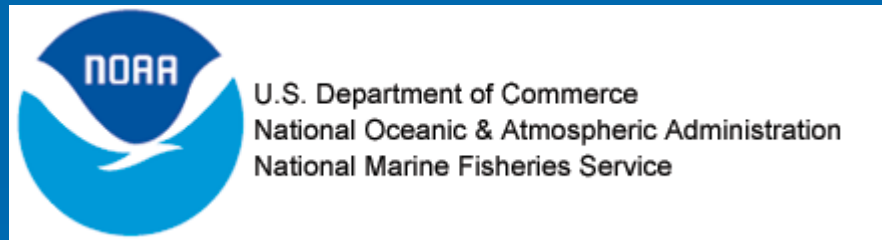


Northwest Region Marine Mammal Stranding Network



Kristin Wilkinson, Marine Mammal Stranding Specialist



MMPA and ESA

The Marine Mammal Protection Act was established in 1972.



Purpose - to conserve and protect marine mammals by regulating activities of U.S. citizens and activities of all persons carried on within the jurisdiction of the United States. (Congressional Report No. 92-863).

Title IV- Marine Mammal Health and Stranding Response

MMPA Regulations

50 CFR §216.3 defines "take" as:

To harass, hunt, capture, collect, or kill or attempt to harass, hunt, capture, collect, or kill any marine mammal.



This includes -

- the negligent or intentional operation of an aircraft or vessel
- the doing of any other negligent or intentional act which results in disturbing or molesting a marine mammal
- feeding or attempting to feed a marine mammal in the wild.

What is the stranding network?

- Established by NOAA and NMFS under the MMPA of 1972.
- Designed to respond to events in WA & OR, nationwide network in place.
- Data is collected and inserted into a national database.

Marine Mammal Jurisdiction

NOAA Fisheries is charged under the MMPA with the protection of whales, dolphins, porpoises, seals and sea lions.

The U.S. Fish and Wildlife Service maintains jurisdiction over manatees, sea otters, polar bears and walrus.



Why is this important?

- Data establishes baseline information on marine mammal communities and their health.
- Educating the public about marine mammals reduces the chances of negative interactions.
- Safety information and increasing awareness.
- Increase in biological information for research.

Specimen Requests

Research (institutions, academia, other agencies)

Community education (science centers, museums)

Letter of request to NOAA Fisheries

Updated every year

At discretion of stranding network members

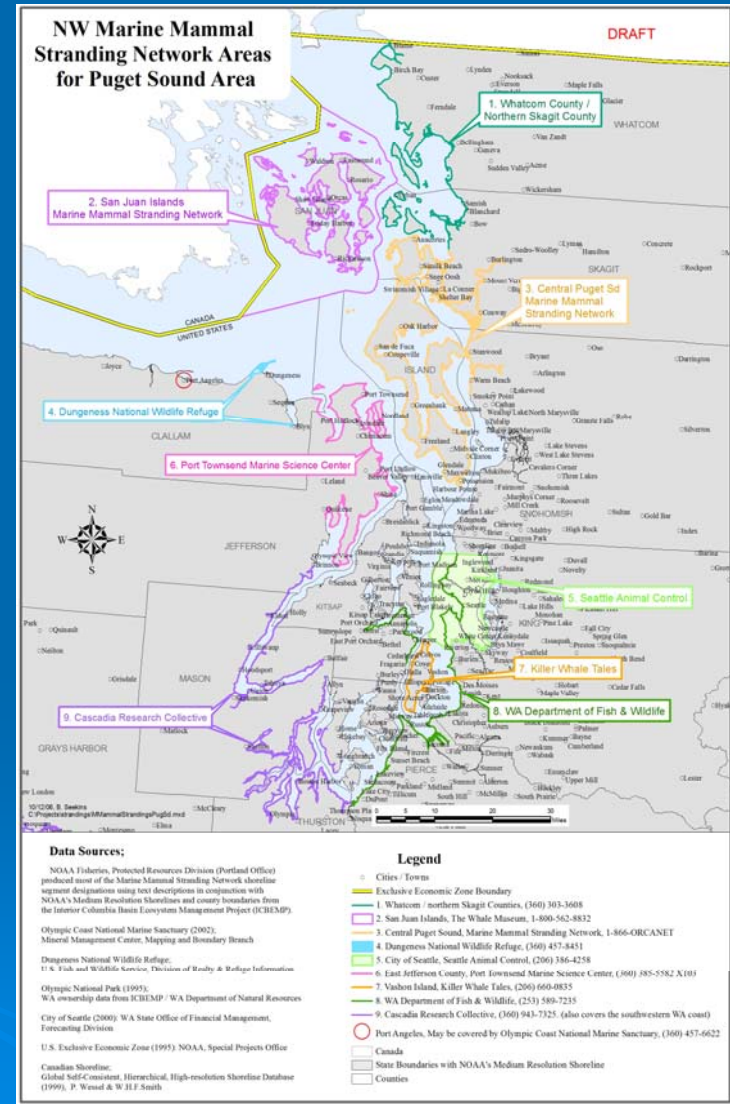
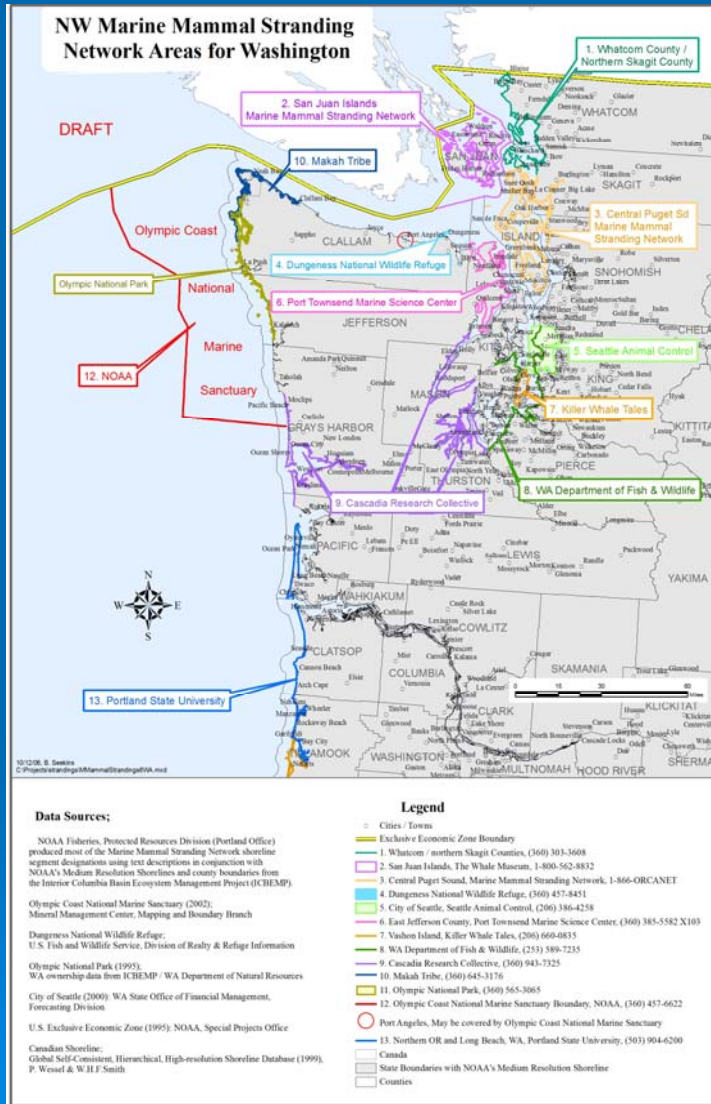
Who is involved?

