

Marine Animal Rescue



PROTECT OUR
OCEANS

Mystic Aquarium's Animal Rescue Clinic

- Part of the Federal Stranding & Entanglement Response Networks
- Regulated under the **Marine Mammal Protection Act of 1972 (MMPA)** & the **Endangered Species Act of 1973 (ESA)** as well as state laws
- It is **illegal** for unauthorized person to disturb, handle, or feed marine mammals and sea turtles
- It is also **illegal** to collect or possess parts of dead marine mammals and sea turtles
- Recommended observation distance for whales, dolphins, sea turtles and seals is 50 yards with a 500-yard mandatory distance for Northern Right Whale



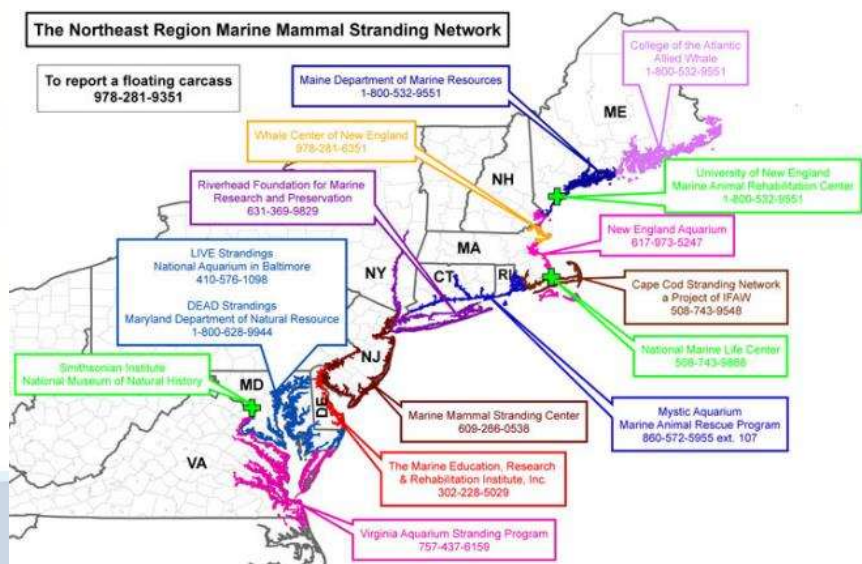
What is a Stranded Animal?

- Any dead marine mammal on the shore or in the water.
- A live marine mammal on the shore, unable to return to water.
- A live marine mammal that is on shore, and in need of medical attention.
- A live marine mammal in water, unable to return to its natural habitat without assistance.



Objectives of the Northeast Region Stranding Network

- Provide rapid action to best serve the stranded animal
- Protect the public while acting on their concern
- Collect scientific information in a consistent method



Why do marine animals strand?

- Disease or Malnourishment
- Toxic algal bloom
- Injury by boats, fishing gear, gunshots
- Injury by predator
- Disorientation



Signs of Illness in Marine Mammals

- Unusual behavior
- Weight Loss
- Skin Damage
- Respiratory signs
- Eye/Mouth/Nose discharge
- Halitosis (bad breath)
- Vomiting/Diarrhea
- Sand around mouth





New England Seal Populations

- Give birth in the spring, summer, and fall each year off the coast of northern New England and Canada
- Pups spend a short time with their mothers (some just as short as 4 days)
- Head south as they migrate in search of food
- May strand if hungry, sick, or tired

