



Marine Mammal Commission

An independent agency of the U.S. Government



Recent Marine Mammal Mortality Events

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Marine Mammal Mortality

- Information and data sources
 - Strandings
 - *MMHSRP strandings database*
 - Carcasses on rookeries, floating at sea, bows of ships, entangled at sea
 - *Regional NMFS/FWS/State program data bases*
 - Fishery observer programs
 - *Stock assessments*
 - Subsistence harvest
 - *Species specific local databases/ADFG*



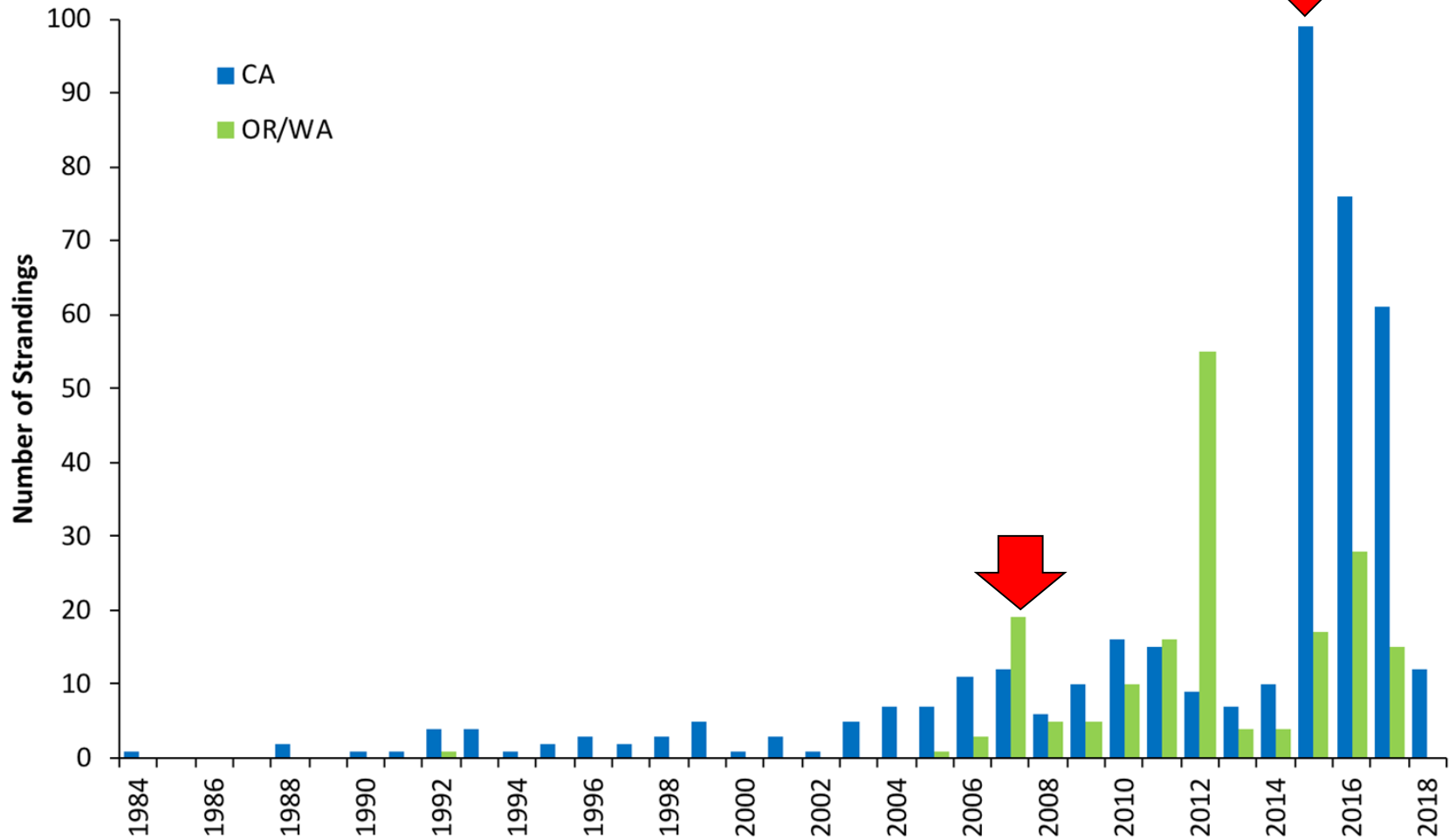


Unusual Mortality Events UMEs

