

Harbor Safety Committee

of the San Francisco Bay Region

*Mandated by the California Oil Spill
Prevention and Response Act of 1990*

Harbor Safety Committee of the San Francisco Bay Region

Thursday, April 11, 2019

California Maritime Academy, Richmond Maritime Safety & Security Center
756 West Gertrude Street, Richmond, CA

Capt. Lynn Korwatch (M), Marine Exchange of the San Francisco Bay Region (Marine Exchange), Chair of the Harbor Safety Committee (HSC); called the meeting to order at 10:01.

Marcus Freeling (A), Marine Exchange, confirmed the presence of a quorum of the HSC.

Committee members (M) and alternates (A) in attendance with a vote: **John Berge** (M), Pacific Merchant Shipping Association; **Ted Blanckenburg** (A), AmNav Maritime Services; **Capt. Marie Byrd** (M), United States Coast Guard; **Capt. Bob Carr** (M), San Francisco Bar Pilots; **Brandon Chapman** (A), Port of San Francisco; **Ben Eichenberg** (A), San Francisco Baykeeper; **Jeff Ferguson** (M), NOAA; **Scott Grindy** (M), San Francisco Small Craft Harbor; **Chris Hendry** (M), Chevron Shipping Company; **Capt. Thomas Kirsch** (M), Blue and Gold Fleet; **Duncan McFarlane** (A), Shell Martinez; **Jim McGrath** (M), Bay Conservation and Development Commission; **Lt.Col. Travis Rayfield** (M), US Army Corps of Engineers; **Justin Taschek** (A), Port of Oakland; **Jeff Vine** (M), Port of Stockton.

The meetings are always open to the public.

Approval of the Minutes-

A motion to accept the minutes of the March 14, 2019 meeting was made and seconded. The minutes were approved without dissent.

Comments by Chair- Capt. Lynn Korwatch

Welcomed the committee members and audience.

Coast Guard Report- Capt. Marie Byrd

- Advised that USCG Sector San Francisco Change of Command took place two weeks ago. Capt. Ceraolo has taken a position with the DHS in Washington DC.
- Advised that Sail GP will be held on May 4-5 in San Francisco. The USCG has published a Notice of Proposed Rulemaking for the event and the comment period is open until April 17th. Scott Grindy advised of permit approval for the race and asked for an organizational meeting with the USCG.

Harbor Safety Committee of the SF Bay Region

April 11, 2019

Page 1

Harbor Safety Committee

of the San Francisco Bay Region

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- Advised that VTS updated their Ports and Waterways Safety System on March 26th and the transition was fairly seamless.
- Advised that Operation Safe Salmon will take place April 23-25. Vessel inspection and safety checks will be conducted throughout Northern California.
- LTJG Jennae Cotton read from the March- 2019 Prevention/Response Report (attached).

Army Corps of Engineers Report- Lt.Col. Travis Rayfield

- Advised that national dredging assets have been deployed to the Mississippi River following extensive flooding. Dredge availability may be affected.
- Read from the US Army Corps of Engineers, San Francisco District Report (attached). The dredge Essayons has been undergoing maintenance in Hawaii but should be available for Main Ship Channel dredging in June. Beneficial reuse of dredge material from Redwood City dredging is being approved. Debris removal numbers were near average. The Dillard is now operational after being out for maintenance.

Clearinghouse Report- Marcus Freeling (report attached)

OSPR Report- Mike Zamora

- Advised that an announcement has been sent out regarding several HSC membership openings (attached). Committee members whose terms have expired are welcome to re-apply. Contact Mike Zamora regarding the application process.
- Announced that Steve West, Ampports, has been appointed as HSC member representing the Port of Benicia.
- Capt. Korwatch advised that the HSC does not have term limits.

NOAA Report- Jeff Ferguson

- Advised that there are open positions on NOAA's Hydrographic Services Review Panel, a federal advisory committee which informs NOAA on maritime issues. Applications are due by May 1st.
- Advised that all US Coast Pilot volumes now contain the USCG Rules of the Road.
- Advised that Christopher DiVeglie is the new NOAA PORTS manager.
- Advised that the National Marine Sanctuaries Voluntary Vessel Speed Reduction Program will be in effect from May 1st through November 15th. Vessels are asked reduce speed to 10 knots while in the TSS to help protect whales from ship strikes. Whales have been sighted recently and sightings can be reported with NOAA's Whale Alert app.

Harbor Safety Committee of the SF Bay Region

April 11, 2019

Page 2

Harbor Safety Committee

of the San Francisco Bay Region

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- Advised that the NWS El Nino Advisory is still in effect. Rainfall is expected to taper off.
- Advised of changes to raster charts. Only project depths will be shown on the charts although the ENC's will still provide survey depths.

State Lands Commission Report- Mike Melin (report attached)

Report on CeNCOOS- Henry Ruhl, CeNCOOS

- Henry Ruhl, Central and Northern California Ocean Observing System (CeNCOOS), gave a presentation to the committee on his organization (slides attached). CeNCOOS is focused on ocean observing and maritime support in state and federal waters and is part of IOOS hosted by NOAA. CeNCOOS maintains a 26 station HF radar network measuring surface currents, two gliders measuring temperature, 15 water quality analysis shore stations and several wave measurement buoys. Biodiversity data is also collected and an animal telemetry network is used to monitor marine mammals. Stakeholder outreach is a primary function along with observations, data management and information products. CeNCOOS is a trusted source for marine data which can be accessed by the public at: <https://data.cencoos.org>. Data modeling and forecasting is also conducted including the West Coast Ocean Forecast System. Development of the Bay Currents App is a priority. HF radar current data supports ocean rescue and trajectory analysis. Water quality stations support aquaculture. A tide station is being considered in Pinole Shoal to support shipping. An acoustic sensor in Monterey is deployed to help mitigate whale ship strikes.
- Capt. Korwatch is a member of the CeNCOOS Governing Council and advised that CeNCOOS wants to reach out to the maritime community for feedback on their operations. Comments are welcome.
- Henry Ruhl advised that all CeNCOOS data is integrated and undergoes varying layers of quality assurance.

Report on Drone Delivery to Anchorage- Michael Bender, Code42 Air

- Michael Bender, Code42 Air, gave a presentation to the committee on a proposed drone delivery pilot program (slides attached). The pilot program will use drones to deliver small packages from the Port of Oakland to ships in Anchorage 9 and is a first step towards commercial service in the future. Planned drone delivery will be highly automated and both cheaper and safer than boat delivery. Deliveries will be scheduled using a mobile app and skilled drone operators will not be required. Only one drone will be in the air at a time during

Harbor Safety Committee of the SF Bay Region

April 11, 2019

Page 3

Harbor Safety Committee

of the San Francisco Bay Region

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Prevention and Response Act of 1990*

the pilot program. Delivery distance will average approximately 5 miles with a 2 kg payload. Two drones will be used for the program each capable of 20-30 minute flights. Flight altitude will remain below 400 feet complying with FAA regulations. The timeline for the project gives three months for FAA and partner approval to be obtained, several months of testing and start of the pilot program in about a year. Test flights will be conducted at the Northern Plains UAS Test Site which is FAA authorized to review operations and issue project approval. Safety is primary concern. Drone safety features include flight control redundancy, automatic emergency landing and ballistic parachutes. Visual observers will be watching the drones at all times and have the ability to take over controls if required. Small package drone delivery has recently been deployed in Singapore. Feedback from the maritime community is welcome. Concerns regarding port security and labor impacts have been expressed.

- Capt. Korwatch advised of possible impacts to tender services and highlighted the risk of hydrostatic electricity when landing on a ship. Justin Taschek advised of drone regulations being developed for regulated facilities. Capt. Korwatch suggested that San Francisco might be a better base location than Oakland in order to avoid conflict with facilities. CMD Rivera, USCG, advised that hydrostatic electricity is a concern as well as environmental issues. The USCG should be consulted on the project.
- In response to other questions, Michael Bender advised that the drones will have transponders similar to AIS. Drone cameras will be used for flying only, not surveillance. Drones will use GPS satellite communication. Eventual payloads between 150 – 200 kg are possible for commercial service. Drones will only be operated during daylight hours.

Report on National Maritime Day 2019 – Mariner Memorial- Capt. Margaret Reasoner

- Capt. Margaret Reasoner gave a presentation to the committee on the International Maritime Center (IMC) in Oakland (slides attached). The IMC provides hospitality services to seafarers. Mariners, many who are foreign and unfamiliar with our region, are given access to transportation, counseling and worship services. 6528 crewmembers were served in 2018. The IMC also provides internet access and recreational facilities including a pool table. A Swedish pancake breakfast will be held on April 27th. National Maritime Day 2019 will be celebrated at the IMC on May 22nd, 10:00 – 11:30. The theme of this year's event is empowering women. The IMC is raising funds for Mariner Memorial and artist Bosun James Allen King's sculptures commemorating seafarers lost at sea. Donations are appreciated.

Harbor Safety Committee

of the San Francisco Bay Region

Mandated by the California Oil Spill Prevention and Response Act of 1990

Report on CDIP Funding- Jim Behrens, UC San Diego

- Jim Behrens, UC San Diego, gave a presentation to the committee on the Coastal Data Information Program (CDIP) which measures and monitors waves in California (slides attached). Waverider buoys located offshore provide data on wave energy, direction, temperature and current. The first buoy was installed in 1975 by Scripps and there are currently 70 buoys worldwide. CDIP partners with NOAA and maintains the San Francisco Bar wave buoy funded by the Army Corps. Wave data is updated every 30 minutes and undergoes quality control. Data is used for forecasting and modeling and can also help mariners determine under-keel clearance. CDIP funding is provided by the CA Department of Parks and Recreation Oceanography Program. Budget cuts have impacted CDIP and a funding increase from \$1.5 million to \$3 million is being requested. Letters from stakeholders in support of increased CDIP funding are appreciated (support request letter attached). Several legislators have signed on to the proposal.

Work Group Reports-

Tug Work Group- Ted Blanckenburg advised that there was nothing to report.

Navigation Work Group- Capt. Bob Carr advised that the Work Group met on March 21st. Harbor Safety Plan CMAs were reviewed in addition to a proposal to use virtual AIS notifications to inform mariners about NOAA's Voluntary Vessel Speed Reduction Program. The use of cameras and visibility sensors to monitor CMAs was discussed.

Ferry Operations Work Group- Capt. Thomas Kirsch advised that the Work Group met on March 27th to address ferry radio traffic congestion issues and electronic VTS reporting. More ferries are working in the bay which has increased radio traffic. Shortening radio call length by using codes was proposed.

Dredge Issues Work Group- Duncan McFarlane advised that there was nothing to report.

PORTS Work Group- Justin Taschek advised that there was nothing to report.

Prevention through People Work Group- Scott Grindy thanked the Army Corps for debris removal.

PORTS Report- Marcus Freeling

- Advised that bi-annual service of the three PORTS buoy-mounted current sensors will take place next week. Equipment will be swapped out at South Hampton Shoal LB6, Oakland Outer Harbor LB3 and Oakland Inner Harbor LB4.

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- Advised of a recent computer glitch affecting GPS at several PORTS stations. Stations using older SatLinks will need firmware upgrades and eventual replacement.
- Advised that equipment associated with the Pier 17 visibility sensor will need to be rearranged due to a conflict with USGS equipment at the location.
- Advised that PORTS IP modem upgrades are almost complete.
- Advised that PORTS data is publicly available through NOAA's Tides and Currents website.

Public Comment- None

Old Business- None

New Business-

- Jim McGrath advised that the HSC should consider sending a letter in support of CDIP funding. Capt. Korwatch agreed and advised that a letter template will be provided.
- Capt. Korwatch announced that the biennial National HSC Meeting will be held June 25-27, 2019 in Huston, Texas. HSCs throughout the country participate.
- Capt. Korwatch announced that the Marine Exchange will be moving to a new office in Emeryville on May 1st.

Next Meeting-

1000-1200, May 9, 2019
Port of San Francisco, Pier 1, Bayside Conference Room
The Embarcadero, San Francisco, CA

Adjournment-

A motion to adjourn was made and seconded. The motion passed without dissent and the meeting adjourned at 12:01.

Respectfully submitted:



Capt. Lynn Korwatch

PREVENTION / RESPONSE - SAN FRANCISCO HARBOR SAFETY STATISTICS			
March 2019			
PORT SAFETY CATEGORIES*	Mar-2019	Mar-2018	**3yr Avg
Total Number of Port State Control Detentions:	0	0	0.33
SOLAS (0), STCW (0), MARPOL (0), ISM (0), ISPS (0)			
Total Number of COTP Orders:	3	4	3.44
Navigation Safety (1), Port Safety & Security (2), ANOA (0)			
Marine Casualties (reportable CG 2692) within SF Bay:	5	9	9.58
Allision (0), Collision (0), Fire (0), Capsize (0), Grounding (0), Sinking (1)			
Steering (0), Propulsion (3), Personnel (1), Other (0), Power (0)			
Total Number of (routine) Navigation Safety issues/Letters of Deviation:	1	0	2.03
Radar (1), Gyro (0), Steering (0), Echo Sounder (0), AIS (0)			
ARPA (0), Speed Log (0), R.C. (0), Other (0)			
Reported or Verified "Rule 9" or other Navigational Rule Violations:	0	2	0.42
Significant Waterway events/Navigation related Cases:	0	1	0.31
Total Port Safety (PS) Cases opened	9	16	16.11
MARINE POLLUTION RESPONSE			
Pollution Discharge Sources (Vessels)	Mar-2019	Mar-2018	**3yr Avg
U.S. Commercial Vessels	1	1	0.78
Foreign Freight Vessels	0	1	0.08
Public Vessels	2	0	0.67
Commercial Fishing Vessels	1	1	0.50
Recreational Vessels	11	1	3.72
Pollution Discharge Sources (Facilities)			
Regulated Waterfront Facilities	1	0	0.31
Regulated Waterfront Facilities - Fuel Transfer	1	0	0.03
Other Land Sources	6	1	2.22
Mystery Spills - Unknown Sources	5	10	4.44
Number of Pollution Incidents within San Francisco Bay			
Spills < 10 gallons	24	3	4.86
Spills 10 - 100 gallons	1	1	1.00
Spills 100 - 1000 gallons	0	0	0.14
Spills > 1000 gallons	0	0	0.00
Spills - Unknown Size	3	11	6.72
Total Pollution Incidents	28	15	12.72
Oil Discharge/Hazardous Materials Release Volumes by Spill Size			
Estimated spill amount from U.S. Commercial Vessels	1.00	20.00	17.05
Estimated spill amount from Foreign Freight Vessels	0.00	5.00	0.14
Estimated spill amount from Public Vessels	1.50	0.00	2.88
Estimated spill amount from Commercial Fishing Vessels	2.00	0.50	7.57
Estimated spill amount from Recreational Vessels	17.00	0.00	23.49
Estimated spill amount from Regulated Waterfront Facilities	1.00	0.00	1.56
Estimated spill amount from Regulated Waterfront Facilities - Fuel Transfer	2.00	0.00	0.06
Estimated spill amount from Other Land Sources	2.00	2.00	11.36
Estimated spill amount from Unknown Sources (Mystery Sheens)	unk	unk	0.00
Total Oil Discharge and/or Hazardous Materials Release (Gallons)	26.50	27.50	64.11
Penalty Actions			
Civil Penalty Cases	0	0	0.00
Notice of Violations	1	0	0.28
Letters of Warning	11	2	2.69
Total Penalty Actions	12	2	2.97
* NOTE: Values represent all cases within the HSC jurisdiction during the period. Significant cases are detailed in the narrative.			
** NOTE: Values represent an average month over a 36 month period for the specified category of information.			

SIGNIFICANT PORT SAFETY AND SECURITY CASES (MAR 2019)

MARINE CASUALTIES

Loss of propulsion (25MAR19): A foreign flag container vessel experienced a fuel oil leak which resulted in the vessel's crew securing the main engines while approaching the San Francisco Pilot Station. The causative factor was determined to be an expired "O" ring on the fuel line. The vessel's crew effected permanent repairs. Class and Coast Guard attended the vessel and witnessed successful repair and satisfactory operation of the vessel's propulsion system. Coast Guard received and reviewed the Class Report. Case closed.

Loss of propulsion (30MAR19): While south of the Golden Gate Bridge, a foreign flag bulk freight vessel's main engine overheated due to a deficient low temperature control valve, and the crew secured the vessel's main engines and auxiliary generators as a result. It was determined that the low temperature control valve was stuck which caused the rise in temperature. The vessel's crew effected permanent repairs. Class and Coast Guard attended the vessel and witnessed successful repair and satisfactory operation of the vessel's propulsion system. Coast Guard received and reviewed the Class Report. Case closed.

NAVIGATIONAL SAFETY

Letter of Deviation, S-Band Radar (06MAR19): Vessel was issued an inbound LOD due to an inoperable S-band radar. A technician attended the vessel while at anchorage and effected repairs. Coast Guard reviewed and approved final report. Case closed.

SIGNIFICANT INCIDENT MANAGEMENT DIVISION CASES

Letter of Warning (22MAR19): A recreational vessel sank south of Capitola, CA and was sheening. The owner of the vessel was unable to secure funding for the removal of fuel and the Coast Guard federally assumed responsibility for the vessel. A salvage company was hired to remove the fuel, HAZMAT, and batteries. The vessel was then turned over to NOAA to be removed as marine debris. Case closed.

Letters of Warning (02MAR19-28MAR19): 10 Letters of Warning were issued to recreational vessels that had sheened while tied up at their respective marinas. The total amount of product discharged in each case was 1-2 gallons and the product dissipated naturally. Cases closed.

**Harbor Safety Committee
Of the San Francisco Bay Region**

**Report of the
U.S. Army Corps of Engineers, San Francisco District
April 11, 2019**

1. CORPS O&M DREDGING PROGRAM

The following report covers the planned FY 2019 dredging program for San Francisco Bay. While this program is subject to change based on a number of variables, it is based on actual FY 19 appropriations including the FY 2019 Work Plan. Please refer to the Local Notice to Mariners for details of dredge operations.

FY 2019 DREDGING

- a. **SF Main Ship Channel** – FY 19 dredging is being planned with expected work **originally forecast to be completed in June by Essayons. Maintenance and repairs have required Essayons to remain in dry-dock for longer than anticipated. Current scheduling uncertain.**
- b. **Richmond Inner Harbor** – FY19 planning for the Richmond Inner is underway with expected award in **May** of 2019. **Dredging anticipated to commence mid-June.**
- c. **Richmond Outer Harbor (and Richmond Long Wharf)** –In alignment with last year’s proposal to alternate Hopper dredging between Pinole Shoals and Richmond Outer, dredging for Richmond Outer dredging was conducted with the Essayons and completed in November 2018. Richmond Outer is expected to be deferred in FY19.
- d. **Oakland Harbor** –The FY 19 Dredging contract is being accelerated to allow for additional placement time. Award is being planned for mid-May. **Target start date is June 1 pending final Biological Opinion issuance from USFWS.**
- e. **Redwood City Harbor** – The 2019 dredging contract is being planned for award in late May. In partnership with the Coastal Conservancy placement at a beneficial reuse site is being evaluated. **Confirmatory sediment testing and analysis for suitability of planned placement location is ongoing. District Engineer has authority to enter into a Memorandum of Agreement with Coastal Conservancy to use cost-share funds for placement at a beneficial reuse site.**
- f. **San Pablo Bay (Pinole Shoal)** –In alignment with last year’s proposal to alternate Gov’t Hopper dredging Pinole will be dredged in 2019. Action is planned for June.
- g. **Suisun Bay Channel (and New York Slough)** – 2019 Clamshell award is being planned for July.

