



Three-month Climate Forecast

For July - September

2018

MINISTRY OF DIGITAL ECONOMY AND SOCIETY,
THAI METEOROLOGICAL DEPARTMENT

Issued on 29 June 2018

Climate Outlook:

1. During the next 3 months, the total rain of Thailand at the eastern part will be 5% below normal or about 860 millimeters: mm (from Normal: 910 mm).

Whereas the total rain of the Southern Thailand (East Coast) and Bangkok Metropolis will be 10% below normal while that of the Southern Thailand (East Coast) is about 350 mm (from Normal: 394 mm) and that of Bangkok Metropolis is about 610 mm (from Normal: 689 mm).

On the other hand, the total rain of the northern and northeastern parts will be 5% above normal whereas that of the northern part is about 650 mm (from Normal: 617 mm) and that of the northeastern part is about 770 mm (from Normal: 735 mm).

Furthermore, the total rain of the central part and the Southern Thailand (West Coast) will be near normal whereas that of the central part is about 590 mm and that of the Southern Thailand (West Coast) is about 1,160 mm.

Besides, mean temperature of Thailand will be near normal except that of Bangkok Metropolis is to be slightly above normal.

2. In July 2018, the total rain of the Southern Thailand (East Coast) and Bangkok Metropolis will be about 10% below normal while that of the northern and northeastern parts is about 5% above normal comparing to that of other parts being near normal.

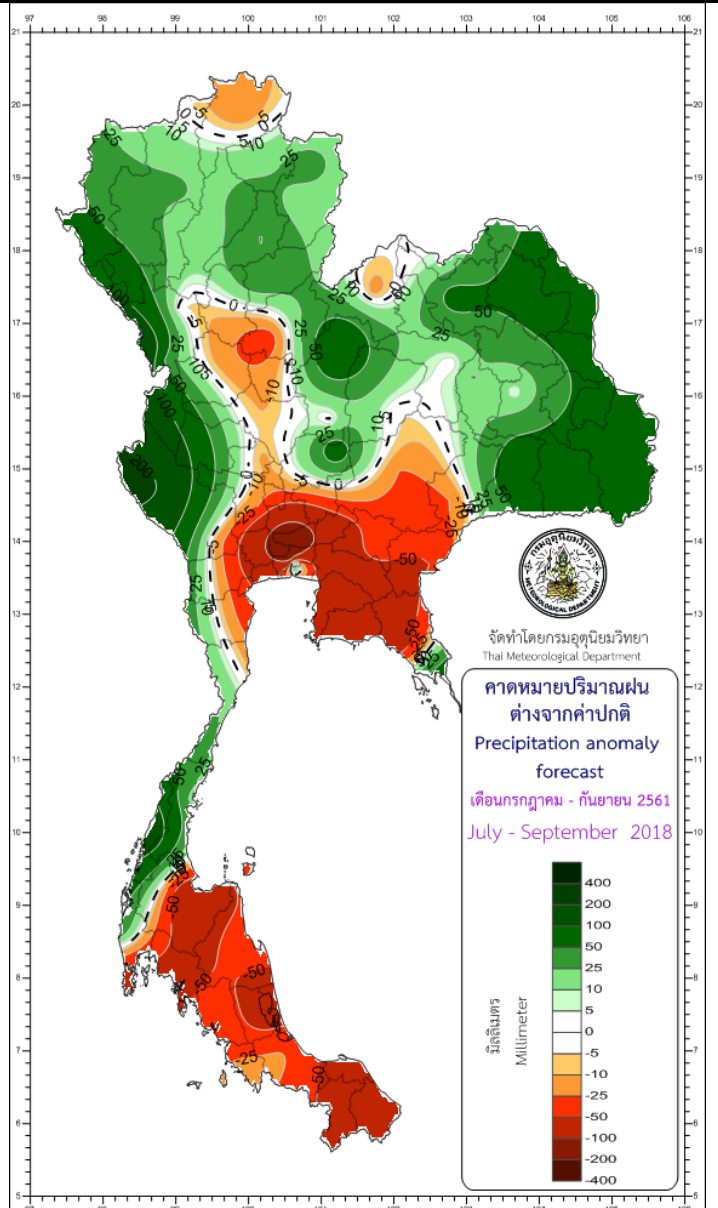
Also, the mean temperature of Thailand in this July will be near normal.

3. In August 2018, the total rain of the eastern part and the Southern Thailand (East Coast) will be 5% below normal whereas that of Bangkok Metropolis is to be 15% below normal. Moreover, the total rain of the northern and northeastern parts will be 5% above normal while that of the central part and the Southern Thailand (West Coast) is to be near normal.

Too, the mean temperature of Thailand in this August will be near normal except that of Bangkok Metropolis is to be slightly above normal.

4. In September 2018, the total rain of the Southern Thailand (East & West Coasts) will be 5% below normal whereas that of Bangkok Metropolis is to be 10% below normal. However, the total rain of the northern, northeastern and central parts will be about 5% above normal while that of the eastern part is to be near normal.

Also, the mean temperature of Thailand in this September will be near normal.



