

Small Cetacean Entanglement

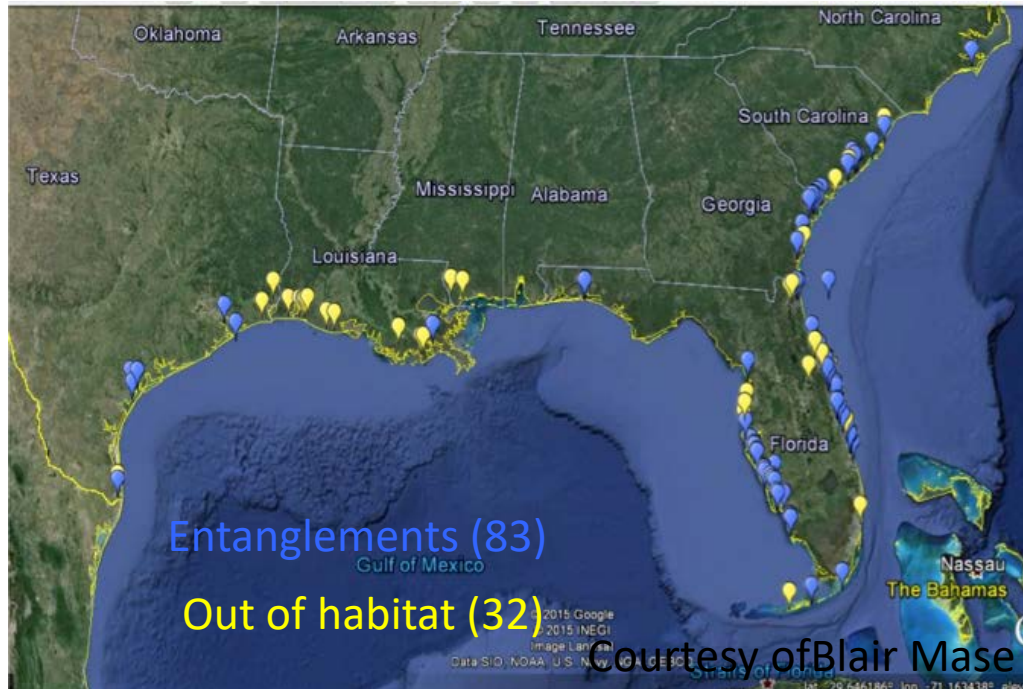
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Small Cetacean Entanglement

- 83 entanglement interventions in SER 2004 – 2016 (Blair Mase)
- 20 entanglement interventions in central east coast Florida 2007-2017 (Noke Durden et al, 2018)



Disease: Entanglement

- Entanglement: An animal in distress as a result of human activity in which an animal has an object or objects attached to their body that they are unable to remove on their own.
 - Immediately life threatening
 - Life threatening
 - Non-life threatening



Disease Reporting

- How is the entanglement reported?
 - Public description, photos or video
 - Photo-ID programs confirm and document
- Disease reporting limitations
 - Reports not always in a photo-ID study area
 - Unsure of chronicity of entanglement at time of report
 - Target animal difficult to find to document
 - Photos do not adequately represent entanglement
 - Lack of 3-D view
 - Difficult to understand what is occurring underwater



Initial Diagnosis

- NMFS consults team of marine mammal veterinarians and biologists.
 - Life threatening?
 - Examine BCS, area of entanglement, depth of entanglement, drag on line, description of locomotion and behavior.
 - Report back to NMFS
- Limitations to initial diagnosis
 - Difficult making diagnosis just from photos/video/description in some cases.
- NMFS makes determination if intervention warranted
- Intervention requires permits - Erin



Entanglement Treatments

- Non-life threatening – Monitor
- Life-threatening – Intervention to disentangle
- Immediate life-threatening (special cases) - NMFS SE Stranding Coordinator can authorize immediate disentangling in some cases
 - Ex: dolphin wrapped in crab trap struggling to stay at surface



Goals of Small Cetacean Disentanglement Intervention

- Safety of humans and animals
- Successfully disentangle animal
- Document entanglement
- Collect diagnostics



Treatment Protocol - Intervention

- Organize intervention planning call – NMFS
- Planning call – All organizations involved
- Personnel
 - Net lead
 - Catch lead
 - NMFS Personnel
 - Marine Mammal Veterinarian
 - Handlers
 - Photo ID
 - Emergency services
- Boats
- Weather
 - Must be safe for intervention
 - wind and lightening
- Sighting
 - The animal must be sighted within 5 days of intervention



