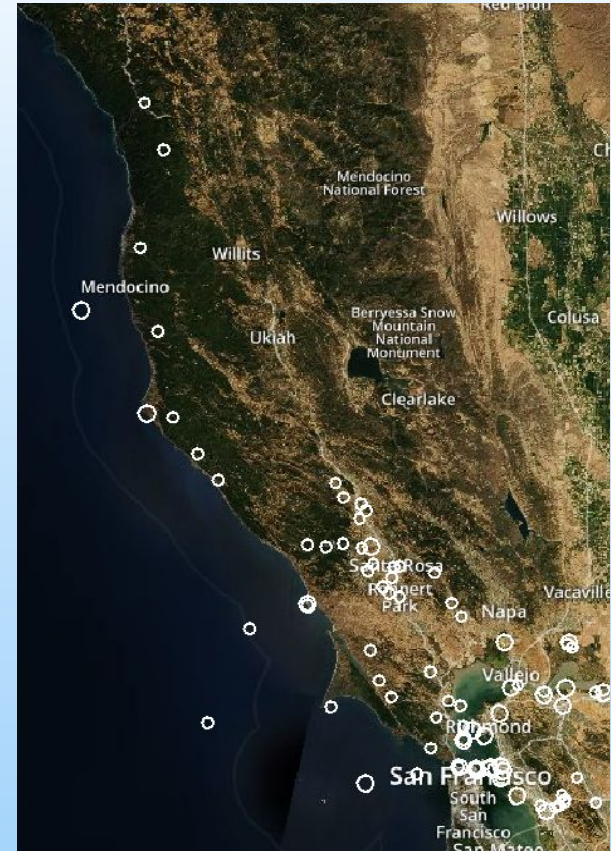


Beyond Golden Gate Research Symposium, January 2022

Ocean Observing Systems beyond the Golden Gate

John Largier, Deedee Shideler, Marcel Losekoot,
Robin Roettger, David Dann, Tessa Hill, Grant
Susner, Carol Vines, and
CeNCOOS collaborators

*Coastal & Marine Sciences Institute
UC Davis*



CeNCOOS Data Portal



Bodega Ocean Observing Node (BOON)

Observations ...

- Wind & weather ~1960 (NDBC)
- Water properties ~1960
- HAB monitoring ~2009 (IFCB now)
- Waves (HFR and CDIP)
- Surface currents (HF Radar) 2001
- Shelf currents & water properties 2005
- Glider line off Stewarts Point 2019
- Tomales Bay ~1990
- * Cordell Bank 2013 (CBNMS)
- San Francisco Bay (with EOS/SFSU) 2019
- * Seasonal estuary data ~2005 (rivers USGS)
- * River plumes (satellite data) 2020

Also ...

