NWS Climate Services

July PEAC Audio Conference Call Summary

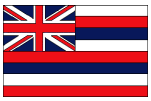
9 July, 1430 HST (10 July 2020, 0030 GMT)

June 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	June	Inches	inches	AMJ
Airai	14.21	83	17.04	-2.83	49.15
Yap	18.56	154	12.04	6.52	31.28
Chuuk	11.45	98	11.66	-0.21	32.67
Pohnpei	11.70	79	14.81	-3.11	59.64
Kosrae	23.64	161	14.64	9.00	82.58
Kwajalein	6.09	88	6.93	-0.84	19.88
Majuro	12.83	117	11.01	1.82	42.56
Guam NAS	3.40	55	6.18	-2.78	14.03
Saipan	1.96	54	3.62	-1.66	3.56
Pago Pago	20.76	389	5.33	15.43	43.28
Lihue	0.98	77	1.28	-0.30	4.82
Honolulu	0.10	56	0.18	-0.08	3.21
Kahului	0		0.09	-0.09	3.53
Hilo	4.46	70	6.33	-1.87	15.66

Reports from around the Region



Hawaii (Kevin Kodama)

Precipitation Summaries for HI can also be found:

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

Kauai

June rainfall totals from Kauai were mostly below average. There were a few near to above average totals from the west side of the island, mostly due to afternoon showers on lighter trade wind days. Gages along the lower leeward elevations from Hanapepe to Waimea had monthly totals 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 32.08 inches (97 percent of average) and the highest daily total of 4.34 inches on June 7. The Wainiha rain gage had its lowest June total since 2009.

All of the rain gages across Kauai had near to above average totals for 2020 through the end of June. Most of the totals have been trending toward the average since April. Mount Waialeale had the highest year-to-date total of 231.56 inches (123 percent of average).

Oahu

June rainfall totals across Oahu were near to below average. The Waianae Range was especially dry with all totals less than 50 percent of average. The USGS' Poamoho Rain Gage No. 1 had the highest monthly total of 10.46 inches (62 percent of average). The highest daily total of 1.78 inches came from the Manoa Lyon Arboretum gage on June 17. The Mililani and Poamoho gages had their driest June totals on record, and the Wheeler Army Airfield gage had its lowest June total in over 20 years.

Despite the recent dryness, most of the Oahu rainfall totals for 2020 through the end of June were still near to above average due to wet conditions earlier in the year. The USGS' Poamoho Rain Gage No. 1 had the highest year-to-date total of 91.94 inches (83 percent of average).

Maui

Rainfall totals across Maui County ranged from near average to well below average. Several sites in Maui's central valley did not record any measurable rainfall the entire month. The persistent trade winds helped sites along the windward slopes record near average totals. The USGS' rain gage on Puu Kukui had the highest monthly total of 13.20 inches but this was only 45 percent of the June average. This site also had the highest daily total of 2.41 inches on June 9. Kahului Airport had its lowest June total since 2007.

Most of the gages in Maui County had near to above average rainfall totals for 2020 through the end of June. The USGS' rain gage on Puu Kukui had the highest year-to-date total of 129.61 inches (68 percent of average).

Big Island

Gages in the Hamakua, Hilo, and Puna areas of the Big Island had mostly near to below average monthly totals. Data from the Kona slopes indicated mostly near to above average monthly totals, with Honaunau and Kealakekua having their highest June totals since 1997. The Kau District had a wide range of conditions with some sites reporting above average totals and others at less than 50 percent of the June average. The USGS' rain gage at Kawainui Stream had the highest monthly total of 10.79 inches (109 percent of average) and the highest daily total of 2.45 inches on June 10.

Big Island rainfall totals for 2020 through the end of June remained near to above average at most of the gages. The USGS' Saddle Road Quarry gage had the highest year-to-date total of 105.62 inches (152 percent of average).

