

## **EXPORTS NE Pacific Context Situational Awareness**

**Date:** Tue- Sep 4, 2018 - JD 247

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### **Weather Forecast Summary:**

Tomorrow (Wed 9/05) will be cloudy with rain in the morning (~.5" in the early hours), wind 29kt from the N, cool (14°C). Winds ~20kt might carry into thur. Sat and Sun might also have 20kt winds.

Wavewatch3 forecasts SWH to peak at slightly over 4m overnight and decrease tomorrow to 2m. Thu-Sun SWH will be 2m or less.

### **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 ~14.3°C and MLDs 26 m and 31m for the last available dive (186). Over the past ten dives, there MLD varied between 25 to 35 m -- this less variable than earlier in the cruise. 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. The small (~0.1 ppt) near-surface fresh layers seen in some of yesterday's glider profiles were not observed today. A strong stabilizing halocline is found between 97 and 138m.

The last dive (186) the chlMax was ~1.1mg/m<sup>3</sup> at 49m, with a spike of 1.55mg/m<sup>3</sup> at 36m. The 1% PAR depth is ~ 65m for dive 186. Over the last 10 dives, the peak in chl fairly uniform between 30 and 70 m depth. Surface values range from 10% of the peak value to nearly uniform up to the surface.

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 for the region NW of PAPA where EXPORTS is operating.

Sea Level: Both absolute dynamic topography and sea level anomaly show that PAPA now sits in a large (100 km), coherent anti-cyclonic mesoscale eddy, NW of the center. EXPORTS is currently operating roughly 50 km north and west of PAPA and currents there are to the NNE. Although this is a large eddy, its 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 4.1km/d to the NNE.

Currents: Mercator products show surface currents at 3.6 km/d to the SE at PAPA while geostrophic currents from altimetry show smaller currents 4.1km/d to the NNE. Spatial current patterns for the two products differ substantially as the Mercator products are

predicting mesoscale variations that do not look like the altimetry's geostrophic currents. At 95m Mercator is showing 5.6km/d to the NE. Mercator products also shows PAPA with an anticyclonic circulation but the patterns are more confused compared with the altimetry products.

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### 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
Wed 9/05	29N	14	4->2N	100	0.44	<a href="#">sep 05 forecast URL</a>	high
Thu 9/06	19N	14	2->1.5N	100	0.04	<a href="#">sep 06 forecast URL</a>	high
Fri 9/07	16SW	14	1.5WNW	100	0.26	<a href="#">sep 07 forecast URL</a>	very high
Sat 9/08	23WNW	13	<2WNW	73	0.17	<a href="#">sep 08 forecast URL</a>	medium
Sun 9/09	23NW	14	2WNW->N	86	0.14	<a href="#">sep 09 forecast URL</a>	low

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

### Glider219- Real time depth profiles

Dive 186 2018-09-04 06:40-12:12 utc-9

Start 50.59N 144.78W

End 50.60N 144.73W

- [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 177-186 2018 Sep 02 03:06 utc-9 Sep 04 12:12 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 2017-09-04 EXPORTS NRT Platform positions in \[graphic\]\(#\) and \[tex\]\(#\) format.](#)