2. DEBRIS REMOVAL – Debris removal for March 2019 was 84.5 tons. Dillard: 29.5 tons, including 1 abandoned vessel; Raccoon: 40 tons; other boats: 15 tons, including 5 abandoned vessels. Average for March from 2009 to 2018 is 78.3 tons (Range: 11-231.5 tons).

BASEYARD DEBRIS COLLECTION TOTALS:

MONTH	RACCOON	DILLARD	MISC	TOTAL
2019	TONS	TONS	TONS	TONS
JAN	55	0	78	133
FEB	40	0	50	90
MAR	40	29.5	15	84.5
APR	0	0	0	0
MAY	0	0	0	0
JUN	0	0	0	0
JUL	0	0	0	0
AUG	0	0	0	0
SEP	0	0	0	0
OCT	0	0	0	0
NOV	0	0	0	0
DEC	0	0	0	0

YR TOTAL
307.5

3. UNDERWAY OR UPCOMING HARBOR IMPROVEMENTS

None to report.

4. EMERGENCY (URGENT & COMPELLING) DREDGING

None to report.

5. OTHER WORK

San Francisco Bay to Stockton – The study is now being conducted by the Wilmington District to more efficiently match the study with available resources. The Tentatively Selected Plan (TSP) milestone for Phase I (Western Reach) of the project was held on 29 June 2016 with a recommended plan to deepen the Phase I reach of the project from a depth of -35 feet to -38 feet MLLW. The Draft report is being scheduled for public release in April of 2019.

HYDROGRAPHIC SURVEY UPDATE

Address of Corps' web site for completed hydrographic surveys:

<http://www.spn.usace.army.mil/Missions/Surveys,StudiesStrategy/HydroSurvey.aspx>

The following surveys are posted:

Alameda Point Navigation Channel: Condition survey of May 23, 2018.
Berkeley Marina (Entrance Channel): Condition survey of July 9, 2018.
Islais Creek Channel: Condition survey of July 17, 2018.
Larkspur Ferry Channel: Condition survey of July 9, 2018.
Main Ship Channel: Condition survey of April 5, 2018.
Mare Island Strait: Condition survey of July 10, 2018.
Marinship Channel (Richardson Bay): Condition survey of December 7, 2017.
Napa River: Condition survey of May 9-10, 2018.
Northship Channel: Condition survey of June 29, 2018.
Oakland Inner Harbor: Condition survey of March 19, 2019.
Oakland Outer Harbor: Condition survey of March 18, 2019.
Petaluma River (Across-the-Flats): Condition survey of December 19, 2017.
Petaluma River (Main Channel): Condition survey of December 12-13, 2017.
Petaluma River (Extended Channel): Condition survey of March 19-26, 2018.
Pinole Shoal Channel: Condition survey of February 6-7, 12 & 21, 2019.
Redwood City Harbor: Condition survey of March 19, 2019.
Richmond Inner Harbor: Condition survey of February 26, 2019.
Richmond Inner Harbor (Santa Fe Channel): Condition survey of December 20, 2016.
Richmond Outer Harbor (Longwharf): Condition survey of February 28, 2019.
Richmond Outer Harbor (Southampton Shoal): Condition survey of March 14, 2019.
Sacramento River Deep Water Ship Channel: Condition survey of January 16-21, 2019.
San Bruno Shoal: Condition survey of July 11, 2018.
San Leandro Marina (and Channel): Condition survey of March 30 and April 1, 2015.
San Rafael (Across-the-Flats): Condition survey of September 24, 2018.
San Rafael (Creek): Condition survey of September 24, 2018.
Stockton Ship Channel: Condition survey of January 26-30, 2019.
Suisun Bay Channel: Condition survey of March 7, 2019.
Suisun Bay Channel (Bullshead Reach): Condition survey of March 7, 2019.
Suisun Bay Channel (New York Slough): Condition survey of March 4, 2019.

Disposal Site Condition Surveys:

SF-08 (Main Ship Channel Disposal Site): Condition survey of October 31, 2018.

SF-09 (Carquinez): Condition survey of December 28, 2018.

SF-10 (San Pablo Bay): Condition survey of December 28, 2018.

SF-11 (Alcatraz Island): Condition survey of February 5, 2019.

SF-16 (Suisun Bay Disposal Site): Condition survey of July 3, 2018.

SF-17 (Ocean Beach Disposal Site): Condition survey of November 7, 2018.

Requested Surveys:

Pre/Post-dredge and condition surveys are scheduled to occur throughout the year for all of San Francisco District's in-bay projects which are planned to be dredged in FY19.

NEW WEB ADDRESS – USACE WORK PLAN:

<http://www.usace.army.mil/Missions/Civil-Works/Budget/>

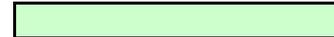
O&M DREDGING PLAN FOR FY19*

11-Apr-19

Project	Bid Opening Award Date	FY 2020												Estimated CY	Planned Placement Site	
		MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC					
SF Main Ship Channel	N/A				■										350kcy	OBDS/ SF-8
Pinole Shoal	N/A				■										300kcy	SF-11/SF-10
Richmond Inner Harbor	24 Apr/8 May		◆	◆											350kcy	DODS/upland least cost
Redwood City Harbor	16 May/28 May			◆	◆										300kcy	SF-11
Oakland Harbor	2 May/15 May			◆	◆										750kcy	DODS/upland least cost
Combined Sac/San Joaquin	13 May/31 May			◆	◆										350kcy	Various Upland
Suisun Bay Channel	26 Jun/10 Jul				◆	◆									175kcy	SF-16



Ongoing Contracts
New SPN Contract including Mobilization
West Coast Hopper Contract
Government Dredge



Environmental Window

◆ Bid Opening

◆ Contract Award

* Program execution is based on the FY19 President's Budget, Workplan and Federal Standard plan for each project.



Harbor Safety Committee of the
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San Francisco Clearinghouse Report

April 11, 2019

- ✎ In March the clearinghouse did not contact OSPR regarding any possible escort violations.
- ✎ In March the clearinghouse did not receive any notifications of vessels arriving at the Pilot Station without escort paperwork.
- ✎ The clearinghouse has not contacted OSPR in 2019 regarding possible escort violations. The clearinghouse contacted OSPR 1 time in 2018 about a possible escort violation. The clearinghouse did not contact OSPR in 2017 about possible escort violations. The clearinghouse contacted OSPR 1 time in 2016 about a possible escort violation. The clearinghouse contacted OSPR 3 times in 2015 about possible escort violations. The clearinghouse contacted OSPR 5 times regarding possible escort violations in 2014. The clearinghouse contacted OSPR 1 time in 2013. The clearinghouse contacted OSPR 3 times in 2012 regarding possible escort violations, 3 times in 2011, 6 times in 2010, 8 time 2009; 4 times 2008; 9 times in 2007; 9 times in 2006; 16 times in 2005; 24 times in 2004; twice in 2003; twice in 2002; 6 times in 2001; 5 times in 2000.
- ✎ In March there were 109 tank vessel arrivals; 20 ATBs, 9 Chemical Tankers, 23 Chemical/Oil Tankers, 26 Crude Oil Tankers, 1 LPG, 18 Product Tankers, and 12 Tugs with Barges.
- ✎ In March there were 274 total vessel arrivals.

San Francisco Bay Clearinghouse Report For March 2019

San Francisco Bay Region Totals

	<u>2019</u>		<u>2018</u>	
Tanker arrivals to San Francisco Bay	77		69	
ATB arrivals	20		15	
Barge arrivals to San Francisco Bay	12		15	
Total Tanker and Barge Arrivals	109		99	
Tank ship movements & escorted barge movements	360		311	
Tank ship movements	179	49.72%	167	53.70%
Escorted tank ship movements	142	39.44%	123	39.55%
Unescorted tank ship movements	37	10.28%	44	14.15%
Tank barge movements	181	50.28%	144	46.30%
Escorted tank barge movements	19	5.28%	17	5.47%
Unescorted tank barge movements	162	45.00%	127	40.84%

Percentages above are percent of total tank ship movements & escorted barge movements for each item.

Escorts reported to OSPR 0 0

Movements by Zone	Zone 1	%	Zone 2	%	Zone 4	%	Zone 6	%	Total	%
Total movements	215		354		0		141		710	
Unescorted movements	116	53.95%	194	54.80%	0	0.00%	78	55.32%	388	54.65%
Tank ships	98	45.58%	158	44.63%	0	0.00%	71	50.35%	327	46.06%
Tank barges	18	8.37%	36	10.17%	0	0.00%	7	4.96%	61	8.59%
Escorted movements	99	46.05%	160	45.20%	0	0.00%	63	44.68%	322	45.35%
Tank ships	94	43.72%	141	39.83%	0	0.00%	56	39.72%	291	40.99%
Tank barges	5	2.33%	19	5.37%	0	0.00%	7	4.96%	31	4.37%

Notes:

1. Information is only noted for zones where escorts are required.
2. All percentages are percent of total movements for the zone.
3. Every movement is counted in each zone transited during the movement.
4. Total movements is the total of all unescorted movements and all escorted movements.

San Francisco Bay Clearinghouse Report For 2019

San Francisco Bay Region Totals

	<u>2019</u>		<u>2018</u>	
Tanker arrivals to San Francisco Bay	219		787	
ATB arrivals	51		123	
Barge arrivals to San Francisco Bay	35		143	
Total Tanker and Barge Arrivals	254		1,053	
Tank ship movements & escorted barge movements	1,002		3,398	
Tank ship movements	530	52.89%	1,853	54.53%
Escorted tank ship movements	422	42.12%	1,458	42.91%
Unescorted tank ship movements	108	10.78%	395	11.62%
Tank barge movements	472	47.11%	1,545	45.47%
Escorted tank barge movements	53	5.29%	227	6.68%
Unescorted tank barge movements	419	41.82%	1,318	38.79%

Percentages above are percent of total tank ship movements & escorted barge movements for each item.

Escorts reported to OSPR 0 0

Movements by Zone	Zone 1	%	Zone 2	%	Zone 4	%	Zone 6	%	Total	%
Total movements	604		983		0		430		2,017	
Unescorted movements	315	52.15%	518	52.70%	0	0.00%	210	48.84%	1,043	51.71%
Tank ships	260	43.05%	411	41.81%	0	0.00%	190	44.19%	861	42.69%
Tank barges	55	9.11%	107	10.89%	0	0.00%	20	4.65%	182	9.02%
Escorted movements	289	47.85%	465	47.30%	0	0.00%	220	51.16%	974	48.29%
Tank ships	275	45.53%	415	42.22%	0	0.00%	197	45.81%	887	43.98%
Tank barges	14	2.32%	50	5.09%	0	0.00%	23	5.35%	87	4.31%

Notes:

1. Information is only noted for zones where escorts are required.
2. All percentages are percent of total movements for the zone.
3. Every movement is counted in each zone transited during the movement.
4. Total movements is the total of all unescorted movements and all escorted movements.



STATE OF CALIFORNIA
THE NATURAL RESOURCES AGENCY

April 10, 2019

ANNOUNCEMENT FOR:

Harbor Safety Committee of the San Francisco Bay Region Membership

The Office of Spill Prevention and Response (OSPR), is accepting applications for membership on the Harbor Safety Committee of the San Francisco Bay Region. The OSPR is seeking applicants for the following positions:

- Representative of Barge Operators (Primary Member)
- Representative of Barge Operators (Alternate Member)
- Representative of Ferry Operators (Alternate Member)
- Representative of Tug Operators (Alternate Member)
- Representative of Dry Cargo Vessel Operators (1) (Primary Member)
- Representative of Dry Cargo Vessel Operators (2) (Primary Member)
- Representative of Non-Profit Environmental Org. (Primary Member)

Qualified individuals who reside in the San Francisco Bay area are encouraged to apply. A Harbor Safety Committee application can be obtained at the following internet site:

<https://www.wildlife.ca.gov/OSPR/Marine-Safety/Harbor-Safety/Harbor-Safety-Application>

Please follow the instructions for e-mailing an electronic application along with a current resume as indicated in the online application. All applications must be received by May 25, 2019. The OSPR intends to appoint the new members in June 2019.

If you have questions regarding the requirements for a position, or the application process, please contact Mr. Michael Zamora at e-mail address michael.zamora@wildlife.ca.gov, or by telephone at (916) 327-9406.



CALIFORNIA STATE LANDS COMMISSION

HARBOR SAFETY COMMITTEE MONTHLY REPORT - MARCH COMPARISON

VESEL TRANSFERS

	Total Transfers	Total Vessels Monitored	Total Transfers Percentage
MARCH 1 - 31, 2018	237	79	33.33
MARCH 1 - 31, 2019	230	78	33.91

CRUDE OIL / PRODUCT TOTALS

	Crude Oil (D)	Crude Oil (L)	Overall Product (D)	Overall Product (L)	GRAND TOTAL
MARCH 1 - 31, 2018	16,249,488		20,294,285	7,907,033	28,201,318
MARCH 1 - 31, 2019	14,588,000		19,842,190	9,057,145	28,899,335

OIL SPILL TOTAL

	<u>TERMINAL</u>	<u>VESSEL</u>	<u>Total</u>	<u>Gallons Spilled</u>
MARCH 1 - 31, 2018	0	0	0	0
MARCH 1 - 31, 2019	1	0	1	Other - 1 Gallon

Disclaimer:

Please understand that the data is provided to the California State Lands Commission from a variety of sources; the Commission cannot guarantee the validity of the data provided to it.



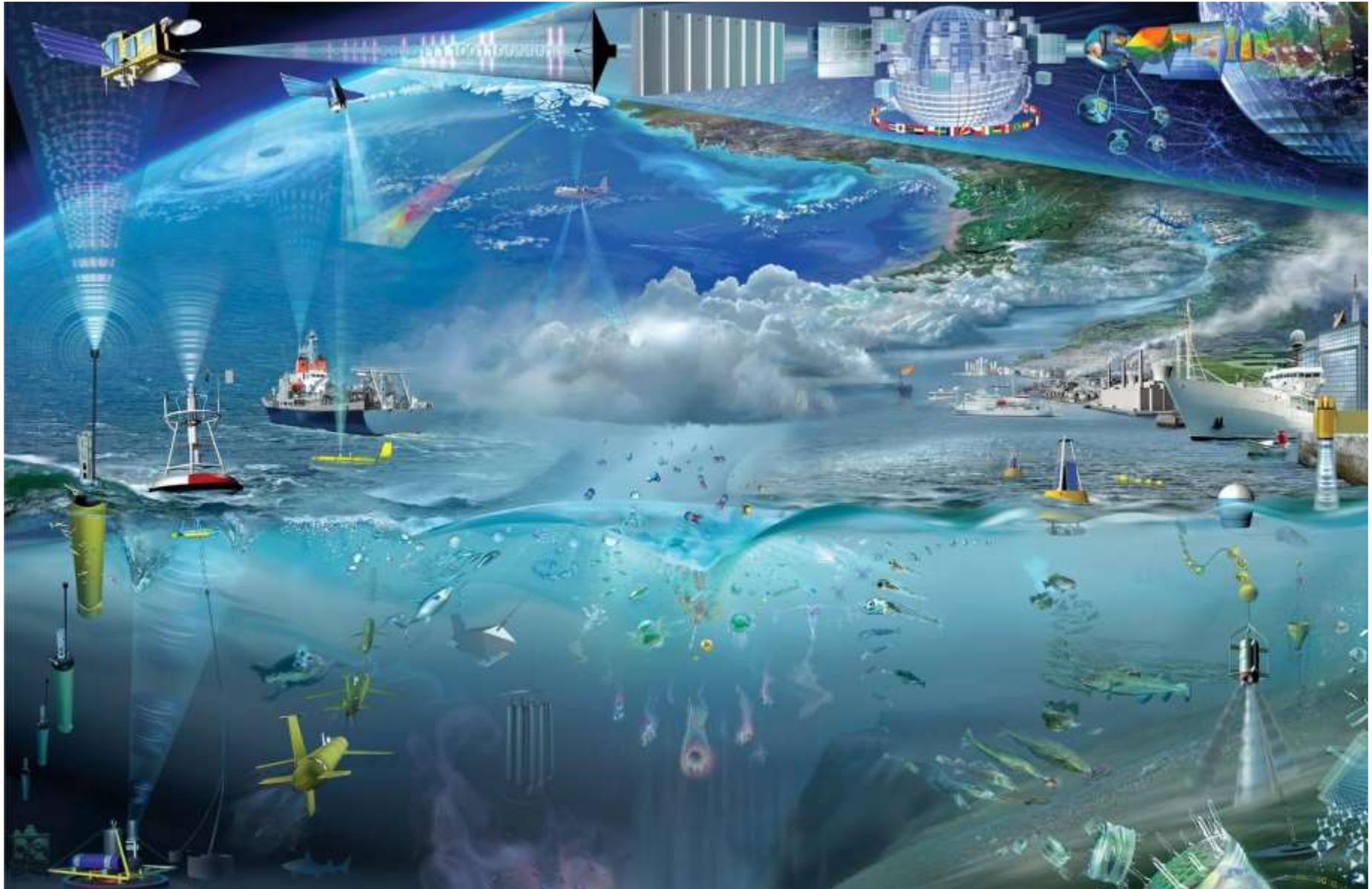
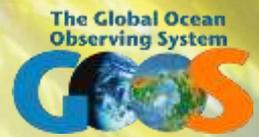
Central & Northern California Ocean Observing System
Ocean information to underpin decisions

Henry Ruhl and the CeNCOOS Community

Human Dimensions



Global Ocean Observing System



U.S. IOOS: Program Overview

Partnership effort that leverages dispersed national investments to deliver ocean, coastal and Great Lakes data relevant to decision-makers.

