

Sanctuary Ecosystem Update, new findings and next steps.

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February 20, 2014

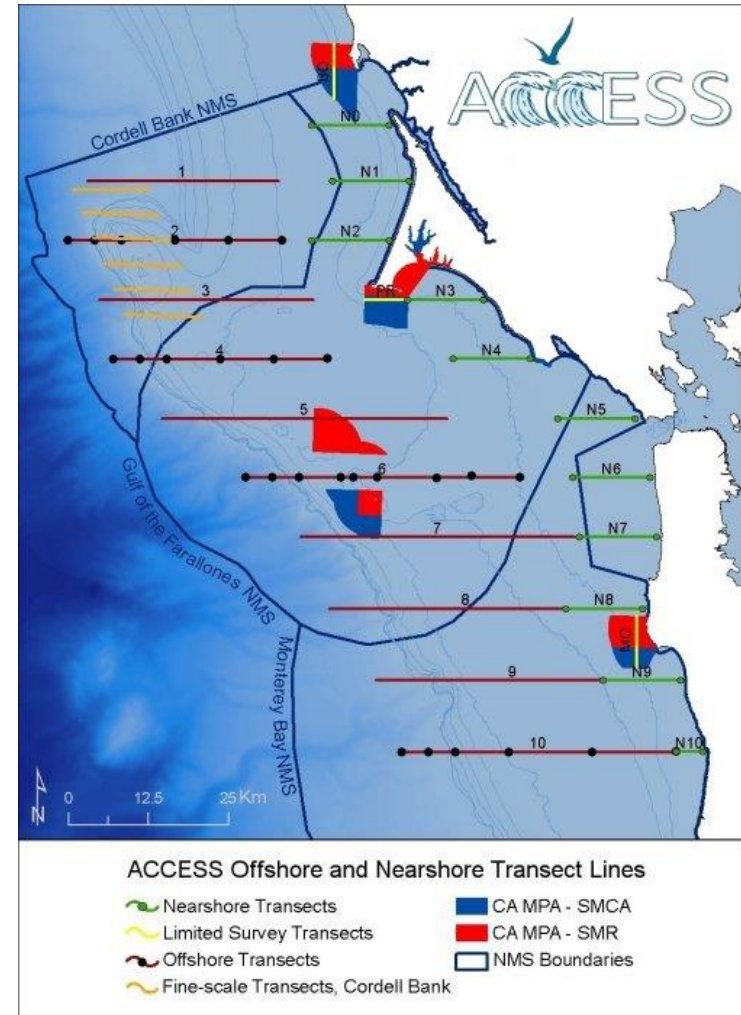


ACCESS



Partnership that uses ocean research to inform resource managers, policy makers and conservation partners.

- Total 35 cruises completed
- 2004 – ongoing (10 years)



Outline

- Status report
- Healthy oceans
- Ocean acidification
- Sensitive areas
- Ship strikes
- Socio-economics

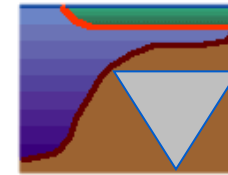


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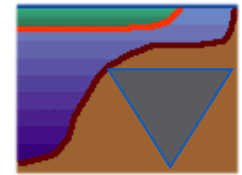


Healthy oceans

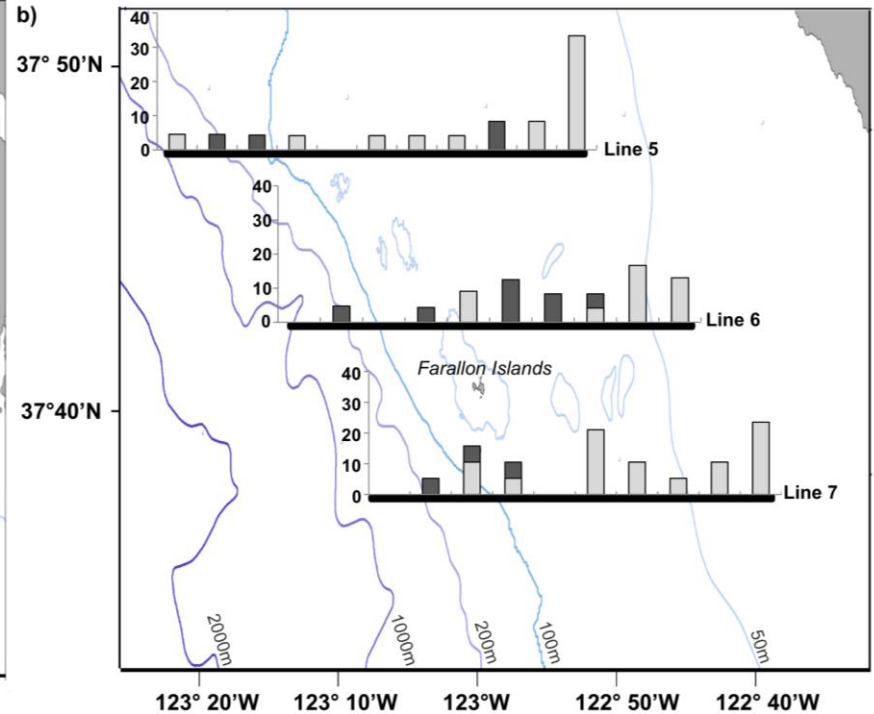
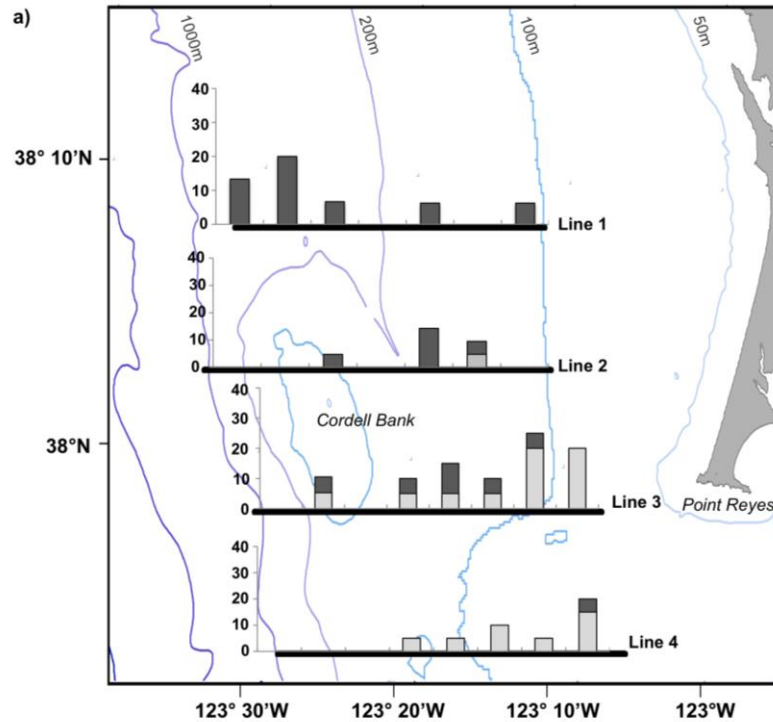
Fronts are common



