

# 2023 Shaw Institute Environmental Speaker Series

*Innovation in Science to  
Protect Human Health &  
the Environment*

**Charles Rolsky, PhD**  
Shaw Institute  
Executive Director & Senior  
Research Scientist

**Shaw Institute**  
OVER 30 YEARS OF ENVIRONMENTAL IMPACT RESEARCH

**FREE Event! August 8 • 5pm - 7pm**

Wine & Cheese at 5pm,  
Lecture at 6pm

## 2023 Speaker Series:

*Innovation in Science to Protect Human Health & the Environment*



### MARINE MAMMAL STRANDINGS: WHAT TO DO AND NOT DO

Rosemary Seton is a wonderful storyteller who will share her experiences from over 25 years of involvement with marine mammal strandings in Maine, including how technology is aiding Allied Whale in rescues.



**Rosemary Seton**

Marine Mammal Stranding  
Coordinator, Allied Whale

VISIT WEBSITE FOR MORE INFO:



Can't make it? We'll be on **zoom**



ShawInstitute.org • 55 Main Street, Blue Hill • (207) 374-2135

# Upcoming events

## SHARK STORYTIME

with Charlie the Shark  
from the Shaw Institute



Fri. August 25  
10:30 am

Sponsored by  
BLUE HILL PUBLIC LIBRARY

5 Parker Point Rd  
Blue Hill, ME 04614  
(207) 374-5515  
www.bhpl.net

Shaw Institute



## Beach Cleanup Day

### Carter Nature Preserve

September 10th, 2-4pm

Be a part of Plastic Oceans  
International event,  
Trees and Seas festival

Help clean this property

Contribute to  
scientific research

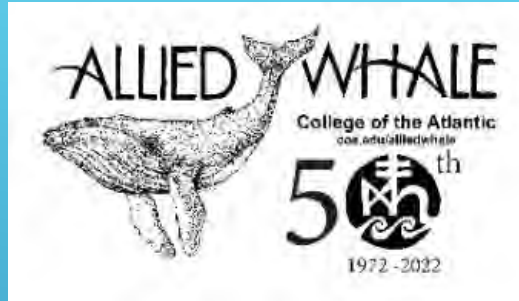
Dress for the weather  
& the task at hand.

BLUE HILL  
HERITAGE TRUST

TREES  
& SEAS

# Shaw Institute

The background of the right-hand poster is a photograph of a rocky beach with water and trees in the background under a blue sky.



## PLEASE NOTE:

The photos and data contained within this presentation may not be copied or used without express permission of the author (Allied Whale, College of the Atlantic).

Photos are either owned by Allied Whale or by the photographers (where noted) who allowed their use in presentations.

# STRANDED?: MARINE MAMMAL STRANDING RESPONSE IN NORTHEASTERN MAINE

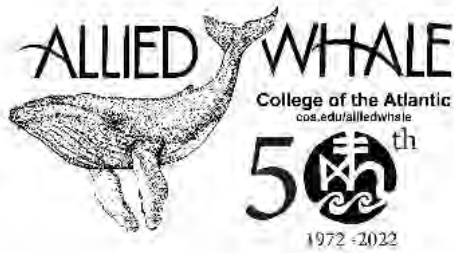


The Shaw Institute Environmental Speaker Series  
Rosemary Seton, M.Sc.  
Allied Whale, College of the Atlantic  
May 2, 2023



Allied Whale of the College of the Atlantic would like to honour and acknowledge the Penobscot and Wabanaki Nations who have occupied this land for thousands of years including the Penobscot Nation's land upon which the College of the Atlantic lies, that of Mount Desert Island.





- Whale Photo-Identification: the North Atlantic Humpback Whale Catalogue, Antarctic Humpback Whale Catalogue, North Atlantic Fin Whale Catalogue
- Marine Mammal Strandings
  - Responsible for marine mammal & sea turtle stranding Rockland to Canadian border
  - Necropsies (animal autopsies) and sampling
  - Bone collection - for education & research
- Field Research
  - Mount Desert Rock (MDR) Marine Research Station
  - Biopsy sampling of humpback and fin whales on M/V Osprey or R/V Borealis
  - Acoustics research in Frenchman Bay
  - Research Assistants document all cetacean sightings from the Bar Harbor Whale Watch



#0054

WHISTLER



Photos: Allied Whale, COA

## Tonight's Menu

What is a stranding? And what is "out of habitat"?

Why do whales strand? Do we even know?

How do I know if a seal is stranded?

Why do we respond to strandings?

The Stranding Network

What species we encounter

Harbor and Grey seals - some basics with a nod to the ice seals

A healthy seal and normal behaviours

Necropsies and sampling

Some cetacean cases

Some pinniped cases

# What is a stranding?

A stranding is a marine mammal that is “out of habitat.”



COA190528Pv – Harrington – rescued and taken to rehab



COA180223Pg – Harp Seal at Frazer Point, Schoodic, Acadia National Park



COA120405Dd - Columbia Falls Common Dolphin – sick and died



What does “out of habitat” mean for a marine mammal?

Depends on if you are a seal or a whale!



# “Out of Habitat” for Cetaceans (whales, dolphins, porpoises)



- Cetacean strandings – is obvious
- If a whale is lying on the shore, it shouldn't be there!
- A whale cannot handle the stress of lying on land for long periods of time especially the large whales – too heavy; whales not ambulatory on land; sunburn, no fur/hair to protect themselves.
- In fresh water – whales less buoyant, food abundance, depths, can have deleterious effects on their skin in the long-term.
- Exceptions: there are a four species of fresh-water dolphin



Live-stranded  
Atlantic White-  
Sided Dolphin  
(COA190407La)  
Tremont, April  
2019.

Rescued and  
relocated. Photos:  
Allied Whale



Perhaps not so obvious? Is the presence of this whale, a cause for concern?



- July 28, 2008 – a live swimming Risso's Dolphin, COA080728Gg (also known as Grey Grampus)
- In a cove in Deer Isle.
- Originally reported as being a minke whale.



Outside its natural range – a humpback whale visits the City of Montreal - June 2020

- Died June 2020 – cause unknown but initially thought to be due to a boat strike
- skin had extensive damage from her prolonged exposure to fresh water; may have contributed to whale's demise.



Humpback whale visits Montreal

Photo: Réseau québécois d'urgences pour les mammifères marins

# Why do cetaceans strand?

- ❑ Mass strandings vs single strandings
- ❑ Mass strandings – typically involve odontocetes or toothed whales



## New Zealand mass stranding - Farewell Spit, Feb. 2017

- Approx. 650 pilot whales – stranded in pulses
- 350 died including 20 euthanized
- 100 refloated, 20 washed back ashore
- “Sometimes extreme weather or unusual ocean floor topography can make the whales navigate into water that’s too shallow to leave.”

# Why do cetaceans strand?

- ❑ Single strandings of cetaceans – can involve both odontocetes and mysticetes (baleen whales).
- ❑ Many theories why a whale strands – more typically they are sick or injured; beachings can also occur if a whale is feeding too close to shore, bad weather, navigating errors, chasing prey into an unknown area, etc. Bathymetry can come into play too – unfamiliar coastline – ex. Cape Cod Bay, pollution, anthropogenic noise, HABs (harmful algal blooms)
- ❑ Each case is unique.

Minke Whale (COA230802Ba) – North Haven – August 2, 2023



Photos by Matt Talbot, Maine Marine Patrol

Chile – March 2015

- At least 343 primarily sei whales (a baleen whale) stranded dead off southern Chile
- 305 carcasses; 32 skeletons
- Sei whales appeared to have died offshore; floated in to shore at Patagonia – remote, difficult to access region of Chile



“Here, we show that the synchronous death of at least 343, primarily sei whales can be attributed to HABs (harmful algal bloom) during a building El Niño.”

