

Marine Mammals Ashore



Responding to Strandings in Oregon

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Institute



Network Authorization

- All marine mammals are federally protected by the Marine Mammal Protection Act
- NOAA Fisheries authorizes us to intervene on behalf of stranded marine mammals by special permission
- Only people authorized by NOAA may handle marine mammals - these include state and local officials.



Oregon Marine Mammal Stranding Network

Objectives

- Collect data from stranded marine mammals
 - first line of detection for ocean health concerns; develop baseline information on disease prevalence
- Provide for the welfare of live stranded animals
 - ➔ reduce occurrences of harassment
 - ➔ disentanglement of pinnipeds and whales
- Minimize risks to public health and safety
- Report Level A Data to NMFS for inclusion in national database

Collecting Level A Data

Level A Data are the basic types of information necessary to report a marine mammal stranding event to the National Marine Fisheries Service

They Include:

- Species Identification
- Location of Stranding (latitude/longitude)
- Age Class
- Sex
- Status of the animal - live, dead (fresh/decomposed)
- Description of any signs of human interaction (net entanglement, gunshot, ship strike)
- Presence / Description of tags or brands



Unique Scientific Value

- Stranded animals offer a unique sample of relatively inaccessible wildlife; can generally be examined thoroughly
- They are biased in favor of the diseased segment of the population
- Diseases in marine mammals may reflect environmental changes such as shifts in prey distribution, exposure to biotoxins and emerging pathogens
- ▶ Stranding data reveal spatial and temporal trends, providing insights into ocean health

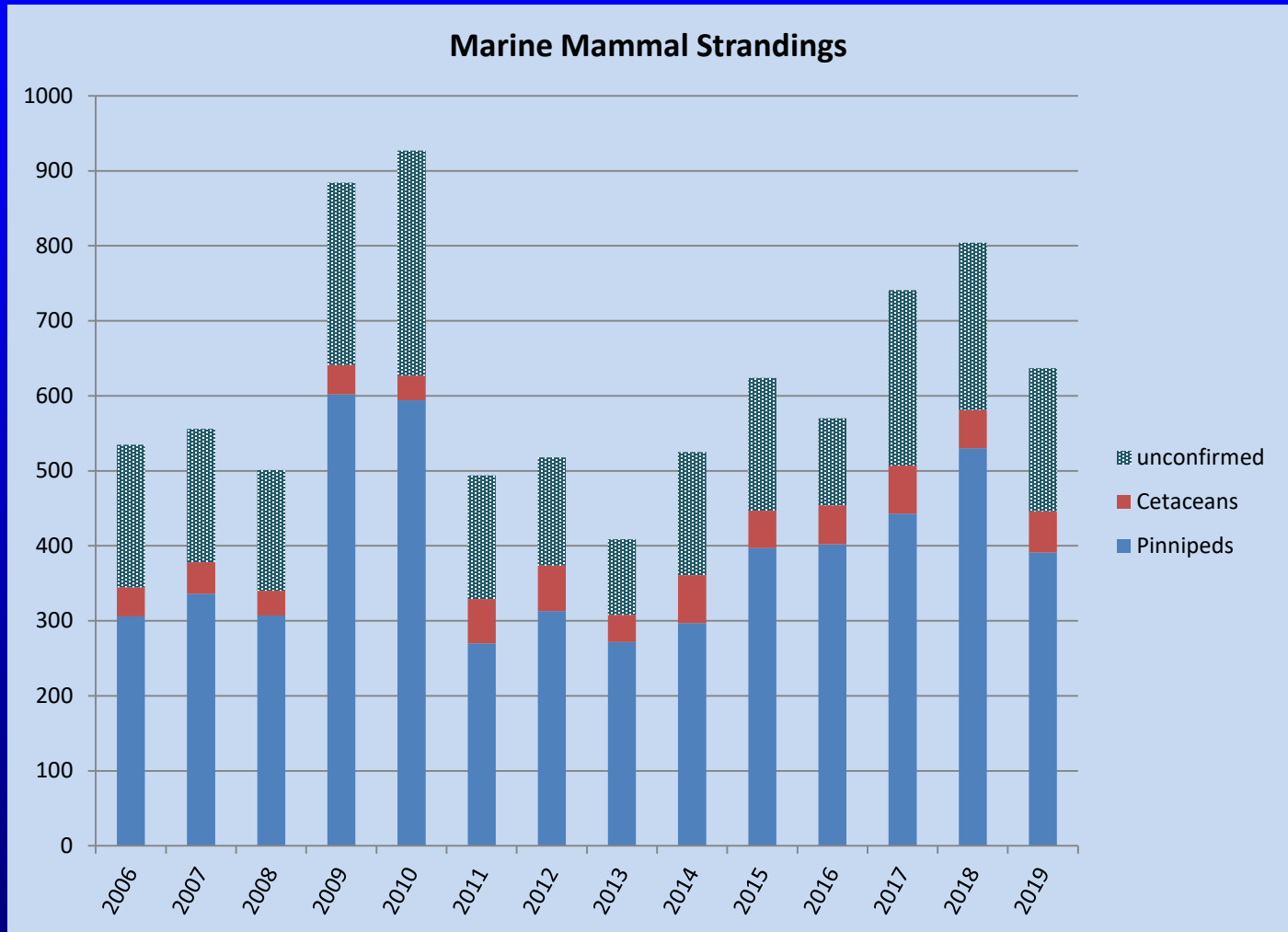
When Is a Marine Mammal Stranded?

