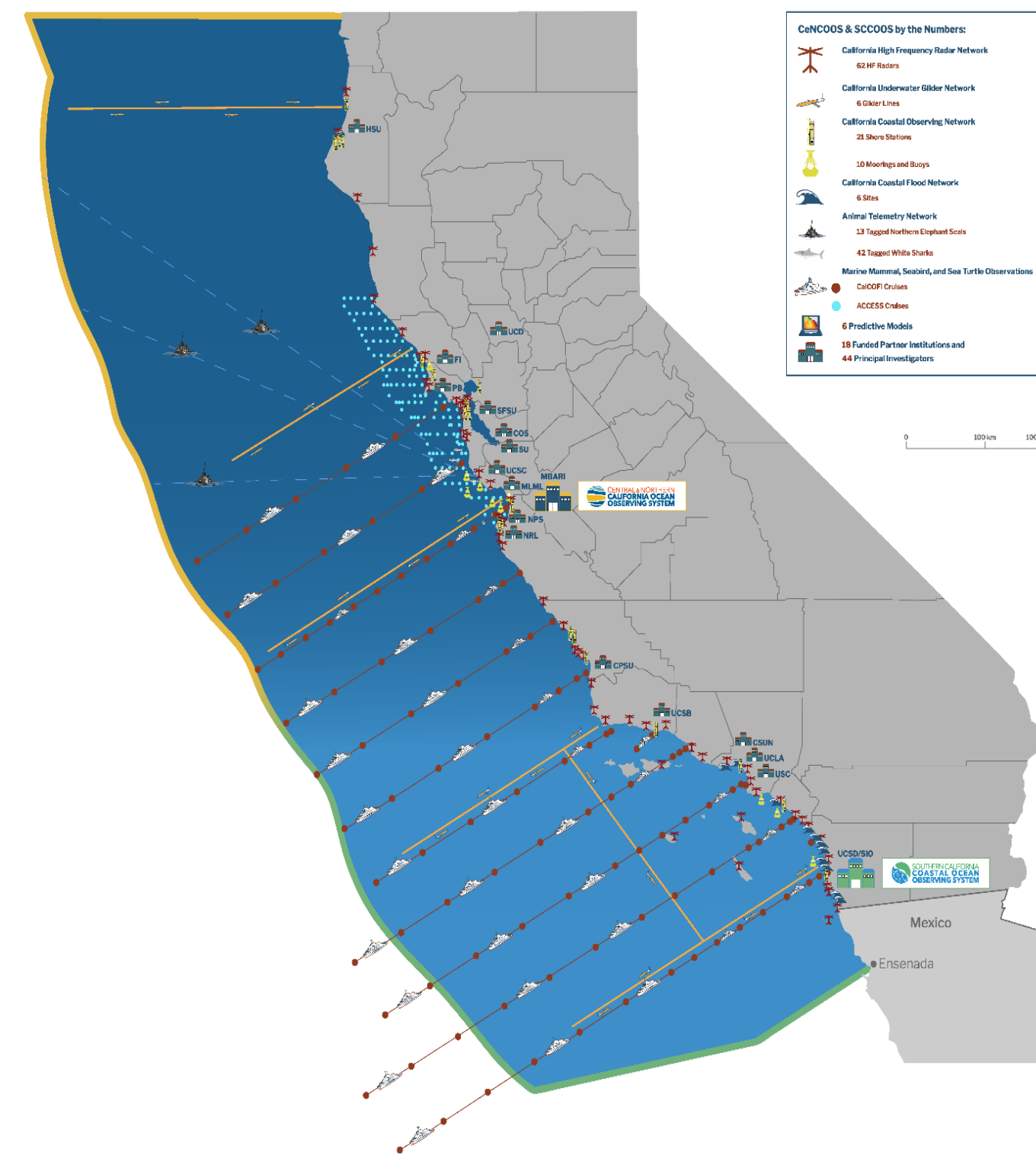


# Building Coastal Climate Resilience & Improving Equitable Service Delivery The Central and Northern California Ocean Observing System

