

**California State University
Council on Ocean Affairs, Science & Technology**



CSU The California State University

What is COAST?

The CSU Council on Ocean Affairs, Science & Technology (COAST) promotes marine and coastal research and education throughout the CSU and disseminates this information to the public for the development of responsible policy statewide.

www.calstate.edu/coast

CSU Network of Marine Resources



Aquaculture and sustainable seafood

Climate change

Ballast water

Socio-economic impacts

Coastal erosion

Commercial fisheries

Harmful algal blooms

Public policy

Coastal wetlands

Sea-level rise

Coastal hazards

Water quality

Marine spatial planning

Ocean energy

Ocean acidification

Ecosystem-based management

Environmental contaminants

Marine protected areas

Seafloor mapping

Marine debris

Invasive species

Ballast Water Treatment Testing: *Golden Bear Facility*

- Primary vector in spread of aquatic invasive species



T/S Golden Bear operated by CMA

- Partnership among CMA, MLML, Glosten Assoc. Inc. with support from MARAD, NOAA, industry and CA State Lands Commission

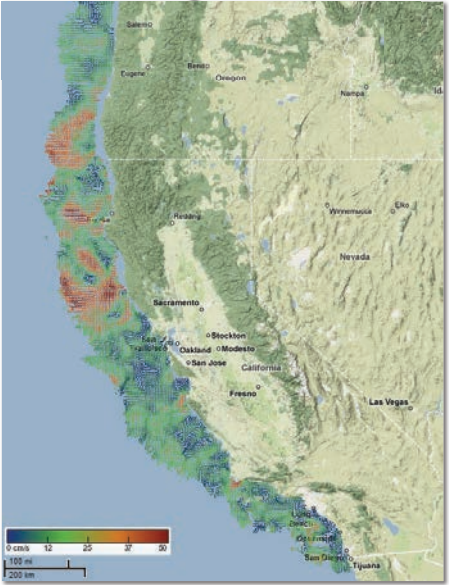
Effective platform for technology development



\$1M retrofit allowing open deck installation of ballast water treatment systems

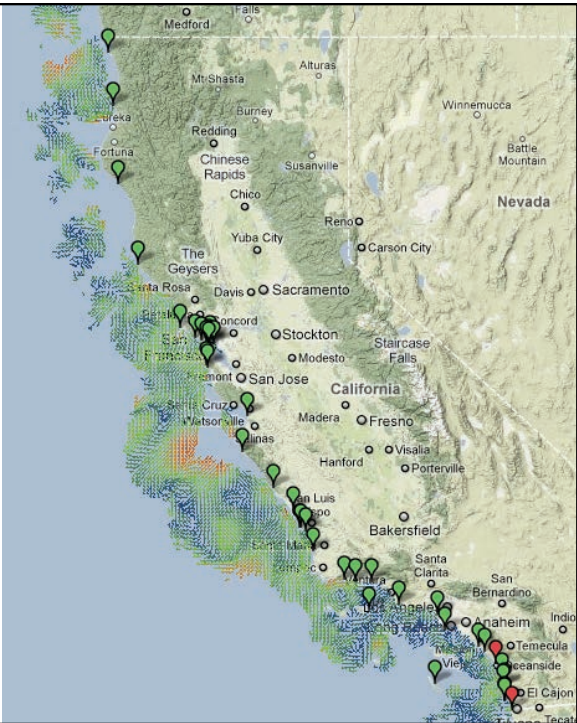
Surface Current Mapping for Vessel Efficiency and Safety