Global Component

- US contribution to Global Ocean Observing System (GOOS)
- 1 of 15 Regional Alliances of GOOS



The Global Ocean Observing System



National Component

- 17 Federal agencies



Regional Component

- 11 Regional Associations
 - Stakeholder driven
 - Academia, state/local/tribal government, private industry



U.S. IOOS: Program Overview

Authorizing legislation

Integrated Coastal Ocean Observing System (ICOOS) Act (P.L. No 111-11, March 2009)

Mission Areas

- Predicting Weather & Climate variability
- Safe and Efficient Transportation and Commerce
- Preparedness and Risk Reduction for Coastal Communities
- Healthy ecosystems and water quality



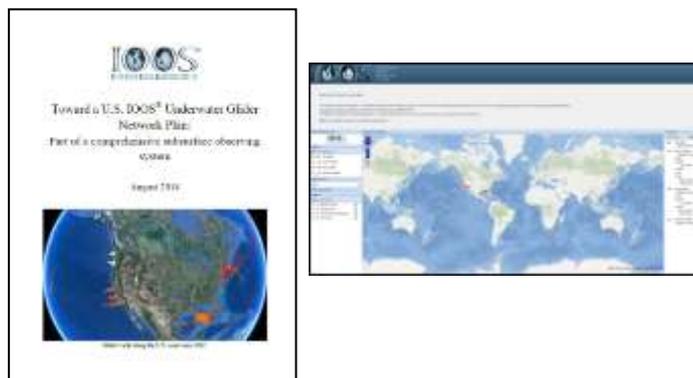
Supporting Decisions Everyday

IOOS: Advancing Communities

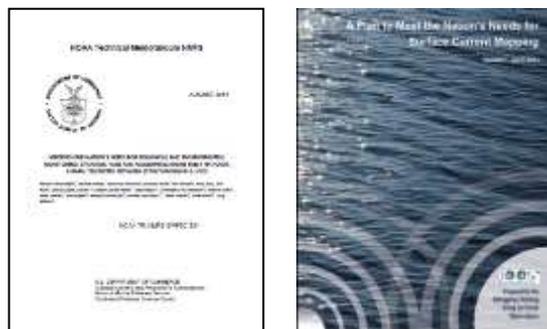
HF Radar:



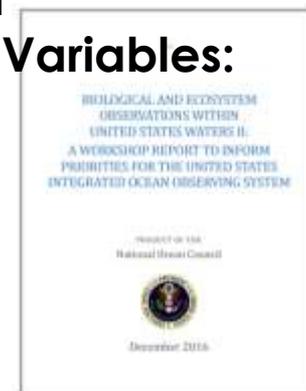
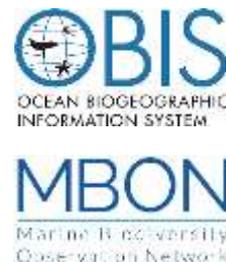
Gliders:



Wave Measurements:



Biological Data and Biological Variables:



Marine Biodiversity Observation Network (MBON):

Animal Telemetry:



IOOS regional and national approach

Stakeholder outreach



Information products



Observations



Data Management



CeNCOOS

Vision Statement

CeNCOOS will be a leader within U.S. IOOS[®], and be recognized and relied upon regionally and nationally as a trusted source of data, information, and expertise to inform wise use of the ocean off central and northern California.

Mission Statement

CeNCOOS is a collaborative that enables sustained and coordinated measurements, model nowcasts and forecasts, and integrated products to inform decisions about our regional ocean.

Teams

4(5) Program Office Staff
60 affiliate organizations
Dozens of collaborators



Alex Harper



Patrick Daniel



Fred Bahr



Megan McKinzie

US Animal
Telemetry
Network

CeNCOOS

CeNCOOS

HF Radar

Water
Quality
Shore
Stations

Numerical
Models

Ships,
Gliders,
and
Moorings

Seafloor
and
Habitat
Mapping

Scientific
and
Technical
Expertise

Data
Serving

Data
Products

Continuity for core operations and products

Synchronising among stakeholders and contributors

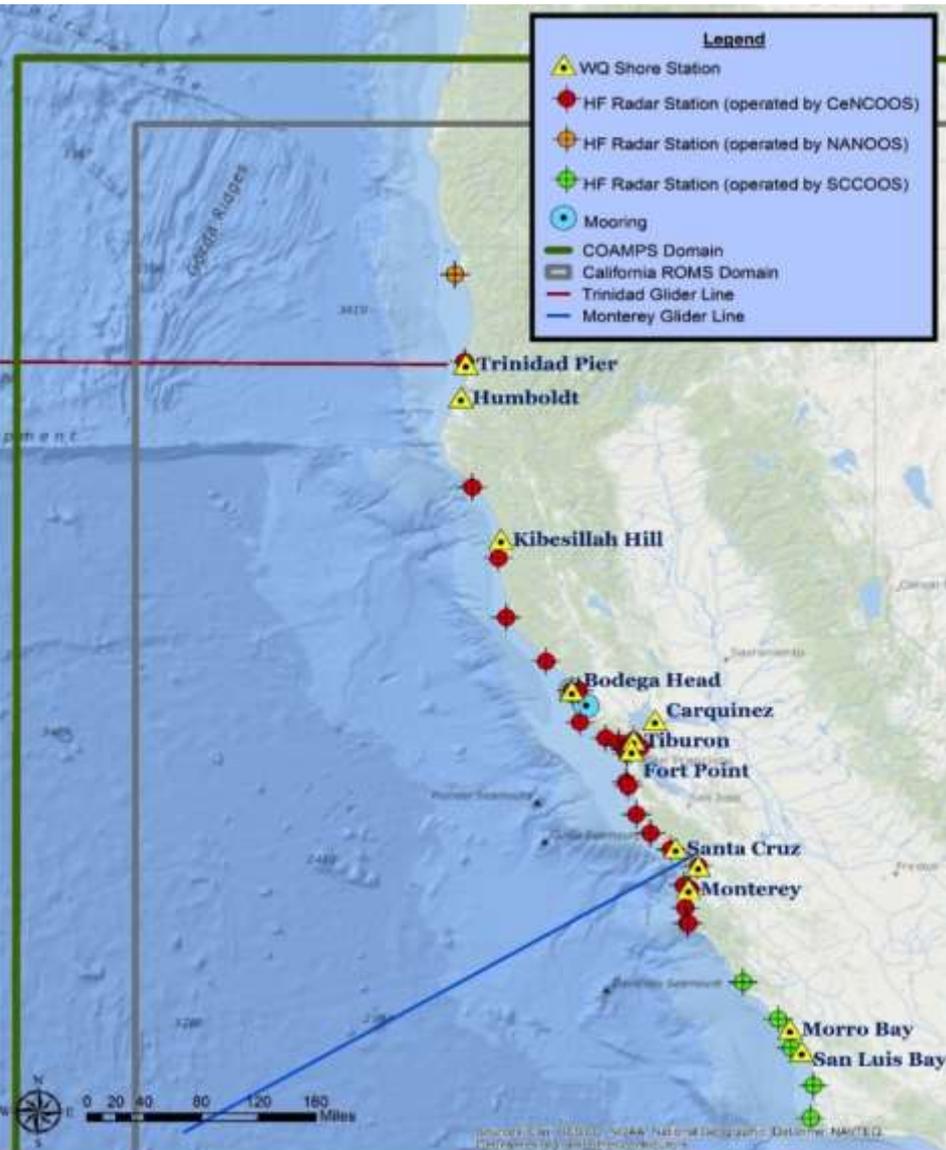
Evolving observing capability through demonstration

Communication dialogue, dissemination and outreach



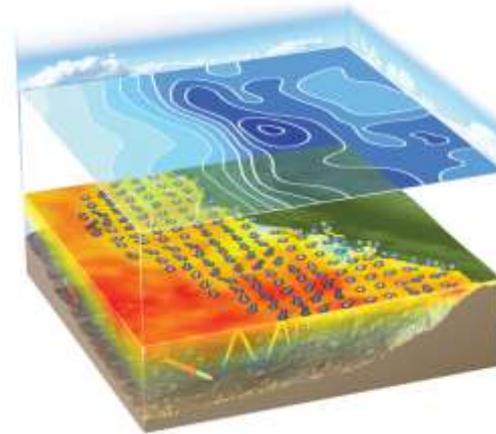
And many more...

CeNCOOS Systems

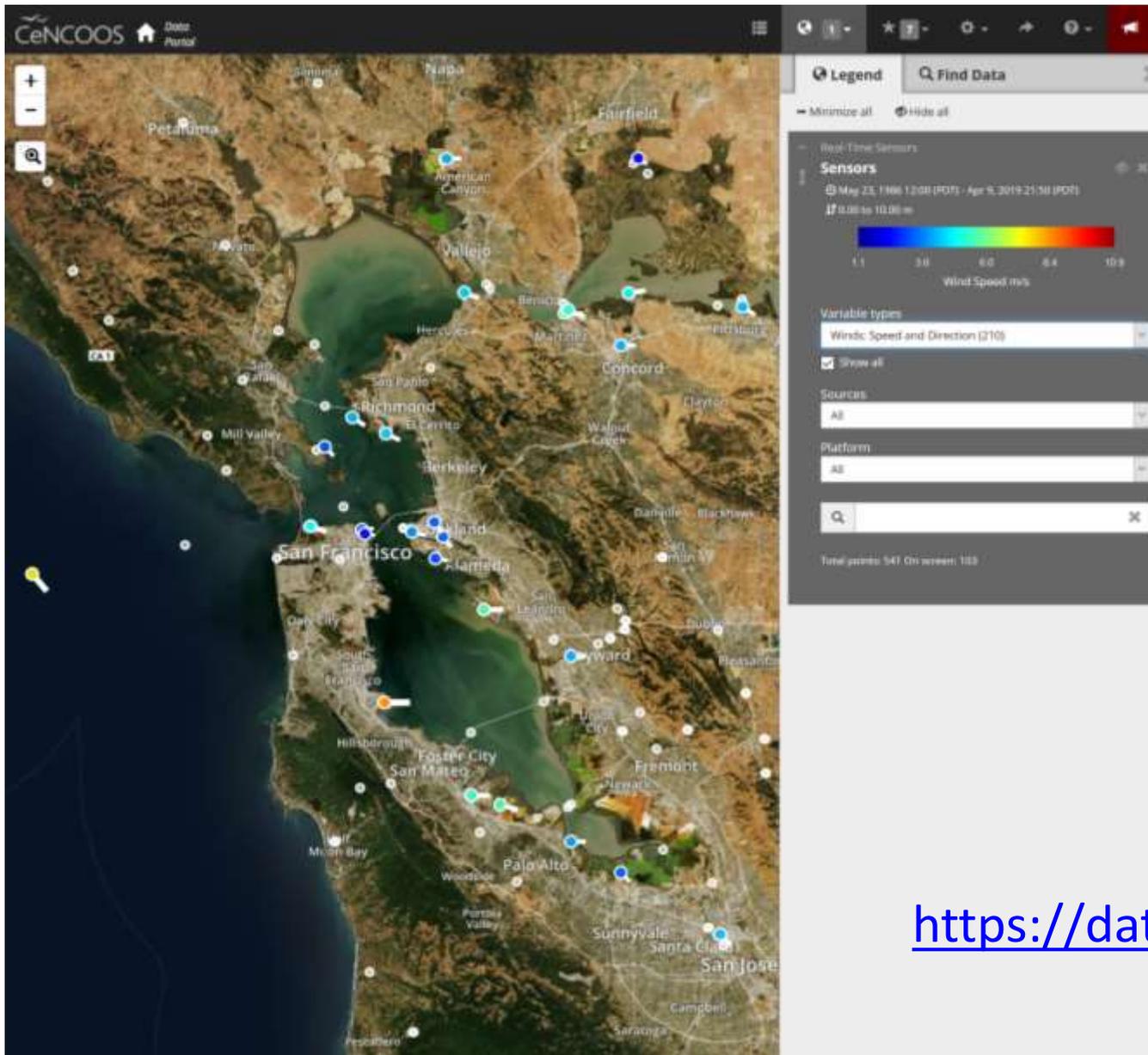


CeNCOOS supports:

- 26 HFR systems (surface currents)
- 15 shore stations/moorings (water properties)
- 4 models
- 2 profiling gliders
- 1 data portal
- Loads of integrated data

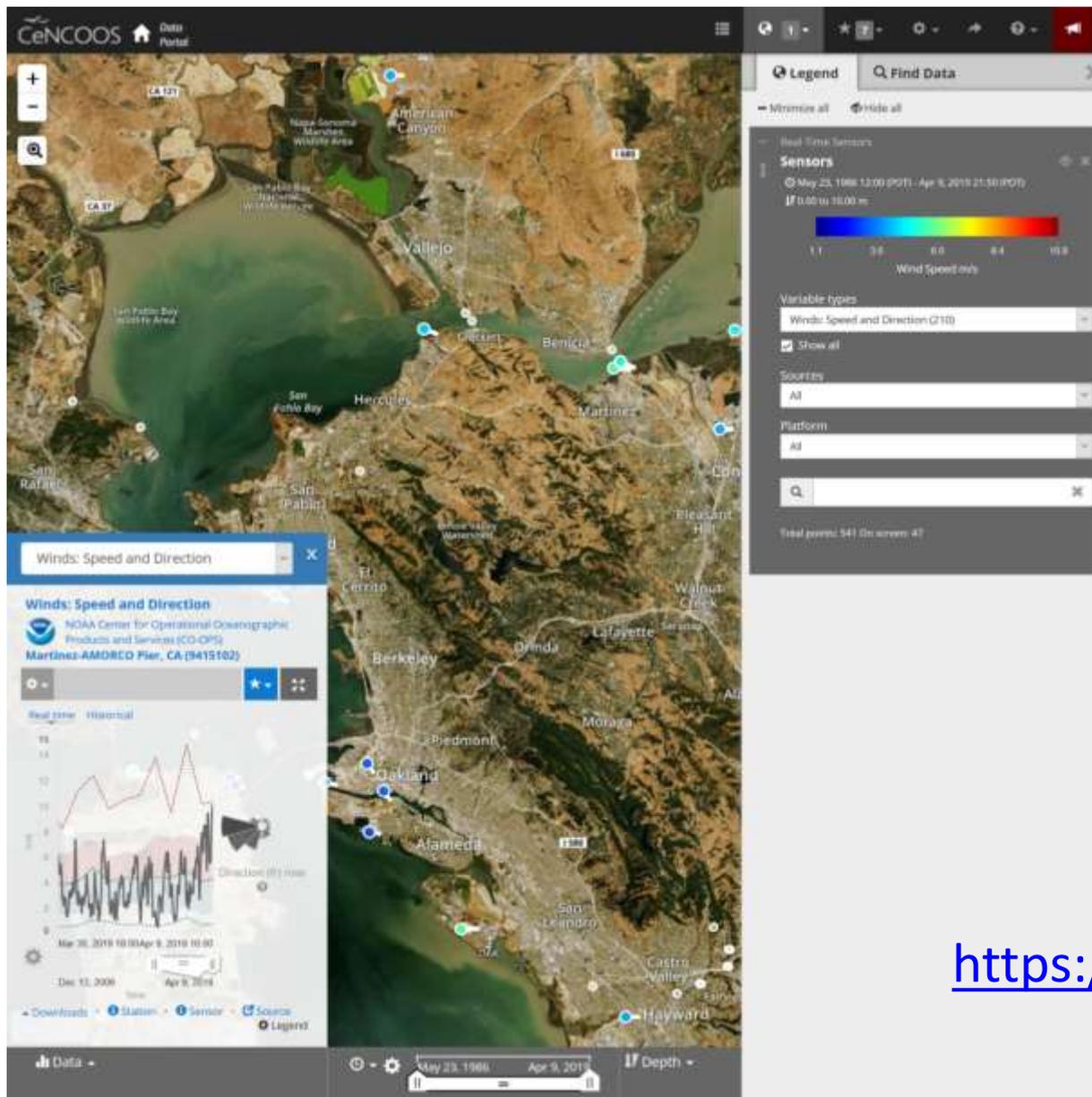


CeNCOOS Data Portal v2.7



<https://data.cencoos.org/>

CeNCOOS Data Portal v2.7



<https://data.cencoos.org/>

Modeling

WCOFS - West Coast Ocean Forecast System (Kurapov)

- Regional Ocean Modeling System (ROMS)
- 2 km and 4 km horizontal resolutions
- In development and testing phase at NOAA National Ocean Service
- NRT 4D-Var data-assimilative system started Jul 4, 2018 (4km)
- Daily operation with 3-7 day forecasts

California Harmful Algae Risk Mapping (C-HARM)

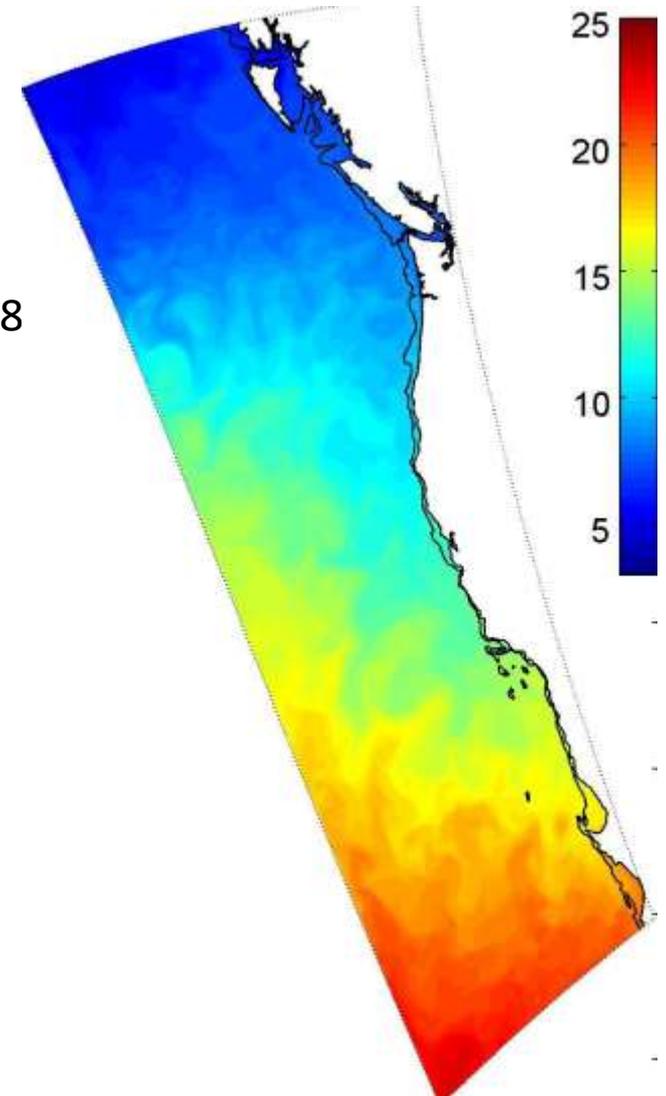
- Particulate DA and pseudo-nitzschia probabilities

CeNCOOS funded Models continue to be served.