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## Coastal Climate Resilience in CeN California

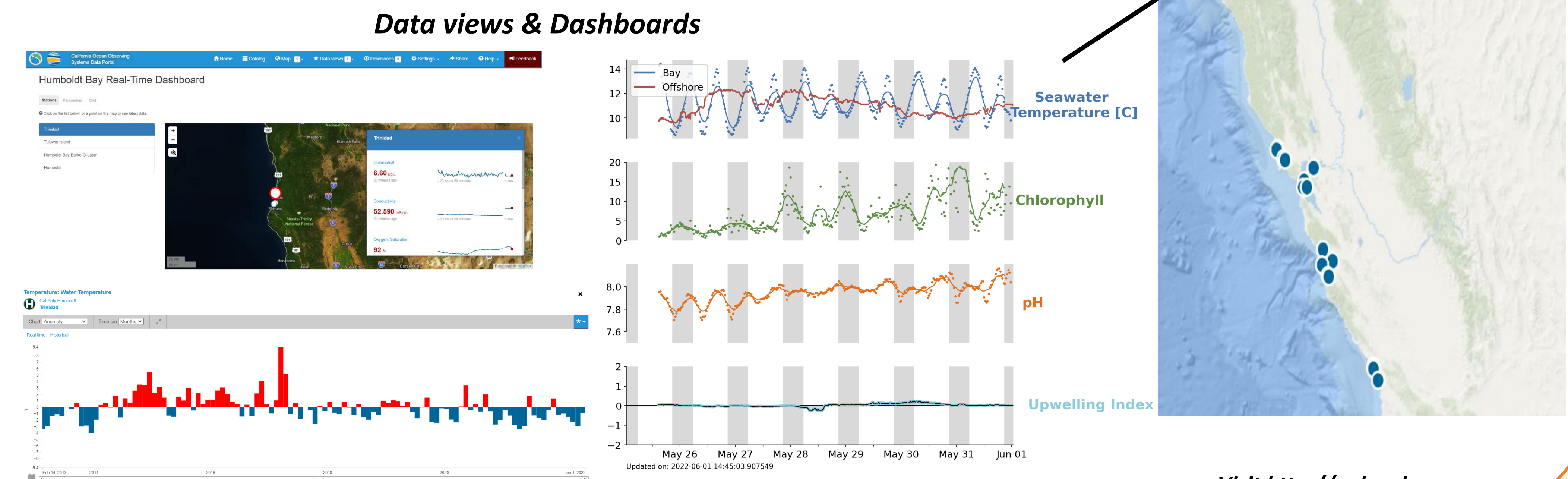
California coastal communities are poorly prepared for changing coastal conditions and the impacts of climate change, with related issues being most acute for overburdened and frontline communities. Here, CeNCOOS is embarking on a new approach for improved coastal and climate resilience and equitable service delivery. This work will improve the availability of weather and climate information, including related to ocean acidification (OA), hypoxia, and harmful algal blooms through expanded capabilities to measure, predict, and respond to extreme events. This includes DMAC upgrades to address place-based management needs (including for offshore wind) and decision-support products.



Visit <http://caloos.org>

## CalOOS (CeNCOOS/SCCOOS) Coastal Observing Network

The Cal OOS Coastal Obs (*shore station*) network delivers high quality, reliable, real-time observations of temperature, salinity, chl-a, dissolved oxygen, nutrients, and increasingly, carbonate chemistry variables (pH, pCO<sub>2</sub>).