American Samoa (Richard Heim– USAPI narrative):

Rainfall was adequate for the week in American Samoa. Weekly rainfall totals were 3.23 inches at Pago Pago, 2.54 inches at Siufaga Ridge (NPS), and 1.89 inches at the NPS automated station at Toa Ridge. This was another wet week in American Samoa. Weekly rainfall totals were 3.83 inches at Pago Pago, 5.74 inches at the automated station at Siufaga Ridge, and 3.50 inches at the automated station at Toa Ridge. June monthly totals were 20.76, 22.19, and 14.73, respectively, which are above the 8-inch monthly minimum. With June continuing a string of wet to very wet months, D-Nothing continued at Tutuila.

Reports from around the Region CON'T

Kwajalein (Jason Selzler):

In the Republic of the Marshall Islands, precipitation remained low at Kwajalein and Wotje with those islands remaining at D1-SL and D3-SL, respectively. Other islands fared better, receiving more than the 2-inch weekly minimum to meet needs. Ailinglapalap received 2.31 inches; Jaluit, 2.39 inches; and Majuro, 3.12 inches. Mili trended slightly dry, receiving 1.39 inches, but previous weeks brought ample rain.

Majuro (Chip Guard):

The ITCZ and weak disturbances will bring near-adequate rainfall the next couple of weeks for Majuro and Wotje. 10-day rainfall totals show 3 to 3.5 inches of rainfall. Drier conditions will persist farther north at Utirik with 10-day rainfall totals around 1.5 inches. A north- ward surge of weak disturbances or surface troughs within the ITCZ could bring more rain to Utirik in the coming weeks.

Pohnpei (Eden Skilling)

A dry trade-wind regime dominated in northern parts of Chuuk and Pohnpei States and across much of the region north of 10 degrees North latitude.

Kosrae (Eden Skilling):

Surface troughs, trade-wind convergence and tropical disturbances migrated across Micronesia and were especially active in two regions: Palau and Yap State in the west, and Kosrae State to the southern Marshall Islands (RMI) in the east. Kosrae also received ample rain for the week with 4.03 (7/1-7/7) inches. Kosrae received plenty of rain for June. No reports of inundation.

Chuuk (Sanchez Salle):

A dry trade-wind regime dominated in northern parts of Chuuk. Higher tides were observed during June but no inundation was reported.

Yap (Landon Aydlett:

Surface troughs, trade-wind convergence and tropical disturbances migrated across Micronesia and were especially active in two regions: Palau and Yap State in the west, and Kosrae State to the southern Marshall Islands (RMI) in the east.

Palau (Kikuko Mochimaru):

There were a few island heating events in the first week of June that provided over an inch of rain per day for a couple of days. By the second week, on June 8th and 9th, converging southwest winds associated with Invest 98W (later known as Tropical Cyclone Nuri) provided over an inch and a half to over four inches of rain across majority of the stations. Moderate to strong trade-wind convergence was the main weather feature for the remainder of the month. Airai and Koror's monthly totals for June fell below Normal at 84% and 72%, respectively.

These pictures below and to the right are of the Rock Islands southeast of Koror, generally covered with all shades of green vegetation with approximately 10% of browning. (Photo take on June 21, 2020 by K. Mochimaru)

Reports from around the Region CON'T

Guam and CNMI (Chip & Landon):

Guam received 0.49 inches for the past week, less than half of the weekly minimum of 1 inch needed. Saipan ASOS received 0.72 inches, the Saipan manual gauge registered 1.15 inches, and Saipan (NPS) received 0.42 inches. Rota remained dry again, receiving just 0.11 inches for the week, on the heels of two dry weeks with rainfall amounting to 0.17 and 0.38 for the weeks ending June 23 and June 30.

Tropical Cyclones (Mark Landers):

Quiet T.C. period so far with what seems to be a strong La Nina season.