When it's:

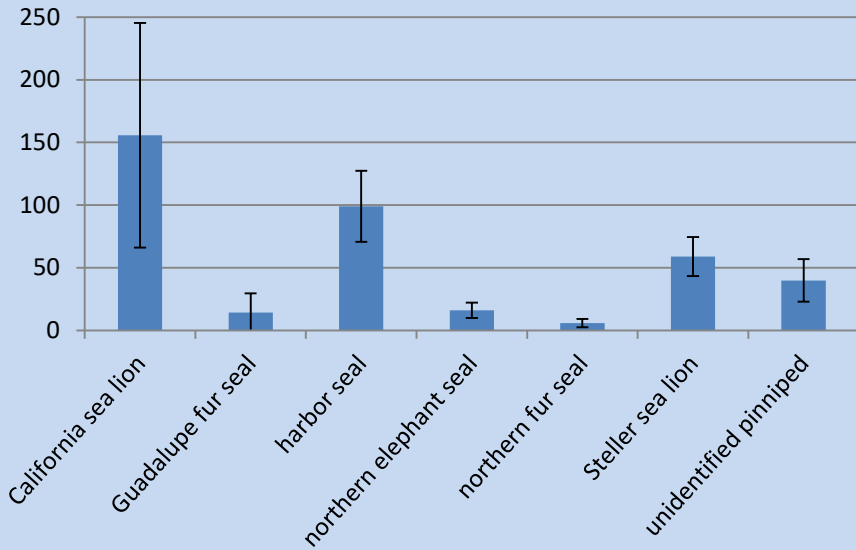
- Dead
- Alive and:
 - Can't get back to the water
 - Is critically injured or ill
 - Can't get back to its natural habitat



2006-2019

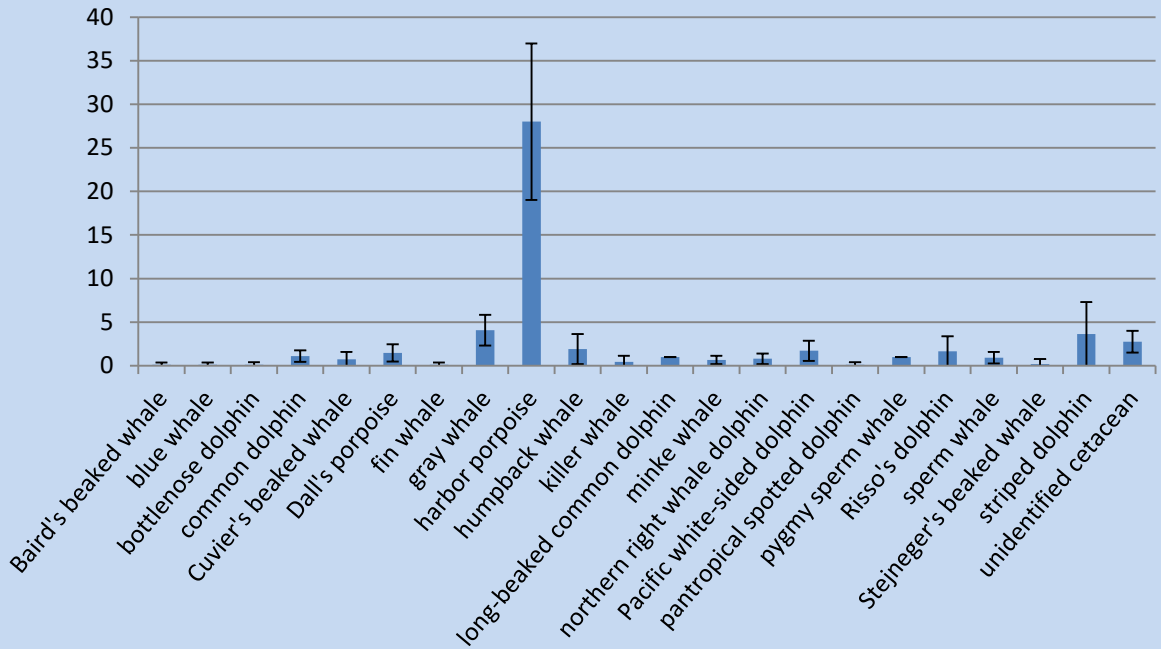


Annual Mean Number of Pinniped Strandings



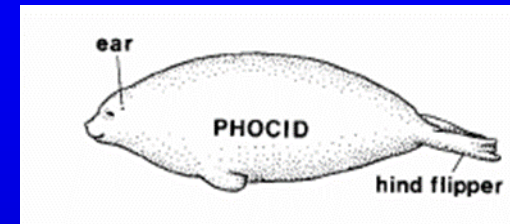
2006-2019

Annual Mean Number of Cetacean Strandings

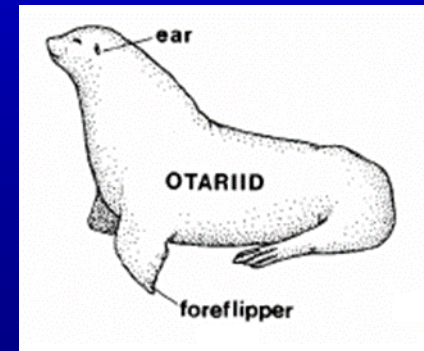


6 Species of Pinnipeds in Oregon

- harbor seal
- northern elephant seal



- California sea lion
- Steller sea lion
- Guadalupe fur seal
- northern fur seal



Harbor Seal

(*Phoca vitulina*)



Maximum Measurements:

Length	Male	6'3" (1.9 m)
	Female	5'7" (1.7 m)
Weight	Male	370 lb (170 kg)
	Female	290 lb (130 kg)

- Snout blunt
- Color variable (gray to tan to brownish-black, with darker spotting);
- Pups gray to tan

(white lanugo typically indicates premature birth)



Dependent Pups



- Harbor seal pups nurse for only about 4 weeks
- Harbor seal mothers routinely leave pups ashore unattended while they forage at sea
- If a seal pup is removed from where it receives care, IT WILL DIE

Mitigating Beach Conflicts

- Public Outreach
 - ▶ Protected species
 - ▶ Stress is harmful
- Most people are well-intentioned but ill-informed about marine mammals
- Most will behave properly once they receive basic information



Elephant Seal

(*Mirounga angustirostris*)



Maximum Measurements:

Length	Male	13'6" (4.1 m)
	Female	10' (3 m)
Weight	Male	4,400 lb (2,000 kg)
	Female	1,300 lb (600 kg)

- Males much larger than females
- Adult males have inflatable proboscis
- Color gray to brown with no markings – black whiskers
- “Catastrophic Molt” April-August, shed hair and skin



Appearances Can Be Deceiving!

