NWS Climate Services

January PEAC Audio Conference Call Summary

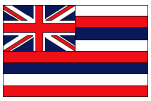
11 January, 1430 HST (12 January 2024, 0030 GMT)

December 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	December	Inches	inches	OND
Airai	7.46	55	13.62	-6.16	79
Yap	3.53	41	8.51	-4.98	72
Chuuk	11.22	100	11.25	-0.03	116
Pohnpei	7.76	48	16.08	-8.32	101
Kosrae	7.06	44	16.11	-9.05	96
Kwajalein	7.42	111	6.66	0.76	125
Majuro	7.96	70	11.39	-3.43	86
Guam NAS	5.49	107	5.11	0.38	121
Saipan	6.07	158	3.85	2.22	116
Pago Pago	25.00	195	12.84	12.16	115
Lihue	3.94	124	3.17	0.77	103
Honolulu	0.88	67	1.32	-0.44	91
Kahului	1.00	38	2.66	-1.66	39
Hilo	7.62	74	10.24	-2.62	67

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 near to above average rainfall for the month of December, and most of the leeward gages had below average rainfall. The U.S. Geological Survey's (USGS) rain gage on Mount Waiʻaleʻale had the highest monthly total of 36.29 inches (121 percent of average), and the highest daily total of 10.30 inches on December 20. The Poʻipū gage had its highest December total since 2013.

All of the gages on Kauaʻi ended up with near to above average rainfall for 2023. The Mount Waiʻaleʻale gage had the highest annual total of 384.06 inches (98 percent of average). The Kalāheo gage had its wettest year on record with 75.77 inches (137 percent of average). Mōhihi Crossing, Puʻu Lua, Port Allen Airport, and Waiakoali have relatively short periods of record but their 2023 totals were the highest in over 10 years.

Oahu

Gages along the slopes of the Koʻolau Range from Mānoa to Punaluʻu had mostly near to above average December rainfall totals. Most of the remaining gages on Oʻahu had below average monthly totals, with many sites at less than 50 percent of average. The USGS' Hālawa Tunnel gage had the highest monthly total of 22.68 inches (189 percent of average), and the highest daily total of 10.43 inches on December 20. The Bellows Air Force Station gage posted its lowest December total since 2012.

Most Oʻahu's rain gages had near average totals for 2023. The Hālawa Tunnel gage ended up with the highest annual total of 167.70 inches (130 percent of average), followed closely by the 167.55 inches (74 percent of average) at the USGS' Poamoho Rain Gage No. 1.

Maui

December rainfall totals across Maui County were below average at nearly all of the rain gage sites. The leeward slopes of Maui were especially dry with most gages recording less than 30 percent of the average December rainfall. The USGS' rain gage at West Wailuaiki Stream had the highest monthly total of 23.24 inches (142 percent of average). The USGS' gage on Puʻu Kukui had the highest daily total of 5.03 inches on December 20. Pukalani had its lowest December total since 2012.

Maui County rainfall totals for 2023 were near to below average at most of the gages. The rain gage at West Wailuaiki Stream had the highest annual total of 208.06 inches (92 percent of average).

Big Island

Big Island rainfall totals were mostly near to below average for the month of December. The Kaʻū District and the Humuʻula Saddle region were very dry with most of the totals at less than 20 percent of average. The USGS' rain gage at Kawainui Stream had the highest monthly total of 20.00 inches (149 percent of average). The highest daily total of 8.93 inches was logged on December 1 at a manually read CoCoRaHS observer network gage a few miles southeast of Pāhoa. Most of this daily total may have actually occurred on November 30. Among the automated sites, Honokaʻa had the highest daily total of 4.28 inches on December 14. The Pali 2 gage in the Kaʻū District had its lowest December total in a data record going back to 2003. The Kealakomo and PTA Kīpuka ʻAlalā sites had their lowest December totals since 2009 and 2012, respectively.

Rainfall totals for 2023 were near to below average at most of the gages on the Big Island. The USGS' rain gage at Honoliʻi Stream had the highest annual total of 186.87 inches (81 percent of average).

Current State of ENSO and predictions

Issued 11 January 2024

ENSO Alert System Status: El Niño Advisory

Synopsis: **El Niño is expected to continue for the next several seasons, with ENSO-neutral favored during April-June 2024 (73% chance).**

Above-average sea surface temperatures (SST) persisted across the equatorial Pacific Ocean, with the largest anomalies observed in the central and east-central Pacific. The latest weekly Niño index values remained at +1.4°C in Niño-4, +1.9°C in Niño-3.4, and +2.0°C in Niño-3, while Niño-1+2 weakened to +1.0°C. Area-averaged positive subsurface temperature anomalies decreased in December, reflecting the strengthening and eastward expansion of below-average subsurface temperatures in the western Pacific. Over the east-central Pacific Ocean, low-level wind anomalies were westerly, while upper-level wind anomalies were easterly. Convection/rainfall remained enhanced at the Date Line and was suppressed around Indonesia. The equatorial and station-based SOI were negative. Collectively, the coupled ocean-atmosphere system reflected a strong and mature El Niño.