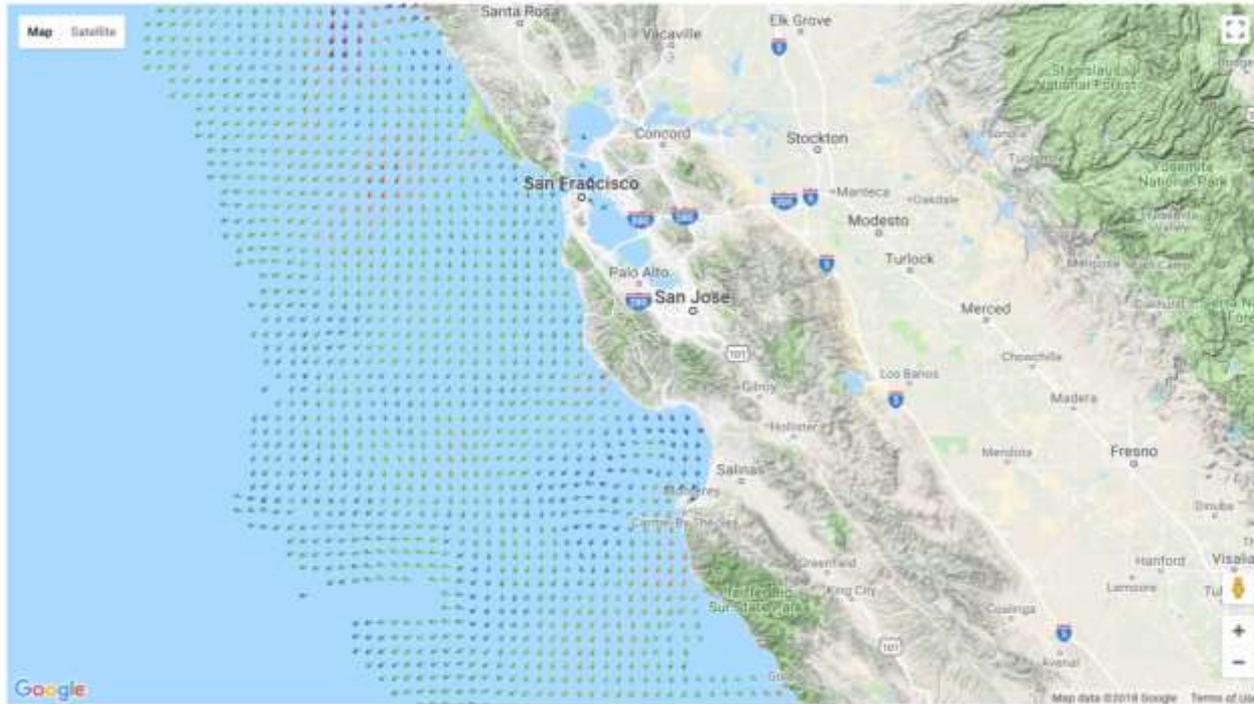
- West Coast ROMS (Edwards)
- California ROMS (Chao)
- Coupled Ocean/Atmosphere Mesoscale Prediction System (Doyle)

Bay Currents App in (re)development

New particle/plume tracking capabilities in development



High Frequency Radar



SETTINGS

25-hr Average Hourly

RESOLUTION:
6km

COLOR SCHEME: Default

COLOR BAR RANGE (cm/s):
Min: 0 Max: 50
Current Strength (cm/s)
0 10 20 30 40 50

2018-02-25 13:00:00 UTC

-1 HOUR +1 HOUR

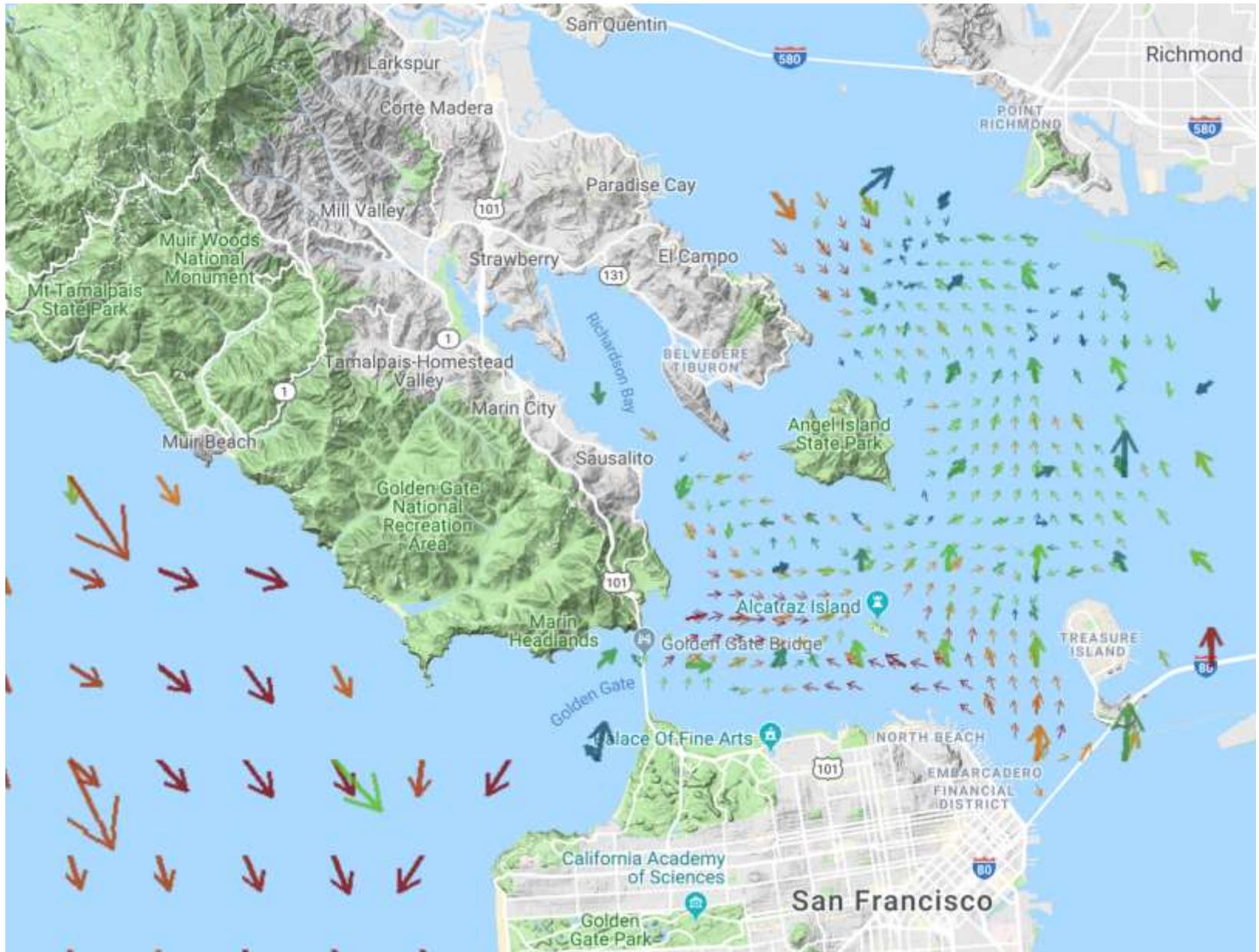
UPDATE

Station Placemarks

26 radar systems give near complete coverage along California coast, >60 sites in CA



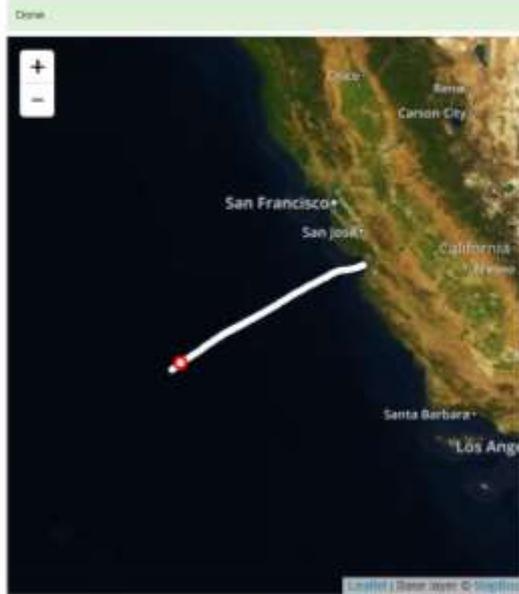
High Frequency Radar



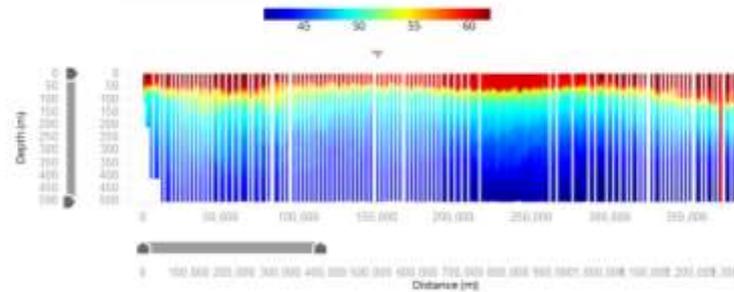
Gliders

sp025-20181203T1811 (glider)

Downloads ▾



Color palette: Rainbow
 Visualize: Sea Water Temperature
 Interpolation: Raw



Sea Water Temperature

60 °F

Depth: 4 m

Decibars: 4

Profile: 171

Location: 35.24750, 125.40180

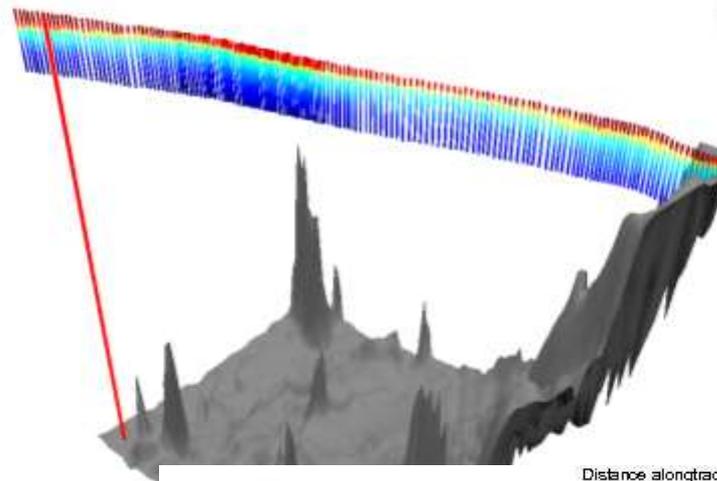
Points: 143

Dec 22, 2018 09:16 (PST) - Dec 22, 2018 11:54 (PST)

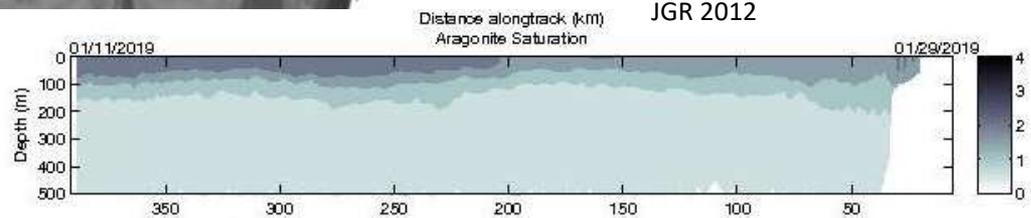
A small line graph showing temperature (°F) on the x-axis (ranging from 42 to 60) and depth (m) on the y-axis (ranging from 0 to 100). The curve shows temperature increasing with depth, with a sharp increase near the surface.

Spray glider profile data from Scripps Institution of Oceanography Instrument Development Group. (This deployment supported by NOAA.)

Date range	Dec 3, 2018 12:23 (PST) - Feb 4, 2019 04:20 (PST)
Points	78,291
Profiles	657
Institution	Scripps Institution of Oceanography
Authority	edu.ucsd.spray



Aragonite Saturation. N.B This is an EXPERIMENTAL product; use with CAUTION. Created using Alin *et. al.* JGR 2012



Shore Stations & Moorings

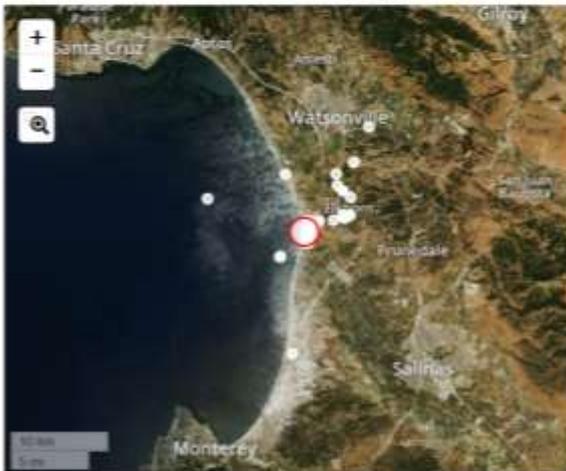
IOOS | Integrated Ocean Observing System

CeNCOOS

Home Portal Catalog Map

Moss Landing Marine Laboratories (MLML)

(MLSC1) Moss Landing Marine Laboratories Sea Water Station



Location	36.8025, -121.7915
Temporal Coverage	Sep 3, 2010 11:11 (PDT) - Feb 3, 2019 13:58 (PST)
Platform	Fixed
Web site	http://seawater.mlml.calstate.edu/
Metadata	ERDDAP station page
URN	urn:ioos:station:mlml:mlml-sea
WMO	MLSC1

Affiliations

Moss Landing Marine Laboratories (MLML) | [Web site](#) | [Source](#)

Water Temperature



Salinity



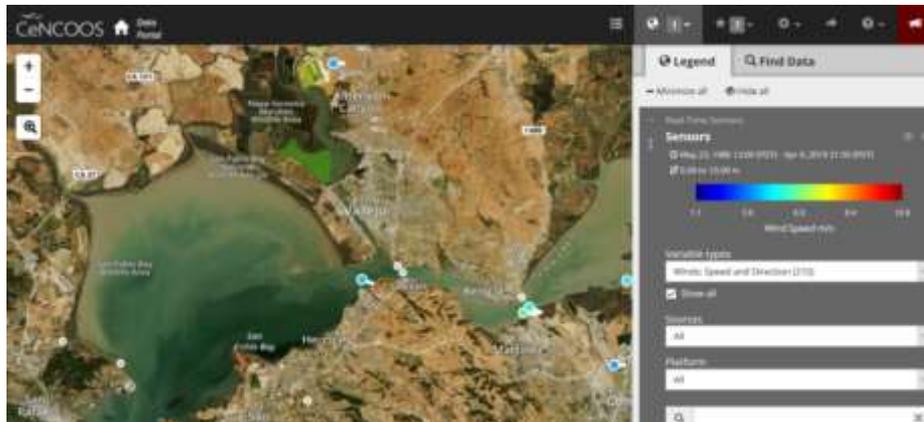
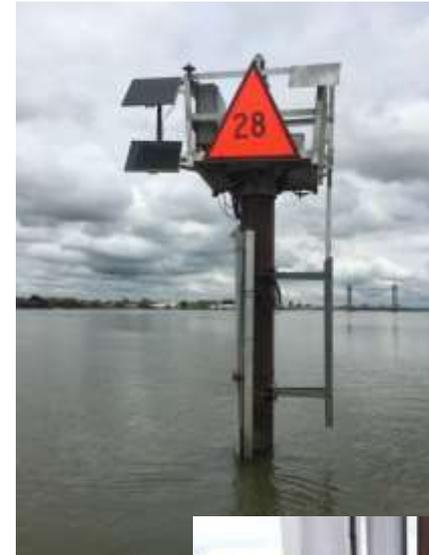
MONTEREY BAY SEAWEEDS



Specialized Products – Pinole Shoal

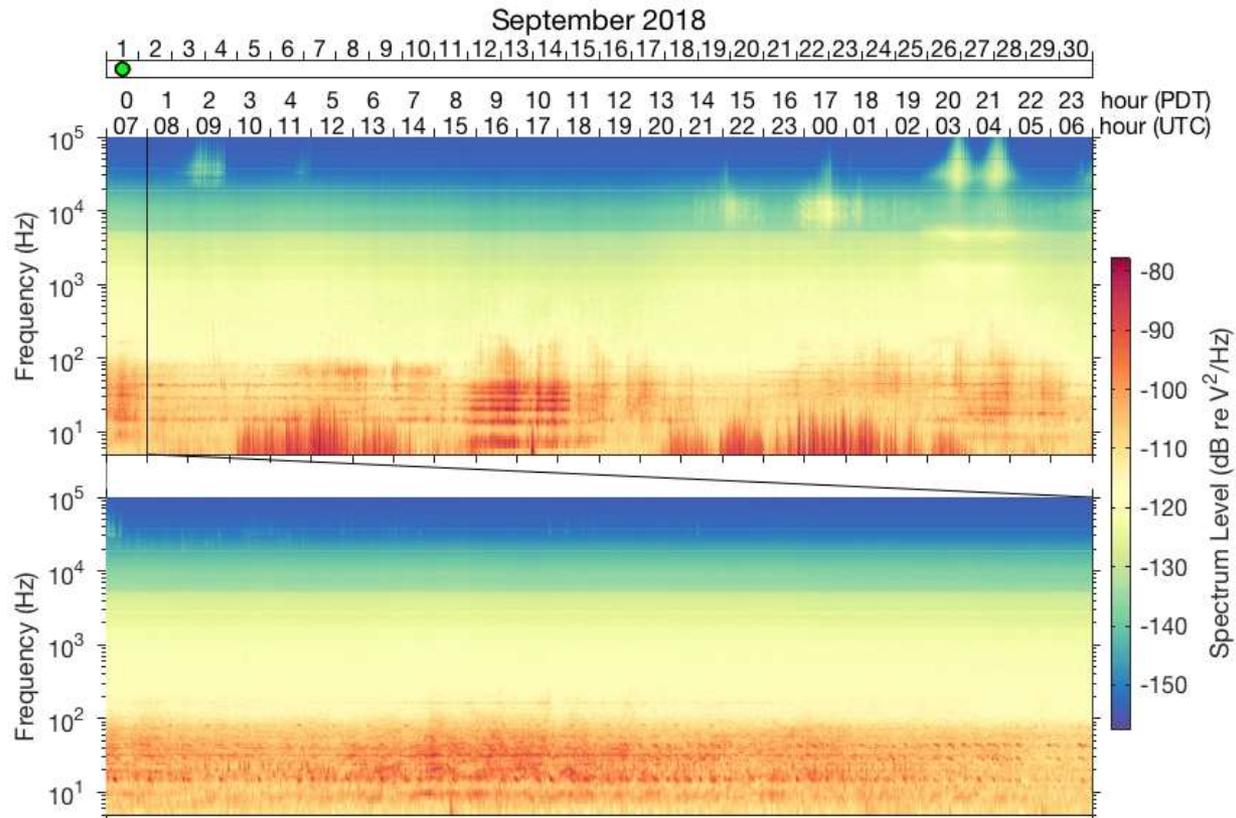
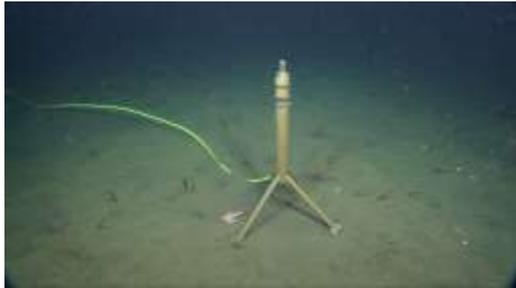
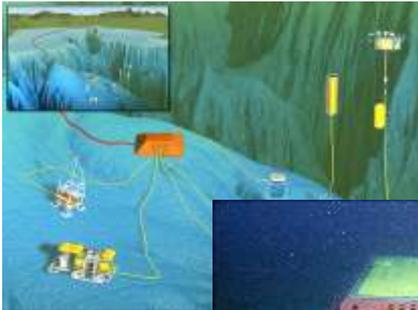
Improve Tide Height Monitoring and Prediction

- Pinole Shoal is of interest to maritime traffic through San Pablo Bay.
- The particular area of focus is 5 nm long and between buoy 7 and 8 to light 15.
- Potentially install a tide gauge and integrate with model tools to help better forecast the water level for the transit.
- CeNCOOS and Harbor Safety Committee connections helping to facilitate identify challenge and scope solutions
- Could improve confidence in safety margins for loading via 'Digital dredging' with substantial economic value



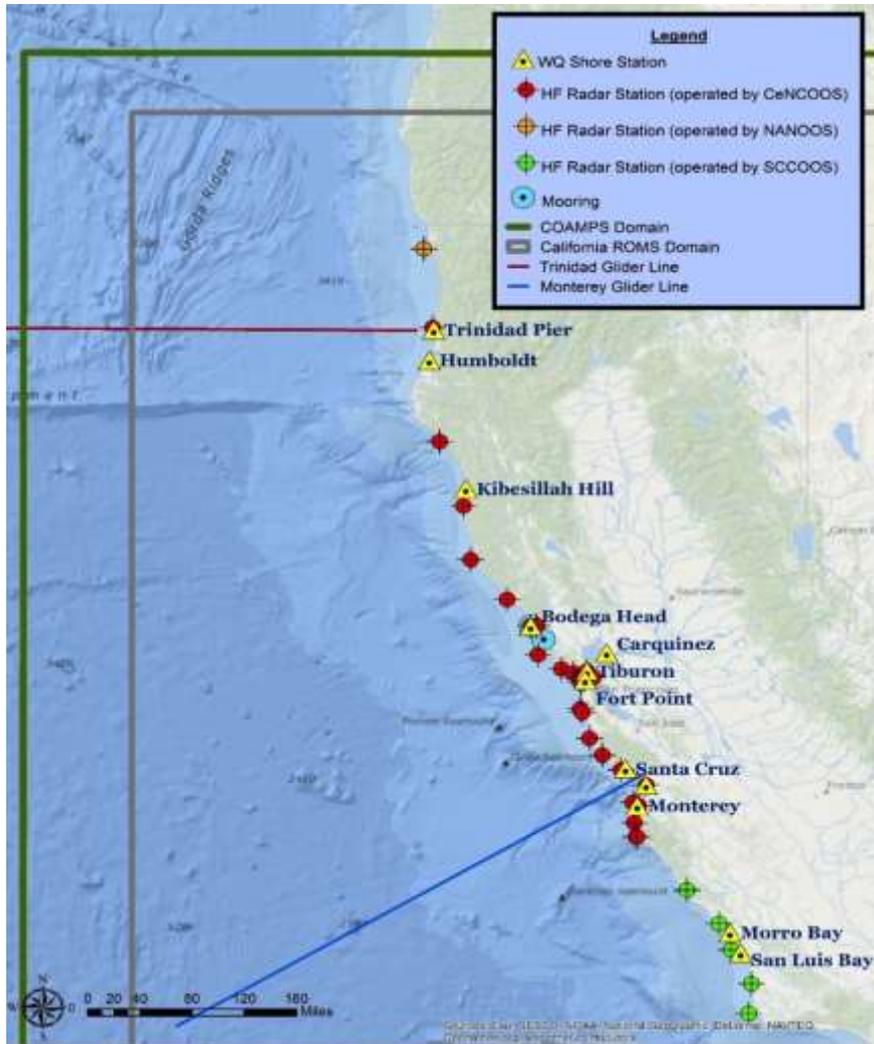
Real-time Ocean Acoustics

- Live feed from MARS cabled observatory
- Machine learning classifiers being implemented



https://youtu.be/w6zMKhy_F74

Summary



- Realizing the power of ‘big data’ for ocean safety, economy and stewardship
- Connecting local and regional internets to national and global coordination.