Some “healthy”
animals look sick



Molting elephant seal-
NOT stranded!



California Sea Lion

(*Zalophus californianus*)

Maximum Measurements:

Length	Male	7'10" (2.4 m)
	Female	6'7" (2.0 m)
Weight	Male	860 lb (390 kg)
	Female	240 lb (110 kg)

- Snout long, straight, narrow
- Color dark brown, juveniles and females lighter
- Extreme sexual dimorphism,
- Males with prominent sagittal crest, more muscular neck
- Bark-like vocalizations
- Population at about 300,000



Leptospirosis

in California sea lions



- A kidney infection that impairs the animal's ability to concentrate urine
- Causes sea lions to become lethargic, dehydrated; neurological signs
- Often beach themselves near streams seeking fresh water
- Potentially reversible but often fatal
- Transmissible to humans and dogs – public health concerns

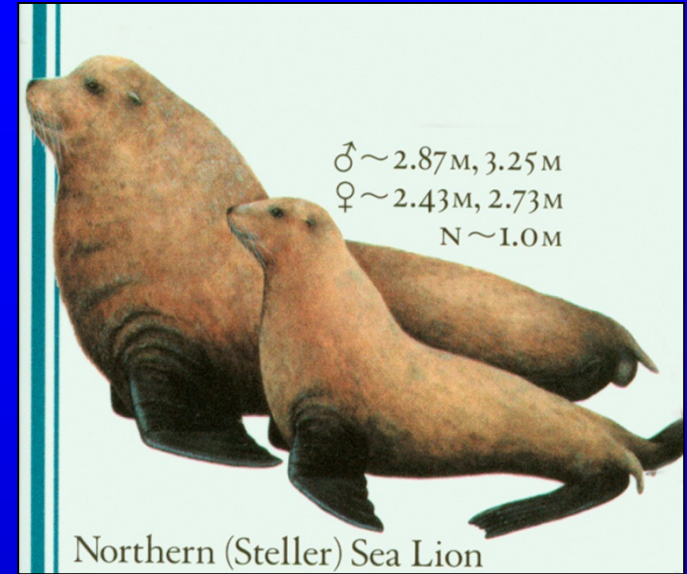
Steller Sea Lion

(*Eumetopias jubatus*)

Maximum Measurements:

Length	Male	11' (3.3 m)
	Female	9'6" (2.9 m)
Weight	Male	2,400 lb (1,100 kg)
	Female	770 lb (350 kg)

- Front flippers broad
- Color light brown to blond, darker ventrally than dorsally
- Adult males much larger, mane
- No sagittal crest on head
- Can be very aggressive
- de-listed as a *Threatened* species in Oregon in 2013



Northern Fur Seal

(*Callorhinus ursinus*)

Maximum Measurements:

Length	Male	6'11" (2.1 m)
	Female	4'11" (1.5 m)
Weight	Male	600 lb (270 kg)
	Female	132 lb (60 kg)

- Small head, short snout
- Very long hind flippers
- Fur has coarse outer guard hairs
- Males brown, females dark gray
- Extreme sexual dimorphism, adult males with massive neck and bushy mane



Guadalupe Fur Seal

(*Arctocephalus townsendi*)

- Longer snout; bulbous nose
- Presumed extinct by end of 19th century
- Re-discovered in 1928
- 2006 -first confirmed Oregon stranding record.
- 2012 - total of 34 strandings
- Listed as *Threatened* under ESA

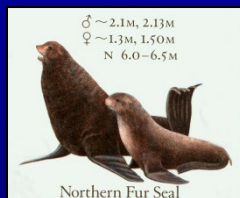
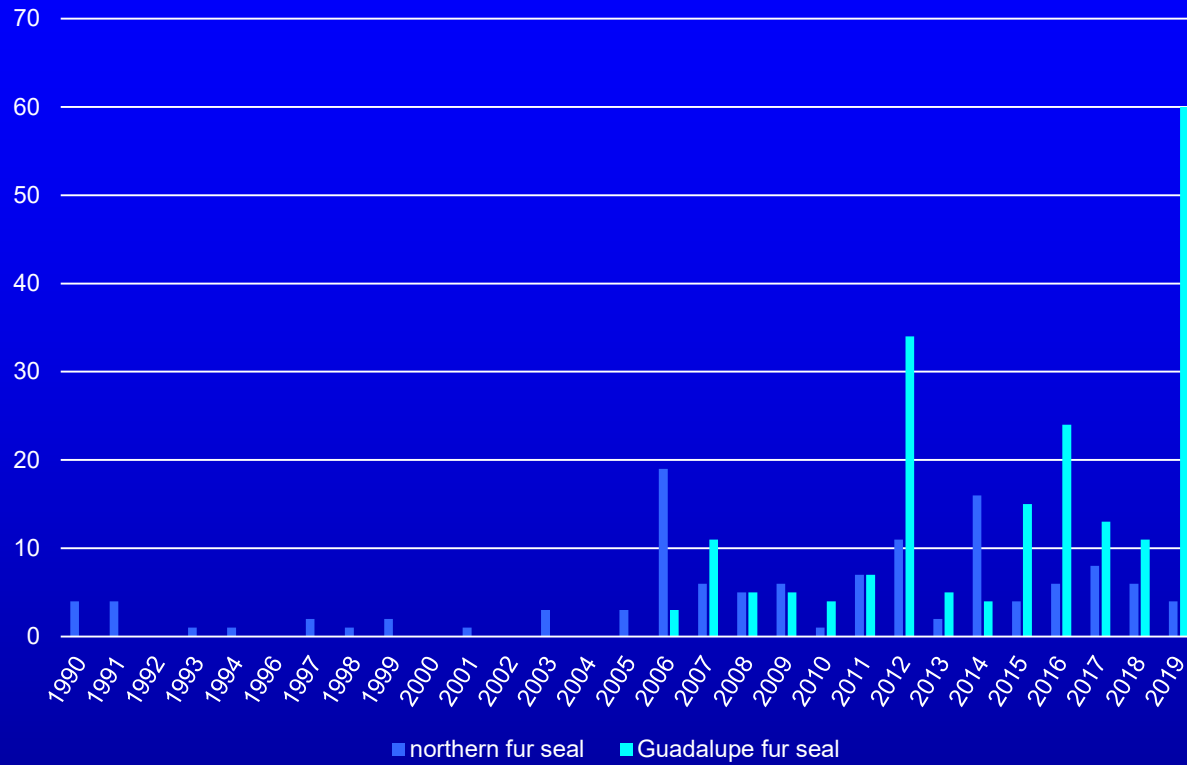


