

The Natural History of Harbor Seals



- **No sexual dimorphism**
- **Weight 200-250 lbs**
- **Length 4-5 ft**
- **Age - @30 years in captivity**



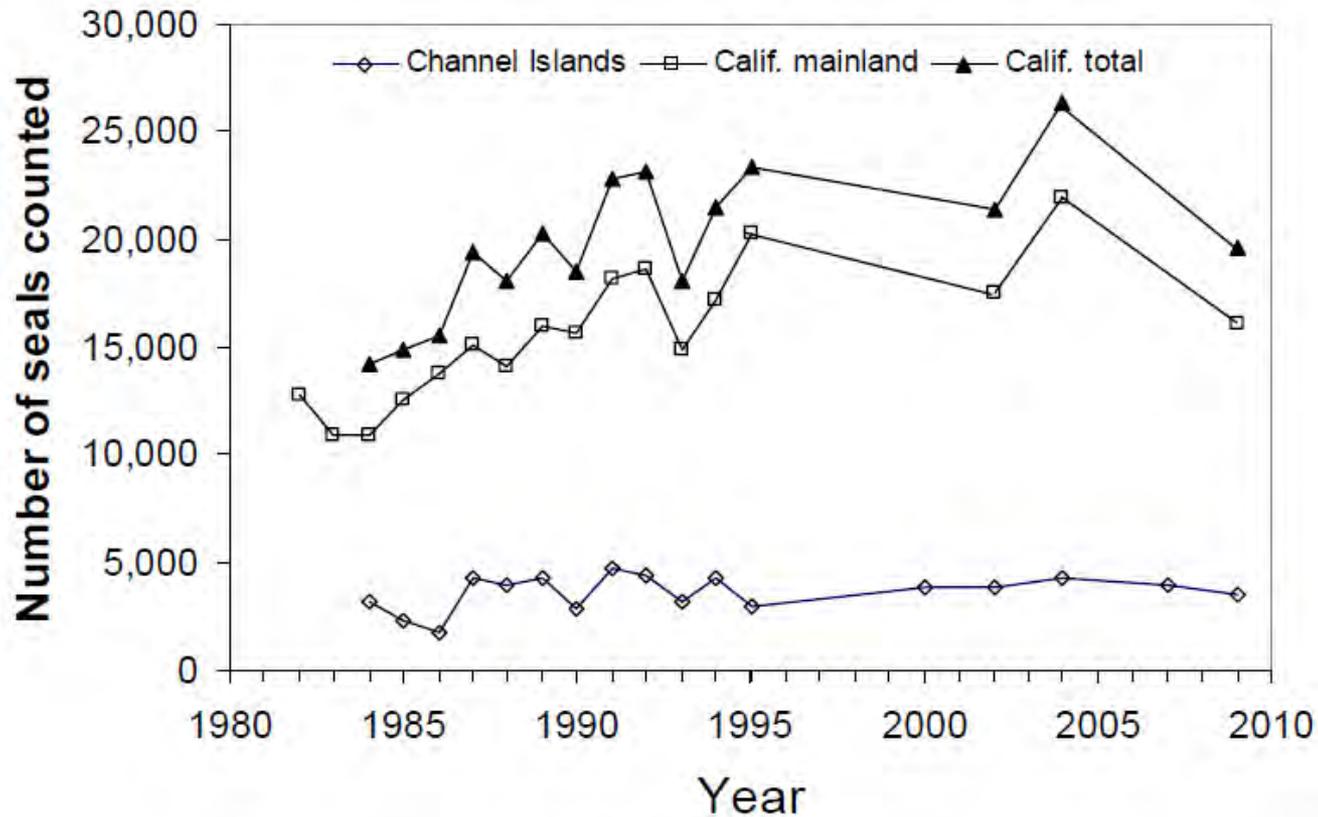
No External Ear Flap

Smaller front flipper

Wide hind flipper

Cannot Rotate Hind flipper

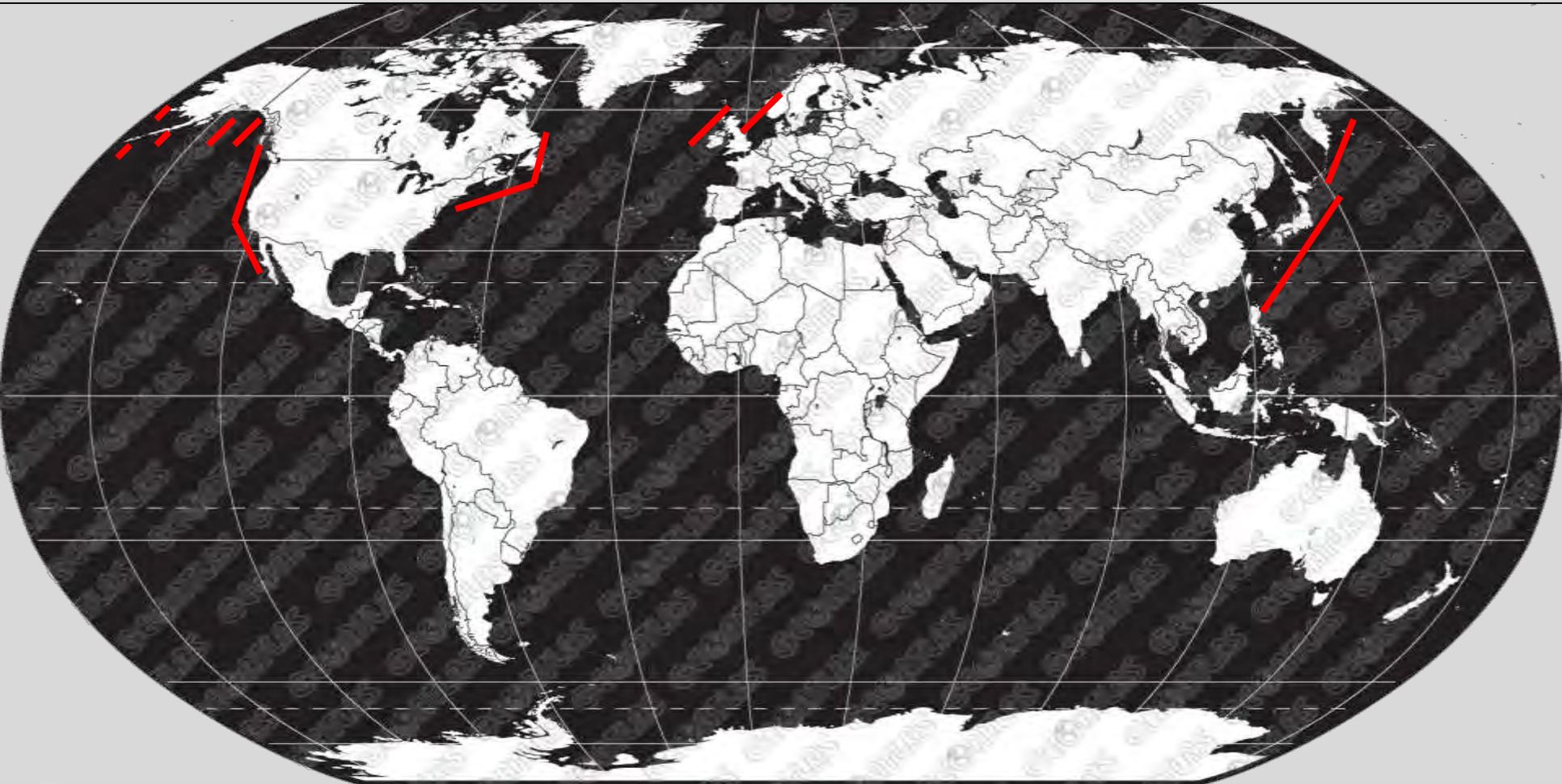
General Population Status and Trends



Population in 2011:

- *Stable*
- *30,196 + in CA*
- *@6,000 at Point Reyes*

Harbor seal world distribution



Color Phases



© Sophie Webb



© Sophie Webb



Red = Iron Oxide attached to fur



Red Seals



Algae grows on fur of seals





Habitat Needs of All Seals

Terrestrial
reproduction
physiological
historical

Marine
food
travel

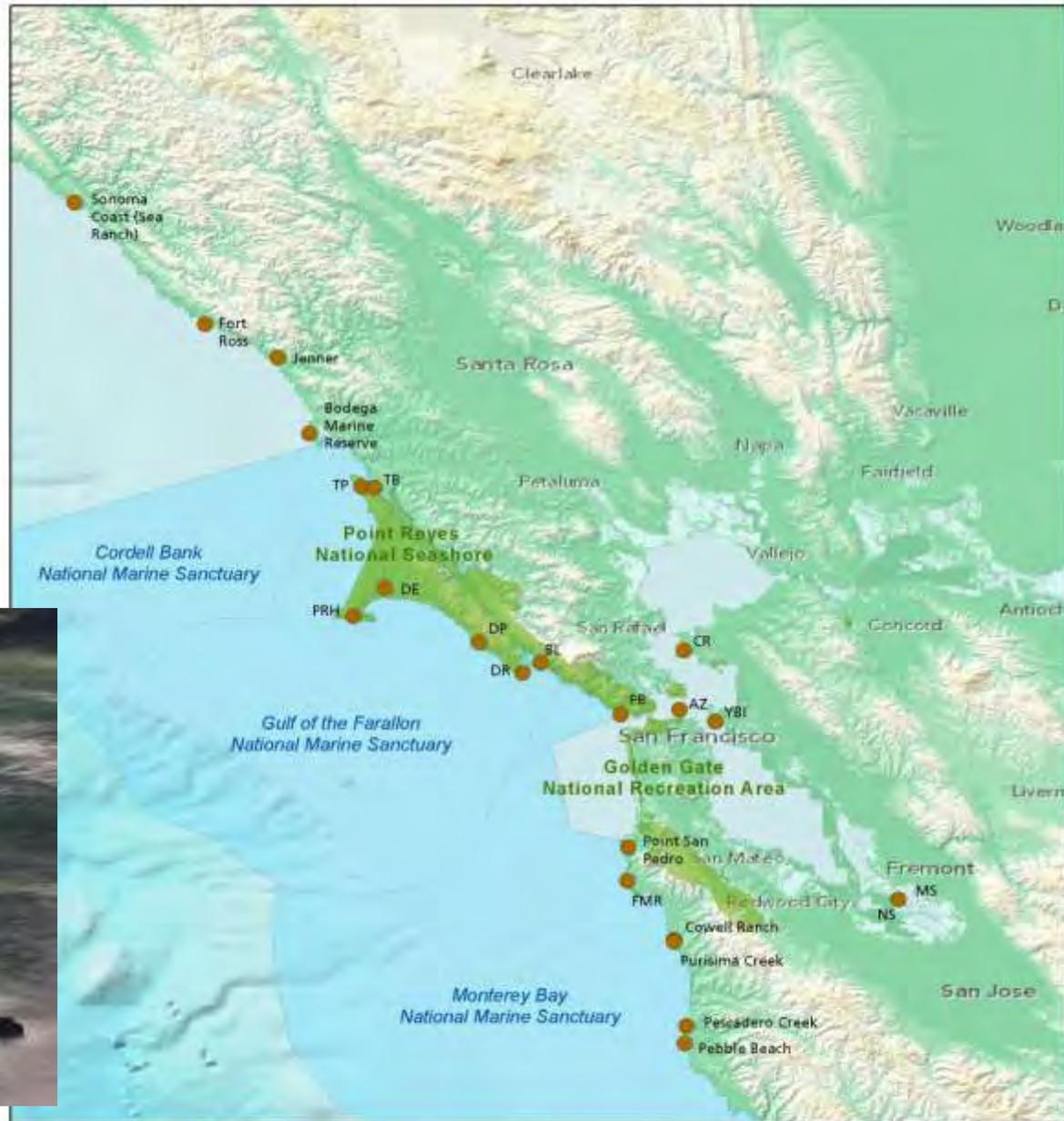


Marine life



Photo from web

Harbor Seal Regional Colonies



● Harbor Seal Colonies

■ National Park

■ National Marine Sanctuary

0 10 20 Miles



Data Sources:
Harbor Seal Colonies,
National Park Boundary (NPS)
National Marine Sanctuaries (USGS GAP)
Basemap compiled by ESRI

Haul-outs : locations on land where seals gather to rest, give birth, care for pups, molt.

- **Sandy Beaches**



- **Tidal Mud Flats**



- **Tidal Rocky**



- **Tidal Sandbars**



Haul out site examples























Photos by Raleigh McLemore







Man made structures





Daily Pattern
Time of day
Tide

Seasonal Pattern

Breeding (March-June)

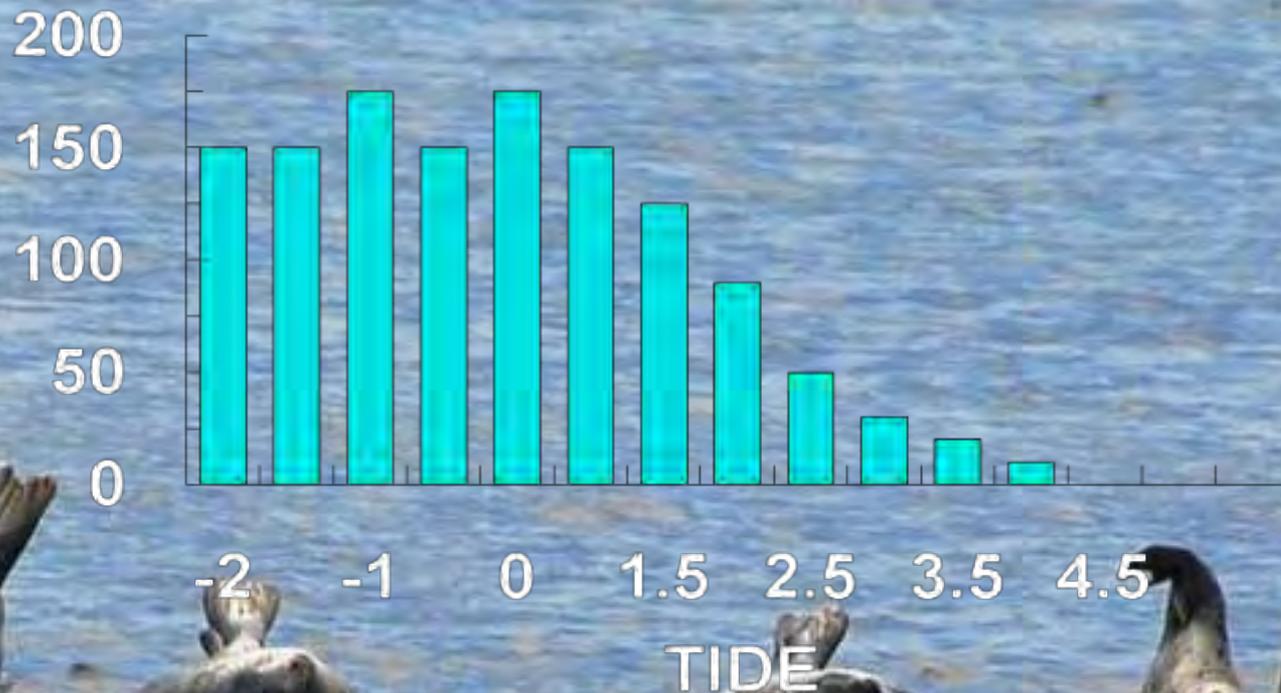
Molt (July-August)

Non-breeding (Sept-Feb)

Daily haul out pattern



Tidal haul out pattern



Meyers Grade Low Tide



Sites used high
and low tide

Meyers Grade High Tide





Seasonal variation in number

Pupping (daily)