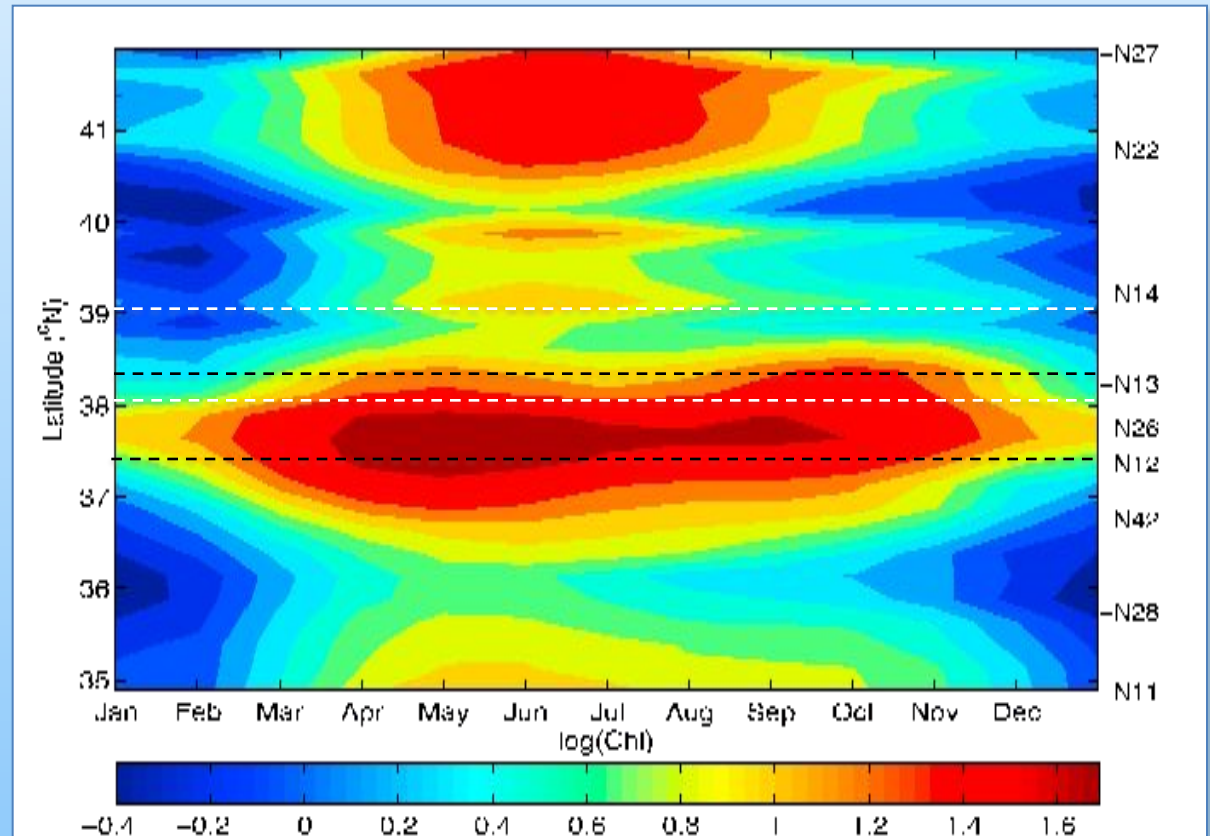
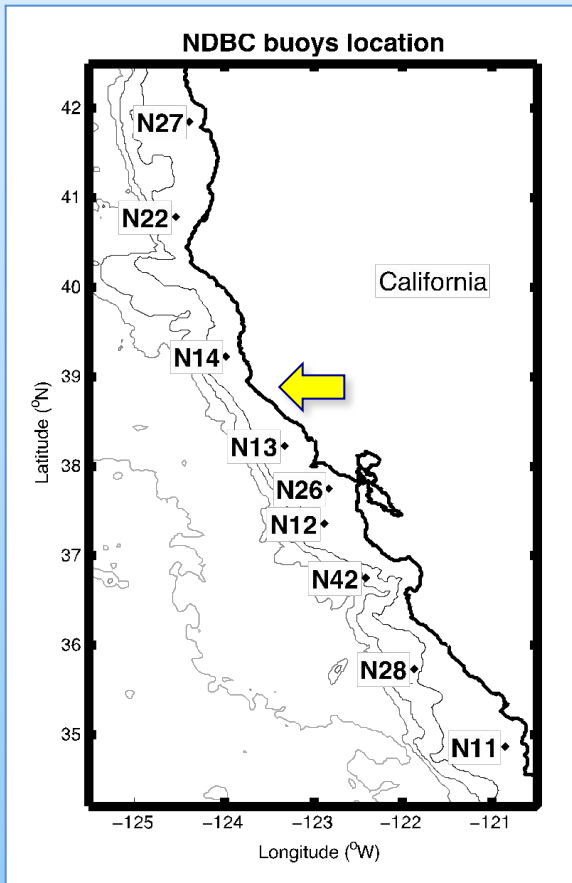
- ACCESS and other offshore surveys
- Numerical models and reanalysis data