Visit <http://oah.caloos.org>

## Ecosystem Change (EcoChg)

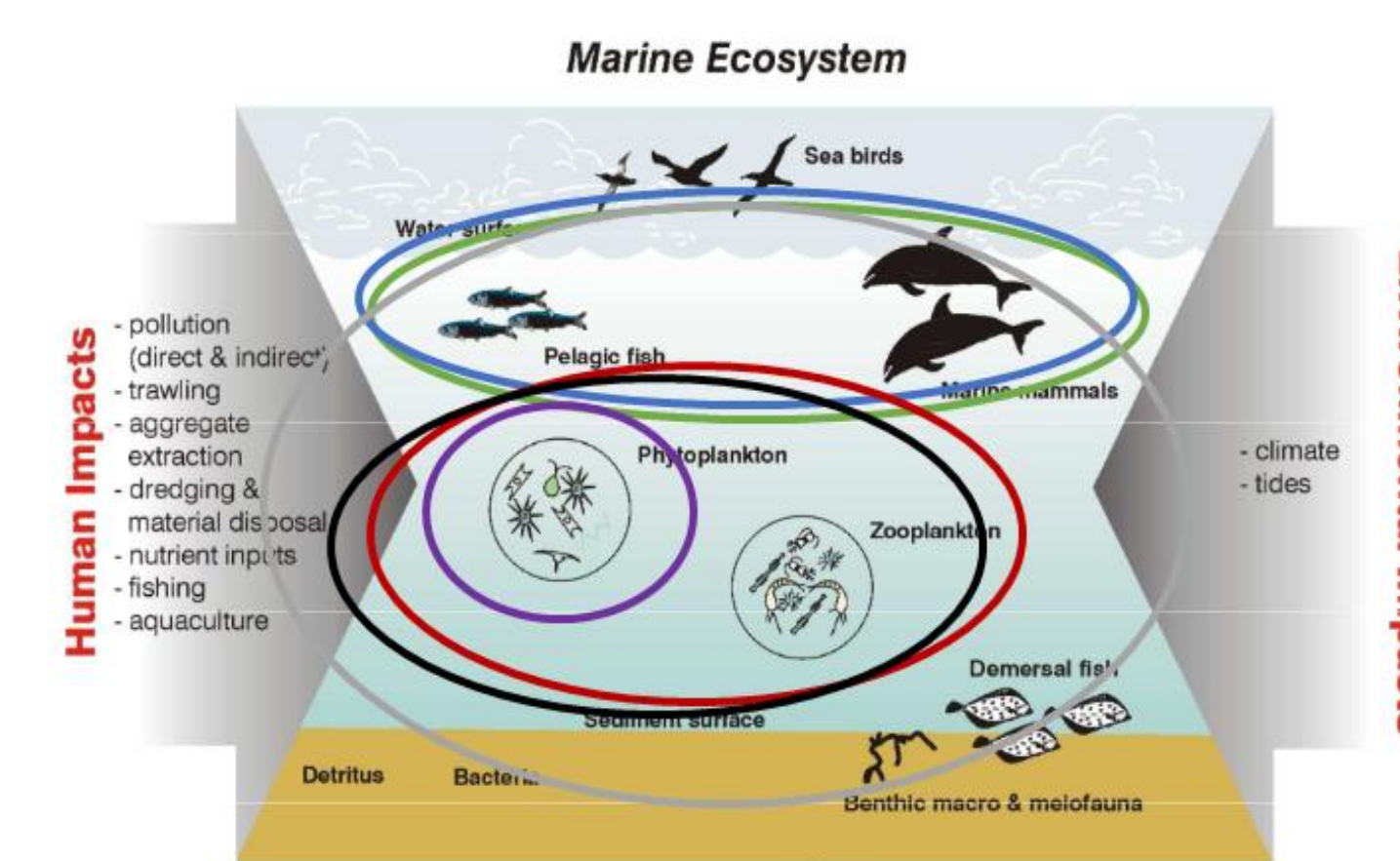
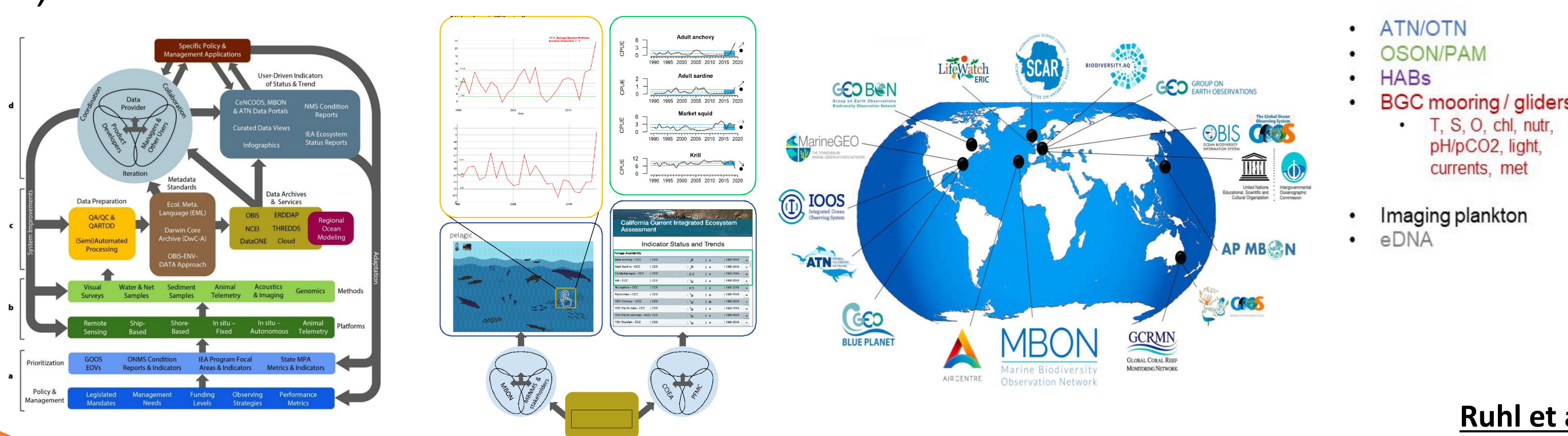
Clear and consistent data and information on coastal ocean ecosystems is imperative for managing societal and climatic pressures on marine resources. Such information, including biology and biodiversity data is of high interest in our region, driven by needs from the CA Ocean Protection Council, soon to be 4 NMSs, and >130 CA MPAs, 6 OSW lease areas, and a very productive and dynamic Large Marine Ecosystem supporting aquaculture and fisheries, all in an area where the social license to operate gets high scrutiny from NGOs et al. including from ocean sound/PAM, eDNA and processing of a wide range of data to support place-based management (e.g. for NOAA, BOAM, NASA, and more).

