NWS Climate Services

September PEAC Audio Conference Call Summary

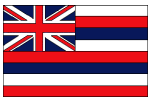
9 September, 1430 HST (10 September 2021, 0030 GMT)

August rainfall totals reported

% Normal: blue above normal & red below normal. Departure from normal: blue-above & red-below (same for 3 mon %)

	Rainfall	% Norm	Normal	Departure	3 mon %
	Inches	August	Inches	inches	JJA
Airai	13.66	92	14.85	-1.19	37.08
Yap	12.84	87	14.82	-1.98	33.32
Chuuk	6.20	48	12.86	-6.66	29.33
Pohnpei	9.35	66	14.26	-4.91	44.60
Kosrae	9.48	67	14.22	-4.74	62.58
Kwajalein	3.43	35	9.74	-6.31	16.09
Majuro	10.60	91	11.69	-1.09	29.30
Guam NAS	15.44	105	14.74	0.70	29.28
Saipan	10.95	83	13.13	-2.18	27.60
Pago Pago	7.82	145	5.38	2.44	23.78
Lihue	1.39	76	1.84	-0.45	4.17
Honolulu	0.29	153	0.19	0.10	0.43
Kahului	0.66	138	0.48	0.18	0.66
Hilo	7.34	88	8.37	-1.03	19.12

Reports from around the Region



Hawaii (Kevin Kodama)

Precipitation Summaries for HI can also be found:

https://www.weather.gov/hfo/hydro_summary

Kauai

Windward gages had mostly below average rainfall totals, and leeward gages had mostly above average totals for the month of August. The above average leeward totals were mainly due to afternoon showers during the two periods of the month where the trade winds were disrupted. Monthly totals in these areas were less than 2 inches, but because the August averages were mostly less than an inch, even relatively modest amounts of rainfall can push the totals into above average territory. The U.S. Geological Survey's (USGS) rain gage on top of Mount Waialeale had the highest monthly total of 24.95 inches (72 percent of average) and the highest daily total of 4.22 inches on August 23.

All of the gages on Kauai continued to have near to above average rainfall for 2021 through the end of August. Mount Waialeale had the state's highest year-to-date total of 342.62 inches (131 percent of average).

Oahu

Most of the Oahu rain gages posted near to above average totals for the month of August. The bulk of the below average totals were from the lower leeward sites. The USGS' Halawa Tunnel rain gage had the highest monthly total of 14.82 inches (173 percent of average), and the highest daily total of 6.21 inches on August 23. This daily total was associated with the passage of the remnants of former Tropical Cyclone Linda.

Nearly all of the Oahu gages had near to above average rainfall totals for 2021 through the end of August. The USGS' Poamoho Rain Gage No. 1 had the highest year-to-date total of 125.68 inches (85 percent of average).

Maui

The passage of the remnants of former Tropical Cyclone Linda across Maui County helped push monthly totals at many locations into the above average range. Gages along the lower elevations of leeward Maui have August averages at less than a quarter of an inch so recording totals above half an inch puts them into well above average territory. Unfortunately, locations in lower south Maui from Kihei to Kepuni managed to miss out on significant rainfall and ended up with below average rainfall for August. The USGS' rain gage at West Wailuaiki Stream had the highest monthly total of 19.27 inches (113 percent of average). However, the National Park Service's Puu Alii gage on Molokai had the highest daily total of 4.33 inches on August 23.

Most of the Maui County rainfall totals for 2021 through the end of August were near to above average. The rain gage at West Wailuaiki Stream had the highest year-to-date total of 190.90 inches (121 percent of average).

Big Island

Most of the rain gages in the Kona, Kohala, and Hamakua regions of the Big Island had near to above average rainfall for the month of August. Gages in the Hilo, Puna, and Kau regions had near to below average August totals. The USGS' rain gage at Kawainui Stream had the highest monthly total of 22.70 inches (254 percent of average). The highest daily total of 3.66 inches came from a CoCoRaHS observer in Holualoa on August 25. The Honaunau gage, another site in Kona, recorded its highest August total in a 29-year record.