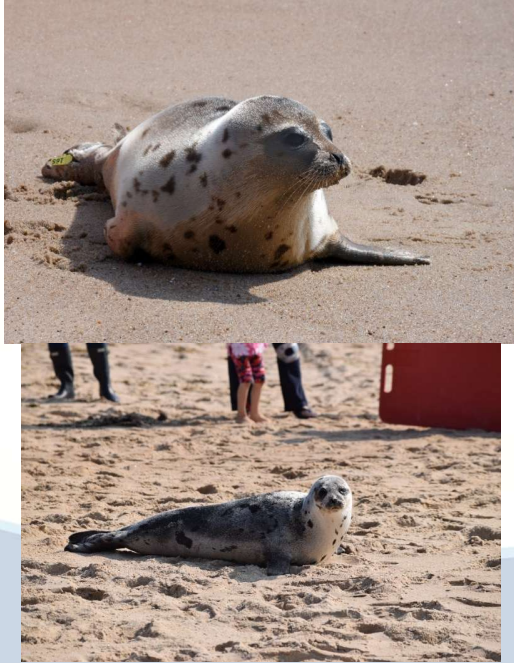
Harbor Seal



Gray Seal



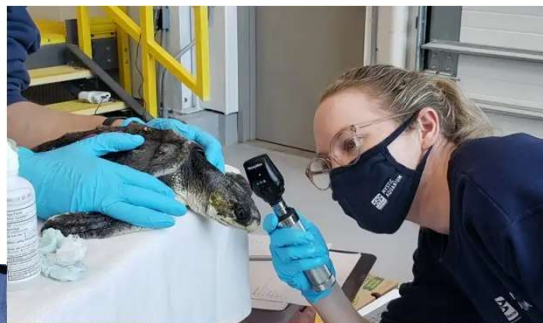
Harp Seal



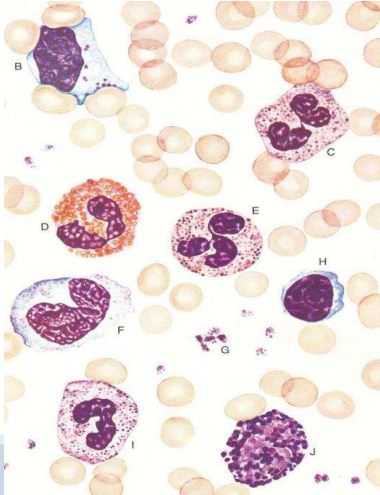
Hooded Seal



Initial exam by veterinary staff & treatment plan developed



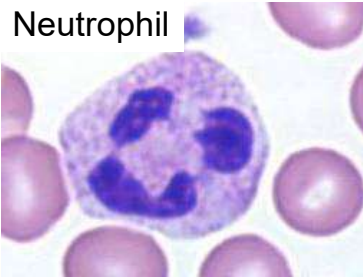
What makes up blood?



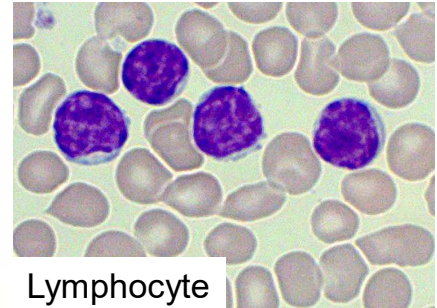
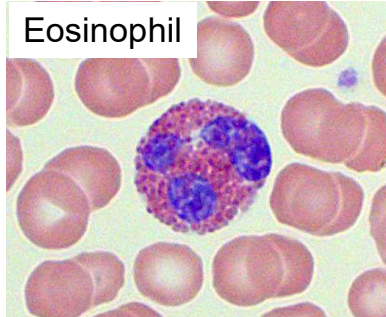
- Erythrocytes/Red Blood Cells (RBCs)
- Lymphocytes/White Blood Cells (WBCs)
- Serum/Plasma
- Electrolytes
- Platelets – enables clotting
- Proteins including antibodies

Mammalian leukocytes (white blood cells)

Neutrophil

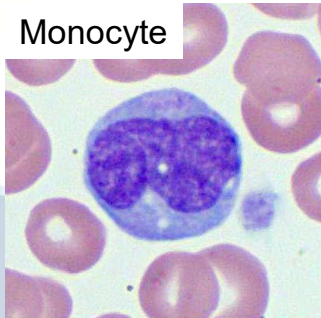


Eosinophil



Lymphocyte

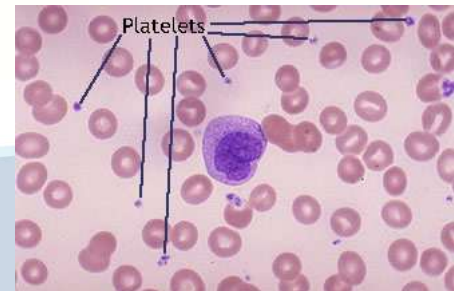
Monocyte

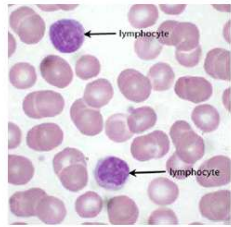


Basophil



Your turn...





Lymphocyte

C

Description

This is a small circular white blood cell that plays a large role in defending the body against disease.

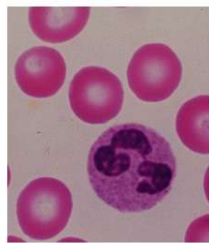
There are two main types of these cells: B cells and T cells. The B cells make antibodies that attack bacteria and toxins while the T cells attack body cells themselves when they have been taken over by viruses or have become cancerous.

