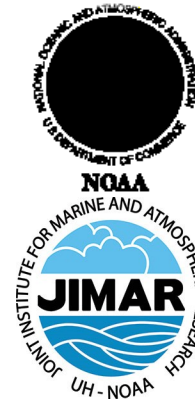




NWS Climate Services

December PEAC Audio Conference Call Summary

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

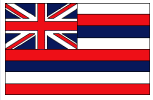


November rainfall totals reported

% 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	November	Inches	inches	SON
Airai	7.95	62	12.79	-4.84	54.86
Yap	5.68	64	8.83	-3.15	31.23
Chuuk	11.89	112	10.61	1.28	44.45
Pohnpei	25.82	174	14.83	10.99	53.57
Kosrae	16.81	122	13.83	2.98	47.24
Kwajalein	14.47	128	11.28	3.19	36.74
Majuro	17.42	130	13.44	3.98	44.95
Guam NAS	9.87	134	7.38	2.49	48.16
Saipan	7.76	138	5.61	2.15	27.01
Pago Pago	12.58	124	10.14	2.44	20.29
Lihue	1.08	31	3.53	-2.45	4.51
Honolulu	0.09	7	1.36	-1.27	0.26
Kahului	0.21	11	1.84	-1.63	0.85
Hilo	5.89	52	11.38	-5.49	24.30

Reports from around the Region



Hawaii (Kevin Kodama)

Precipitation Summaries for HI can also be found:

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

Kauai

All of the rain gages on Kauai recorded below average monthly totals for the month of November, with most amounts at less than 50 percent of average. The U.S Geological Survey's (USGS) rain gage on Mount Waialeale had the highest monthly total of 17.09 inches (45 percent of average) and the highest daily total of 3.14 inches on November 4. The Hanapepe rain gage tied its record for the lowest November rainfall, with only 0.50 inches (13 percent of average). Both the Wainiha and Wailua Experiment Station gages had their lowest November totals since 2012.

Although conditions have been dry recently, all of the gages on Kauai continued to have near to above average rainfall totals for 2021 through the end of November. Mount Waialeale had the highest year-to-date total of 420.32 inches (116 percent of average).

Oahu

Like Kauai, all of the gages on Oahu posted below average rainfall totals for the month of November. Most of the monthly totals were less than 50 percent of average and many of the lower leeward sites had totals at less than 10 percent of average. The Manoa Lyon Arboretum gage had the highest monthly total of 7.33 inches (49 percent of average) and the highest daily total of 2.18 inches on November 22. The Aloha Tower and Punaluu Pump gages had their lowest November totals on record. Honolulu Airport's 0.09 inches (4 percent of average) registered as its fourth driest November on record, and the driest November since 1962. Many of the other locations around the island had their lowest November totals since 2012.

Most of the gages on Oahu had near to above average rainfall totals for 2021 through the end of November. Many of the below average totals were along the lower leeward slopes of the island. The highest year-to-date total of 150.63 inches (73 percent of average) came from the USGS' Poamoho Rain Gage No. 1.

Maui

Most of the Maui County rain gages had November rainfall totals at less than 30 percent of average. The lone above average total was from the rain gage at Hana Airport. This site had not only the highest monthly total in Maui County (9.37 inches, 141 percent of average), but also the highest daily total of 5.18 inches on November 14. The USGS' gage on Puu Kukui had its lowest November rainfall total since 1983. The Haiku and Pukalani gages had their lowest November totals since 2008 and 2012, respectively.

Across Maui County, most of the rainfall totals for 2021 through the end of November remained near to above average. The USGS' rain gage at West Wailuaiki Stream had the highest year-to-date total of 235.94 inches (113 percent of average).

Big Island

Outside of a couple of near average totals, most of the rain gages on the Big Island reported below average totals for the month of November. Many of these totals were less than 50 percent of the long term November average. After over a year of mostly above average rainfall along the slopes of the South Kona District, rain gages in the area have reported a second consecutive month of below average rainfall. The Papaikou Well gage had the highest monthly total among the automated sites, with 10.44 inches (49 percent of average). However, the highest overall total came from the Wainaku CoCoRaHS site with a manually recorded November total of 11.99 inches. This site also had the highest daily total of 2.86 inches on November 17. The Kahua Ranch, Kamuela Upper, and Upolu Airport gages all had their lowest November totals since 2002. The Honokaa and Kamuela sites both had their lowest November totals since 2005.