Haussermann et al. (2017). Largest baleen whale mass mortality during strong El Niño event is likely related to harmful toxic algal bloom. PeerJ 5:e3123; DOI 10.7717/peerj.3123



# “Out of Habitat” for Pinnipeds (seals, sea lions, walrus)



Lake Baikal Seals, Russia

Pinnipeds are a different story!



## Things to consider:

- Location
  - is it on a road or in a high traffic spot?
  - this is in keeping with the strict definition of “stranded”
- Health assessment (is it in poor health, injured, entangled, abandoned?)
- Age (premature; abandoned?)
- Is it a rare species? Rarely seen vs endangered species
- Is it a species that is beyond its usual geographic range?

Bearded seal in Laval (Montreal),  
June 2020  
Photo - Anna Cavuoti




Harp seal  
(COA180223Pg)  
- Frazer Point,  
Schoodic,  
Acadia  
National Park.  
February 23,  
2018

Photos: Rosemary Seton, Allied Whale, COA



Premature  
harbor seal  
(COA050519Pv)  
pup with  
lanugo coat  
“Rufus” – May  
20, 2005



A young male walrus is resting on a dark, pebbly beach. The walrus has a thick, wrinkled, light-brown skin and a prominent, dark, bushy mustache. Its two large, white tusks are visible. The background shows the dark water of the ocean meeting the shore.

This young male visited  
Middle Cove,  
Newfoundland, Canada –  
May 2022

Vagrancy - an animal  
wandering outside its  
normal geographic range



HARP SEAL ADULT IN BANGOR - HAULED OUT ON THE ICE OF THE FROZEN PENOBSCOT RIVER  
MARCH 2009.

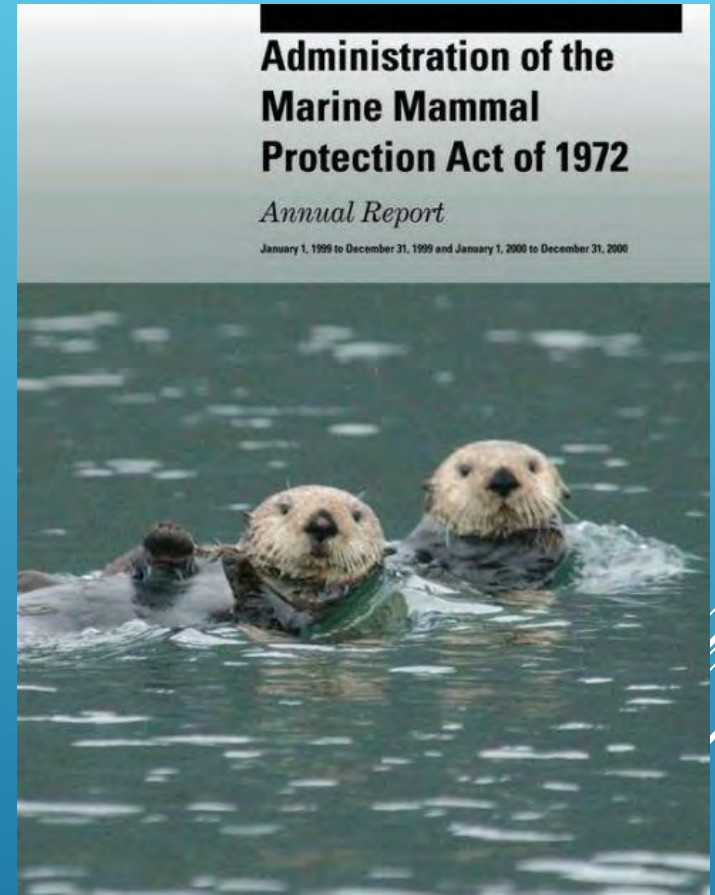


Why do we respond to strandings?



# MARINE MAMMAL PROTECTION ACT (MMPA) OF 1972

- “...marine mammals have proven to be resources of great international significance, esthetic and recreational as well as economic...and...it is the sense of Congress that they should be protected...”
- The MMPA prohibits, with certain exceptions, the "**take**" of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S.
- First mandated ecosystem approach to natural resource management and conservation



In the United States, it is illegal to harass, pursue, annoy, torment, harm, kill any marine mammal whether an endangered species or if it is abundant.





# Marine Mammal Protection Act (MMPA)



Harassment: Under the 1994 amendments, Congress statutorily defined and divided the term "harassment" to mean any act of pursuit, torment, or annoyance which --

1. Level A Harassment- has the potential to injure a marine mammal or marine mammal stock in the wild; or
2. Level B Harassment- has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption to behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

Photo: Kirk Trabant of MERI, now the Shaw Institute

Photo: Kirk Trabant of MERI, now the Shaw Institute

This is a "take."



# Selfies! The latest human induced stressor!

## Level B Harrassment



  
**NOAA  
FISHERIES**

**NO  
Selfies  
with  
Seals**

If you get too close...  
**Mother Seals  
May Abandon  
Their Pups**

**SHARE  
THE SHORE**

**1** Sea lions and seals are protected by federal law.

**2** It's **ILLEGAL** to disturb them or do anything that might make them change their behavior.

**3** Enjoy watching them in a safe, responsible way.

**KEEP YOUR DISTANCE.** You are too close if an animal starts to stare, fidget, or flee. Seals and sea lions on land are easily disturbed and may rush into the water or abandon their pups. They become stressed and may be trampled, and continued interruptions could be harmful to their health.

**BE CONSIDERATE OF MOTHERS AND PUPS.** Seals and sea lions come ashore to rest, regulate their body temperature, and nurse their young. Mothers often leave pups behind while feeding offshore.

**KEEP PETS AWAY AND ON A LEASH.** Pets can disturb or harm wildlife or separate mothers from their pups. And wild animals can injure or spread disease to pets.

If you see an injured, stranded, or dead marine mammal, call  
**(866) 767-6114**  
You will be asked about the location and condition of the animal.

**LEARN MORE:** [www.westcoast.fisheries.noaa.gov/protected\\_species/marine\\_mammals/share\\_the\\_shore\\_resources.html](http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/share_the_shore_resources.html)



**Do not approach the seals!**  
**¡No se acerquen las focas!**  
**请勿靠近海豹**

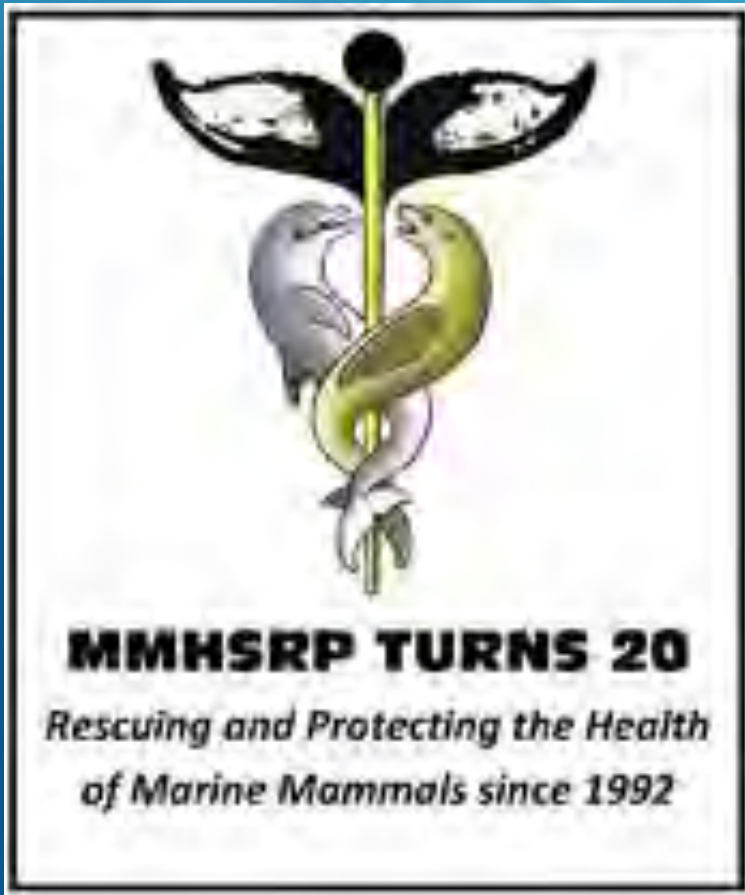
U.S. Department of Commerce | National Oceanic and Atmospheric Administration | National Marine Fisheries Service

# Sea lions in California subjected to people taking selfies

Note: We do not have sea lions in the North Atlantic



# Marine Mammal Health and Stranding Response Program (MMHSRP)



Poster for the 20<sup>th</sup> anniversary for the MMHSRP

- Formalized by the 1992 Amendments to the Marine Mammal Protection Act,
- NOAA's National Marine Fisheries Service (NMFS) was designated as the lead agency to coordinate related activities.

