NWS Climate Services

April PEAC Audio Conference Call Summary

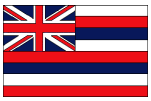
11 April, 1430 HST (12 April 2019, 0030 GMT)

March rainfall totals reported (Joe)

% Normal: blue above normal & red below normal. Departure from normal: blue-above & red-below (same for 3 mon %)

	Rainfall	% Norm	Median	Departure	3 Month Total
	Inches	March	Inches	inches	JFM
Koror	6.24	84	7.44	-1.20	19.48
Yap	4.88	107	4.56	0.32	22.35
Chuuk	14.56	175	8.32	6.24	41.92
Pohnpei	18.84	143	13.17	5.67	44.09
Kosrae	23.02	143	16.06	6.96	51.22
Kwajalein	1.22	52	2.35	-1.13	7.58
Majuro	6.74	102	6.58	0.16	19.06
Guam NAS	0.81	39	2.07	-1.26	11.95
Saipan	0.53	28	1.89	-1.36	3.83
Pago Pago	11.47	107	10.68	0.79	46.61
Lihue	1.11	43	2.59	-1.48	4.64
Honolulu	0.08	10	0.79	-0.71	2.58
Kahului	0.59	31	1.88	-1.29	7.60
Hilo	4.67	43	10.78	-6.11	17.17

1. Reports from around the Region



Hawaii (Kevin/Rashed)

Kauai

Windward Kauai gages recorded near to below average rainfall for the month of March. Drier conditions along the leeward slopes resulted in all gages in the area having less than 50 percent of average March rainfall. The U.S. Geological Survey's (USGS) Mount Waialeale gage had the highest monthly total of 27.11 inches (72 percent of average) and the highest daily total of 6.14 inches on March 26. The overall dryness during the month produced the lowest March totals since 2008 at Lihue Airport and Wainiha, and since 1993 at Hanapepe.

A majority of the gages reported below average rainfall totals for 2019 through the end of March. Some of the windward gages had near to above year-to-date totals due to the wet conditions in February. Mount Waialeale had the highest year-to-date total of 67.59 inches (78 percent of average). The gages near Hanapepe on the south side of the island have recorded only a couple of inches of rain all year, or less than 20 percent of average.

Oahu

All of the Oahu gages posted below average March rainfall totals, many of which were less than 20 percent of average. The Manoa Lyon Arboretum gage had the highest monthly total of 7.76 inches (56 percent of average) and the highest daily total of 1.66 inches on March 12. There were no monthly rainfall records broken, but the gages at Lualualei and Punaluu Pump have not had March totals this low since 1993. At Waihee Pump, it was the driest March since 2001. At 12 other sites across the island, it was the driest March since 2008.

Most of the rain gages on Oahu had below average rainfall totals for 2019 through the end of March. Many of the leeward totals were less than 50 percent of average. The Manoa Lyon Arboretum gage had the highest year-to-date total of 43.63 inches (125 percent of average).

Maui

The dry March weather resulted in most of the Maui County gages recording less than 50 percent of average rainfall for the month. The USGS' rain gage at West Wailuaiki Stream had the highest monthly total of 22.88 inches (79 percent of average), while their gage on top of Puu Kukui observed the highest daily total of 3.34 inches on March 6. Kula Branch Station posted its lowest March total since 1992, and the gages at Molokai Airport, Kahului Airport, Kaunakakai, Kahakuloa, and Ulupalakua Ranch had their lowest totals since 2008.

Due to the very wet conditions in February, rainfall totals for 2019 remained near to above average across Maui County despite the March dryness. The rain gage at West Wailuiki Stream had the highest year-to-date total of 77.35 inches (121 percent of average).

Big Island

Most of the rain gages on the Big Island recorded less than 50 percent of average rainfall for the month of March. The USGS' rain gage at Kawainui Stream had the highest monthly total of 16.40 inches (99 percent of average). The gage at Kealakekua had the highest daily total of 3.68 inches from the heavy rain event on the afternoon of March 27. This heavy rain event helped produce the highest March total at Kealakekua since 2006, and the sole above average March total on the Big Island. In contrast, Kapapala Ranch posted its lowest March total since 2008.

Nearly all of the gages on the Big Island had near to below average rainfall for 2019 through the end of March. The USGS' rain gage at Kawainui Stream had the highest year-to-date total of 50.08 inches (126 percent of average).