Rainfall totals for 2021 through the end of August were near to above average at most of the gages on the Big Island. The Piihonua gage had the highest year-to-date total of 136.23 inches (112 percent of average), followed closely by Glenwood (134.28 inches, 87 percent of average) and Kawainui Stream (133.34 inches, 133 percent of average).

Current State of ENSO and predictions

Issued 9 September 2021

ENSO Alert System Status: **La Niña Watch**

***Synopsis*: A transition from ENSO-neutral to La Niña is favored in the next couple of months, with a 70-80% chance of La Niña during the Northern Hemisphere winter 2021-22.**

In the last month, ENSO-neutral continued with near-to-below average sea surface temperatures (SSTs) persisting in the central and eastern equatorial Pacific. In the last week, all of the Niño index values ranged from -0.2ºC to -0.3ºC. Negative subsurface temperature anomalies (averaged from 180-100ºW) remained steady in August, reflecting below-average temperatures that extended from the surface to ~250m depth in the eastern Pacific Ocean. Low-level wind anomalies were easterly over the western Pacific Ocean, while upper-level wind anomalies were westerly over the western and east-central Pacific. Tropical convection was suppressed near and west of the Date Line and enhanced over Indonesia. Given these conditions, the ocean-atmosphere system reflected ENSO-neutral, but is edging toward La Niña.

The IRI/CPC plume average of forecasts for the Niño-3.4 SST region from the last month favored borderline or weak La Niña during the fall and winter 2021-22. The forecaster consensus this month, however, favors the latest predictions from the NCEP CFSv2 and the North American Multi-Model Ensemble, which suggest higher chances for the emergence of La Niña. At this time, forecasters anticipate La Niña to be of weak strength (seasonal average Niño-3.4 index values between -0.5ºC to -0.9ºC). In summary, a transition from ENSO-neutral to La Niña is favored in the next couple of months, with a 70-80% chance of La Niña during the Northern Hemisphere winter 2021-22 (click CPC/IRI consensus forecast for the chances in each 3-month period).

6. Rainfall Verification JJA– June, July, August (Sony)

The verification result of **JJA** rainfall forecasts was 10 hits and 4 misses (Heidke score: 0.4160). Stations missed are Airai, Chuuk, Kwajalein, and Majuro.