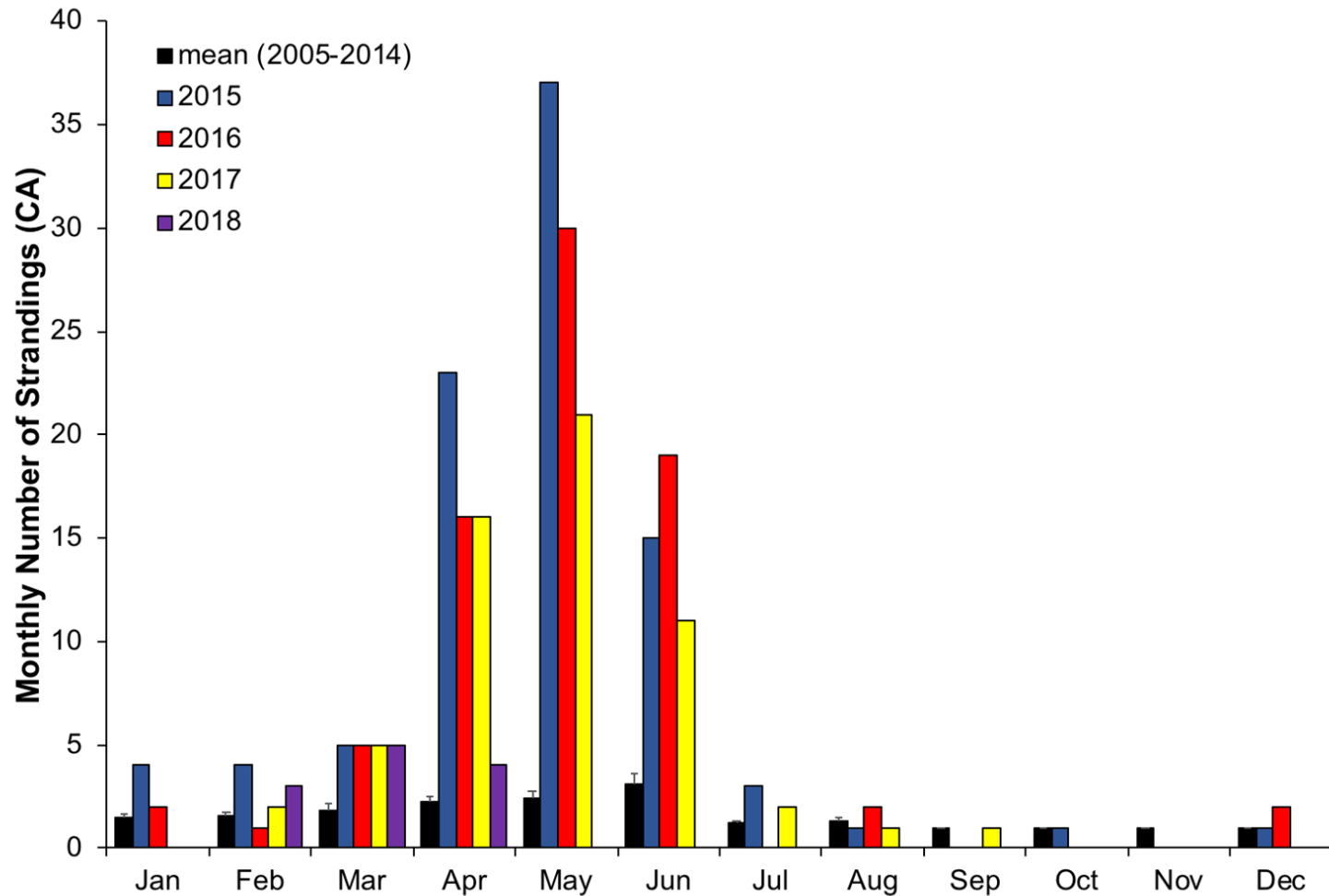
- Program established under MMPA 1992 amendments
- Whether an event is defined as a UME is a decision based on vote by expert Working Group that advises the Secretaries
- UME Contingency Fund managed by NMFS for response
 - (Only Appropriation in 2005 ~800K)
- UME defined as a group of strandings that:
 - Is unexpected
 - Involves a significant die-off of any marine mammal population
 - Demands an immediate response and a formal investigation



Guadalupe Fur Seal California UME 2015-2018

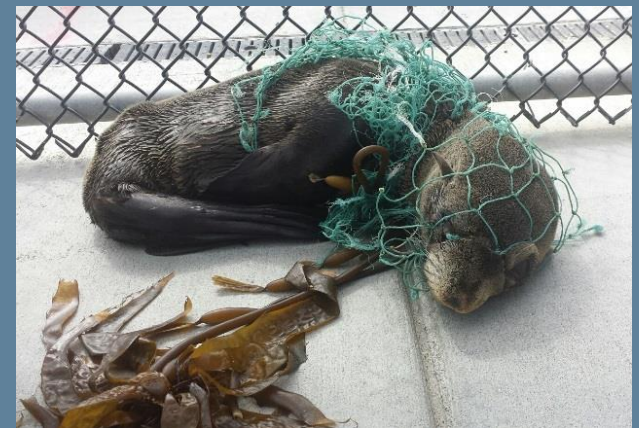
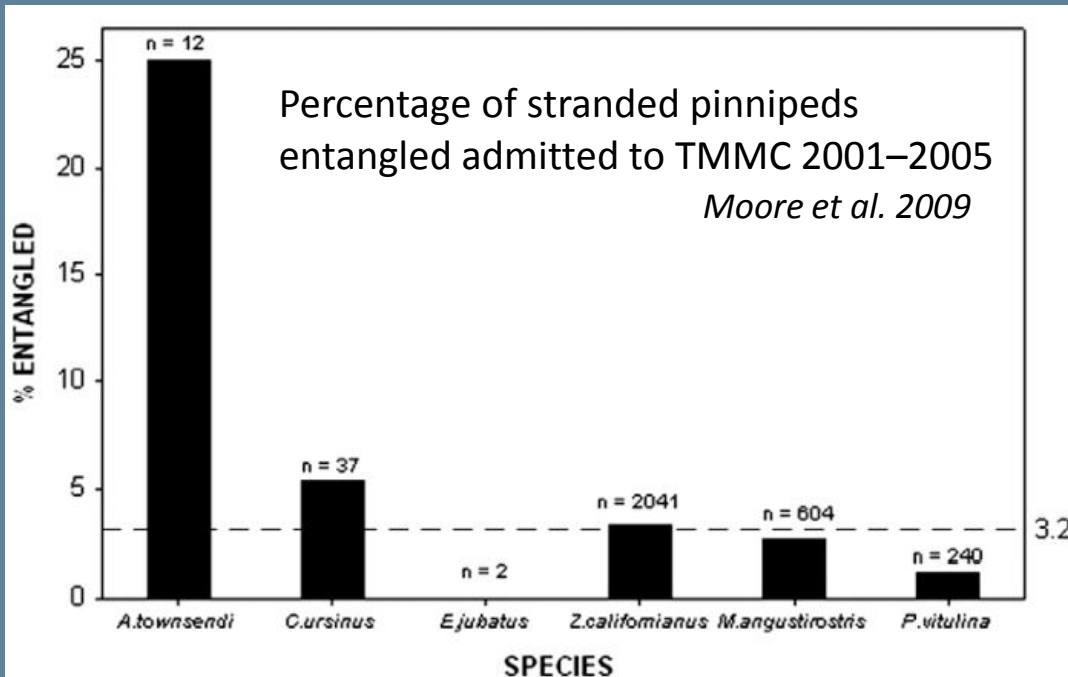