American Samoa (Chip, Mark):

American Samoa (AS) is influenced by Tropical Wet climate. The month of March received 107% of normal (% of normal and % are synonymously used throughout this call-note) rainfall. Trades are picking up as SPCZ is still weakly active over American Samoa! There is no report of any significant damage, but sea level stays elevated. Model-based PEAC's seasonal climate outlook is now indicating above-average rainfall for AMJ with moderate confidence. Currently the sea level is staying very high (+7 inches above normal). Forecasts indicate that it will stay elevated over the next three months. There is indication that the upcoming TC season in American Samoa could be busy (Source: NIWA).

Kwajalein (Jason):

Dry trades remain over Kwajalein Atoll. The atoll generally experiences a relatively dry windy season from mid-December to mid-May and a relatively wet calm (wind) season from mid-May to mid-November. March recorded only 52% of normal rainfall. The sea level is near normal. Current model projections show most of the precipitation staying to the north or southwest. Winds during this period will be gentle and generally easterly. PEAC-model forecasts have trended to show below-average rainfall and near normal sea level over the next 3 months, and there is no active TC warning now. (Also see https://www.rts-wx.com/forecasts-kwajalein-atoll-forecast)

Majuro (Lee):

Majuro has recorded less than average rainfall for the last few months. However, In March, it recorded slightly above normal rainfall at 102%, but the island is still a bit dry. Current water reserves are at about 67% capacity compared to max capacity of 36 million gallons, which has already caused for water rationing on the Island. Currently, the island has been divided into 3 sections where water is only available once a week from 4:30 PM to 8:30 PM in each section. Several fires broke out in different places around Majuro, but there was no significant damage. PEAC-model forecasts have trended average-below rainfall and slightly elevated sea level over the next 3 months, and there is no active TC warning now.

Reports from around the Region (CON'T)

Pohnpei (Wallace):

Pohnpei recorded 143% of normal rainfall in March. Currently, the streamflow is less than normal, and the southern part of the island is drier than the eastern part. There have been some high surf and some minor inundations along the North-East side of the island. The outer islands have reported fairly normal conditions. PEAC-model forecasts have trended average rainfall and slightly elevated sea level over the next 3 months. The first Drought Statement issued from Guam Forecast Office was on February 11, 2019.

Kosrae (Eden):

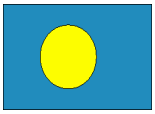
There were a few high surf warning issued in the month of March, and there was some minor flooding on the reads. Kosrae recorded 143% of normal rainfall in March, and have already recorded 13.7 inches so far in April. The rainfall situation was also better in January and February—near normal (93% and 98%). The overall climate looks like post El Niño type. PEAC-model forecasts have trended average-above rainfall and slightly elevated sea level over the next 3 months.

Chuuk (Chip):

Chuuk has been fairly normal (wet) for the last couple of months. Chuuk received about 122% and 175% of normal rainfall in February and March, so the island is fairly wet now. PEAC forecasts indicate average-below rainfall for the island state for the next three months. While there is no operational tide gauge now sited at Chuuk, based on virtual satellite data, it is seen that the mean sea level throughout Chuuk State has been falling over the past few months. It is currently near normal.

Yap (David):

Yap is in their monsoon season with the monsoon trough moving towards them. They received 107% of normal rainfall in March. Yap is bit drier now, including the outer islands. The sea level recorded further fall and is currently below normal (-6 inches). PEAC forecasts are favoring below-average rainfall and below normal sea level in the next three months.



Palau (Kikuko, Chip):

The near equatorial troughs and associated weak low pressure, circulations are struggling to make its westward approach to the republic of Palau. As the features approach Palau, the model precipitation amounts decrease even more and/or the features shift south of the main islands of Palau. The expectation is that the monsoon will be active this summer to make up for a below average dry season. Majority of models opt for the lower tercile and a couple are a little conservative. In the models and in reality, there's variability in rainfall amounts and their location but the general trend leans toward below normal rainfall in the AMJ season. PEAC forecasts are favoring below-average rainfall.

Guam and CNMI (Chip, Mark):

The summer monsoon became well established in the western North Pacific Basin, and after a wet month Guam and Saipan are now dry. While Guam received only 39% of normal rainfall in March, Saipan received ONLY 8%. The dry yellow grasses have contributed to the many brush fires in Guam and Saipan. PEAC forecasts are now indicating below-average rainfall for both Guam and Saipan over the next three months and slightly below normal sea level.

