



CLIMATE SUMMARY MAY 2020

Samoa Meteorology Division

Ministry of Natural Resources and Environment



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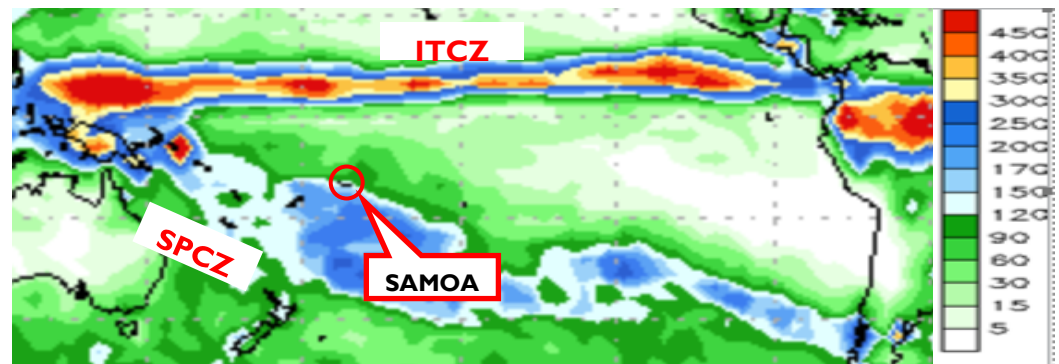


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HIGHLIGHTS

- ◆ 'Below Average' rainfall recorded in May 2020. **Pg 1 & 2**
- ◆ Warmest daytime temperature of 33.8°C was recorded at Nafanua station **Pg 3**
- ◆ Easterly winds remain dominant for most of the areas with north easterlies influencing the windward side of the islands **Pg 4 & 5**
- ◆ El Nino Southern Oscillation (ENSO) remains Neutral for May 2020. **Pg 6**
- ◆ Cooler anomalies along the equatorial region have strengthened significantly for the Ocean temperatures. **Pg 6**

Figure I: SPCZ Position in May 2020



GLOBAL SCALE OBSERVATIONS

Dry conditions observed for the month of May 2020. According to Figure I above, the South Pacific Convergence Zone (SPCZ) although extended eastward of its normal position, was also seen to be less active. The location of the SPCZ shifted south of the islands, resulting in the significant drop of rainfall activity for Samoa. The Inter Tropical Convergence Zone (ITCZ) on the other hand was seen to be very active while maintaining its normal position along the equatorial region.

LOCAL SCALE OBSERVATIONS

Precipitation during May was very limited, where 'below average' rainfall was recorded for most stations across the country. The highest monthly rainfall of 242.4mm was recorded at Afiamalu station, with the second highest of 230.2mm at Lotofaga. In addition, the second and third week of May was observed to have significant precipitation, where the highest one day fall of 64.0mm was recorded at Saleilua and second highest of 54.6mm at Vailoa Aleipata stations were recorded on the 13th and the 18th respectively. Conversely, the lowest monthly rainfall of 85.7mm was registered at Faleolo, with the second lowest of 85.8mm at Aopo station. The resulting rainfall received in May reflects the normal pattern of precipitation during the dry season.

Table 1: Rainfall Statistics in May 2020

This table displays the rainfall status of all stations in the country in May 2020