- Composed of cooperating scientific investigators, institutions, organizations, wildlife and fisheries agencies, and state/federal agencies.



- For example...
 - WDFW & USFW
 - Cascadia Research
 - OSU
 - MMSN
 - OCNMS
 - Olympic National Park
 - Tribal Fisheries
 - PAWS & Wolf Hollow

Stranding Coverage



When you get a call...

- Interview the caller for details.
- Consult the notebook.
- Look at the protocol and the guidelines for handling specific cases.
- Determine your course of action.
 - Public education
 - On-site Level A
 - Removal of animal
 - Pup sitting
 - Signs and Posters

Signs



DO NOT DISTURB !



SEAL PUPS NEED TIME ASHORE

Mothers won't return when people are nearby. Nursing may take place at night. The pup's best chance of survival is to be left alone !

**PLEASE STAY AT LEAST 50 YARDS AWAY
FROM SEAL PUPS.**

**FEDERAL LAW PROHIBITS TOUCHING,
FEEDING, OR DISTURBING MARINE
MAMMALS.**

**REPORT VIOLATIONS TO THE NOAA FISHERIES
OFFICE FOR LAW ENFORCEMENT 1-800-853-1964**



**SEALS AND SEA LIONS USE
SHORELINE HABITAT.**

Do not disturb them - it's the law!
Keep dogs away.

Chasing, tormenting, molesting, capturing or feeding
these animals is harassment and is prohibited.

This animal has been reported to the National Marine Fisheries Service and is under observation.

PLEASE KEEP DOGS AWAY and DO NOT APPROACH



WSG AS 97-02

Health Guidelines

- Wear gloves and protective gear.
- Wash hands thoroughly after animal and specimen contact.
- If you are bitten, cut, or injured while handling an animal or tissues, seek professional medical attention.
- Consult your physician before working with marine mammals.

The Level A!

➤ Important Info...

- Location (GPS)
- Date
- Species
- Sex
- Length & Weight
- Human interaction
- Tags

MARINE MAMMAL STRANDING REPORT - LEVEL A DATA

FIELD #: _____ NMFS REGIONAL #: _____ NATIONAL DATABASE #: _____
(NMFS USE) (NMFS USE)

COMMON NAME: _____ GENUS: _____ SPECIES: _____

EXAMINER: _____ Letterholder: _____
 Name: _____ Affiliation: _____
 Address: _____ Phone: _____