Guadalupe fur seal flipper



northern fur seal flipper

Fur Seal Strandings



Northern Fur Seal
(*Callorhinus ursinus*)



Guadalupe Fur Seal
(*Arctocephalus townsendi*)

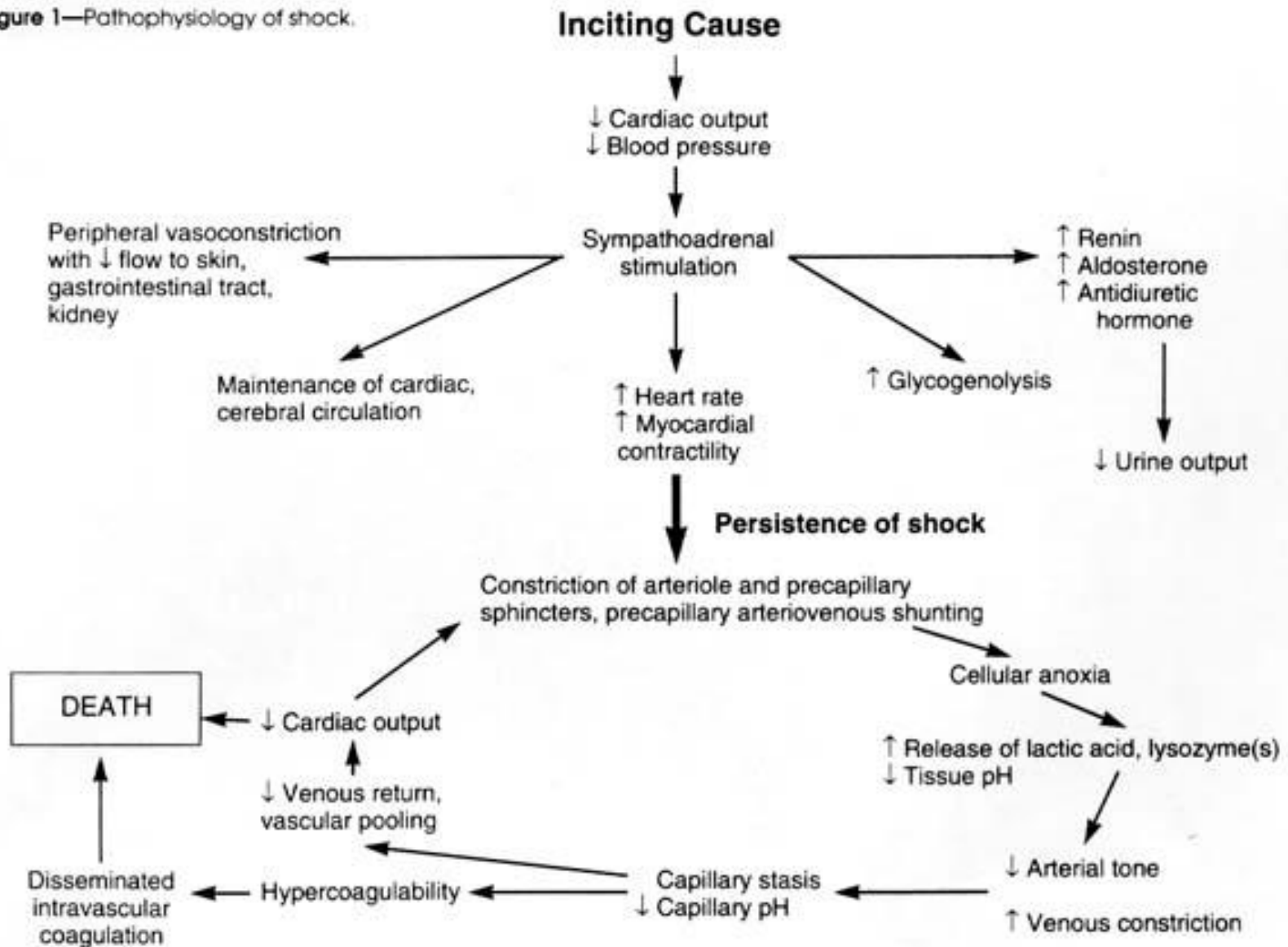
Stranded Cetaceans



- Live whales, dolphins, and porpoises are completely helpless on land
- Most that come ashore are sick and not likely to survive (mass strandings are exceptions)

Cetacean Stranding Effects

Figure 1—Pathophysiology of shock.



Harbor Porpoise

(*Phocoena phocoena*)



Size

Average adults measure about 5 feet (155 cm) long and weigh about 120 pounds (55 kg). Female porpoises are usually larger than males. Calves are 27 to 35 inches (70-90 cm) long and weigh 14 to 22 pounds (6.4-10 kg) at birth.

Appearance

The back, flippers and flukes appear dark gray or nearly black. The underside is a light gray to white in color. The dorsal fin is triangular rather than sickle-shaped as it is on many dolphins.