2. **Tropical Cyclones** (Mark)

Taking into account outside guidance, and considering current weather patterns and the evolution of ENSO, the PEAC will adopt the press-release forecast by the WFO for the 2018 typhoon season for Guam and the CNMI, wherein the odds for a severe tropical storm at each location is given as 50% (about average); the odds of a CAT 1 typhoon is set at 25% (above average); and the odds for a major typhoon (CAT 3 or higher) is set at 15% (slightly above average). Elsewhere in Micronesia, the odds for damaging TC strikes are set to slightly above average. Eastward of Chuuk State, the risk of a tropical storm or typhoon is much lower than at locations farther to the west, except during strong or some moderate El Niño events. There are indications that the upcoming 2018/2019 TC season in American Samoa could be busy.

3. Sea Level Discussion Remarks (Rashed) All values are in inches (1 inch=25.4 mm); Seasonal cycle removed.

Tide Gauge stations	Seasonal Forecasts AMJ (mean[1]) (ano)	SD of JFM (mean)	Monthly mean[1] anomaly Observed rise/fall Jan/ 2019	Feb/ 2019	Mar/ 2019	Current State/ Trend NDJ 2018	Seasonal Fore-casts AMJ (max[2]) (ano.)	SD of JFM (max)	Monthly max[2] anomaly Observed rise/fall Jan/ 2019	Feb/ 2019	Mar/ 2019
Marianas, Guam	0	4.4	-3	-1.2	+1	Normal	+19	4.0	**+12**	**+18**	**+16**
Malakal, Palau	-2	5.3	-5	-6	-2	**Below**	+37	5.3	+33	+32	+37
Yap, FSM	-3	4.9	**-5**	**-6.6**	**-7**	Normal	+32	5.2	+23	+25	+23
Chuuk, FSM***	-2	*	**0**	**0**	**0**	Normal	+29				
Pohnpei, FSM	+2	3.6	**+2**	**+4.1**	**0**	Normal	+28	3.5	**+35**	**+34**	**+25**
Kapingamarangi	+2	**	**	**	**	**Above**	**	**	**	**	**+27**
Majuro, RMI	+3	2.4	+7	+3.4	+3	**Above**	+43	2.7	+50	+47	+45
Kwajalein, RMI	+2	3.1	+3.3	+2.2	+2	Normal	+41	3.4	+44	+43	+44
Pago Pago*	+5 [+10]	3.3	+6 [+11]	+6 [+11]	+7 [+12]	**Above**	(+30) [+35]	3.8	+41	+41	+39
Honolulu	+2	1.6	+2	+1	0	Normal	+20	2.4	+23	+20	+17
Hilo	+2	2.0	**0**	**0**	**+1**	Normal	+22	3.0	+23	+23	+20

+/- indicate positive anomaly (rise) and negative anomaly (fall) respectively. Note that any changes between (0~ ±1) inch is considered to be negligible. Also note that changes within the range of (+/-) 2 inches are unlikely to cause any adverse climatic impact. *** (Experimental) Satellite Aviso Altimetry data, ** Data currently unavailable; *Figures in parenthesis for monthly-max anomaly indicates difference between the maximum anomaly for the given month and the long-term monthly average anomaly.*

1: D*ifference between the mean sea level for the given month and the 1983 through 2001 monthly mean sea level value at each station (seasonal cycle removed);* 2*: Same as 1 except for maxima; SD stands for standard deviations.*

**** In Pago Pago,*** There was a level shift (approximately 5 inches) in American Samoa at the time of September 2009 earthquake. So, -5 inches has been adjusted (shown in parenthesis) to the current tide-gauge values of Pago Pago.