<p>LOCATION</p> <p>State: _____ County: _____ City: _____ Locality Details: _____ _____ _____</p> <p>Latitude: _____ N Longitude: _____ W</p>	<p>OCCURRENCE DETAILS MS#: _____ <small>(NMFS USE)</small></p> <p>Mass Stranding: <input type="checkbox"/> YES <input type="checkbox"/> NO # Animals: _____</p> <p>Signs of Human Interaction: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Could Not be Determined (CBD) <small>(Check one or more)</small></p> <p><input type="checkbox"/> 1. Boat Collision <input type="checkbox"/> 3. Fishery Interaction <input type="checkbox"/> 2. Shot <input type="checkbox"/> 4. Other Human Interaction: _____</p> <p>How determined: <input type="checkbox"/> External Exam <input type="checkbox"/> Internal Exam <input type="checkbox"/> Not Examined Other Causes: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> CBD Describe: _____</p>																								
<p>DATE OF INITIAL OBSERVATION</p> <p>Year: _____ Month: _____ Day: _____</p> <p>STATUS <small>(Check ONE)</small></p> <p><input type="checkbox"/> 1. Alive <input type="checkbox"/> 4. Advanced Decomposition <input type="checkbox"/> 2. Fresh Dead <input type="checkbox"/> 5. Mummified/Skeletal <input type="checkbox"/> 3. Moderate Decomposition <input type="checkbox"/> 6. Dead - Condition Unknown</p>	<p>DATE OF EXAMINATION (LEVEL A) <input type="checkbox"/> Not Able to Examine</p> <p>Year: _____ Month: _____ Day: _____</p> <p>CONDITION <small>(Check ONE)</small></p> <p><input type="checkbox"/> 1. Alive <input type="checkbox"/> 4. Advanced Decomposition <input type="checkbox"/> 2. Fresh Dead <input type="checkbox"/> 5. Mummified/Skeletal <input type="checkbox"/> 3. Moderate Decomposition <input type="checkbox"/> 6. Dead - Condition Unknown</p>																								
<p>INITIAL LIVE ANIMAL DISPOSITION <small>(Check one or more)</small></p> <p><input type="checkbox"/> 1. Left at Site <input type="checkbox"/> 5. Euthanized at Site <input type="checkbox"/> 2. Immediate Release at Site <input type="checkbox"/> 6. Died at Site <input type="checkbox"/> 3. Relocated <input type="checkbox"/> 7. Transferred to Rehabilitation <input type="checkbox"/> 4. Disentangled <input type="checkbox"/> 8. Died During Transport <input type="checkbox"/> 9. Other</p> <p>CONDITION <small>(Check ONE)</small></p> <p><input type="checkbox"/> 1. Sick <input type="checkbox"/> 3. Apparently Healthy <input type="checkbox"/> 5. Other <input type="checkbox"/> 2. Injured <input type="checkbox"/> 4. Out of Habitat</p> <p>Date: _____ Rehabilitation Facility: _____ Comments: _____ _____</p>	<p>MORPHOLOGICAL DATA</p> <p>SEX <small>(Check ONE)</small> AGE CLASS <small>(Check ONE)</small></p> <p><input type="checkbox"/> 1. Male <input type="checkbox"/> 1. Adult <input type="checkbox"/> 4. Pup/Calf <input type="checkbox"/> 2. Female <input type="checkbox"/> 2. Subadult <input type="checkbox"/> 5. Unknown <input type="checkbox"/> 3. Unknown <input type="checkbox"/> 3. Yearling</p> <p>Straight Length: _____ <input type="checkbox"/> cm <input type="checkbox"/> in <input type="checkbox"/> actual <input type="checkbox"/> estimate Weight: _____ <input type="checkbox"/> kg <input type="checkbox"/> lb <input type="checkbox"/> actual <input type="checkbox"/> estimate</p> <p>PHOTOS/VIDEOS TAKEN: <input type="checkbox"/> YES <input type="checkbox"/> NO Disposition: _____ _____</p>																								
<p>TAG DATA</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>ID#</th> <th>Color</th> <th>Type</th> <th>*Placement (Circle One)</th> <th>Applied</th> <th>Present</th> </tr> </thead> <tbody> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>D DF L LF LR RF RR</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>D DF L LF LR RF RR</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>D DF L LF LR RF RR</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table> <p><small>*D=Dorsal; DF=Dorsal Fin; L=Lateral Body LF=Left Front; LR=Left Rear; RF=Right Front; RR=Right Rear</small></p>	ID#	Color	Type	*Placement (Circle One)	Applied	Present	_____	_____	_____	D DF L LF LR RF RR	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	D DF L LF LR RF RR	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	D DF L LF LR RF RR	<input type="checkbox"/>	<input type="checkbox"/>	<p>WHOLE CARCASS DISPOSAL <small>(Check one or more)</small></p> <p><input type="checkbox"/> 1. Left at Site <input type="checkbox"/> 4. Rendered <input type="checkbox"/> 7. Unknown <input type="checkbox"/> 2. Buried <input type="checkbox"/> 5. Sunk <input type="checkbox"/> 3. Towed <input type="checkbox"/> 6. Frozen for Later Examination</p> <p>SPECIMEN DISPOSITION <small>(Check one or more)</small></p> <p><input type="checkbox"/> 1. Scientific Collection <input type="checkbox"/> 2. Educational Collection <input type="checkbox"/> 3. Other: _____</p> <p>Comments: _____ _____</p> <p>NECROPSIED <input type="checkbox"/> YES <input type="checkbox"/> NO Date: _____ NECROPSIED BY: _____</p>
ID#	Color	Type	*Placement (Circle One)	Applied	Present																				
_____	_____	_____	D DF L LF LR RF RR	<input type="checkbox"/>	<input type="checkbox"/>																				
_____	_____	_____	D DF L LF LR RF RR	<input type="checkbox"/>	<input type="checkbox"/>																				
_____	_____	_____	D DF L LF LR RF RR	<input type="checkbox"/>	<input type="checkbox"/>																				

NOAA Form 89-864 (rev. 6-01)
 OMB No. 0648-0178, Expires May 31, 2004

PLEASE USE BACK SIDE OF THIS FORM FOR ADDITIONAL REMARKS

How to fill out the Level A

- **Field #:** The coordinator should have a system for assigning this number. For example, Year – Location Month Date-Case #
 - 2006-SJ0910-01
- **NMFS Regional # and National Database #:** Are always left blank, this will be assigned by NOAA Fisheries after the report has been sent in.
- **Findings of Human Interaction:** Only check YES if you have 100% evidence of human interaction. If you check YES, you need to provide details.



When should I fill out a Level A?

Situation	Fill out a Level A?
Stranded animal from a phone call, no response, sufficient info and credible	Yes
Live pup on the beach that is relocated or transferred to rehab (more than posting signs or pup sitting)	Yes
All dead animals when info is provided	Yes
Healthy animals on the beach	No

SEASONS

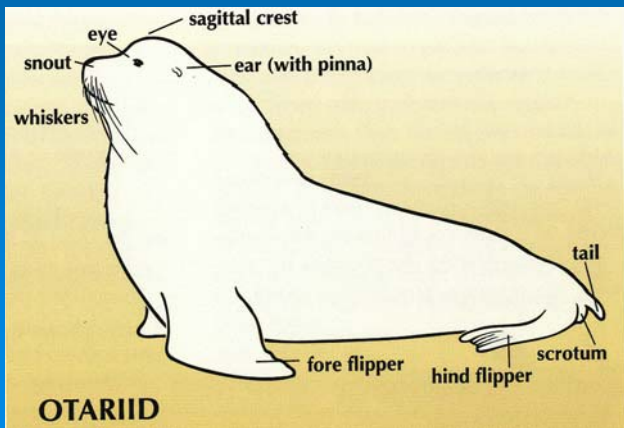
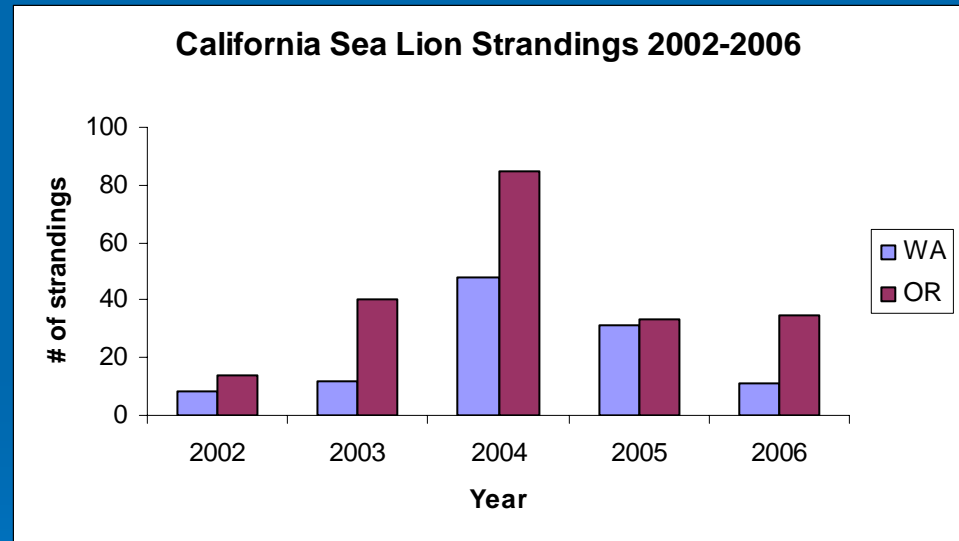
Seasons	Type of Strandings
Spring	Gray whales, harbor seal pups, elephant seals, CSL, Stellers, Fur Seals
Summer	Harbor and Dall's Porpoise, Harbor Seal pups, Orcas
Fall	Weaned harbor seal pups, CSL & occasional sea turtle, elephant seals, Fur Seals
Winter	Harbor porpoise, CSL, Fur Seals