5. Current State of ENSO and predictions

ENSO Alert System Status: Final La Niña Watch

Issued 9 July 2020

Synopsis: ENSO-neutral is favored to continue through the summer, with a 50-55% chance of La Niña development during Northern Hemisphere fall 2020 and continuing through winter 2020-21 (~50% chance).

During June 2020, sea surface temperatures (SST) were near average in the east-central equatorial Pacific and below average in the eastern Pacific. The Niño-4 and Niño-3.4 indices were near zero during the latest week, while the Niño-3 and Niño-1+2 indices were negative. Negative equatorial subsurface temperature anomalies (averaged across 180°-100°W) weakened from May through June. However, below-average subsurface temperatures continued in the eastern equatorial Pacific. Also during the month, low-level wind anomalies were easterly across the east-central Pacific, while upper-level wind anomalies were westerly over parts of the far western and eastern Pacific. Tropical convection was suppressed over the western and central Pacific, and near average over Indonesia. Overall, the combined oceanic and atmospheric system is consistent with ENSO-neutral. The models in the IRI/CPC plume are roughly split between La Niña and ENSO-neutral (Niño-3.4 index between -0.5°C and +0.5° C) during the fall and winter. Based largely on dynamical model guidance, the forecaster consensus slightly favors La Niña development during the August-October season, and then lasting through the remainder of 2020. In summary, ENSO-neutral is favored to continue through the summer, with a 50-55% chance of La Niña development during Northern Hemisphere fall 2020 and continuing through winter 2020-21 (~50% chance; click CPC/IRI consensus forecast for the chance of each outcome for each 3-month period).

6. Rainfall Verification AMJ– April, May, June (Sony)

The verification result of **AMJ** rainfall forecasts was 9 hits and 5 misses (Heidke score: 0.3417). The stations that hit the forecasts were: Yap, Pohnpei, Kosrae, Kwajalein, Guam, Saipan, Lihue, Honolulu, and Kahului. The 5 missed stations were Arai, Chuuk, Majuro, Pago Pago, and Hilo.

AMJ Verification Location	Rainfall Outlook	Final Probs	3 month Verification		
			% norm	Total (in)	Tercile
Palau					
Airai 7º 22' N, 134º 32' E	Avg-below	**35:35:30**	118	49.15	**Above**
FSM					
Yap 9º 29' N, 138º 05' E	Avg-below	**35:35:30**	123	31.28	**Avg.**
Chuuk 7º 28'N, 151º 51'E	Avg-above	**30:35:35**	92	32.67	**Below**
Pohnpei 6º 59'N, 158º 12'E	Avg-above	**30:35:35**	112	59.64	**Above**
Kosrae 5º 21'N, 162º 57'E	Avg-above	**30:35:35**	**165**	82.58	**Above**
RMI					
Kwajalein 8º 43'N, 167º 44'E	Avg.	**30:40:30**	105	19.88	**Avg.**
Majuro 7º 04' N, 171º 17'E	Avg.	**30:40:30**	139	42.56	**Above**
Guam and CNMI					
Guam 13º 29'N, 144º 48' E	Avg-below	**35:35:30**	116	14.03	**Avg.**
Saipan 15º 06'N, 145º 48' E	Avg-below	**35:35:30**	**41**	3.56	**Below**
American Samoa					
Pago Pago 14º 20'S, 170º 43'W	Avg.	**30:40:30**	**178**	43.28	**Above**
State of Hawaii					
19.7º - 21.0' N, 155.0º - 159.5' W					
Lihue	Avg-above	**30:35:35**	102	4.82	**Avg.**
Honolulu	Avg-above	**30:35:35**	**292**	3.21	**Above**
Kahului	Avg-above	**30:35:35**	**240**	3.53	**Above**
Hilo	Avg-above	**30:35:35**	69	15.66	**Below**

9	**Hit**
5	**Miss**
Heidke:	**0.3417**
RPSS:	**0.0223**

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

	Koror	Yap	Chuuk	Pohnpei	Guam	Saipan	Majuro	Kwaj
below (<)								
33.33%	34.28	21	32.97	49.71	13.05	8.14	25.63	15.41
near								
66.66%	42.1	32.89	39.15	56.96	15.95	11.06	34.51	26.35
above (>)								