Peak Strandings in Spring of Pups



Entanglements

2015: 3/99 entangled GFS (3%)
2016: 9/76 entangled GFS (12%)
2017 YTD: 5/61 entangled GFS (8%)



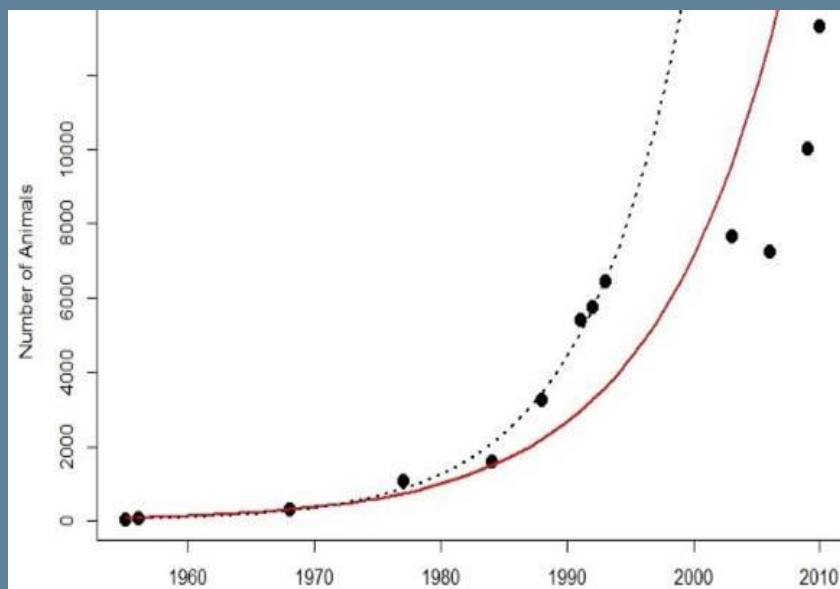
A photograph of several seals resting on a dark, rocky shoreline. The seals are of various shades of grey and brown, and some are looking towards the camera. The water is visible in the foreground.

Domoic Acid Toxicosis

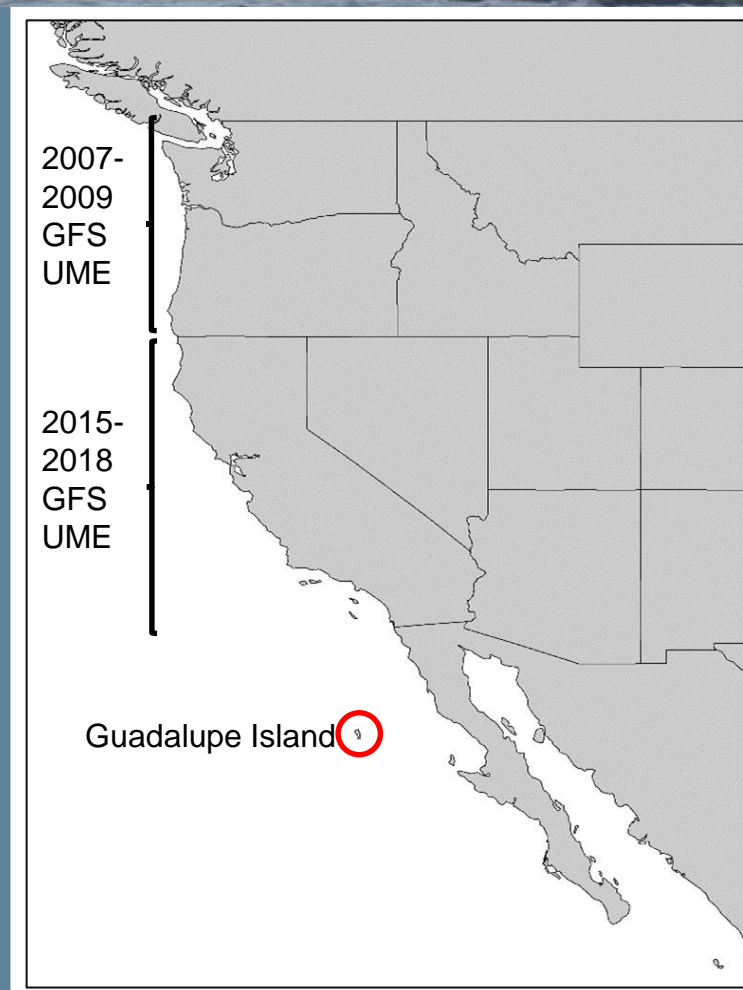
2015-2016: 14/25 animals positive for domoic acid