Diet

Feed on bottom dwelling and schooling fishes. Weaning porpoises eat small crustaceans, such as euphausiid shrimp.

Sentinels of Ocean Health

- Performing surveillance of known and emerging pathogens
 - Developing baseline data on disease prevalence
- Documenting the toll of human interactions on marine mammals:
 - fishery takes, ship strikes, gunshot, debris entanglement



Working in close collaboration
with the OSU Veterinary
Diagnostic Laboratory

Field Necropsy



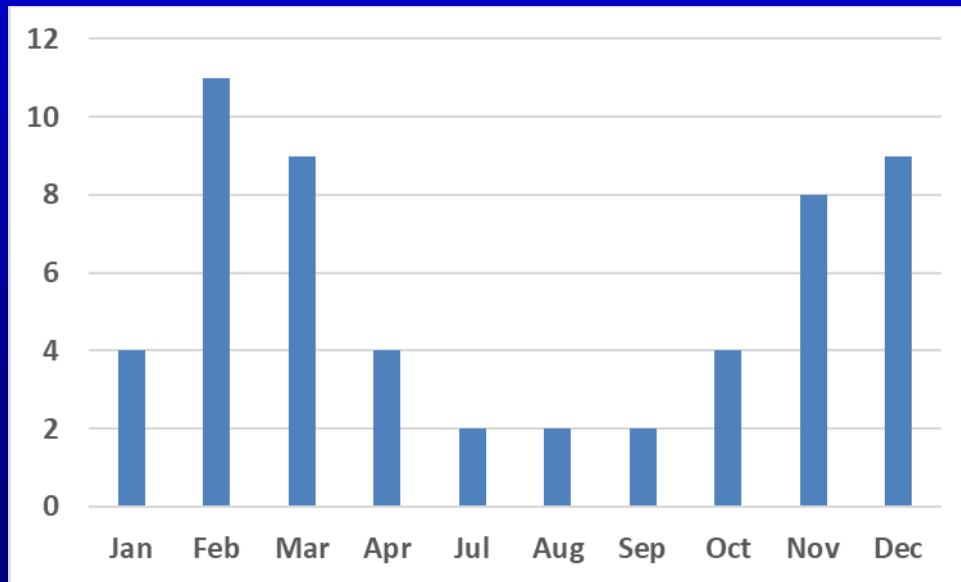
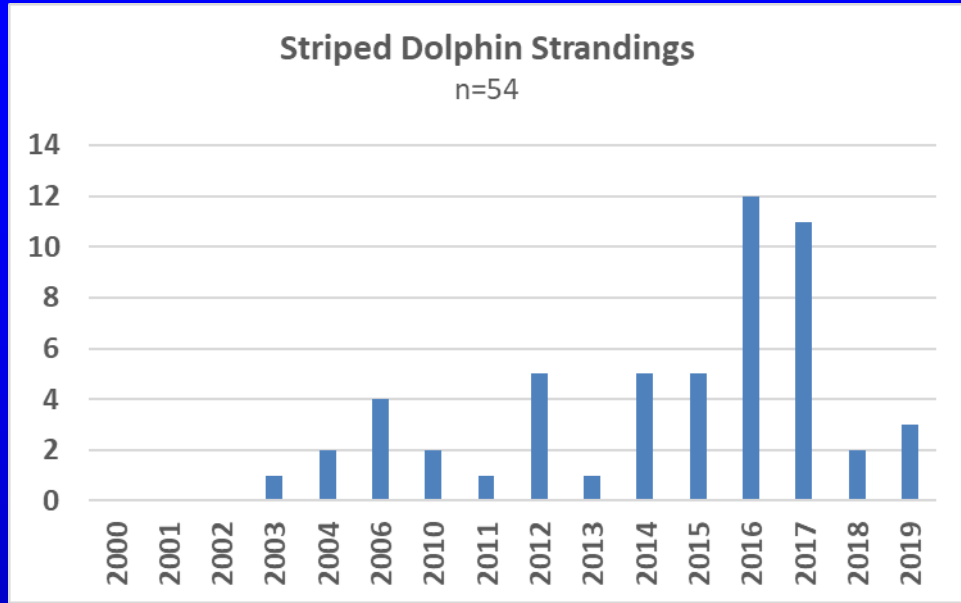
Lab Necropsy



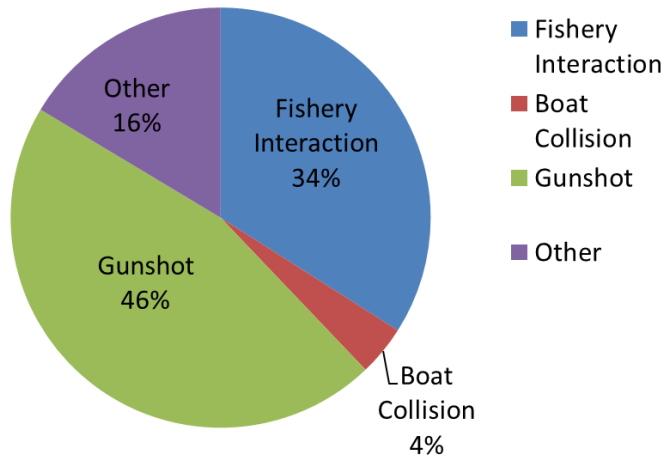
Pneumonia

- To date, pneumonia has been implicated in 249 mortalities, the most common pathology finding overall.
- Verminous (lung worm) and bacterial causes are most common.
- Disseminated protozoal infection (toxoplasma or sarcocystis) are often involved in harbor porpoise pneumonia.
- A few fungal causes have been found in harbor porpoises too.