Mar-Jun

Molt (daily)

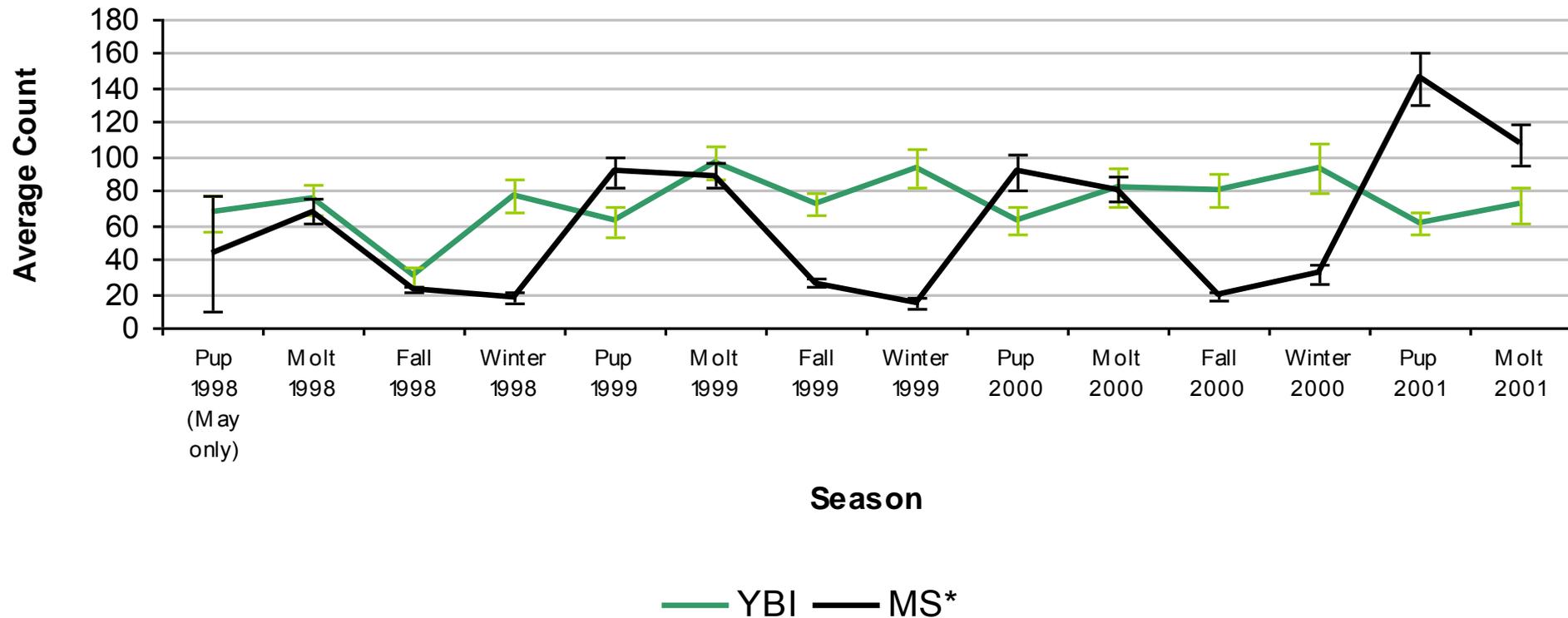
Jul-Aug

Fall/Winter

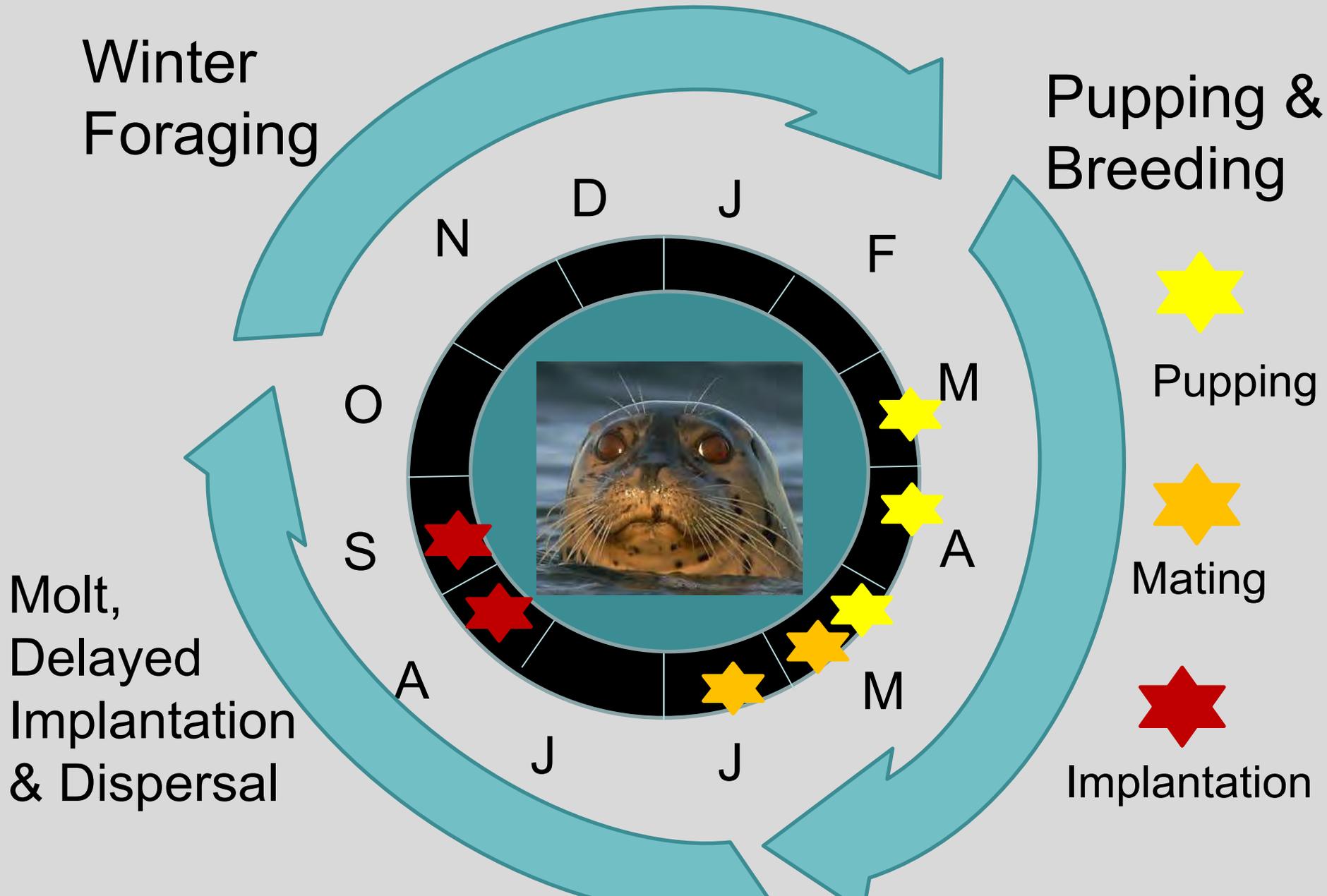
Sept-Feb



Seasonal and annual variation



Annual cycle



Pupping



- ❖ Females give birth to one pup/year
- ❖ Females wean pups at 30 days
- ❖ Pups swim at birth



❖ Pups weigh 24 lbs at birth

❖ Pups weigh 50 lbs at weaning (30 days)



