

EXPORTS NE Pacific Context Situational Awareness

Date: Fri - Aug 17, 2018 - JD 229

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Weather Forecast Summary:

Tomorrow (Sat 8/18) will be cloudy, very windy (28 kts), humid, and cool (15°C). A large storm system will enter over the weekend and winds are forecast to increase early Sat to > 25kts from the SSE. All models now have the winds down to 10-15kt range by Mon morn.

Looks like rain overnight Sat into Sun (GFS and ECMWF), NEMS has the rain holding off till midday Sun into Mon.

Current SWHs ~1.7m from SSW These are expected to increase up to 5m Saturday evening then decreasing throughout Sunday to about 3m Monday (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 ~14C and MLDs are 20-28 m for the last available dive (dive 98). Over the past ten dives, there is some variability in mixed layer depth between 20 and 35 m; may be related to diurnal cycle. Strong pycnoclines are seen just beneath the MLD, between 25 and 40 m and between 100 and 115m. 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 100 and 115m.

The surface chl (mean of top 10m) the last couple days is often in the ballpark of .5-.8mg/m³. The last dive (98) shows a strong ChlMax at ~60 m. 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 ~ 71m. The glider has been NNW of PAPA.

SST: The SST distribution shows a large-scale temperature gradient that is aligned such that the temperature changes from NW to SE near PAPA (colder waters to the NW, warmer waters to the SE). A warm feature seems to be moving northward towards PAPA. It is like 50km wide and extends ~80km northward. It is maybe .5 warmer than the water it is pushing into. The surface fields from Mercator seem to agree.

Sea Level: Both absolute dynamic topography and sea level anomaly show that PAPA continues to sit on the west edge of a weak, coherent mesoscale anti-cyclone (about 100-km in scale). The absolute geostrophic velocity associated with this feature is still fairly weak, ~4.9km/d to the NNE but amongst the strongest velocities in the region. There is an indication that this

anticyclone may be merging with weaker features to the S and NE of PAPA. Mercator products also show an anticyclone, although it is centered on PAPA rather than to the east as in altimetry.

Currents: According to altimetry surface currents at Station P are ~4.9km/d to the NNE; PAPA sits on the western edge of the anti-cyclone. Mercator products show -surface currents are ~8.8km/d to the NE at PAPA. At 95m Mercator is showing 6.3km/d to the NE. Mercator product shows an anti-cyclone centered on PAPA.

Weather forecast details

[ECMWF,GFS,NEMS summary](#)

[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 8/18	28SSE	15	2->5SSW	100	0.04	aug 18 forecast URL	high
Sun 8/19	28SSE	15	5->3SSW	100	0.4	aug 19 forecast URL	high
Mon 8/20	10S	15	3SSW	100	0.1	aug20 forecast URL	medium
Tue 8/21	15SW	14	3->2WSW	80	--	aug21 forecast URL	high
Wed 8/22	9NW	14	1.5WSW	50	0.3	aug 22 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 98 2018-08-17 08:11-13:36 utc-9
 Start 50.22N 145.09W
 End 50.22N 145.03W

- [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 10 profiles dives 89-98 2018 Aug 16 06:47 utc-9 Aug 17 13:36 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](#)
 Aug 5 Chl image: 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 2017-08-17 EXPORTS NRT Platform positions in \[graphic\]\(#\) and \[tex\]\(#\) format.](#)