Regional Productivity

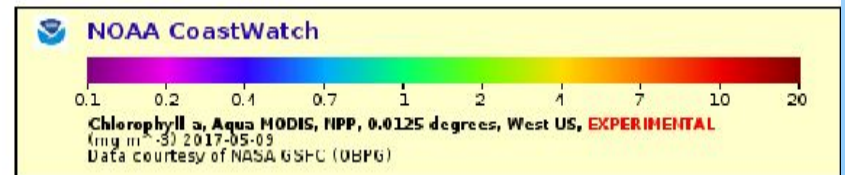
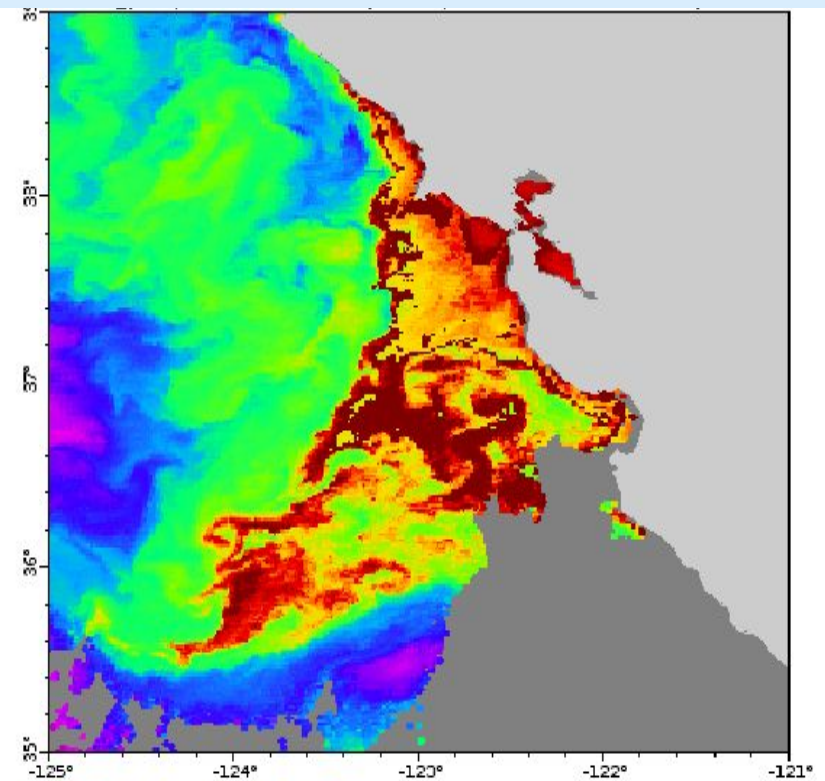
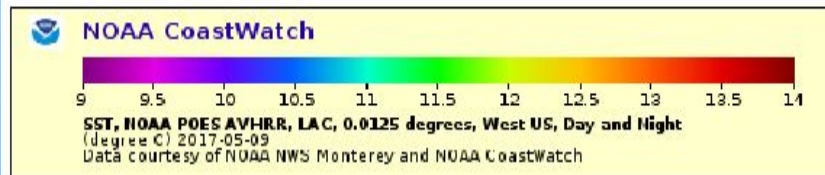
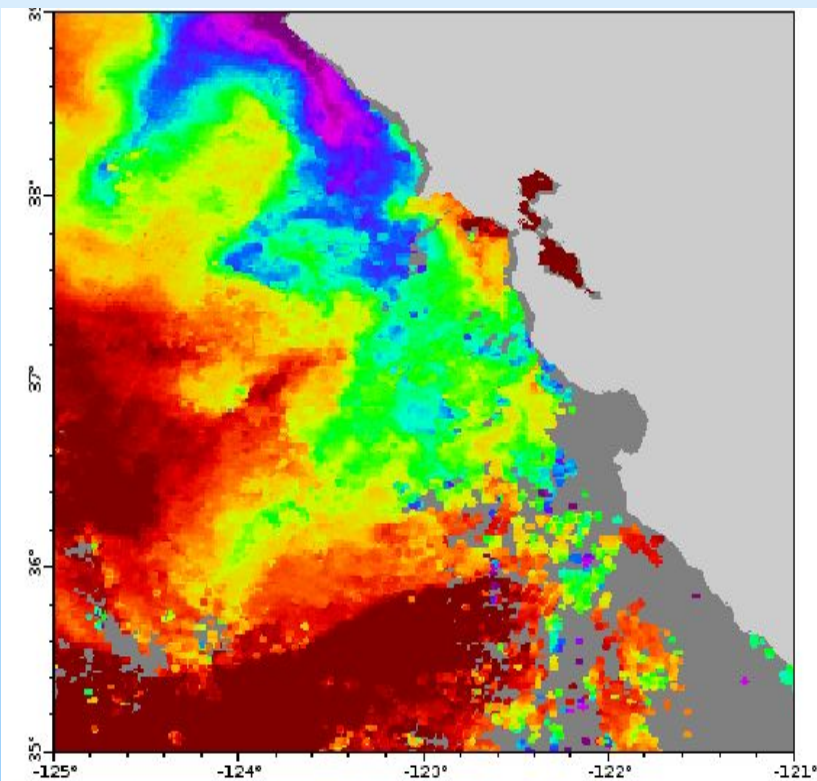
Farallones-Cordell-Reyes is a phytoplankton hotspot
... supporting a productive food web

SeaWiFS Chlorophyll 1998-2006



Regional Productivity

Point Arena upwelling center is headwaters for the Farallones-Cordell-Reyes ecosystem.