- The program has the following components:

- stranding networks,
- responses/investigations of mortality events,
- biomonitoring,
- tissue/serum banking,
- analytical quality assurance.

## 30<sup>th</sup> anniversary in 2022

- Marine mammals are important indicator species of the health of the ocean. They are top level predators that eat many of the same fish that we do, and several species live in coastal areas utilized by people.
- When marine mammals show signs of illness or distress, they may be signaling changes in the marine environment that might also have significant implications for the health of our ocean ecosystems. (Unusual Mortality Event!! – spatial and temporal die-offs)
- Monitoring and studying marine mammal health is important for their conservation as well as maintaining healthy oceans. (individual, population, ocean)



COA180608Pv - Trenton

The stranding network is on the front lines to recognize those red flags



# THE STRANDING NETWORK



- Marine Mammal Health & Stranding Response Program

- Members hold a Stranding Agreement (SA)

- Mandated by NOAA Fisheries to handle live and dead marine mammals

- Complete Level A data and file online reports to the National Stranding Database

- Perform necropsies when possible

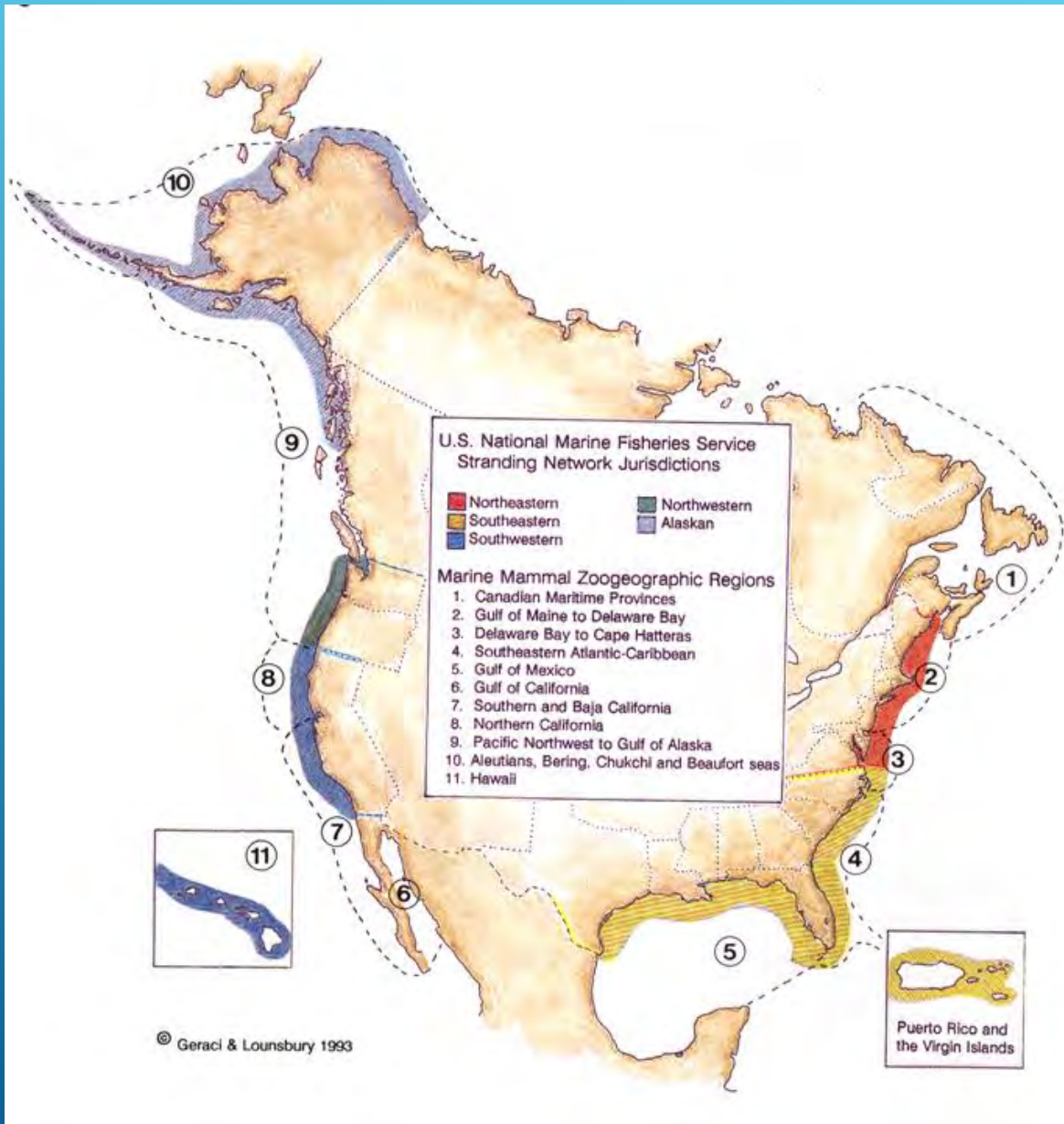
- Sampling – research, UMEs, etc.



COA120814Pm

Photos: Allied Whale, COA

# Stranding Network Jurisdictions



-We are a member of the Greater Atlantic Region Stranding Network or GARS (formerly the North East Region Stranding Network or NERS)

-The GARS ranges from Virginia to Maine



Canada

United States

Canada

Quebec

Maine

New Brunswick



**Our Region**



Calais



Rockland

Nova Scotia

If all islands and peninsulas stretched out = approx. 2,600 miles

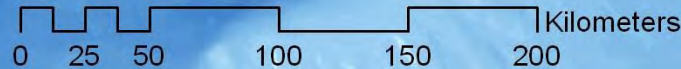
ire

New Hampshire

Gulf of Maine



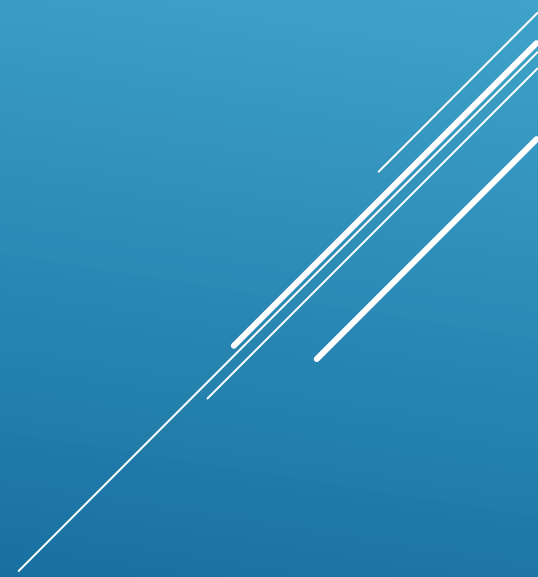
Massachusetts



Gulf of Maine Stranding Response Region

nd

Species





Harbour Seal



Hooded Seal

# Pinnipeds in the Gulf of Maine



Grey Seal



Harp Seal – “Beater” (juvenile)