	Lihue	Honolulu	Kahului	Hilo	Pago Pago	Kosrae
below (<)						
33.33%	4.74	1.23	1.25	21.42	22.42	47.62
near						
66.66%	5.97	1.77	2.17	29.01	33.53	51.87
above (>)						

6. Rainfall Outlook JAS- July, August, September (Sony)

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

Tercile Cut-offs for JAS 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 (>)						

Drought monitoring updates.

A. End-of-June Monthly Drought Assessment:

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

ii. June was dry (less than the 4- or 8-inch monthly minimum needed to meet most water needs) in the Marianas, northern RMI, Jaluit (RMI), & Fananu & Kapingamarangi (FSM). It was wet across the rest of Micronesia and American Samoa. The end-of-June monthly analysis (June 30) is consistent with the weekly analyses and, in fact, is the weekly analysis for June 30. Compared to the end-of-May monthly analysis:

A. The USDM status improved in the central to western FSM, and Ailinglapalap (RMI):

1. Yap, Chuuk, & Ailinglapalap went to D-Nothing; Woleai & Ulithi went to D0-S.

B. The USDM status worsened in the extreme southern FSM & northern Marianas:

1. Kapingamarangi went to D2-S; Saipan went to D4-SL.

C. The USDM status stayed the same at the other stations:

1. D3-SL at Rota & Wotje; D1-SL at Kwajalein & Guam; D-Nothing at Palau, Pohnpei, Pingelap, Kosrae, Lukonor, Nukuoro, Jaluit, Mili, Majuro, & Pago Pago.

D. Fananu began reporting data and was plotted as D0-S; Utirik was plotted as missing due to missing data for most of May & all of June.

iii. Some June 2020 precipitation ranks:

A. Saipan: 6th driest June in their 40-year record; driest May-June, Apr-June, Mar-June; 2nd driest Feb-Jun & Dec-Jun; 3rd driest Jan-Jun; but 2nd wettest July-June (31 yrs)

B. Kapingamarangi: 5th driest June (30 yrs); 2nd driest May-Jun (26 yrs); 4th driest Apr-Jun & Dec-Jun; 5th driest Jan-Jun

C. Fananu: driest June (8 yrs)

D. Pohnpei: 8th driest June (69 yrs)

E. Lukonor: 18th driest June (36 yrs) but 2nd driest July-June (23 yrs)

F. Woleai: 16th driest June (38 yrs) but 4th driest July-June (23 yrs)

G. Jaluit: 6th driest June (36 yrs) & 5th driest July-June (34 yrs)

H. At the other extreme:

1. Mili: 3rd wettest June (36 yrs) & wettest July-June (32 yrs) & other time periods

2. Pago Pago: wettest June May (55 yrs) & wettest July-June (54 yrs) & other time periods

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

i. The July 7 analysis has mostly the same status as end of June, except Woleai was improved to D-Nothing

C. June 2020 NCEI State of the Climate Drought Report: The June 2020 NCEI SotC Drought report will go online Monday, July 13.

i. The web page url will be:

A. https://www.ncdc.noaa.gov/sotc/drought/202006#det-reg-pacis-usapi

D. Automated Ingest of Daily Rainfall Data: -- NO CHANGE IN STATUS

i. Automated Program: -- NCEI changed servers in June 2020, so the automated program is now running on climon-prod instead of cmb-us. It is also running in parallel on climon-dev. The automated program that ingests the USAPI station daily data has been modified to send out a master file of the current data to the authors, in case NCEI's web pages go down because of a future government shut down or for other reasons.

Ii. **Updates and Fixes**

A. Kwajalein is getting into the automated data system now, but Pago Pago still is not getting in on a regular basis. Efforts are being made to get Pago Pago in there.