Otariids!

- Order Pinnipedia – Family Otariidae
- Sea lions and Fur Seals (ear flap present)



- California Sea Lions
- Steller (Northern) Sea Lions
- Northern Fur Seal



California Sea Lions



Location: August to April on the coast of Washington.

Size: Average male is 8 feet and 800 pounds, females are 5 feet and 250 pounds.

Reproduction: Breeding takes place from May to July, but breeding grounds are typically south of Oregon. Males establish their territories and females give birth and then mate one month later.

Gestation: 10 months
Lactation: Weaned by 8 months

Behavior: Rarely aggressive. Shoreline habitat, thermoregulation, sailing, entanglements.

Strandings: California sea lions are becoming more abundant in Washington and Oregon State.

ID: Fore and hind flippers mostly hairless, nails presents on hind limbs on middle digits. Short fur, beige and brown whiskers. Pronounced sagittal crest.

Steller Sea Lions



Location: Can be seen in the Pacific Northwest but are considered to be threatened under the Endangered Species Act.

Size: Males are 8.5-11 feet in length and can be up to 2,200 pounds. Females are 6-7 feet and up to 800 pounds.

Reproduction: Males form a harem at rookeries to establish their territory for breeding seasons. Females arrive and give birth in mid-May to June, mating again only two weeks after giving birth. **Gestation:** 10 months **Lactation:** One year

Behavior: Steller sea lions are known for their curiosity and playfulness, can be aggressive.

Strandings: Very important information since they are listed, shot cases.

ID: Skull broad and flat, females are the same size as male CSL, males have thick fur around neck.

Northern Fur Seal

Location: Found from California through Alaska, across the North Pacific to Japan.

Size: Males range from 6-7.5 feet and can be up to 620 pounds. Females are 3.5 - 5 feet and are around 120 pounds.

Reproduction: Territories are established in May and June and females will arrive and give birth, mating 8-10 days after the pup is born.

Gestation: 10 months

Lactation: Four to five months

Behavior: This species only comes ashore to breed, and is pelagic for 7 to 10 months of the year. This species is known to be aggressive.

ID: Long fur, long ear pinnae, fur line on flippers, hind and fore flippers hairless. Rostrum flush with head.

Strandings: Several this year, always found on the Outer Coast of WA and OR.

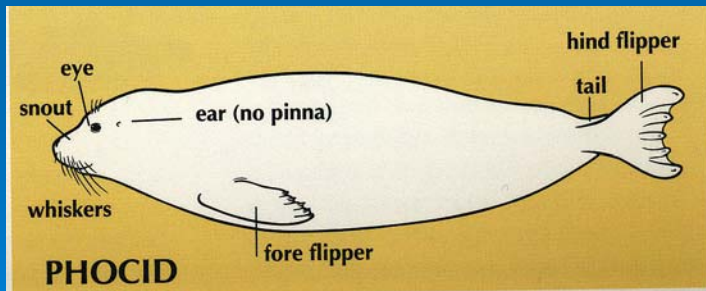
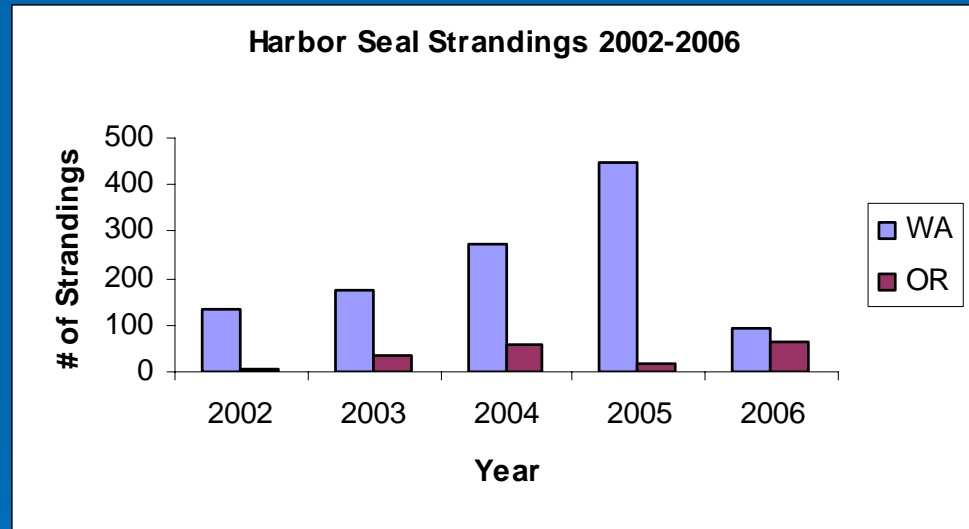


Phocids!



- Order Pinnipedia – Family Phocidae
- True seals (earless)

- Northern Elephant Seals
- Harbor Seals



Harbor Seal



Location: Can be seen in throughout Washington and Oregon, Europe, Asia, and northern coasts of North America.

Size: Males and Females range from 4-6 ft. and a maximum of 310 pounds.

Behavior: Shoreline habitat, foraging while nursing.

Reproduction: Nurseries provide protection for pups; they are sexually mature at 3-7 years.
Gestation: 10 months.

Lactation: Weaned at 4-6 weeks, milk is 50% fat.