Stations	May Rainfall (mm)	May 30 Year Long Term Average	% of Average	1 day fall (mm)	Date	# of Rainy Days	Rainfall Status
U P O L U							
Afiamalua	242.4	315	77	45.2	19 th	22	Below Average
Alafua	118.6	216	55	39.6	13 th	16	Below Average
Apia	216.4	207	105	52.2	01 st	18	Average
Faleolo	85.7	128	67	18.6	13 th	14	Below Average
Laulii	154.7	223	69	48.0	31 st	11	Below Average
Lepa	139.6	387	36	32.4	18 th	21	Well Below Average
Lotofaga	230.2	373	62	27.8	31 st	27	Below Average
Nafanua	142.8	477	30	32.0	19 th	17	Well Below Average
Nuu	167.8	216	78	41.0	13 th	16	Below Average
Saleilua	156.6	483	32	64.0	18 th	13	Well Below Average
Saoluafata	97.6	390	25	22.8	31 st	23	Well Below Average
Tanumapua	220.7	216	102	24.4	10 th	24	Average
Togitogiga	114.3	447	26	19.6	17 th	24	Well Below Average
Vailoa.A	112.6	239	47	54.6	18 th	19	Below Average
S A V A I I							
Aopo	85.8	163	53	34.6	16 th	12	Below Average
Falelima	139.0	191	73	41.4	10 th	13	Below Average
Tuasivi	197.0	398	49	37.4	02 nd	22	Below Average

Well Below Average
<40%

Below Average
40%-80%

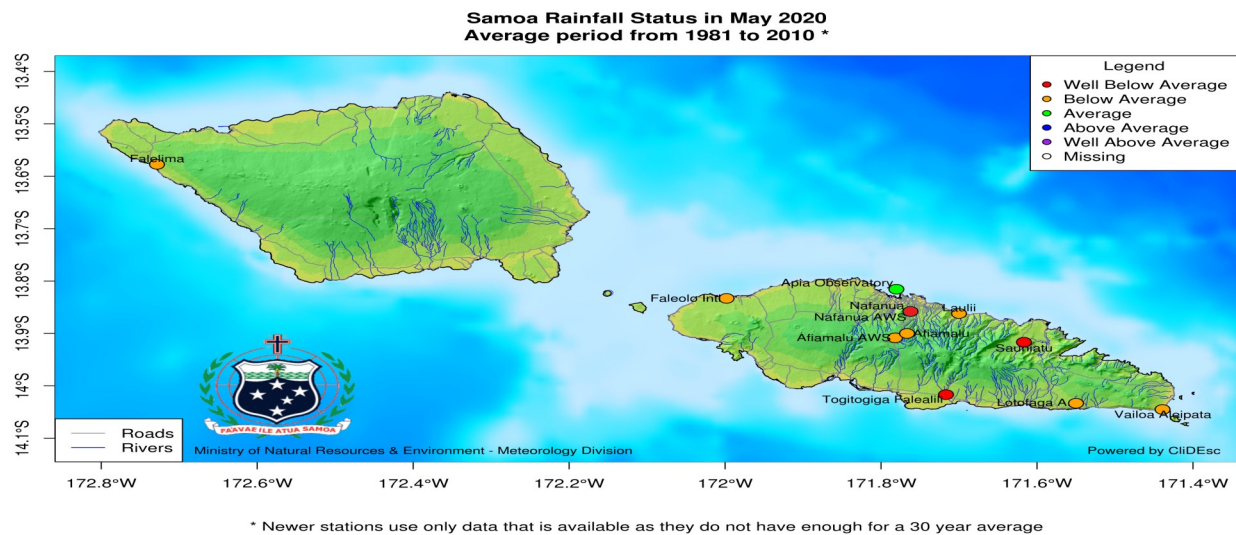
Average
80%-120%

Above Average
120%-160%

Well Above Average
>160%

Figure 3: Rainfall Status Map in May 2020

This rainfall map is generated using observation data from Table 1



TEMPERATURE

Table 2: Air Temperature Statistics

This table displays the temperature statistics recorded across stations in May 2020

Stations	Max Temperature (°C)		
	Mean Daily Temperature (°C)	Extreme Temp Max (°C)	Date
Afiamalua	22.2	29.4	26 th
Alafua	28.0	32.4	06 th
Nafanua	28.6	33.8	22 nd
Nuu	25.9	32.4	18 th

Stations	Min Temperature (°C)	
	Extreme Temp Min (°C)	Date
Apia	22.5	01 st
Faleolo	22.9	30 th
Afiamalua	16.4	05 th
Alafua	22.5	01 st
Nafanua	22.9	01 st
Nuu	16.8	05 th

Varying temperatures were observed in May, where the warmest daytime temperature of 33.8°C was registered at Nafanua on the 22nd. The mean daily temperatures therefore ranged between 22°C to 26°C during the previous month. Nonetheless, cooler temperatures were also recorded during night time due to clear skies, with the lowest of 16.4°C observed at Afiamalua station on the 05th of May.