* The information supporting this 3-month climate outlook are at the following pages:

[Thailand climate for July-August-September 2018 from baseline: 1981-2010](#)

July 2018: During the 1st half of this month, the dry spell will continue from late June 2018 because a low-pressure trough still places over the southern portion of China. Together with the southwest monsoon prevailing over the Upper Thailand mostly weakens influencing many areas to meet slight or no rain continuously for many days.

Later during the 2nd half of this month, more abundant rainfall appears because of the low-pressure trough moving downward to place over the Upper Thailand again including with the southwest monsoon prevailing over Thailand becoming more active periodically.

In addition, some tropical cyclones may move near or toward Thailand along the eastern side of the country.

August 2018: Usually, densely abundant rain occurs at this month with more rain amount than the past July. The reason is that the influential low-pressure air mass trough places over the northern and northeastern parts along with the prevailing southwest monsoon over Thailand becomes more active from time to time. Besides, some tropical cyclones may move near or toward Thailand around the upper portion of the northern and northeastern parts more than other areas of the country.

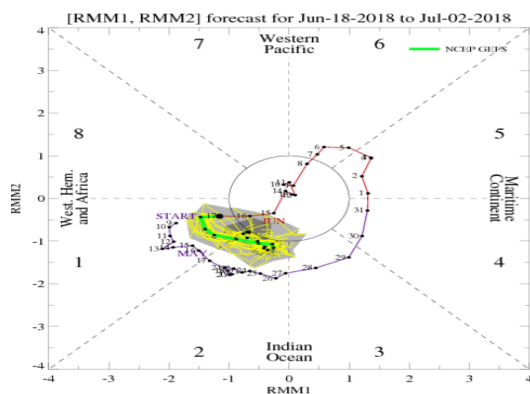
September 2018: Thailand will meet densely abundant rainfall as most areas meet the most abundant rain in the past year. The reason is that the influential low-pressure air mass trough places around the central portion of Thailand together with the southwest monsoon prevails over Thailand. Additionally, some influential tropical cyclones may move to dissipate near or toward Thailand directly, specifically around the eastern portion of the country.

Outlook of the phenomena influencing climate of Thailand

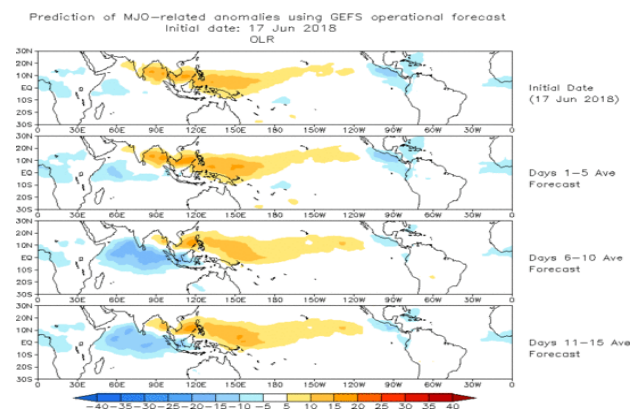
1. Madden Julian Oscillation (MJO)

During the past June 2018, active MJO moved from the Indian Ocean toward the Andaman Sea, Thailand and the western side of the Pacific Ocean influencing on more air mass uplifting. Later during the middle June 2018, weak MJO moved past the Indian Ocean influencing on less air mass uplifting.

And from MJO index forecast models, they predict that for the first 2 – 3 weeks of July 2018, MJO will weaken and move through the Indian Ocean, the Andaman Sea, Thailand and the Western Pacific Ocean. Consequently, the rain amount of Thailand will reduce during the 1st half of July 2018 while MJO still needs to be monitored closely further for the 2nd half of July 2018.



Graph of MJO index and phase forecast from global climate centers (source: IRI/CPC)



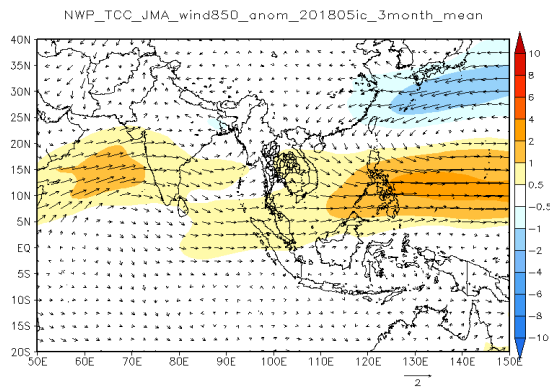
Three-phase forecast maps of mean OLR, each phase consists of 5 days. (source: IRI/CPC)

2. Monsoon

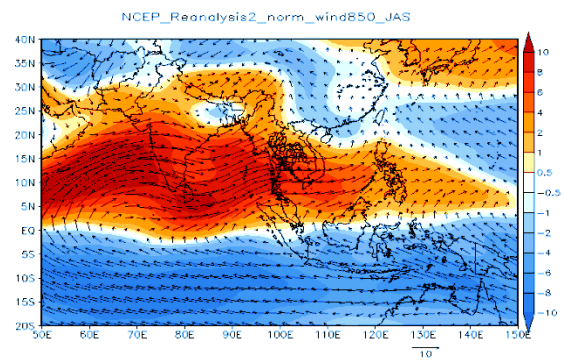
On average, the prevailing southwest monsoon over Thailand during the past month was slightly-above-normal and periodically active. In July 2018, the prevailing southwest monsoon over Thailand will weaken but still become slightly-above-normal specifically at the Southern Thailand. Thus, Thailand will meet slightly-above-normal rain.