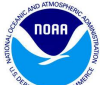
SF Bay
fronts



Upwelling
fronts

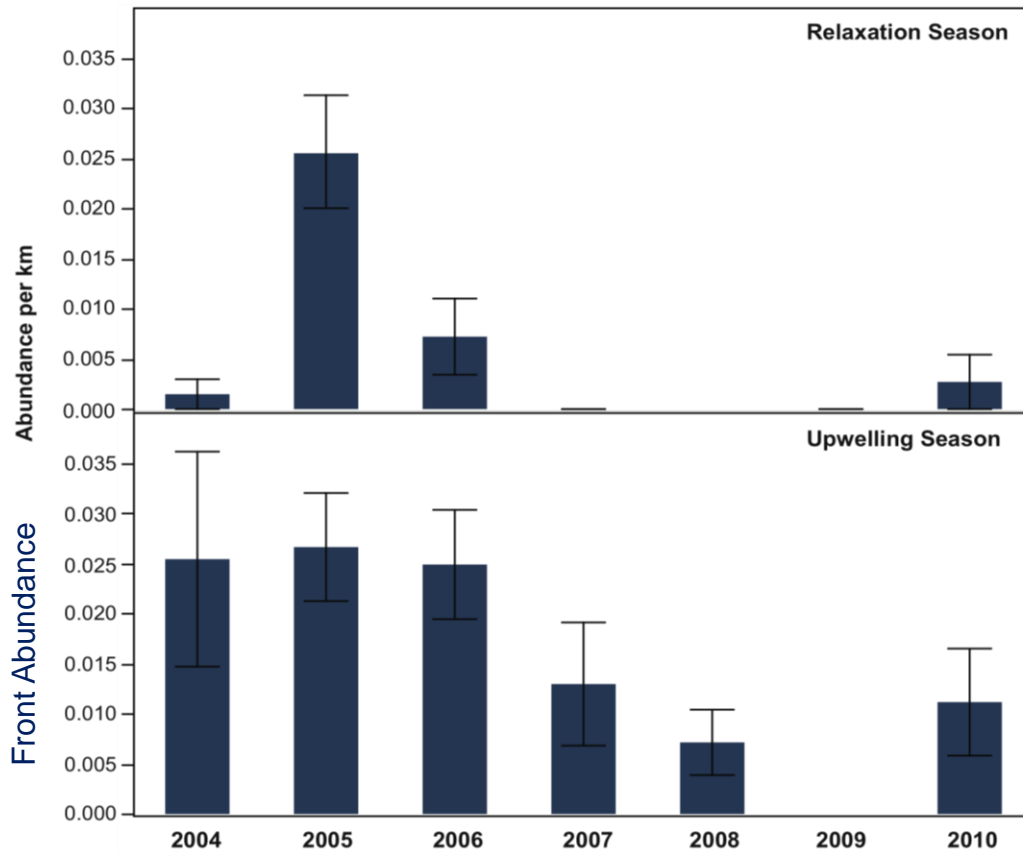


Small-Scale Surface Fronts in a California Coastal Upwelling.
Rachel Fontana (2014) *Journal of Marine Systems*?