Location	UKMO	ECMWF	CA	NASA	NCEP	IRI	APCC	Rainfall Outlook	Final Probs	3 mo Verification			PEAC JJA	PEAC JJA
										% norm	Total (in)	Tercile	Forecast	Probs
Palau														
Airai 7° 22' N, 134° 32' E	Avg-above	Avg-below	Avg.	Avg-below	Avg.	**Above**	Avg.	~~Avg.~~	**~~30:40:30~~**	69	37.08	**Below**	Avg-above	**30:30:40**
FSM														
Yap 9° 29' N, 138° 05' E	Avg.	Avg-below	Avg-below	Avg-below	Avg.	Clim.	Avg.	Avg-below	**30:35:30**	79	33.32	**Below**		
Chuuk 7° 28'N, 151° 51'E	Avg.	Avg.	Avg-above	Avg-above	Avg-above	Clim.	Avg.	Avg.	**30:40:30**	80	29.33	**Below**		
Pohnpei 6° 59'N, 158° 12'E	Avg.	Avg.	Avg-above	**Above**	**Above**	**Below**	Avg.	Avg-above	**30:35:35**	100	44.60	**Avg.**		
Kosrae 5° 21'N, 162° 57'E	Avg-above	Avg.	Avg-above	Avg-below	**Above**	**Above**	Avg-above	Avg-above	**30:35:35**	**143**	62.58	**Above**		
RMI														
Kwajalein 8° 43'N, 167° 44'E	Avg-below	Avg.	Avg-above	Avg-above	Avg-below	Clim.	Avg.	Avg.	**30:40:30**	61	16.09	**Below**		
Majuro 7° 04' N, 171° 17'E	**Above**	Avg-above	Avg-above	Avg-below	Avg-above	Clim.	Avg-above	Avg-above	**30:35:35**	87	29.30	**Below**		
Guam and CNMI														
Guam 13° 29'N, 144° 48' E	Avg-below	Avg-above	Avg-below	Avg-below	Avg.	Clim.	Avg.	Avg.	**30:40:30**	94	29.28	**Avg.**		
Saipan 15° 06'N, 145° 48' E	Avg-below	Avg-above	Avg-below	Avg-below	Avg.	**Above**	Avg.	Avg.	**30:40:30**	108	27.60	**Avg.**		
American Samoa														
Pago Pago 14° 20'S, 170° 43'W	Avg.	Avg-below	Avg.	Avg.	Avg-below	**Below**	Avg-below	Avg-below	**30:35:30**	**146**	12.46	**Below**		
State of Hawaii														
19.7° - 21.0' N, 155.0° - 159.5' W														
Lihue	Avg-below	**Below**	Avg.	Avg-below	Avg.	**Below**	Avg.	Avg-below	**30:35:30**	87	4.17	**Below**		
Honolulu	Avg-below	**Below**	Avg.	Avg-below	Avg.	**Below**	Avg.	Avg-below	**30:35:30**	**59**	0.43	**Below**		
Kahului	Avg-below	**Below**	Avg.	Avg-below	Avg.	**Below**	Avg.	Avg-below	**30:35:30**	69	0.66	**Below**		
Hilo	Avg-below	**Below**	Avg.	Avg-below	Avg.	**Below**	Avg.	Avg-below	**30:35:30**	79	19.12	**Below**		

10	Hit
4	Miss
Heidke:	0.4160
RPSS:	-0.0363

Tercile Cut-offs for JJA Season based on 1981-2010 Pacific Rainfall Climatologies (Luke He)

	Koror	Yap	Chuuk	Pohnpei	Guam	Saipan	Majuro	Kwaj
below (<)								
33.33%	47.11	40.34	33.35	40.21	29.26	21.38	31.08	24.49
near								
66.66%	55.07	45.79	43.35	50	36.54	30.82	35.58	28.47
above (>)								

	Lihue	Honolulu	Kahului	Hilo	Pago Pago	Kosrae
below (<)						
33.33%	4.39	0.71	0.74	19.45	14.32	43.42
near						
66.66%	6.88	1.3	1.51	31.4	21.74	46.35
above (>)						

6. Rainfall Outlook SON-September, October, November (Sony)

SON Forecast Location	Rainfall Outlook	Probability Pre-Conference	Final Outlook	Final Probability
Palau				
Airai 7º 22' N, 134º 32' E	**Above**	**25:30:45**	-	-
FSM				
Yap 9º 29' N, 138º 05' E	Avg-above	**30:35:35**	-	-
Chuuk 7º 28'N, 151º 51'E	Avg.	**30:40:30**	-	-
Pohnpei 6º 59'N, 158º 12'E	Avg.	**30:40:30**	-	-
Kosrae 5º 21'N, 162º 57'E	Avg-below	**35:35:30**	-	-
RMI				
Kwajalein 8º 43'N, 167º 44'E	Avg-below	**35:35:30**	-	-
Majuro 7º 04' N, 171º 17'E	Avg.	**30:40:30**	-	-
Guam and CNMI				
Guam 13º 29'N, 144º 48' E	Avg-below	**35:35:30**	-	-
Saipan 15º 06'N, 145º 48' E	Avg-below	**35:35:30**	-	-
American Samoa				
Pago Pago 14º 20'S, 170º 43'W	Avg-above	**30:35:35**	-	-
State of Hawaii				
19.7º - 21.0' N, 155.0º - 159.5' W				
Lihue	Avg-below	**35:35:30**	-	-
Honolulu	Avg-below	**35:35:30**	-	-
Kahului	Avg-below	**35:35:30**	-	-
Hilo	Avg-below	**35:35:30**	-	-