Current Conditions: Since late October, the tropical Pacific Ocean surface temperature has maintained levels indicative of borderline to weak El Niño. However, although some atmospheric features have responded to the warmed ocean, others have shown only weak or short-lived responses. For example, reduced low-level trade winds across the tropical Pacific have been observed sporadically, and the pattern of cloudiness and rainfall resembled the pattern expected with El Niño only during early February. Models and expert opinion suggest a continuation of warm-neutral to weak El Niño conditions through April and May of 2019. Many models now suggest a strengthening of El Niño conditions toward the middle of the year, while a sizable minority does not predict new El Niño development. *Currently sea level in Palau is 6 inches below normal, which is an indication of El Niño as the sea level in Palau is highly sensitive to ENSO, with El Niño to low sea level and La Niña to high sea level.*

The recent variability of sea level may be explained as WP El Niño, the positive sea level anomaly is located over/or near the central Pacific and maximum near 160^{0}E-180 (i.e., Pohnpei, Kwajalein, and Majuro). The negative SLA is located near 130^{0}E-150^{0}E (i.e., Guam, Koror, Yap, and Chuuk) (also see Kug, J.-S., et al. (2009).

Impacts: T*here is no noticeable inundation in low-lying atolls and there is no report for damage, so far.*

Forecasts for AMJ: PEAC-CCA Statistical model is predicting **normal to marginally** below-normal sea level to the north Pacific islands (***Guam, Koror, Yap, and Chuuk)***. RMI's stations are likely to stay slightly higher than normal. In Hawaii, both Honolulu and Hilo are likely to be near normal.

Kug, J.-S., et al. (2009). Two types of El Niño events: Cold tongue El Niño and warm pool El Niño. J. Climate, 22, 1499–1515 (available @ https://journals.ametsoc.org/doi/pdf/10.1175/2008JCLI2624.1).

Chowdhury M. R., Chu P-S, and Guard C. (2014): An Improved Sea Level Forecasting Scheme for Hazards Management in the U.S.-Affiliated Pacific Islands. *Int. J. Climatology* 6, 2320-2329.

4. Current State of ENSO and predictions: (Matt) **ENSO Alert System Status: El Niño Advisory**

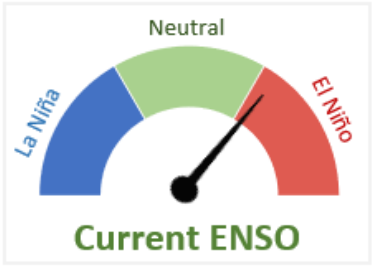
(11 April 2019)

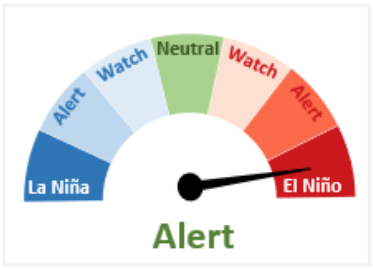
Synopsis: A weak El Niño is likely to continue through the Northern Hemisphere summer 2019 (65% chance) and possibly fall (50-55% chance).

El Niño continued during March 2019, as above-average sea surface temperatures (SSTs) persisted across the equatorial Pacific Ocean. The latest weekly values of the Niño3 and Niño4 indices were +0.8°C, while the Niño3.4 value was +0.9°C. The anomalous upper-ocean heat content (averaged across 180°-100°W) decreased during March but remained well above average, as the above-average temperatures at depth peaked in early March in association with a downwelling equatorial oceanic Kelvin wave. Enhanced equatorial convection was observed near the Date Line and in the western Pacific, while suppressed convection prevailed over western Indonesia. Low-level wind anomalies were westerly in the western Pacific Ocean during March. Meanwhile, upper-level winds were mostly near average. The equatorial and traditional Southern Oscillation Index values were negative. Overall, these features are consistent with a weak El Niño.

The majority of models in the IRI/CPC plume predict a Niño 3.4 index of +0.5°C or greater through the remainder of 2019. Most forecasters expect SST anomalies in the Niño 3.4 region to remain between +0.5°C and +1.0°C for at least the next several seasons, indicating a weak El Niño. However, because forecasts made during spring tend to be less accurate, the predicted chance that El Niño will persist through fall is currently 50-55%. In summary, a weak El Niño is likely to continue through the Northern Hemisphere summer 2019 (65% chance) and possibly fall.

El Nino-Southern Oscillation Watch





Source: NIWA Island Climate Update: April 2019

Current situation

Sea surface temperatures remained above average in the equatorial Pacific Ocean during March 2019.

The atmosphere continued to respond to the oceanic anomalies

Forecast situation

90% chance for El Niño conditions during April-June 2019.

73% chance for El Niño conditions during July-September 2019

According NIWA, the probability for oceanic El Niño conditions is 90% for the April-June period. Beyond this, for the July to September period, the probability for oceanic El Niño conditions increased to 73%, up from 55% last month. This continues to suggest the potential for a 'protracted' event (multi-year duration).

