

# Dolphin Strandings

Introduction

# What is an animal stranding?

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- An animal that is stuck in shallow water or stuck on shore when it should be freely swimming in the ocean
- Causes can be natural or human-induced

Natural	Human-induced
Predator	Pollution
Disease	Boats/ships
Food supply low	Fishing line and ropes

# What is an animal stranding



- Single individual
- Mass stranding
  - > **2+ individuals at the same time in the same general area**
- Unexplained Mortality Event (UME)
  - > **Unexpected**
  - > **Significant die-off**
  - > **Requires an immediate response**



# Why do animals strand?



# Marine Mammals

- Order Cetacea (89 species)
  - > Mysticeti (baleen whales)
  - > Odontoceti (toothed whales)
- Order Carnivora (35 species)
  - > Pinnipedia (flipper footed)
  - > Fissipedia (paw footed)
- Order Sirenia (4 species)



**Total of over 100 species in the world!**



# Bottlenose Dolphins



- Marine mammal
- Order Cetacea (Baleen & Toothed Whales)
  - > **Suborder Odontoceti - Toothed Whales (~70 species, including bottlenose dolphins)**
- Most common marine mammal in South Carolina
- In the Southeast US, they have a unique feeding behavior called strand feeding

# Strand Feeding





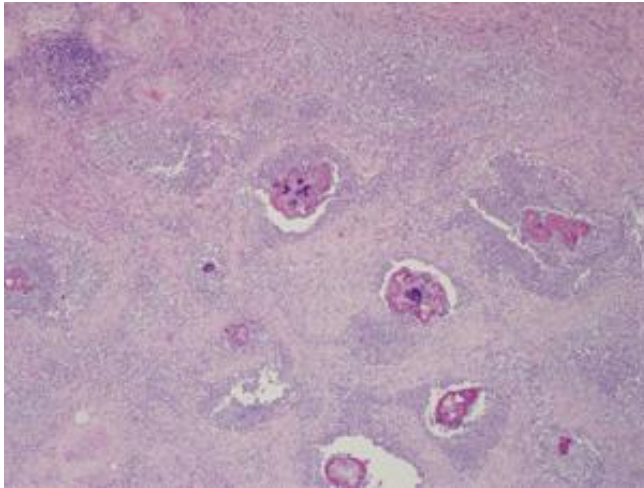
# Primary Stranding Causes

- Disease
- Fisheries Interaction – incidental
- Entanglement – passive gear
- Boat strike
- Predators
- Sound Pollution
- Pollution (trash, chemical toxins)
- Biotoxins
- Unknown
- Other



Note: These are the primary causes as defined by the South Carolina Aquarium. Other institutions may categorize them differently.

# Disease



- Most common reason Bottlenose dolphins strand
- May be viral or bacterial
  - > **Very similar diseases to those that affect humans**
- Could be natural or human induced or both
- Can cause
  - > **Lesions**
  - > **Emaciation**



# Fisheries Interaction - incidental

- Caught by fisherman in various methods
  - > **Gill net**
  - > **Shrimp nets**
  - > **Trawl nets**
  - > **Hook and line**
- Considered accidental or bycatch





# Entanglement – passive gear

- Passive gear is fishery material left in the water without human monitoring
  - > **Fishing line**
  - > **Crab pots**
  - > **Rope**
- Entanglement worsens as animal tries to escape



# Boat Strike

- Hit by boat or propeller
- Dolphins are air breathers and get hit when coming to surface to breath
- Also can be hit if they are on the surface for other reasons
- More likely if they have been fed by people on boats



# Predator Attack

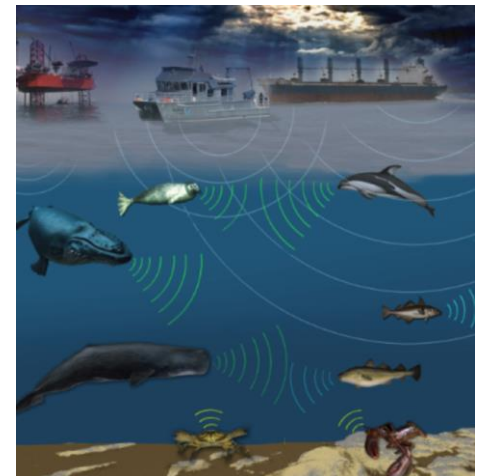


- Sharks are sometimes predators of dolphins
  - > **Sharks can bite chunks out of flippers and body**
  - > **They can also make puncture wounds in the skin**
- Stingrays will sometimes use their barb (stinger) on a dolphin