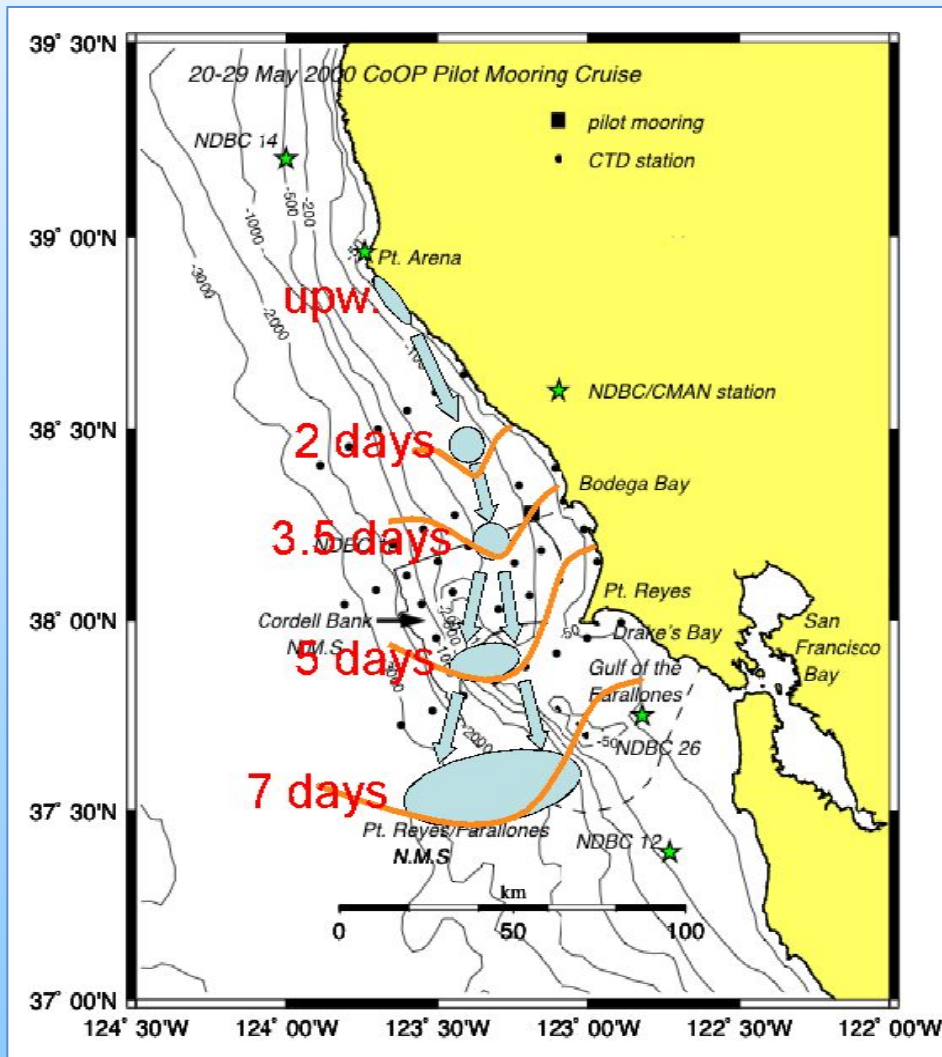
Regional Productivity

Aging of upwelled water, changing from nutrient rich to

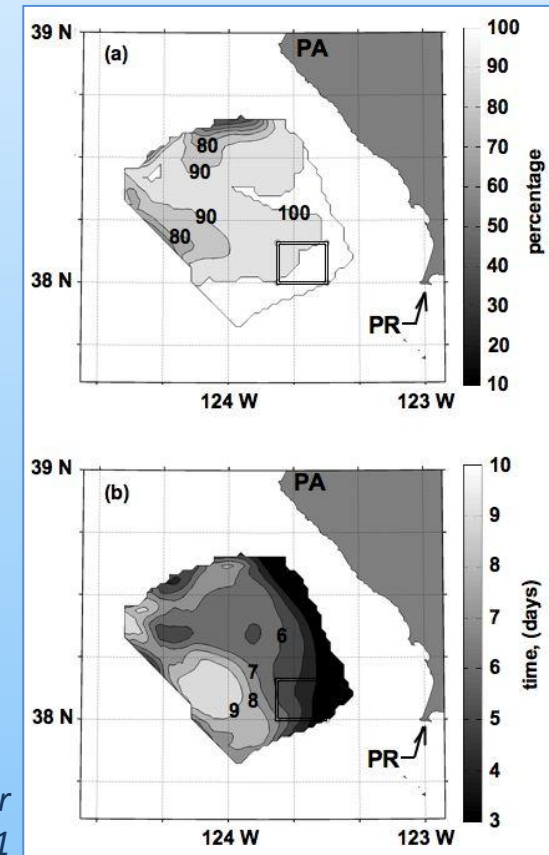
plankton rich –

... persistent southward transport

... with travel time 5-10 days



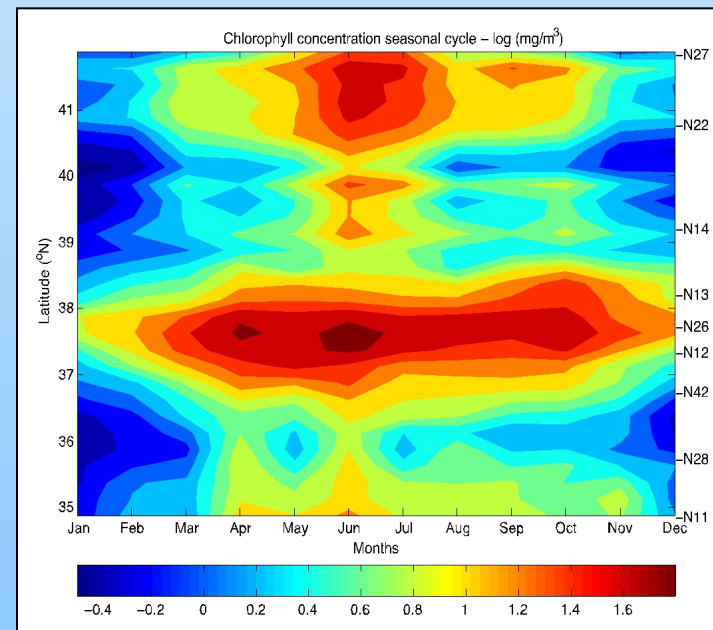