In August 2018, the prevailing southwest monsoon over Thailand will be near normal. As a result, Thailand will meet rain usually. Then in September 2018, the prevailing southwest monsoon over Thailand will become near normal causing Thailand to meet rain as usual.

On average from July until September 2018, the prevailing southwest monsoon over Thailand will become slightly-above-normal. For this reason, Thailand will meet rain as usual or slightly-above-normal rain at some areas.



Map of 'mean wind speed' anomaly from normal at the 850-hPa level during July until September 2018 (Tokyo climate center, JMA - Japan Meteorological Agency, Japan)

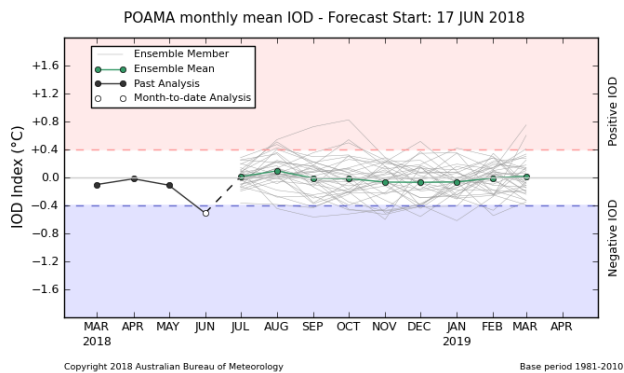


Map of mean wind speed at the 850-hPa level during July until September 2018 (NCEP - National Center for Environmental Prediction, NOAA, USA)

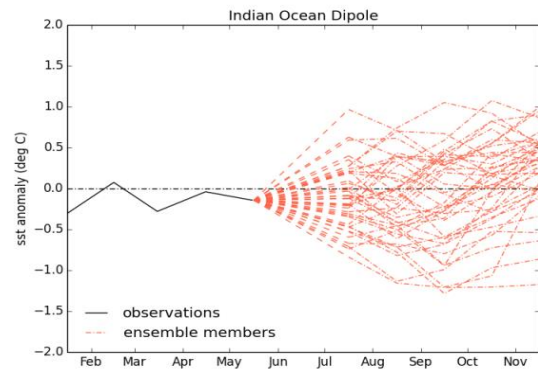
3. Indian Ocean Dipole (IOD)

During the past May till June 2018, IOD was still neutral. Moreover, from forecast models of IOD index, IOD scenario probability and sea surface temperature forecast around the Indian Ocean, they predict that IOD will still become neutral for the whole period of July till September 2018.

In other words, IOD will not influence on the total rain and mean temperature of Thailand in July 2018.



Model forecast of IOD index (source: Bureau of Meteorology, Australia (BOM))



IOD index graph (source: United Kingdom Met. Office (UKMO))

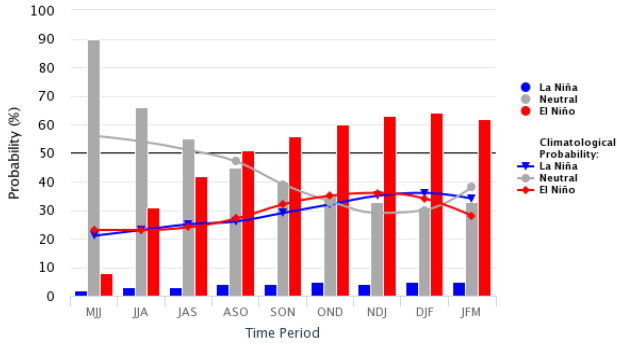
4. El Niño Southern Oscillation (ENSO)

During the past May 2018, the ENSO phenomenon was neutral (Nino 3.4 = -0.2). And from El Niño/Southern Oscillation (ENSO) Diagnostic Discussion, ENSO probability forecast, and ENSO: Recent Evolution, Current Status and Predictions, they predict for ENSO scenario probability and sea surface temperature around the Pacific Ocean.

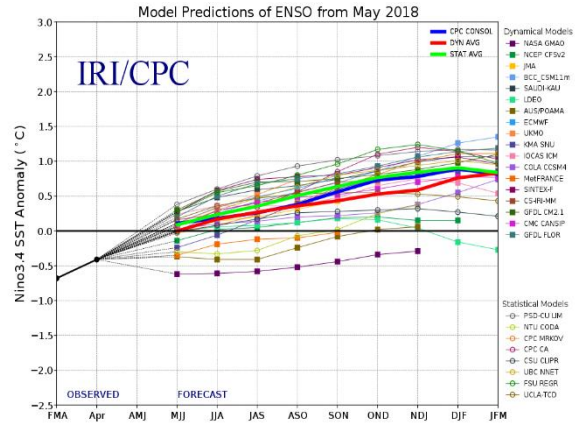
Accordingly, global climate centers predict that ENSO will still become neutral continuously until August - October 2018.