Harp Seal – Adult

# Large Cetaceans



Humpback Whale



Fin Whale



Minke Whale

Northern Right Whale





Harbor Porpoise (calf)  
COA200706Pp - Steuben



Atlantic White-Sided Dolphin  
COA081013La - Hull's Cove



Common Dolphin  
COA070723Dd - West Tremont

## Small Cetaceans



Photo: Laura Howes

Pilot Whale



Beluga whale



Risso's Dolphin

Small Cetaceans  
continued

# SEALS OF SUMMER

## Harbor Seals

Shorter  
"dog-  
like"  
snout



Heart shaped  
nostrils



## Grey Seals

Longer "horse-like" snout



W-Shaped nostrils

Larger  
splotched  
pelage



Smaller, even  
mottled pelage



# Pitbulls are just land seals



SEADOGS



# HARBOR SEAL

THE USUAL SUSPECT



# HARBOR SEAL BASICS

- Scientific name: *Phoca vitulina*
- Average length – 1.5 m (4.9 ft)
  - Female Max: 1.7 m (5.7 ft)
  - Male Max: 1.9 m (6.25 ft)
- Average weight – 100 kg (220 lb)
  - Female Max: 130 kg (290 lb)
  - Male Max: 170 kg (370 lb)
- Lifespan:
  - Female: 35 years
  - Male: 25 years



# Harbor Seal Range



THERE ARE SOME HARBOR SEALS  
(*PHOCA VITULINA*) WHICH INHABIT  
FRESHWATER LAKES

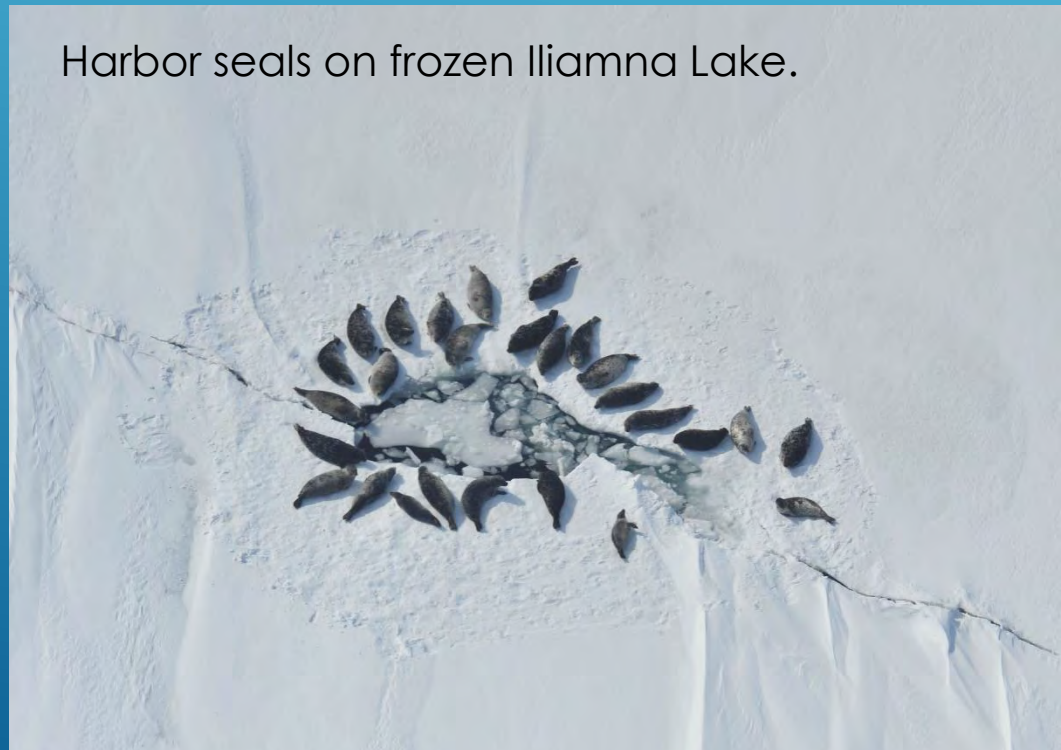


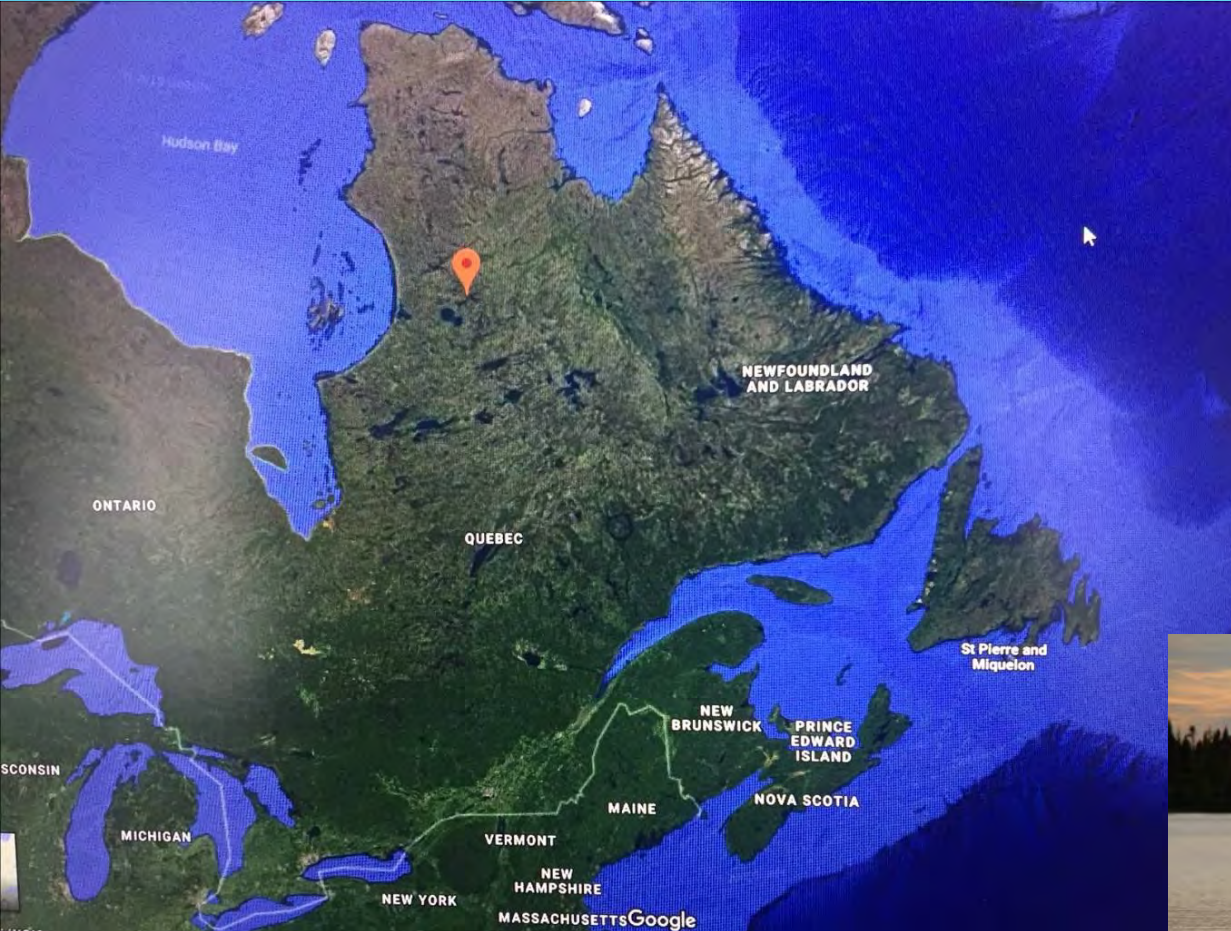


# ALASKA

- Bristol Bay stock in Alaska includes a small population found in Iliamna Lake in Southcentral Alaska