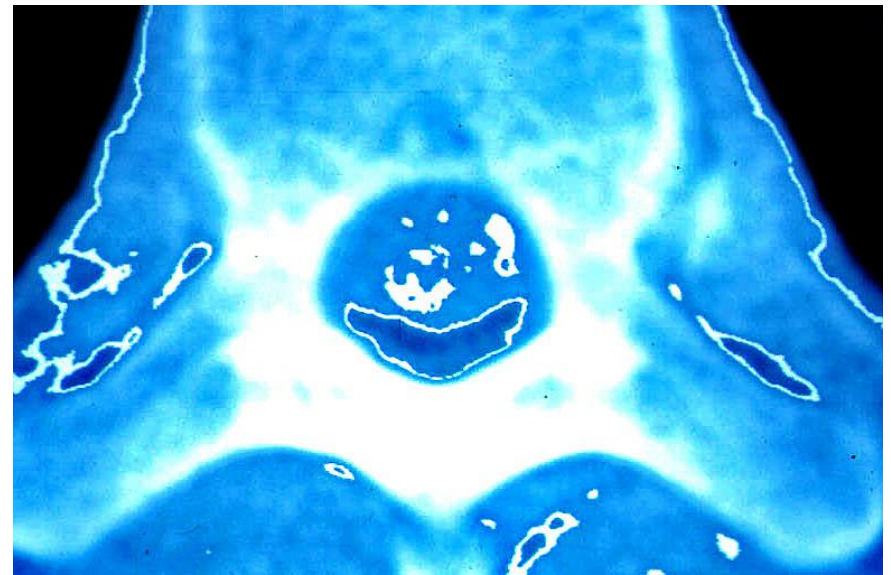
# Sound Pollution

- There is a natural soundscape in the ocean
  - > **All the sounds heard in an area**
- Human or anthropogenic sounds are increasing
  - > **Boats, sonar, air guns used for oil and gas exploration**
- These noises can alter how marine mammals move through their environment causing changes in
  - > **Swimming behavior**
  - > **Diving behavior**
  - > **Eating**
  - > **Stress levels**
- These changes can lead to strandings and cause decompression sickness



# Sound Pollution Continued

- Decompression Sickness
  - > Occurs when animals come up from the deep too quickly causing bubbles to form in their tissues and organs
  - > Bubbles migrate to other parts of the body
  - > Can cause pain, nausea, and paralysis
- In diver's its called the bends



# Pollution (Chemicals or Trash)

- Bottlenose dolphins are considered sentinel species
  - > **Tell scientists about how toxins/chemicals in the environment could affect humans**
- They absorb the chemicals/toxins through their diet
- Can ingest marine debris that looks like food





# Biotoxin



- Naturally created by marine algae
  - > **Dinoflagellates**
  - > **Diatoms**
- Can affect
  - > **Neurological systems**
  - > **Respiratory systems**
- One common example is brevetoxicosis from red tides

# Unknown

- Sometimes upon first look a primary cause of stranding cannot be determined
- Further observation and testing will be needed



# Other

- Many other issues can be placed in this category
  - > Cancer
  - > Unusual weather or oceanographic events
  - > Parasites
  - > Freshwater lesions
  - > Cetaceans morbillivirus
  - > Starvation



NOAA PERMIT # 932-1905



# What to do if you see a stranded marine mammal

- DO NOT try to push it back out to sea
- DO Call South Carolina Department of Natural Resources Wildlife Hotline:  
    > **1-800-922-5431**
- DO keep a safe distance

Leading the  
way to  
connect people  
with water,  
wildlife and  
wild places.

