

EXPORTS NE Pacific Context Situational Awareness

Date: Fri- Aug 31, 2018 - JD 243

Creators: Dave Siegel, Erik Fields

Weather Forecast Summary:

Tomorrow (Sat 9/01) will be cloudy, wind 20kt from the W, humid, and cool (15°C). Tue NEMS (but not GFS or ECMWF) shows 21kt winds, but things look pretty tame between sat and tue. All models are predicting some precipitation sun-tue, but timing and amounts vary- nothing over 0.5" for a day.

Wavewatch3 forecasts 2.25m SWH tomorrow, 1.5m sun, 1.5-2m mon, tue increases to 2.5 and wed drops down below 1.5m.

Oceanography Summary:

Ocean Color: Yesterday no useful coverage, because of clouds. Today's images are not available yet.

Upper Ocean Profiles: Note that all near-real time SeaGlider data are only notionally processed and calibrated. SeaGlider CTD observations show SST values of ~14.2°C and MLD ~30 m for the last available dive (166). Over the past ten dives, there MLD varied between 25 to 35 m. Strong pycnoclines are seen just beneath the MLD, between 28 and 39 m, and then again between 100 and 120m. Salinity values slowly increase with depth over the upper 90 m showing none of the strong gradient seen in temperature. There is a halocline between 97 and 138m.

The last dive (166) the chlMax was ~1mg/m³ at 63m, with a spike at 33m of 1.6mg/m³. The 1% PAR depth is 72m for dive 166.

SST: The microwave SST distribution shows a large-scale (NW to SE) temperature gradient across the region, with colder waters to the NW, warmer waters to the SE. Some coherent mesoscale variations are seen in the microwave SST images.

Sea Level: Both absolute dynamic topography and sea level anomaly show that PAPA now sits nearly in the center of a large, coherent anti-cyclonic mesoscale eddy. Currents north and west of PAPA where EXPORTS is operating coincide with some of the strongest velocities in the area, to the NNE. It is also in a region of strong horizontal shear. The scales are still very large (the eddy is ~100 km across) and the velocities are still relatively small (~5km/d), so this feature is unlikely to have a big impact on dispersion of deployed assets. At PAPA the absolute geostrophic velocity is 5.3km/d to the NNE.

Currents: Mercator products show surface currents at 9.0 km/d to the E at PAPA while geostrophic currents from altimetry show smaller currents 4.8km/d to the ESE. Spatial current patterns for the two products differ substantially. Mercator surface currents are generally Southward across the entire 5 degree domain but less coherent than in previous days. At 95m Mercator is showing 5.7km/d to the NE with even less spatial organization than at 0m.

Mercator products also shows PAPA with an anticyclonic circulation but the patterns are more confused compared with the altimetry products.

Weather forecast details

[ECMWF,GFS,NEMS summary](#) (note NEMS is offset 10hrs. This will be fixed. Utc vs local issue. Windy.com is aware.)

[sea state summary \(wavewatch3 CDIP for UW wave rider mooring\)](#)

[sea state summary \(ECMWF WAM 13km\)](#)

Date	Wind(kn) "from the"	Tair(°C)	SWH(m) "from the"	Clouds(%)	Precip(")	URL	predictability
Sat 9/01	20WSW	15	2.5W	100	--	sep 01 forecast URL	high
Sun 9/02	10W	15	1.5W	100	0.1	sep 02 forecast URL	high
Mon 9/03	13SW	15	2SSE	100	0.4	sep 03 forecast URL	medium
Tue 9/04	13N*	15	2.5NE	93	0.5#	sep 04 forecast URL	medium
Wed 9/05	13NW	15	1.5NE	40	--	sep 05 forecast URL	medium

*NEMS says 20kt from N.

#NEMS only

Comparison of weather forecasts at Station P of 7 different model runs - [6 day forecast model comparison](#)

Glider219- Real time depth profiles

Dive 166 2018-08-31 08:32-13:28 utc-9

Start 50.61N 144.82W

End 50.64N 144.81W

- [locations/dates/times](#)
- [chlor a](#)
- [fraction of surface PAR](#)
- [fraction of saturated O2](#)
- [Temperature](#)
- [Salinity](#)
- [Sigma0](#)
- [Optical scatter](#)

Note: all NRT glider data are using manufacturers offsets / cal constants

Last couple days, dives 157-166 2018 Aug 29 06:20 utc-9 Aug 31 13:28 utc-9

- [Locations](#)
- [chlor a](#)
- [fraction of surface PAR](#)
- [fraction of saturated O2](#)

- [temperature](#)
- [Salinity](#)
- [Sigma0](#)
- [Blue scatter](#)
- [Red scatter](#)

PMEL mooring

Last week of hourly air temp, wind, current, sss, sst - [PMEL stack time series plot](#)

Satellite Imagery:

Microwave SST: [URL 10 deg](#) & [URL 5 deg](#),

Merged Satellite Altimetry:

Absolute Sea Level & Geostrophic Velocity - [10 degree box](#) & [5 degree box](#)
Sea level anom & anom currents - [10 degree box](#) & [5 degree box](#)

Mercator Ocean Products:

Surface currents, SST & SSH: [10 degree](#) & [5 degree](#)
95 m currents & salinity: [10 degree](#) & [5 degree](#)

Today's Situational Awareness data **on the google drive** [sitAware for 2017-08-31 EXPORTS NRT Platform positions in \[graphic\]\(#\) and \[tex\]\(#\) format.](#)