A

Disease/Function

Following a vaccine, these white blood cells go to work to produce antibodies that will fight the infection if it enters your body.

B



Neutrophil

D

Description

These mature cells have a segmented nucleus (it is called a seg or poly) while the immature cell has band-shape nucleus (it is called a band). The cell has a lifespan of about 3 days.

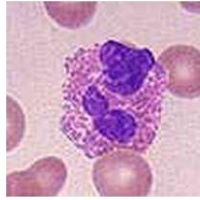
These cells are the most numerous white blood cell in the human body and may comprise up to 70% of the white blood cells in your body. They are known to kill bacteria in the body.

G

Disease/Function

When you receive a splinter in your finger, these cells jump into action to fight off any bacteria that may have been on the wood.

J

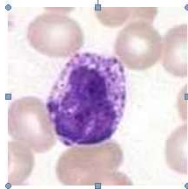
**Eosinophil****E****Description**

This white blood cell has round orange/pink granules (bubbles) with a two-lobed nucleus.

The numbers of these cells often rise above the normal range with allergic reactions and parasitic infections as with worms

I**Disease/Function**

Parasites that may be passed when someone eats meat that has not been cooked will be fought by these cells.

L**Basophil****F****Description**

This white blood cell appears to have blue/black bubbles is a two-lobed nucleus. This cell count can rise if there is an allergic reaction or if there is inflammation.

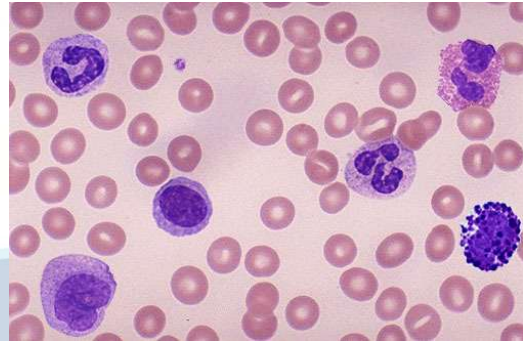
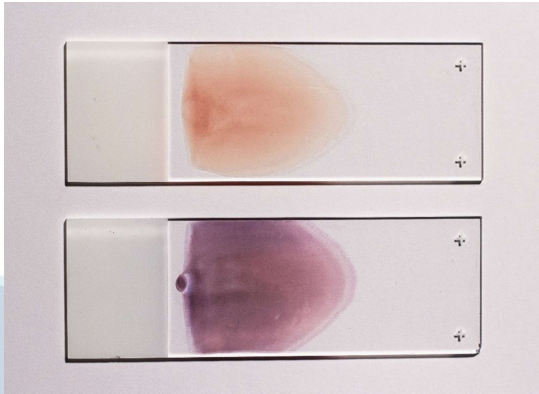
H**Disease/Function**

Following an asthma attack, these cells have been seen in high numbers. Doctors believe that it is because the lungs have become swollen or inflamed.

K

Bloodwork - Differential

- Differential – identify how many leukocytes are present in a blood sample, and how many of each type are present.



Radiographs



Case Study Time!!

Today's case study focuses on the Gray Seal, *Halichoerus grypus*



- Birth weight: 13-18 kg
- Nurse 15-18 days after birth
- Weaning weight: 60+ kg
- Fast for ~36 days after weaning as they learn to forage

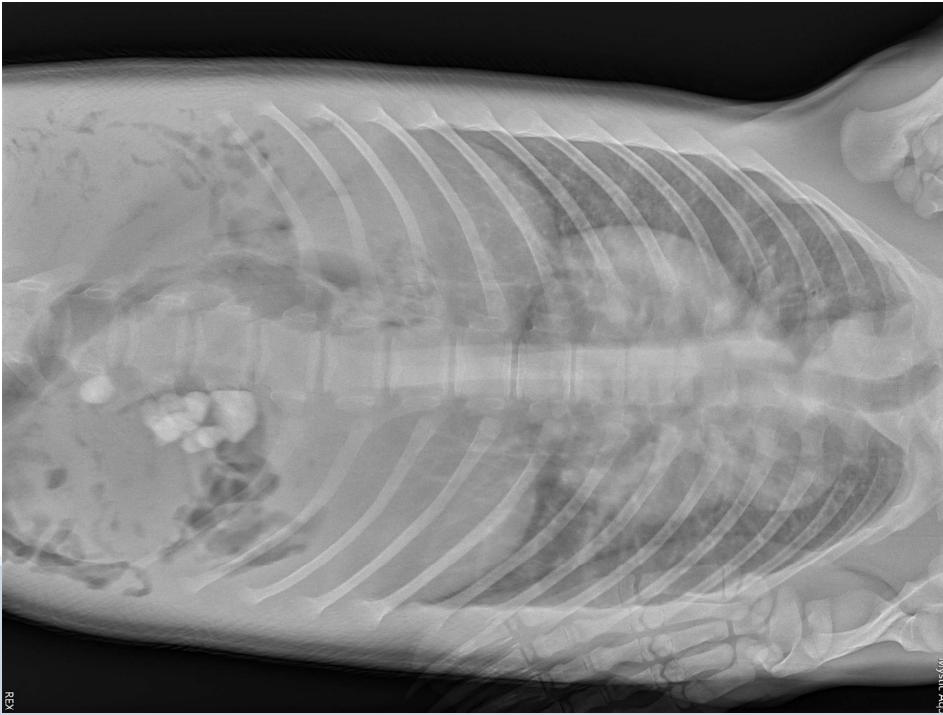
- Pups are born with a lanugo coat (not waterproof)