Strandings: Harbor seals are the most common species to strand in Washington and Oregon State.

ID: Very round shaped body, small fore flippers.

Harbor Seal Reproduction

<u>Location</u>	<u>Time of Year</u>
Columbia River, Willapa Bay, Grays Harbor	Mid-April - June
Olympic Peninsula	May - July
San Juan Islands, Eastern Puget Sound	June - August
Southern Puget Sound	July - September
Hood Canal	August - January

Northern Elephant Seal

Location: Can be found from coastal Baja California to the Gulf of Alaska. 13,000 miles roundtrip.

Size: Males range from 12-16 feet and can weigh up to 5,000 pounds. Females are smaller and range from 7-12 feet and weigh around 2,000 pounds.

Reproduction: Males form harems usually when they are 9-10 years of age, battling for status in the social hierarchy. **Gestation:** 11 months.

Lactation: No more than one month.

Behavior: Molting 4-5 weeks, shoreline habitat.

Color: Pups are born black, silver at one month. Adults are light brown to black.

ID: Largest pinniped in N. Hemisphere. Males have elongate snout. Female snout extends just beyond the mouth.

Strandings: Few, mostly molting animals reported.

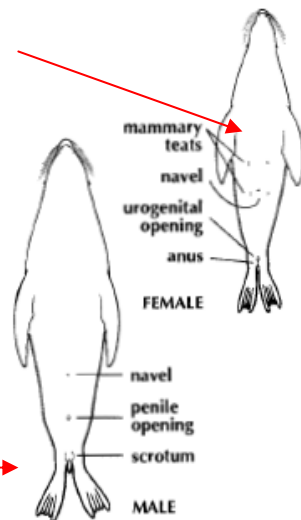


Sex determination

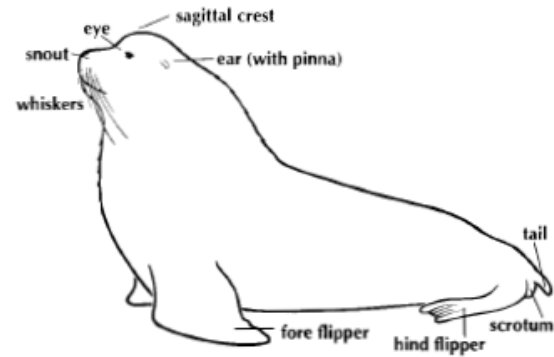
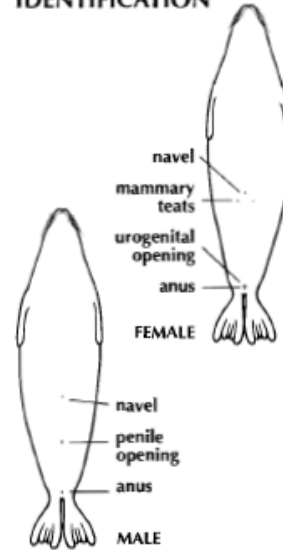
Morphology of Pinnipeds

44

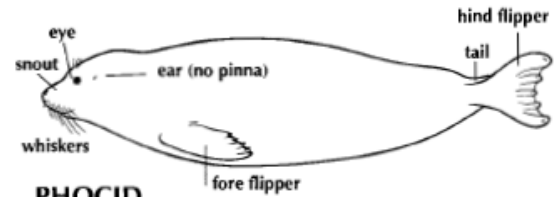
OTARIID GENDER IDENTIFICATION



PHOCID GENDER IDENTIFICATION



OTARIID



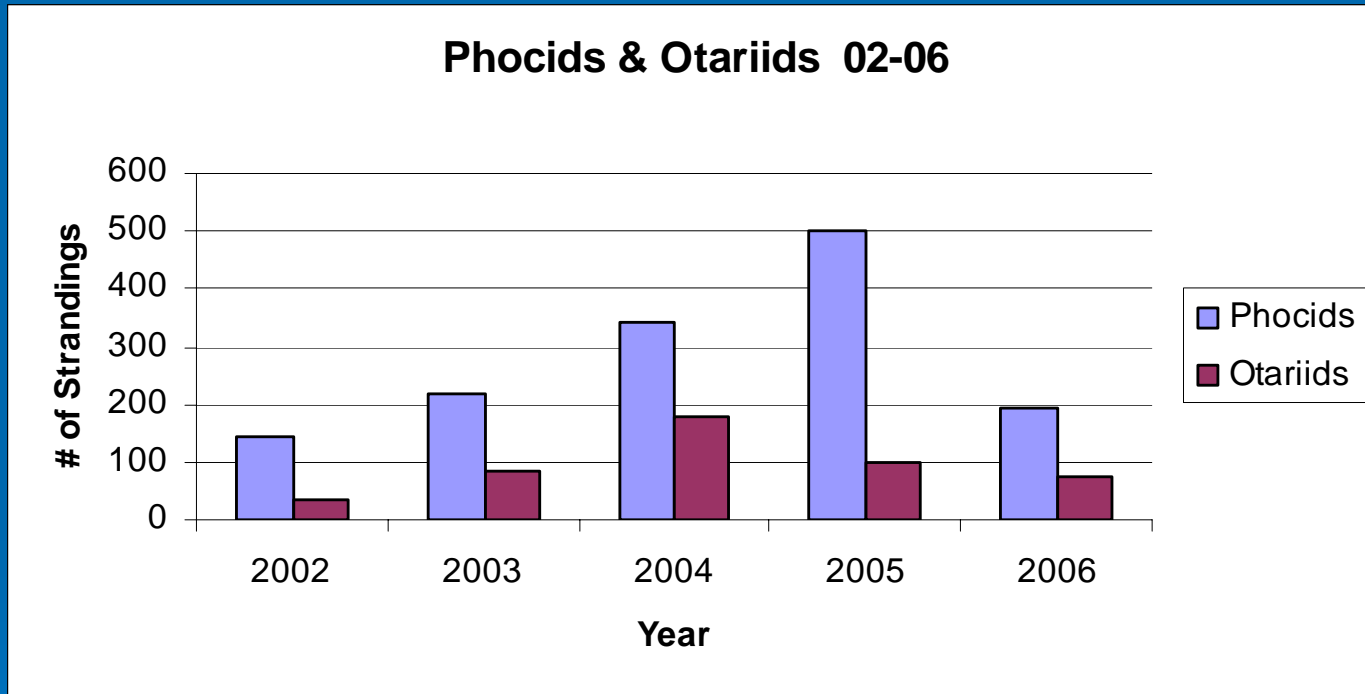
PHOCID



Phocids vs. Otariids

Hind limbs cannot rotate	Locomotion	Hind limbs rotate forward
Hind limbs	Swimming	Fore limbs
No ear flap	Ear	Ear flap present
5 on hind flippers	Claws	3 on hind flippers
Relatively small	Fore Flipper size	Large, 1/4 th body length
Spotted or banded	Pelage	Uniform
Internal testes, one set of teats	Sex Determination	External testes, two sets of teats
Equal, smaller or larger	Sexual Dimorphism	Males larger

