NWS Climate Services

August PEAC Audio Conference Call Summary

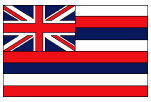
10 August, 1430 HST (11 August 2023, 0030 GMT)

July 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	July	Inches	inches	MJJ
Airai	26.81	122	21.99	4.82	109
Yap	25.35	168	15.08	10.27	144
Chuuk	15.56	130	11.98	3.58	146
Pohnpei	22.76	148	15.43	7.33	139
Kosrae	19.67	132	14.91	4.76	126
Kwajalein	4.45	45	9.87	-5.42	160
Majuro	7.87	70	11.17	-3.30	92
Guam NAS	8.69	86	10.14	-1.45	248
Saipan	4.13	46	8.91	-4.56	86
Pago Pago	5.64	102	5.55	0.09	135
Lihue	1.31	78	1.69	-0.38	140
Honolulu	0.20	56	0.36	-0.16	134
Kahului	0.36	95	0.38	-0.02	74
Hilo	4.97	52	9.53	-4.56	64

Reports from around the Region



Hawaii (Kevin Kodama)

Precipitation Summaries for HI can also be found:

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

Kauai

Most of the rain gages on Kauaʻi recorded below average totals for the month of August. The U.S. Geological Survey's (USGS) gage on Mount Waiʻaleʻale had the highest monthly total of 14.10 inches (41 percent of average), and the highest daily total of 1.98 inches on August 16. The Anahola gage had its lowest August total since 2000, and Mount Waiʻaleʻale and Wainiha had their lowest August totals since 2005. Several other gages posted their lowest August totals since 2013.

Despite the recent dryness, most of the gages on Kauaʻi still had above average rainfall for 2023 through the end of August. The Mount Waiʻaleʻale gage had the highest year-to-date total of 263.17 inches (100 percent of average).

Oahu

December rainfall totals were near to above average at most of the gages along the slopes of the Waiʻanae Range. Rainfall totals from the slopes of the Koʻolau Range were mostly near to below average. The USGS' Poamoho Rain Gage No. 1 had the highest monthly total of 10.25 inches (51 percent of average). The Poamoho Experiment Farm gage had the highest daily total of 4.06 inches on December 19. The gages at Mānoa Lyon Arboretum and Wheeler Army Airfield posted their lowest December totals since 2009. The Moanalua, Nuʻuanu Upper, and Pālo-lo Fire Station gages had their lowest December totals since 2012.

Most of the Oʻahu rain gages ended 2022 with below average totals. The USGS' Poamoho Rain Gage No. 1 had the highest annual total of 113.27 inches (50 percent of average). The Mānoa Lyon Arboretum and Luluku gages had their lowest annual totals since 1975 and 2001, re-spectively.

Maui

Nearly all of the gages in Maui County posted below average totals for the month of August. The USGS' rain gage at West Wailuaiki Stream had the highest monthly total of 12.18 inches (71 percent of average), and the highest daily total of 2.70 inches on August 21 associated with the passage of former Tropical Cyclone Fernanda's remnant moisture. The Pukalani gage had its lowest August total on record, and the Hāna Airport gage had its lowest August total since 1998.

Most of the rainfall totals across Maui County for 2023 through the end of August were near average. The rain gage at West Wailuaiki Stream had the highest year-to-date total of 145.50 inches (92 percent of average).

Big Island

August rainfall totals were below average at most of the gages on the Big Island, with many of the totals between 40 and 70 percent of average. The USGS' rain gage at Kawainui Stream had the highest monthly total of 14.00 inches (157 percent of average). The highest daily total was 4.37 inches on August 21 at the USGS' Saddle Road Quarry rain gage associated with the passage of former Tropical Cyclone Fernanda's remnant moisture. The Ahumoa and PTA West gages had their lowest August totals since 2011. Hilo Airport had measurable rainfall (greater than or equal to 0.01 inches) on 28 out of 31 days in August, which was just above the long term August average. However, the daily average rainfall was just 0.17 inches, or 47 percent of the long term August average of 0.36 inches per day.

Rainfall totals for 2023 through the end of August were near to above average at most of the gages on the Big Island. The USGS' rain gage at Honoliʻi Stream had the highest year-to-date total of 141.20 inches (93 percent of average).

