

EXPORTS NE Pacific Context Situational Awareness

Date: Tues - Aug 14, 2018 - JD 226

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Weather Forecast Summary:

Tomorrow (Tues 8/14) will be cloudy, windy (20 kts), humid, and cool (13.5°C) The winds are forecast to be ~20kts from the SW and decrease by morning to be ~9kt from the W, turning to be from the North, then from the East. Wed the wind strength to 19 kts from the SSW. The various forecasts diverge after Wed but generally show an increasing trend.

Rain forecasted for tonite and during morning hours (~0.2" total) and rain is forecasted off and on throughout the week although the various forecasts diverse from one another.

Current SWHs ~3.2m from W. These are expected to peak Mon evening around 3.5m and then decrease tomorrow to 2m or less. The model shows it staying in that range until Sat when it cranks up to 6m (WaveWatch3).

Oceanography Summary:

Ocean Color: Last good Chl image - July 3 - see below. Some patchy images from Viirs, Terra, and Aqua from Sunday show some definite spatial changes (S to N increases from 0.2 to > 0.6 mg/m³ over large spatial extent), but these are >200 km N of PAPA. No notable features around PAPA. No surprise, there are lots of clouds...

Upper Ocean Profiles: Please note that all NRT SeaGlider data are largely unprocessed and only notionally calibrated. SeaGlider 219 CTD observations show SST values of ~14.0C and MLDs are between 20 and 30 m for the last available dive (dive 80). Strong pycnoclines are seen just beneath the MLD, between 40 and 50 m and between 90 and 110m. Salinity values slowly increase over the upper 80 m.

Mixed layer Chl values seemed to increase moderately for past couple of days and at time reached 1 mg/mg³ with a good deal of variability. ChlMax depths remain between 45 and 75 m again with a good deal of variability. Increases are also seen in surface layer optical backscatter with some large subsurface features consistent with the Chl Max (but mostly not). 1% light level was at ~ 70m. As of the last dive 80, glider was N of PAPA heading SW to the center of the butterfly pattern.

SST: Over the past few days, the SST distribution has changed such that the large-scale temperature gradient is now largely aligned east-west around PAPA (warmer waters to the east). Gradients at PAPA are still fairly weak and their spatial patterns incoherent. Little evidence of coherent eddies in the SST data.

Sea Level: Both absolute dynamic topography and sea level anomaly show PAPA sitting ~50 km north of a weak, coherent mesoscale anti-cyclone (about 100-km in scale). The absolute geostrophic velocity associated with this feature is still fairly weak, ~2.9km/d to the NE but amongst the strongest velocities in the region. An anticyclonic feature is located to the NE of

PAPA and a weak cyclonic feature is located to the ESE of PAPA, each more than 100 km from the site. There is the clear signature of an anticyclonic eddy immediate south of PAPA in the Mercator products.

Currents: According to altimetry surface currents at Station P are ~2.9km/d to the NE; PAPA sits on the western edge of the anti-cyclone. Mercator products show strong downwind currents and surface currents are ~11km/d to the ENE at PAPA. At 95m Mercator is showing 5.7km/d to the NE.

Weather forecast details

[ECMWF,GFS,NEMS summary](#)

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

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

NOTE the 3 models differ wildly during the forecast period. At various times the winds are >20kts in each model, but they don't agree in timing and direction. PAPA is between two highs.

Date	Wind(kn) "from the"	Tair(°C)	SWH(m) "from the"	Clouds(%)	Precip(%)	URL	predictability
Tue 8/14	9W->N->9E	14	3.5->2WSW	100	0.2-0.4	aug 14 forecast URL	high
Wed 8/15	19SW	14	2WSW	100	0.2-0.4	aug15 forecast URL	high
Thu 8/16	18SSW	14	2W	100	0.2-0.4	aug16 forecast URL	medium
Fri 8/17	18S	14	2SW	100	0-.1	aug 17 forecast URL	medium
Sat 8/18	20SSW	15	2->4SW	100	--	aug 18 forecast URL	medium

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

Glider219- Real time depth profiles

Dive 80 2018-08-13 05:50-09:21 utc-9

Start 50.19N 144.91W

End 50.16N 144.94W

- [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 9 profiles dives 72-80 2018 Aug 11 7:30 utc-9 Aug 13 09:21 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:

Last good Chl image: July 3 - JD 184 - Aqua - [URL](#) corresponding [sst](#)

LAST Sunday's Chl image: Aug 5 JD 217- Aqua- [URL](#), corresponding [sst](#) and [Rrs555](#)

“ “ NPP-S [URL](#) corresponding [Rrs551](#)

Microwave SST: [URL 10 deg](#) & [URL 5 deg](#), $||\text{grad}(\text{sst})||$ [5 deg URL](#)

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 2017-08-13](#)
EXPORTS NRT Platform positions in [graphic](#) and [tex](#) format.