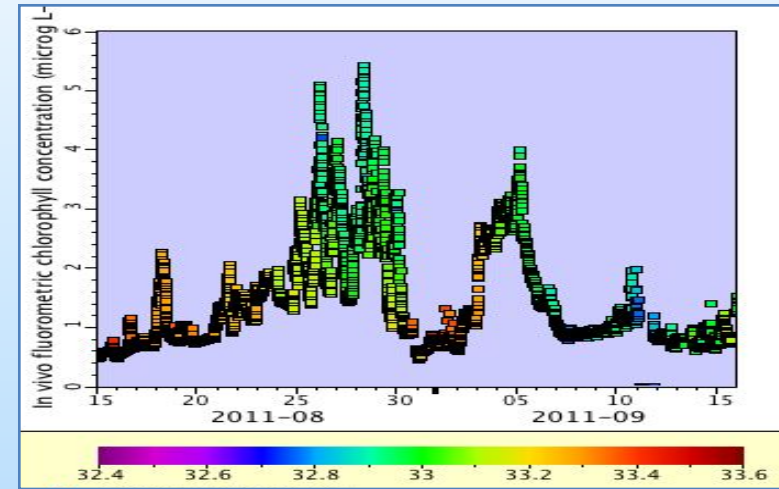
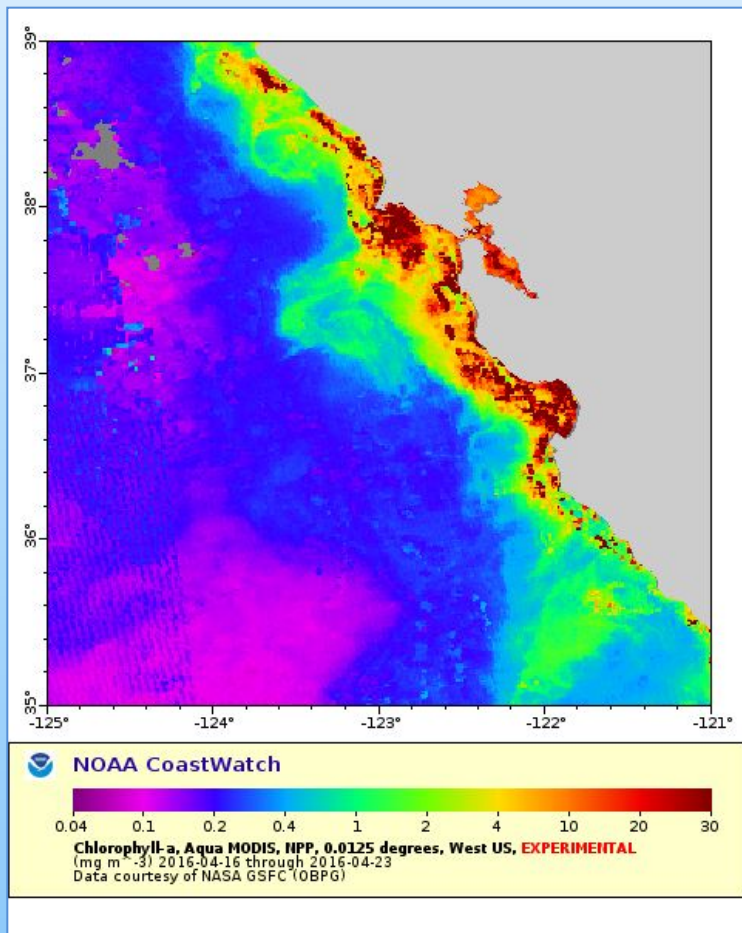
Halle & Largier
2011



Harmful Algal Blooms

Relaxation flows in the fall ...

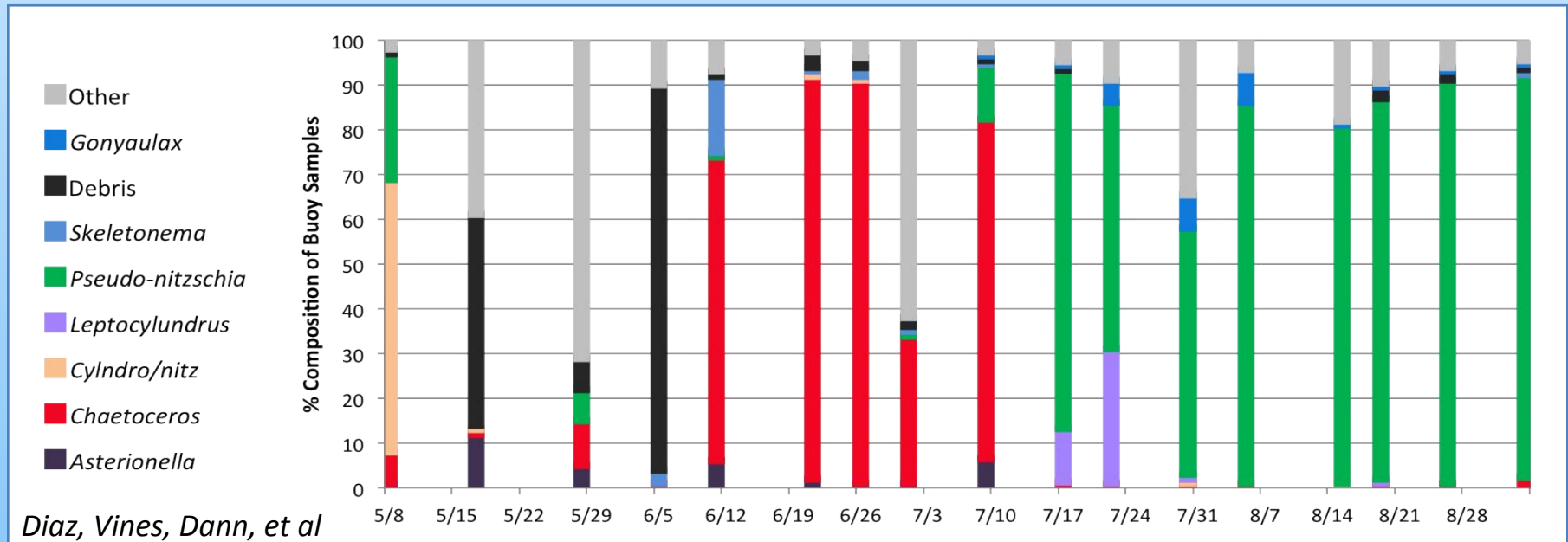
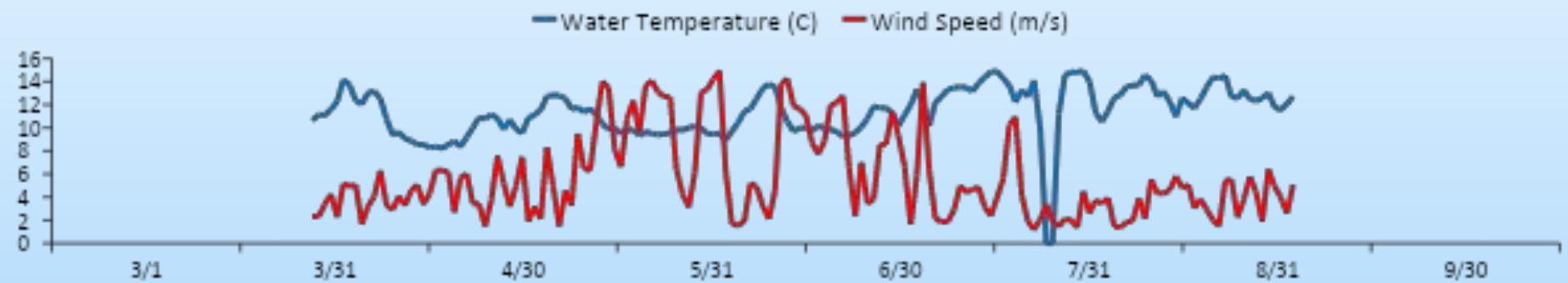
BML and HABMAP monitoring