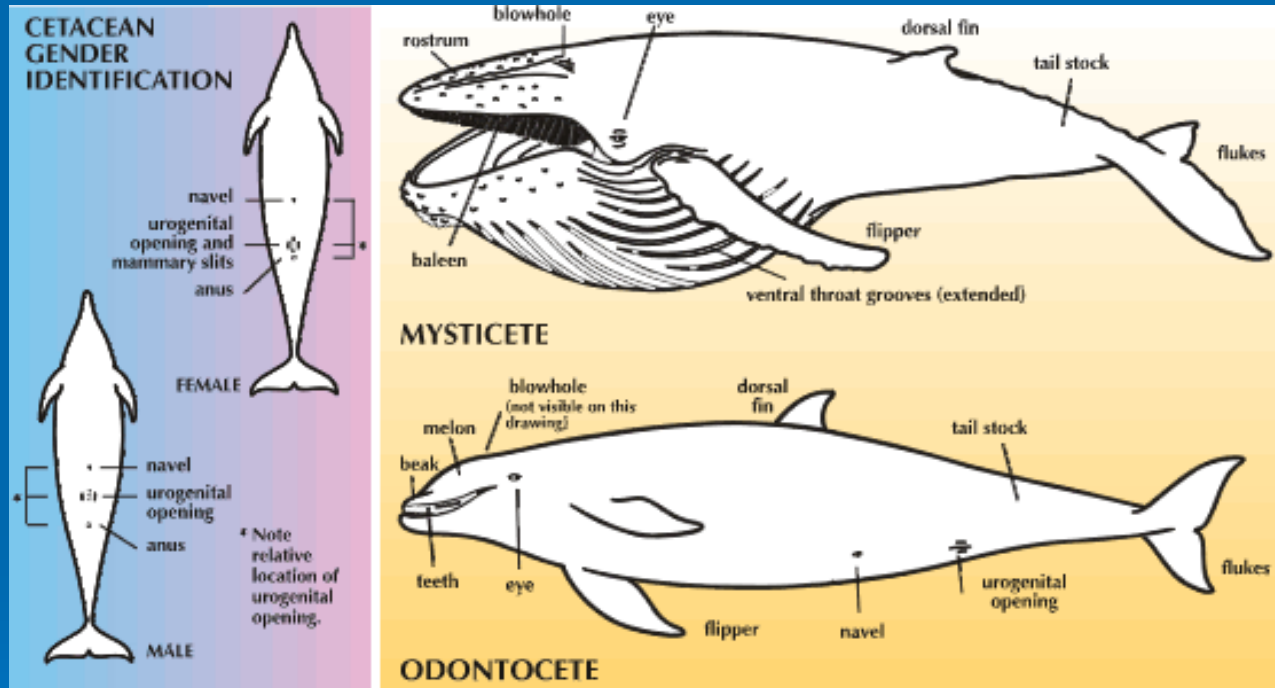
Stranding Data



QUIZ!



Cetacean Morphology



Odontocetes!



- Order Cetacea, Suborder Odontoceti
- Toothed whales

- Harbor Porpoise
- Striped Dolphin
- Saddleback Dolphin
- Pygmy Sperm Whale
- Dwarf Sperm Whale
- Sperm Whale
- Northern Right Whale Dolphin
- Cuvier's Beaked Whale
- Stejneger's Beaked Whale
- Dall's Porpoise
- Risso's Dolphin
- Pacific White Sided Dolphin
- False Killer Whale
- Short finned Pilot Whale
- Orca
- Baird's Beaked Whale
- Hubb's Beaked Whale

Harbor Porpoise



Location: Harbor porpoises can be found in cold waters throughout the Northern Hemisphere and occur in coastal waters no deeper than 300 meters.

Size: The average adult is 5 feet in length and weighs a maximum of 150 pounds.

Reproduction: Sexually mature at 3-5 years and they breed in the summer months. Most harbor porpoises have a life span of 10-13 years.

Behavior: Harbor porpoises are the smallest porpoise in the Pacific Northwest and are considered to be shy.

Color: Dark gray to black on top, white undersides.

ID: Stocky with small pointed flippers. No beak.

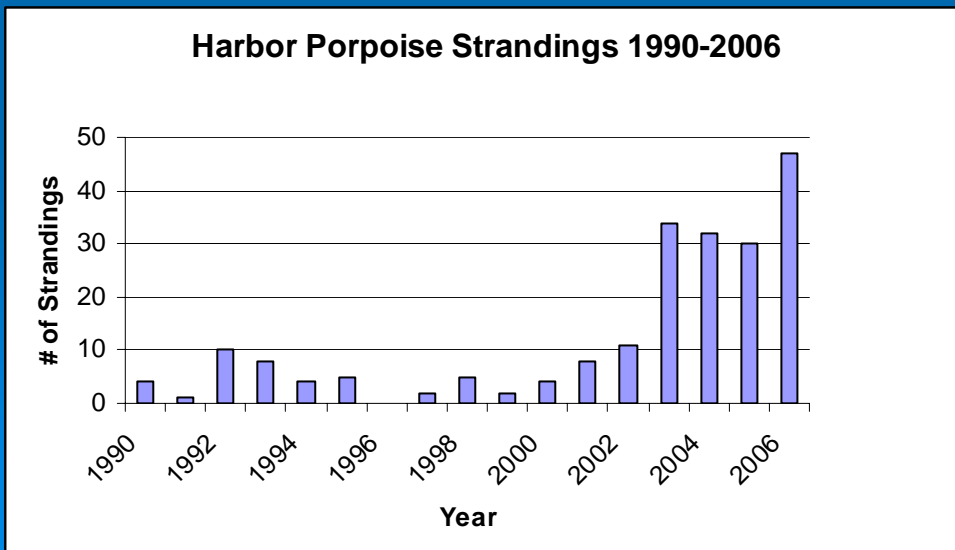
Strandings: UME 2006/2007



Harbor Porpoises



Year	# of strandings
1990	4
1991	1
1992	10
1993	8
1994	4
1995	5
1996	0
1997	2
1998	5
1999	2
2000	4
2001	8
2002	11
2003	34
2004	32
2005	30
2006	64



Dall's Porpoise

Location: Common from the Bering Sea and the Gulf of Alaska and as far south as Baja California.