Tercile Cut-offs for SON Season based on 1981-2010 Pacific Rainfall Climatologies (Luke He)

	Koror	Yap	Chuuk	Pohnpei	Guam	Saipan	Majuro	Kwaj
below (<)								
33.33%	35.83	37.61	33.32	40.96	39.08	31.99	32.51	29.26
near								
66.66%	43.49	44.47	42.92	45.22	44.79	36.25	40.5	34.92
above (>)								

	Lihue	Honolulu	Kahului	Hilo	Pago Pago	Kosrae
below (<)						
33.33%	6.24	1.62	0.84	26.06	19.26	37.76
near						
66.66%	8.43	3.14	2.45	33.29	27.9	40.35
above (>)						

(Richard Heim)

Drought monitoring updates

A. End-of-August Monthly Drought Assessment:

I. With WxCoder III data, we have 23 stations in the monthly analysis.

II. August was dry (less than the 4- or 8-inch monthly minimum needed to meet most water needs) at Chuuk, Kapingamarangi, & Pingelap (in the FSM) and Ailinglaplap, Jaluit, Kwajalein, and Wotje (in the RMI); it was wet elsewhere. But August was drier than normal at most of the stations (because nor mals during the wet season are higher than the monthly minimum), and wetter than normal at three stations (Airai, Guam, & Pago Pago). The end-of-August monthly analysis (August 31) is consistent with the weekly analysis for August 31, and is the same as the weekly analysis. Compared to the end-of-July monthly analysis:

a. D0 developed at Chuuk, Kapingamarangi, Kwajalein, and Wotje.

b. D0 continued at Jaluit.

c. The USDM status worsened at Ailinglaplap (D0 became D1).

d. The USDM status stayed the same (D-Nothing) at the other stations.

e. Utirik & Fananu were plotted as missing due to missing data for the month.

III. Some August 2021 precipitation ranks:

a. **Ailinglaplap:** (dry short-term, wet long-term): driest August, July-August, June- August, May- August, & April- August in the 37-year record. But Sep-August 4th wettest such 12-month period.

b. **Kwajalein:** driest August (70 yrs), 2nd driest Jun-Aug, 3rd driest Jul-Aug, 5th driest May-Aug.

c. **Jaluit:** 2nd driest July-August (38 yrs).

d. **Chuuk:** 3rd driest August (71 yrs) and 5th driest Jun-Aug.

e. **Lukunor:** 4th driest August (25 yrs), 2nd driest Jul-Aug, 3rd driest Jun-Aug.

f. **Kapingamarangi:** 7th driest August (31 yrs), but longer time scales were drier with Sep-Aug 3rd driest such 12-month period.

g. **Ulithi:** 5th driest August (39 yrs).

h. **Pohnpei:** 5th driest August (71 yrs) & 7th driest Jul-Aug, but 4th wettest Sep-Aug 12-month period.

i. **Pingelap:** 6th driest August (37 yrs).

B. Current (Weekly) Drought Conditions: The discussion above is the monthly (end of August) analysis. The latest weekly USAPI USDM assessment may show different USDM classifications. The latest weekly USAPI USDM assessment is for September 7.

I. The September 7 analysis has D-Nothing at Chuuk Lagoon, Jaluit, & Wotje, and D2-S at Ailinglaplap.

C. August 2021 NCEI State of the Climate Drought Report: The August 2021 NCEI SotC Drought report will go online Tuesday. The web page url will be:

a. https://www.ncdc.noaa.gov/sotc/drought/202108#regional-usapi