Harmful Algal Blooms

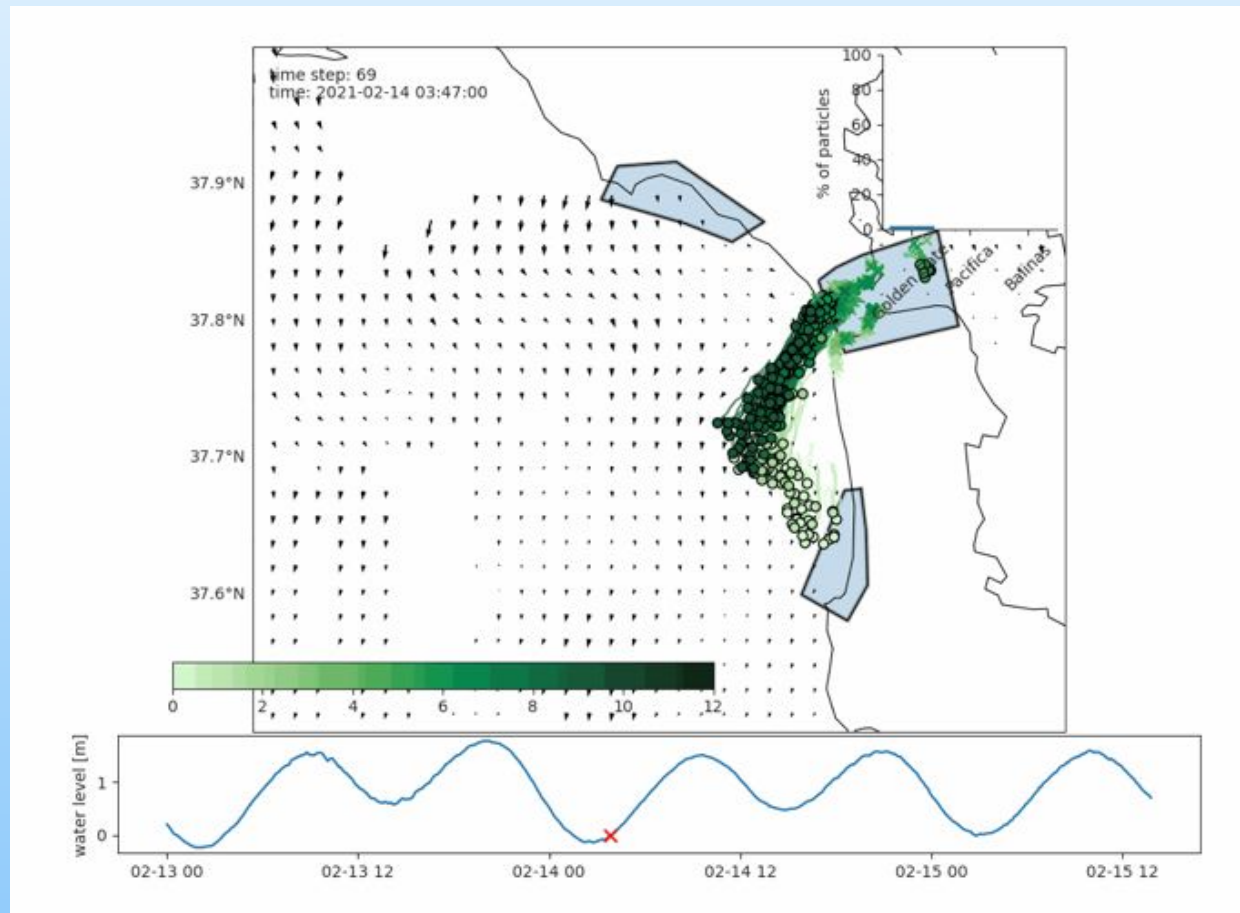
Relaxation flows in the fall ...