Birth sequence



Drakes Estero 2007
Photos by volunteer
Judy Bourke



Birthing



- ❖ Mothers recognize pups by sight, sound and smell



Newborn pups



Lanugo pup



Pup without lanugo

Photos from Sue Van Der Wal



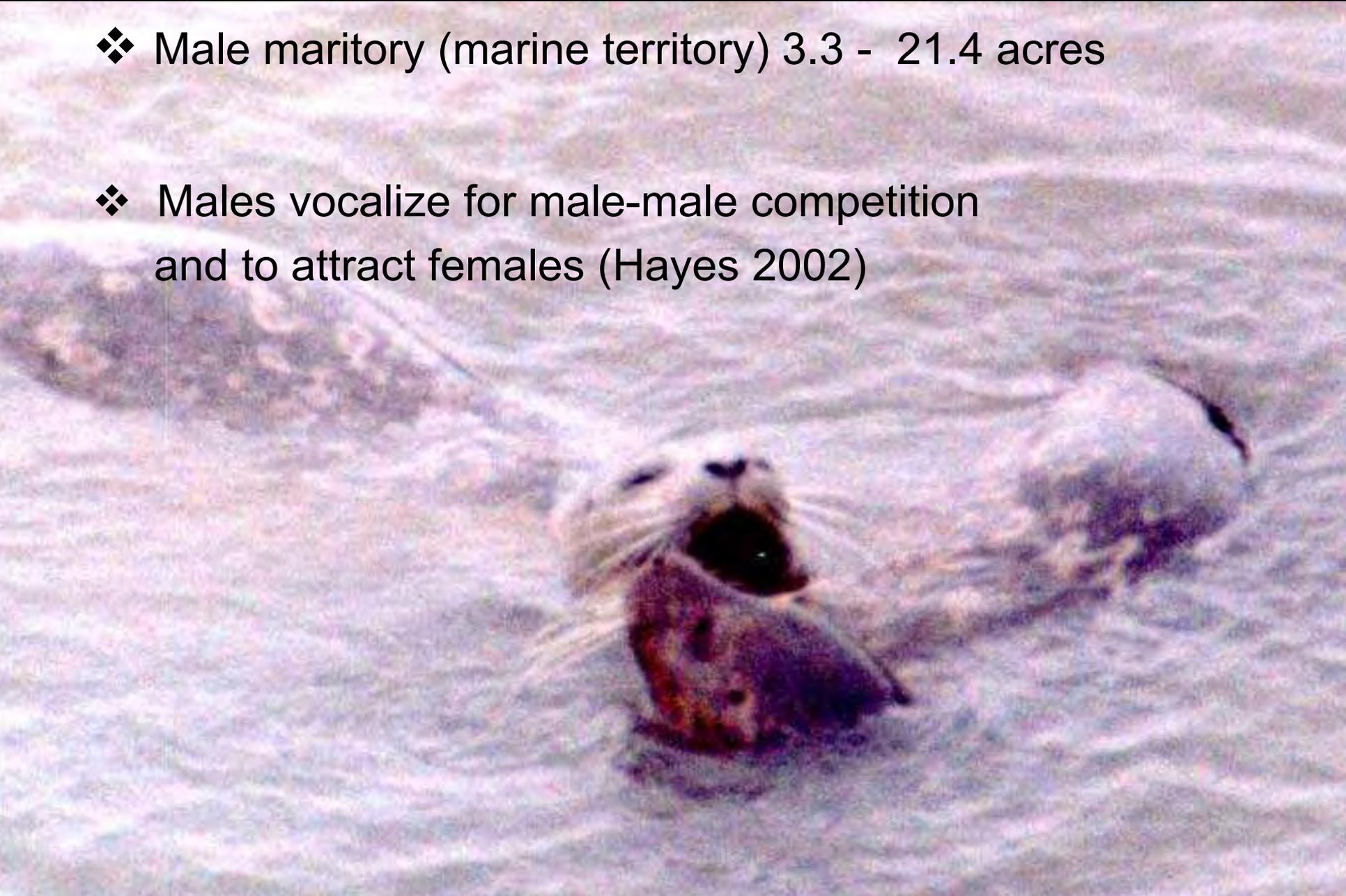
Pups of all ages - How many do you count?



10

Mating

- ❖ Male maritortory (marine territory) 3.3 - 21.4 acres
- ❖ Males vocalize for male-male competition and to attract females (Hayes 2002)





