Sanctuary Beach COMBERS

(Coastal Ocean Mammal/Bird Education and Research Surveys)

Volunteer Surveys

1997 to 2007

NATIONAL MARINE SANCTUARIES

NOAA

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

U.S. DEPARTMENT OF COMMERCE

Moss Landing Marine Laboratories

RESOURCES AGENCY

CALIFORNIA

DEPARTMENT FISH & GAME

Monterey Bay National Marine Sanctuary

Beach COMBERS

Beach COMBERS Program Goals

- Obtain baseline information on rates of deposition of beachcast birds and mammals
- Assess causes of seabird and marine mammal mortality
- Assess abundance of tar balls on beaches
- Assist resource management agencies in early detection of mortality events, both natural and anthropogenic
- Build a network of interacting citizens, scientists, and resource managers
- Disseminate information to the public and educational institutions

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Methods

- Volunteer training

- Surveys for beachcast organisms and tar patches

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Methods

- Collecting samples

- Web sites, symposia, and publications
- Interactions among volunteers, academics, and agency staff

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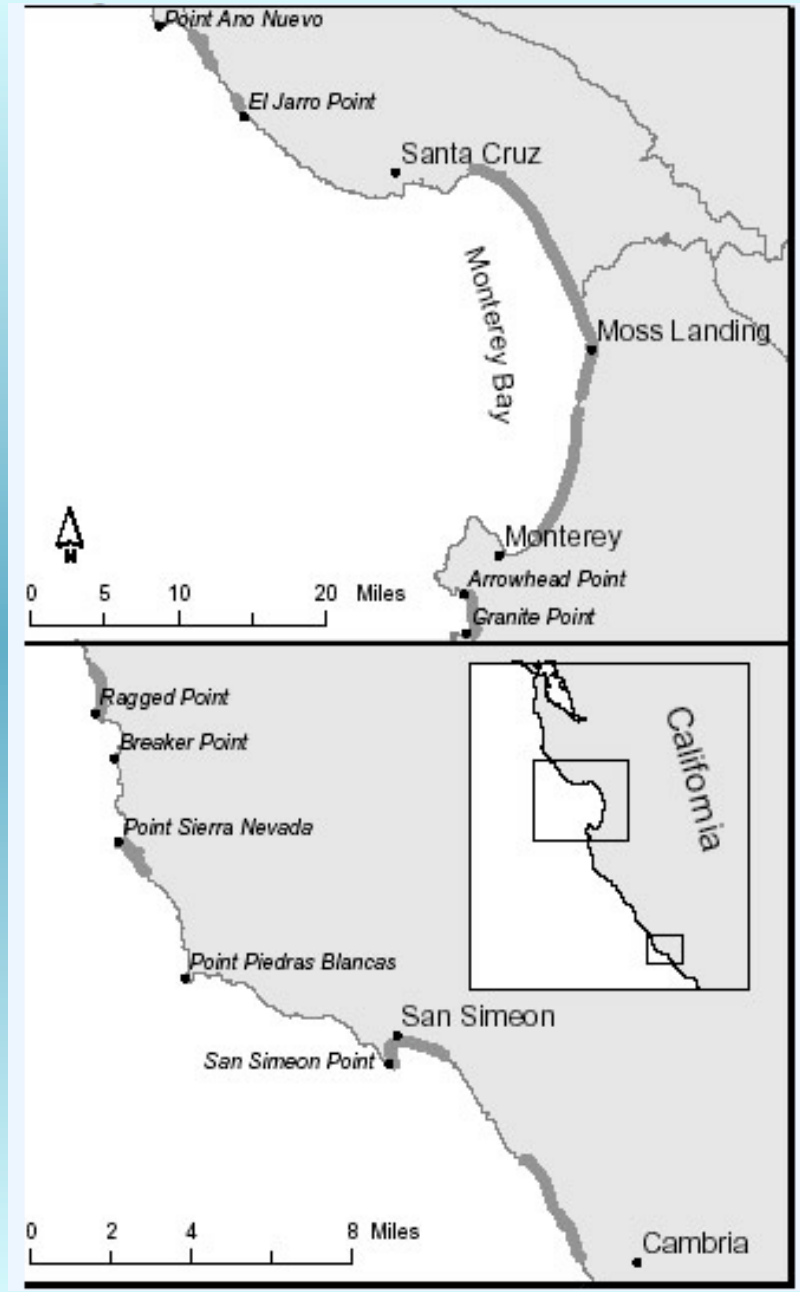
Survey Locations