2016-2018: additional results pending





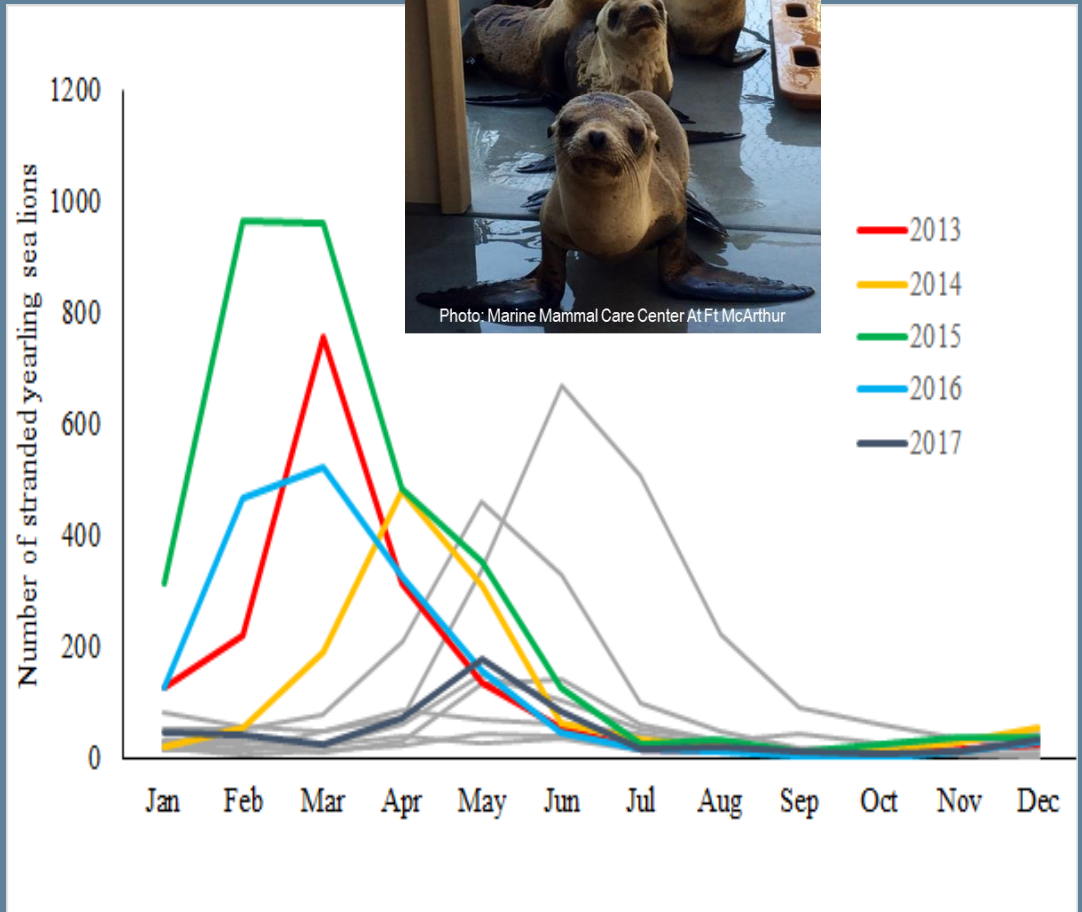
Carretta et al. 2016



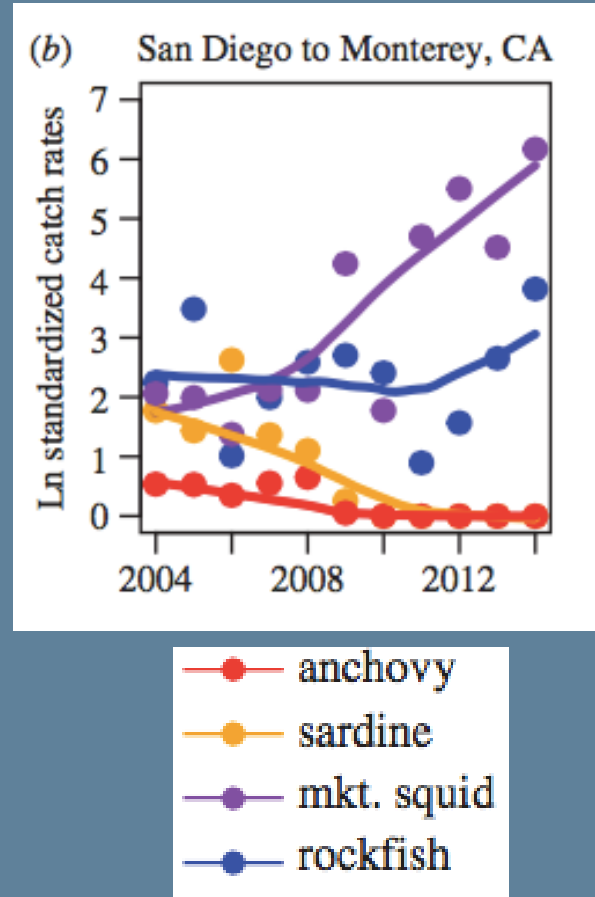
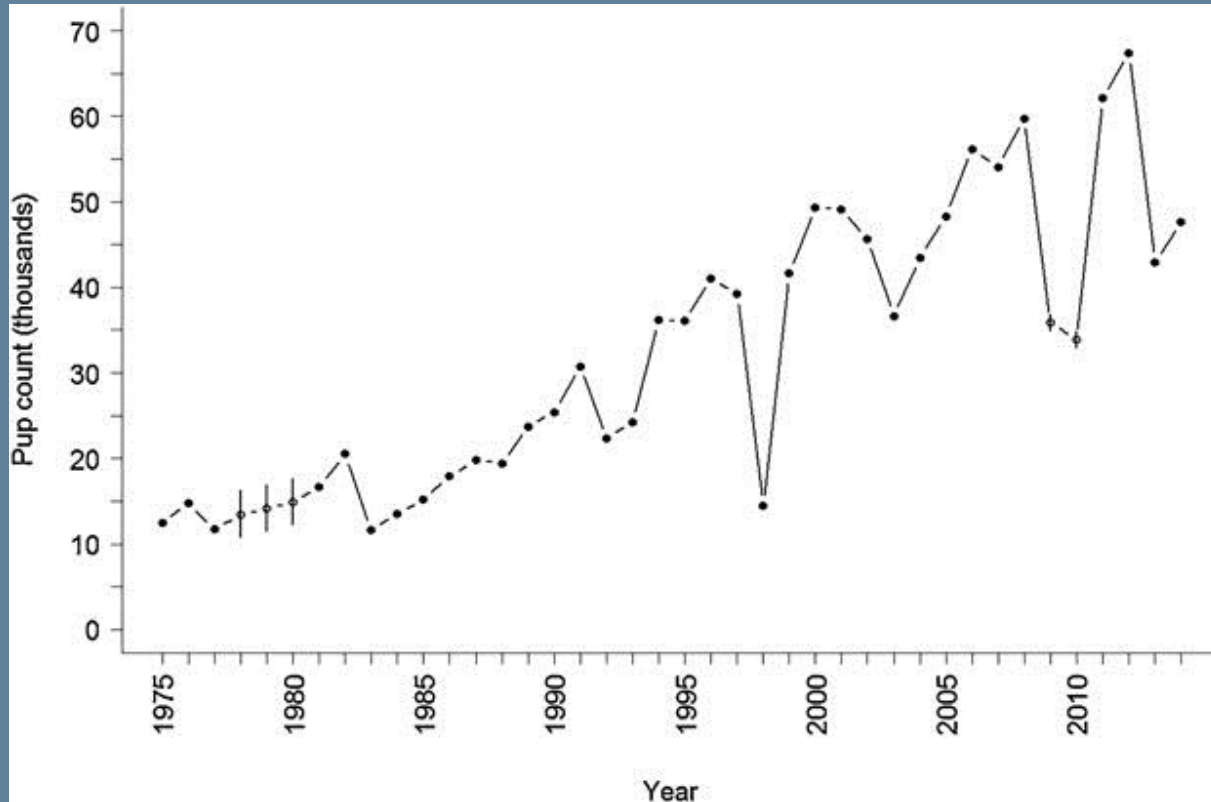