Healthy oceans

Fronts don't last long enough



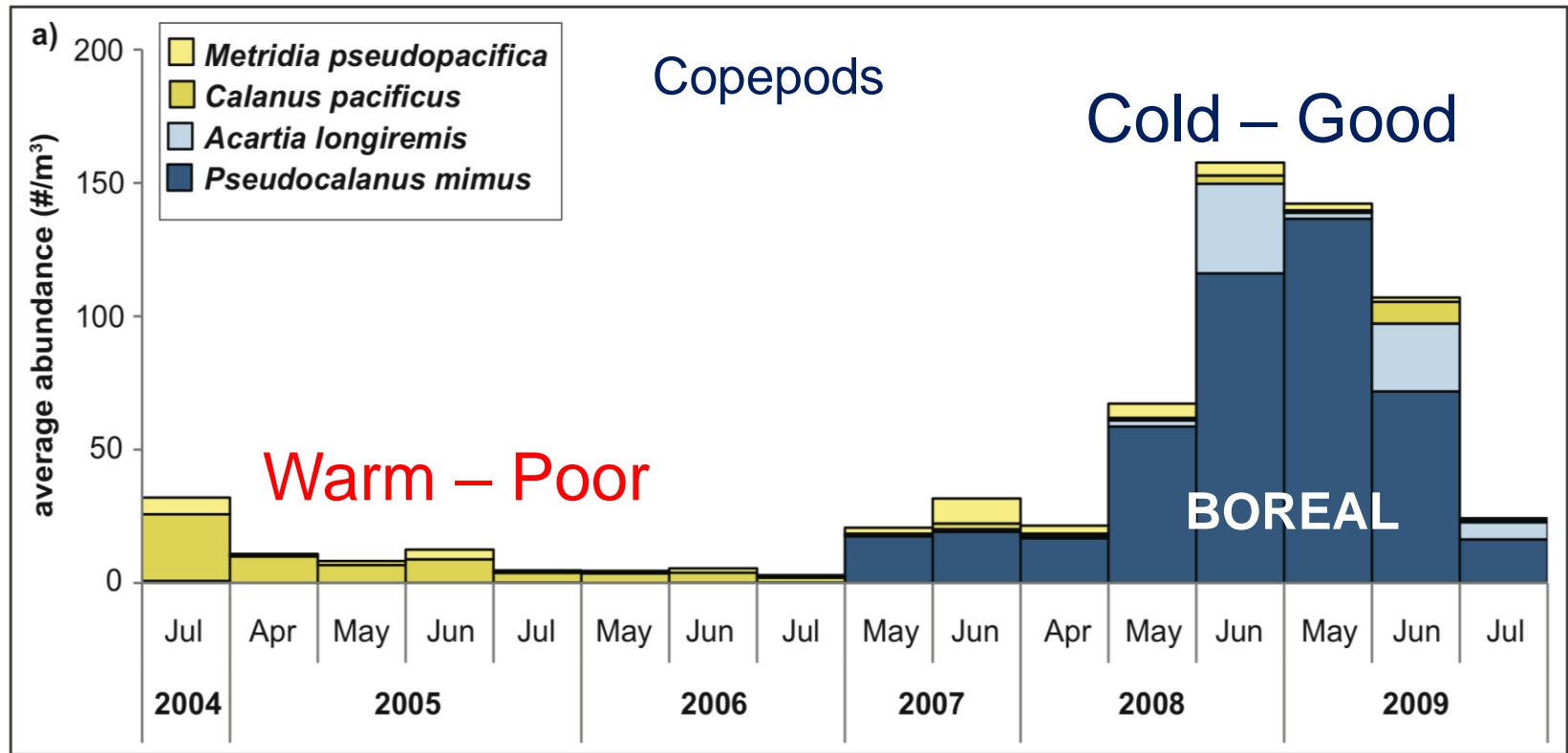
Relaxation Season
(Jul to Oct)

Upwelling Season
(Apr to Jun)



Healthy oceans

Strong upwelling brings rich prey



Zooplankton in a dynamic coastal upwelling region.
 Rachel Fontana (2014) *Progress in Oceanography?*