Current State of ENSO and predictions

Issued 10 August 2023

ENSO Alert System Status: El Niño Advisory

Synopsis: **El Niño is anticipated to continue through the Northern Hemisphere winter (with greater than 95% chance through December 2023-February 2024).**

In July, El Niño continued as indicated by above-average sea surface temperatures (SSTs) across the equatorial Pacific Ocean. Nearly all of the weekly Niño indices in the central and eastern Pacific were in excess of +1.0°C: Niño-3.4 was +1.1°C, Niño-3 was +1.8°C, and Niño1+2 was +3.4°C. Area-averaged subsurface temperatures anomalies decreased compared to June, but remained positive, in association with anomalous warmth across the equatorial Pacific Ocean. Tropical atmospheric anomalies were also consistent with El Niño. Starting in mid-July, low-level winds were anomalously westerly over the western equatorial Pacific, while anomalous easterlies prevailed over the eastern Pacific. Upper-level wind anomalies were westerly over the eastern Pacific. Convection continued to be enhanced around the International Date Line and was weakly suppressed in the vicinity of Indonesia. The equatorial Southern Oscillation Index (SOI) and the traditional SOI were both negative. Collectively, the coupled ocean-atmosphere system reflected El Niño.

The most recent IRI plume indicates El Niño will persist through the Northern Hemisphere winter 2023-24. Given recent developments, forecasters are more confident in a "strong" El Niño event, with roughly 2 in 3 odds of an event reaching or exceeding 1.5°C for the November-January seasonal average in Niño-3.4. Note that a strong El Niño does not necessarily equate to strong El Niño impacts locally, withthe odds of related climate anomalies often lower than the chances of El Niño itself (e.g., CPC's seasonal outlooks). In summary, El Niño is anticipated to continue through the Northern Hemisphere winter (with greater than 95% chance through December 2023 -February 2024).

6. Rainfall Verification MJJ-May, June, July (Josie)

The verification result of **MJJ** rainfall forecasts was 10 hits and 4 misses (Heidke score: 0.5938).

Updated 9/15/2023 MJJ

Location	UKMO	ECMWF	CA	NASA	NCEP	IRI	APCC	Initial: Rainfall Outlook	Initial: Final Probs	3 mo Verification % norm	Total (in)	Tercile	Post Conference PEAC Forecast Final	Post Conference PEAC Probs Final
Palau														
Airai 7° 22' N, 134° 32' E	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Above	30:35:35	109	59.77	Above		
FSM														
Yap 9° 29' N, 138° 05' E	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Above	25:35:40	144	50.22	Above		
Chuuk 7° 28'N, 151° 51'E	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Above	25:35:40	146	50.86	Above		
Pohnpei 6° 59'N, 158° 12'E	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Above	25:30:45	139	69.72	Above		
Kosrae 5° 21'N, 162° 57'E	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Above	25:30:45	126	59.38	Above		
RMI														
Kwajalein 8° 43'N, 167° 44'E	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Above	30:30:40	160	37.56	Above		
Majuro 7° 04' N, 171° 17'E	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Above	25:35:40	92	29.78	Below		
Guam and CNMI														
Guam 13° 29'N, 144° 48' E	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Above	25:35:40	248	48.84	Above		
Saipan 15° 06'N, 145° 48' E	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Avg-above	30:35:35	86	12.82	Below		
American Samoa														
Pago Pago 14° 20'S, 170° 43'W	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Avg-below	35:35:30	135	27.64	Above		
State of Hawaii														
19.7° - 21.0' N, 155.0° - 159.5' W														
Lihue	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Avg-below	35:35:30	140	6.23	Above		
Honolulu	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Avg-below	35:35:30	134	1.26	Avg.		
Kahului	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Avg-below	35:35:30	74	0.71	Avg.		
Hilo	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Clim.	Avg-below	35:35:30	64	14.81	Below		

Clim. indicates equal chances of below normal rainfall-average rainfall-and above average rainfall.

Note: Interpretation of tercile probability—What do these ***Final Probability** seasonal forecasts mean? For example, a **35:35:30 probability** forecasts in MJJ season Indicates a **30%** chance (probability) for occurrence of **excess rainfall** during the MJJ season, **35%** chance for occurrence of rainfall within a pattern considered **normal** during the MJJ season, and **35%** chance for occurrence of **deficit** rainfall during the MJJ season.

Also note that excess and deficit limit for each of the stations are different.