ATMOSPHERIC PRESSURE

Table 3: Atmospheric Pressure at Mean Sea Level (MSL)

This table displays the atmospheric statistics recorded across two stations in May 2020

Station	Highest MSL Pressure (hPa)	Date	Lowest MSL Pressure (hPa)	Date	Average MSL Pressure (hPa)
Apia	1016.5	30 th	1010.8	01 st	1013.1
Faleolo	1016.8	30 th	1010.6	01 st	1013.3

Between the two northern stations, Faleolo recorded the highest mean sea level (MSL) pressure of 1016.8 hPa on the 30th. Moreover, the lowest MSL pressure of 1010.6 hPa was also recorded at Faleolo on the 01st of May.

(Note: Generally, high pressure systems associate with good weather conditions whereas low pressure systems associate with bad weather conditions)

WIND

Figure 4: Wind Speed and Directions

The following diagrams show the different wind speed and direction that recorded daily at 9am across the country in May 2020.

Figure 4a : Apia Station

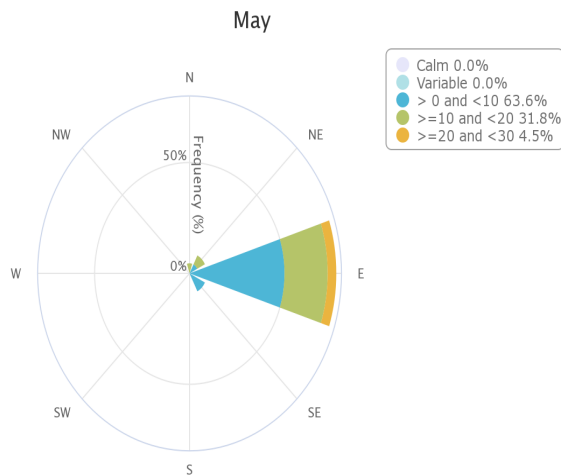


Figure 4b: Saoluafata Station

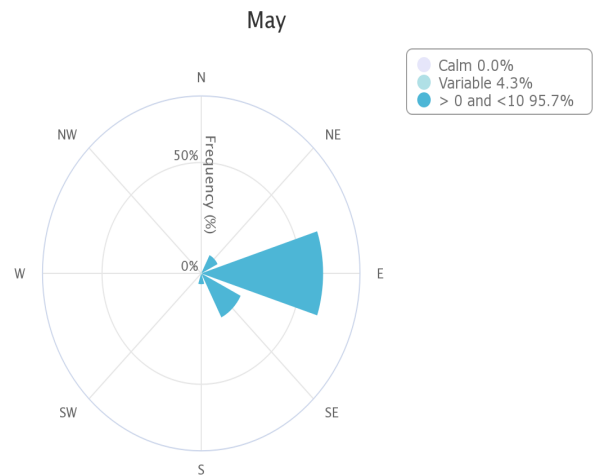


Figure 4a shows easterlies as the dominant wind direction, with noticeable variable winds from the south-east and north-east at Apia. It was also recorded that slight breeze (1-10km/hr) was the dominant wind speeds, having occurred 34% of the time in May. Saoluafata (Figure 4b) was also dominated by easterly winds, with persisting slight breeze (1-10km/hr) as the dominant wind speeds as well.

