

EXPORTS NE Pacific Context Situational Awareness

Date: Sat- Sep 8, 2018 - JD 251

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Weather Forecast Summary:

Tomorrow (Sun 9/09) will be cloudy, wind 20kts in the wee hours and then ≤ 15 kt (from the NW) all day, cool (14°C), little or no precip. The next few days will be ~ 15 kts and no rain.

Wavewatch3 forecasts SWHs 2 m (and maybe a smidge) m for the next few days.

Oceanography Summary:

Ocean Color: No coverage over EXPORTS. 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 $\sim 14.0^{\circ}\text{C}$ and MLDs 25 and 32m for the last available dive (205). Over the past ten dives, there MLD varied between 18 to 35 m (the 18m seems like an outlier the rest were between 25-35m). Strong pycnoclines are seen just beneath the MLD, between 27 and 44 m, and then again between 100 and 123m. Salinity values slowly increase with depth over the upper 90 m showing none of the strong gradient seen in temperature. A strong stabilizing halocline is found between 97 and 143m.

The last dive (205) the chlMax was $\sim 1.1\text{mg}/\text{m}^3$ at 45m & 65m (down & upcast). The 1% PAR depth is $\sim 78\text{m}$ for dive 205. Over the last 10 dives, a blunt peak in chl was found with values fairly uniform between 39 and 67 m depth.

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 - particularly SW of PAPA.

Sea Level: Both absolute dynamic topography and sea level anomaly show that PAPA now sits the N portion of a large (100 km), coherent anti-cyclonic mesoscale eddy. EXPORTS is currently operating roughly 60 km NNE of PAPA and geostrophic currents there are very small, much less than currents at PAPA. Velocities from the eddy are still relatively small ($\sim 5\text{km}/\text{d}$), so this feature is unlikely to have a big impact on dispersion of deployed assets. At PAPA the absolute geostrophic velocity is $4.4\text{km}/\text{d}$ to the NE and lower values are seen where EXPORTS is currently operating.

Currents: Mercator products show surface currents at $8.3\text{km}/\text{d}$ to the ENE at PAPA while geostrophic currents from altimetry show $4.4\text{km}/\text{d}$ to the NE. Spatial current patterns for the two products differ substantially as the Mercator products are predicting currents in the region near PAPA and the locations of mesoscale variations that are inconsistent with the altimetry's geostrophic currents. At 95m Mercator is showing $6.0\text{km}/\text{d}$ to the ENE. 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. UTC vs local issue. Windy.com acknowledge is error.)

[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
Sun 9/09	15NW	14	2WNW->NE	100	--	sep 09 forecast URL	high
Mon 9/10	15NW	14	2NE->S	100	--	sep 10 forecast URL	high
Tue 9/11	15NW	13	2S	100	--	sep 11 forecast URL	high

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

Glider219- Real time depth profiles

Dive 205 2018-09-08 10:48-11:37 utc-9

Start 50.60N 144.52W

End 50.59N 144.51W

- [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 195-205 2018 Sep 06 09:40 utc-9 Sep 08 11:37 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 2017-09-08](#)
EXPORTS NRT Platform positions in [graphic](#) and [tex](#) format.