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2013-2016 California Sea Lion UME

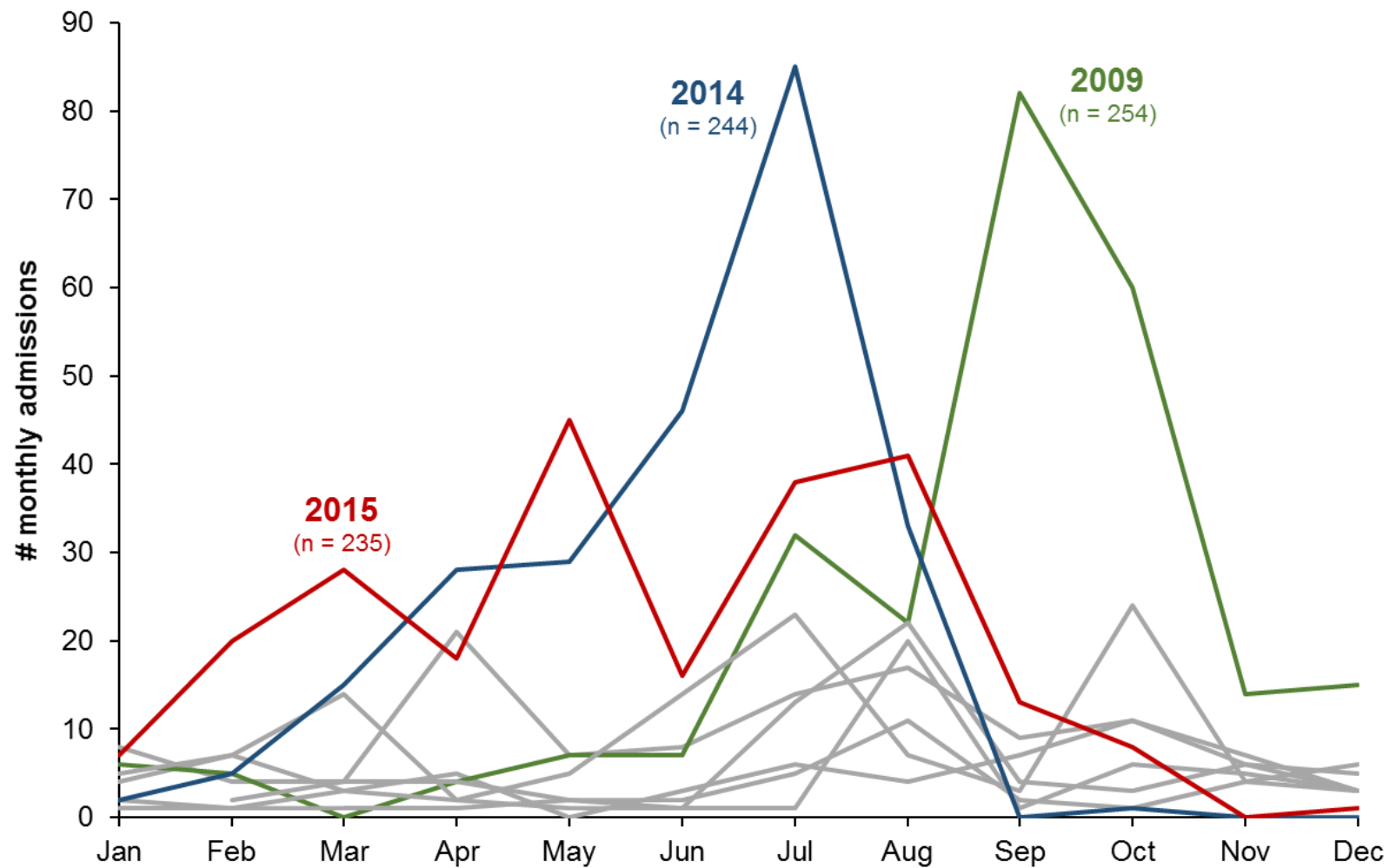
Primarily
malnourished
pups/yearlings
– 2013 – 2,348
– 2014 – 2,218
– 2015 – 4,664
– 2016 – 2,491