Aquatic mating



Molt

June-Aug

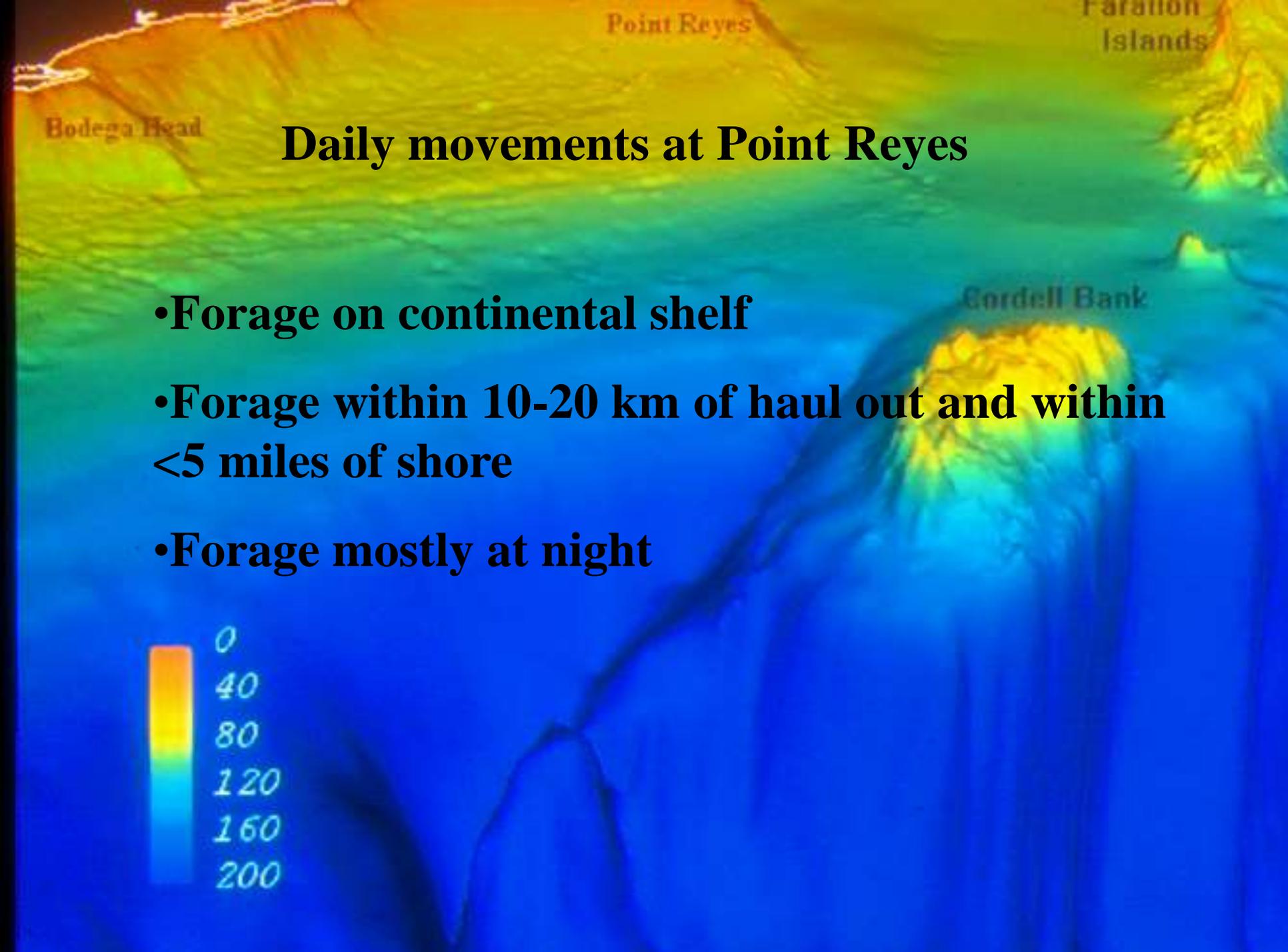


Daily and seasonal movements



Radio, satellite and flipper tags

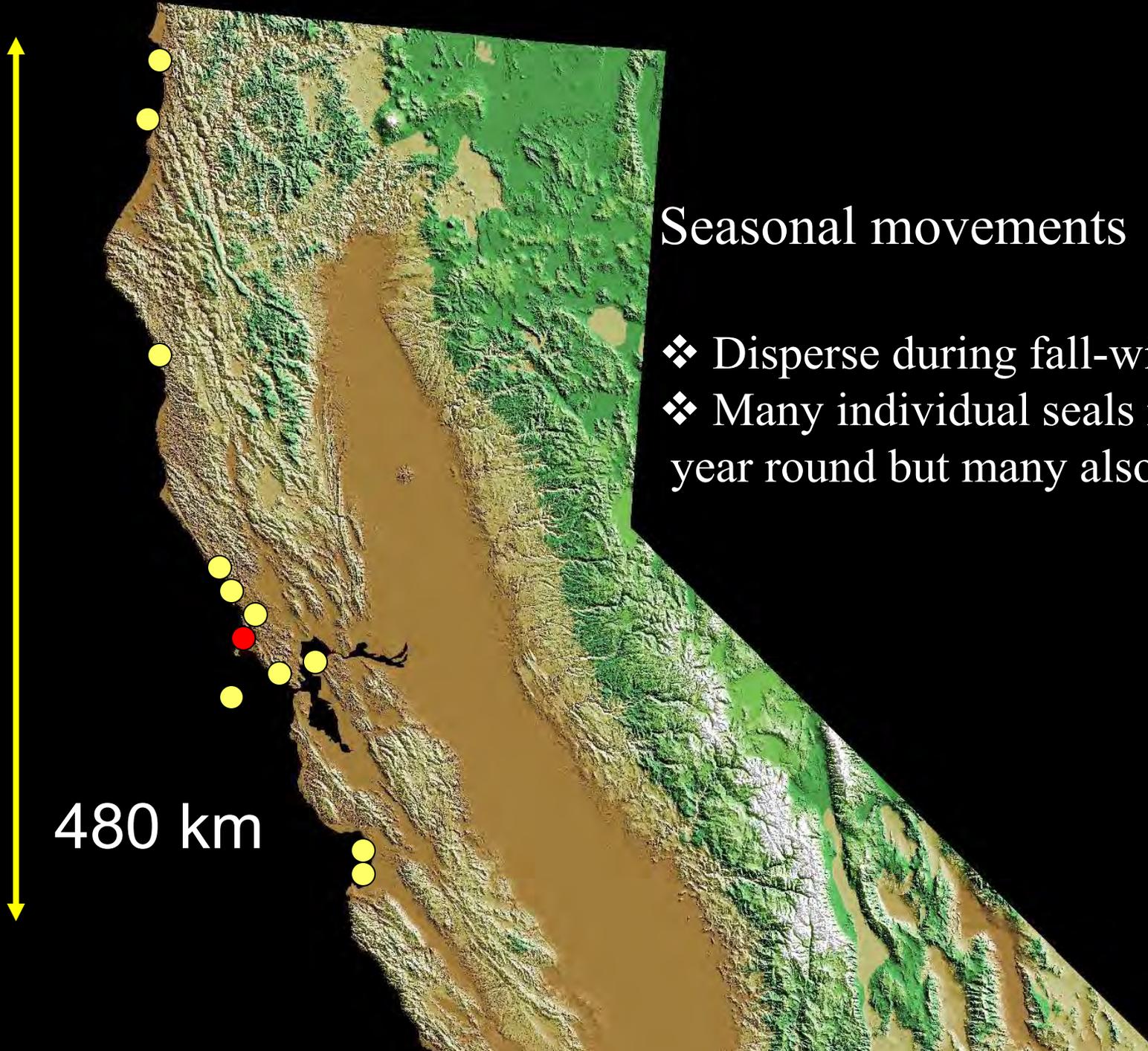


A map of the Point Reyes area in California, showing daily movements. The map uses a color scale from 0 (red) to 200 (blue). Key locations labeled include Bodega Head, Point Reyes, Farallon Islands, and Cordell Bank. The highest density of movements (red) is concentrated near the coast and around Cordell Bank. The density decreases as distance from the shore increases, transitioning through yellow and green to blue.

Daily movements at Point Reyes

- Forage on continental shelf
- Forage within 10-20 km of haul out and within <5 miles of shore
- Forage mostly at night





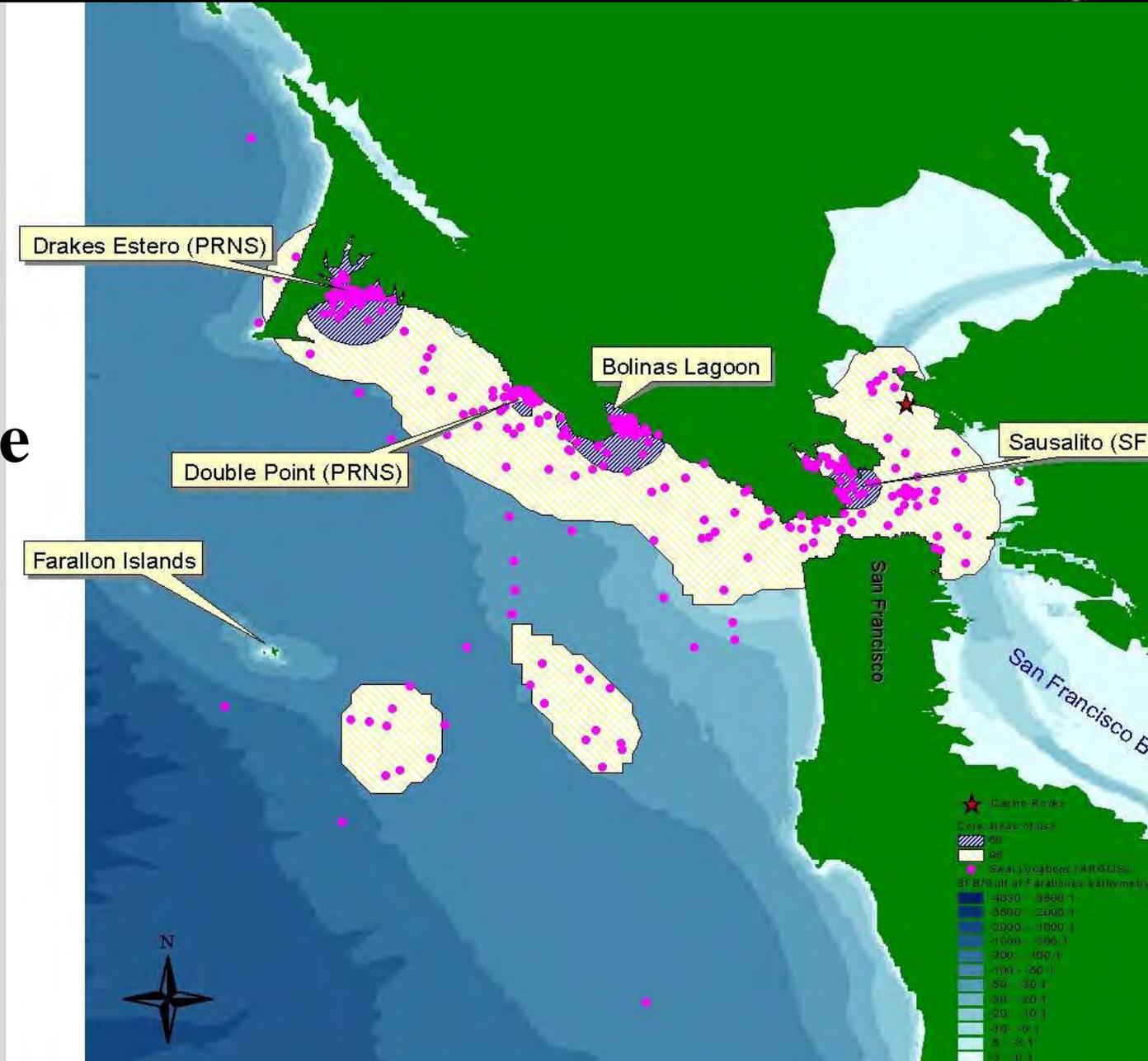
Seasonal movements

- ❖ Disperse during fall-winter
- ❖ Many individual seals remain year round but many also disperse

