NWS Climate Services

November PEAC Audio Conference Call Summary

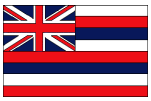
16 November, 1430 HST (17 November 2023, 0030 GMT)

October 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	October	Inches	inches	ASO
Airai	15.26	91	16.83	-1.57	110
Yap	9.46	70	13.50	-4.04	129
Chuuk	13.07	112	11.71	1.36	120
Pohnpei	19.57	156	12.55	7.02	174
Kosrae	17.52	123	14.22	3.30	120
Kwajalein	6.60	61	10.74	-4.14	62
Majuro	6.27	56	11.17	-4.90	74
Guam NAS	12.46	98	12.66	-0.20	108
Saipan	11.03	109	10.09	0.94	105
Pago Pago	10.18	156	6.53	3.65	104
Lihue	0.92	47	1.94	-1.02	57
Honolulu	0.10	17	0.60	-0.50	36
Kahului	0.08	42	0.19	-0.11	60
Hilo	5.67	61	9.31	-3.64	59

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 gages across Kauaʻi posted near to below average rainfall totals for the month of October. Gages on the west side of the island had above average monthly totals as a result of the passage of pre-frontal rain bands on October 23. The U.S. Geological Survey's (USGS) gage on Mount Waiʻaleʻale had the highest monthly total of 16.96 inches (50 percent of average). The USGS' gage at Mohihi Crossing had the highest daily total of 3.32 inches on October 23. The gages at Hanalei and Wainiha had their lowest October totals since 2012.

All of the rain gages on Kauaʻi had near to above average rainfall totals for 2023 through the end of October. The Mount Waiʻaleʻale gage had the highest year-to-date total of 301.12 inches (92 percent of average).

Oahu

Nearly all of the gages on Oʻahu had October rainfall totals at less than 50 percent of average. The Mānoa Lyon Arboretum gage had the highest monthly total of 3.61 inches (28 percent of average). The USGS' Hālawa Tunnel gage had the highest daily total of 1.46 inches on October 2. Records for the lowest October rainfall totals were broken at the ʻĀhuimanu, Hakipuʻu Mauka, Kahuku, Luluku, Mililani, Mānoa Lyon Arboretum, Pacific Palisades, Waipiʻo, Poamoho Rain Gage No. 1, Punaluʻu Pump, Waiawa Correctional Facility, and Waiheʻe Pump gages. Several other sites had their lowest October totals in more than 10 years.

Oʻahu rainfall totals for 2023 through the end of October were near average at most of the gages. The USGS' Poamoho Rain Gage No. 1 had the highest year-to-date total of 125.61 inches (68 percent of average).

Maui

Similar to September, most of the gages across Maui County had October rainfall totals below 50 percent of average. Several sites along the slopes of Haleakalā had monthly totals below 20 percent of average. The USGS' gage on top of Puʻu Kukui had the highest monthly total of 2.05 inches (8 percent of average). This was lowest October total at this location since 1987. ʻUlupalakua Ranch had the highest daily total of 0.95 inches on October 13. Māhinahina had its lowest October total since 1996.

Most of the rainfall totals across Maui County for 2023 through the end of October were near average. The USGS' rain gage at West Wailuaiki Stream had the highest year-to-date total of 160.93 inches (85 percent of average).

Big Island

October rainfall totals were below average at most of the gages on the Big Island. The normally wet windward slopes were especially dry with most of the sites posting monthly totals at less than 20 percent of average. The highest monthly total of 5.25 inches was recorded at Pāhala (99 percent of average) and Kapāpala Ranch (103 percent of average). Kapāpala Ranch had the highest daily total of 1.01 inches on October 23. Records for the lowest October rainfall were broken at Glenwood, Hilo Airport, Pāhoa Beacon, Piʻihonua, and Waiākea Uka. The Hilo Airport record was particularly notable because the data archive for this site goes back to 1949. The Hakalau, Kahuā Ranch, Kaʻūpūlehu, Keaumo, and Mauna Loa Observatory gages had their lowest October totals in more than a decade.

Rainfall totals for 2023 through the end of October were near to below 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 152.98 inches (81 percent of average).