B. *Find out why Saipan's ASOS data are being transmitted and getting into our automated process instead of the manual gauge WxCoder III data.*

C. Add new stations to the automated process (Capital Hill 1, Nimitz Hill, Koror COOP, Mwoakilloa). I need to identify the WxCoder I.D. call sign and the COOP station numbers for these stations, then find them in our (NCEI) metadata base, then determine if they are being captured from the NOAAPort feed.

Iii. Web interface: url is:

A. https://www.ncdc.noaa.gov/temp-and-precip/drought/usapi-pcp/

B. The "All Indicators" tab is the most used tab by USDM authors:

https://www.ncdc.noaa.gov/temp-and-precip/drought/usapi-pcp/all

C. The "Weekly", "Monthly", and "Seasonal" tabs have data tables as well as maps plotting the values.

D. The web page is updated automatically every day by a computer program that automates the ingest and processing of the data. The program runs every morning at 10 a.m. EST; it also sends out an email every day containing daily and weekly rainfall totals for several USAPI stations.

E. Some data on the web page are color coded to indicate wet or dry conditions (weekly and monthly precipitation totals), missing days (grey), and USDM categories (monthly and seasonal rank percentiles).

F. The web page is for internal use by NWS Pacific Island personnel and USDM author personnel. It is not for public release (NCEI does not have the staff to answer questions from the public and media and other users about why there is missing data).

E. USAPI USDM Authors: -- NO CHANGE IN STATUS

i. The OCONUS (USAPI) USDM became an operational product at the beginning of March, with authorship rotating amongst the NCEI, NDMC, USDA, & CPC authors.

ii. There are 7 USAPI USDM (OCONUS) authors: Ahira Sanchez-Lugo and myself (Richard Heim) from NCEI; Curtis Riganti, Claire Shield, and Deb Bathke from NDMC; Brad Rippey (from USDA); Anthony Artusa (from CPC).

A. Claire, Curtis, & Brad have authored besides Ahira & me.

Iii. **With the June 4, 2019 map, the U.S. Virgin Islands have been added to the USDM product suite. The USDM web site (https://droughtmonitor.unl.edu/) has been revised so that two USDM products (sets of maps) are produced each week: a CONUS USDM and an OCONUS USDM. The OCONUS USDM includes the USAPI and the US Virgin Islands (dots), while the CONUS USDM is what has been done for years (50 States & Puerto Rico) (polygon shapefiles).**

F. USAPI Listserv: -- NO CHANGE IN STATUS

i. NDMC (National Drought Mitigation Center) set up a listserv for communication of the USAPI USDM analyses and discussion, similar to the listservs that were set up for the Mainland and for the U.S. Virgin Islands. **We have been using this for communications, both for sending out the USAPI USDM analyses and it is also for NWS offices to report drought impacts to the authors and rest of the group.**

ii. If others want to be added to the listserv, let me (Richard Heim) or Brian Fuchs know and Brian will get them added.

iii. There is also a DM Update Listserver for those who just want to know when the new USDM maps are released.

Participants:

NWS Climate Services Program Managers (CSPMs):

WSO Climate Service Focal Points (CSFPs):

(Majuro) Sanchez (Chuuk) Eden(Pohnpei)
(Kosrae) Jay (Yap) (Pago Pago)
(Palau) Kiku Jason (Kwajalein)
Chip, Mark, Landon (Guam & CNMI)

PEAC Principal Research Scientist: Rashed Chowdhury

WERI Scientist:

CPC Forecaster: Dan Collins

WFO Guam : Landon

NWS MIC, Honolulu: Christopher Brenchley

NCEI: Richard Heim

Pacific RISA:

NWS Hydrologist: Kevin Kodama

Additional Attendees:

John Marra

Eric Lau

Dave Simeral

Bill Ward

Elizabeth Vickery

**** Next Call– 13 August 2020, 1430 HST (14 August 2020, 0030 GMT)****