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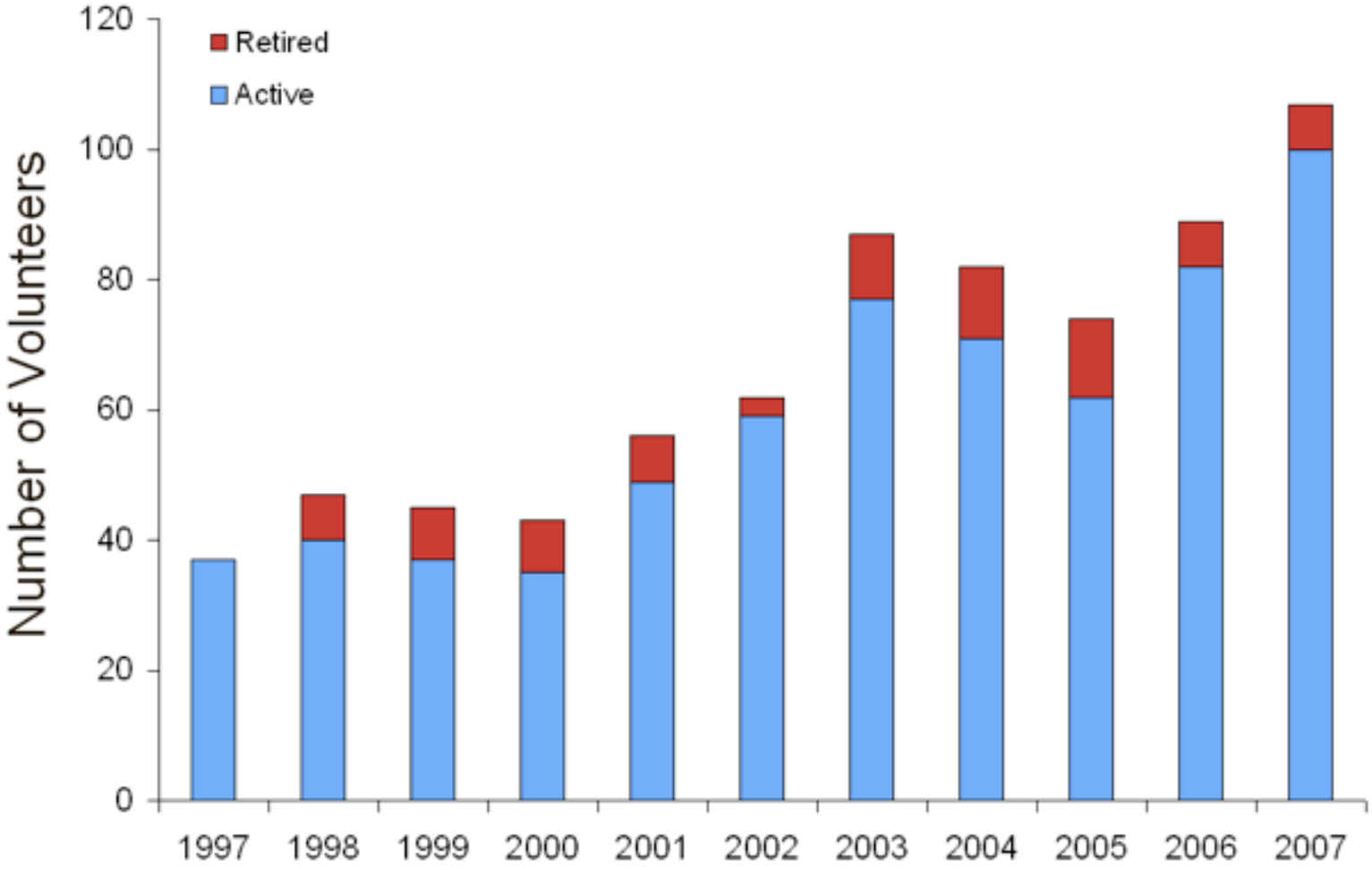
