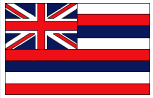




## Reports from around the Region



Hawaii

### Kauai

All of the rain gages across the island of Kauai posted below average totals for February. The highest monthly total of 5.08 inches came from the U.S. Geological Survey's (USGS) gage on top of Mount Waialeale, but this total was just 21 percent of the February average. This site also had Kauai's highest daily total of just 0.84 inches on February 6. Records for the lowest February rainfall total were broken at the Hanapepe, Omoa, and Wailua UH Experiment Station gages. Lihue Airport and Lihue Variety Station had their lowest February rainfall totals since 2000.

Nearly all of the rain gages on Kauai had below average rainfall totals for 2022 through the end of February. Only Lihue Airport had a near average total due to wet conditions in early January. The Mount Waialeale gage had the highest year-to-date total of 15.74 inches (32 percent of average).

### Oahu

It was a very dry February across Oahu with all gages recording below average monthly rainfall totals. The USGS' Halawa Tunnel Rain Gage had the highest monthly total of 5.46 inches (57 percent of average). However, the highest daily came from the Ahuimanu gage with 1.14 inches recorded on February 21. Records for the lowest February rainfall total were broken at Honolulu Airport, Mililani, Wheeler Army Airfield, and Waiawa Correctional Facility. Hawaii Kai Golf Course and Pacific Palisades had their lowest February totals since 1998, and the Kahuku, Lualualei, Poamoho Experiment Farm, Punaluu Pump, and Waimanalo Nonokio sites had their lowest February totals since 2000.

Most of the rain gages on Oahu had near to below average totals for 2022 through the end of February. Sites along the lower leeward slopes from Honolulu Airport to Waianae had near to above average year-to-date totals due to wet condition in early January. The Maunawili gage had the highest year-to-date total on Oahu, with 14.16 inches (90 percent of average).

### Maui

Most of Maui County has had two consecutive months of very dry conditions, with more than half of the sites recording February totals at less than 20 percent of average. The USGS' rain gage at West Wailuaiki Stream had the highest monthly total of 8.98 inches (61 percent of average) and the highest daily total of 5.11 inches on February 20. The Mahinahina and Pukalani gages posted their lowest February totals on record. The USGS' rain gage on top of Puu Kukui had its lowest February total since 1978 and its lowest January-February rainfall total (6.09 inches) on record. The Waikapu Country Club site had its lowest February total since 2000.

All of the gages across Maui County had below average rainfall totals for 2022 through the end of February. The rain gage at West Wailuaiki Stream had the highest year-to-date total of 12.99 inches (37 percent of average).

### Big Island

February rainfall totals were below average at nearly all of the rain gages on the Big Island. Many of the totals were less than 50 percent of average. Only isolated gages in the South Kohala, Puna, and Kau Districts had near to above average totals. Among the automated gages, Waiakea Uka had the highest monthly total of 8.27 inches (65 percent of average). However, the highest overall total came from the Wainaku CoCoRaHS site with a manually recorded February total of 9.65 inches. The highest daily total was from Glenwood, with 2.55 inches on February 19. Kahua Ranch and Hakalau logged their lowest February totals since 2000 and 2010, respectively.

Rainfall totals for 2022 through the end of February were below average at all of the sites on the Big Island. Most of the totals were less than 50 percent of average. The Papaikou Well gage had the highest year-to-date total of 11.75 inches (41 percent of average).

## Current State of ENSO and predictions

Issued

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

**Synopsis: La Niña is favored to continue into the Northern Hemisphere summer (53% chance during June-August 2022), with a 40-50% chance of La Niña or ENSO-neutral thereafter.**

Below-average sea surface temperatures (SSTs) strengthened during February 2022 across the central and east-central tropical Pacific, with negative anomalies stretching from the central to eastern equatorial Pacific Ocean. In particular, the weekly Niño-3.4 index decreased from  $-0.6^{\circ}\text{C}$  at the beginning of February to  $-1.1^{\circ}\text{C}$  in the last week, while the other Niño SST regions were between  $-0.6^{\circ}\text{C}$  and  $-1.3^{\circ}\text{C}$  in the last week. Subsurface temperatures anomalies (averaged between  $180^{\circ}$ - $100^{\circ}\text{W}$  and 0-300m depth) were near zero, as the recent warming associated with the downwelling Kelvin wave has attenuated. Below-average temperatures have expanded near the surface and at depth near  $\sim 150^{\circ}\text{W}$ . Tropical atmospheric anomalies strengthened during the past month, with the extension of enhanced low-level easterly winds across the equatorial Pacific and upper-level westerly wind anomalies remaining over the east-central and eastern Pacific Ocean. Suppressed convection strengthened around the Date Line, while convection was enhanced near Indonesia. Overall, the coupled ocean-atmosphere system reflected the continuation of La Niña.