The most recent IRI plume indicates El Niño will gradually weaken and then transition to ENSO-neutral during spring 2024. Some state-of the-art dynamical climate models suggest a transition to ENSO-neutral as soon as March-May 2024. The forecast team, however, delays this timing and strongly favors a transition to ENSO-neutral in April-June 2024. There are also increasing odds of La Niña in the seasons following a shift to ENSO-neutral. It is typical for El Niño to peak in December/early January, but despite weakening, its impacts on the United States could last through April (see CPC seasonal outlooks for probabilities of temperature and precipitation). In summary, El Niño is expected to continue for the next several seasons, with ENSO-neutral favored during April-June 2024 (73% chance).

6. Rainfall Verification OND– October, November, December (Josie)

The verification result of **OND** rainfall forecasts was 10 hits and 4 misses (Heidke score: 0.4492).

October, November, December-OND 2023 Verification

Updated 1/24/2024 OND

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	Avg-below	**Below**	Avg-below	Avg.	Avg.	Avg-below	**Below**	Avg-below	**35:35:30**	79	29.91	**Below**		
FSM														
Yap 9° 29' N, 138° 05' E	Avg-below	**Below**	Avg-below	Avg.	Avg.	**Above**	**Below**	Avg-below	**35:35:30**	72	21.22	**Below**		
Chuuk 7° 28'N, 151° 51'E	**Above**	Avg-below	Avg-below	Avg-above	Avg.	**Above**	Avg.	Avg-above	**30:35:35**	116	38.85	**Above**		
Pohnpei 6° 59'N, 158° 12'E	**Above**	**Below**	Avg-below	Avg-above	Avg.	**Above**	**Above**	Avg-above	**30:35:35**	101	46.86	**Avg.**		
Kosrae 5° 21'N, 162° 57'E	**Above**	**Above**	**Below**	**Above**	Avg-above	**Above**	**Above**	Avg-above	**30:35:35**	**44**	39.10	**Below**		
RMI														
Kwajalein 8° 43'N, 167° 44'E	Clim.	**Below**	Avg-below	Avg-below	Avg-above	**Below**	**Below**	**Below**	**40:30:30**	125	36.53	**Above**		
Majuro 7° 04' N, 171° 17'E	Clim.	**Below**	**Below**	Avg-above	**Above**	**Above**	**Below**	Avg-below	**35:35:30**	86	32.45	**Below**		
Guam and CNMI														
Guam 13° 29'N, 144° 48' E	**Above**	**Below**	Avg.	Avg.	Avg.	**Above**	Avg.	Avg-above	**30:35:35**	121	29.07	**Avg.**		
Saipan 15° 06'N, 145° 48' E	**Above**	**Below**	Avg-below	Avg-below	Avg.	**Above**	**Below**	Avg.	**35:35:30**	116	23.31	**Above**		
American Samoa														
Pago Pago 14° 20'S, 170° 43'W	**Above**	**Below**	Avg-below	Avg.	Avg-below	**Above**	**Below**	Avg-below	**35:35:30**	115	37.14	**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**	**40:30:30**	103	10.34	**Avg.**		
Honolulu	**Below**	**Below**	Avg-below	Avg-below	Avg.	**Below**	**Below**	**Below**	**40:30:30**	91	3.60	**Below**		
Kahului	**Below**	**Below**	Avg-below	Avg-below	Avg.	**Below**	**Below**	**Below**	**40:30:30**	**39**	1.98	**Below**		
Hilo	**Below**	**Below**	Avg-below	Avg-below	Avg.	**Below**	**Below**	**Below**	**40:30:30**	67	20.15	**Below**		

10	Hit
4	Miss
Heidke:	0.4492
RPSS:	-0.1564

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%	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 (>)						

6. Rainfall Outlook JFM– January, February, March

NDJ Forecast Location	Rainfall Outlook	Probability Pre-Conference	Final Outlook	Final Probability
Palau				
Airai 7º 22' N, 134º 32' E	Below	55:25:20	-	-
FSM				
Yap 9º 29' N, 138º 05' E	Below	55:25:20	-	-
Chuuk 7º 28'N, 151º 51'E	Below	55:25:20	-	-
Pohnpei 6º 59'N, 158º 12'E	Below	55:25:20	-	-
Kosrae 5º 21'N, 162º 57'E	Below	50:30:20	-	-
	-	-		
RMI				
Kwajalein 8º 43'N, 167º 44'E	Avg-Below	40:35:25	-	-
Majuro 7º 04' N, 171º 17'E	Avg-Below	40:30:30	-	-
Guam and CNMI				
Guam 13º 29'N, 144º 48' E	Avg-Below	40:35:25	-	-
Saipan 15º 06'N, 145º 48' E	Avg-Below	40:35:25	-	-
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	45:30:25	Avg-Below	35:35:30
Honolulu	Below	45:30:25	Avg-Below	35:35:30
Kahului	Below	45:30:25	Avg-Below	35:35:30
Hilo	Below	45:30:25	Avg-Below	35:35:30