Early-Jun CPC/IRI Official Probabilistic ENSO Forecasts

ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: -0.5 °C to 0.5 °C



Graph of ENSO scenario probability forecasts
(source: IRI/CPC)

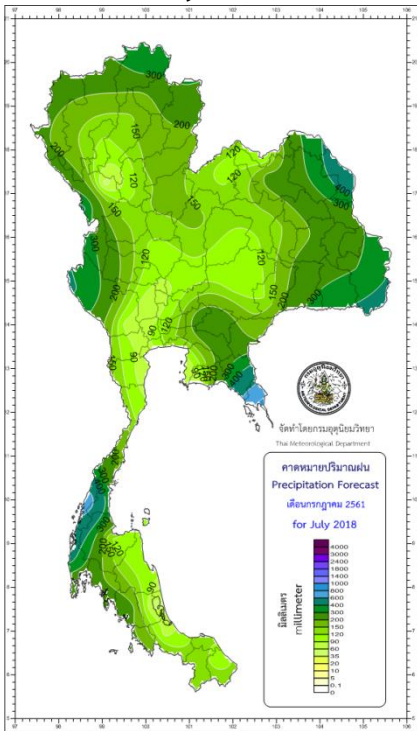


Graph of ensemble model forecasts for 'mean sea surface temperature' anomaly around Nino 3.4 from global climate centers (source: IRI/CPC)

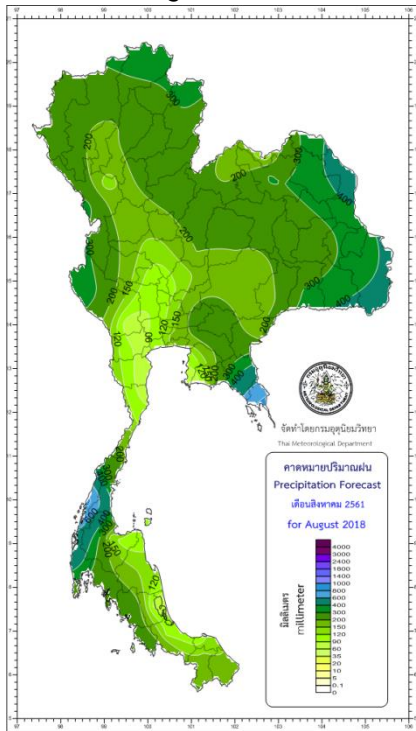
** For further information, please visit www.tmd.go.th/en and www.climate.tmd.go.th **

Precipitation (mm/month) and
Precipitation Anomaly (mm/month) Forecast:

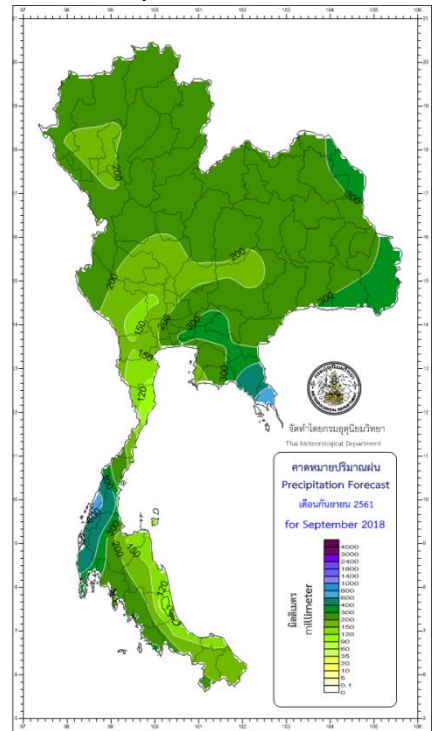
Precipitation forecast for July 2018



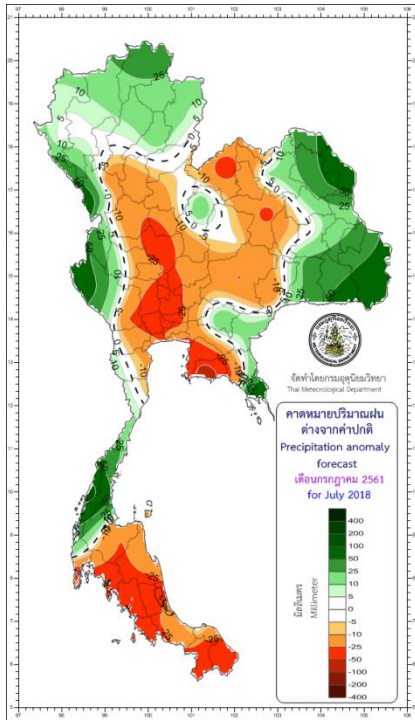
Precipitation forecast for August 2018



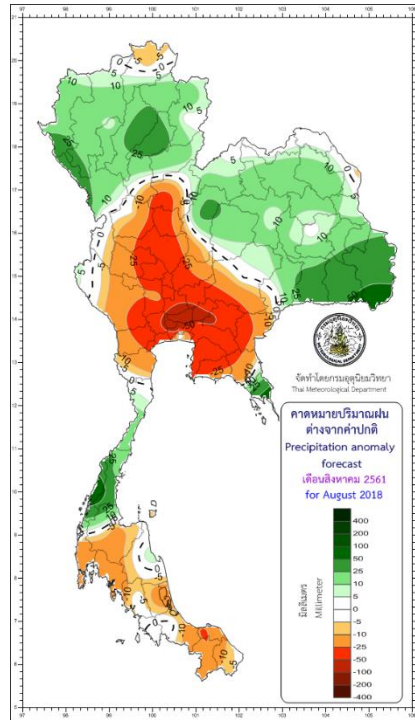
Precipitation forecast for September 2018



