

# A Review of the Occurrence, Distribution, and Movements of Whale Sharks in the Northern Gulf of Mexico



Photo by B. Groark

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# Western North Atlantic

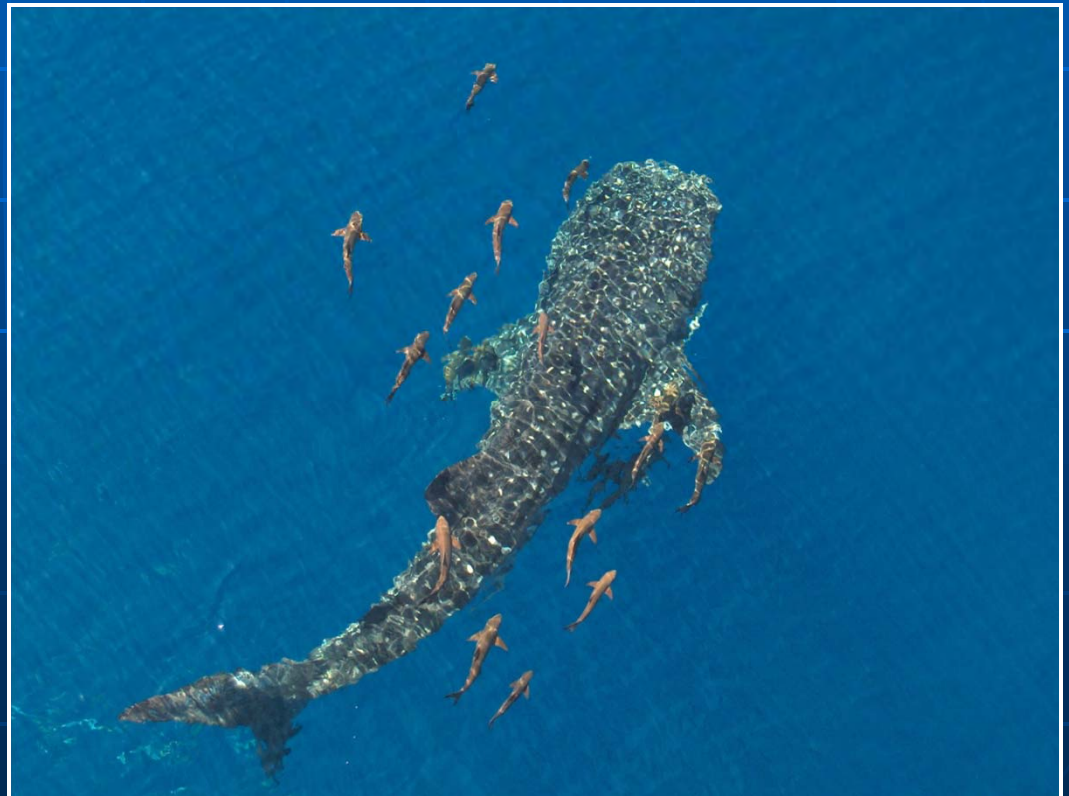
- First reported in the western North Atlantic Ocean in 1902
- First documented in the Gulf of Mexico in 1933
- Reports on the occurrence of whale sharks in the Gulf of Mexico are primarily anecdotal or largely based on isolated observations
  - (Gudger, 1939, 1941; Baughman, 1947, 1950, 1955; Gunter and Knapp, 1951; Breur, 1954; Springer, 1957; Clark and von Schmidt, 1964; Hoffman et al., 1981).