**Acknowledgements: P Daniel, A Harper, F Bahr, M McKinzie, J
Ryan, D Cline & CeNCOOS Members**

hruhl@mbari.org

www.cencoos.org



Drone Delivery Pilot Presentation

Port of Oakland

CODE42 Air

Michael Bender

Henk Goosen

CODE42

Agenda

- Who we are
- What we do
- Value proposition to the Port of Oakland and commercial ship operators
- Pilot program details
- Regulatory and Safety
- Airbus / Wilhelmsen Ships Agency Deployment in Singapore
- Open questions

Thank you for giving us the opportunity to talk to you about our pilot today. We are looking forward to starting a dialogue with experts in the commercial maritime field.

CODE42

CODE42 Air: Who we are

Henk Goosen - CEO

`henk@code42.ai`

Mike Bender - Senior Architect

`mike@code42.ai`

Team: Engineers, scientists, pilots, regulatory representatives, distributed around the globe. We pull in additional team members on an as-needed basis for pilot programs.

CODE42

What we propose to do

Mission: Create a small package delivery service between a land-based port facility and anchored commercial ships using UAVs (drones). The UAV operation is highly automated and does not require flying skills from operators.

Value proposition

Value Proposition: Using UAVs to deliver small packages between a land facility such as the Port of Oakland and a commercial ship increases the safety and decreases the cost of such operations; estimates are:

- 10x cheaper than a traditional tender for a small delivery
- Much safer than sending humans out on a tender

A UAV can be dispatched on-demand by operators rather than waiting for a tender and crew to be available.

Pilot Program Details

This pilot is a step towards offering package delivery as a commercial service.

The service is envisioned to operate on an on-demand basis:

- Both the Port side and the ship side operators can request a vehicle using an app on a mobile device.
- Operators are not required to be skilled UAV pilots.
- Initially we plan for only one UAV to be in the air at any time.

Average flight distance 5 miles (between Port and ship).

Maximum payload is 2 kg for the initial phase of the pilot.

CODE42

Initial Vehicles for Pilot Program

Initially we plan to fly multi-rotor vehicles (DJI M600 Pro / Inspired Flight IF750):

- Max vehicle speed: 40 MPH
- Max flight time: 20 minutes @ 5 kg payload
- Max payload: 5 kg (avionics plus package to be delivered)



CODE42

Pilot Program at Port of Oakland

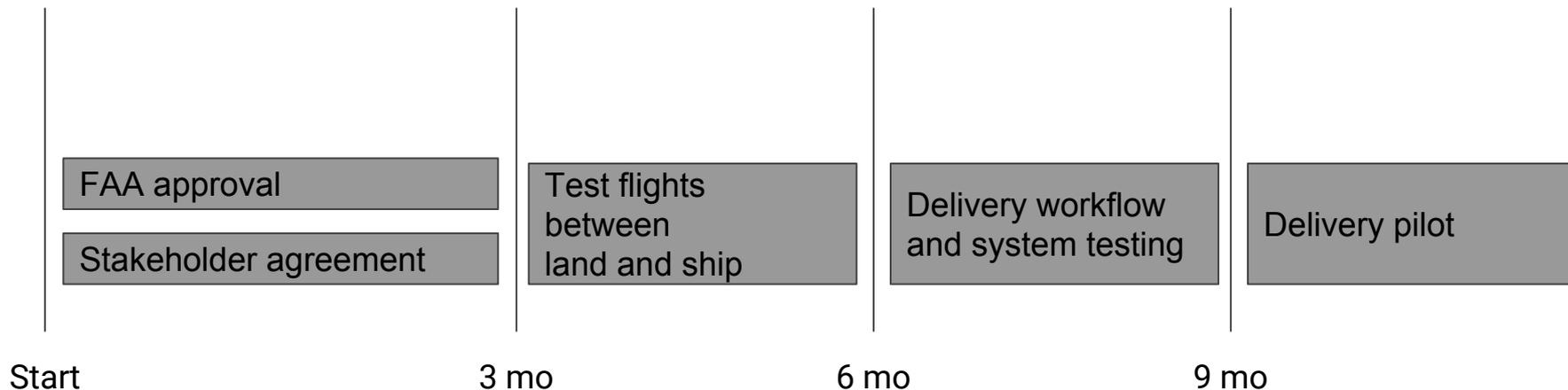
Proposed flight areas



- Flight altitudes below 400 feet (or as specified in our COA from the FAA).
- Flying up the Estuary / across Alameda.
- No operations over or north of the Bay Bridge or near YBI.
- No operations over or near San Francisco.

Indicative timeline

(subject to change)



Pilot Program Regulatory

A key component of our pilot program and eventual commercial operations is the requirement to obtain FAA approval to operate in the airspace we want to fly in, and to do so in a safe manner to minimize, to the extent possible, risk to human life, other aircraft and property.

We are talking to the [Northern Plains UAS Test Site](#), a public agency authorized by the FAA to work with us to review our operations, train our team and obtain approvals from all required agencies to allow our pilot program to proceed.

FAA authorization is called a COA (Certificate of Authorization).

CODE42

Pilot Program Safety

Vehicles we fly have the following safety systems:

- Flight control redundancy
 - Redundant autopilots.
 - Ability to be manually controlled from multiple ground stations.
- Automatic emergency landing
 - Vehicle automatically lands at a pre-programmed site in case of non-critical failure.
- Ballistic parachute
 - Vehicle is equipped with a parachute that automatically deploys in the event of a system failure and safely brings the vehicle down to the ground.

Pilot Program Visual Observers

In order to maintain a safe flying environment, we use VOs (human visual observers) stationed on land to monitor every flight.

- Vehicles will always be in visual range of a VO.
- VOs will be in radio contact with each other and with the master control operator that is based on land at the Port.
- The function of a VO is to monitor the flight and guide the master control operator to take over manual control of the vehicle and land it safely.

Airbus Skyways Deployment in Singapore

Airbus is partnering with the Port of Singapore and Wilhelmsen Ships Agency to trial shore to ship package delivery using UAVs.

World Maritime News: [WSS and Airbus Shore-to-Ship Drone Delivery Trials](#)



CODE42

Open Questions

- What aspects of the operation will the Port, Coast Guard and commercial ship operators be concerned with?
- Labor issues - goal is to make people more efficient, what are the unionized labor issues that need to be addressed?
- Is it common for commercial ships to have a helicopter landing area?
- What is the frequency of tender service today to move small packages between the Port and the ship? (i.e. number of service trips per day, etc...)
- Any issues with US Customs when doing package transfers between the Port and a ship?

Q & A

(open discussion)

CODE42

Happy Seafarers mean Safe Harbors and Seas!

*INTERNATIONAL MARITIME CENTER
HARBOR SAFETY COMMITTEE MEETING*

4/11/19

IMC

*Create Recognition and Appreciation for
the contributions and work efforts of
International Seafarers and the Shipping
Industry to the Bay Area and to
California State economy and lifestyle.*

(Sea Blindness– the Maritime Industry– the best kept secret!)



HOSPITALITY TO THE SEAFARER



HELPING SEAFARERS FEEL SAFE



AND
WORK
SAFE!!



2018 ACTIVITIES

<u>ACTIVITY</u>	<u>2018 Metric</u>
Ship Visits	353
Ships Served	824
Seafarers Transported	3481
Seafarers who came to the center	1549
Visitors who came to the center	1087
Total Crew Population Serviced	6528
Crew members counselled	939
Attended worship or services	1730
Christmas Gifts to Seafarers	1514



- Resurfaced Pool Table
- New Ping Pong Table
- New Freezer and Drink Refrigerator
- CISM Training
- MLC Training
- Pacific Sail and Power Boat Show
- Speaking Engagements
- Nautical Institute/CAMM at CMA
- Swedish Pancake Breakfast (4/27)
- National Maritime Day



2018 ACTIVITIES



NATIONAL MARITIME DAY

**22
MAY**

**CELEBRATION FROM
1000-1130**

International Maritime Center
4001 7th Street
Port View Park
Port of Oakland

Location

maritimeday@asmhq.com

510-206-2218

RSVP call or email.

**NATIONAL
MARITIME DAY**

This Year's Theme:
Empowering Women in the
Maritime Community

Unveiling: Mariner Memorial
Sculpture- Sea Remembrance

Special Guest Speakers,
Wreath Laying, Coffee/Pastries,
Networking....

Join the fun and
Salute the Maritime Industry!



SEA REMEMBRANCE

QUESTIONS?



Happy Seafarers mean Safe Harbors and Seas!

CDIP:

Measuring and Modeling California's Waves



Meeting of the Harbor Safety Committee
of the San Francisco Bay Region

April 11, 2019

James Behrens, Ph.D.

Program Manager

Coastal Data Information Program
Scripps Institution of Oceanography

UC San Diego

COASTAL DATA INFORMATION PROGRAM

The Coastal Data Information Program measures, analyzes, archives and disseminates coastal environment data for use by coastal engineers, planners, managers, scientists and mariners.



Waverider buoys

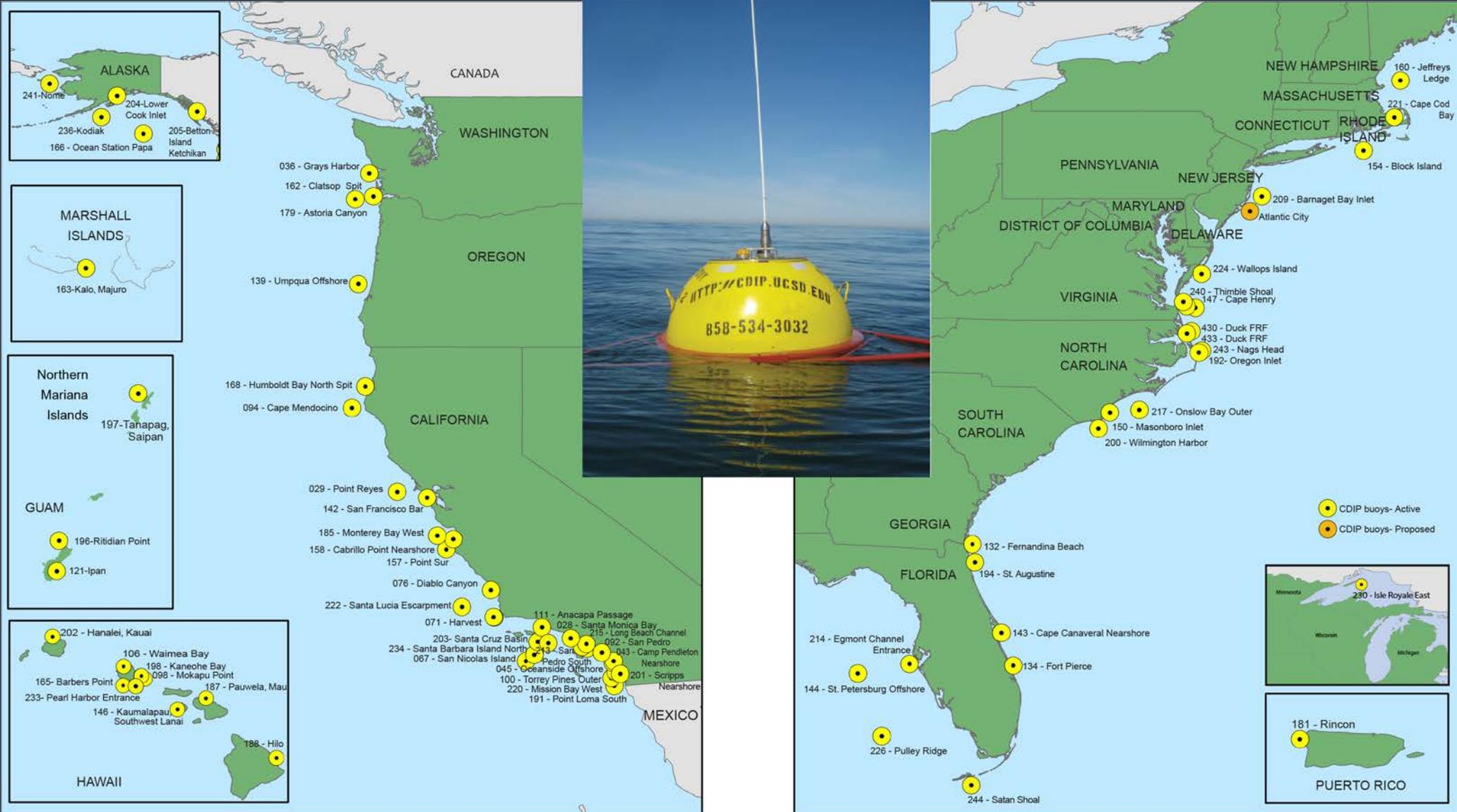
- Wave Energy Spectrum
- Directional Spectrum
- XYZ (E,N,V) Displacements
- Sea Surface Temperature
- *Sea Surface Currents*
- *Air Temperature*



COASTAL DATA INFORMATION PROGRAM

- Established 1975
- ~ 70 wave stations worldwide, 24 in California
- 15-person CDIP Waves operations team
- Major Funding from:
 - US Army Corps of Engineers
 - California State Parks Division of Boating and Waterways
 - Navy
- Partners:
 - NOAA IOOS
 - DOE National Renewable Energy Laboratory
 - NASA
 - Industry





Primary Sponsor:  US Army Corps of Engineers®



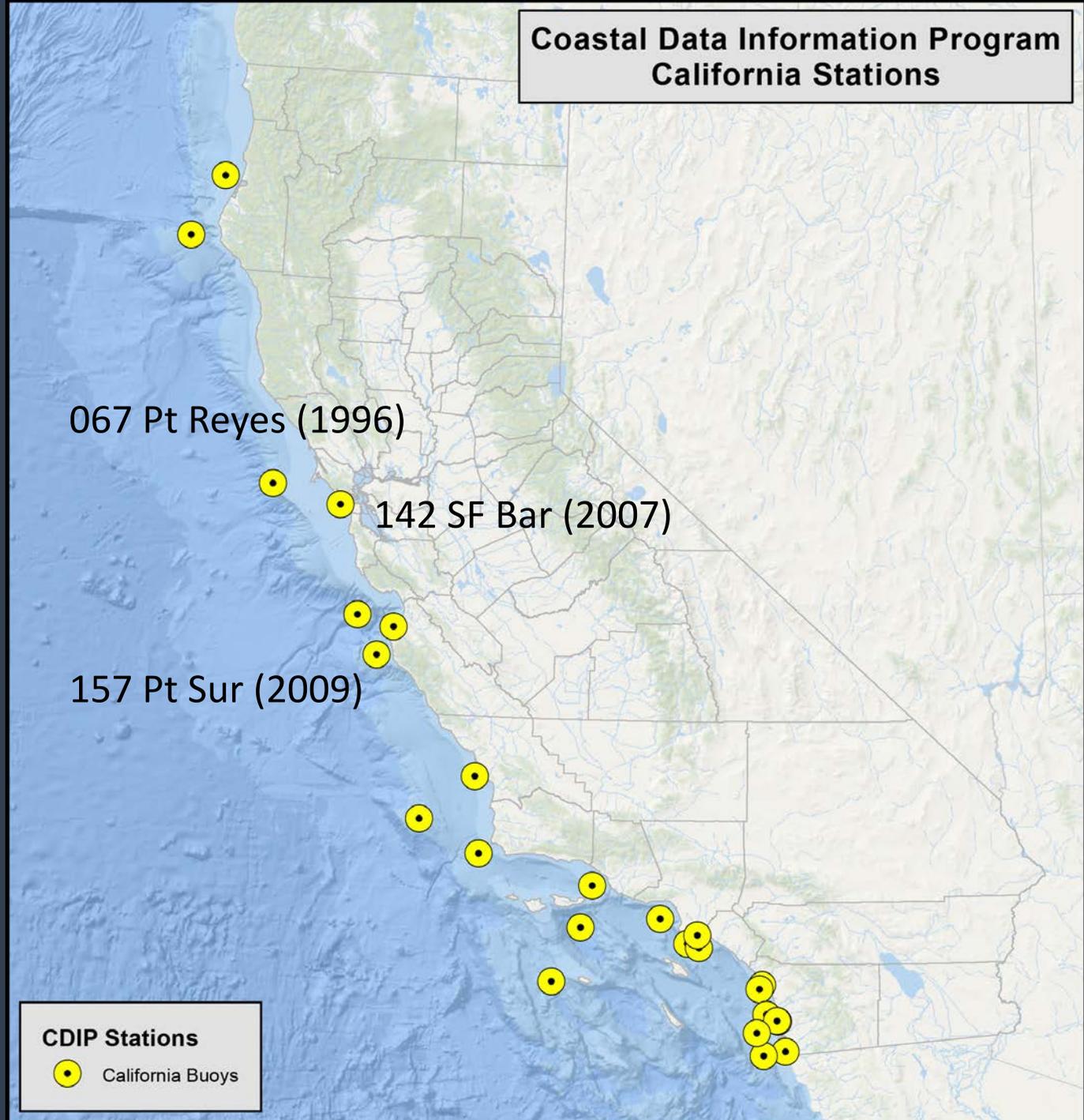
 IOOS | Integrated Ocean Observing System



