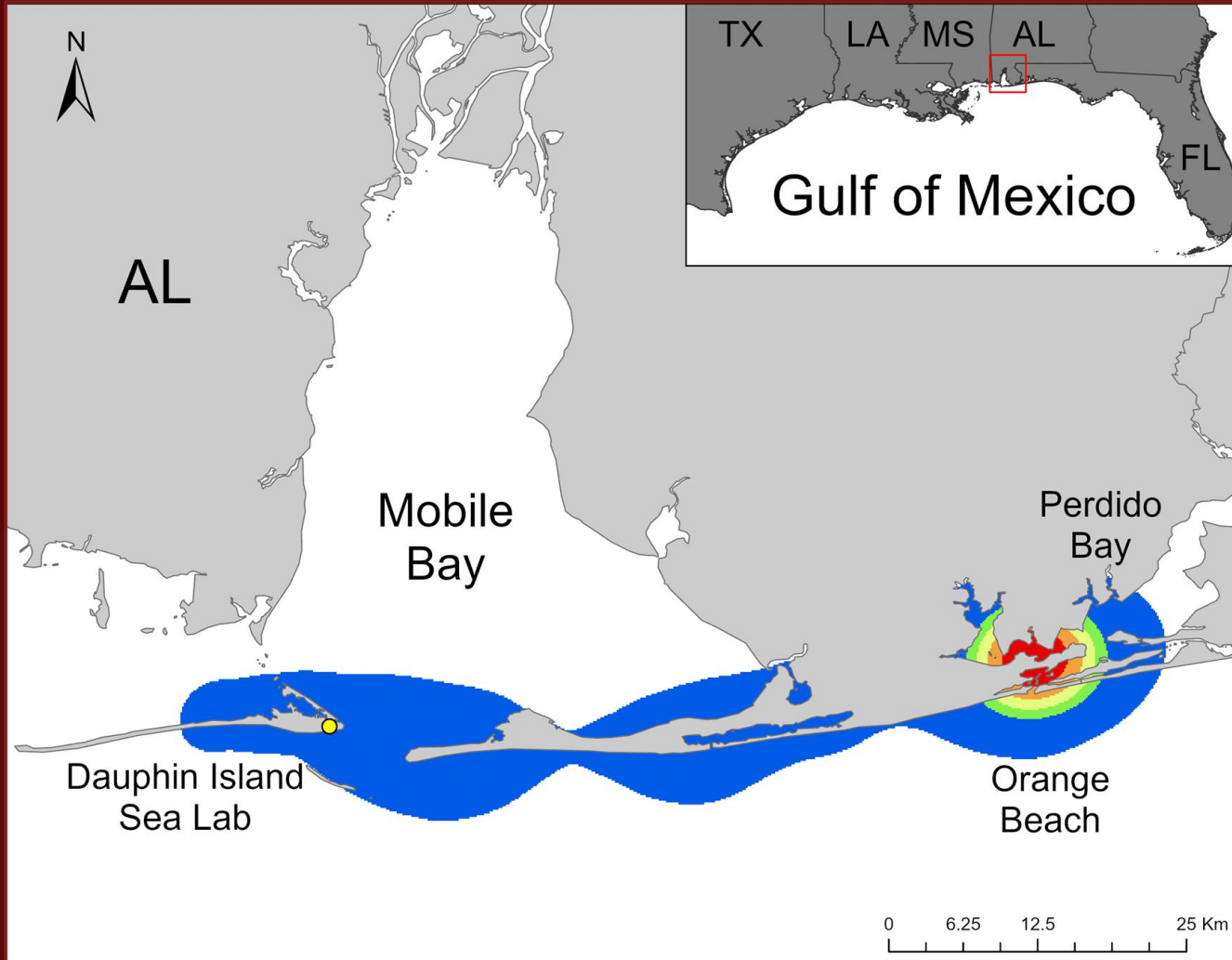
- Proportion of stranded dolphins *without* accessory spleens was **higher** in all stressor categories
- **Accessory spleens** were more common in animals that **did not experience** known stressors (CBD, FW-)

Results



- The proportion of dolphins *with* accessory spleens was <10% for all COD.
- Dolphins *with* accessory spleens most often died due to **HI**.

Results



- Hotspot of dolphins *with* accessory spleens in the Orange Beach and Perdido Bay.
- **Genetic** data (NOAA tech report; Wilcox et al. 2025) confirms genetically distinct population.

Conclusions

- Stressors are unlikely drivers of accessory spleen development; accessory spleens may contribute to better survival in stressful habitats.
- The hotspot area suggests a possible genetic driver of accessory spleen presence.
- More study is needed to determine if accessory spleens contribute to better immune function and survival in dolphins (and other wildlife).



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