Figure 4c : Afiamalu Station

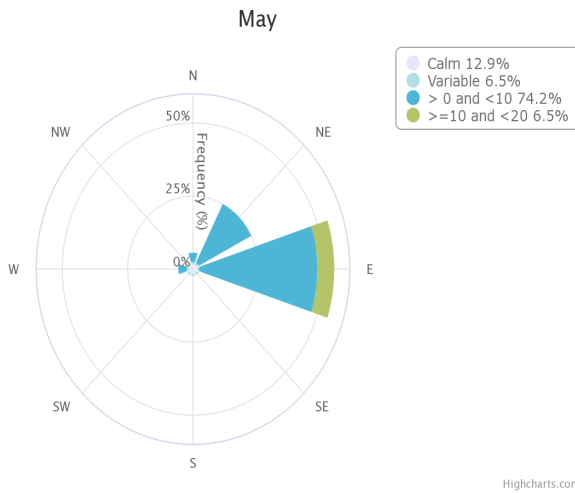


Figure 4d: Nafanua Station

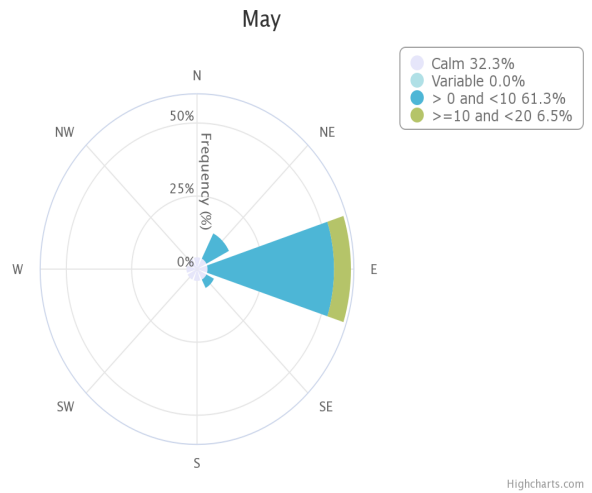


Figure 4e : Alafua

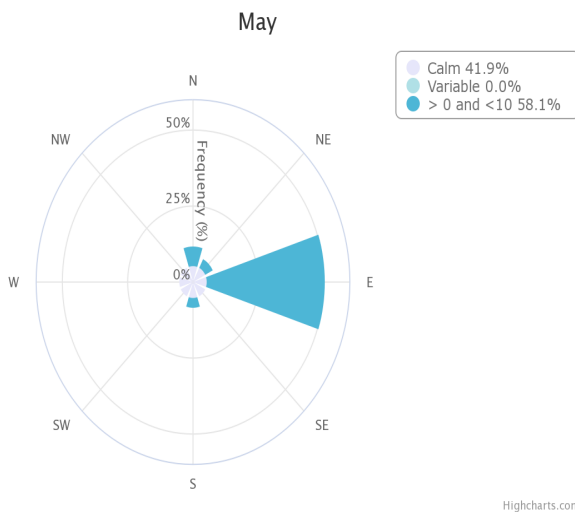
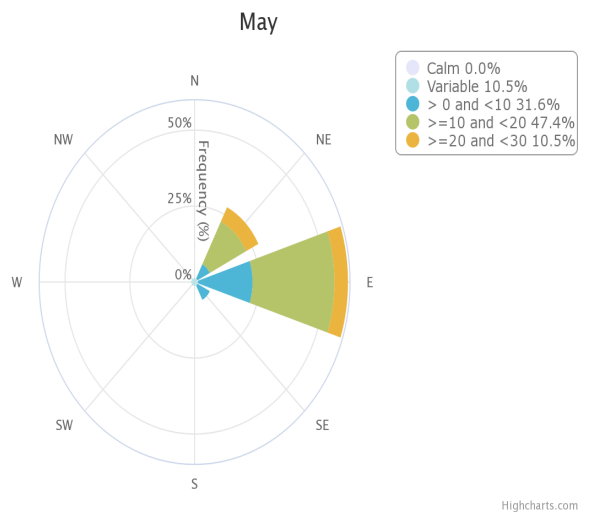


Figure 4f : Faleolo



Afiamalu, Nafanua, Alafua and Faleolo were influenced mainly by light easterly breeze (1-10km/hr) throughout the month, with some north-east winds also recorded at all stations. Wind activities for these stations during the month were observed to be rather calm, whereas Faleolo experienced some moderate breeze (21-30km/hr).