BML and HABMAP monitoring



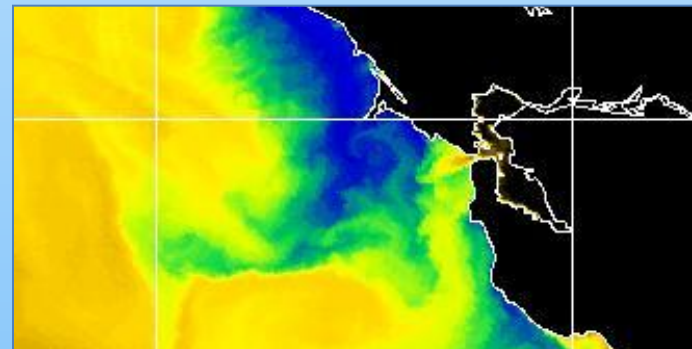
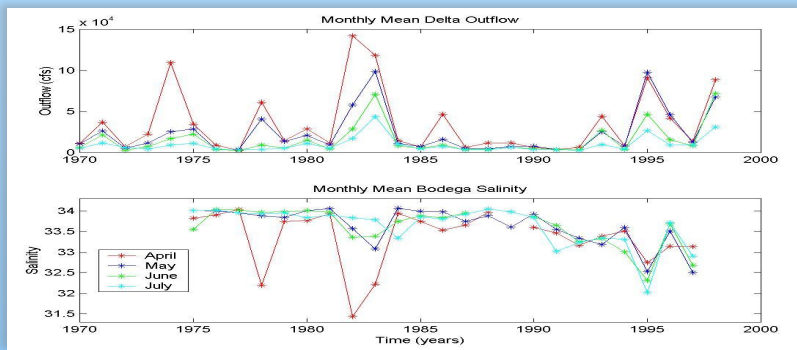
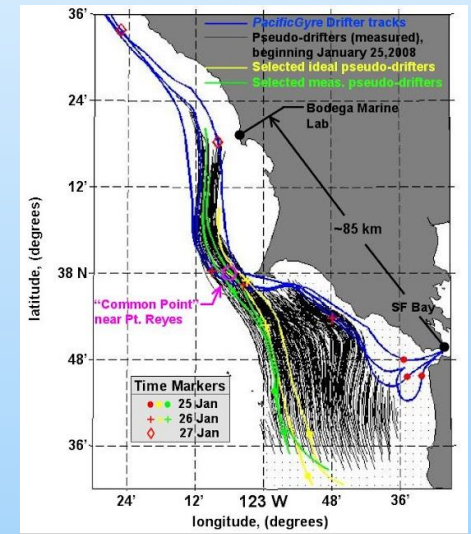
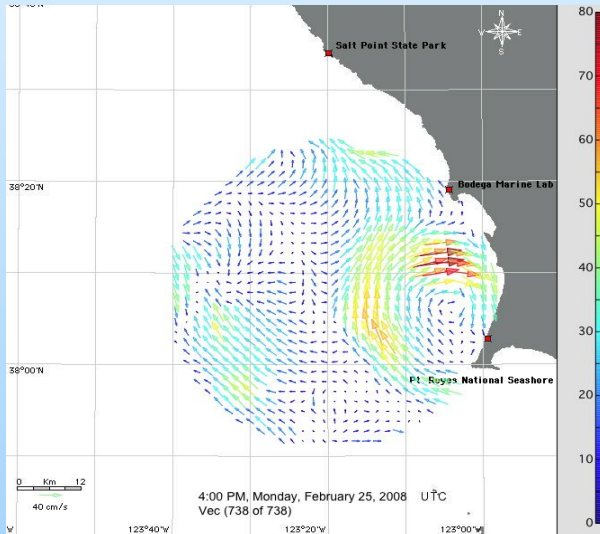
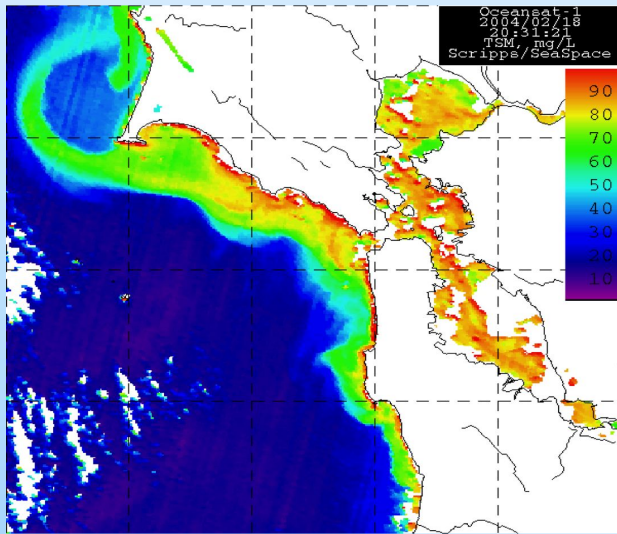
San Francisco Bay Outflow