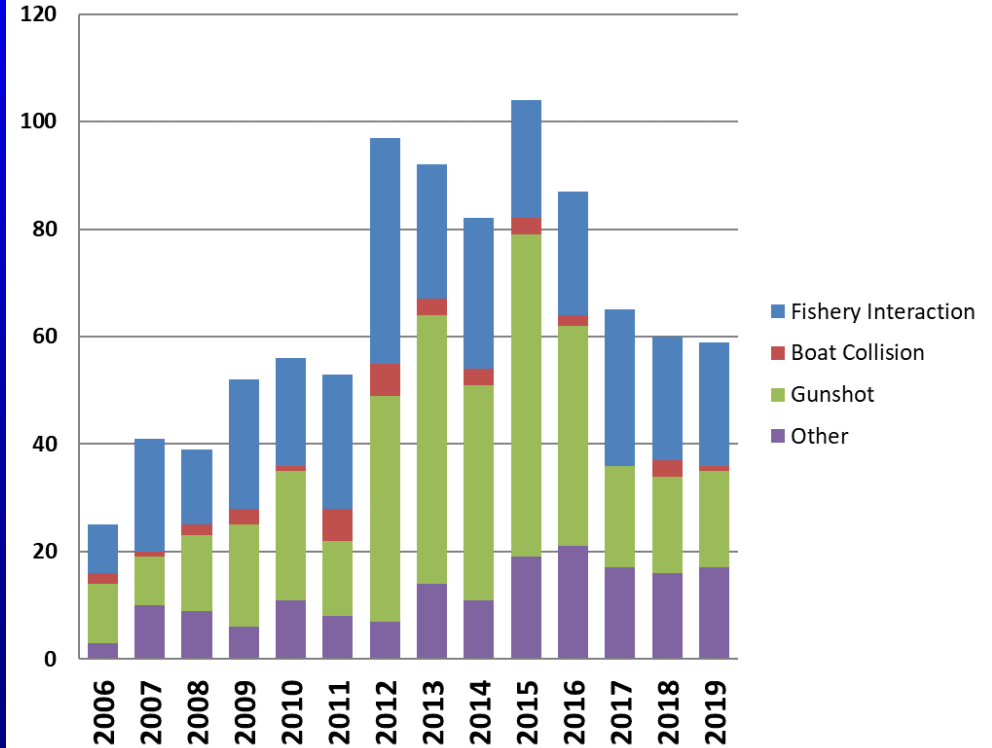


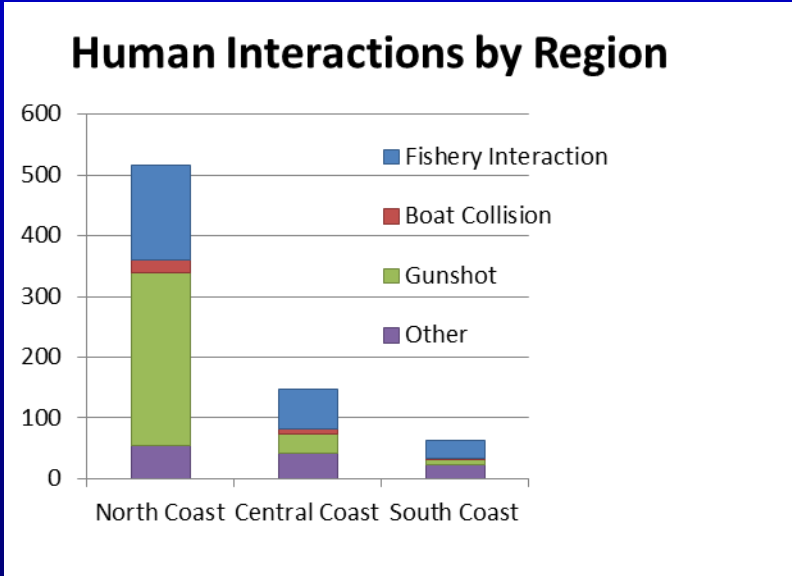
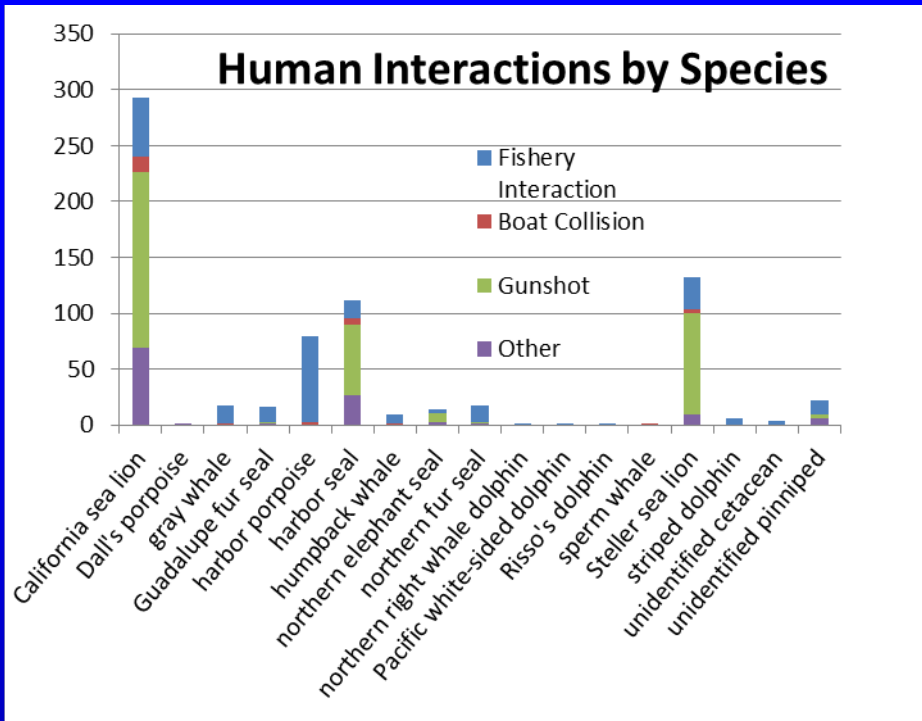
Strandings Involving Human Interactions 2006-2019 n = 829