US Army Corps of Engineers®



Coastal Data Information Program
California Stations

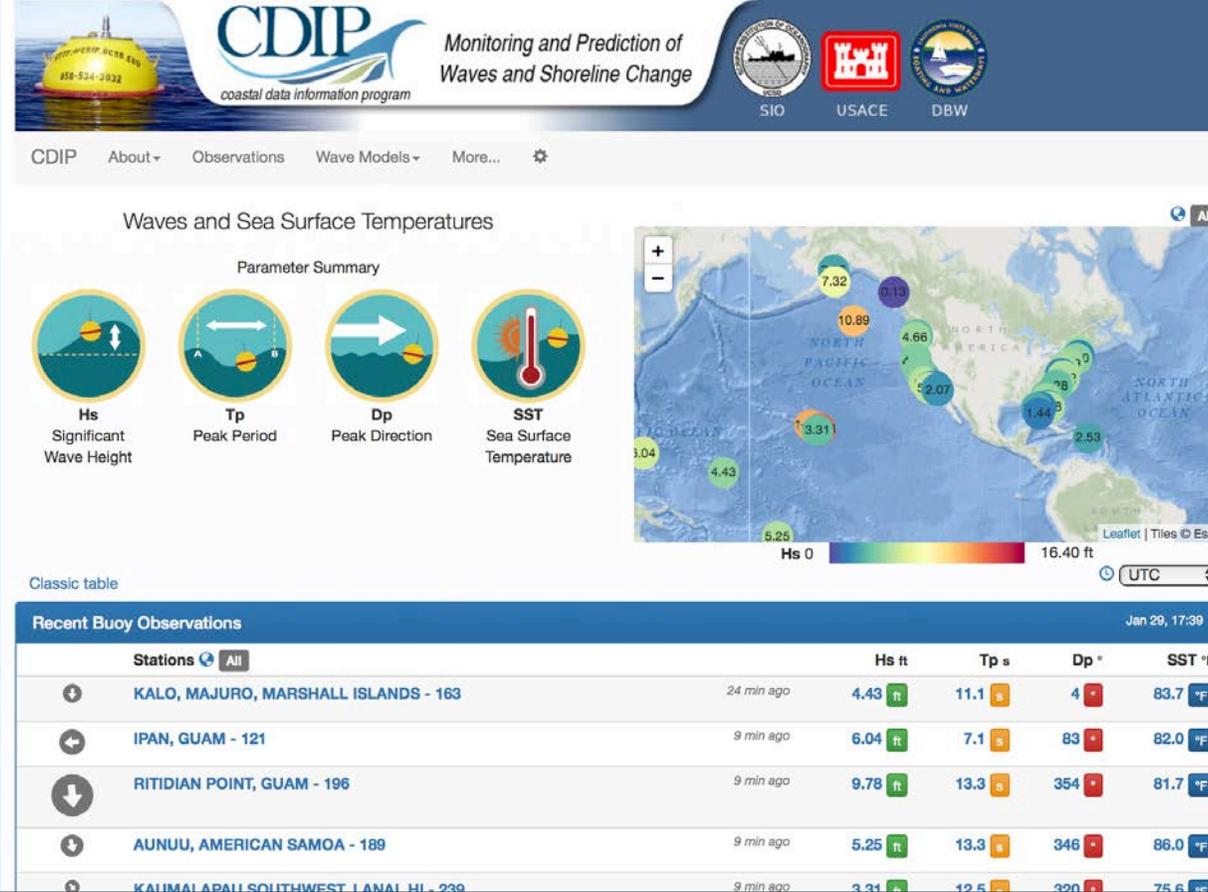


CDIP Stations

● California Buoys



CDIP 142
San Francisco Bar
March 2019



Data Dissemination

Updates every 30 minutes (> 99% reliable)

CDIP Website (~17,000 unique visitors per day)

National Data Buoy Center / NOAA (NWS)

National Centers for Environmental Information

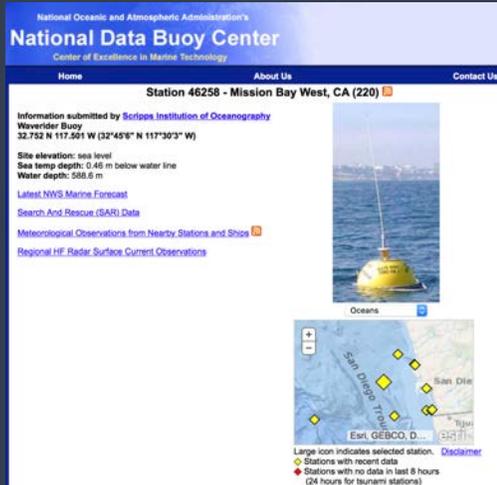
Physical Oceanographic Real-Time System (PORTS®): Humboldt Bay, San Francisco, LA/LB

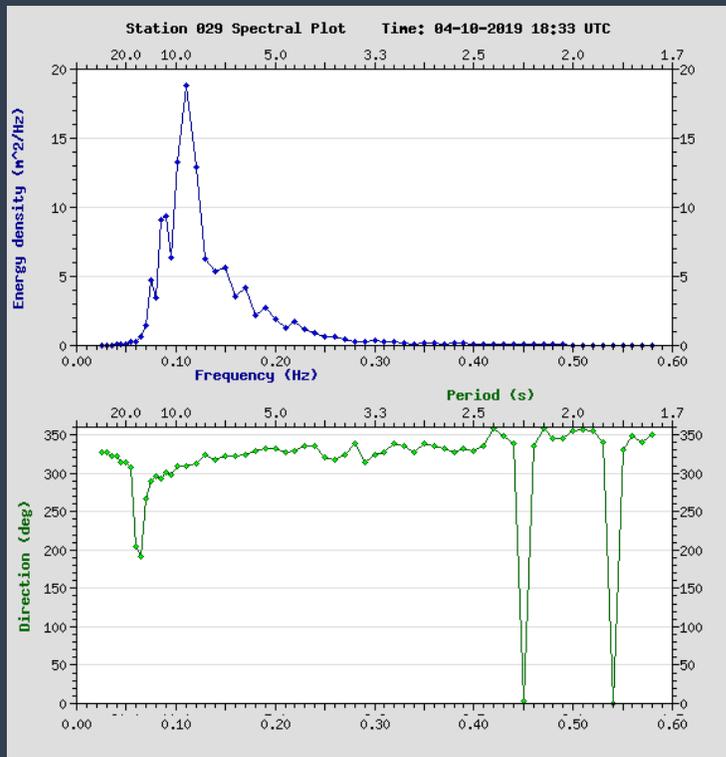
Quality Control

QARTOD compliant (national standards)

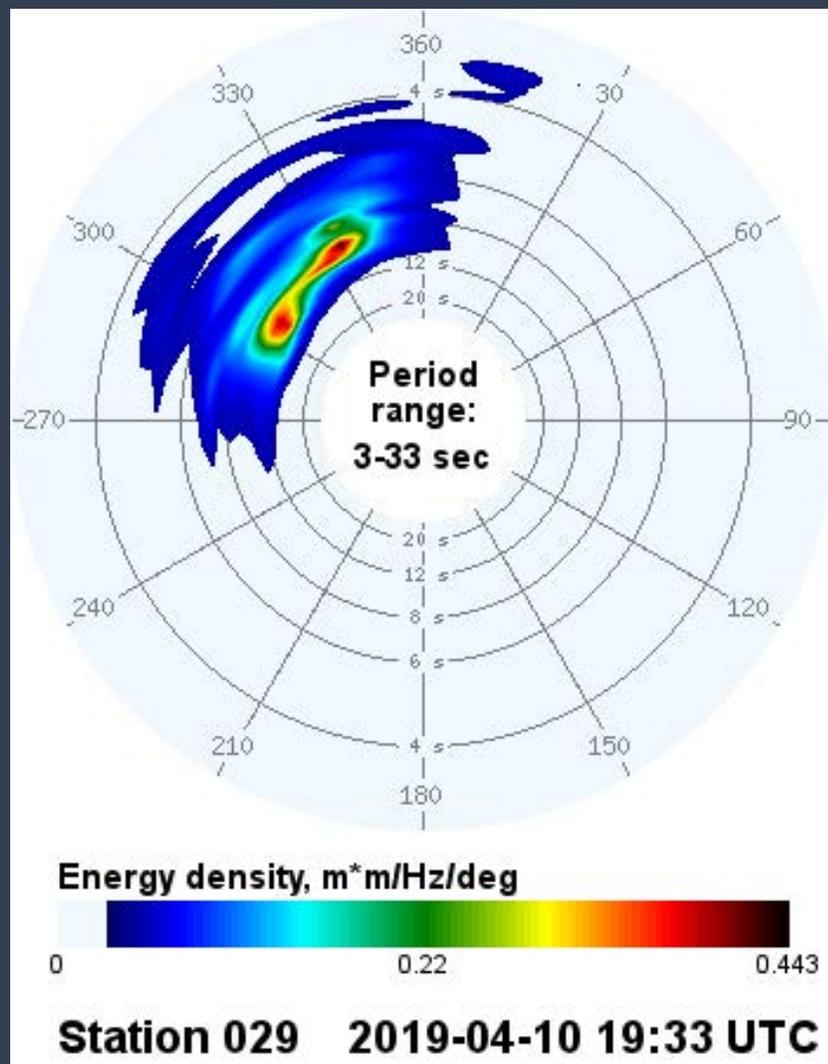
Automated messaging

Calibration verification

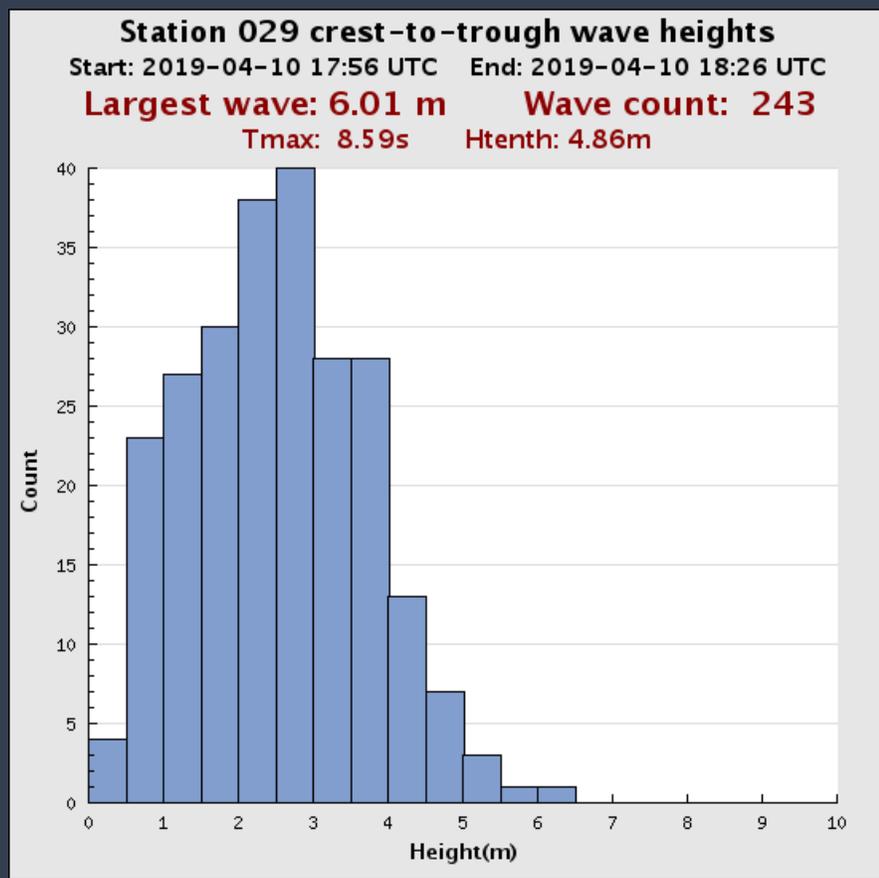




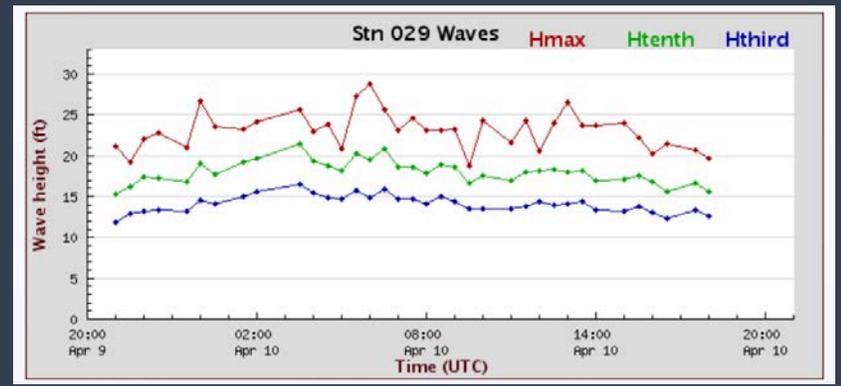
Wave Energy Spectra
(1 - 30 sec)



Directional Spectra



Individual Waves



SAN FRANCISCO BAR, CA - 142

Observed Data

Significant Wave Height 2.48 m / 8.15 ft

Peak Period 10.53 s

Direction 279° 

Temperature 14.6 °C / 58.2 °F

Current speed 0.07 m/s / 0.14 kt

Current direction 308 deg

Apr 10, 20:56

Station Details

Latitude: 37.78630 N

Longitude: -122.63500 E

Depth: 16 m / 51 ft



Leaflet | Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors

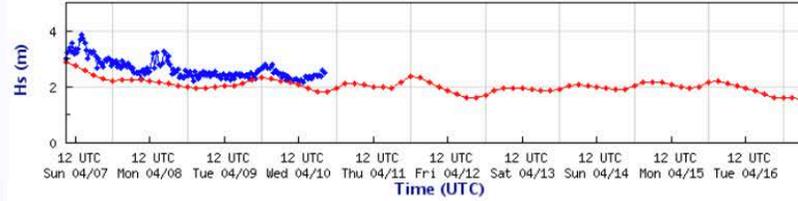
Historic data

Interactive

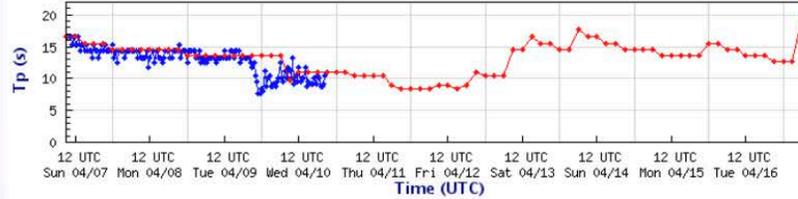
San Francisco Bar, CA Conditions + Forecast

Observations: CDIP buoy 142
Forecast: NOAA WW3 46237

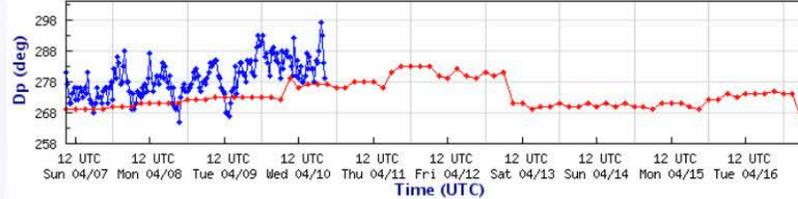
Wave height - Station 142



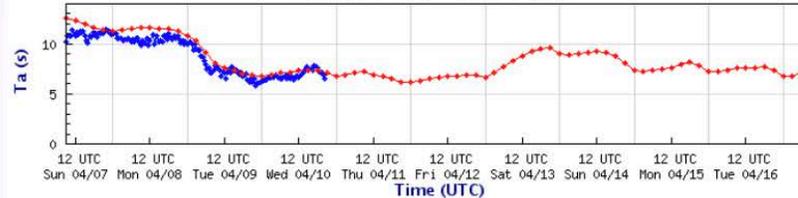
Peak period - Station 142



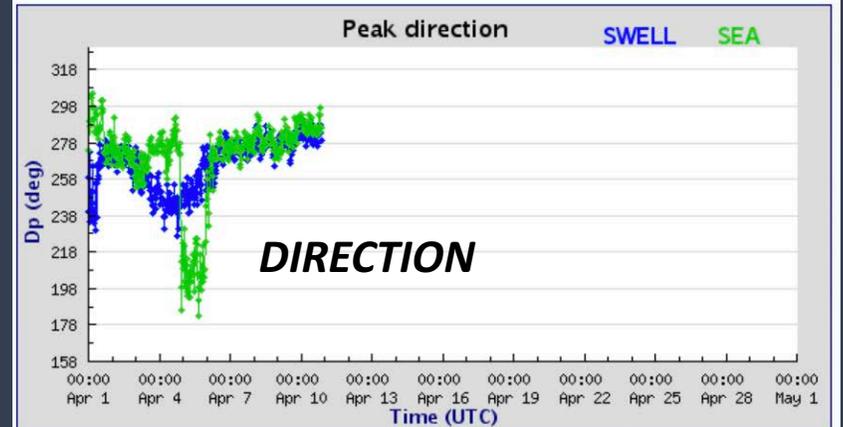
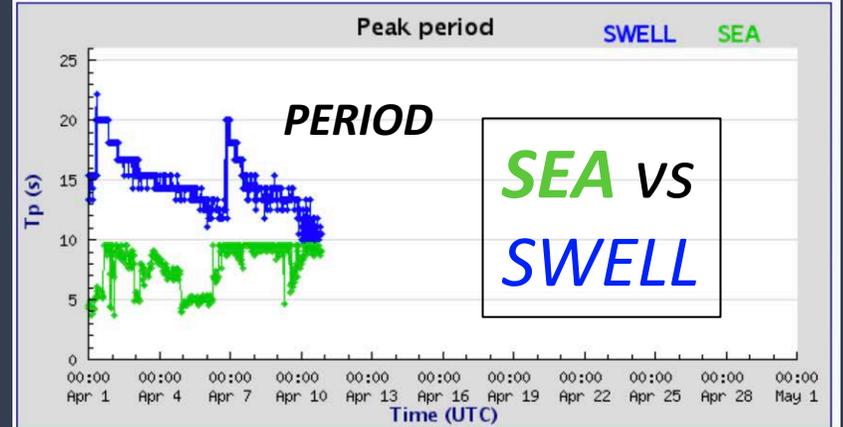
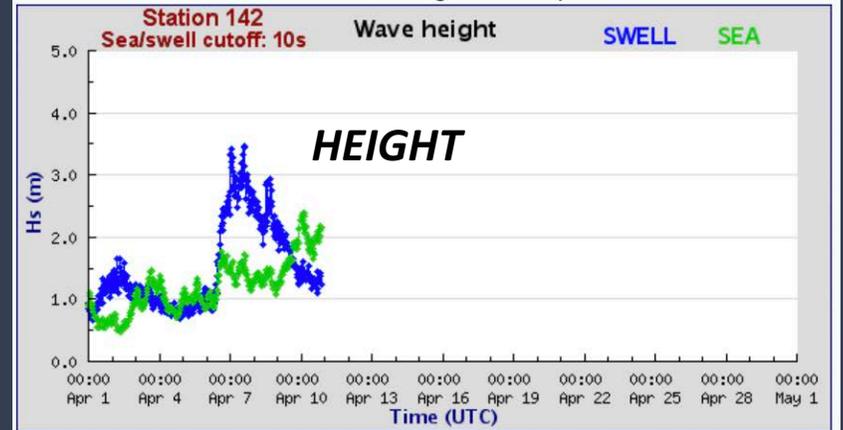
Peak direction - Station 142