# Occurrence in northern Gulf of Mexico

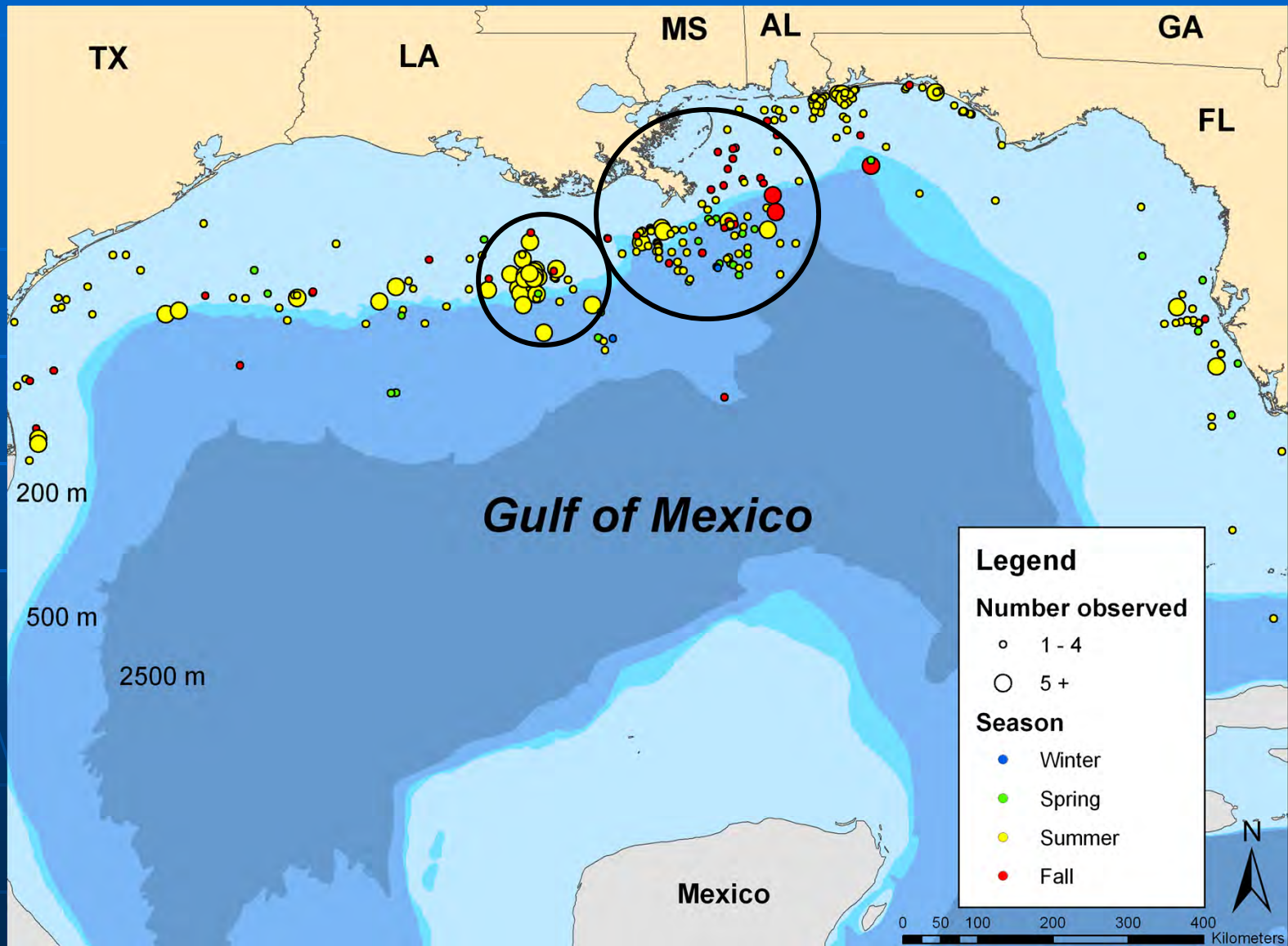
- Early Accounts (1930's)
  - Reports from commercial mariners traveling from the Straits of Florida to Texas port cities
- NOAA Marine Mammal Surveys (1990's)
  - Aerial survey from Tampa, FL to Brownsville, TX over slope waters
- Gulf Coast Research Laboratory Whale Shark Research Program (2000's)
  - Reports of whale sharks sightings by fishers, offshore workers, pilots, etc.