Ocean acidification

Monitoring ocean acidification

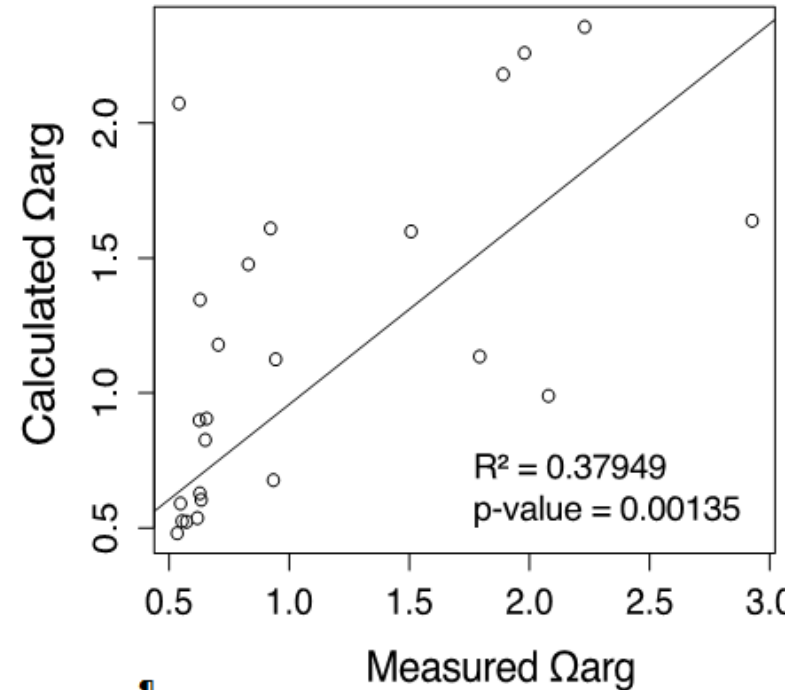
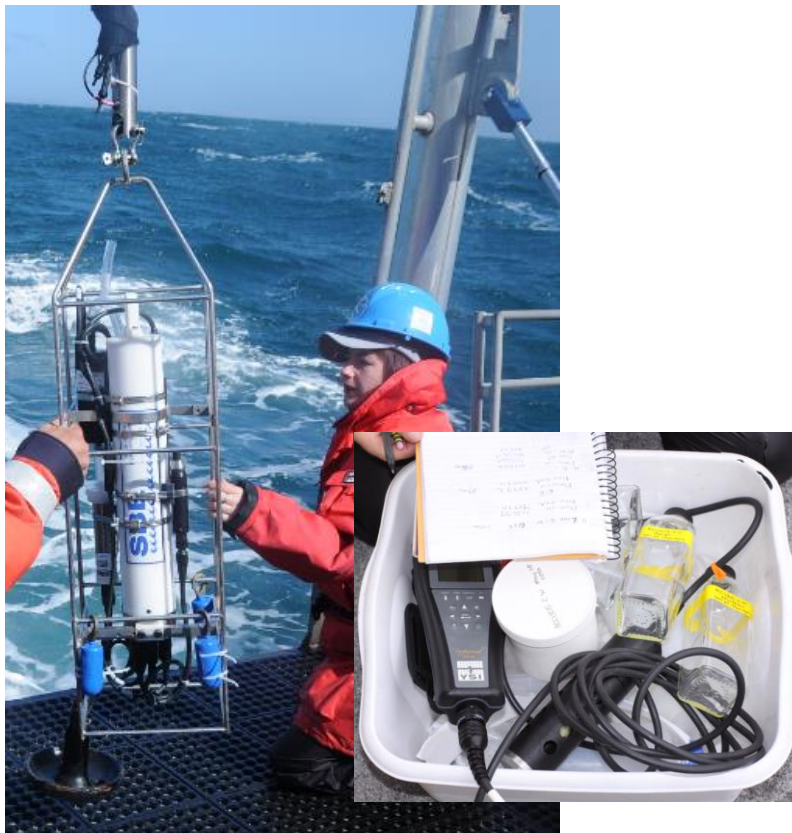
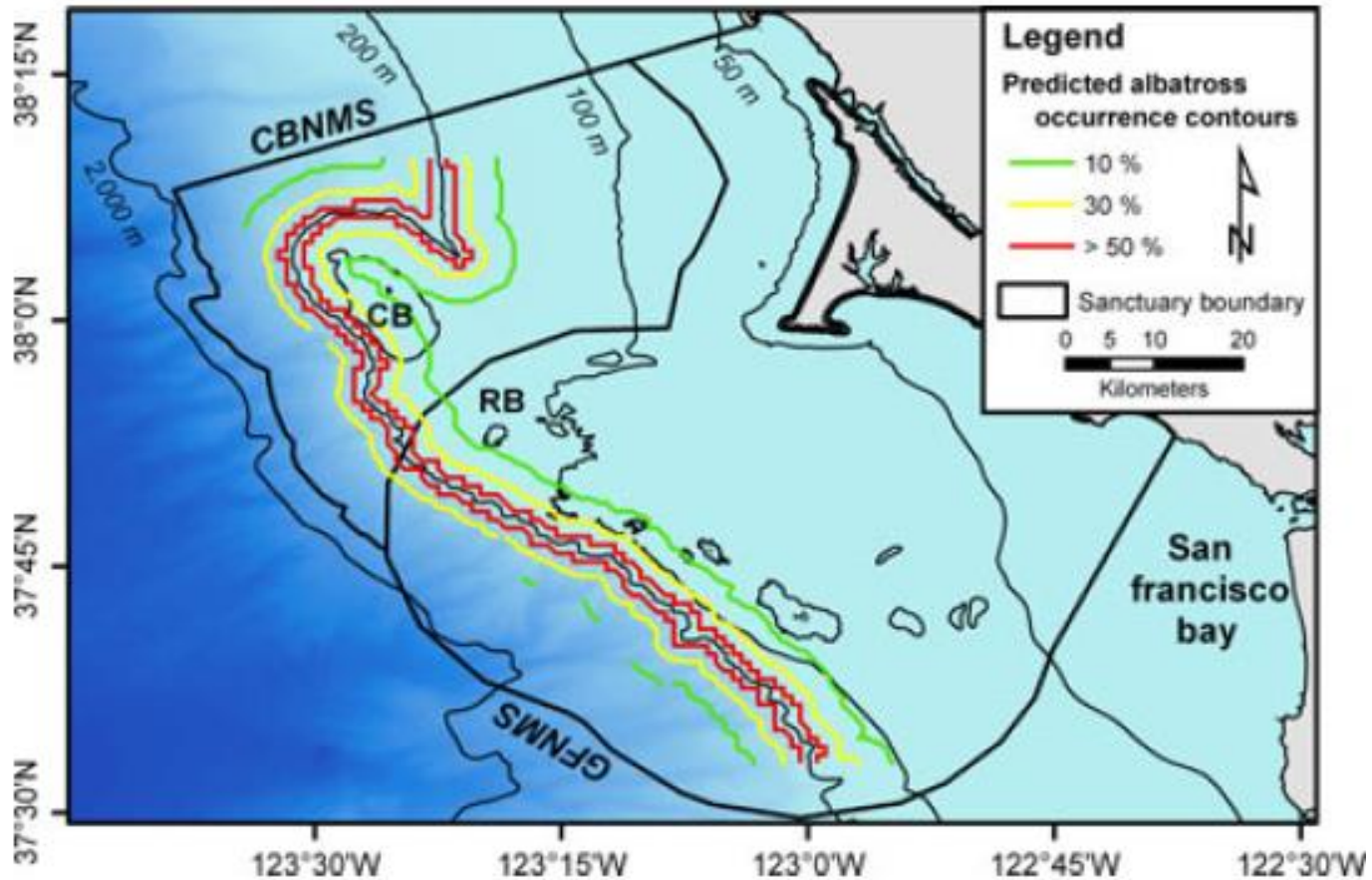