Regional movements



Movements
of one satellite
tagged seal



Regional movements

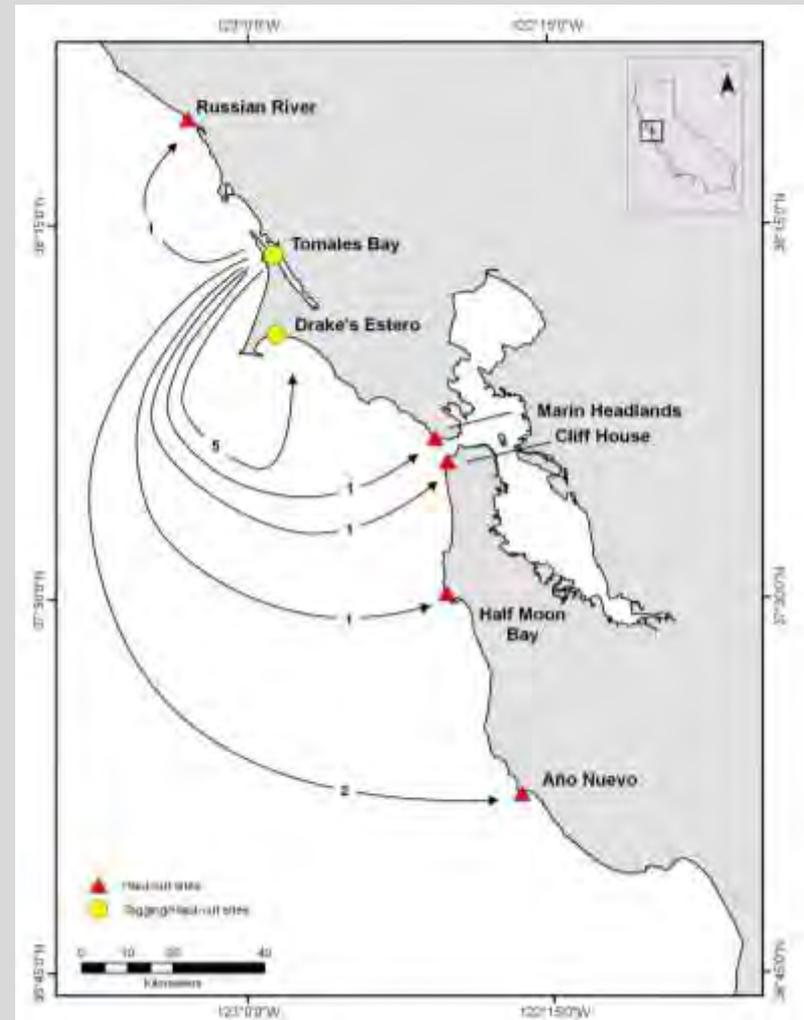
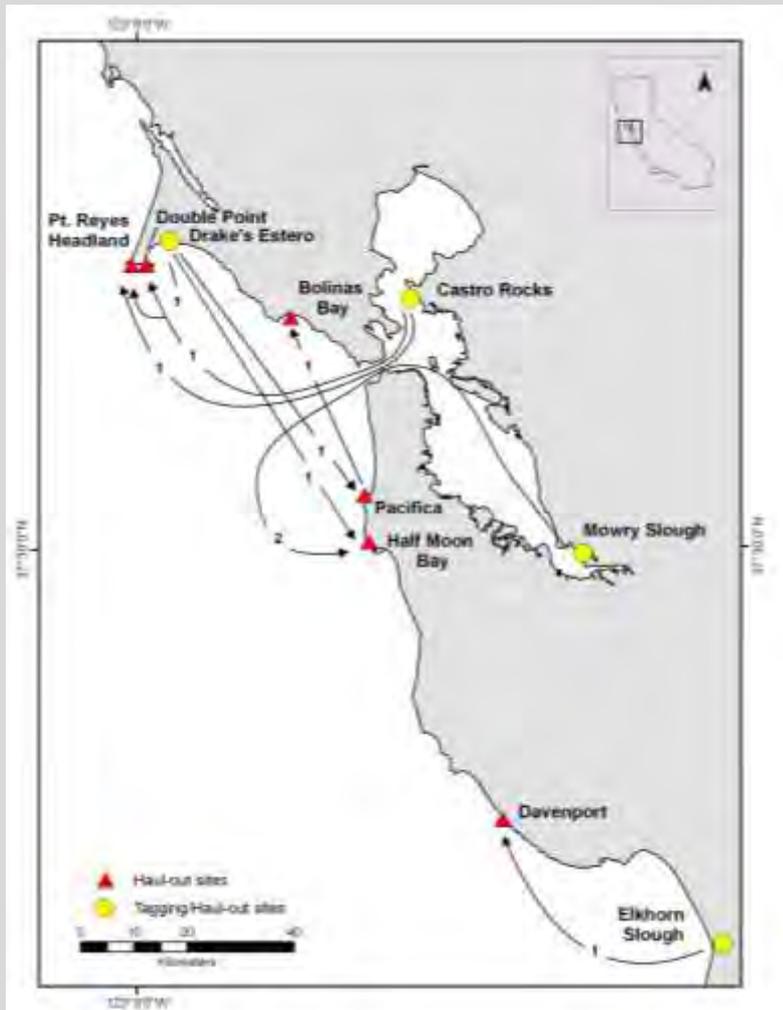


**Movements
of another
satellite
tagged seal**



Movement between sites (Harvey & Goley 2005)

