Sea Turtle Strandings

Introduction
What is an animal stranding?
What is an animal stranding?

- 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

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<th>Natural</th>
<th>Human-induced</th>
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<td>Predator</td>
<td>Pollution</td>
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<td>Disease</td>
<td>Boats/ships</td>
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<td>Food supply low</td>
<td>Fishing line and ropes</td>
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Why do animals strand?
Sea Turtle Life Cycle

**Hatchlings**
Hatch after eggs have been incubating for about 2 months; Head out to the ocean

**Juveniles (0-5 yrs old)**
Sea turtles live in the Sargasso Sea as they continue growing and maturing (see next slide)

**Sub-Adults (5-25 yrs old)**
Sea turtles live exclusively in the open ocean as they continue growing and maturing

**Eggs**
Are buried in the sand by the females and hatch after about 2 months

**Hatchlings**
Hatch after eggs have been incubating for about 2 months; Head out to the ocean

**Adults (at least 25 to 30 yrs old)**
Males and females have reached reproductive maturity; they will mate in the ocean and then part ways

**Males**
Swim back out to the open ocean

**Sub-Adults**
Sea turtles live exclusively in the open ocean as they continue growing and maturing

**Females**
Stay in coastal waters for several weeks, returning to the beaches to lay their eggs before returning to the open ocean

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When should a sea turtle be on land?
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1) Female laying a nest
2) Hatchlings on their way from nest to sea
3) Eggs in a nest

Anything else is a sign that the turtle is sick or injured!
Primary Stranding Causes

- Debilitated Turtle Syndrome (DTS)
- Boat Strike
- Fisheries Interaction – incidental
- Entanglement – passive gear
- Local Cold Stun
- Transferred Cold Stun
- Predator Attack
- Buoyancy Disorder
- No Apparent Injuries
- Other

Note: These are the 10 primary causes as defined by the South Carolina Aquarium. Other institutions may categorize them differently.
Debilitated Turtle Syndrome (DTS)

- Very sick turtle with many things wrong
  - Lethargic
  - Malnourished and underweight
  - Low blood glucose
  - Usually many epibionts (organisms on shell and skin)
- Unknown if natural or human induced or both
Boat Strike

- Most common cause of stranding in SC
- Hit by boat or propeller
- Turtles are air breathers and get hit when coming to surface to breath
- Also get hit if they are floating on the surface for other reasons
Fisheries Interaction - incidental

- Caught by hook and line by fisherman
  - Hook must be surgically removed if swallowed
- Stuck in hopper dredge
- Caught in net by shrimper/fisherman
  - Turtle Excluder Device (TED) required on all commercial fishing vessels which has dramatically reduced drownings
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
Local Cold Stun

- Turtles are cold blooded
  - Internal temperature matches external air or water temperature
- Can’t move if temperature drops below 60 degrees
- Can result in pneumonia and/or frostbite
Transferred Cold Stun

- Cold stun events take place in ocean all around the country (and world) due to drops in temperature
  > Sometimes includes hundreds of turtles
- Many facilities share the care of these large events
- The South Carolina Aquarium has received patients from North Carolina and the New England area
Predator Attack

• Sharks are sometimes predators of sea turtles
  > Sharks can bite chunks out of flippers and shells
  > They can also make puncture wounds in the skin or shell

• Stingrays will sometimes use their barb (stinger) on a sea turtle
  > This can happen when turtles get trapped in net with stingrays

• As hatchlings and juveniles, birds and fish can be a threat to sea turtles
Buoyancy Disorder

• Happens when sea turtles are unable to control their place in the water causing them to float
• Gas can build up in the body cavity because of a bacterial infection or in the intestines because of impaction
  > Natural would be food stuck in intestines (for example - horseshoe crab)
  > Human-induced would be plastic or other marine debris stuck in intestines
• Gas can also build up after boat strikes, lung trama, etc.
• Also called Floater Syndrome
No Apparent Injuries

- 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
  - Trismus (lock jaw)
  - Brevetoxicosis (red tide poisoning)
  - Necrotic Ulcerative Disease (dead skin and tissue)
  - Metabolic Bone Disease (issues with bones)
  - Fibropapillomatosis (skin tumors)
  - Pulmonary Bulla (air space in lung)
South Carolina Aquarium
Sea Turtle Care Center

• Rescue
• Rehabilitate
• Release