5. Rainfall Outlooks for AMJ (Joe)

The verification result of **JFM** rainfall forecasts was 9 hits and 5 misses (Heidke score: 0.4150). The stations that hit the forecasts were: Koror, Kosrae, Kwajalein, Majuro, Saipan, Pago Pago, Lihue, Honolulu, Kahului. The 5 missed stations were Yap, Chuuk, Pohnpei, Guam, and Hilo. PEAC forecasts are based on six GCMs and two statistical models.

JFM Verification Location	Rainfall Outlook	Final Probs	3 mo Verification		
			% norm	Total (in)	Tercile
Palau					
Koror 7° 22' N, 134° 32' E	Avg-below	**35:35:30**	74	19.48	**Below**
FSM					
Yap 9° 29' N, 138° 05' E	Avg-below	**35:35:30**	138	22.35	**Above**
Chuuk 7° 28'N, 151° 51'E	Avg-below	**35:35:30**	**163**	41.92	**Above**
Pohnpei 6° 59'N, 158° 12'E	Avg-below	**35:35:30**	123	44.09	**Above**
Kosrae 5° 21'N, 162° 57'E	Avg.	**30:40:30**	112	51.22	**Avg.**
RMI					
Kwajalein 8° 43'N, 167° 44'E	Avg-below	**35:35:30**	93	7.58	**Avg.**
Majuro 7° 04' N, 171° 17'E	Avg-below	**35:35:30**	90	19.06	**Below**
Guam and CNMI					
Guam 13° 29'N, 144° 48' E	**Below**	**40:35:25**	131	11.95	**Above**
Saipan 15° 06'N, 145° 48' E	**Below**	**40:35:25**	**49**	3.46	**Below**
American Samoa					
Pago Pago 14° 20'S, 170° 43'W	Avg-above	**30:35:35**	129	46.61	**Above**
State of Hawaii					
19.7° - 21.0' N, 155.0° - 159.5' W					
Lihue	Avg-below	**35:35:30**	70	4.64	**Below**
Honolulu	Avg-below	**35:35:30**	88	2.58	**Avg.**
Kahului	Avg-below	**35:35:30**	**145**	7.60	**Avg.**
Hilo	Avg-above	**30:35:35**	74	22.68	**Below**

	Hit
	Miss
Heidke:	**0.4150**
RPSS:	**-0.0024**

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%	27.485	14.98	22.35	34.4	8.52	6.98	20.29	7.24
near								
66.66%	37.2945	21.91	31.31	43.28	11.35	9.47	24.26	11.19
above (>)								

Lihue	Honolulu	Kahului	Hilo	Pago Pago	Kosrae
6.52	2.08	4.24	22	35.08	43.67
13.75	7.8	8.23	44.53	42.92	53.33

Rainfall in inches

5. Rainfall Outlooks for AMJ (Con't)

Location	*Rainfall Outlook*	*Final Probabilities*
Palau		
Koror	**Below**	**50:40:10**
FSM		
Yap	**Below**	**40:35:25**
Chuuk	Avg-below	**35:35:30**
Pohnpei	**Average**	**30:40:30**
Kosrae	Avg-above	**30:35:35**
RMI		
Kwajalein	**Below**	**40:35:25**
Majuro	Avg-below	**35:35:30**
Guam and CNMI		
Guam	**Below**	**45:30:25**
Saipan	**Below**	**45:30:25**
American Samoa		
Pago Pago	Avg-above	**30:35:35**
State of Hawaii		
Lihue	**Below**	**40:35:25**
Honolulu	**Below**	**40:35:25**
Kahului	Avg-below	**40:35:25**
Hilo	Avg-below	**40:35:25**

Note:

Interpretation of tercile probability Example: The Avg-above probability, **30:35:35** forecasts in AMJ season means there is a **35%** chance (probability) for occurrence of excess rainfall during the AMJ season, **35%** chance for occurrence of rainfall within a pattern considered normal during the AMJ season, and **30%** chance for occurrence of deficit rainfall during the AMJ season. *Also note that excess and deficit limit for each of the stations are b different*

5. Rainfall Outlooks for AMJ (Joe)

A comparison of the significant difference in the 2018 and 2019's AMJ Forecast. Note the almost complete opposite forecast due to El Nino and La Nina.