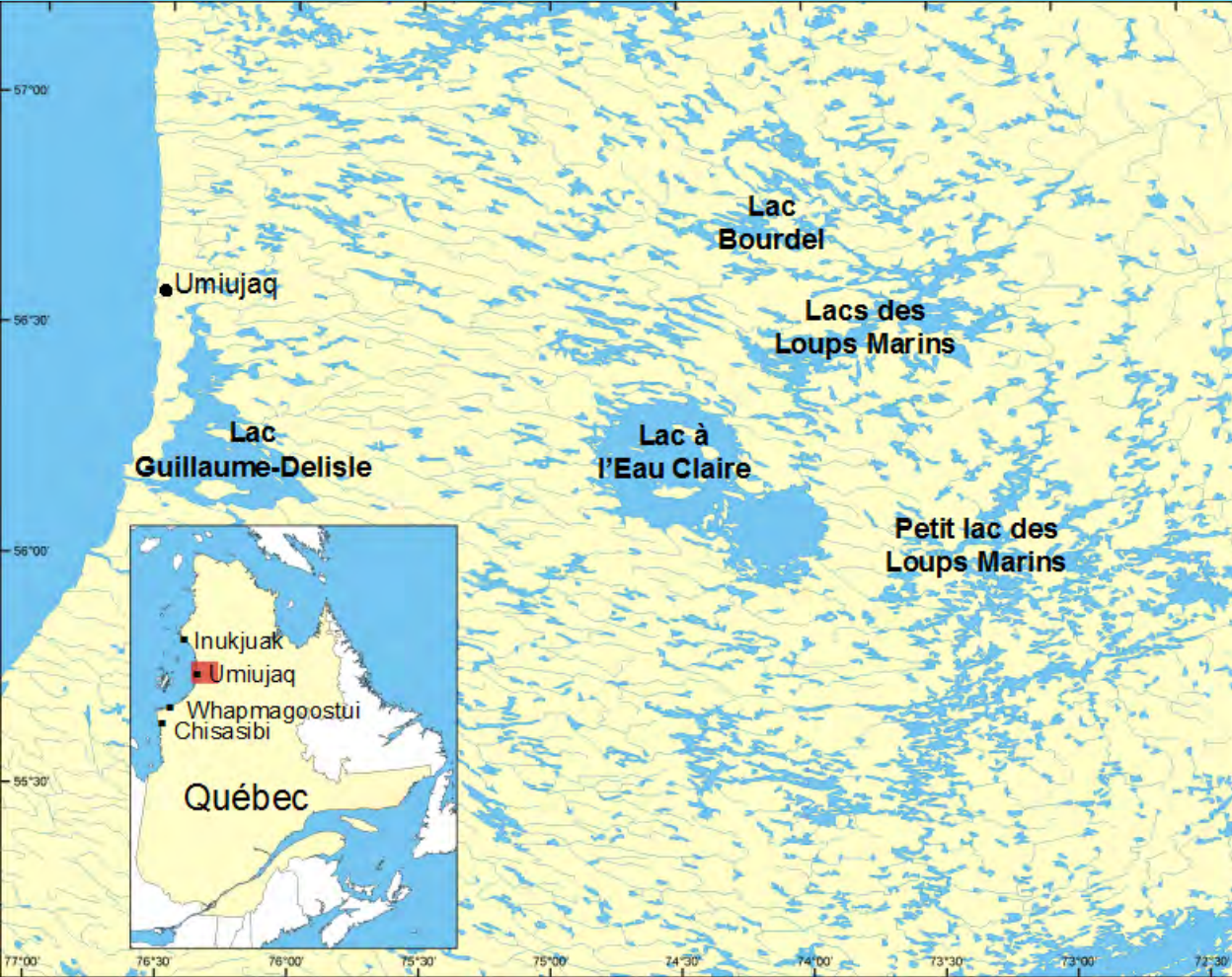
Harbor seals on frozen Iliamna Lake.





## Harbour Seal (*Phoca vitulina*)

*Achikunipi* by the Cree, meaning “freshwater seal”. Biologically, they’re harbour seals. But the Loups Marins lakes are located 250 kilometers east of the Hudson Bay coast..... This northern seal is among the few isolated populations of freshwater seals in the world, numbering anywhere between 50 and 600 individuals, but the exact population size is unknown.



## Harbour Seal (*Phoca vitulina*)

*Achikunipi* by the Cree, meaning “freshwater seal”. Biologically, they’re harbour seals. But the Loups Marins lakes are located 250 kilometers east of the Hudson Bay coast..... This northern seal is among the few isolated populations of freshwater seals in the world, numbering anywhere between 50 and 600 individuals, but the exact population size is unknown.

# HARBOR SEAL PUPPING BASICS

- Pups are born mid-May to late June
- 0.6 to 1 meter at birth (2.1 to 3.3 ft)
- Pups weigh between 8-12 kgs (17.6-26.4 lbs) at birth
- Pups nurse for 4-6 weeks
- Pups gain around 0.7 kg (1.5 lbs) a day during nursing period
- Weaning weight around 30 kgs (66 lbs)



Harbor seal mom and pup – 2016,  
Photo by Allied Whale





Full term pup –  
with adult coat

COA210428Pv – Lincolnville  
- April 28, 2021

Ref# COA080515Pv  
- Hulls Cove, Bar Harbor  
- May 15, 2008



Pup – with lanugo  
or birth coat



Pup – with lanugo  
or birth coat

COA210428Pv – Lincolnville  
- April 28, 2021



The release –August 11, 2021  
(COA210428Pv)

# GREY SEAL



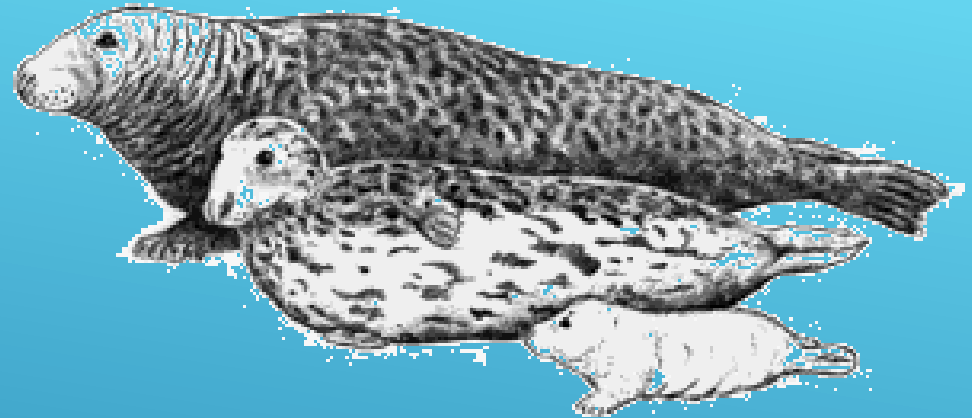
Male



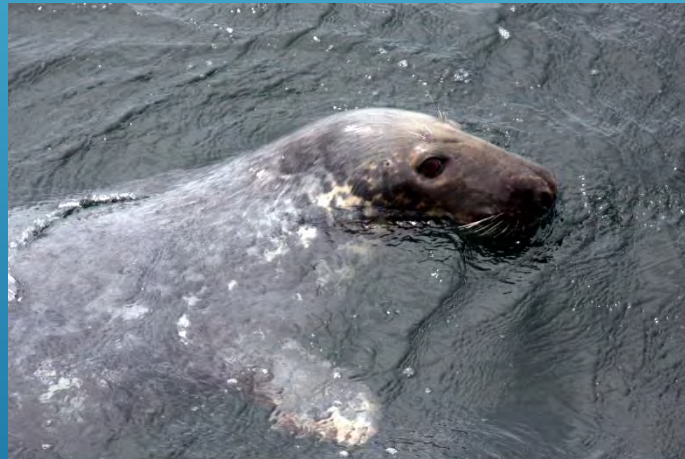
Female

# GREY SEAL BASIC STATS

- Scientific name:
  - *Halichoerus grypus*
- Sexual dimorphism
- Length
  - Adult female Avg: 2.05 m
  - (6 ft 9 in)
  - Adult male Avg: 2.7 m
  - (8 ft 10 in)