Rainfall totals for 2021 through the end of November were near to above average at most of the gages on the Big Island. The Piihonua gage, with 177.42 inches (104 percent of average), passed the USGS' rain gage at Kawainui Stream (171.71 inches, 141 percent of average) for the Big Island's highest year-to-date total.

Current State of ENSO and predictions

Issued 9 December 2021

ENSO Alert System Status: [La Niña Advisory](#)

Synopsis: La Niña is favored to continue through the Northern Hemisphere winter 2021-22 (~95% chance) and transition to ENSO-neutral during the spring 2022 (~60% chance during April-June).

In November, the continuation of La Niña was reflected in the below-average sea surface temperatures (SSTs) extending across the equatorial Pacific Ocean. In the last week, all of the Niño indices were between -0.7°C and -1.2°C , with the largest departures occurring in the easternmost regions of Niño-1+2 and Niño-3. Below-average subsurface temperatures weakened slightly compared to the previous month, but a large pool of negative temperature anomalies still extended across the central and eastern Pacific, down to $\sim 200\text{m}$ depth. Low-level easterly and upper-level westerly wind anomalies persisted over most of the equatorial Pacific. Enhanced convection and rainfall were observed over Indonesia and convection was suppressed over the central and western equatorial Pacific. The Southern Oscillation Index and Equatorial Southern Oscillation Index were more positive than the previous month. Overall, the coupled ocean-atmosphere system was consistent with La Niña.

The IRI/CPC plume average of forecasts for the Niño-3.4 SST index indicates La Niña will continue through the February-April 2022 season. The forecaster consensus anticipates a transition to ENSO-neutral sometime during the Northern Hemisphere spring, with chances for La Niña declining below 50% after March-May 2022. The chance of a moderate-strength La Niña declined slightly from last month's update, but there is still a 59% chance of the Niño-3.4 index reaching a value less than -1.0°C for the [November 2021 - January 2022](#) season. In summary, La Niña is favored to continue through the Northern Hemisphere winter 2021-22 (~95% chance) and transition to ENSO-neutral during the spring 2022 (~60% chance during April-June; click [CPC/IRI consensus forecast](#) for the chances in each 3-month period).

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

The verification result of SON rainfall forecasts was 6 hits and 8 misses (Heidke score: 0.2376). The 6 missed stations were Yap, Chuuk, Pohnpei, Kosrae, Kwajalein, Guam, and Pago Pago.

Location	UKMO	ECMWF	CA	NASA	NCEP	IRI	APCC	Rainfall Outlook	Final Probs	3 mo Verification			PEAC SON	PEAC SON
										% norm	Total (in)	Tercile	Forecast Final	Probs Final
Palau														
Airai 7° 22' N, 134° 32' E	Above	Above	Avg-above	Avg-above	Avg-above	Above	Above	Above	25:30:45	133	54.86	Above		
FSM														
Yap 9° 29' N, 138° 05' E	Above	Avg.	Avg.	Avg.	Avg-above	Above	Avg.	Avg-above	30:35:35	90	31.23	Below		
Chuuk 7° 28' N, 151° 51' E	Below	Avg.	Avg.	Avg-above	Avg-above	Clim.	Avg-above	Avg.	30:40:30	131	44.45	Above		
Pohnpei 6° 59' N, 158° 12' E	Below	Avg.	Avg.	Above	Avg.	Avg.	Avg-above	Avg.	30:40:30	126	53.57	Above		
Kosrae 5° 21' N, 162° 57' E	Below	Below	Avg-above	Avg-below	Avg-below	Above	Avg.	Avg-below	35:35:30	121	47.24	Above		
RMI														
Kwajalein 8° 43' N, 167° 44' E	Avg-below	Avg-below	Avg-above	Avg-above	Avg.	Below	Avg-above	Avg-below	35:35:30	111	36.74	Above		
Majuro 7° 04' N, 171° 17' E	Avg-below	Avg-below	Avg.	Avg.	Avg.	Above	Avg.	Avg.	30:40:30	120	44.95	Above		
Guam and CNMI														
Guam 13° 29' N, 144° 48' E	Avg-below	Below	Avg-below	Below	Avg.	Clim.	Avg.	Avg-below	35:35:30	153	48.16	Above	Avg.	30:40:30
Saipan 15° 06' N, 145° 48' E	Avg-below	Below	Avg-below	Below	Avg.	Below	Avg.	Avg-below	35:35:30	103	27.01	Avg.	Avg.	30:40:30
American Samoa														
Pago Pago 14° 20' S, 170° 43' W	Above	Avg.	Avg-below	Avg-above	Avg.	Below	Avg-below	Avg-above	30:35:35	78	20.29	Below		
State of Hawaii														
19.7° - 21.0° N, 155.0° - 159.5° W														
Lihue	Below	Below	Avg-below	Avg.	Avg.	Below	Avg-below	Avg-below	35:35:30	51	4.51	Below		
Honolulu	Below	Below	Avg-below	Avg.	Avg.	Avg-below	Avg-below	Avg-below	35:35:30	8	0.26	Below		
Kahului	Below	Below	Avg-below	Avg.	Avg.	Clim.	Avg-below	Avg-below	35:35:30	33	0.85	Below		
Hilo	Below	Below	Avg-below	Avg.	Avg.	Below	Avg-below	Avg-below	35:35:30	83	24.30	Avg.		