AMJ Forecast Location	2019 El Niño Rainfall Outlook	2019 El Niño Final Probs	2018 La Niña Rainfall Outlook	2018 La Niña Final Probs
Palau				
Koror 7º 22' N, 134º 32' E	**Below**	**50:40:10**	**Above**	**25:35:40**
FSM				
Yap 9º 29' N, 138º 05' E	**Below**	**45:30:25**	**Above**	**25:35:40**
Chuuk 7º 28'N, 151º 51'E	Avg-below	**35:35:30**	**Above**	**25:35:40**
Pohnpei 6º 59'N, 158º 12'E	Avg.	**30:40:30**	**Above**	**30:30:40**
Kosrae 5º 21'N, 162º 57'E	Avg-above	**30:35:35**	Avg-below	**35:35:30**
RMI				
Kwajalein 8º 43'N, 167º 44'E	**Below**	**40:35:25**	**Above**	**20:35:45**
Majuro 7º 04' N, 171º 17'E	Avg-below	**35:35:30**	Avg-above	**30:35:35**
Guam and CNMI				
Guam 13º 29'N, 144º 48' E	**Below**	**45:30:25**	**Above**	**25:35:40**
Saipan 15º 06'N, 145º 48' E	**Below**	**45:30:25**	**Above**	**25:35:40**
American Samoa				
Pago Pago 14º 20'S, 170º 43'W	Avg-above	**30:35:35**	Avg-below	**35:35:30**
State of Hawaii				
Lihue	**Below**	**40:35:25**	**Above**	**30:30:40**
Honolulu	**Below**	**40:35:25**	**Above**	**25:35:40**
Kahului	Avg-below	**40:35:25**	**Above**	**20:35:45**
Hilo	Avg-below	**40:35:25**	**Above**	**20:35:45**

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%	39.422	21	32.97	49.71	13.05	8.14	25.63	15.41
near								
66.66%	48.415	32.89	39.15	56.96	15.95	11.06	34.51	26.35
above (>)								

Lihue	Honolulu	Kahului	Hilo	Pago Pago	Kosrae
4.74	1.23	1.25	21.42	22.42	47.62
5.97	1.77	2.17	29.01	33.53	51.87

Rainfall in inches

6. Drought monitoring updates (Richard Heim**).**

End-of-March Monthly Drought Assessment:

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

ii. Like February, March was dry in northern and western portions of Micronesia, wet in parts of southern & eastern Micronesia & American Samoa. Dry in Marianas, Palau, Yap State, much of RMI (especially northern atolls), & part of Chuuk States. Drought Information Statements issued by Guam. The March monthly analysis (March 31) is consistent with the weekly analyses for March 26 & April 2. Compared to the end-of-February analysis:

a. D0-S improved to D-Nothing at Kapingamarangi. ……. But …
b. D-Nothing worsened to D1-S at Guam.
c. D0-S worsened to D1-S at Yap, Rota, Fananu.
d. D0-S worsened to D2-S at Kwajalein.
e. D2-S worsened to D3-S at Saipan, Wotje.
f. D2-S worsened to D4-S at Utirik.
g. D1-S continued at Koror, Woleai, Majuro.
h. D0-S continued at Lukonor, D0-SL continued at Jaluit.
i. D-Nothing continued at Chuuk, Nukuoro, Pohnpei, Pingelap, Kosrae, Ailinglapalap, Mili, & Pago Pago.
j. Ulithi was missing, so they could not be analyzed.

iii. Some dry precipitation ranks, especially over the last 3 to 6 months (since September 2018):

a. Saipan: 2nd driest March (out of 39 years of data), 3rd driest Jan-Mar (38 yrs), 5th driest Oct-Mar (30 yrs)
b. Utirik: driest March (16 yrs), driest Feb-Mar (15 yrs), driest Nov-Mar (9 yrs)
c. Guam: 2nd driest March (63 yrs)
d. Wotje: 6th driest March (36 yrs), 8th driest Sep-Mar (33 yrs)
e. Woleai: 16th driest March (37 yrs, mid-range), but 6th driest Oct-Mar (31 yrs)
f. Ailinglapalap: 18th wettest March (36 yrs, mid-range), but 6th driest May-March (33 yrs)
g. Kosrae: 15th wettest March (49 yrs), but 4th driest Sep-Mar (34 yrs)
h. Lukonor: 15th wettest March (35 yrs), but 3rd driest May-March (22 yrs)
i. Nukuoro: 18th wettest March (36 yrs, mid-range), but 4th driest April-March (33 yrs)