# Northern Gulf of Mexico Whale Shark Sightings Database

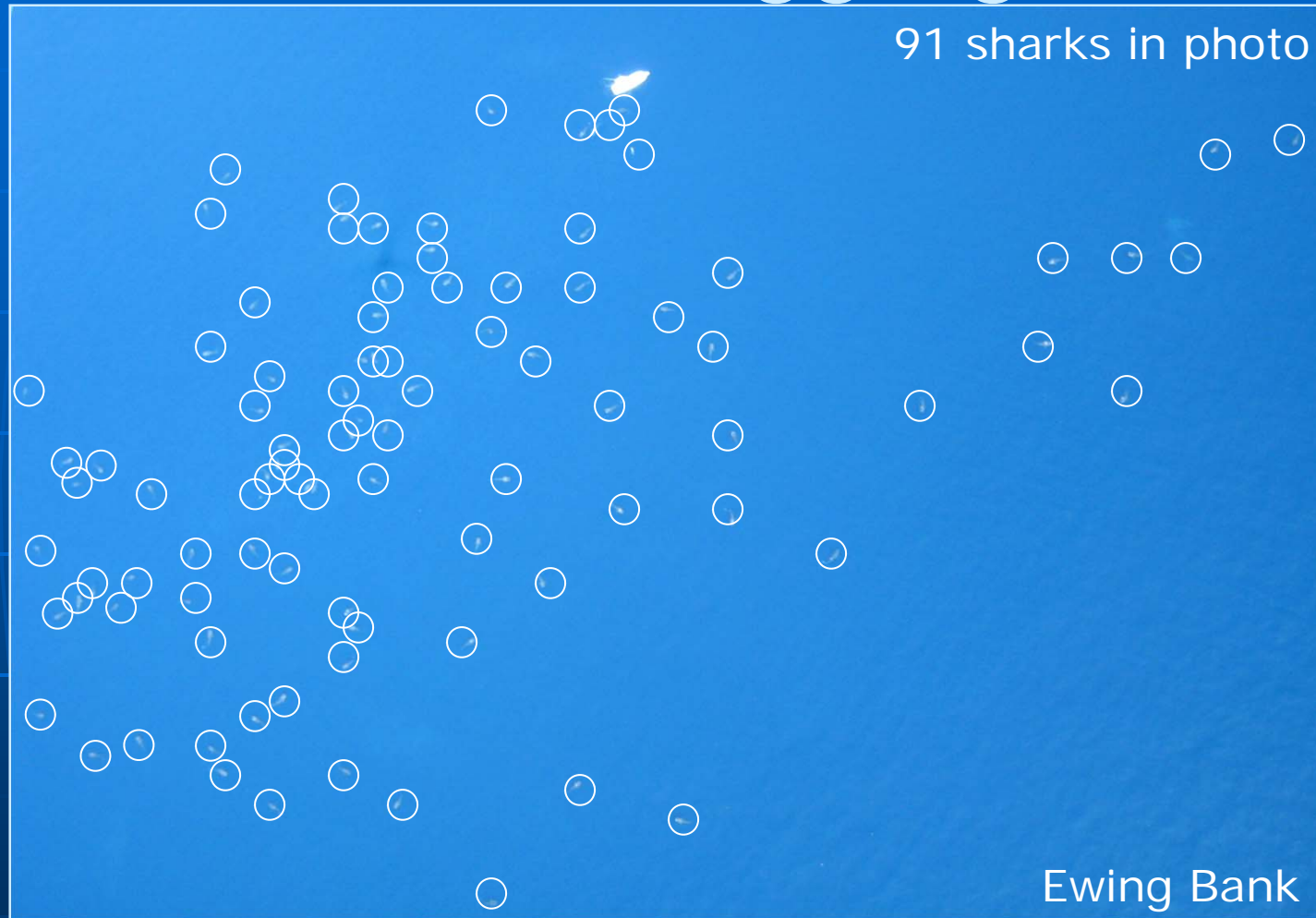
- 2003 to present
- Over 475 sightings of whale sharks
- Summer – fall
- 155 accounts of aggregations
  - 2 – 200 sharks