Treatment Protocol - Intervention

- “Go” or “No-Go” call the day before.
 - Target animal sighting
 - Weather



Treatment Protocol - Intervention

- Muster – 30 to 50 people, multiple organizations
- Find and follow the target
- Net set
- Animal capture
- Stabilize, exam, and document
- Disentangle, euthanize or rehabilitation
- Diagnostics
- Tagging
- Parental treatments
- Release



Finding And Capture

- Minutes to hours on boats searching for target animal.
- Following target animal until conditions appropriate for catching
 - Depth
 - Number of animals
 - Current
- Setting net
- Catching animal
 - Safety



Exam and Documentation

- Exam
 - Respiration character and rate
 - Heart rate
 - Body condition
 - Mouth
 - Wounds / entanglement
- Document entanglement
 - Photographs



Disentangle/Euthanize/Rehab

- Three options:
 - Euthanize on site in extreme cases
 - Bring into rehabilitation
 - Rehabilitation space available?
 - Many times dependent calf is entangled
 - Consider stress of transport and acclimation vs potential benefit
 - Disentangle +/- topical treatment



Sampling and Diagnostics

- Usual sampling
 - Blood draw
 - CeMV
 - CBC/Chemistry
- Further diagnostics
 - Radiographs – done once
 - Occasional cytology and cultures



Tagging

- Roto tag – Frequently placed
- Radio tag – In certain cases if available
- Satellite tag - uncommon



Treatment and Release

- Treatments
 - Topical flushing and treatment
 - saline, betadine
 - Exceed – long acting injectable antibiotic
 - Meloxicam – anti-inflammatory
- Release



Follow-Up

- Photo-identification and public
- Radio or satellite tags



Treatment Success

- Based on Noke Durden (2018) for central east coast of Florida:
 - 11/16 (69%) cases successful
 - 3/16 (19%) cases unsuccessful
 - 2/16 (12%) insufficient follow-up
 - Only 50% in poor body condition are successful.
- Veterinarians always searching for ways to improve treatment outcomes.



Improving Treatment Success

- Improve response time - get the ambulance there faster.
- Improve diagnostics which allows veterinarians to make more informed decisions
- Improve medical care which improves chances for success
- Improve post-intervention assessment to guide future treatments

Improving Response Time

- Intervention timeline
 - Reporting to NMFS - Unsure of chronicity of disease at this point
 - MM veterinarian and biologist assessment - Takes about 24 hours
 - Determination of intervention - Takes about 24 hours
 - Planning call - Can occur within days to a week
 - Intervention - Can occur within days to month+
- Overall can take from 4 days to month+, need to aim more for the 4 days.
 - Complicating circumstances: Weather, difficult to find animals, resources (people, boats)
 - What we can control and improve: Network capacity

Improving Diagnostics

- Seldom do we have real-time diagnostic abilities to provide more information for decisions
- Potential diagnostic capabilities
 - iSTAT blood gas and electrolytes
 - 2 min to run off whole blood
 - Estimated WBC and differential and PCV/TS
 - 10 to 15 min after drawing blood to make slide and read
 - Requires microscope on a boat and personnel experienced at reading slide and PCV
 - Ultrasound
 - 10 - 15 min to perform ultrasound in the water
 - Can be done while other procedures being done
 - Radiography
 - 15 min and have to put on deck for short period.
 - Only if animal is deemed stable to pull out of water.



Improved Medical Care

- Current medical care includes:
 - One long term antibiotic (4-5 days), a possible anti-inflammatory, Vit E & selenium +/- calcium
 - One time topical treatment of deep open wounds
- Medical Care based on improved diagnostics
 - Fluids for dehydrated animal
 - Decisions that follow-up care is required
 - Bringing into rehabilitation
 - Many times space not available, must consider stress and adaptability
 - Recapture after 4 to 5 days for another treatment
 - Big departure from current protocols but for more serious infections/osteomyelitis, a second round or more may be required to help animal clear infection. Personnel and Permits

Improve Post Intervention Assessment

- Documentation and analysis of success/failure such as Noke Durden et al, 2018.
- Increased blood analysis
 - only requires a little more blood from the dolphin but money to run tests.
 - Bank blood components in Legacy Archive
- Blowhole and fecal cytology, culture and sensitivity – money to run samples
- Opportunities to get samples on unique animals

Thank You

- NOAA Fisheries
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- Georgia Aquarium Conservation Field Station
- SeaWorld Orlando
- Harbor Branch Oceanographic Institute
- FWC
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- Clearwater Marine Aquarium
- Chicago Zoological Society
- Prescott Marine Mammal Health Stranding Award