**Goal 1.1:** Understand and meet community needs for EcoChg observations

**Goal 1.2:** Communities of Practice to Develop, Share, and Evolve Best Practices

**Goal 1.3:** Common standards and data management practices

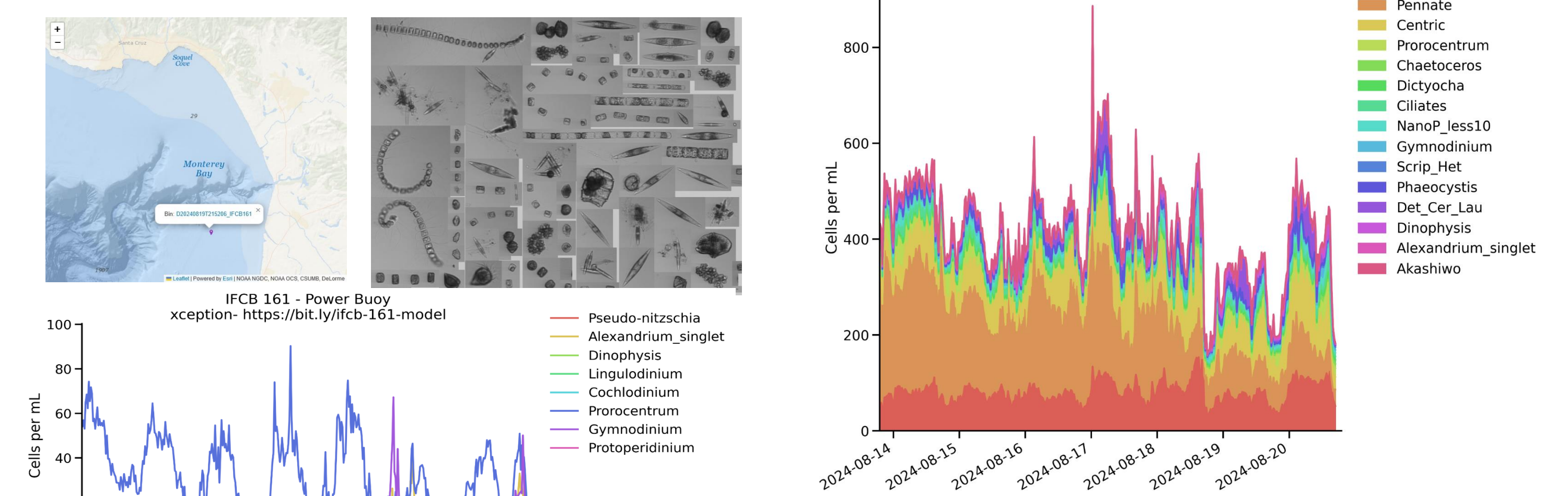
### Leveraging Existing CoPs



Ruhl et al., <https://doi.org/10.5670/oceanog.2021.221>

## Harmful Algal Blooms – Early Warning Detection

With SCCOOS, CeNCOOS supports a statewide network of automated *in situ* phytoplankton measurements to implement an automated early warning system for the detection and identification of a suite of potential HABs to enable rapid response and better decision-making. Cutting-edge imaging data processing and communication platforms in support of the nation and NHABON.



This particular facet of our ecosystems data of high interest for the region, noted through usage stats and other interest. IRA and NHABON et al. are driving HAB DAC, IFCB and other HABMAP efforts.