# Whale Shark Occurrence 2003-2010

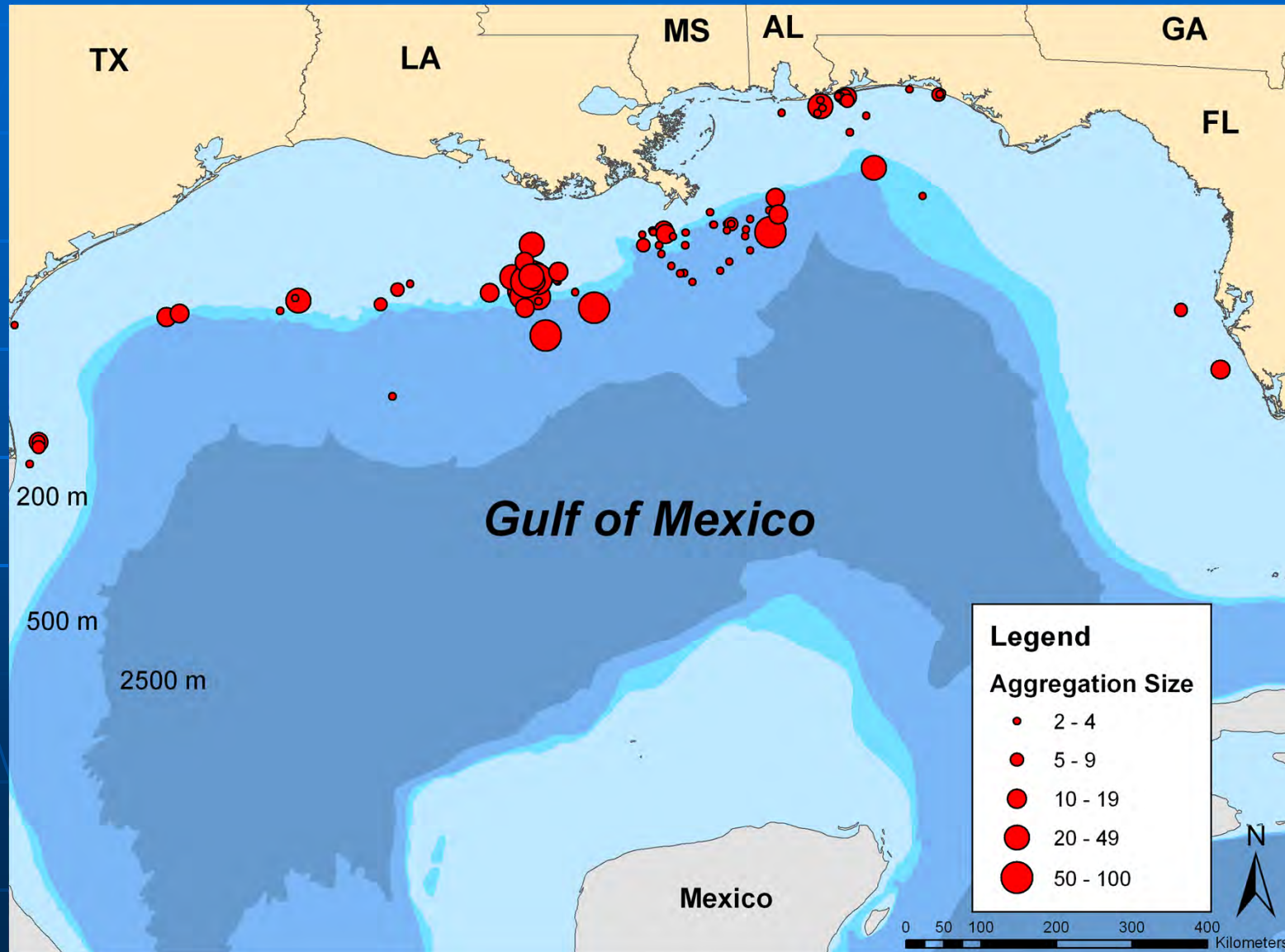


# Whale Shark Aggregations



- Over 110 sightings of aggregations
  - 2 to 200 sharks

# Aggregation Locations 2003 - 2010



# Aggregation Encounters

- June 26, 2006
  - 16 sharks at Sackett Bank
- June 11, 2009
  - 25-30 shark at Ewing Bank
- June 22, 2010
  - >100 sharks at Ewing Bank