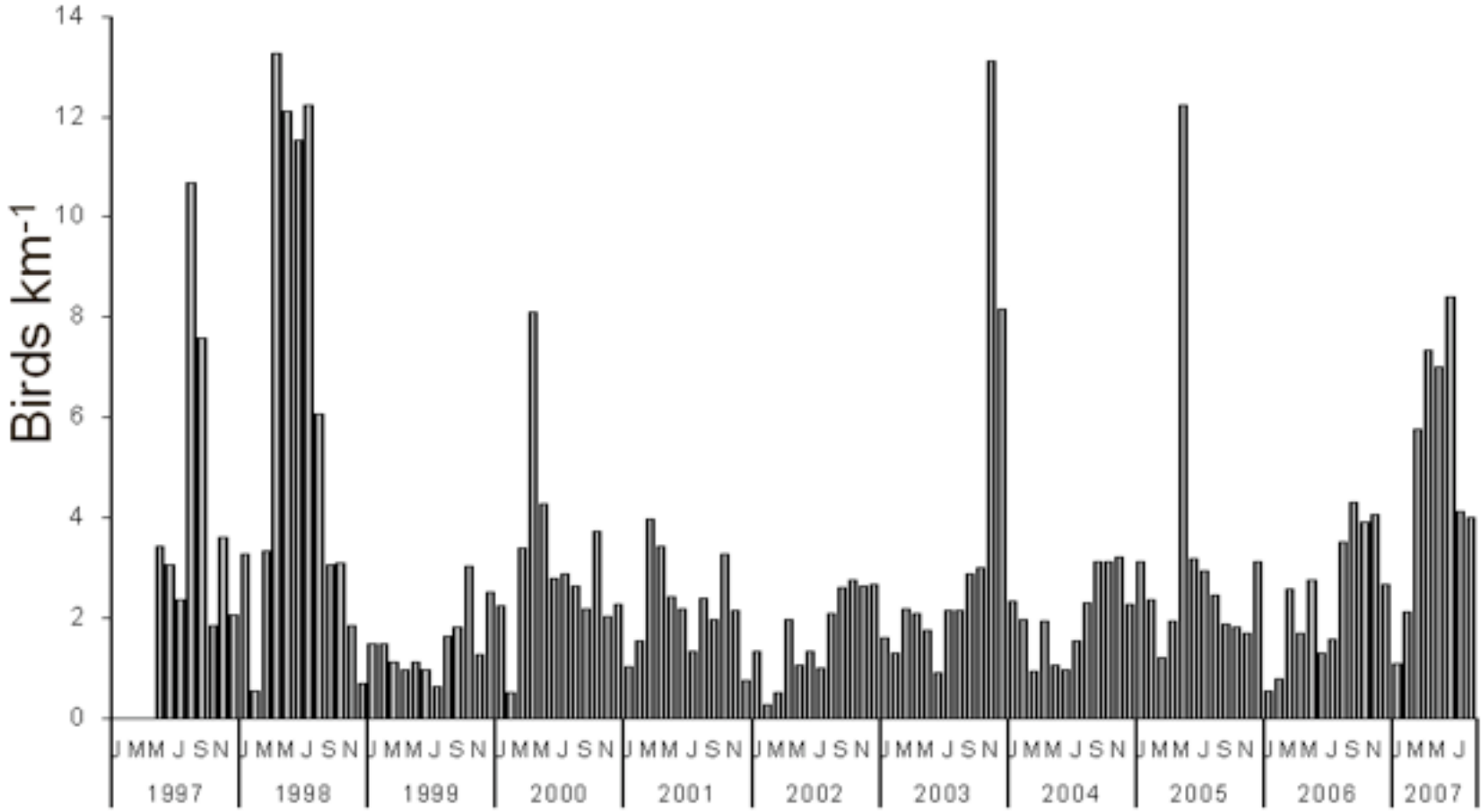
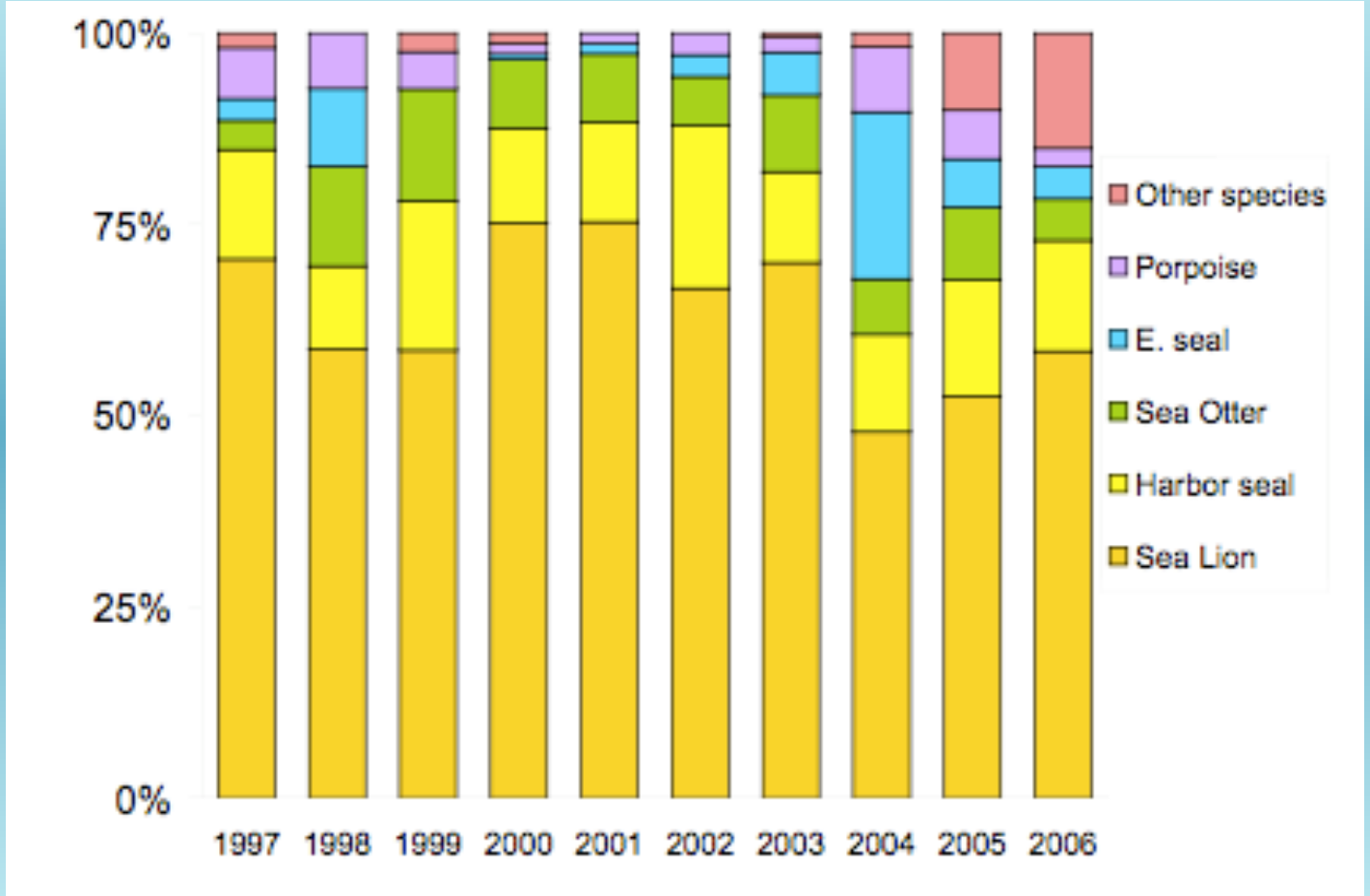
Over the first 11 years:
205 Trained Volunteers
contribute 17,117 hours