## Coastal Ocean Weather & Climate

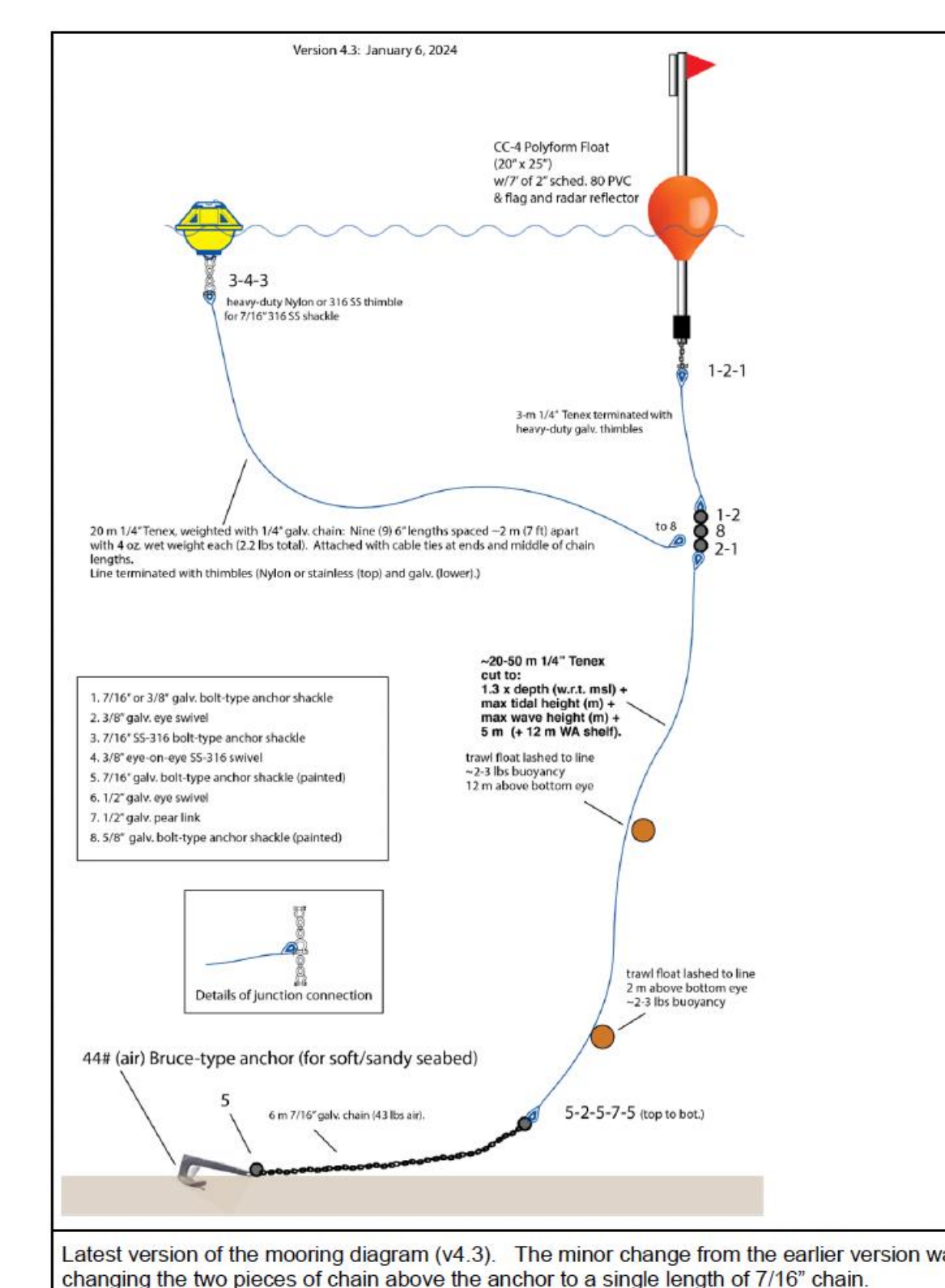
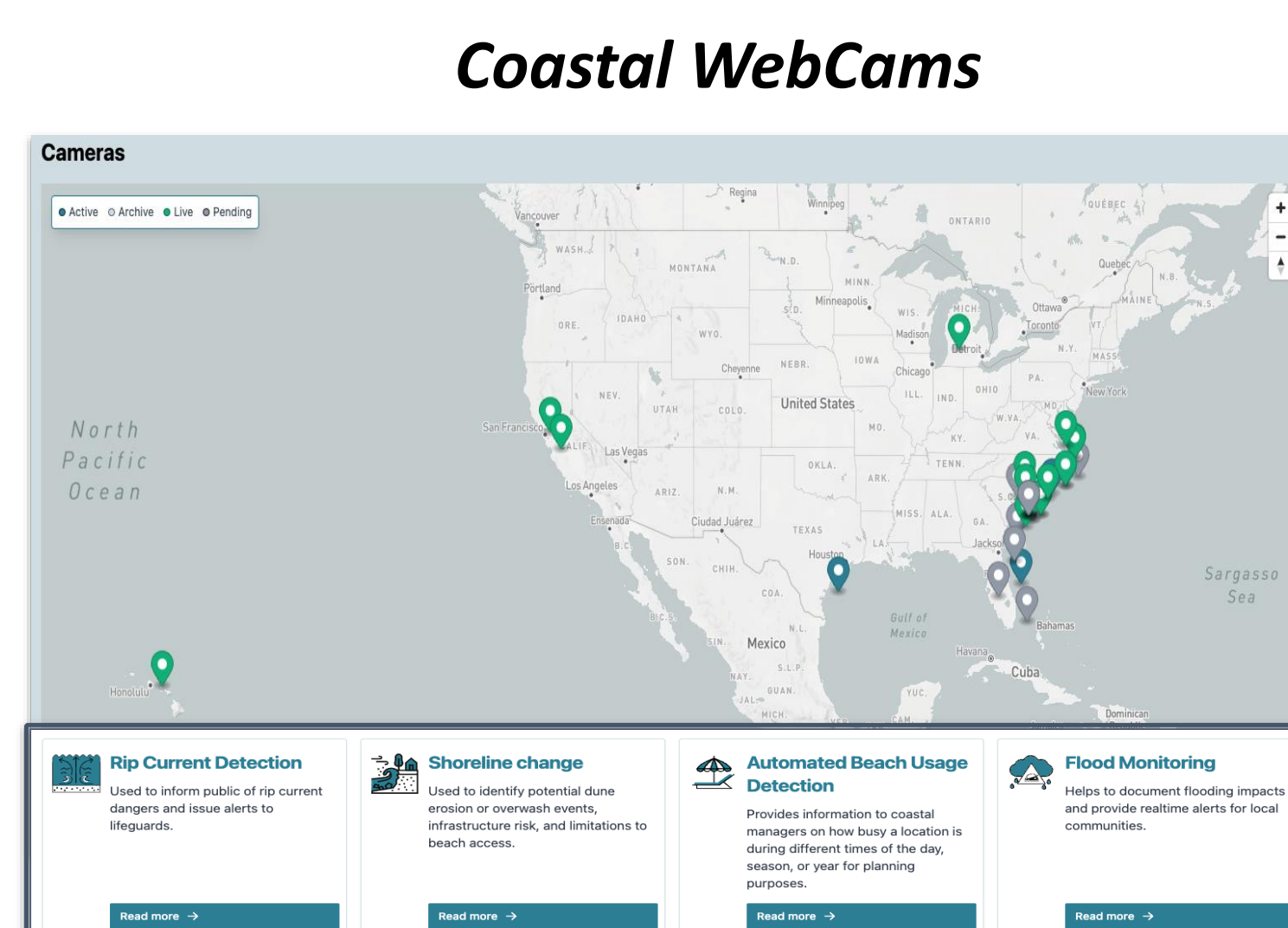
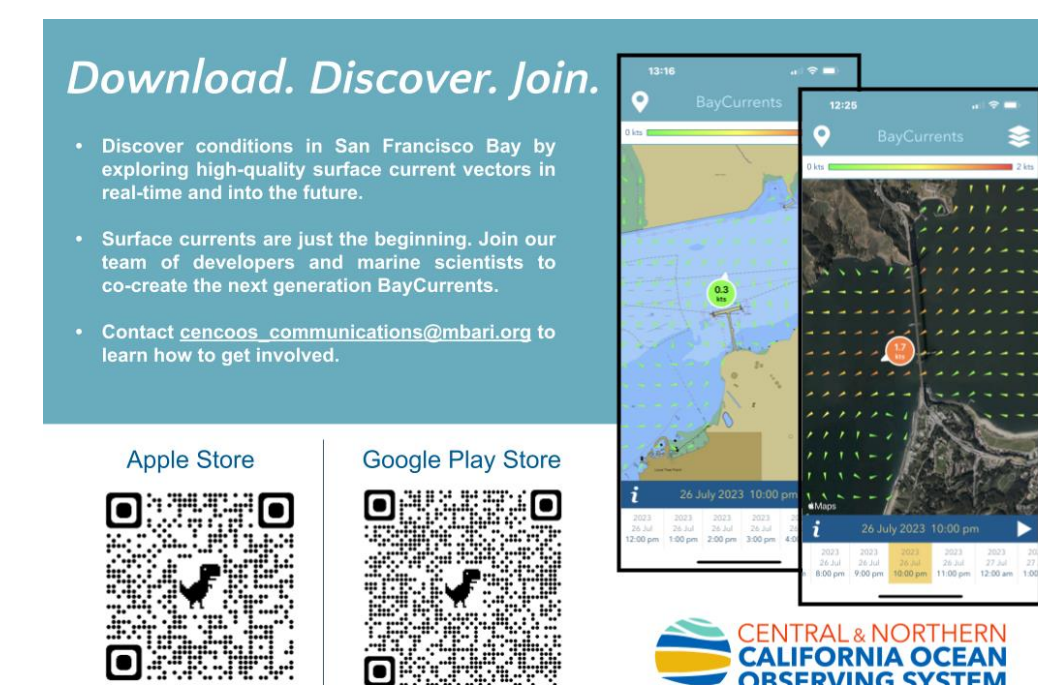
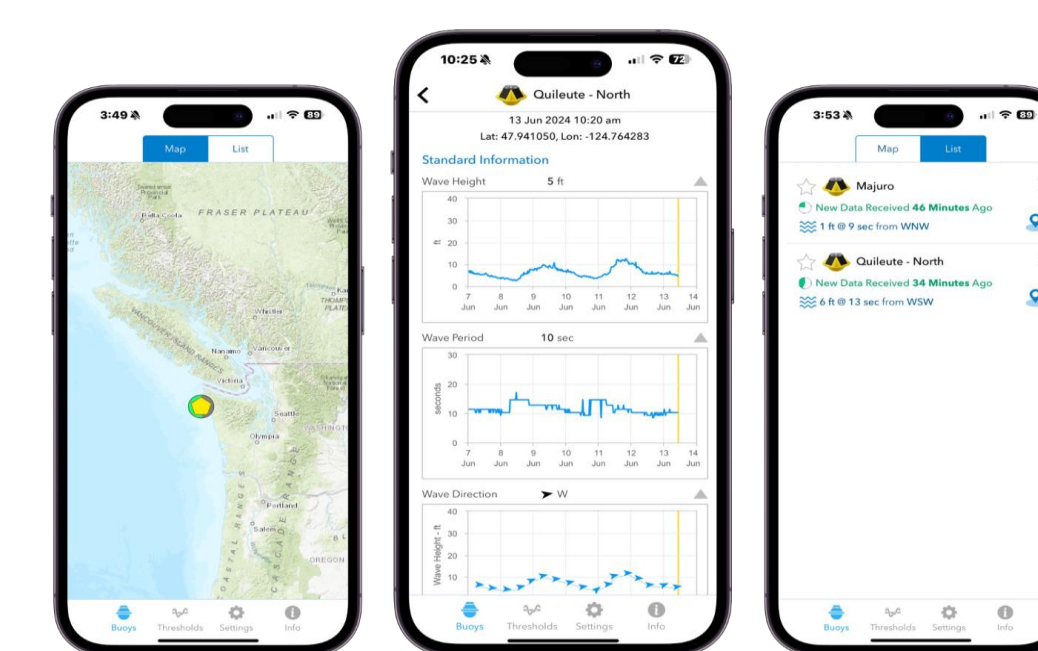
Ocean circulation and physics information supports search and rescue for USCG Sector SF, oil spill response, regional modeling and ocean and weather forecasting including partnership with NOAA and the Naval Research Lab. IRA will fund new statewide work on improving inundation modeling/forecasting with targeted calibration/parameterization observations.

**Goal 2.1:** Understand and meet community needs for WWW observations

**Goal 2.2:** Communities of Practice to Develop, Share, and Evolve Best Practices

**Goal 2.3:** Common standards and data management practices

### Smartphone Apps



Backyard Buoys - Mooring Design

## Equitable Delivery of Services

**ESD Goal 1:** Workforce development: Trainings and workshops (with comm colleges)

**ESD Goal 2:** Pilot Data Ambassadors program (with ONMS)

**ESD Goal 3:** Fishing Gear of Opportunity (FiGO) and Ships of Opportunity (SOOP)

**National project goal** → Build on decades of work within IOOS to move the entire network and culture forward in a coordinated way