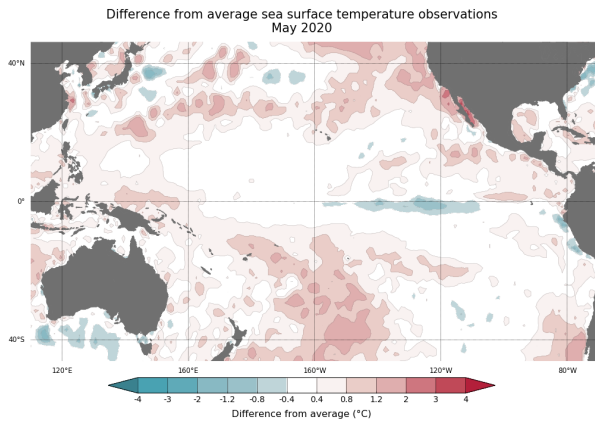
EL NINO SOUTHERN OSCILLATION (ENSO)

CURRENT ENSO STATUS

El Nino Southern Oscillation (ENSO) status remain neutral in May. Although climate indicators were all within neutral thresholds by the end of last month, models are suggesting the possibility of a La Nina event to occur as the months unfold in 2020.

Oceanic Indicator of ENSO

Figure 5: Sea Surface Temperature in May 2020

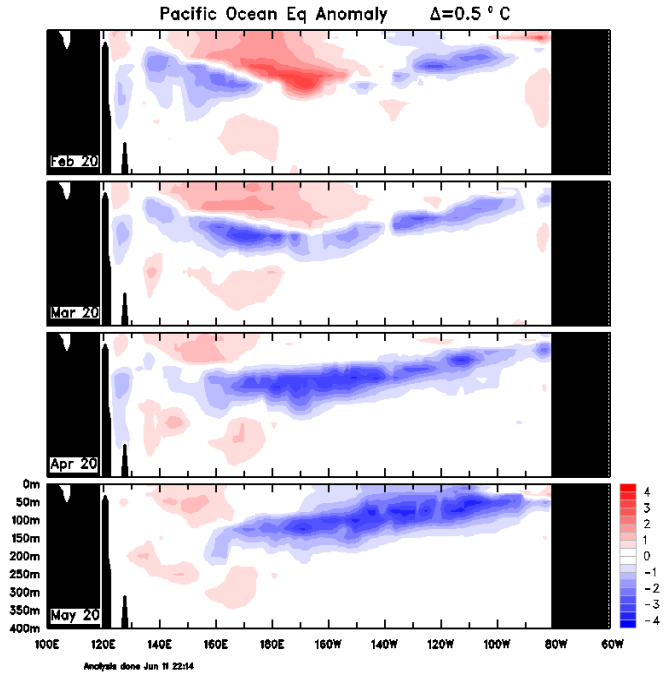


Data: BOM SST
 Climatology baseline: 1961 to 1990
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 http://www.bom.gov.au/climate
 Monthly average: May 2020
 Created: 10/06/2020

Warm anomalies were experienced for almost all the Pacific Islands during May, as portrayed by Figure 5 above. On the contrary, the central equatorial region was cooled immensely, hinting a La Nina to eventuate in the upcoming months.

In addition, Nino values for 2020 were seen to have cooled, where May values for Nino 3 were 0.0°C, Nino 3.4 at -0.1°C and Nino 4 at +0.1°C.

Figure 6: Sub-surface Temperature



Warmer anomalies that was seen in early 2020 have significantly weakened in recent months, with the latest observations showing cooler anomalies strengthening, especially in the central region. If the given triggers (sustaining trade winds) were to persist, a current situation has a potential to evolve into a La Nina .