- Surface feeding on fish eggs
  - 1<sup>st</sup> documentation in Gulf of Mexico





Stash Slionski



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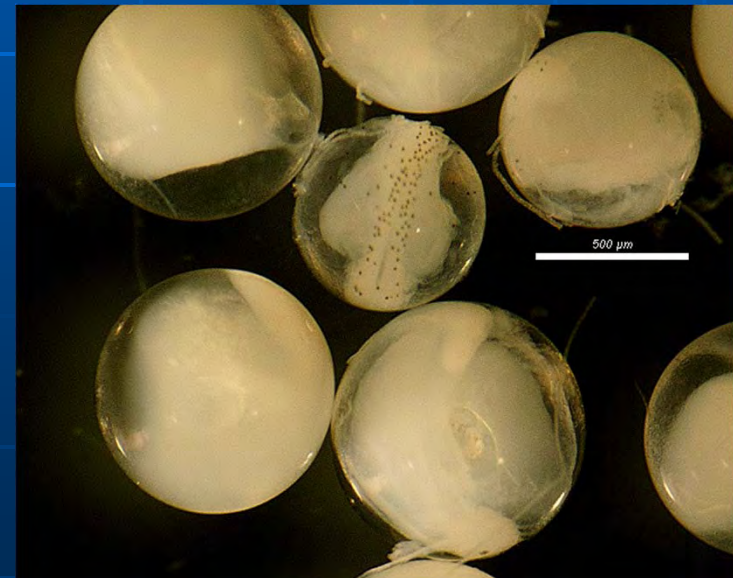
# Fish Eggs at Surface



Photo by S. Earle

# What's on the Menu?

- Little Tunny eggs (*Euthynnus alletteratus*)
  - All 3 encounters in the northern GOM
  - One encounter off Holbox, MX