HFR data to track tidal outflow jet



San Francisco Bay Outflow

HFR data to track tidal outflow jet ...
... and up the north coast

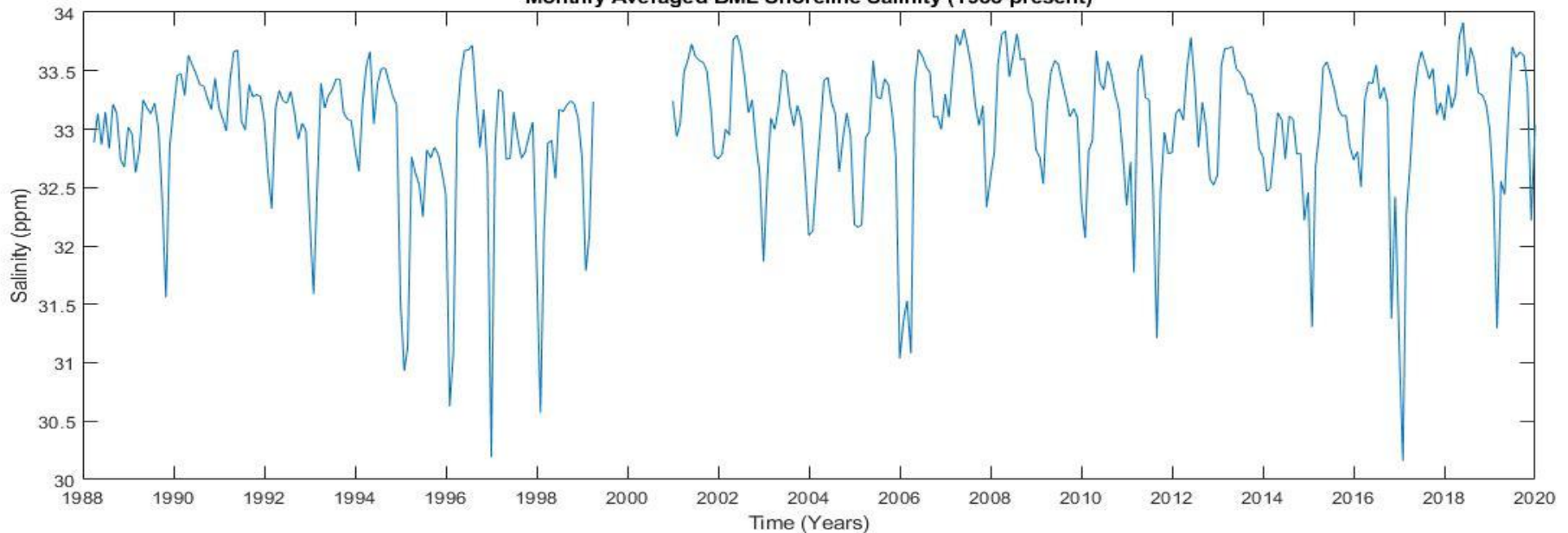


San Francisco Bay Outflow

Decades of salinity data
from BML (1988 to 2019 here)



Monthly Averaged BML Shoreline Salinity (1988-present)

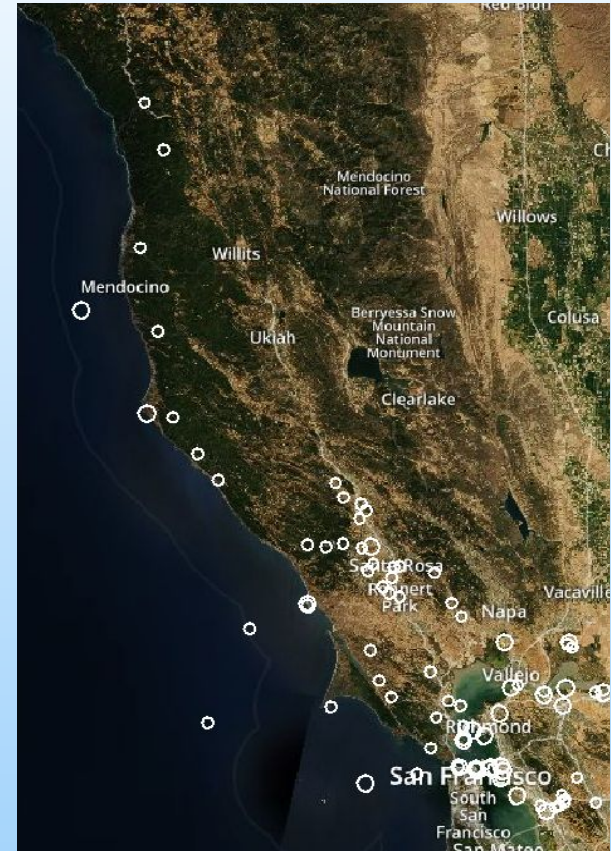


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