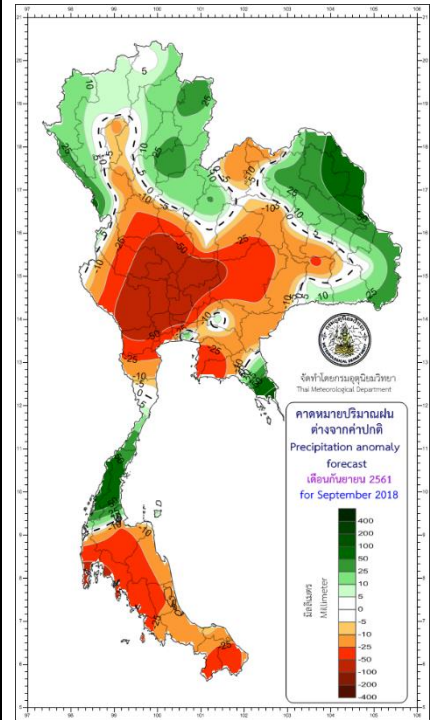
Precipitation anomaly forecast for July 2018



Precipitation anomaly forecast for August 2018

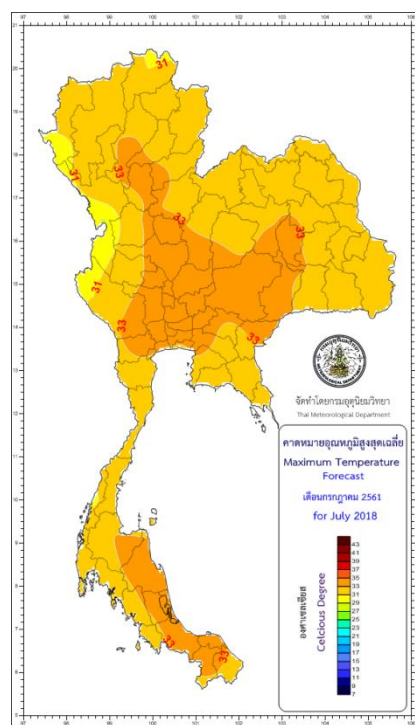


Precipitation anomaly forecast for September 2018

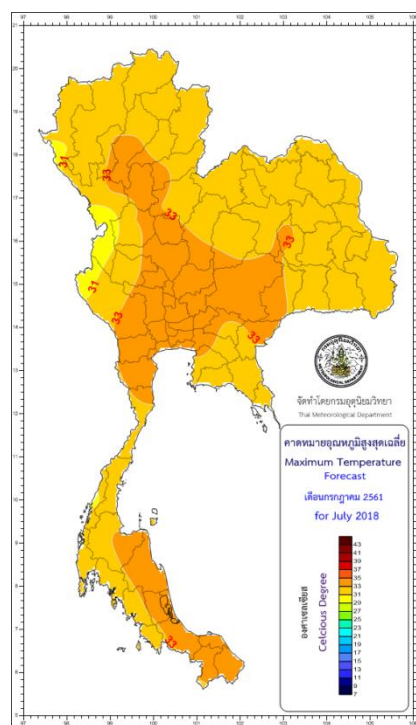


Mean Maximum Temperature (°C) and Anomaly (°C) Forecast:

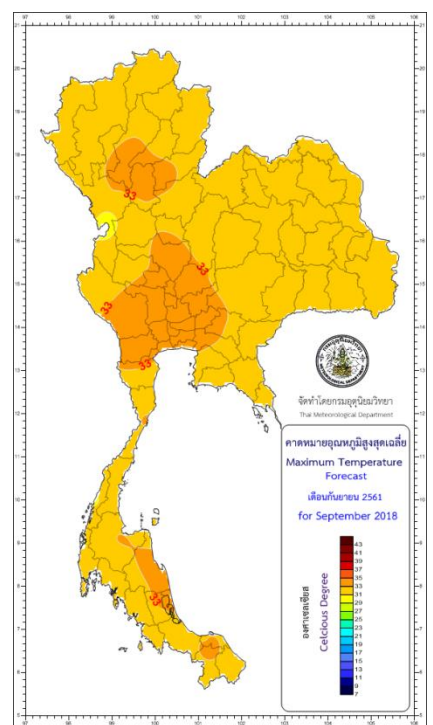
Mean maximum temperature forecast for July 2018