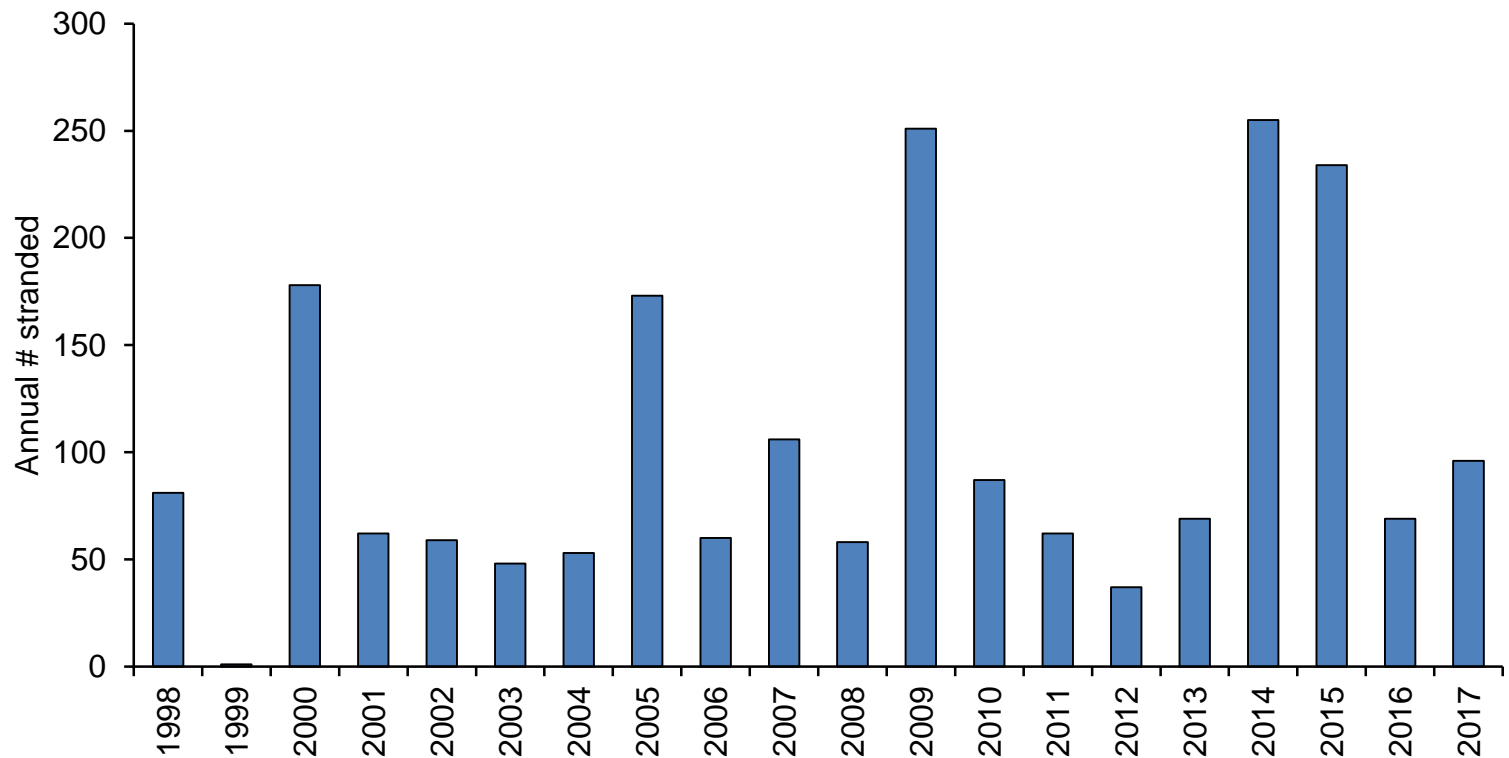
California Sea Lions



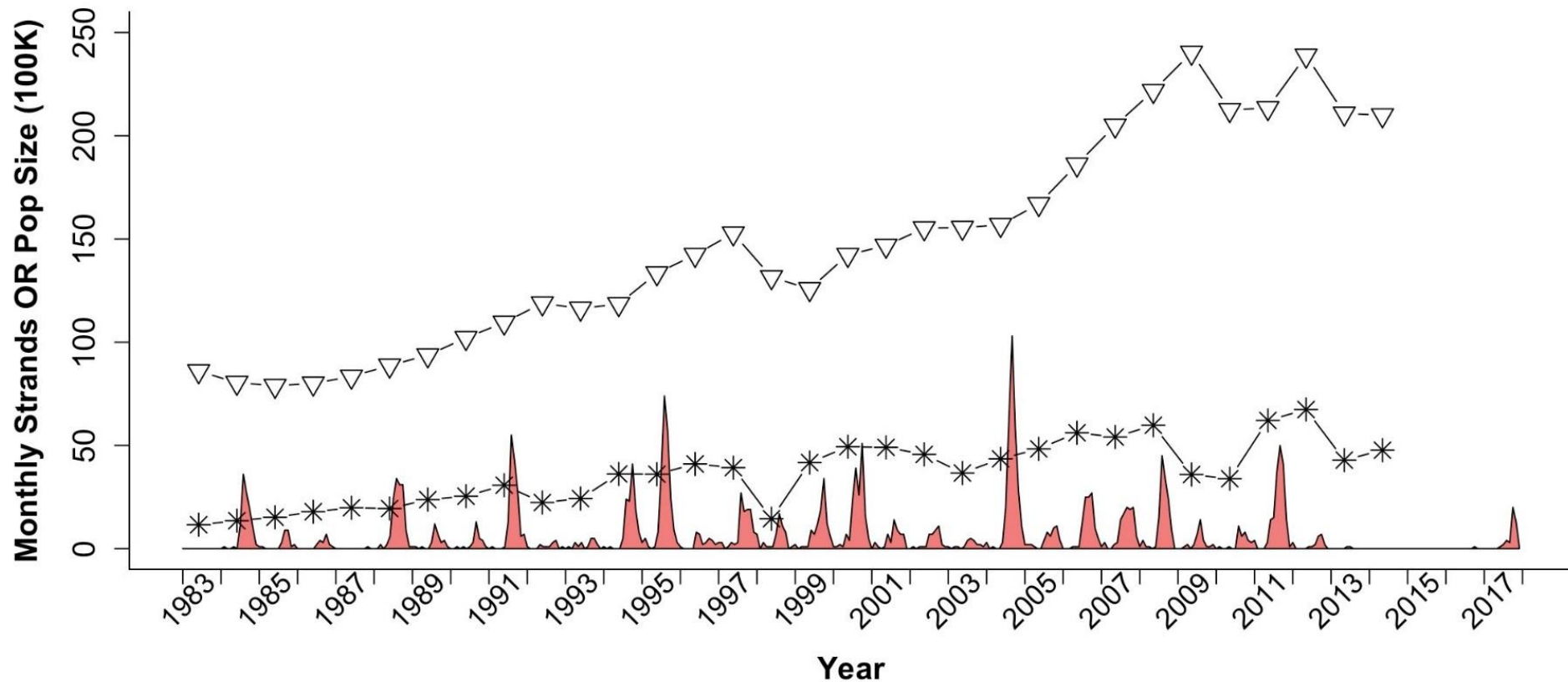
Increased Strandings in Other Years, Different Age Classes, Causes