B. Current (Weekly) Drought Conditions: The discussion above is the monthly (end of March) analysis. The latest weekly USAPI USDM assessment may show different USDM classifications. The latest weekly USAPI USDM assessment is for April 9 and shows worse conditions for the following stations: D4-S for Wotje, D2-S for Guam & Majuro, D0-S for Ailinglapalap; wetter conditions for: Lukonor & Jaluit (D-Nothing), Woleai (D0-S).

i. For April 9, we have D4-S at Utirik & Wotje; D3-S at Saipan; D2-S at Majuro, Kwajalein, and Guam.

C. March 2019 NCEI State of the Climate Drought Reports: I included a discussion of USAPI drought and climate conditions in my March 2019 NCEI SotC Drought & Synoptic reports (which will go online tomorrow).

i. The web page url's:

https://www.ncdc.noaa.gov/sotc/drought/201903#det-reg-pacis-usapi

https://www.ncdc.noaa.gov/sotc/synoptic/201903#usapi-wnp

D. Alaska Drought Workshop: I will be out of town the second week of next month and likely will miss the May 9 PEAC conference call.

E. USAPI USDM Authors:

i. **Last month, the OCONUS (USAPI) USDM was approved by the USDM steering committee to be an operational product, so the "experimental" label has been removed and authorship is now rotating amongst the NCEI, NDMC, USDA, & CPC authors.**

Drought monitoring updates (CON'T).

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. Currently, the USDM is analyzed for the 50 States and Puerto Rico, and the USAPI USDM is done separately. The USDM web site (https://droughtmonitor.unl.edu/) has been revised so that two USDM products are produced each week: a CONUS USDM and an OCONUS USDM. The OCONUS USDM will include the USAPI and the US Virgin Islands (dots), while the CONUS USDM will be what has been done for years (50 States & Puerto Rico) (polygon shapefiles).

F. Automated Ingest of Daily Rainfall Data:

i. Automated Program: I modified the automated program that ingests the USAPI station daily data 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: With the December-January government shutdown, lots of updates to the automated system have been delayed. I've begun to research how to address them. This is a list of things I'll be doing or looking at in the weeks ahead:**

a. Follow up on why Jaluit, Woleai, & Kwajalein are not getting into the automated process.

b. From Chip: Kwajalein is in the Super Form in WxCoder III, but it is not in the regular station list. Question: Can Kwajalein's data be automatically transmitted daily from WxCoder III into the NOAAPort data feed? (need to find out station I.D. and other info to get it in to the NOAAPort feed)

c. Question: Regarding Jaluit and Woleai, has it been determined yet why their data are not being sent into the NOAAPort data feed? -- From the November call: Guam will check with WRCC on the station code letters for Jaluit & Woleai since that may be why they aren't getting into the NOAAPort feed (what WxCoder III is using may be different from what WRCC is looking for) – status?

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

e. Add new stations to the automated process (Capital Hill 1, Nimitz Hill, Palau International Airport, 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.

f. Follow-up with Bill Ward about good synoptic observations from the outer islands that we could be using (want to use) in this process (get into automated data ingest system and use for USAPI USDM analysis); let's (Bill and me and Chip) schedule a conference call to discuss how to get these data included.

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).

Drought monitoring updates (CON'T).

G. USAPI Listserv:

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.

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

Participants:

NWS Climate Services Program Managers (CSPMs): Joe Brinkley

WSO Climate Service Focal Points (CSFPs):

Lee (Majuro)	(Chuuk)	Wallace (Pohnpei)
Eden (Kosrae)	David (Yap)	(Pago Pago)
(Palau)	(Kwajalein)	Mark/Chip (Guam & CNMI)

PEAC Principal Research Scientist: Rashed Chowdhury

WERI Scientist: Mark Lander

CPC Forecaster: Matt

WFO Guam : Chip Guard, Clint Simpson

NWS MIC, Honolulu: Christopher Brenchley

NCEI: Richard Heim

Pacific RISA: Krista Jaspers

NWS Hydrologist: Kevin Kodama

Additional Attendees:

***** Next Call– 9 May 2019, 1430 HST (10 May 2019, 0030 GMT)*****