

EXPORTS NE Pacific Context Situational Awareness

Date: Thu- Sep 6, 2018 - JD 249

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Weather Forecast Summary:

Tomorrow (Fri 9/07) will be cloudy, wind ~16kt from the W, cool (14°C), precip 0.13". Sat afternoon there is forecasted to be 20kt wind and Sunday winds will be 20kts or close to it all day.

Wavewatch3 forecasts SWHs on Fri and Sat will be 2m or less. Sun, 2.5m.

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 ~14.0°C and MLDs ~28 and 36m for the last available dive (194). Over the past ten dives, there MLD varied between 25 to 36 m -- this less variable than earlier in the cruise. The MLD SST varied from 14.0-14.3°C. 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. 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 143m.

The last dive (194) the chlMax was ~1mg/m³ at 39 and 49m (up vs downcast). The 1% PAR depth is ~76m for dive 194 (although there is some variations that looks like surface irradiance fluctuations during the profile). Over the last 10 dives, the peak in chl fairly uniform between 30 and 60 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 SW of PAPA.

Sea Level: Both absolute dynamic topography and sea level anomaly show that PAPA now sits the NW 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 (~5km/d), so this feature is unlikely to have a big impact on dispersion of deployed assets. At PAPA the absolute geostrophic velocity is 4.9km/d to the NE.

Currents: Mercator products show surface currents at 0.7 km/d to the E at PAPA while geostrophic currents from altimetry show 4.9km/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 6.4km/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
Fri 9/07	16W	14	2->1 SSE	100	0.13	sep 07 forecast URL	high
Sat 9/08	20NW	13	1SW->2WSW	100	0.22	sep 08 forecast URL	medium
Sun 9/09	19NNW	14	2.5WNW->NE	100	0.05	sep 09 forecast URL	medium
Mon 9/10	16WNW	14	2NE->S	80	--	sep 10 forecast URL	high
Tue 9/11	17WNW	14	2S	100	0.01	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 194 2018-09-06 03:51-09:25 utc-9

Start 50.56N 144.74W

End 50.58N 144.69W

- [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 185-194 2018 Sep 04 01:04 utc-9 Sep 06 09:25 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 2017-09-06 EXPORTS NRT Platform positions in \[graphic\]\(#\) and \[tex\]\(#\) format.](#)