Figure 2. Relationship between measured Ω_{arg} and Ω_{arg} calculated according to the multiple regression model between Ω_{arg} , O_2 and temperature proposed in Juranek et al. (2009).



Sensitive areas

Albatross hotspots



Black-footed albatross habitat use in central California
Pamela Michael (2013) Fisheries Oceanography



Sensitive areas

Breeding seabird hotspots



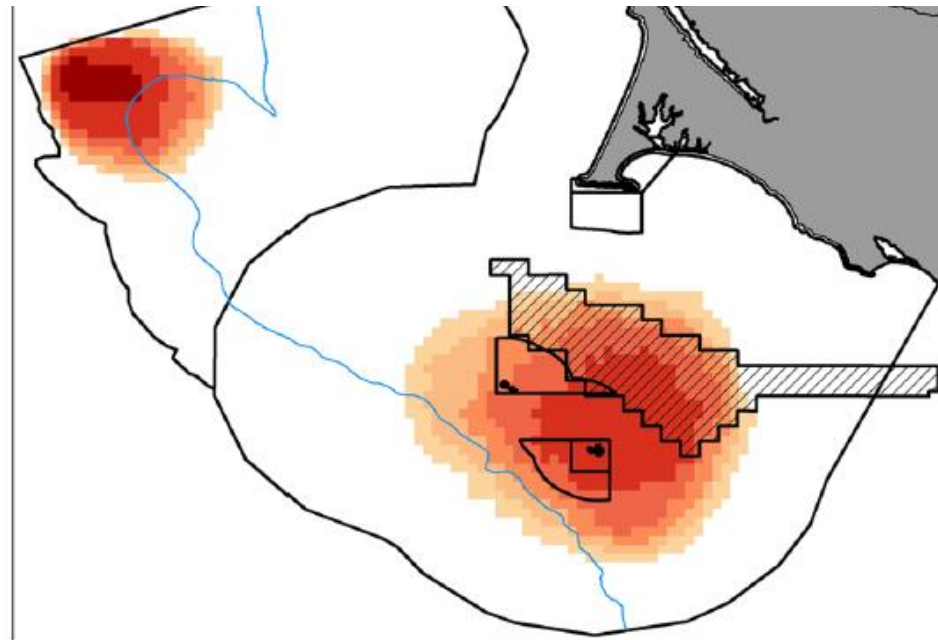
Murre

Auklet

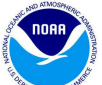
Gull

Auklet

Cormorant