The IRI/CPC plume average for the Niño-3.4 SST index continues to forecast a transition to ENSO-neutral during the Northern Hemisphere spring. This month, the forecaster consensus favors a slower decay of La Niña due to the recent renewal of ocean-atmosphere coupling, which contributed to cooler near-term forecasts from several state-of-the-art climate models. For the summer and beyond, there is large uncertainty in the state of ENSO; however forecasters lean toward negative Niño-3.4 index values even if the index does not reach La Niña thresholds. In summary, La Niña is favored to continue into the Northern Hemisphere summer (53% chance during June-August 2022), with a 40-50% chance of La Niña or ENSO-neutral thereafter; click [CPC/IRI consensus forecast](#) for the chances in each 3-month period).

La Niña is anticipated to affect temperature and precipitation across the United States during the upcoming months (the [3-month seasonal temperature and precipitation outlooks](#) will be updated on Thurs. Mar. 17th).

## 6. Rainfall Verification DJF-December, January, February

DJF

Location	UKMO	ECMWF	CA	NASA	NCEP	IRI	APCC	Rainfall Outlook	Final Probs	3 mo Verification			PEAC DJF	
										z norm	Total (in)	Tercile	Forecast Final	Probs Final
<b>Palau</b>														
Airai 7° 22' N, 134° 32' E	Above	Above	Above	Avg-above	Above	Above	Above	Above	20:30:50	118	39.48	Above	Above	15:30:55
<b>FSM</b>														
Yap 9° 29' N, 138° 05' E	Above	Above	Above	Avg.	Above	Above	Above	Above	20:35:45	141	28.24	Above		
Chuuk 7° 28' N, 151° 51' E	Above	Above	Above	Above	Avg-above	Clim.	Above	Above	25:35:40	82	23.58	Below		
Pohnpei 6° 59' N, 158° 12' E	Above	Above	Above	Above	Avg-above	Avg-above	Above	Above	25:35:40	111	42.91	Avg.		
Kosrae 5° 21' N, 162° 57' E	Avg.	Avg.	Above	Avg.	Avg.	Above	Avg.	Avg.	30:40:30	100	45.80	Avg.		
<b>RMI</b>														
Kwajalein 8° 43' N, 167° 44' E	Above	Avg-below	Avg-above	Above	Avg.	Below	Avg-above	Avg-above	30:35:35	92	11.44	Below		
Majuro 7° 04' N, 171° 17' E	Above	Avg-above	Above	Avg-above	Avg.	Above	Avg.	Avg-above	30:35:35	86	22.28	Below		
<b>Guam and CNMI</b>														
Guam 13° 29' N, 144° 48' E	Above	Above	Avg-above	Avg-above	Avg.	Clim.	Avg-above	Avg-above	30:35:35	95	11.59	Avg.		
Saipan 15° 06' N, 145° 48' E	Above	Above	Avg-above	Avg-above	Avg.	Avg-below	Avg-above	Avg-above	30:35:35	113	10.15	Avg.		
<b>American Samoa</b>														
Pago Pago 14° 20' S, 170° 43' W	Avg.	Avg.	Below	Avg-above	Avg.	Below	Avg-below	Avg-Below	35:35:30	108	41.16	Avg.		
<b>State of Hawaii</b>														
19.7° - 21.0° N, 155.0° - 159.5° W														
Lihue	Above	Above	Avg-above	Avg-above	Avg-above	Above	Avg-above	Avg-above	30:35:35	206	14.86	Above		
Honolulu	Above	Above	Avg-above	Avg-above	Avg-above	Above	Avg-above	Avg-above	30:35:35	503	17.41	Above	Above	20:30:50
Kahului	Above	Above	Avg-above	Avg-above	Avg-above	Above	Avg-above	Avg-above	30:35:35	127	7.64	Avg.		
Hilo	Above	Above	Avg-above	Avg-above	Avg-above	Above	Avg-above	Avg-above	30:35:35	119	32.82	Avg.	Above	20:30:50