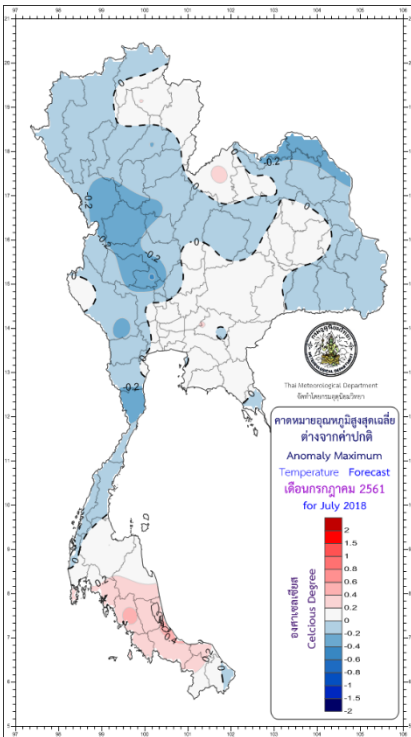
Mean maximum temperature forecast for August 2018



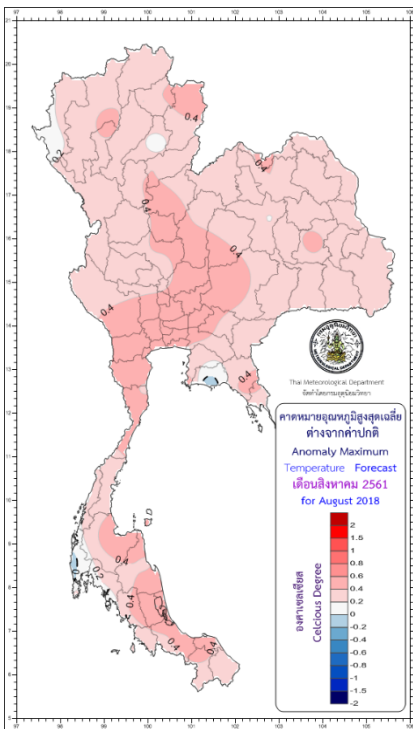
Mean maximum temperature forecast for September 2018



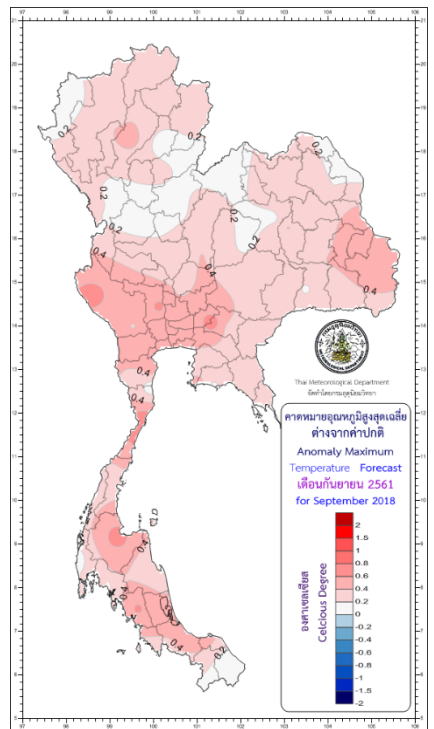
Mean maximum temperature anomaly forecast for July 2018



Mean maximum temperature anomaly forecast for August 2018

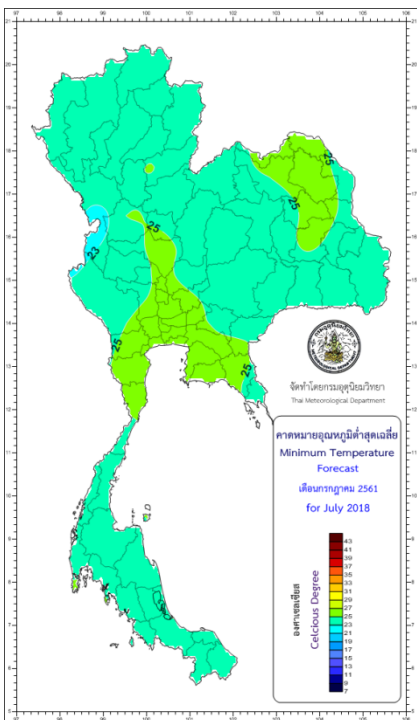


Mean maximum temperature anomaly forecast for September 2018

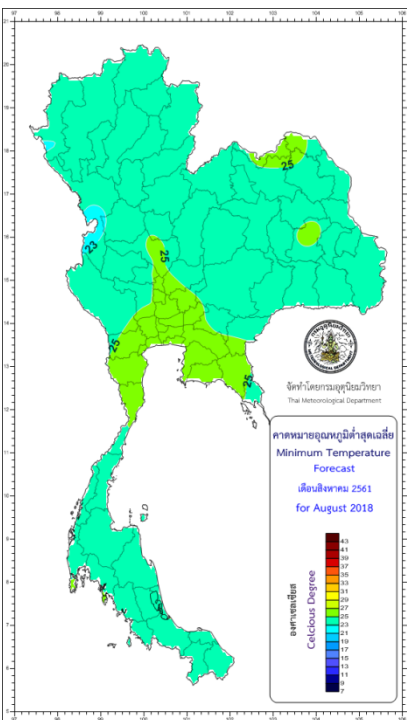


Mean Minimum Temperature ($^{\circ}\text{C}$) and Anomaly ($^{\circ}\text{C}$) Forecast:

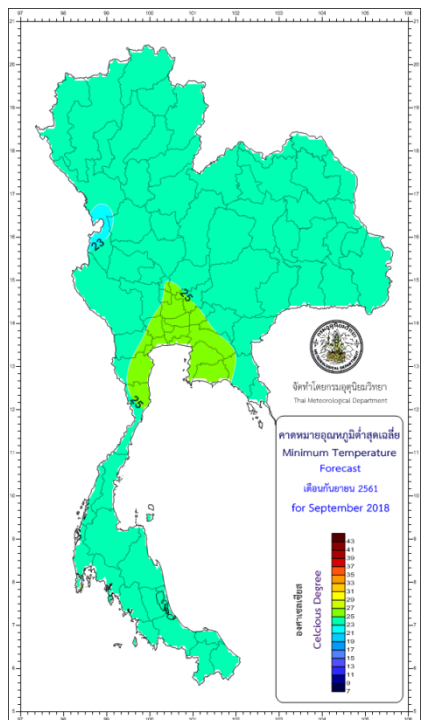
Mean minimum temperature forecast for July 2018

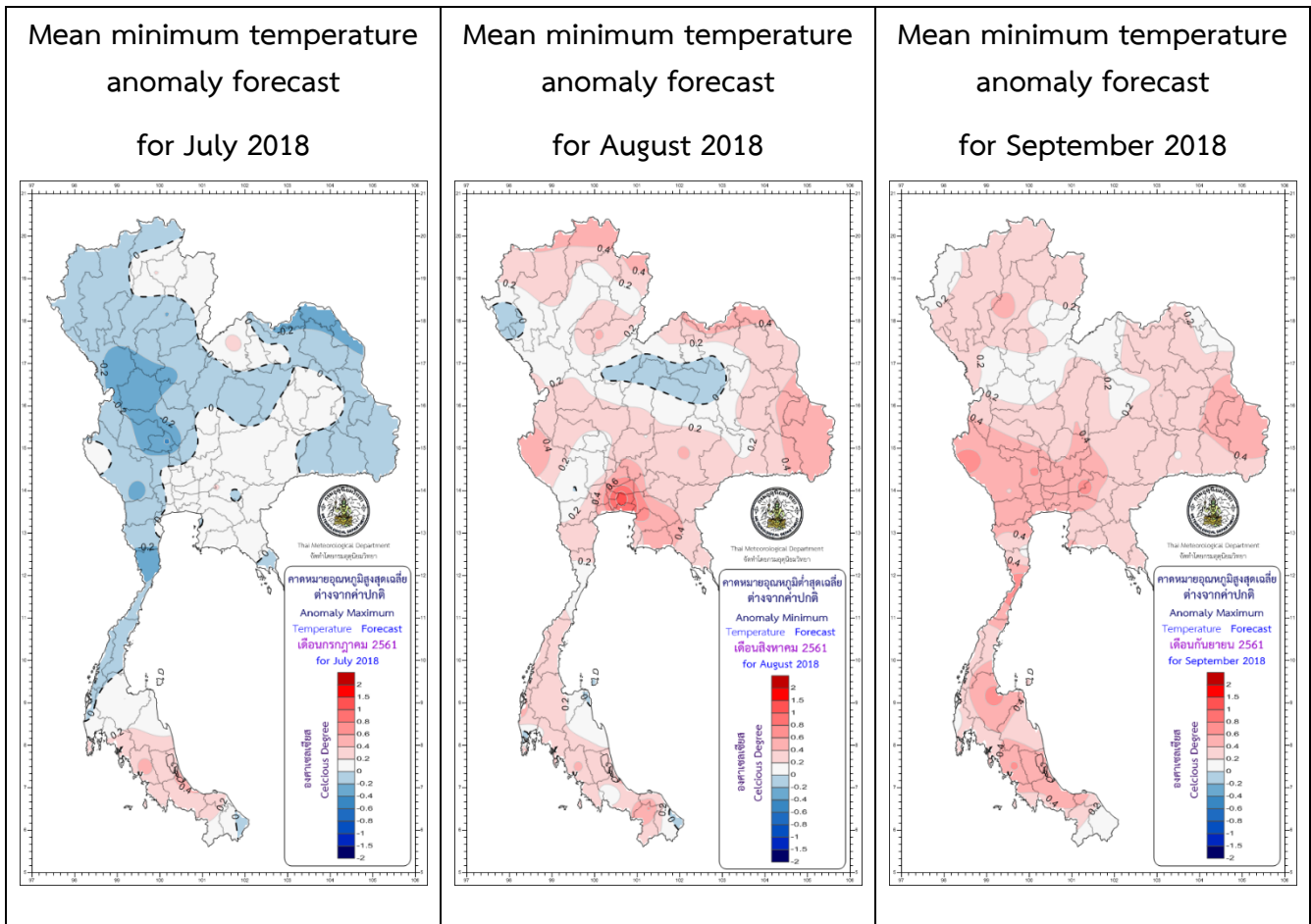


Mean minimum temperature forecast for August 2018



Mean minimum temperature forecast for September 2018





***** Caution: *****

July 2018: Some tropical cyclones may develop in the western part of the North Pacific Ocean and move past the Philippines toward the South China Sea. Then, they will move northwesterly past around the Gulf of Tonkin and influence the southwest monsoon to prevail over Thailand and the Gulf of Thailand and becoming more active. As a result, Thailand will meet more rain, specifically at the eastern part of the Southern Thailand (West Coast).