- Weight
  - Birth weight: 35 lbs
  - Female Max: 250 kg
  - (550 lb)
  - Male Max: 400 kg
  - (880 lb)



- Lifespan:
  - Female: 35 years
  - Male: 25 years

- Grey seal pups – born December –February
- Born with a lanugo
- Nursing - approx. 3 weeks

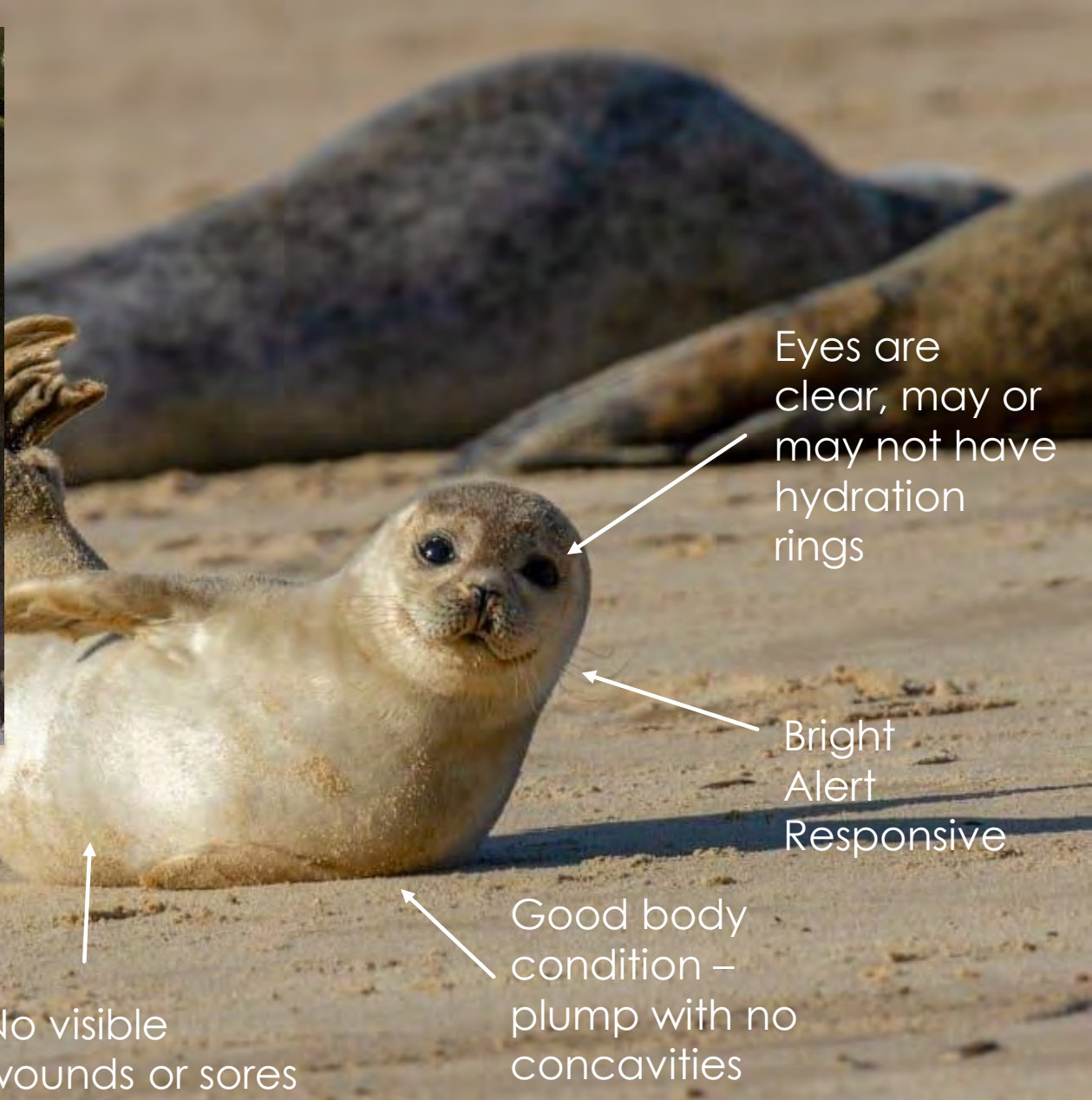


# Grey and Harbor Seal Range

- Grey seals inhabit the northern North Atlantic Ocean and Baltic Sea
  - Some overlap between both species



# WHAT DOES A NORMAL HEALTHY SEAL LOOK LIKE?



Eyes are clear, may or may not have hydration rings

Bright Alert Responsive

Good body condition – plump with no concavities

Banana pose!

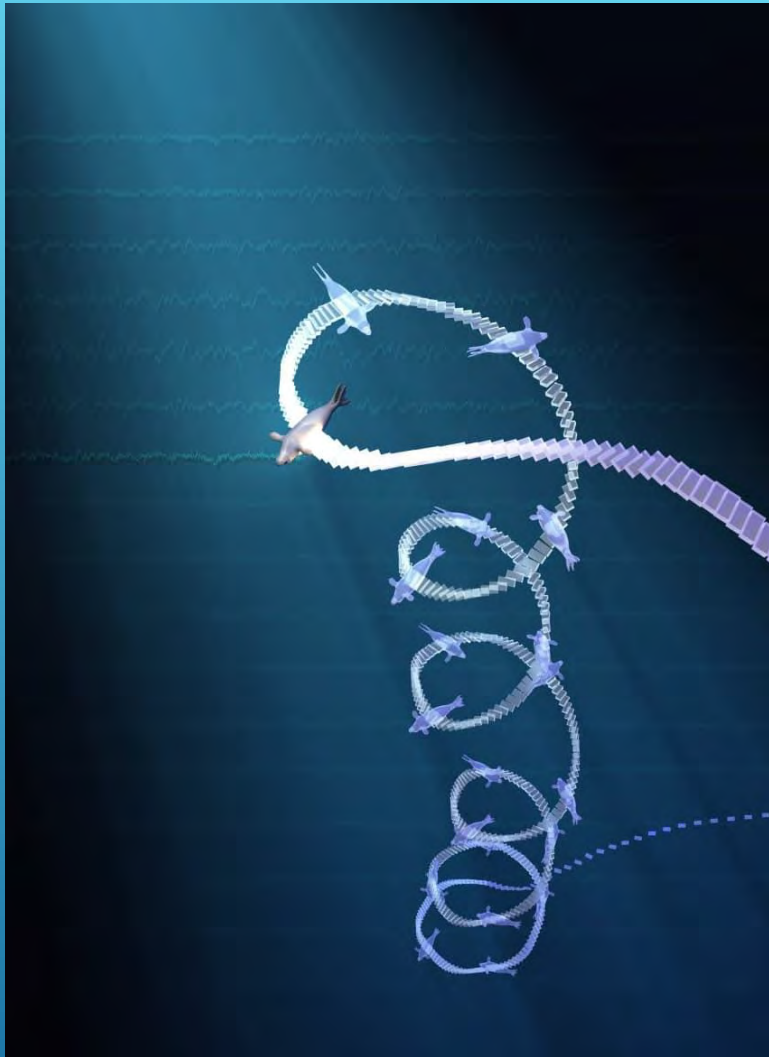
No visible wounds or sores

# Normal Seal Behaviors



- Lying on its side – the “banana pose” – thermoregulation
- Stretching hind flippers
- Scratching using front flippers
- Moving on land using its front flippers only
- Vocalizing – pup, adults
- Pups - nursing on itself, rocks, docks, buoys!
- In water – “bottling” – resting behaviour