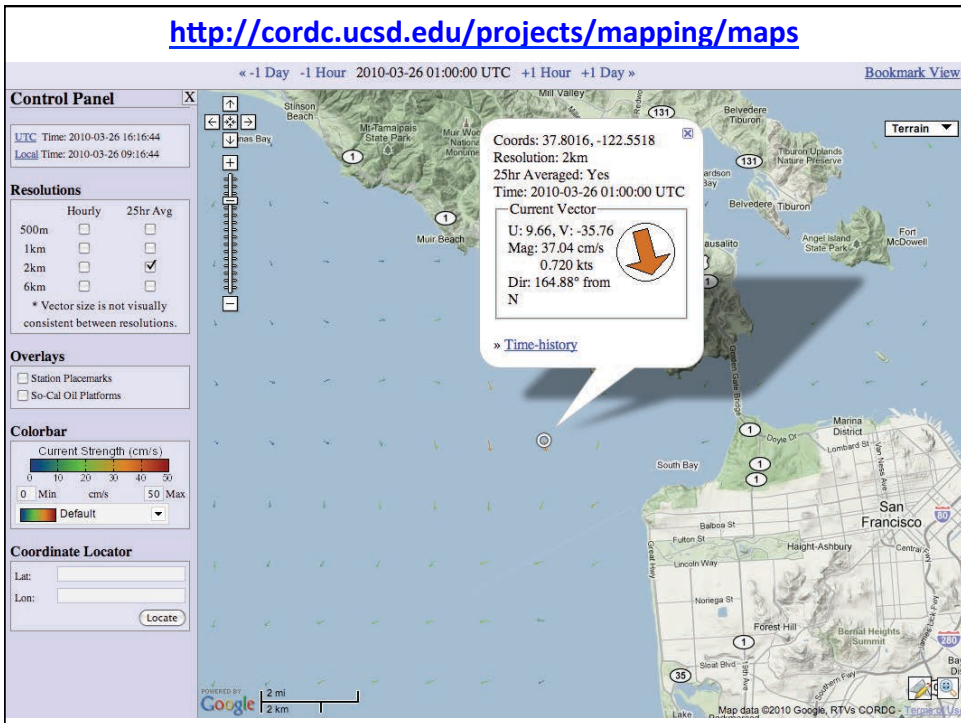
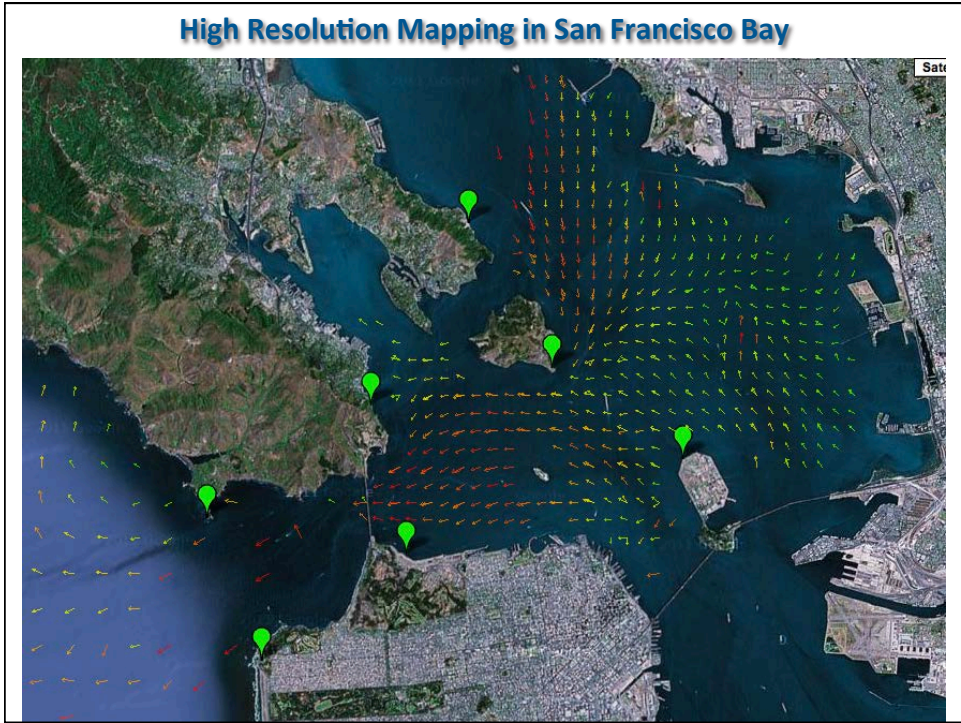
- Coastal Ocean Currents Monitoring Program (COCMP)
- \$21M investment in high-frequency radar along entire CA coast