10% of all strandings involve some type of Human Interaction

Human Interactions by Year





Entangled Whales



- Average of 3 entangled whales reported annually along Oregon coast
- Typically sighted by fishing vessels; often impossible to re-locate

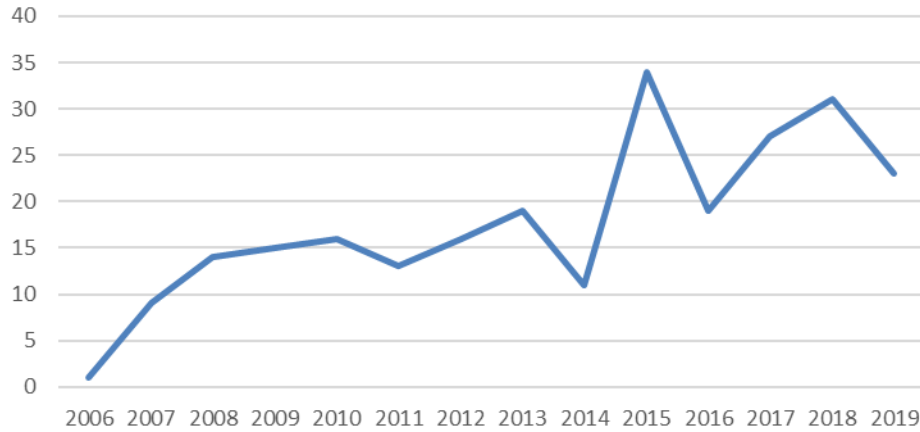
Orca predation



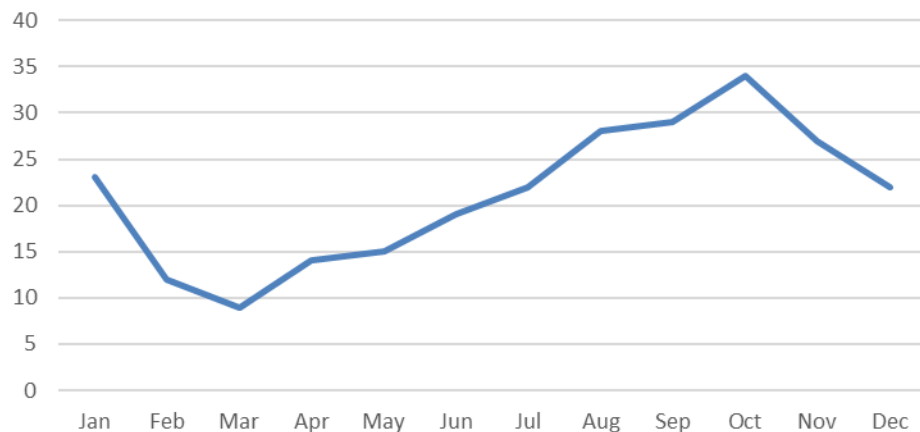


Shark Predation

Bite Wounded Pinnipeds 2006-2019
n=248



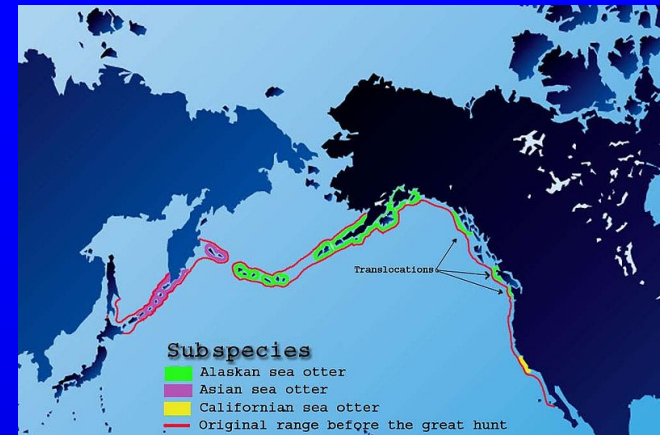
Bite Wounded Pinnipeds 2006-2019
n=248



Sea Otter

(*Enhydra lutris*)

- Populations in California, AK, and WA
- A “keystone species”; controls urchin populations, promotes kelp forest communities
- Often confused with northern river otters