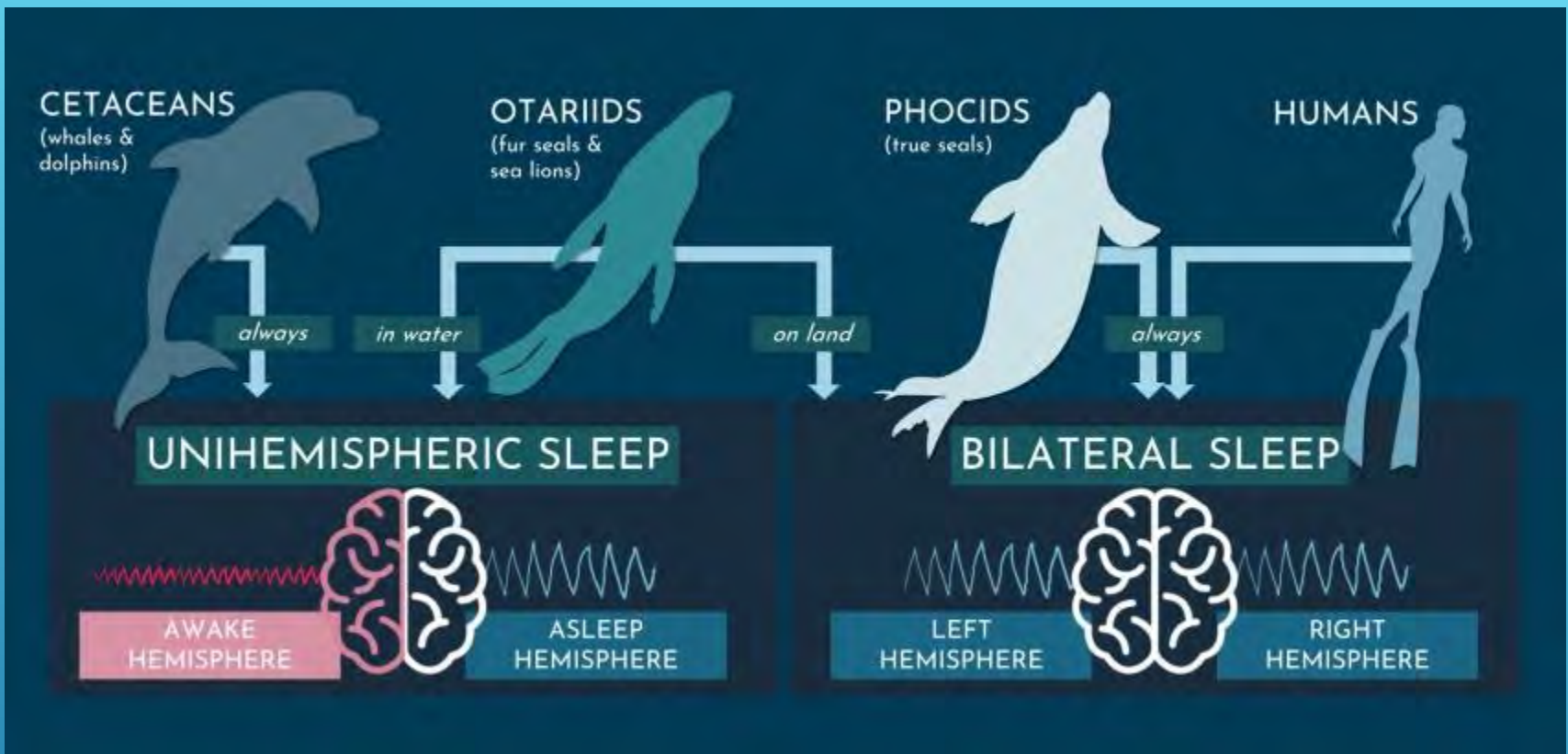


Sleep spiral: This graphic shows sleeping postures in elephant seals in REM sleep every 20 seconds, with accompanying 30-second segments of EEG traces in the background. Credit: Graphic by Jessica Kendall-Bar

When Northern Elephant Seals on land in breeding season, they can sleep for more than 10 hours per day, but they can spend as much as eight months at a time on foraging trips in the Pacific Ocean.

They've found that the Northern Elephant seals function on two hours of sleep per day out at sea, which they grab in 10-minute bursts on deep dives, where they spiral gently towards the sea floor.





Cetaceans (whales and dolphins) and otariids (fur seals and sea lions) keep one side of their brains awake while the other is asleep (unihemispheric sleep). In most other mammals, including phocids (true seals, including elephant seals) and humans, both hemispheres of the brain are asleep at the same time.

Credit: Graphic by Jessica Kendall-Bar

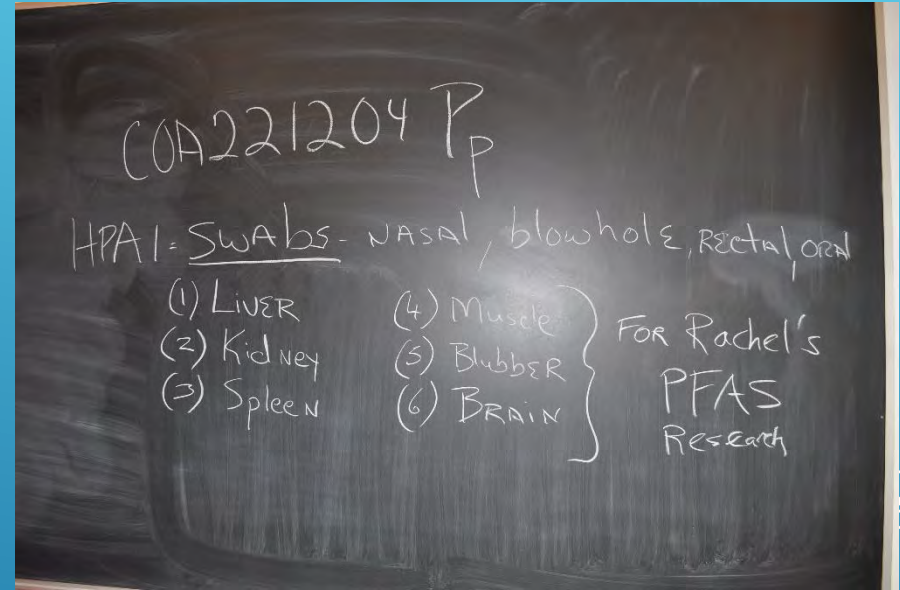
# Necropsies and Sampling



In the lab – seal necropsies



# In the lab – small cetacean necropsies



# In the field – large whales



*smoothest line and slope in the mouth*  
 Rosemary Seton and Jenn Tackenberg took morphs.