Between tagged sites
and haul out sites



Food Web

Predator and prey relationships

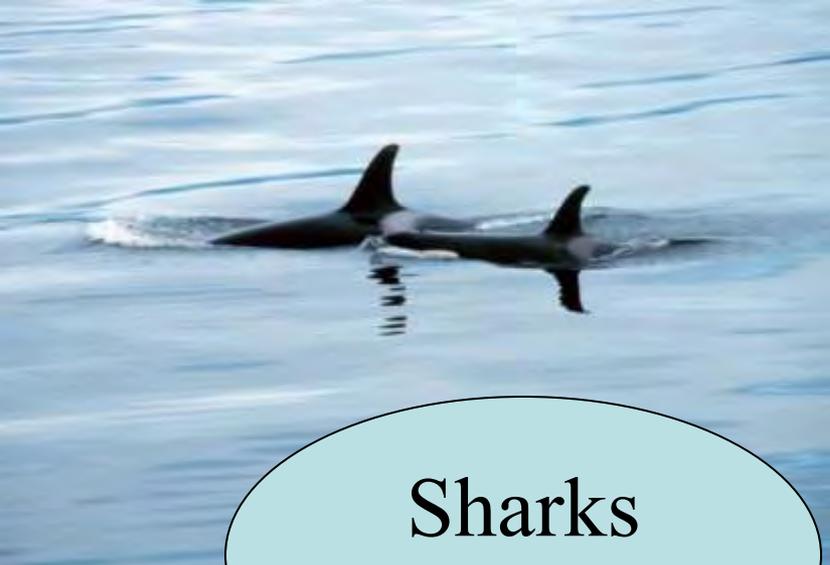
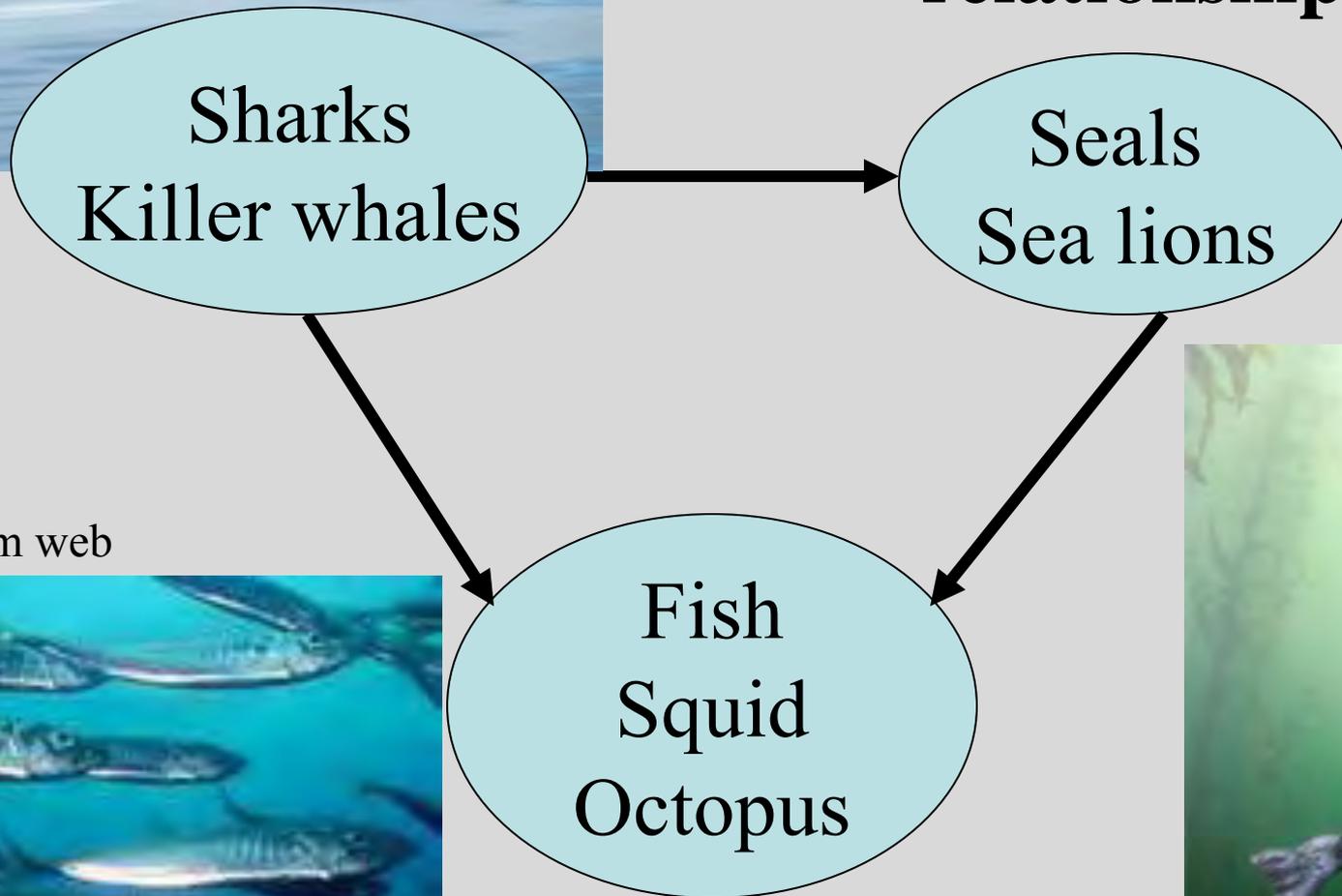


Photo from web



Photo Norbert Wu





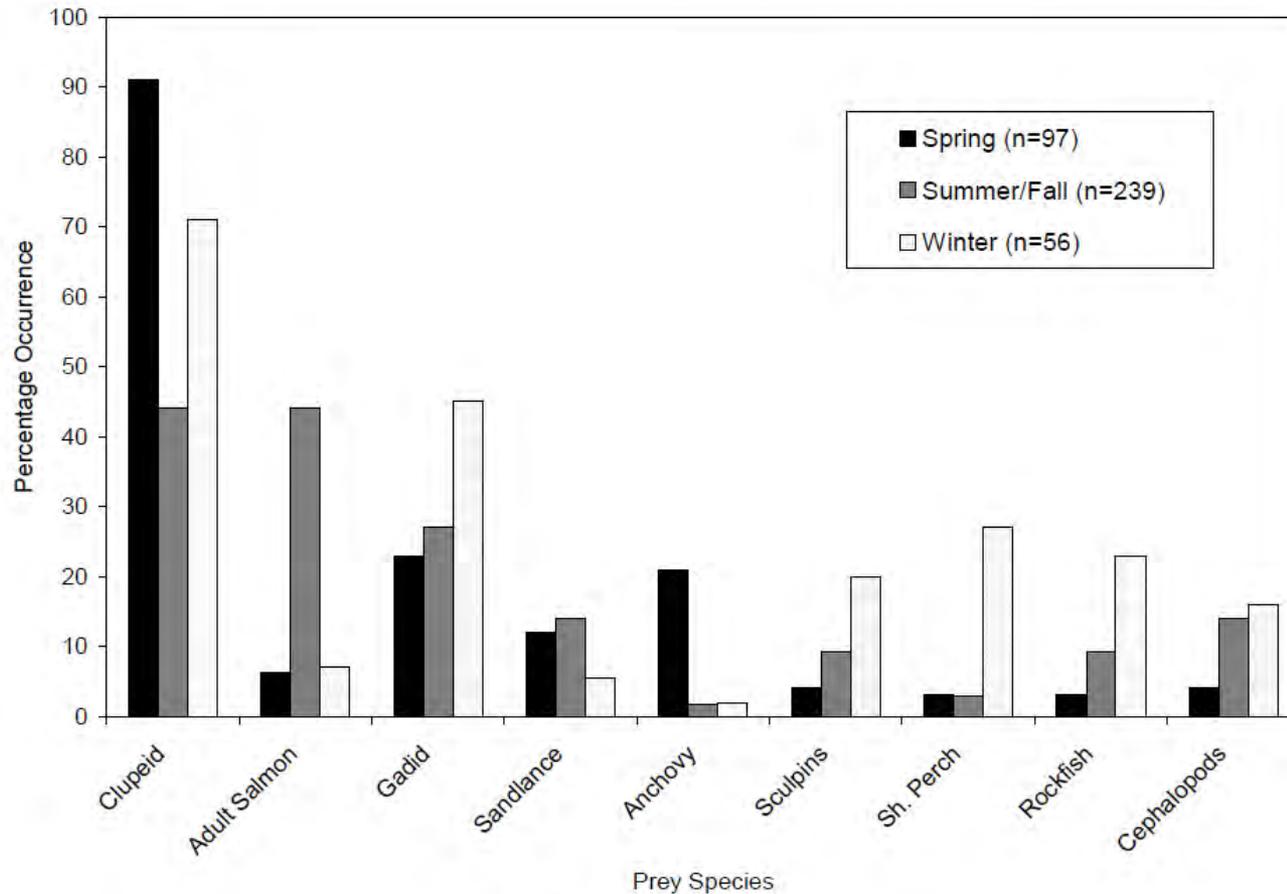
Photos from web

What seals eat



One study in Puget Sound showed diet changed seasonally (Lance and Jeffries 2007)

Figure 4. Frequency of occurrence (expressed as percent) of Clupeids, adult Salmon, Gadids, Pacific sand lance, Northern Anchovy, rockfish and cephalopods in the diet of harbor seals in the San Juan Islands by season, 2006-07



What eats seals



(c) Chuck Davis/Tidal Flats, Ltd.