Case study time!

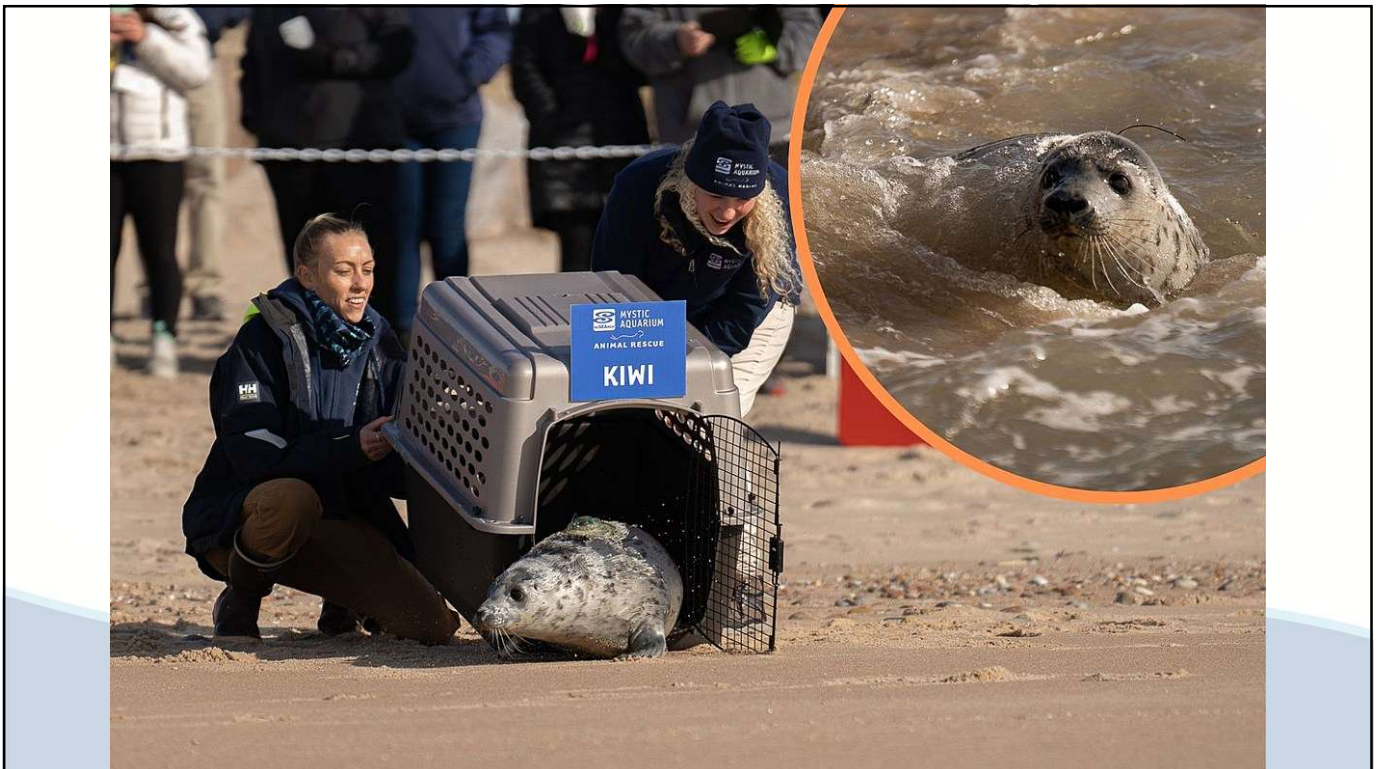
You will be tracking a stranded seal from intake to the Animal Rescue Clinic, assessing the animal at intake, examining test results, and following the animal through to it's release, and after!