Size: Adults average six feet in length and a maximum of 490 pounds.

Reproduction: Two calving periods, one taking place in February and March, and the other in July and August. Life span of 20 years.

Gestation: 11 ½ months.

Lactation: 2-4 months

Behavior: Are typically seen in groups of 2-20 individuals and they are very fast swimmers, with observations of speeds up to 35 mph. They are common bow riders and are rarely acrobatic.

Color: Black with white side and light belly. White on dorsal fin.

ID: Thick body, pointed dorsal fin and flippers. NO white eye spot. Roostertail.

Strandings: Since 2002 a total of 46 Dall's porpoise have stranded in Washington and Oregon State.



Orca



Location: Fall & Winter in the North Pacific and Inland Waters. Summer core range north of Admiralty inlet with few incursions to the south.

Size: Average of 28 feet and 7.5 tons, can reach 32 feet and 11 tons.

Reproduction: Males are mature at 19 feet and females when they are 16 feet. Winter is the peak calving period and gestation is 12 to 16 months. Lactation is estimated at one to two years. Life span 50-60 for females, 30 for males. Maximum 80-90/50-60.

Behavior: 3 Ecotypes

- Offshore
- Transient
- Resident

Southern Residents ESA Listed Nov. 2005



Dolphin vs. Porpoise



Conical, peg-like	<i>Teeth</i>	Flattened, spade-like
Bulbous melon, pronounced beak	<i>Rostrum</i>	Forehead tapers smoothly to a blunt snout
Swallow whole	<i>Feeding</i>	Dismember with teeth
Usually have a hooked or curved dorsal fin (some lack dorsal fin)	<i>Dorsal Fin</i>	Usually have a dorsal fin shaped like a triangle (some lack dorsal fin)

Mysticetes!



- Order Cetacea, Suborder Mysticeti
- Baleen Whales

- Gray Whale

- Sei Whale

- Blue Whale

- Northern Right Whale

- Minke Whale

- Fin Whale

- Humpback Whale



Gray Whale



Location: Gray whales spend April-November in their Arctic feeding grounds and December-April in Mexican breeding areas.

Size: Adult gray whale length is 39-46 feet, with the largest recorded measuring a little longer than 49 feet. Weight is 15-39 tons. A gray whale can live approximately 70 years.

Reproduction: Gray whales are sexually mature at 8 years of age and they breed in November and December during their migration south.

Gestation: 13.5 months

Lactation: Lasts anywhere from 7 to 9 months.

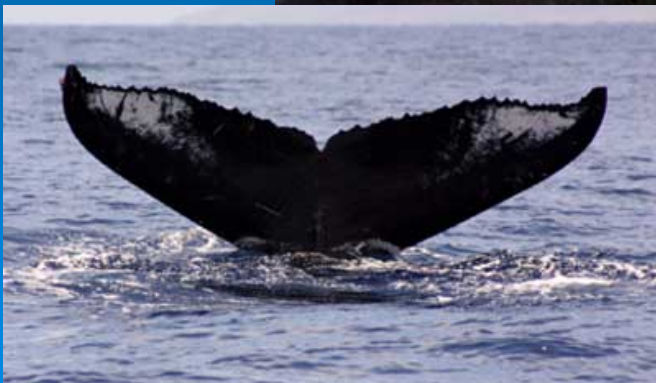
Behavior: They are usually found in groups of 2-3 animals.

Color: Mottled gray, some patches of orange due to whale lice or white patches of barnacles.

ID: Triangular head, mottled color, NO dorsal fin, low hump with ridges. Smooth and pointed flukes.

Strandings: Gray whale strandings in Washington and Oregon coast are fairly common and provide resources for education and scientific research.

Humpback Whale



Location: Migrate off of WA & OR. AK to HI or Mexico.

Size: Average of 45 feet and 30 tons. Female larger than males.

Reproduction: Gestation is 11.5 months, fast while at breeding grounds. Lactation: One year.

Behavior: Males sing, male escorts, solitary or with calf. Acrobatic.

Color: Black body with white on belly and throat. White on underside of flippers and flukes.

ID: Flippers are 1/3 of the body length and notched, triangular dorsal fin, a lot of ventral grooves.

Strandings: Rare, OC in 9/06.