10	Hit
4	Miss
Heidke:	0.4158
RPSS:	0.2927

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

	Koror	Yap	Chuuk	Pohnpei	Guam	Saipan	Majuro	Kwaj

above (>)

	Lihue	Honolulu	Kahului	Hilo	Pago Pago	Kosrae

above (>)

## 6. Rainfall Outlook MAM– March, April, May

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

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

	Koror	Yap	Chuuk	Pohnpei	Guam	Saipan	Majuro	Kwai

above (>)

	Lihue	Honolulu	Kahului	Hilo	Pago Pago	Kosrae

above (>)

Notes for USAPI USDM authors -- Highlights from Reports from Around the Region and drought discussion:

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### **Drought monitoring updates.**

#### **A. End-of-February Monthly Drought Assessment:**

- i. With WxCoder III data, we have 23 stations in the monthly analysis.
- ii. February was dry (less than the 4- or 8-inch monthly minimum needed to meet most water needs) across the Marianas (all 3 stations), most of the RMI (Kwajalein, Wotje, Ailinglaplap, Jaluit), and in parts of the FSM (Yap, Ulithi, Woleai, Fananu, Chuuk, & Lukunor); it was wet elsewhere. February was drier than normal at Saipan & Guam (Marianas) and Chuuk, Kosrae, and Lukunor (FSM); February was wetter than normal at the rest of the stations.
- iii. The end-of-February monthly analysis (February 28) is consistent with the weekly analyses for February 22 and March 1, and is the same as the March 1 analysis. Compared to the end-of-January monthly analysis:
  - a. D2 improved to D1 at Kwajalein.
  - b. D0 ended at Nukuoro and Kapingamarangi.
  - c. D0 developed at Guam, Rota, and Jaluit.
  - d. D0 worsened to D1 at Woleai & Chuuk Lagoon.
  - e. D1 worsened to D2 at Fananu.
  - f. D3 continued at Wotje.
  - g. D1 continued at Ailinglaplap.
  - h. D0 continued at Majuro & Mili.
  - i. The USDM status stayed the same (D-Nothing) at the other stations.
  - j. Utirik was plotted as missing due to missing data for the month.

- iv. Some February 2022 precipitation ranks:
- a. **Wotje:** driest (tie) January-February (in 39 years of data), fourth driest February (behind 1990, 1994, and 2021 which each had zero inches), second driest December-February, and sixth driest April-February.
  - b. **Fananu:** driest February, but based on only 8 years of data.
  - c. **Lukunor:** fifth driest February (38 years of data) and sixth driest June-February.
  - d. **Guam:** tenth driest February (65 years).
  - e. **Woleai:** tenth driest February (38 years) and fourth driest January-February.
  - f. **Chuuk:** sixth driest January-February (71 years).
  - g. **Ailinglaplap:** third driest May-February (36 years of data).
  - h. **Pingelap:** eighth driest December-February (37 years) and seventh driest August-February.
  - i. **Jaluit:** eighth driest July-February (37 years), June-February, and April-February.
  - j. **Nukuoro:** eighth driest September-February and August-February (38 years).
  - k. **Kapingamarangi:** in spite of having only the 15th wettest February (in a 35-year record) and 15th driest January-February, it was still the fourth driest August-February, July-February, June-February, and May-February.
  - l. **Kwajalein:** in spite of having the ninth wettest February (in a 70-year record), it was still the fifth driest June-February.

- B. Current (Weekly) Drought Conditions: The discussion above is the monthly (end of February) analysis. The latest weekly USAPI USDM assessment may show different USDM classifications. The latest weekly USAPI USDM assessment is for March 8.
- i. The March 8 analysis has D0 at Woleai & Ailinglaplap, and D-Nothing at Jaluit & Mili; otherwise it is the same as the February analysis.

- C. February 2022 NCEI State of the Climate Drought Report: The February 2022 NCEI SotC Drought report will go online tomorrow.
- i. The web page url for the February report will be:
    - a. <https://www.ncdc.noaa.gov/sotc/drought/202202#regional-usapi>