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%	23.9	14.98	22.35	34.4	8.52	6.98	20.29	7.24
near								
66.66%	32.43	21.91	31.31	43.28	11.35	9.47	24.26	11.19
above (>)								

	Lihue	Honolulu	Kahului	Hilo	Pago Pago	Kosrae
below (<)						
33.33%	6.52	2.08	4.24	22	35.08	43.67
near						
66.66%	13.75	7.8	8.23	44.53	42.92	53.33
above (>)						

Drought Monitoring Updates: (Richard Heim)

Drought monitoring updates.

A. End-of-December Monthly Drought Assessment:

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

December was dry (less than the 4- or 8-inch monthly minimum needed to meet most water needs) in parts of the FSM (Yap, Ulithi, Woleai, Kapingamarangi, Pohnpei, Pingelap, Kosrae), Marshalls (Wotje, Kwajalein, Jaluit), and Republic of Palau (Airai); it was wet elsewhere in these countries and in the Marianas and American Samoa. December was drier than normal in Palau, the FSM, and southern Marshalls (Majuro); it was wetter than normal in most other areas.

The end-of-December monthly analysis (December 31) is consistent with the weekly analyses for December 26 and January 2, and is the same as the January 2 analysis.

a. End-of-December drought conditions:

D0 continued at Lukunor.

D0 began at Nukuoro, Pohnpei, & Pingelap.

D0 worsened to D1 at Wotje & to D2 at Ulithi.

D0 ended at Tutuila.

D1 developed at Yap.

D-Nothing at all other locations.

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

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

4 stations were D0, 2 were D1, and 1 was D2 in December.

4 stations were D0 in November.

Some December 2023 precipitation ranks:

a. **Kosrae:** second driest December (in a 56-year record).

b. **Pingelap:** fourth driest December (38 years) and June-December, fifth driest August-December, and sixth driest May-December.

c. **Ulithi:** eighth driest December (41 years) and third driest November-December, but fourth wettest January-December.

d. **Wotje:** 17th driest December (39 years), but fifth driest August-December and July-December.

e. **Yap:** third driest December (73 years) & September-December, fifth driest November-December, & seventh driest October-December.

f. **Jaluit:** seventh driest December (40 years) and fourth driest June-December back to March-December, fifth driest July-December & February-December, and sixth driest January-December.

g. **Pohnpei:** seventh driest December, but second wettest January-December.

h. **Majuro:** fourth driest July-December.

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

Pago Pago had the fourth wettest December (58 years)

Guam had the wettest January-December (66 years), May-December, & March-December.

Mili had the wettest January-December (37 years), June-December, & May-December.

Pohnpei (72 years) and Kapingamarangi (21 years) had the second wettest January-December.

Saipan had the fourth wettest January-December (35 years).

Current (Weekly) Drought Conditions: The discussion above is the monthly (end of December) analysis. The latest weekly USAPI USDM assessment may show different USDM classifications. The latest weekly USAPI USDM assessment is for January 9 (https://droughtmonitor.unl.edu/data/png/20240109/20240109_usdm_pg2.png).

The January 9 weekly analysis is the same as the end of December analysis, except Woleai is D-Nothing instead of missing.

C. November 2023 NCEI State of the Climate Drought Report: The December 2023 NCEI SotC Drought report will go online next week; the Annual 2023 NCEI SotC Drought report will go online tomorrow.

The web page url for the December report will be:
a. https://www.ncei.noaa.gov/access/monitoring/monthly-report/drought/202312#regional-usapi
The web page url for the Annual report will be:
a. https://www.ncei.noaa.gov/access/monitoring/monthly-report/drought/202313#usapi-sect

D. Next Authors:

i. NCEI's Ahira Sanchez-Lugo has moved on to a special detail and is no longer an author. NDMC has added Lindsay Johnson as a USAPI USDM author. There are 9 USAPI USDM (OCONUS) authors and one backup: Rocky Bilotta, and myself (Richard Heim) from NCEI; Curtis Riganti, Denise Gutzmer, Tsegaye Tadesse, Lindsay Johnson, and Deb Bathke (backup) from NDMC; Brad Rippey (from USDA); Rich Tinker and Anthony Artusa (from CPC).