Domoic Acid Toxicosis of California Sea Lions



Leptospirosis

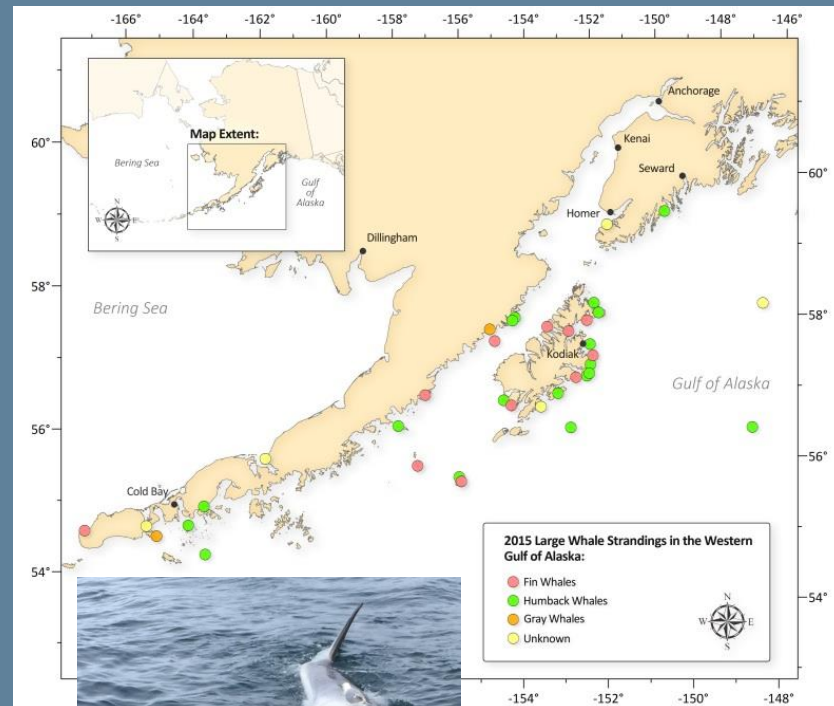


2015-2016 Alaska Large Whale UME

Western Gulf of Alaska and British Columbia April 2015 - April 2016

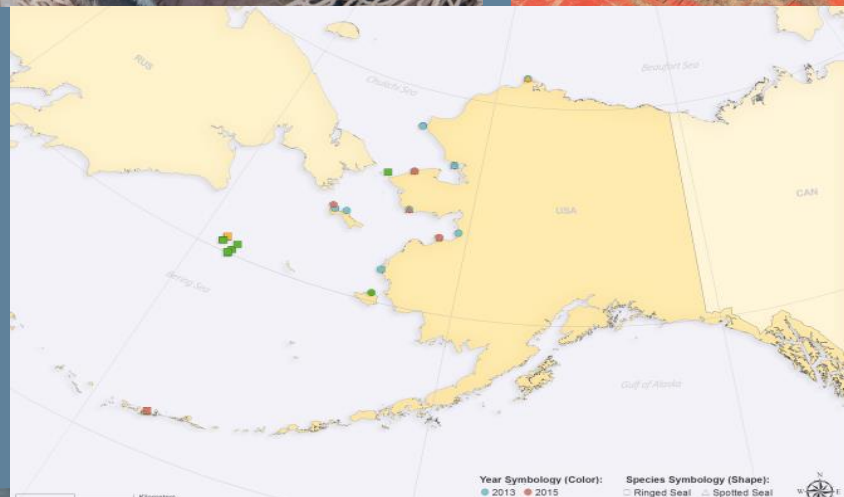
46 Whales

- 34 in AK; 12 in BC
- 17 Fin , 29 Humpback whales
- Only one carcass examined in AK, 8 in Canada
- Concurrent domoic acid and saxitoxin producing blooms
- 7 of 8 Canadian whales STX & DA positive (low levels)



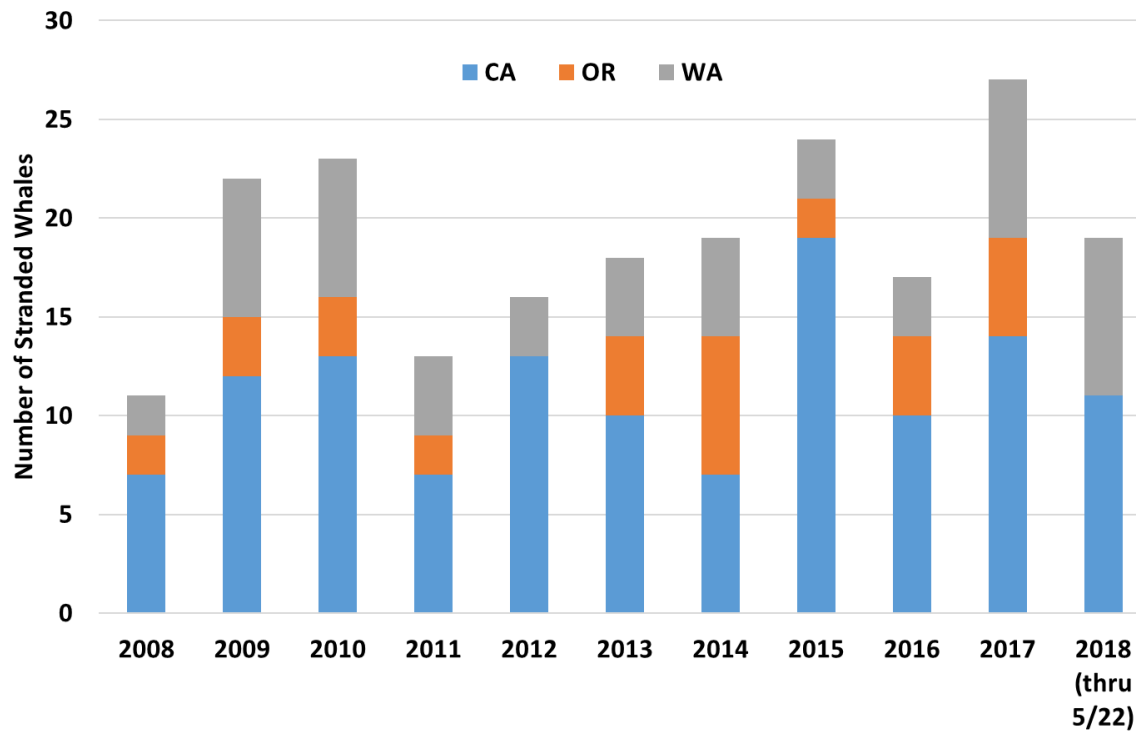
2011-2016 Alaska Pinniped UME

- May 2011- Dec 2016
- Alaska hunters reported ice seals with hair loss, skin ulcers
- Ice seals stranding further south than typical range
- Biologists handled seals with hair loss, skin ulcers
- Minimum of 657 Ice Seals - Bearded, Ringed, Ribbon, & Spotted
- Signs linked to abnormality of the molt (unknown cause)
- No primary pathogen identified



Grey Whale Strandings

Annual Gray Whale Strandings in CA, OR, & WA





Mortality Monitoring

- Lack of integration of different data sources
 - Thus poor understanding of overall extent, causes
- Majority of investigations conducted on strandings by private sector, support through UME and Prescott grant programs (NMFS)
- UME designation
 - useful for increasing resources for investigation and response, increasing awareness, ensuring data are captured for future
 - dependent upon
 - request from the responder/region
 - Fulfillment of specific criteria
 - If mortalities regularly increase, are not “Unusual”

Need a more integrated approach to mortality data management and integration with other ecosystem data sources if marine mammals are to be useful sentinels of ecosystem health