Analyses

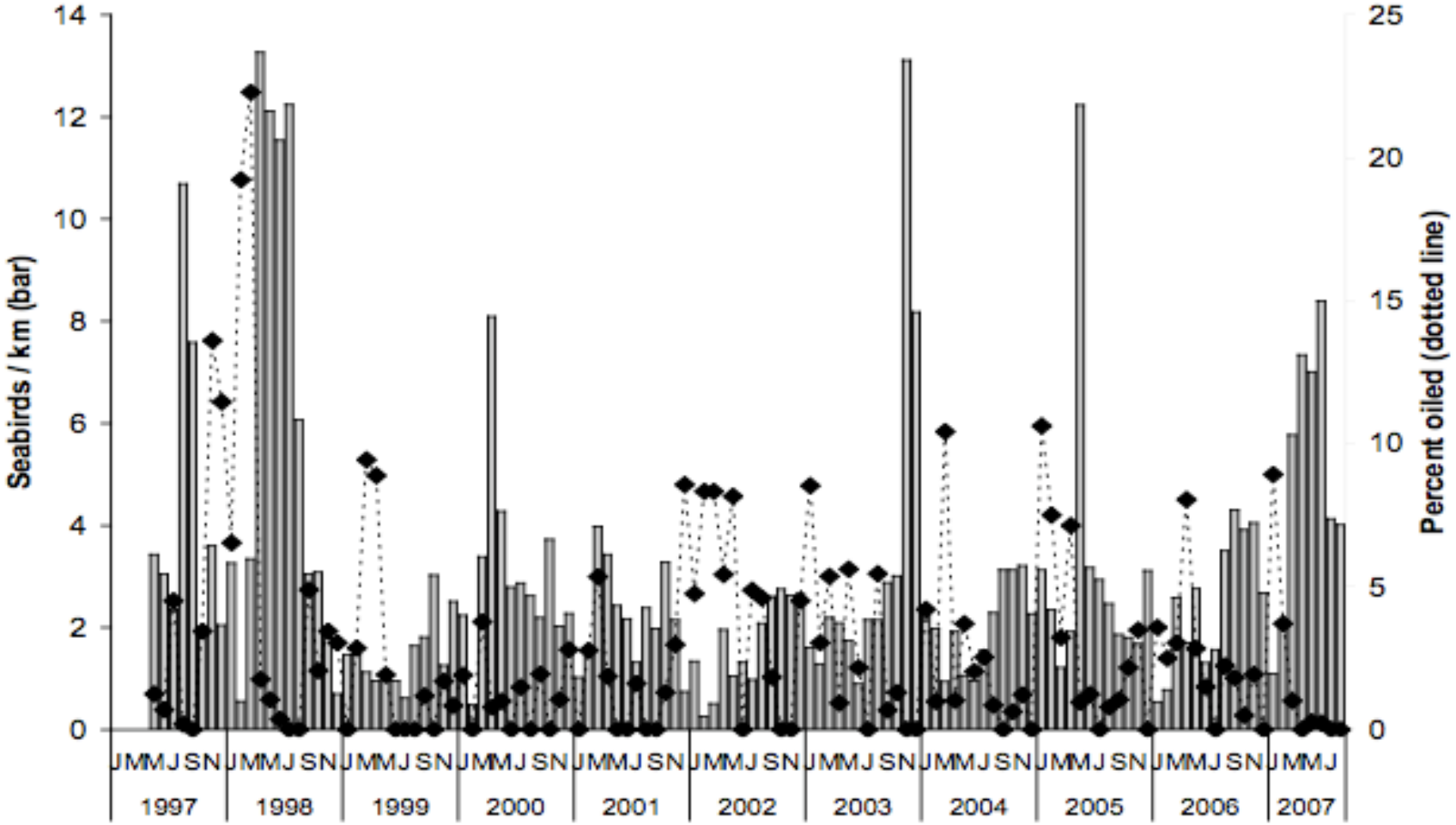

Birds km-1
14
12
10
8
6
4
2
0
J MM J S N
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007