6	Hit
8	Miss
Heidke:	0.2375
RPSS:	0.0587

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%	30.65	32.05	32.73	41.51	30.44	26.19	34.74	30.69
near								
66.66%	41.38	38.09	38.35	47.07	33.78	29.77	42.55	34.83
above (>)								

	Lihue	Honolulu	Kahului	Hilo	Pago Pago	Kosrae
below (<)						
33.33%	9.17	2.52	2.08	24.29	26.91	38.3
near						
66.66%	11.22	5.59	4.76	40.81	31.48	43.49
above (>)						

6. Rainfall Outlook DJF– December, January, February (Sony)

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

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

	Koror	Yap	Chuuk	Pohnpei	Guam	Saipan	Majuro	Kwai
below (<)								
33.33%	26.42	17.47	25.39	34.23	11.41	8.66	24.24	11.78
near								
66.66%	37.21	25.53	32.01	45.42	16.49	11.56	30.01	16.47

above (>)

	Lihue	Honolulu	Kahului	Hilo	Pago Pago	Kosrae
below (<)						
33.33%	7.45	3.68	4.64	19.58	35.2	43.72
near						
66.66%	13.98	8.62	8.68	33.29	46.65	53.68

above (>)

Drought monitoring updates.

A. End-of-November Monthly Drought Assessment:

- i. With WxCoder III data, we have 23 stations in the monthly analysis.
- ii. November was dry (less than the 4- or 8-inch monthly minimum needed to meet most water needs) in parts of the FSM (Kapingamarangi, Fananu, Yap) and Palau (Airai, Koror COOP); it was wet elsewhere. November was drier than normal at these stations (Kapingamarangi, Yap, & Airai); November was wetter than normal at the rest of the stations.
- iii. The end-of-November monthly analysis (November 30) is consistent with the weekly analysis for November 30, and is the same as the November 30 weekly analysis since the end of the month fell on a Tuesday (the end of the USDM week). Compared to the end-of-October monthly analysis:
 - a. D2 worsened to D3 at Kapingamarangi.
 - b. D0 ended at Jaluit and Nukuoro.
 - c. The USDM status stayed the same (D-Nothing) at the other stations.
 - d. Uirik was plotted as missing due to missing data for the month.

iv. Some November 2021 precipitation ranks:

- a. **Kapingamarangi**: third driest November (in 33 years of data) and August-November and July-November; fifth driest October-November (30 years).
- b. **Lukunor**: driest June-November (in 25 years of data), 2nd driest July-November, 6th driest August-November.
- c. **Yap**: tenth driest November (71 years) and 9th driest June-November and May-November.
- d. **Pingelap**: fifth driest August-November (36 years) in spite of November being the sixth wettest.
- e. **Ailinglaplap**: third driest May-November (37 years).
- f. **Jaluit**: fifth driest July-November (38 years) and ranks 6th or 7th or 9th driest for June-November thru December-November.
- g. **Kwajalein**: ninth driest June-November (70 years).
- h. **Wotje**: 7th driest February-November (36 years).
- i. **Woleai & Mili**: wettest November in 38 years each.

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

- i. The December 7 analysis is the same as the end of November analysis.

C. November 2021 NCEI State of the Climate Drought Report: The November 2021 NCEI SotC Drought report will go online Monday next week.