LIVMA CE Notes 2/12/25

Marine Mammal and Sea Turtle Stranding Trends on Long Island
and
Cold Stunning in Large Sea Turtles: Care and Genetic Understanding
presented by
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NY Marine Rescue Center:

- 501(c)(3) non-profit
- Primary responders for sick or injured seals, sea turtles, dolphins, porpoises and small toothed whales, and maintain the only marine mammal and sea turtle rehabilitation center in New York State
- Mission: To preserve and protect the marine environment through conservations efforts including rescue, rehabilitation, education, and research

Pinniped Trends:

- Standings tend to occur on the south shore of Long Island
- Shift from primarily harp seals to mostly gray seals
- NY Pinniped species – harbor seals, gray seals, harp seals
    - Also see ringed and hooded seals with very low frequency
- Causes of strandings: dehydration, predation injuries, virus, ingestion of rocks/sand, human interaction, entanglements, vessel strikes
- Rehab: shorter (6-8 weeks),

Cetacean Trends:

- No apparent trends regarding location
- In field response only – refloat or humanely euthanize

Sea Turtle Trends:

- Number of strandings are increasing in New York
- Strandings typically on north facing beaches toward eastern Long Island
- Fewer loggerheads and leatherbacks, higher numbers of Kemp's ridley
- Cause of stranding: fishery interactions, entanglements, boat strikes
    - Number 1 cause = cold stunning
- Cold stunning = hypothermia-like state, animals metabolic rates decrease, unable to swim against currents and float at the surface until brought to shore by winds and tides
    - Occurs when water temperatures drop below 50-55 degrees C
- Rehab: long term, 8-9 months

Dr. Wendy McFarlane Research:

Metabolic studies underway

1. Corticosterone levels in cold stuns from intake to release (2020-23)
    a. *Still to analyze – 2024 samples*
2. Blood parameters in cold stuns from intake through 5-day warming to use as a predictor of good rehab outcomes
    a. *Analysis underway for 2019-2024 samples*

Study 1: Corticosterone in sea turtles

- Primary corticosteroid hormone secreted in response to stressful stimuli
- Used as integrated measure of stress in many species
- Cold stunning = stressful event
- Objective: monitor survival and changes in plasma CORT levels in cold stunned sea turtles from rescue, through rehabilitation, to release
    - Sample blood collection at intake, at temperature after warming, and pre-release
- Results: CORT levels highest at intake and decline throughout rehabilitation

Study 2: Blood parameter changes in cold stunned sea turtles

- Objective: Monitor blood parameters in sea turtles from cold stun through the 5-day warming period to optimal physiological temperature
    - Measurements: Hct, WBC, glucose, K+, pH, pCO_2, pO_2
- Sampling: blood gas, glucose, Hct, K+, CBC