Current State of ENSO and predictions

Issued 9 November 2023

ENSO Alert System Status: El Niño Advisory

Synopsis: **El Niño is anticipated to continue through the Northern Hemisphere spring (with a 62% chance during April-June 2024).**

Above-average sea surface temperatures (SST) across the equatorial Pacific Ocean were indicative of a strong El Niño, with anomalies increasing in the central and east-central Pacific in the past month. The latest weekly Niño index values were +1.4°C in Niño-4, +1.8°C in Niño-3.4, +2.1°C in Niño-3, and +2.2° C in Niño-1+2. Area-averaged subsurface temperatures anomalies increased slightly associated with the initiation of a downwelling oceanic Kelvin wave, which strengthened above-average subsurface temperatures in the central equatorial Pacific. Low-level wind anomalies were westerly in the east-central Pacific, while upper-level wind anomalies were easterly in the western and central Pacific. Convection/rainfall was enhanced around the International Date Line, extending into the eastern Pacific. Suppressed convection/rainfall strengthened around Indonesia. The equatorial Southern Oscillation Index (SOI) and the station-based SOI remained negative. Collectively, the coupled ocean-atmosphere system reflected a growing El Niño.

The most recent IRI plume favors El Niño to continue through the Northern Hemisphere spring 2024. Based on latest forecasts, there is a greater than 55% chance of at least a "strong" El Niño (≥ 1.5°C in Niño-3.4 for a seasonal average) persisting through January-March 2024. There is a 35% chance of this event becoming "historically strong" (≥ 2.0°C) for the November-January season. Stronger El Niño events increase the likelihood of El Niño-related climate anomalies, but do not necessarily equate to strong impacts (see CPC seasonal outlooks for probabilities of temperature and precipitation). In summary, El Niño is anticipated to continue through the Northern Hemisphere spring (with a 62% chance during April-June 2024).

6. Rainfall Verification ASO- August, September, October (Josie)

The verification result of **ASO** rainfall forecasts was 10 hits and 4 misses (Heidke score: 0.5607).

July, August, September JAS 2023 Verification

Updated 10/12/2023 JAS

Location	UKMO	ECMWF	CA	NASA	NCEP	IRI	APCC	Initial: Rainfall Outlook	Initial: Final Probs	3 mo Verification % norm	3 mo Verification Total (in)	3 mo Verification Tercile	Post Conference PEAC Forecast Final	Post Conference PEAC Probs Final
Palau														
Airai 7° 22' N, 134° 32' E	Below	Above	Avg-above	Avg-below	Avg.	Above	Above	Above	30:30:40	110	58.93	Above		
FSM														
Yap 9° 29' N, 138° 05' E	Clim.	Above	Above	Avg.	Avg-above	Above	Above	Above	25:35:40	129	56.14	Above		
Chuuk 7° 28'N, 151° 51'E	Above	Above	Above	Above	Above	Above	Above	Above	20:30:50	120	43.86	Avg.		
Pohnpei 6° 59'N, 158° 12'E	Above	Above	Above	Above	Above	Above	Above	Avg-above	30:30:40	174	73.54	Above		
Kosrae 5° 21'N, 162° 57'E	Above	Above	Above	Avg-above	Above	Above	Above	Avg-above	30:30:40	120	51.91	Above		
RMI														
Kwajalein 8° 43'N, 167° 44'E	Above	Below	Avg-above	Avg-below	Above	Above	Above	Above	30:40:30	62	18.91	Below		
Majuro 7° 04' N, 171° 17'E	Above	Above	Avg-above	Avg-above	Above	Above	Above	Avg-above	30:30:40	74	25.21	Below		
Guam and CNMI														
Guam 13° 29'N, 144° 48' E	Above	Below	Avg-above	Avg.	Avg-above	Above	Above	Avg-above	30:35:35	108	40.62	Avg.		
Saipan 15° 06'N, 145° 48' E	Above	Below	Avg-below	Avg.	Avg.	Below	Avg.	Avg-below	35:35:30	105	33.78	Avg.		
American Samoa														
Pago Pago 14° 20'S, 170° 43'W	Avg.	Below	Avg-below	Avg-below	Avg.	Below	Below	Below	40:35:25	104	18.08	Avg.		
State of Hawaii														
19.7° - 21.0' N, 155.0° - 159.5' W														
Lihue	Below	Below	Avg-below	Avg-below	Avg.	Below	Below	Below	45:30:25	57	3.12	Below		
Honolulu	Below	Below	Avg-below	Avg-below	Avg.	Below	Below	Below	45:30:25	36	0.41	Below		
Kahului	Below	Below	Avg-below	Avg-below	Avg.	Below	Below	Below	45:30:25	60	0.63	Below		
Hilo	Below	Below	Avg-below	Avg-below	Avg.	Below	Below	Below	45:30:25	59	15.99	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 JAS season Indicates a **30%** chance (probability) for occurrence of **excess rainfall** during the JAS season, **35%** chance for occurrence of rainfall within a pattern considered **normal** during the JAS season, and **35%** chance for occurrence of **deficit** rainfall during the JAS season.