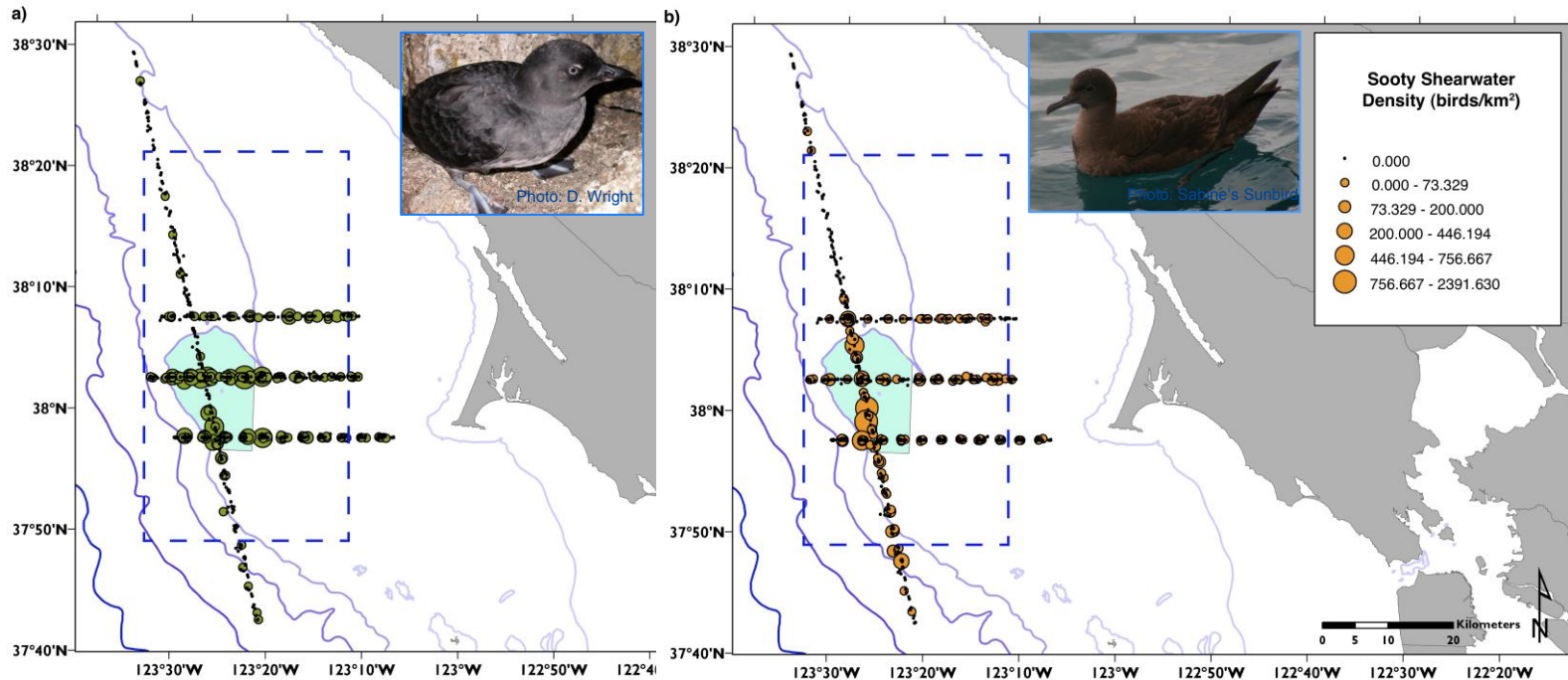


Modeling seabird habitat to inform ocean zoning within Sanctuaries.
Jen McGowan (2013) PLoS ONE



Sensitive areas

Oceanography influences seabird foraging habitat

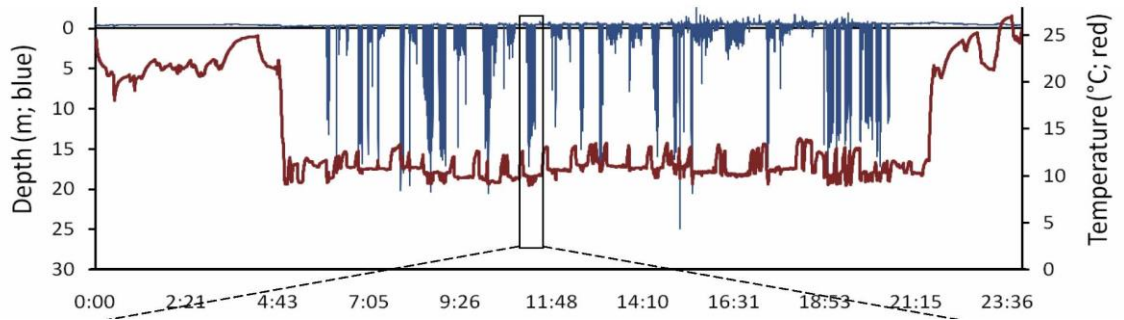


Environmental influences on auklets and shearwaters near Cordell Bank. Rachel Fontana (2015?). **Marine Ornithology.**

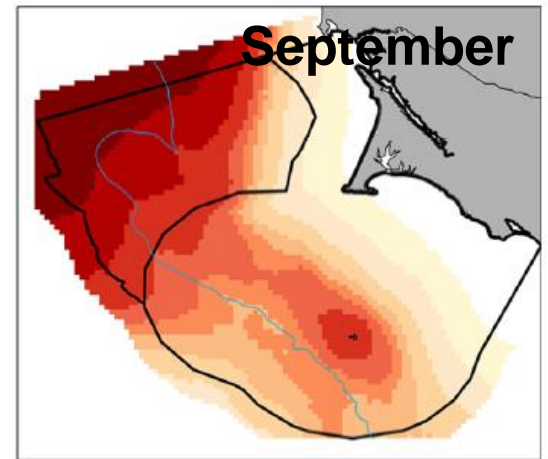
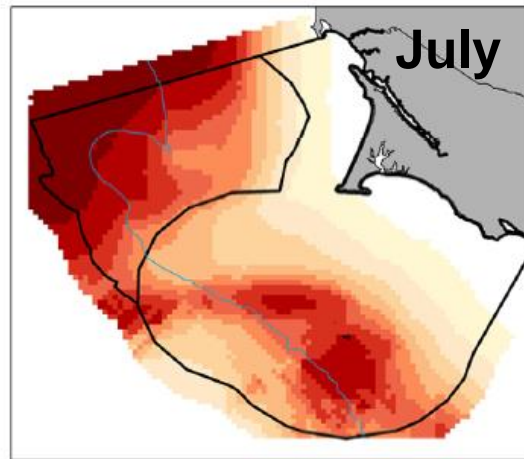
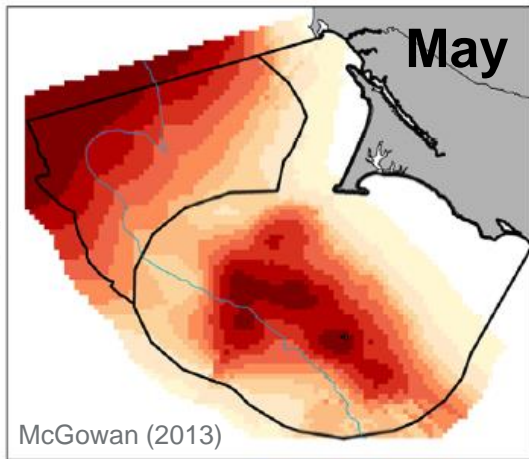