Photo: Jason Thompson



New predator to region



Photos: Jason Thompson

Human disturbance



Disturbance sequence



Head alert

Flush to water

Enter water



Disturbance sequence



Flush to water



Enter water



Disturbance effects



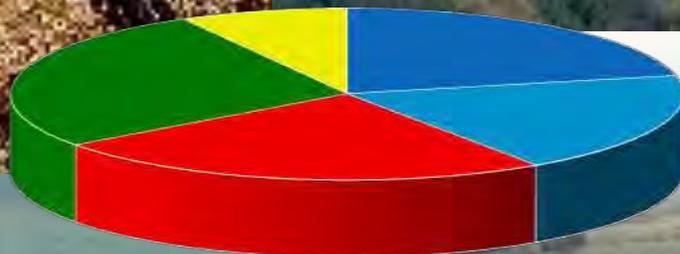
Short-term

- ❖ Disturb resting period
- ❖ Pup separation

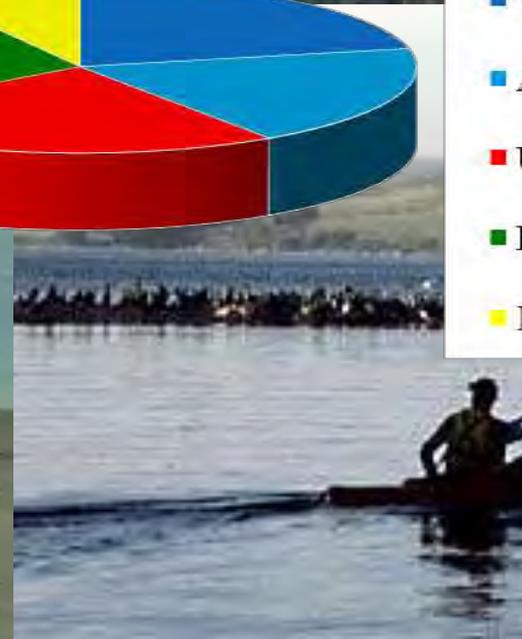
Long-term

- ❖ Reduced usage/abandonment
- ❖ Nocturnal haul out
- ❖ Reduced pup production

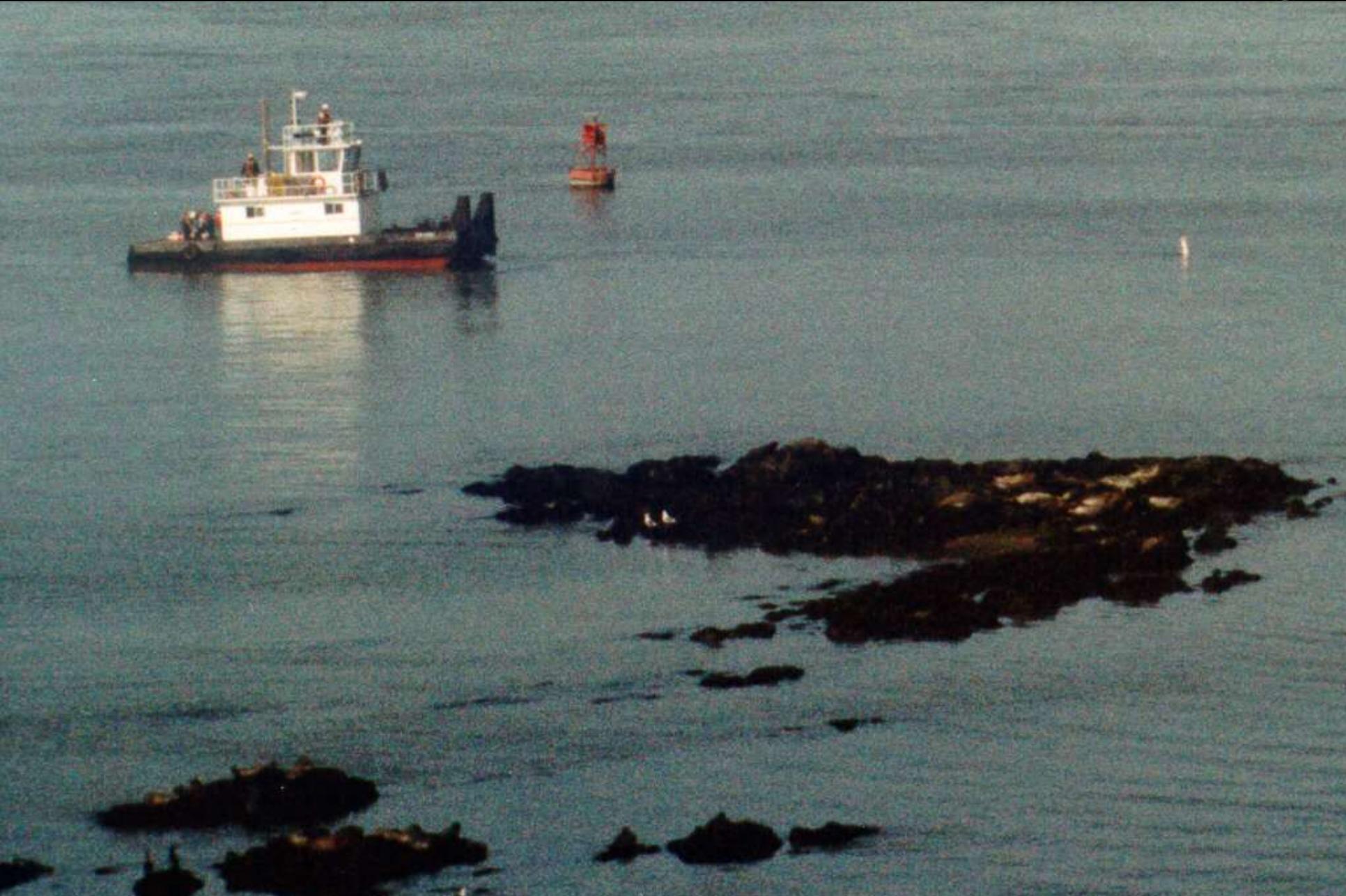
Disturbance Sources



- Watercraft
- Aircraft
- Unknown
- Human
- Birds



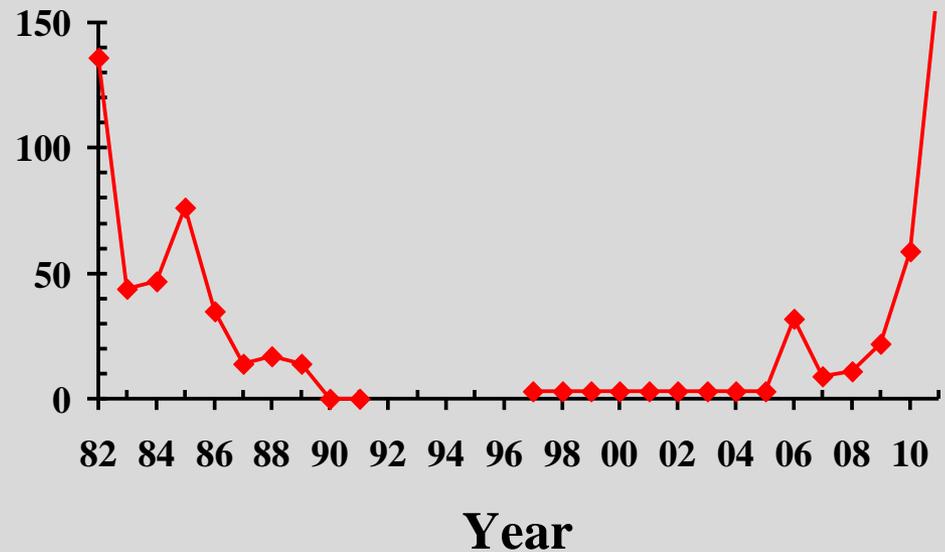
Some seals habituate



Abandonment



**Chronic disturbance can result
in site abandonment
Hog Island on Tomales Bay**



Coming next training day.....

***Long-term Monitoring of
Harbor seals at
Point Reyes***





The end.....



Special protections of colonies during the breeding season

FERAL WEST

By K. LeMieux

MARCH THRU JUNE
THE CALIFORNIA MERMAIDS
HELP GUARD THE VULNERABLE
BABY HARBOR SEALS.

(BE WARNED)

WE WHUP
PUP TOUCHERS.