Analyses



NATIONAL MARINE SANCTUARIES

Analyses


Seabirds / km (bar)
Percent oiled (dotted line)
0
2
4
6
8
10
12
14
0
5
10
15
20
25
J M M J S N J M M J S N J M M J S N J M M J S N J M M J S N J M M J S N J M M J S N J M M J S N J M M J S N J M M J S N J M M J
1997
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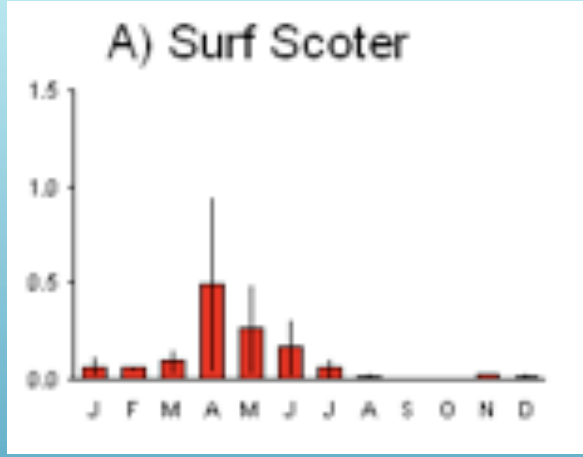
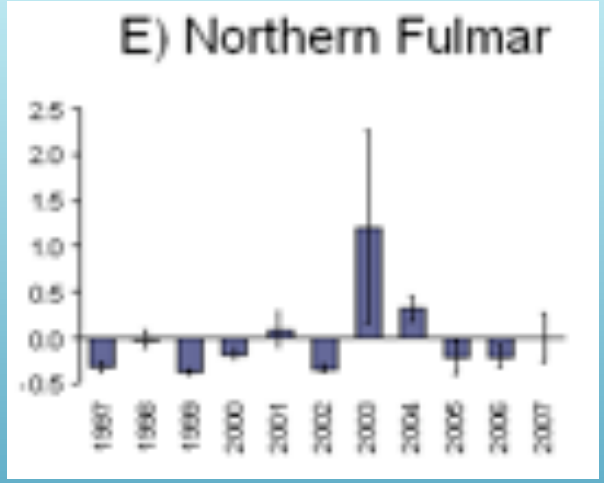
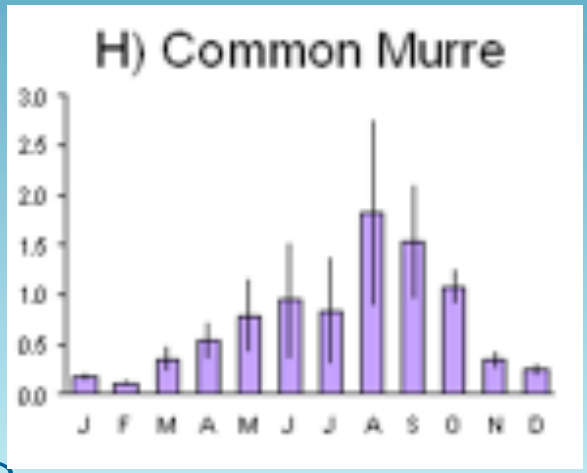
Analyses