Average period - Station 142



DATA and FORECAST



SAN FRANCISCO BAR, CA - 142

Historic data

Observed Data

Significant Wave Height **2.48 m / 8.15 ft**

Peak Period **10.53 s**

Direction **279°** →

Temperature **14.6 °C / 58.2 °F**

Current speed **0.07 m/s / 0.14 kt**

Current direction **308 deg**

Apr 10, 20:56

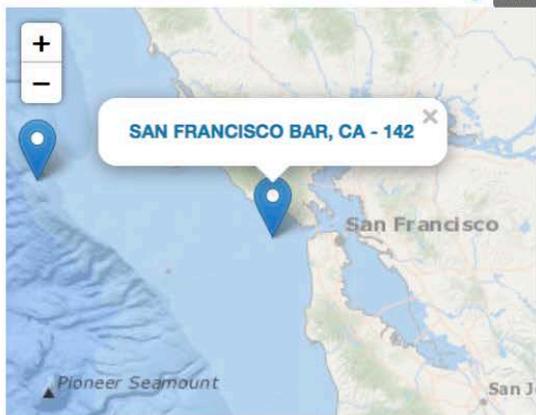
Station Details

Latitude: **37.78630 N**

Longitude: **-122.63500 E**

Depth: **16 m / 51 ft**

All



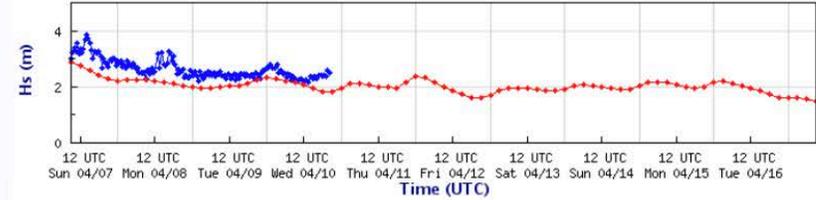
Leaflet | Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors

Interactive WW3 Summary

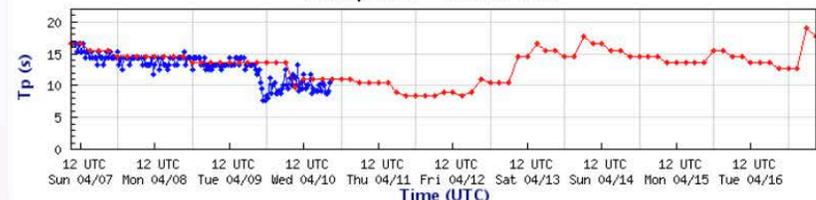
San Francisco Bar, CA Conditions + Forecast

Observations: CDIP buoy 142
Forecast: NOAA WW3 46237

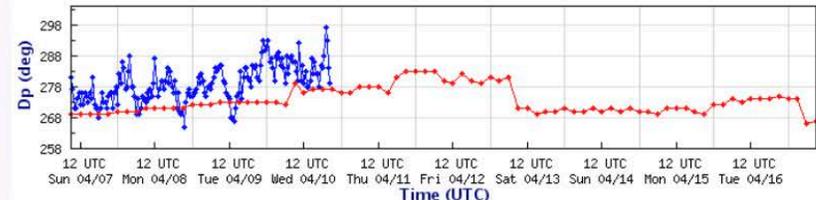
Wave height - Station 142



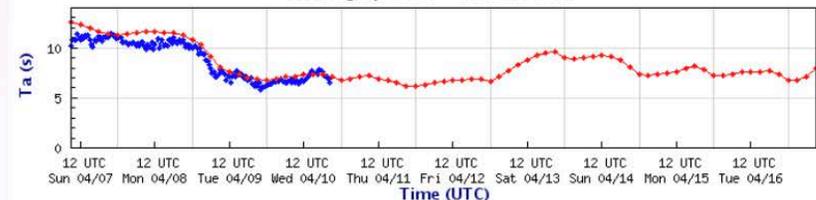
Peak period - Station 142



Peak direction - Station 142



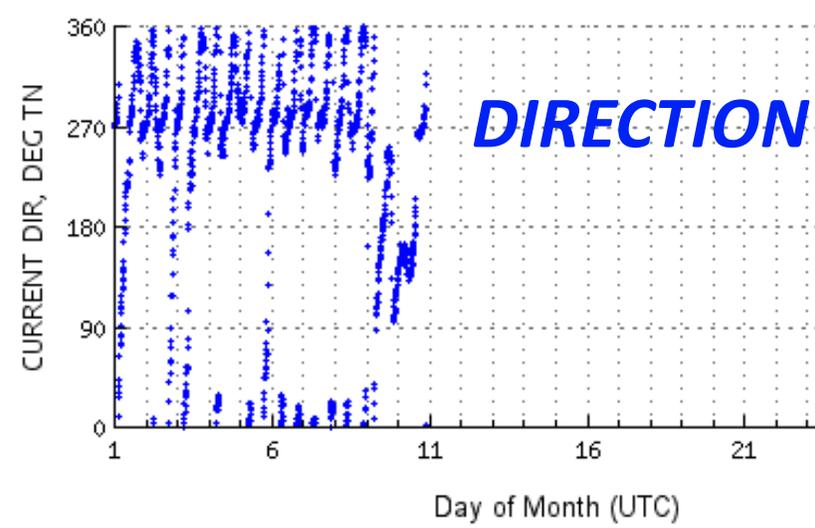
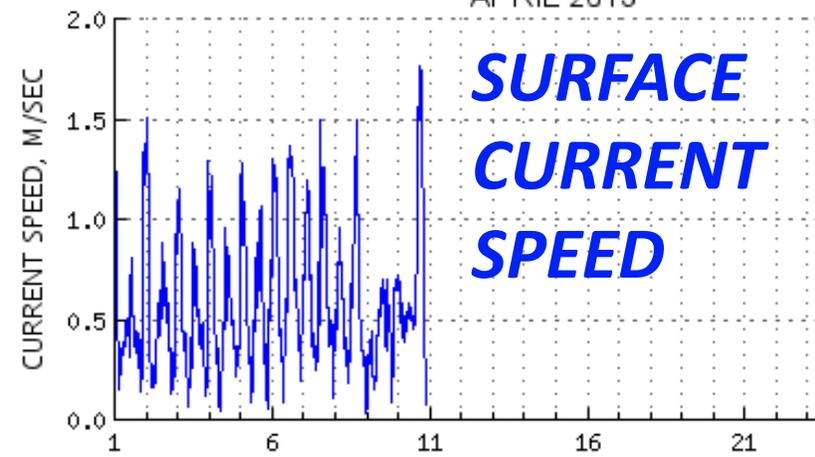
Average period - Station 142



DATA and FORECAST

142 SAN FRANCISCO BAR, CA (BUOY)

APRIL 2019



**Coastal Waters Forecast for California
National Weather Service San Francisco Bay Area**

.....SAN FRANCISCO BAR/FOURFATHOM BANK FORECAST.....

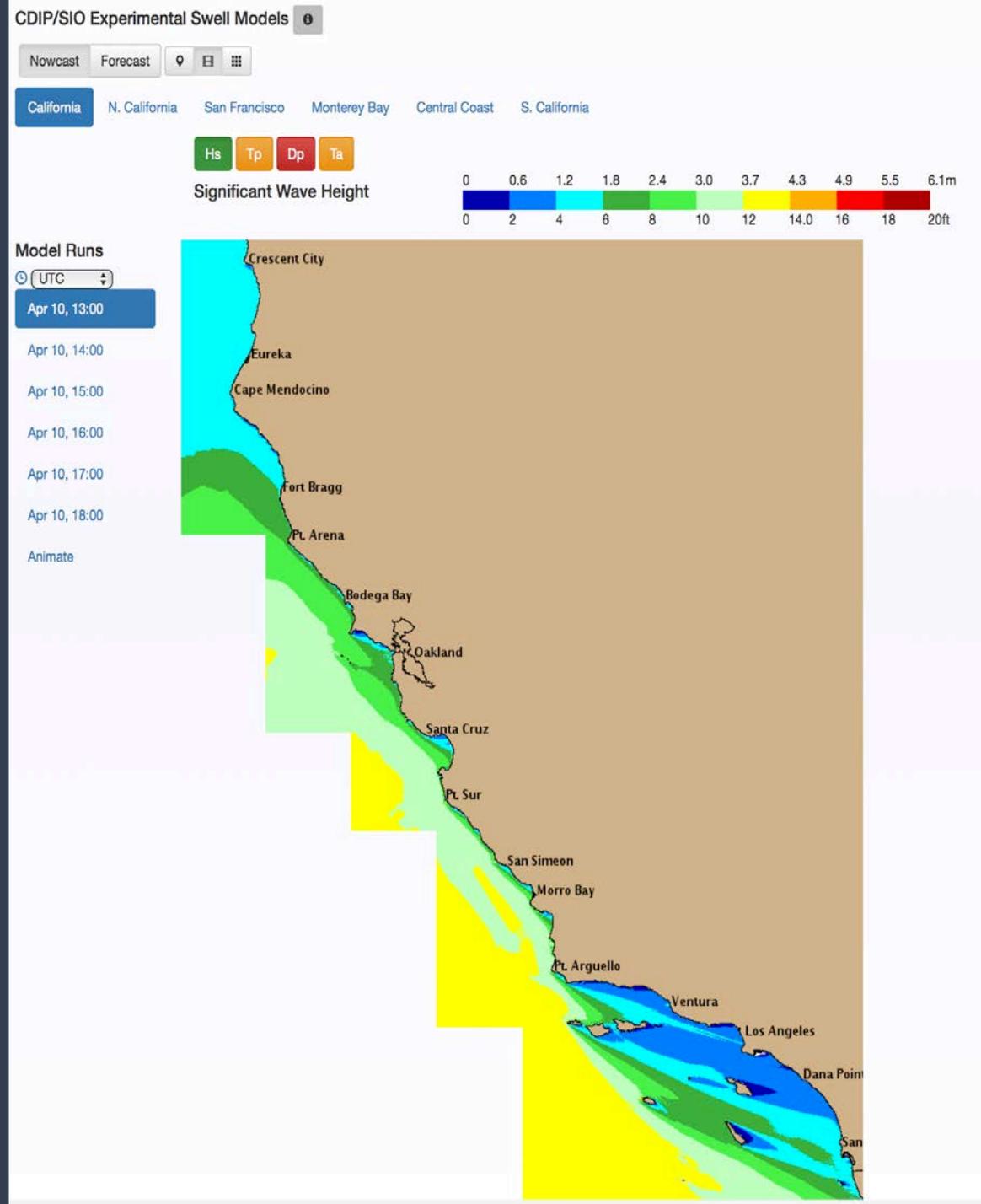
IN THE DEEP WATER CHANNEL...Combined seas 6 to 8 ft with a dominant of 12 seconds.

ACROSS THE BAR...Combined seas 7 to 9 ft with a dominant period of 12 seconds. Maximum ebb current of 3.0 kt at 05:55 PM Thursday and 3.6 kt at 06:07 AM Friday.

CDIP California Wave Model

“Nowcast” and hindcast
(back to 2000) model driven
by **buoy data** + bathymetry +
physics

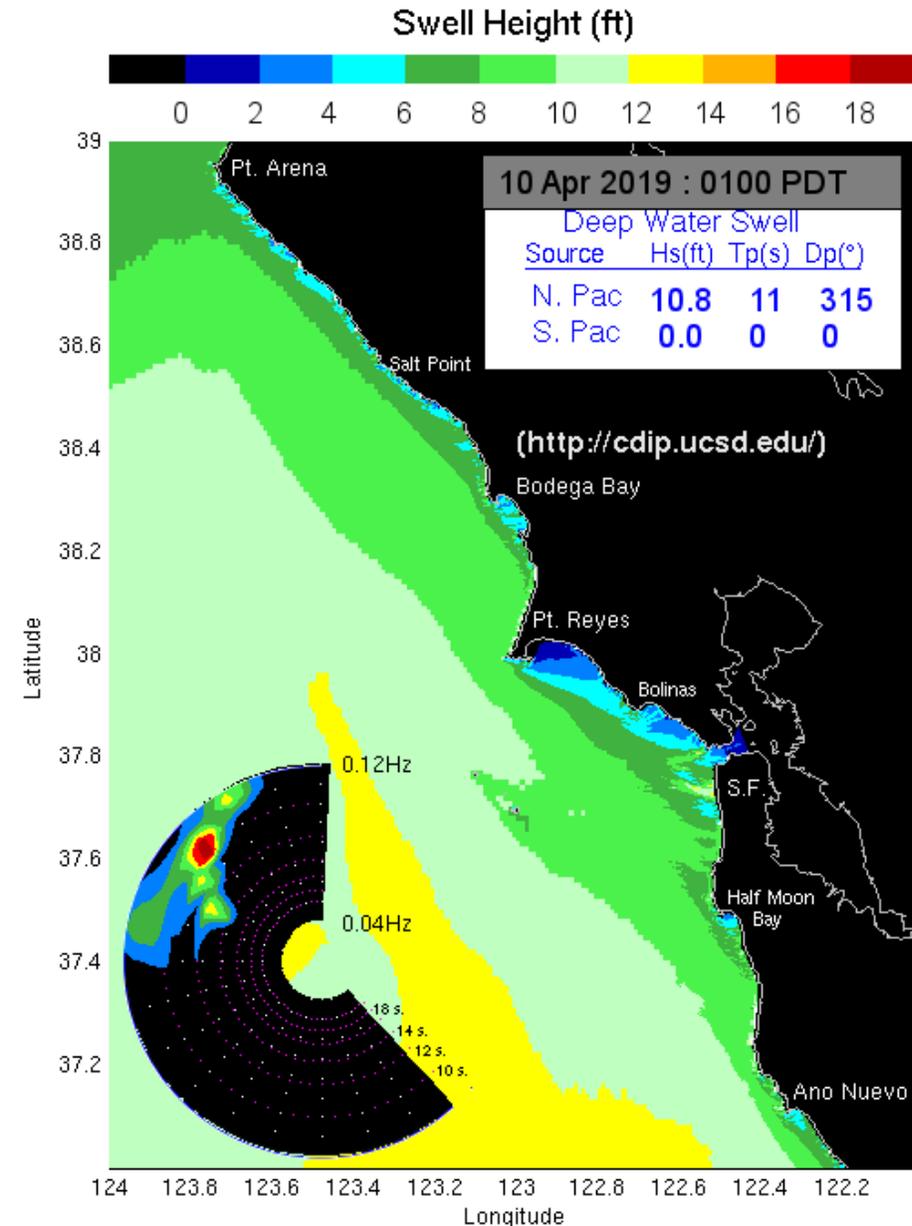
Output points every 100 -
200 m along the coast



CDIP California Wave Model

“Nowcast” and hindcast
(back to 2000) model driven
by **buoy data** + bathymetry +
physics

Output points every 100 -
200 m along the coast



Coastal Flooding Index



Hwy 1

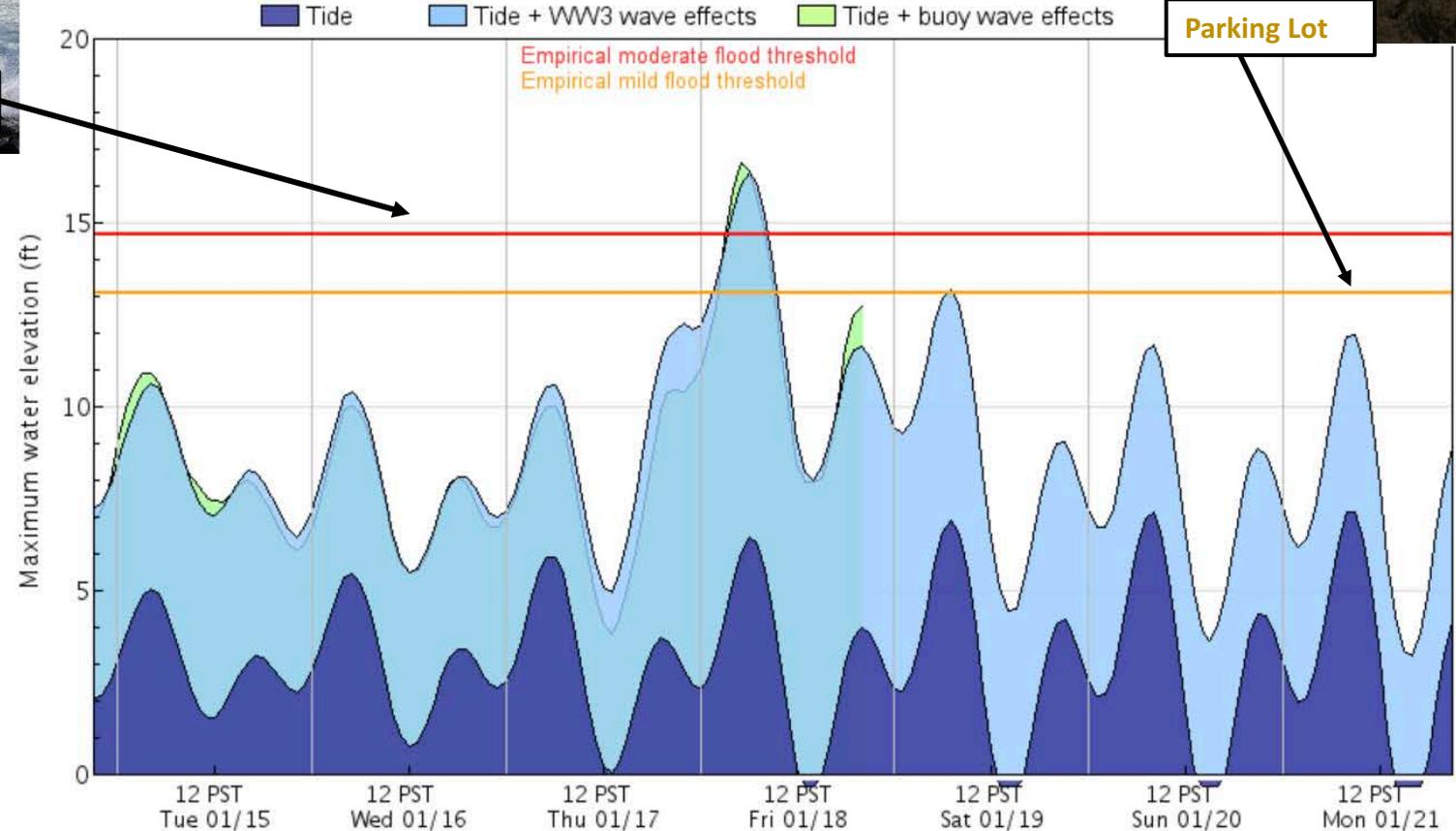


Parking Lot

CDIP/SIO

Water level elevation (relative to MLLW) forecasts use Stockdon (2006), are HIGHLY experimental, and should not be used as your primary forecast information.