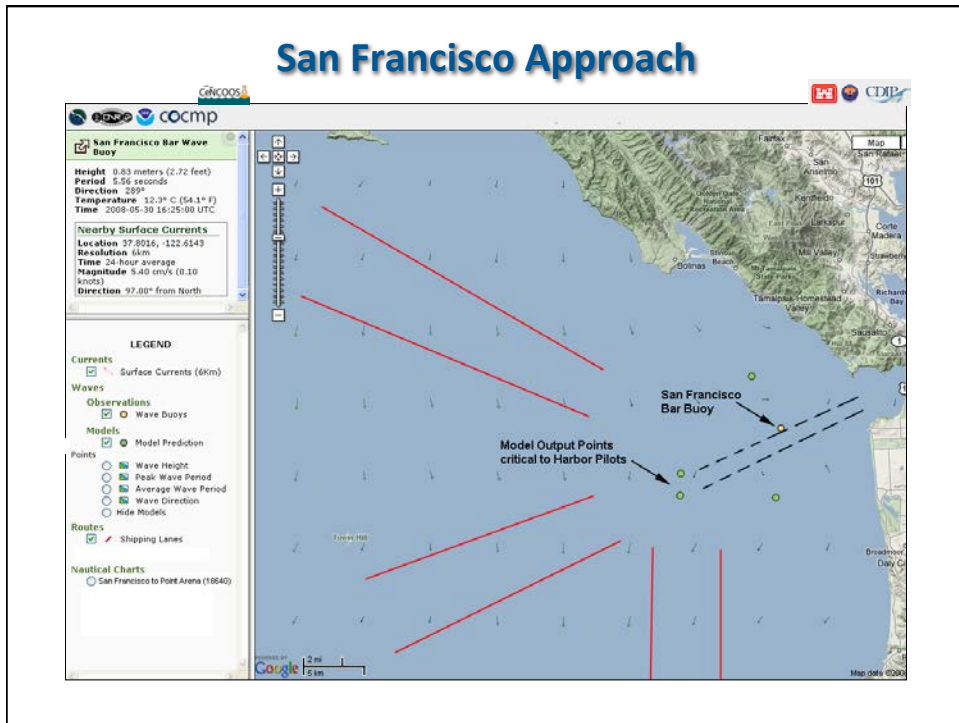
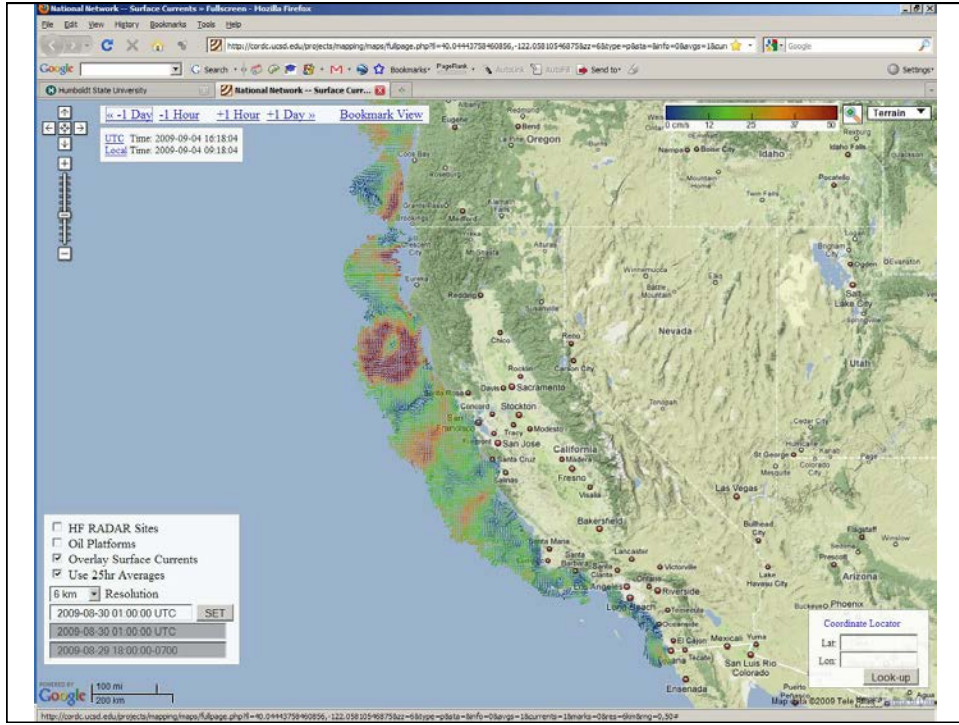


Locations of 5, 12, 25, and 42 MHz High Frequency Radar Antennas

- Outer coast (5 MHz)
 - Range: 150-180 km
 - Resolution: 6 km
- Embedded around San Francisco coast and Southern CA Bight (12 and 25 MHz)
 - Range: 60 km
 - Resolution: 1-2 km
- SF Bay (42 MHz)
 - Range: 15 km
 - Resolution: 400 m







For more information

- COAST
 - www.calstate.edu/coast
 - Dr. Krista Kamer kkamer@sfsu.edu
- Surface current mapping
 - cordc.ucsd.edu/projects/mapping/
 - Dr. Toby Garfield, SFSU garfield@sfsu.edu