Sensitive areas

Cassin's auklets and krill



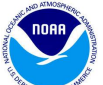
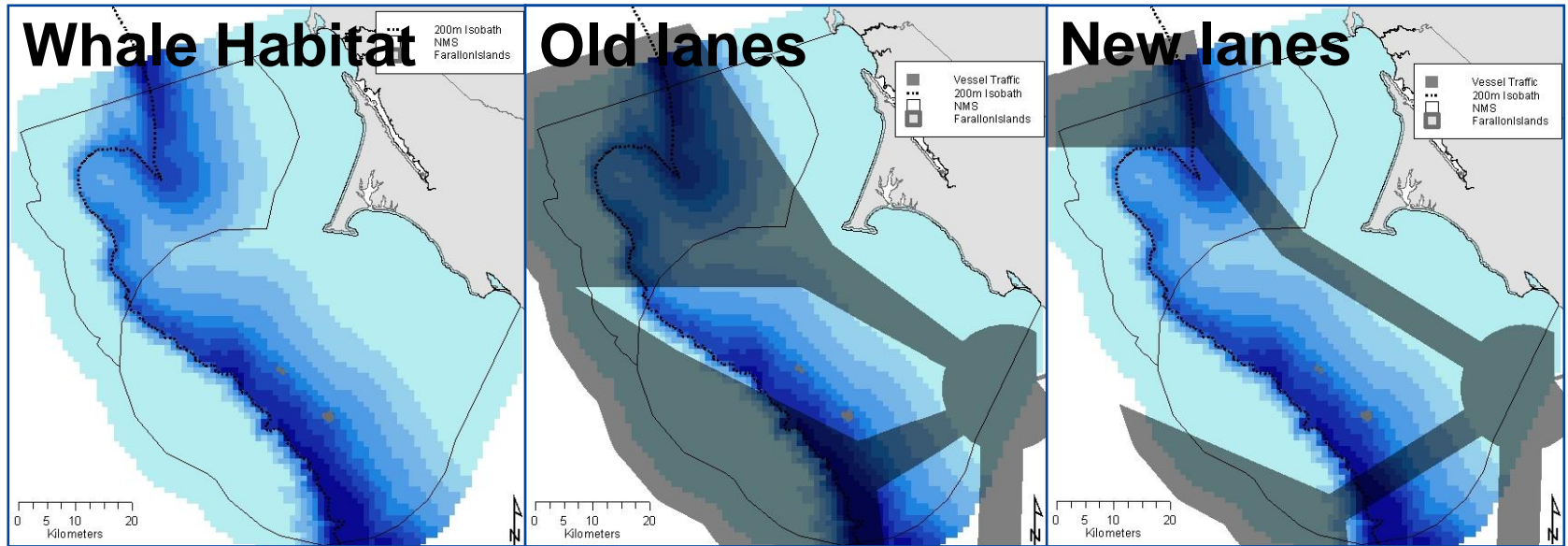
CAU



Foraging ecology of Cassin's auklets in central California Sanctuaries
Collaborators: Zach Brown and Nina Karnovsky

Sensitive areas & Ship strikes

Humpback whale hotspots



Modeling whale habitat to support changes in shipping regulations.
Andrea Dransfield (2014) Endangered Species Research.

Ship strikes

Developing a whale monitoring network

Whale ALERT

Home



PROTECT

Protect whales by increasing awareness about existing threats and actions we can take to help.