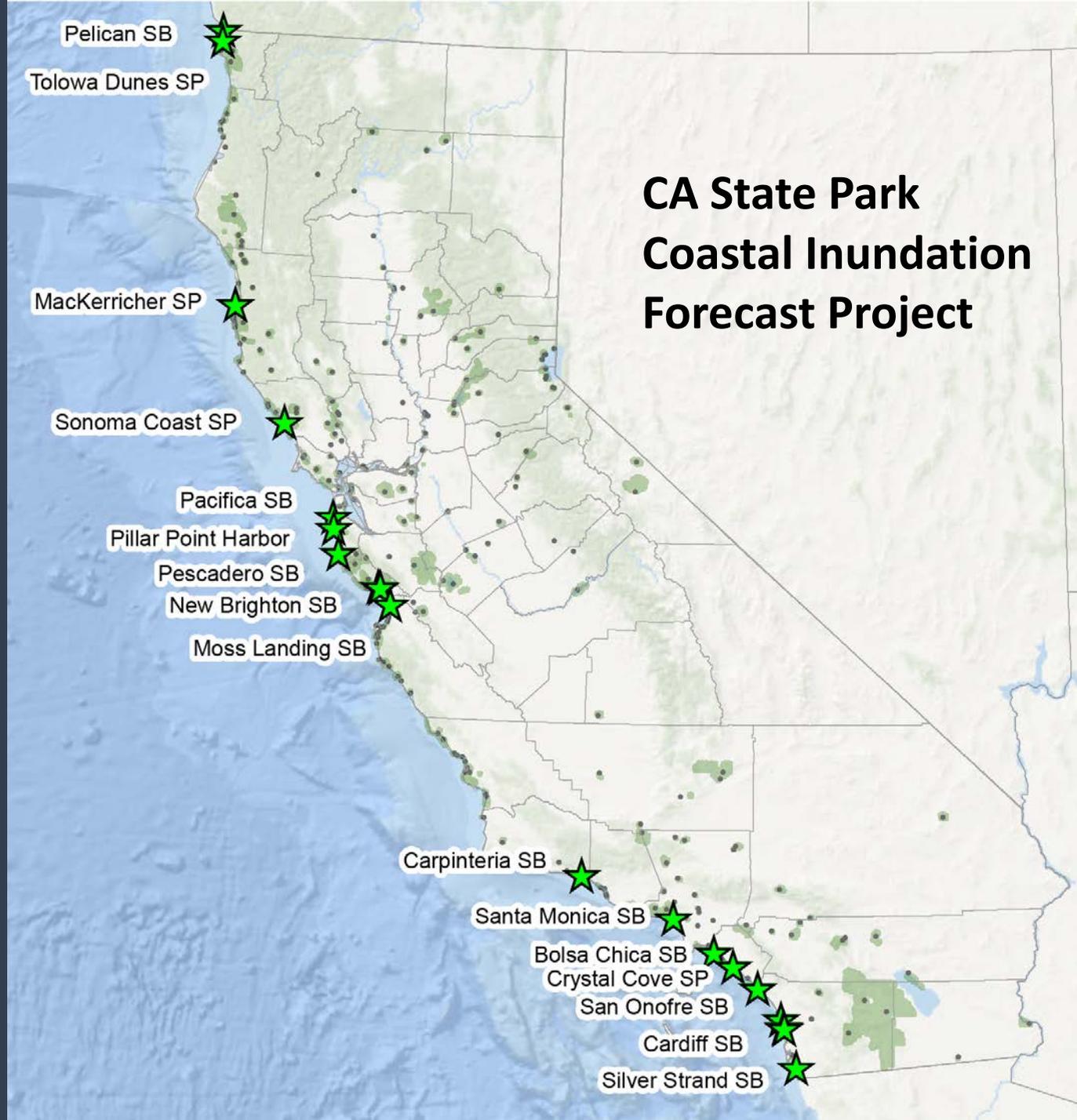
Potential Flooding Index – Cardiff



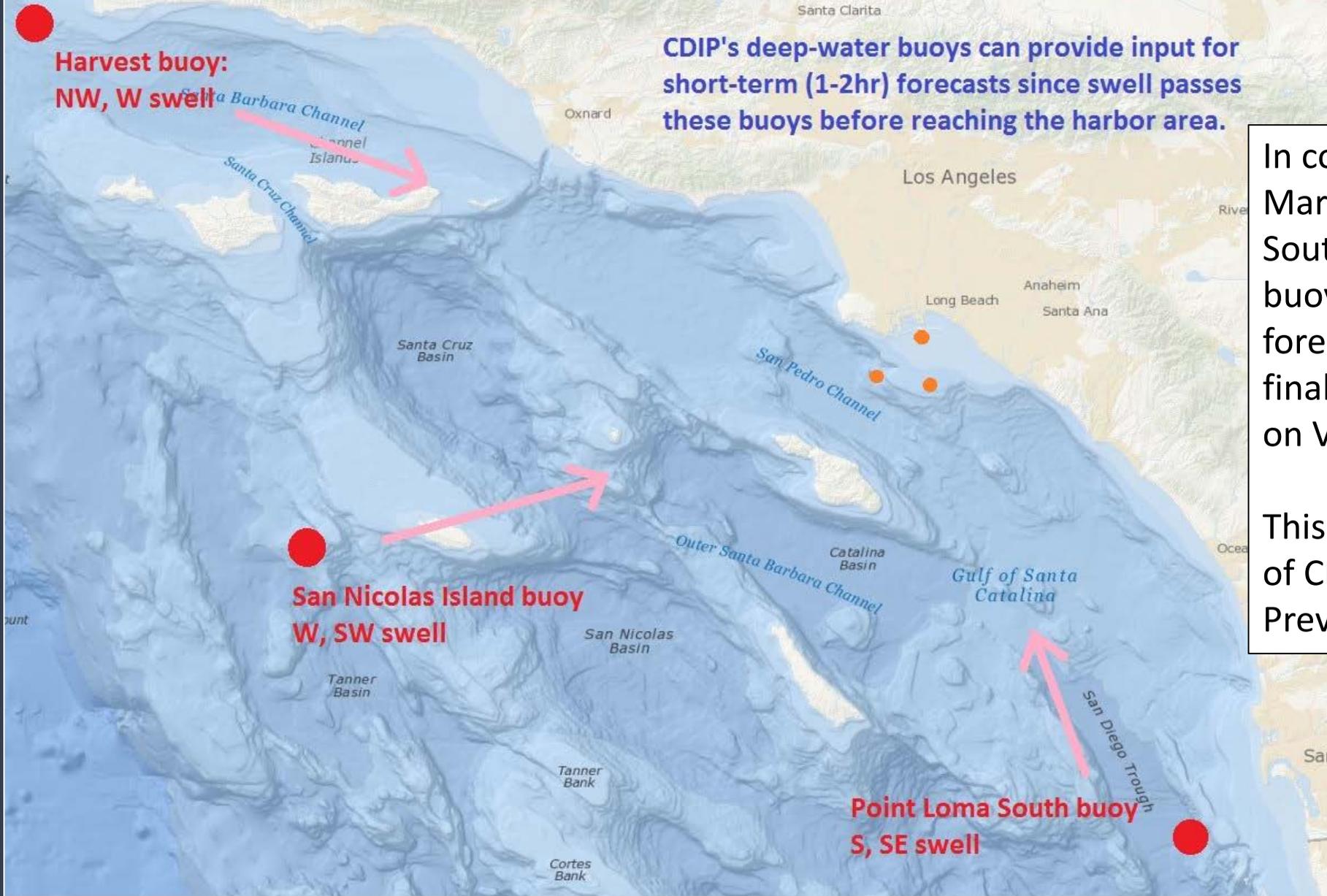
San Diego NWS office disseminates CDIP flood index warnings

Automated warnings to San Elijo SP, Coastal Commission, city gov't, lifeguards, businesses.

CA State Park Coastal Inundation Forecast Project



Under-Keel Clearance: Port of Long Beach



In collaboration with Marine Exchange of Southern California, CDIP buoy-driven 1-3 hour forecast is used to make final "go / no-go" decision on VLCC transits.

This project supports goals of CDFW's Office of Spill Prevention and Response.

California Department of Parks and Recreation Oceanography program

Currently funded through the Harbors and Watercraft Revolving Fund (HWRF)

Budget was cut 12% from \$1.7 million in FY17/18 to \$1.5 million in FY18/19

The Oceanography Program recently transferred from the Division of Boating and Waterways to State Parks Natural Resources Division as part of a new Parks Coastal Program

Real-time wave monitoring and modeling

Coastal and cliff erosion observations and modelling (Mexico to Bodega Head)

California Department of Parks and Recreation Oceanography program

An effort is underway to generate support in the state legislature for a budget increase of \$1.5 million, to **\$3 million total**

Letters of support from stakeholders to state-level elected officials have a strong impact!

- Maintain or expand the buoy program = Navigation safety
- Continue and expand coastal erosion surveys
- Coastal inundation studies: shoreline characterization
- and more...

California Legislature

March 28, 2019

The Honorable Holly J. Mitchell
Chair, Senate Budget Committee
State Capitol, Room 5019
Sacramento, CA 95814

The Honorable Philip Y. Ting
Chair, Assembly Budget Committee
State Capitol, Room 6026
Sacramento, CA, 95814

The Honorable Bob Wieckowski
Chair, Senate Budget Subcommittee 2
State Capitol, Room 4085
Sacramento, CA 95814

The Honorable Richard Bloom
Chair, Assembly Budget Subcommittee 3
Capitol Office, Room 2003
Sacramento, CA 95814

RE: Oceanography Program, Budget Request, Department of Parks and Recreation

Dear Chairs Mitchell, Ting, Wieckowski, and Bloom,

We request your Subcommittees include an additional \$1.5 million for the Department of Parks and Recreation's Oceanography program bringing 2019-20 total funding to \$3 million. Additional investment is necessary to support California's coastal climate adaption efforts. Recently transferred from the Division of Boating and Waterways to the new Parks Coastal Program, the Oceanography program is currently funded with a Harbors and Watercraft Revolving Fund allocation.

The Oceanography program directly supports California's ocean and climate action goals. Many findings in California's Fourth Climate Change Assessment about coastal climate change and adaptation included in were based on ocean research and observation programs funded by the Oceanography program. Increasing funding for the Oceanography program will ensure continuation of critical research and observing projects essential to understanding climate change impacts on coastal erosion, wave conditions, and supporting safe navigation. The Oceanography program supports statewide and regional climate adaptation efforts through long-term coastal and cliff erosion observations and modeling, wave variability measurements and prediction, and establishment of wave condition baselines for design and operation of coastal projects. With 340 miles of coastline managed by State Parks, nearly 75 coastal Park units need advanced high-water level predictions to prepare facilities, cultural resources, and natural resources for flooding. Additional funds can be used to develop pilot projects, gather data, and improve flood run-up and erosion modeling necessary for cost-effective and efficient planning and adaptation.

March 28, 2019
The Honorable Chairs Mitchell, Ting, Wieckowski, and Bloom
Page 2

We very much appreciate your attention to this request and for your continued leadership on California coastal, ocean, and climate issues.

Sincerely,

cc: The Honorable Senate Pro Tem Toni Atkins
The Honorable Speaker of the Assembly Anthony Rendon



TODD GLORIA
78th Assembly District

TASHA BOERNER HORVATH
76th Assembly District



BRIAN MAIENSCHIN
77th Assembly District



MARC LEVINE
10th Assembly District



PATRICK O'DONNELL
70th Assembly District



BEN HUESO
40th Senate District



PAT BATES
36th Senate District



AD 71



SD 35

David Chin AD 17

James Behrens
Program Manager
Coastal Data Information Program

858 534 3032

jb@cdip.ucsd.edu

cdip.ucsd.edu

CDIP provides near real-time wave and sea surface temperature information through a network of 70+ buoys in 22 states and island territories. Averaging 17,000 unique visitors per day, these data serve the military, policy, industry and academia sectors benefiting maritime and coastal communities, government and the general public.



INFRASTRUCTURE SUPPORT

Energetic waves can impact coastal development. Wave information provides design thresholds for coastal engineers.



MILITARY BENEFIT

CDIP maintains buoys for the Navy to support weapons testing (Pt Mugu / NAVAIR) and fleet operations.



ECONOMIC BENEFIT

Wave buoys ensure safe and efficient economic transport. \$47 billion of direct and indirect annual sales to the Ports of Long Beach and Los Angeles.



2018 HIGHEST WAVE RECORD IN SAN DIEGO CALIFORNIA

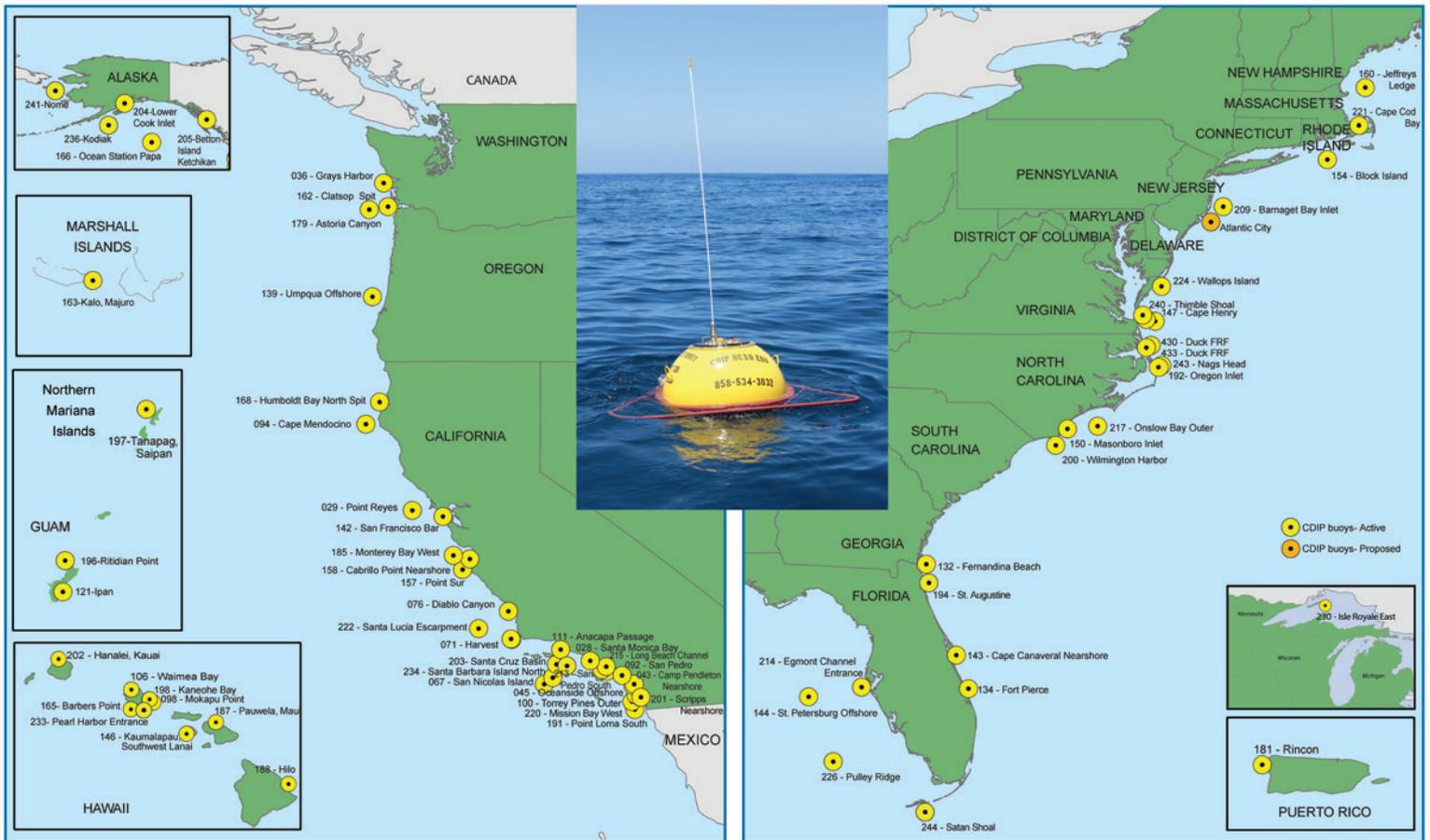
21.4 ft Max Wave, Point Loma South, CA, 02/19/18

CURRENT MAX WAVE RECORD FOR SAN DIEGO CALIFORNIA

33ft Point Loma South, CA, 02/01/16



COASTAL DATA INFORMATION PROGRAM (CDIP) AT SCRIPPS INSTITUTION OF OCEANOGRAPHY



CDIP has been measuring waves for more than 40 years, and since the late 1990s has also been running a wave model for the California coastline to produce forecasts which benefit mariners and ship captains, helping provide safe navigation in harbors and waterways. The Long Beach Channel buoy (left) has been critical for increasing safe passage and vessel size, and improving efficiency at the Port of Long Beach.



Program Line: USACE- O&M Remaining Items/CODS/CDIP
 In collaboration with U.S. IOOS & SCOOS
 Program Manager James Behrens
 858.534.3032 | jb@cdip.ucsd.edu | <http://cdip.ucsd.edu>



Dear Members of the Harbor Safety Committee of the San Francisco Bay Region,

Thank you for your support of the Coastal Data Information Program (CDIP) at Scripps Institution of Oceanography at UC San Diego. As you may know, CDIP receives State funding through the CA Department of Parks and Recreation's Natural Resources Division's Oceanography program. In the past several fiscal years, Oceanography program State funding has significantly eroded, impacting CDIP and other coastal monitoring programs' ability to leverage federal funding and produce valuable information and tools to end-users. At this time, I am asking you to please consider submitting a letter of support for **Parks Natural Resources Oceanography program**. Please see below for more information on this program.

To assist you in this process, we have drafted a letter template (attached), and we will submit on your behalf to the appropriate State Senate and Assembly Committees. **Please email your letter of support directly to the following contacts (and copy me) as soon as possible:**

Luan.Huynh@sen.ca.gov (Luan Kim Huynh is the contact for Holly J. Mitchell, Senate Budget Committee Chair)
andrew.white@asm.ca.gov (Andrew White is the contact for Philip Y. Ting, Assembly Budget Committee Chair)
heather.resetarits@sen.ca.gov (Heather Resetarits is the contact for Bob Wieckowski, Senate Budget Subcommittee 2 Chair)
guy.strahl@asm.ca.gov (Guy Strahl is the contact for Richard Bloom, Assembly Budget Subcommittee 3 Chair)

These letters are increasingly important in advocating for State funding of these programs, and we thank you for your support and time in completing this request.

Sincerely,

James Behrens, Ph.D.
Program Manager
Coastal Data Information Program
Scripps Institution of Oceanography

cdip.ucsd.edu
w:858.534.3034
m:619.972.1923
jb@cdip.ucsd.edu

Oceanography Program - CA State Parks Natural Resources

Recently transferred from the CA Division of Boating and Waterways to the new Parks Natural Resources' Coastal Program, the Oceanography program supports statewide and regional climate adaptation efforts through long-term coastal and cliff erosion observations and modeling, wave variability measurements and prediction, and establishment of wave condition baselines for design and operation of coastal projects. Many findings about coastal climate change and adaptation included in California's Fourth Climate Change Assessment were based on ocean research and observation programs funded by the Oceanography program. Increasing funding for the Oceanography program can be used to develop pilot projects, gather data, and improve flood run-up and erosion modeling necessary for cost-effective and efficient planning and adaptation.