August & September 2018: Some tropical cyclones may develop at the western side of the North Pacific Ocean and move northwesterly past the South China Sea. They favor a high chance to move past the Upper Thailand. Consequently, Thailand will meet dense rainfall with heavy to very heavy rain amount at many areas, especially at areas where the tropical cyclone moves past. Thus, flash or forest flood with overflow will inundate at many areas. Therefore, the public should follow weather forecast news and tropical cyclone warnings from the Thai Meteorological Department further.

Prediction of Rain (mm = millimeters), Rainy Days (days) and comparing with normal:

Part	Prediction									Normal (Baseline period 1980-2010)					
	July 2018			August 2018			September 2018			July 2018		August 2018		September 2018	
	Rain (mm)	Rainy Days	Comparing with normal	Rain (mm)	Rainy Days	Comparing with normal	Rain (mm)	Rainy Days	Comparing with normal	Rain (mm)	Rainy Days	Rain (mm)	Rainy Days	Rain (mm)	Rainy Days
Northern	160-215	19-21	5% above normal	180-250	21-23	5% above normal	195-255	18-20	5% above normal	176.0	19.4	223.0	21.0	218.3	18.3
Northeastern	195-265	17-19	5% above normal	220-305	19-21	5% above normal	205-280	18-20	5% above normal	211.4	17.4	266.2	19.4	242.0	17.7
Central	115-160	13-15	10 % below normal	120-170	15-17	10 % below normal	205-275	16-18	10 % below normal	155.5	16.4	181.1	18.2	257.3	19.2
Eastern	235-320	16-18	near normal	235-325	16-18	5 % below normal	290-390	19-21	near normal	277.5	17.2	302.5	18.4	330.1	19.9
Southern Thailand (East Coast)	85-130	11-13	10 % below normal	90-135	13-15	5 % below normal	125-175	14-16	5 % below normal	118.9	14.5	124.1	15.4	149.8	16.7
Southern Thailand (West Coast)	280-395	19-21	near normal	325-445	19-21	near normal	360-475	20-22	5 % below normal	336.5	19.8	398.5	20.5	423.7	22.4
Bangkok Metropolis and Vicinity	115-170	14-16	10 % below normal	125-195	15-17	15 % below normal	335-410	18-20	10 % below normal	175.1	17.1	219.3	19.1	334.3	21.1

Prediction of Mean Maximum Temperature (Tmax) and Mean Minimum Temperature (Tmin) (°C) and comparing with normal:

Part	Prediction									Normal (Baseline period 1980-2010)					
	July 2018			August 2018			September 2018			July		August		September	
	Mean Tmax	Mean Tmax	Mean Tmax	Mean Tmax	Mean Tmax	Mean Tmax	Mean Tmax	Mean Tmax	Mean Tmax	Mean Tmax	Mean Tmin	Mean Tmax	Mean Tmin	Mean Tmax	Mean Tmin
Northern	31-33	23-25	near normal	31-33	23-25	near normal	31-33	23-25	near normal	32.1	24.0	31.8	23.8	32.2	23.5
Northeastern	32-34	24-26	near normal	32-33	24-25	near normal	31-33	24-25	near normal	32.8	24.6	32.2	24.4	31.9	24.0
Central	32-34	24-26	near normal	32-35	24-26	near normal	32-34	24-25	near normal	33.4	25.1	33.1	24.8	32.9	24.7
Eastern	31-33	25-26	near normal	31-33	25-27	near normal	31-33	24-26	near normal	32.2	25.3	32.0	25.3	31.9	24.7
Southern Thailand (East Coast)	32-34	24-25	near normal	32-34	24-25	near normal	32-34	24-25	near normal	32.8	24.4	32.8	24.2	32.3	24.1
Southern Thailand (West Coast)	31-33	24-26	near normal	31-33	24-26	near normal	30-32	23-25	near normal	31.7	24.3	31.5	24.4	31.1	23.9
Bangkok Metropolis and Vicinity	32-34	25-27	near normal	32-34	26-28	slightly below normal	32-34	25-26	near normal	33.2	25.7	33.0	25.5	32.8	25.0

Remarks:

- Normal means average during the 30-year period (A.D. 1981 – 2010 or B.E. 2524 – 2553).
- This long range climate forecast is created by applying some climate models and statistical methods, the public then should follow the daily weather forecast news from the Thai Meteorological Department for more accuracy further.
- The next 3-month climate forecast will be published online before the end of July 2018.
- Further enquiry of monthly climate, 3-month climate and seasonal forecasts can be preceded at Tel: (662)-398-9929 or Fax: (662)-383-8827.
- Also, please follow monthly climate, 3-month climate and seasonal forecasts at <http://www.tmd.go.th/en/> at the climate tab.

Climate Center, Meteorological Development Division,
Thai Meteorological Department, Ministry of Digital Economy and Society.