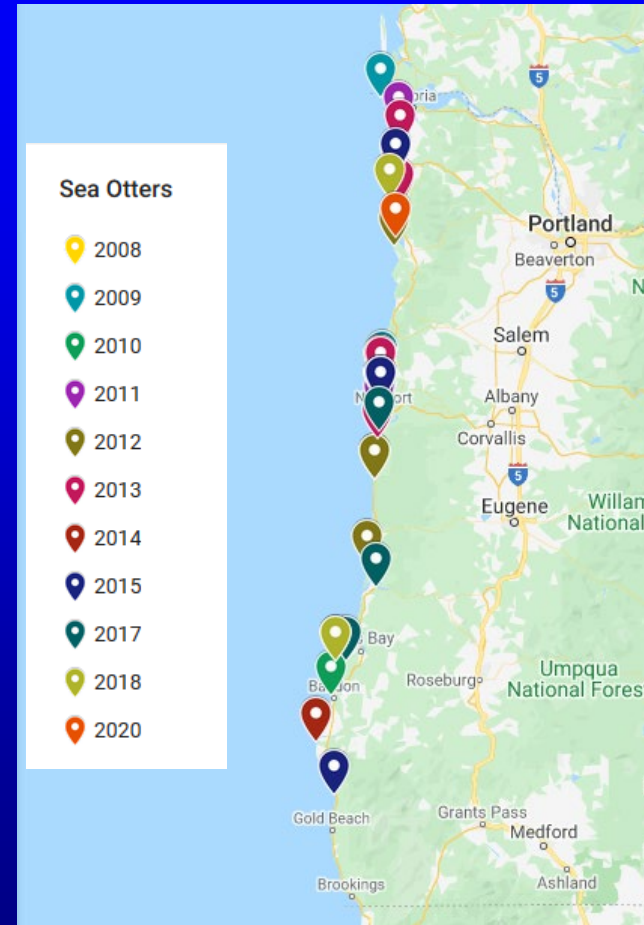


Sea Otters in Oregon

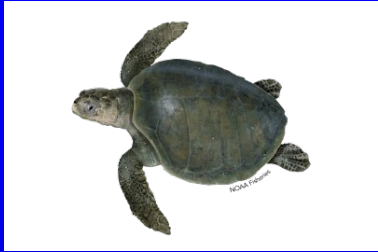
Since 2008

24 sightings

12 strandings

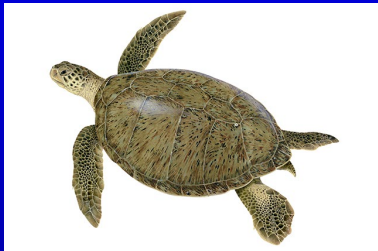


Sea Turtles



Olive Ridley Turtle
(*Lepidochelys olivacea*)

Nesting: Mexico
Status: **Endangered**



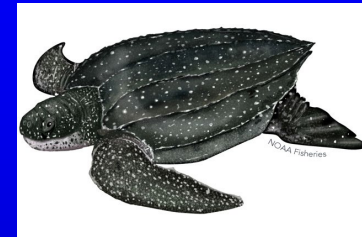
Green Turtle
(*Chelonia mydas*)

Nesting: Mexico
Status: **Threatened**



Loggerhead Turtle
(*Caretta caretta*)

Nesting: Japan
Status: **Endangered**



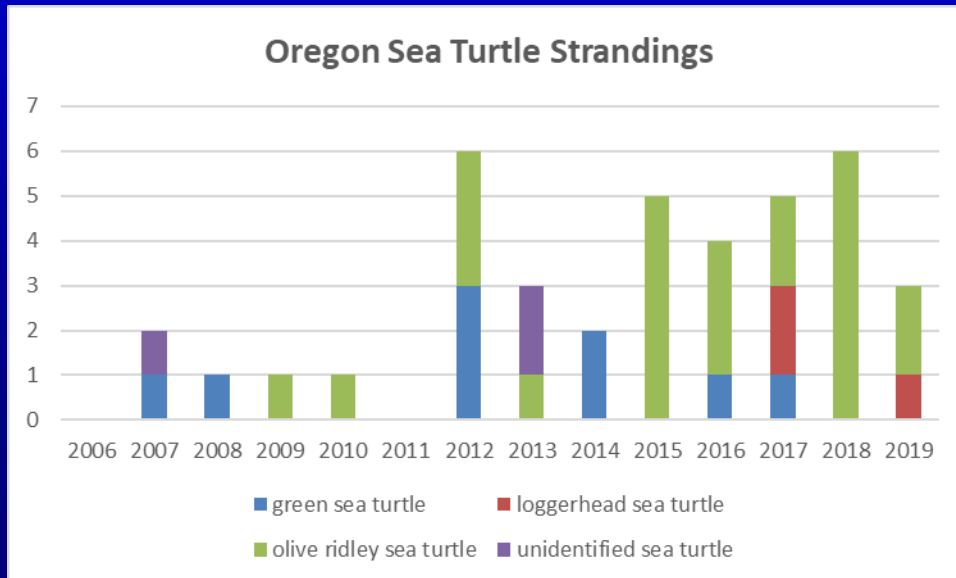
Leatherback Turtle
(*Dermochelys coriacea*)

Nesting: Indonesia
Status: **Endangered**

Critical habitat was designated off of the U.S. West Coast (California, Oregon, and Washington)

Sea Turtles

- Cold-stunned turtles often appear dead but might be salvageable
- Oregon Coast Aquarium can provide rehabilitation

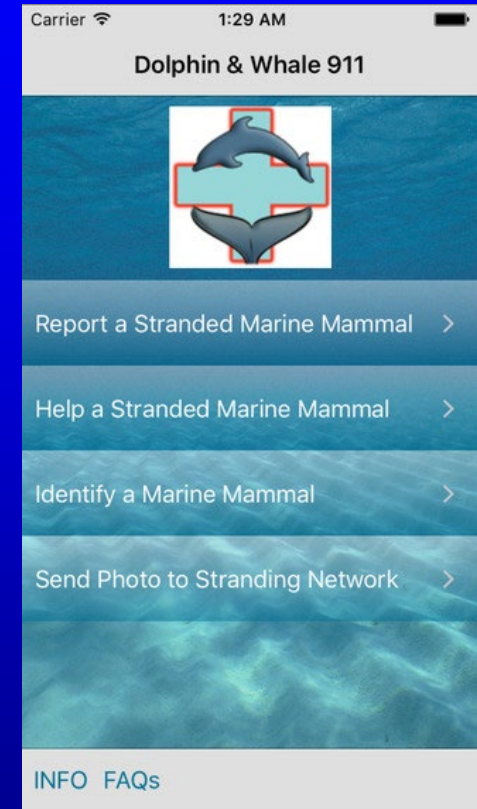


15 turtles rescued since 2009

So How Can You Help?



- Observe and Report Strandings
 - Identification - size, age class, sex
 - General condition - alive or dead, injured, lethargic
 - Location - be as specific as possible
 - Presence of tags - color, number, location
 - Take *digital pictures!*
- Help to educate others
 - to reduce harassment and enhance public safety





OREGON MARINE MAMMAL STRANDING NETWORK

OMMSN

Marine Mammal Institute

Visit our Website

<http://mmi.oregonstate.edu/ommsn>



To report a stranding, call:

Oregon State Police 24-Hour
Wildlife Tipline

1-800-452-7888

Stranding Network Office
541-867-0446

Stranding Cell Phone: **541-270-6830**

E-Mail: stranding@oregonstate.edu

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