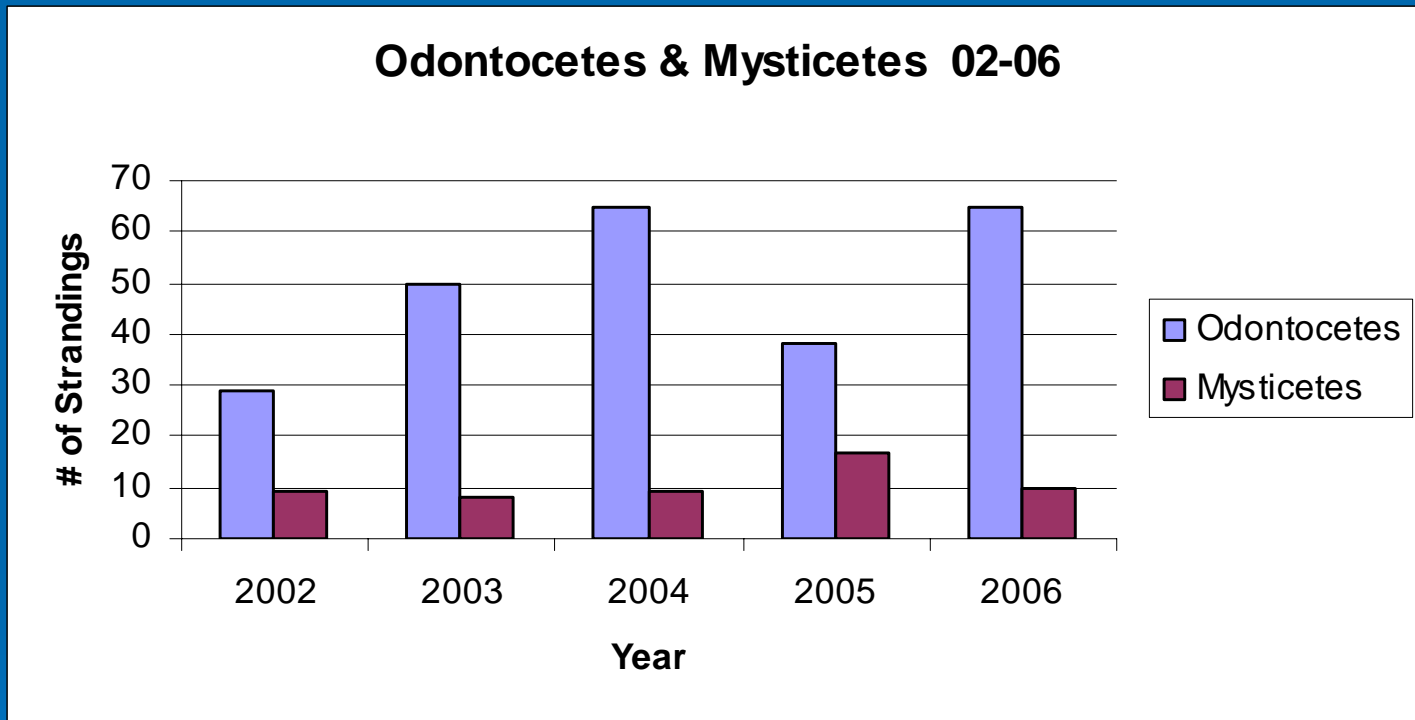


Mysticetes vs. Odontocetes

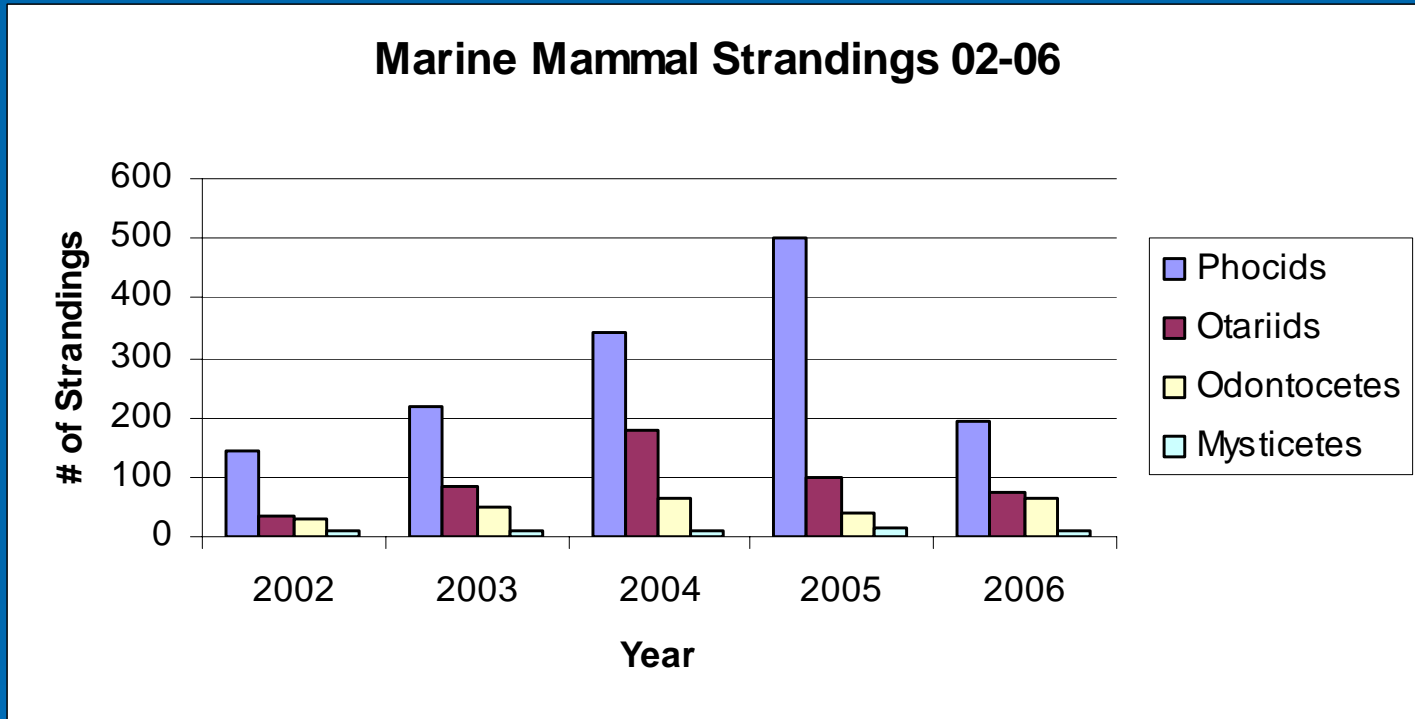


Baleen	<i>Feeding</i>	Teeth
Two	<i>Blowhole</i>	One
Small groups	<i>Travel</i>	Complex social systems
No evidence	<i>Echolocation</i>	Present
Up to 100 ft.	<i>Size</i>	Range from 5-60 ft.

Stranding Data



The Big Picture!



Sea & River Otters!



Sea and River Otters = Family Mustelidae

Sea	Vs.	River
Marine Only!	<i>Habitat</i>	Marine and Fresh!
Kelp beds, 15	<i>Groups</i>	Family Groups
100 lbs.	<i>Weight</i>	30 lbs.
1/3	<i>Tail</i>	1/2
Belly up, surface	<i>Swimming</i>	Belly down, surface

Opportunities

- Visit our website!

<http://www.nwr.noaa.gov/Marine-Mammals/index.cfm>

- Training sessions

- Coupeville March 21st 6:30-9:30
- WBW Snohomish/Skagit Co. Stanwood April 20th 9-12

- Coordinate with existing stranding groups and local government agencies

- LOA

- Grant opportunities

Questions?