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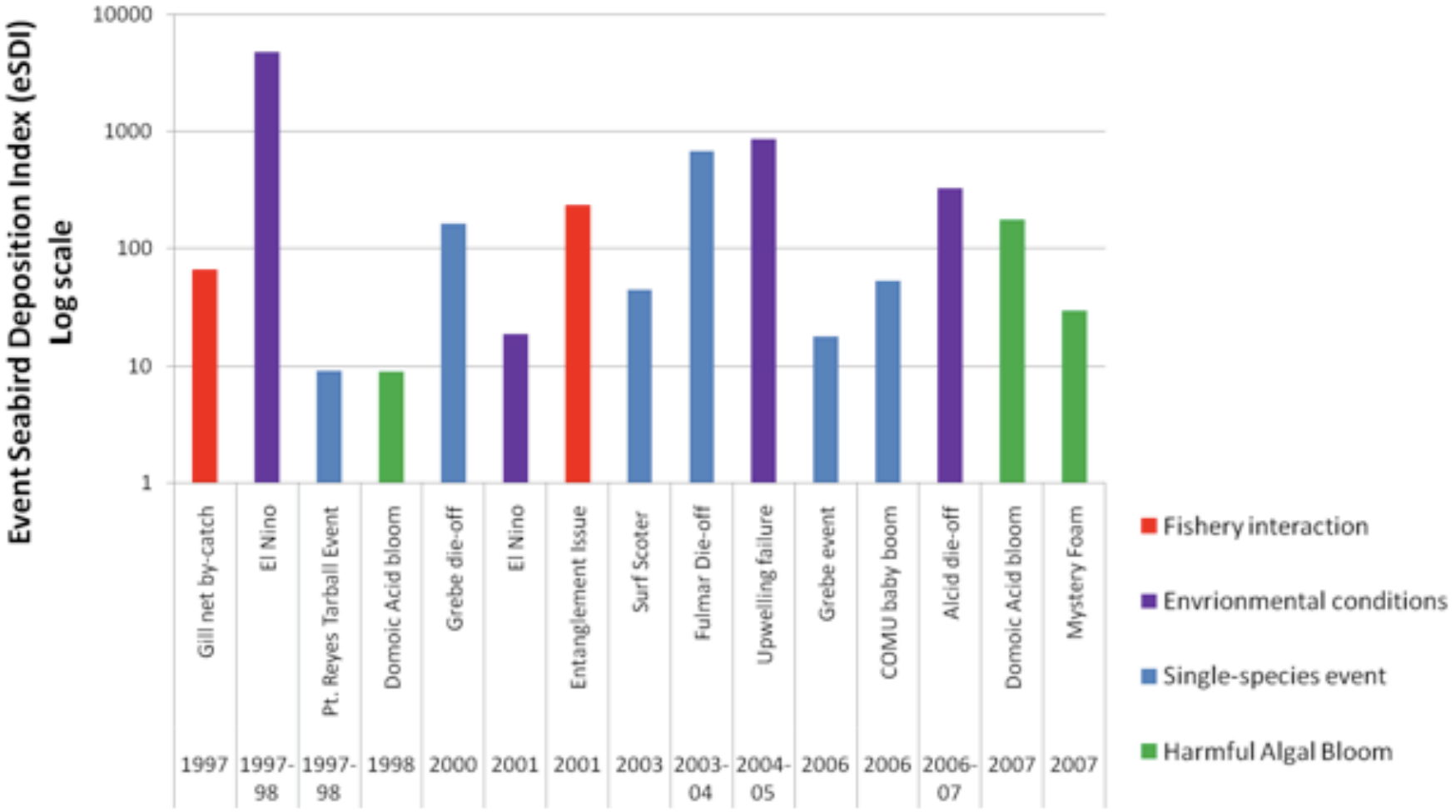
Events Documented



Conclusion

- Inexpensive, effective monitoring program
- Effective citizen scientists
- Events occur almost annually
- Natural versus human caused events result in different management responses
- Unique interagency coordination
- Highlighted as a critical priority of the *Cosco Busan* oil spill
- No more ONMS funding

NATIONAL MARINE SANCTUARIES

Questions?