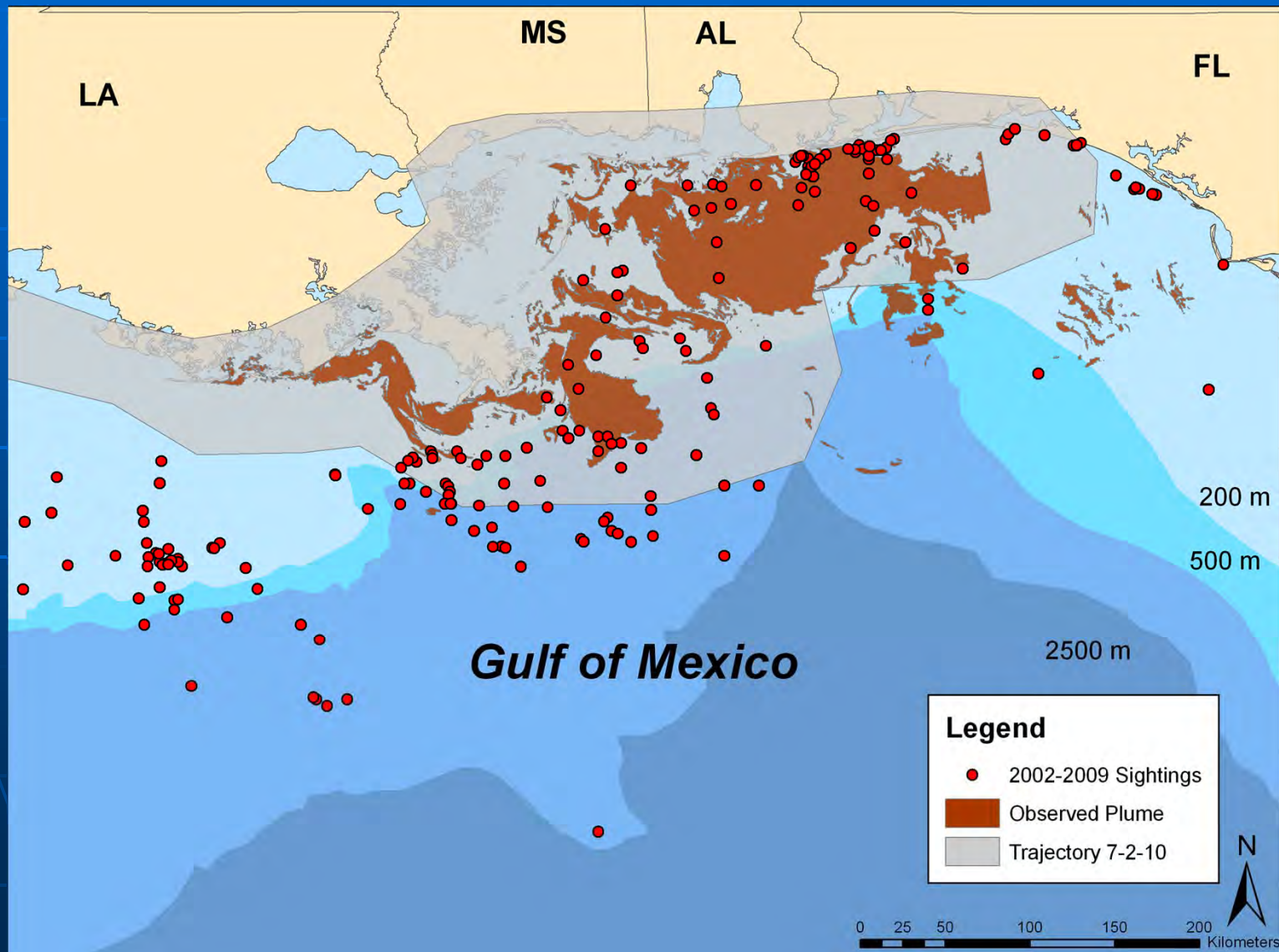
# Feeding Aggregations

- How important are short-term localized productivity events?
  - Spawning events, convergence zones, plankton blooms, etc.
- How are whale sharks finding these areas?
  - Olfaction, auditory cues, predictable events, etc.
- Were they able to detect oil and avoid the north central Gulf region during the oil spill?