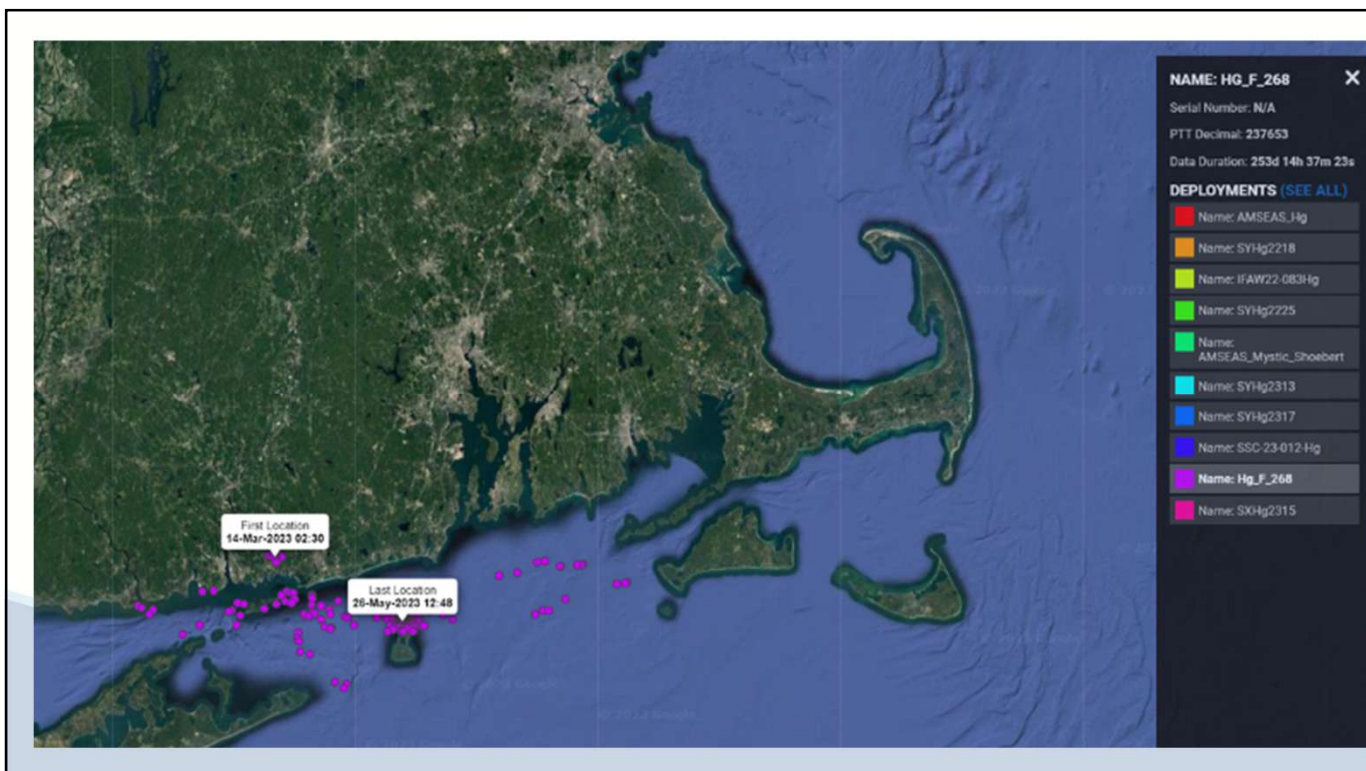




Initial
Assessment:
Thoracic cavity
and abdomen







Ongoing Unusual Mortality Events (UME)



UME No.	Year Declared	UME Name	Species	Body of Water/Location	Cause
72	2022	Northeast Pinniped	Harbor and gray seals	Atlantic Ocean	Infectious Disease
71	2021	Atlantic Florida Manatee	Manatee	Atlantic Ocean, Florida	Malnutrition secondary to ecological factors (e.g. change in forage)
64	2017	North Atlantic Right Whale	North Atlantic right whale	Atlantic Ocean, Canada & U.S.	Human Interaction (Vessel Strike/Rope Entanglement)
63	2017	Atlantic Humpback Whale	Humpback whale	Atlantic Ocean	Suspect Human Interaction (Vessel Strike)