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

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

Hit	10
Miss	4

Hit	
Miss	
Heidke:	0.5607
RPSS:	-0.1209

11	Hit
3	Miss
Heidke:	0.5607
RPSS:	-0.1209

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%	39.25	41.9	34.86	40.06	37.2	29.48	31.17	28.97
near								
66.66%	50.04	46.11	44.29	50.76	44.54	35.85	38.16	33.09
above (>)								

	Lihue	Honolulu	Kahului	Hilo	Pago Pago	Kosrae
below (<)						
33.33%	5.27	1.02	0.84	25.17	15.04	41.49
near						
66.66%	7.79	1.67	1.64	33.44	23.4	47.32
above (>)						

6. Rainfall Outlook NDJ– November, December, January

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

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%	31.24	27.44	30.88	43.58	24.01	20.13	35.14	29.07
near								
66.66%	38.99	32.32	38.67	49.78	29.41	23.26	41.82	31.88
above (>)								

	Lihue	Honolulu	Kahului	Hilo	Pago Pago	Kosrae
below (<)						
33.33%	9.18	4.36	4.18	28.26	31.15	39.86
near						
66.66%	15.56	8.52	8.05	41.99	41.56	44.83
above (>)						

Drought Monitoring Updates: (Richard Heim)

Drought monitoring updates.

A. End-of-October Monthly Drought Assessment:

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

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

iii. The end-of-October monthly analysis (October 31) is consistent with the weekly analysis for October 31, and is the October 31 analysis.

a. End-of-October drought conditions:

1. D0 ended at Ailinglaplap and Majuro, but continued at Kwajalein and Wotje.
2. D1 ended (improved to D-Nothing) at Pago Pago/Tutuila.
3. D-Nothing at all other locations.
4. Utirik was plotted as missing due to missing data for the month.

b. Compared to the end-of-September monthly analysis:

1. 2 stations were D0 in October.
2. 4 stations were D0 and 1 was D1 in September.
3. Some October 2023 precipitation ranks:

a. Lukunor: sixth driest November-October (in a 27-year record for the 12-month time scale) but third wettest October (in 39 years of data for October).

b. **Jaluit:** 14th driest October (40 years) but fourth driest May-October, fifth driest June-October and April-October through February-October, and seventh driest November-October.

c. Some stations at the wet end of the scale:

1. Ailinglaplap had the sixth wettest October (40 years).
2. Mili had the seventh wettest October (40 years) and wettest June-October, May-October, and January-October through November-October.

i Current (Weekly) Drought Conditions: The discussion above is the monthly (end of October) analysis. The latest weekly USAPI USDM assessment may show different USDM classifications. The latest weekly USAPI USDM assessment is for November 14 (https://droughtmonitor.unl.edu/data/png/20231114/20231114_usdm_pg2.png).

i. The November 14 weekly analysis has D0 ending at Kwajalein and Wotje with all locations having no drought or abnormal dryness (D-Nothing).

C. October 2023 NCEI State of the Climate Drought Report: The October 2023 NCEI SotC Drought report went online yesterday.

i. The web page url for the October report is:

a. https://www.ncei.noaa.gov/access/monitoring/monthly-report/drought/202310#regional-usapi

D. Next Authors:

I (Richard Heim) will be OCONUS USDM author the next 2 weeks; then Tsegaye Tadesse, then Anthony Artusa, then me again the following 3 weeks.