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News



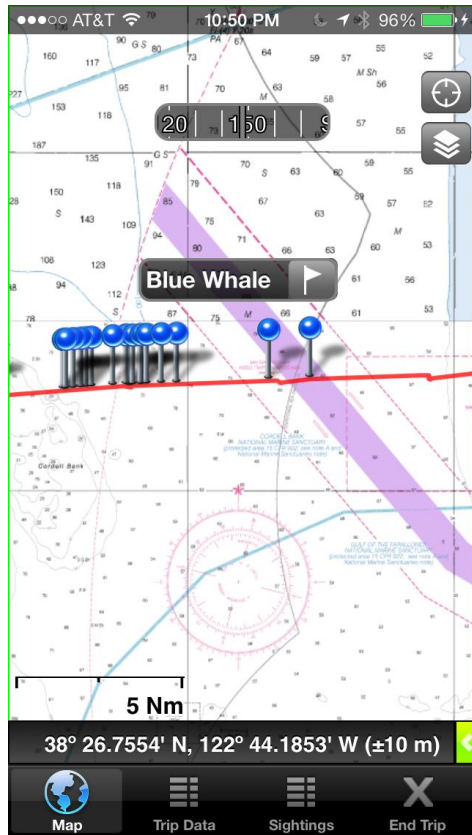
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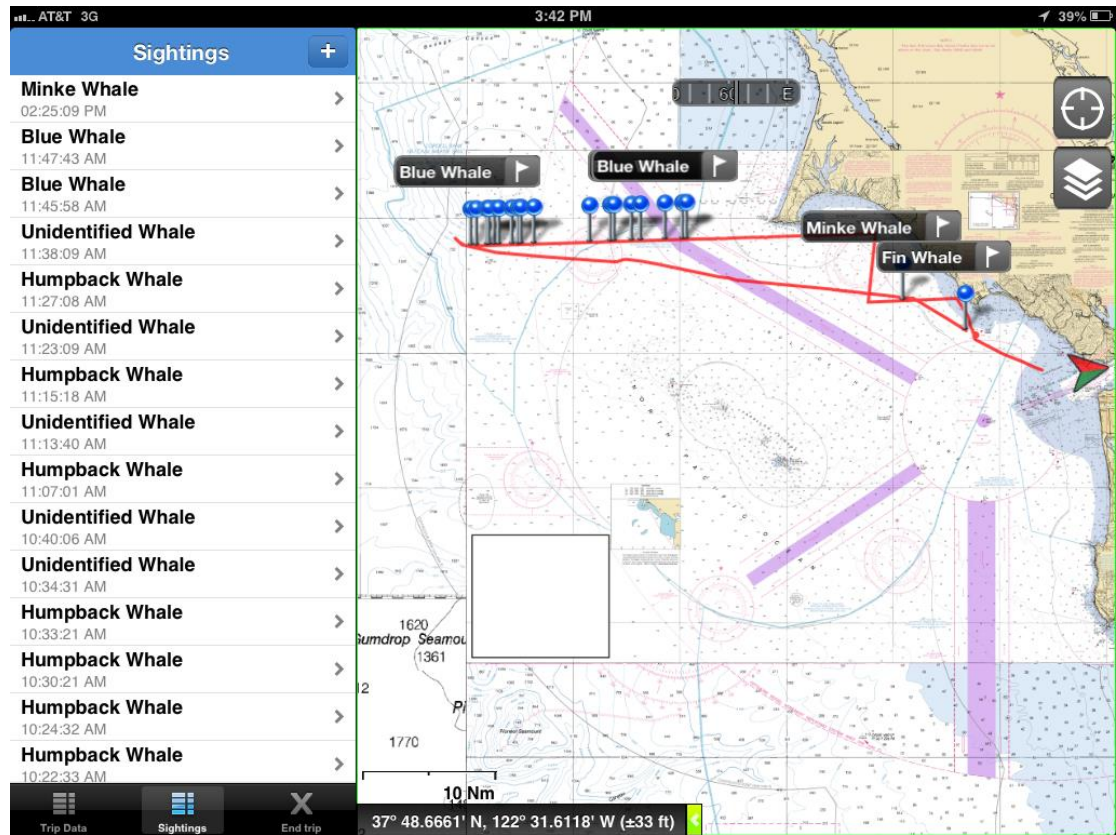
Ship strikes

Spotter Pro for data collection

iPhone



iPad



Summary

- Status report 2013 – using selected indicators
- Monitored the health of the ocean and hypoxia
- Monitored ocean acidification and biological impacts
- Contributed to ocean zoning, spill prevention and response by identifying sensitive areas
- Monitored whales and will help reduce ship strikes
- Will help assess the value of sanctuaries for wildlife and the community.



Thank you!

Elinor Patterson Baker Trust Fund

Boring Family Foundation

California Sea Grant

California Dept. of Fish and Wildlife

Cordell Marine Sanctuary Foundation

Cordell Bank NMS (NOAA)

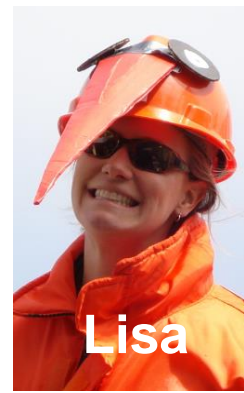
DJ&T Foundation

Farallones Marine Sanctuary Association

Farallones National Wildlife Refuge

Faucett Catalyst Foundation

Firedoll Foundation



Lisa



Shannon



Kaitlin

Gulf of the Farallones NMS (NOAA)

Hellman Family Foundation

McCaw Family Foundation

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National Fish and Wildlife Foundation

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Restoration Center (NOAA)

United States Fish and Wildlife Service

Point Blue Staff, Interns and Volunteers



ALL "MILLION SECOND QUIZ" VIDEOS

14

296

5

MAKING THE NEWS YESTERDAY, WHAT APP IS BEING DEVELOPED TO HELP PREVENT SHIPS FROM COLLIDING WITH OCEAN LIFE?

- A DOLPHIN SPOTTER
- B REEF SPOTTER
- C SHARK SPOTTER
- D WHALE SPOTTER

2 Points

75:42 84:23

CC

SIZE SHARE

FULL SCREEN

Night Ten: The Finale

Full Episode [More »](#)

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