# Deepwater Horizon Oil Spill



# Whale Shark Sightings 2003-2009



# Sharks Observed near Oil



- 4.2 miles from Deepwater Horizon  
6/27/10



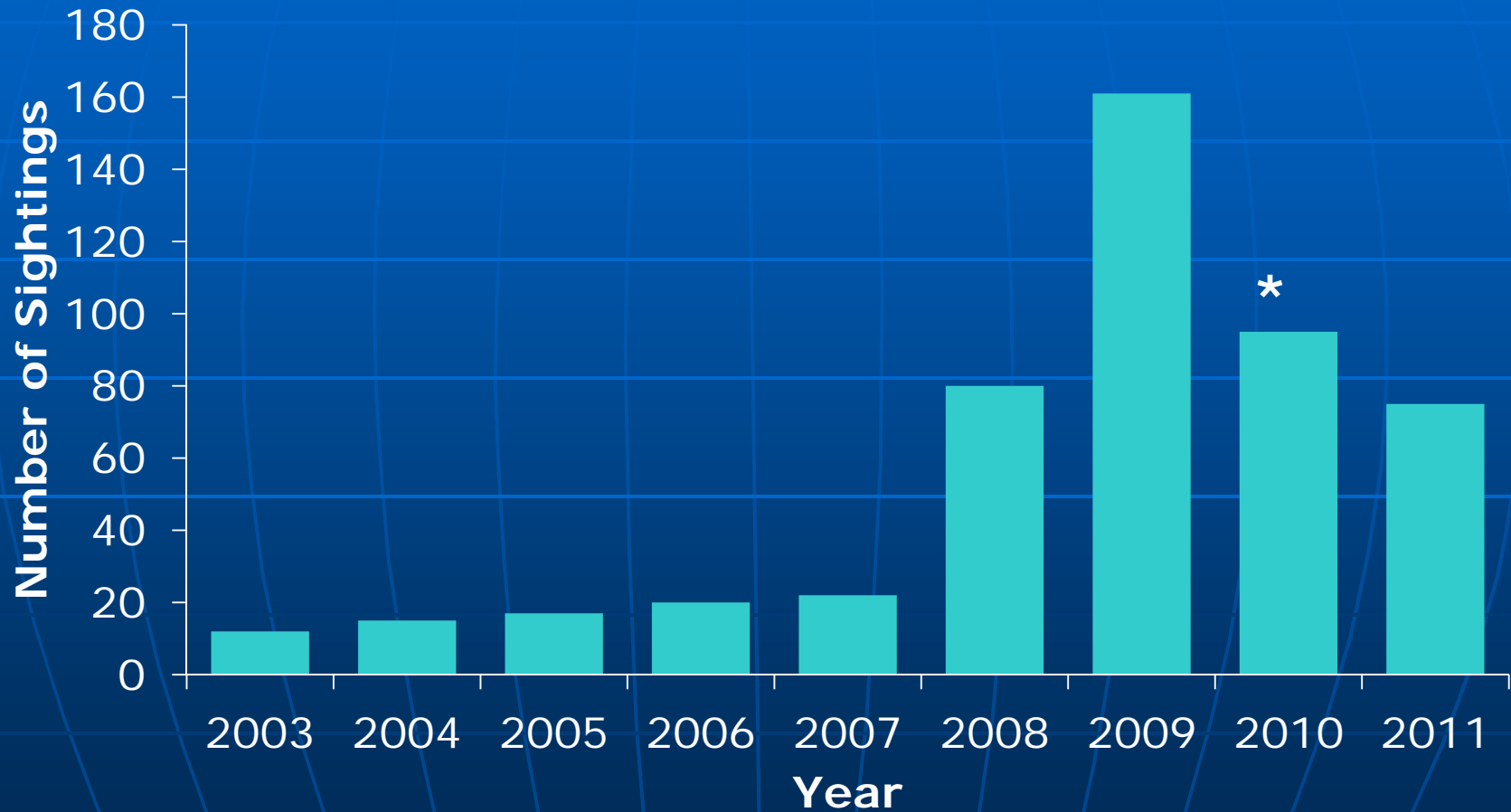
# Concerns

- Were large aggregations observed in 2011?
- Were sightings numbers down in the northern Gulf from previous years?

# Whale Shark Aggregations

- From 2005-2010, aggregations of 20-200 sharks were observed at Ewing Bank during June and July.
- Tagging expedition during mid-June 2011
  - No aggregations present
  - Only three sharks observed
- Few large aggs. reported for 2011
  - Largest was 12 sharks

# Whale Shark Sightings by Year



# 2011 Results

- Satellite tagged 12 sharks
  - 9 popup satellite archival tags
  - 3 smart position tags
- Tag duration ranges from 4-12 months
- Added 6 sharks to the ECOCEAN Database

# Acknowledgments

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Microwave Telemetry Inc.