Atmospheric Indicator of ENSO

Southern Oscillation Index (SOI)

The approximate 30-day and 90-day Southern-Oscillation Index (SOI) values to the 13th of June were -4 and -4 respectively.

(Sustained positive values of the SOI above +7 indicate La Nina. Whereas sustained negative values below -7 indicate El Nino. Values within -7 and +7 shows neutral conditions.)

APPENDIX

Figure 7: Graphical representation of total monthly rainfall in May 2019 vs May 2020 in all rainfall stations.

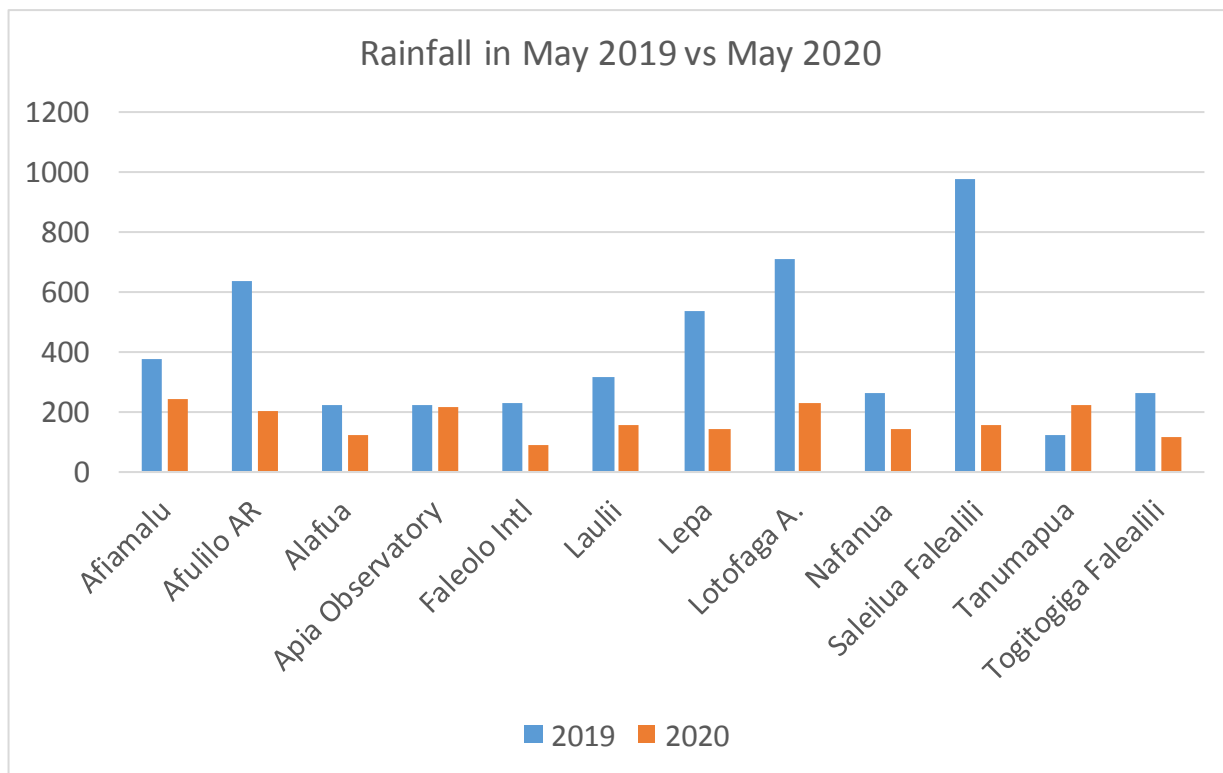


Figure 7 shows rainfall activities registered for the years 2019 and 2020 for the month of May, where the May 2019 rainfall was seen to be wetter than May 2020. These numbers are reflected in Table 1 page 2 where most stations registered *Below Average* rainfall.