### Humpback Whale External Morphometrics

Field ID: COB150611 Mo. Date: June 14 2005 Observer: Laura Lyell

WRITE MORPHOMETRIC VALUES ON LINES  
1,078.9 cm = 35.4 FLANK LENGTH

9.4	ANGLE OF MOUTH - 9.5°	FLANK TO BASE	8.9'
9.4 ft.	BLADE	FLANK LENGTH	
	BLADE		
12.3	DEPTH MOUTH		
22.5	LENGTH FROM NOSE		
21.0	LENGTH		
26.1	LENGTH		
27.3/5	LENGTH		

LENGTH AT BASE: 2.2  
 FLANK LENGTH: 6.1  
 FLANK LENGTH: 6.25  
 FLANK LENGTH: 9.0  
 FLANK LENGTH: 10.3  
 FLANK LENGTH: 11.0  
 FLANK LENGTH: 10.3

## Select Allied Whale Stranding Articles

### Allied Whale co-authors - black

Carley L Lowe, Kathleen E Hunt, Matthew C Rogers, Janet L Neilson, Jooke Robbins, Christine M Gabriele, Suzie S Teerlink, **Rosemary Seton**, C Loren Buck, Multi-year progesterone profiles during pregnancy in baleen of humpback whales (*Megaptera novaeangliae*), *Conservation Physiology*, Volume 9, Issue 1, 2021, coab059, <https://doi.org/10.1093/conphys/coab059>

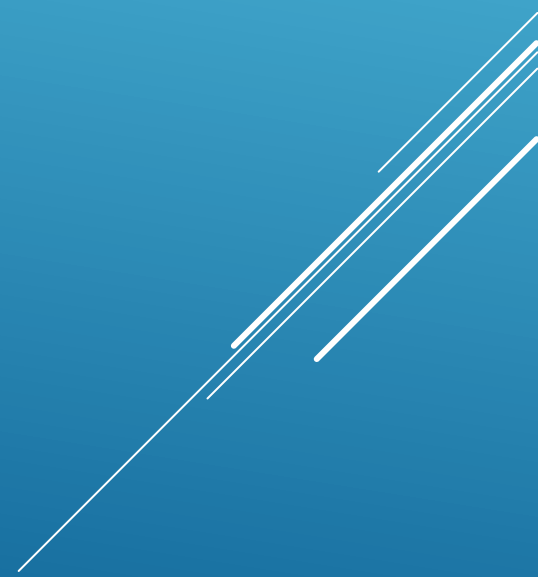
Carley L Lowe, Kathleen E Hunt, Jooke Robbins, **Rosemary E Seton**, Matthew Rogers, Christine M Gabriele, Janet L Neilson, Scott Landry, Suzie S Teerlink, C Loren Buck. (2021). *Patterns of cortisol and corticosterone concentrations in humpback whale (Megaptera novaeangliae) baleen are associated with different causes of death*. *Conservation Physiology*, Volume 9, Issue 1, 2021, coab096, <https://doi.org/10.1093/conphys/coab096>

Newcomb, E., Walk, D., Haverkamp, H., Doughty, L., **Todd, S., Seton, R., Jones, L.**, & Cammen, K. (2021). Breaking down “harassment” to characterize trends in human interaction cases in Maine’s pinnipeds. *Conservation Science and Practice*, 3(11), e518. <https://doi.org/10.1111/csp2.518>

Haverkamp, Holland, Chang, Hsiao-Yun, Newcomb, Emma, Doughty, Lynda, Walk, Dominique, **Seton, Rosemary, Jones, Lindsey S., Todd, Sean**, Cammen, Kristina M. 2022. A retrospectivesocio-ecological analysis of seal strandings in the Gulf of Maine. *Marine Mammal Science*. Vol. xxx. <https://doi.org/10.1111/mms.12975>

## Shaw Institute article – hot off the press

Michelle L. Berger, Susan D. Shaw, Charles B. Rolsky, Da Chen, Jiachen Sun, Aqqalu Rosing-Asvid, Sandra Magdalena Granquistf, Malene Simon, Britt-Marie Backlin, Anna Maria Roos (2023). Alternative and legacy flame retardants in marine mammals from three northern ocean regions. *Environmental Pollution*. Volume 335, 15 October 2023, 122255



# Some Cetacean cases



COA220529Ba - Petit Manan Preserve – Minke whale  
May 29, 2022



# HUMPBACK WHALE COA180417MN – LUBEC - JUVENILE, FEMALE



# COA200808Ba – Milbridge August 12, 2020

Photos and boat ride by Patty Dahlgren



Humpback whale (first sighted in Cutler) finally lands on Great Spruce Island – August 2013 (COA130804Mn)

Not able to identify based on fluke pattern – too decomposed; we were able to genetically identify to a known individual named “Kilter”



Sampling from the laceration on the caudal peduncle  
(tail stock) of this right whale calf  
– July 3, 2010.



Minke whale (first seen on Head Harbor Island) landed on Sand Beach, Acadia National Park - August 21, 2012



# Some Harbor Seal cases



“Rufus” – premature harbor seal pup with a lanugo or birth coat, South Blue Hill, May 19, 2005





“Rufus” in rehab at the Marine Animal Lifeline  
– Westbrook, ME





This harbor seal pup (COA180510Pv-01) was reported in Surry, Maine on May 10, 2018. Collected and brought to rehab.

COA170523Pv-05 – May 23, 2017  
on the bar to Bar Island,  
Bar Harbor





May 24, 2017, at the Seacoast Mission on West Street (now the Bar Harbor Historical Society), Bar Harbor.



May 26, 2017 at 5 a.m.  
In the middle of Route 3 in  
Downtown Bar Harbor.

Photo: Bar Harbor Police Department





COA170523Pv-05

Named “Rosealind Franklin”  
by the National Marine Life Center  
upon admittance to rehab



Photo: Courtesy of the National Marine Life Center



Photos: Courtesy of the  
National Marine Life Center





# Heading Home!!

Photos: Courtesy of the  
National Marine Life Center



“ZION” (COA230617Pv) – the harbor seal pup  
- Sand Beach In Acadia National Park  
- June 17, 2023

Named “Zion” by the National Marine Life Center upon admittance to rehab



Otter Cove, Acadia National Park.  
Morning - June 17, 2023



Sand Beach, Acadia National Park,  
Afternoon - June 17, 2023



“ZION” (COA230617Pv) – the harbor seal pup  
The collection on Sand Beach, Acadia National Park



“ZION” (COA230617Pv) – the harbor seal pup  
Examination and fluids and overnight stay

- Transported to the National Marine Life Center in Buzzards Bay, Massachusetts – next day
- She had lesions, punctures, and abscesses all over her body with exudate, mouth was necrotic, tissue missing and had an abscess in her lower jaw.



“ZION” (COA230617Pv)  
– the harbor seal pup





 NATIONAL  
MARINE  
LIFE  
CENTER  
*Caring for Stranded Marine Animals*

“ZION” (COA230617Pv) – the harbor seal pup – at the National Marine Life Center  
- Learning to capture and eat fish – the foraging lesson



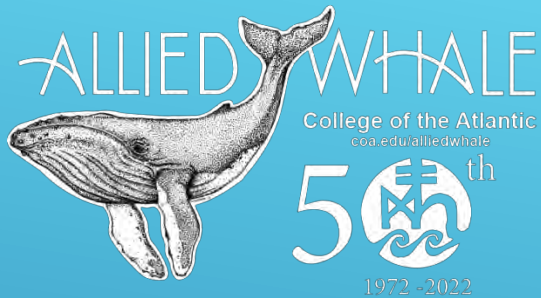
“ZION” (COA230617Pv) – the harbor seal pup





- “ZION” (COA230617Pv) – the harbor seal pup – at the National Marine Life Center
- Enjoying the hammock, one of the enrichment objects





# QUESTIONS?

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Marine Mammal Stranding Coordinator:  
207-266-1326 (stranding cell)  
207-288-5644 (Allied Whale office)  
<http://www.coa.edu/alliedwhale>



With many thanks to our all our wonderful, hard-working stranding volunteers who come from all walks of life and whose caring commitment to stranding response in our more remote region is gratefully acknowledged.