	Hit
	Miss
Heidke:	0.5938
RPSS:	0.0877

10	Hit
4	Miss
Heidke:	0.5938
RPSS:	0.0877

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

	Koror	Yap	Chuuk	Pohnpei	Guam	Saipan	Majuro	Kwaj
below (<)								
33.33%	42.33	31.95	34.01	45.79	18.47	13.58	30.51	20.99
near								
66.66%	55.62	39.5	37.92	54.28	25.81	18.53	33.4	26.52
above (>)								

	Lihue	Honolulu	Kahului	Hilo	Pago Pago	Kosrae
below (<)						
33.33%	4.87	0.84	0.7	20.19	18.47	45.01
near						
66.66%	5.93	1.62	1.83	29.13	26.83	50.14
above (>)						

6. Rainfall Outlook JFM– January, February, March

JFM Forecast Location	Rainfall Outlook	Probability Pre-Conference	Final Outlook	Final Probability
Palau				
Airai 7º 22' N, 134º 32' E	Above	30:30:40	-	-
FSM				
Yap 9º 29' N, 138º 05' E	Above	25:30:45	-	-
Chuuk 7º 28'N, 151º 51'E	Above	20:30:50	-	-
Pohnpei 6º 59'N, 158º 12'E	Above	20:30:50	-	-
Kosrae 5º 21'N, 162º 57'E	Above	20:25:55	-	-
	-	-		
RMI				
Kwajalein 8º 43'N, 167º 44'E	Avg	30:40:30	-	-
Majuro 7º 04' N, 171º 17'E	Avg-Above	30:35:35	-	-
Guam and CNMI				
Guam 13º 29'N, 144º 48' E	Avg-Above	30:35:35	-	-
Saipan 15º 06'N, 145º 48' E	Avg-bove	30:35:35	-	-
American Samoa				
Pago Pago 14º 20'S, 170º 43'W	Below	40:30:30	-	-
State of Hawaii				
19.7º - 21.0' N, 155.0º - 159.5' W				
Lihue	Below	45:30:25	-	-
Honolulu	Below	45:30:25	-	-
Kahului	Below	45:30:25	-	-
Hilo	Below	45:30:25	-	-

Tercile Cut-offs for JFM 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 (>)						

Drought Monitoring Updates: (Richard Heim)

Drought monitoring updates.

A. End-of-July Monthly Drought Assessment:

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

ii. July was dry (less than the 4- or 8-inch monthly minimum needed to meet most water needs) at Fananu (FSM) and Jaluit, Kwajalein, Majuro, and Wotje (Marshalls); it was wet everywhere else. July was drier than normal in the Marshall Islands, northern Marianas, and part of the FSM, but near to wetter than normal in most other areas.

iii. The end-of-July monthly analysis (July 31) is consistent with the weekly analyses for July 25 and August 1, and is the same as the analysis for August 1.

End-of-July drought conditions:

D0 developed at Fananu, Kwajalein, & Wotje.

D-Nothing at all locations.

Utirik was plotted as missing due to missing data for the month.

Compared to the end-of-June monthly analysis:

Since there was no drought or abnormal dryness everywhere at the end of June, the change was D0 developed at Fananu, Kwajalein, & Wotje.

iv. Some July 2023 precipitation ranks:

Kwajalein: second driest July (in a 72-year record).
Jaluit: third driest July (40 years) and fifth driest August-July.
Saipan: fourth driest July (43 years) and seventh driest June-July.
Majuro: ninth driest July (70 years).
Kapingamarangi: wettest July (34 years), but still the tenth driest rank for August-July.

At the wet end of the scale (besides Kapingamarangi):

Ulithi had the fourth wettest July (39 years).

Yap ranked third wettest for July (73 years).

Mili had the eighth wettest July (38 years) but wettest June-July, May-July, and January-July through August-July.

B. Current (Weekly) Drought Conditions: The discussion above is the monthly (end of July) analysis. The latest weekly USAPI USDM assessment may show different USDM classifications. The latest weekly USAPI USDM assessment is for August 8 (https://droughtmonitor.unl.edu/data/png/20230808/20230808_usdm_pg2.png).

i. The August 8 weekly analysis is the same as the July monthly analysis except Fananu is plotted as missing.

C. July 2023 NCEI State of the Climate Drought Report: The July 2023 NCEI SotC Drought report will go online tomorrow.

i. The web page url for the July report will be:
https://www.ncei.noaa.gov/access/monitoring/monthly-report/drought/202307#regional-usapi