



MINISTRY OF DIGITAL ECONOMY AND SOCIETY,  
THAI METEOROLOGICAL DEPARTMENT

Three-month Climate Forecast  
For September – November 2018  
Issued on 31 August 2018

**Climate Outlook:**

1. During the next 3 months, the mean total rain of Thailand in the northern and northeastern parts and that of Bangkok Metropolis and Vicinity will be near normal or about 370, 380 and 610 millimeters consecutively.

Whereas the mean total rain of the central and eastern parts and that of the Southern Thailand will be 5% below normal as follows:

the central part: 410 (Normal 492 mm),

the eastern part: 570 (Normal 608 mm),

the Southern Thailand (East Coast): 730 (Normal 774 mm),

the Southern Thailand (West Coast): 940 (Normal 984 mm).

Moreover, the mean temperature of Thailand will be slightly above normal while that of the Southern Thailand will be near normal.

2. In September 2018, the mean total rain of the Southern Thailand will be 5% below normal whereas that of other parts is to be near normal.

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

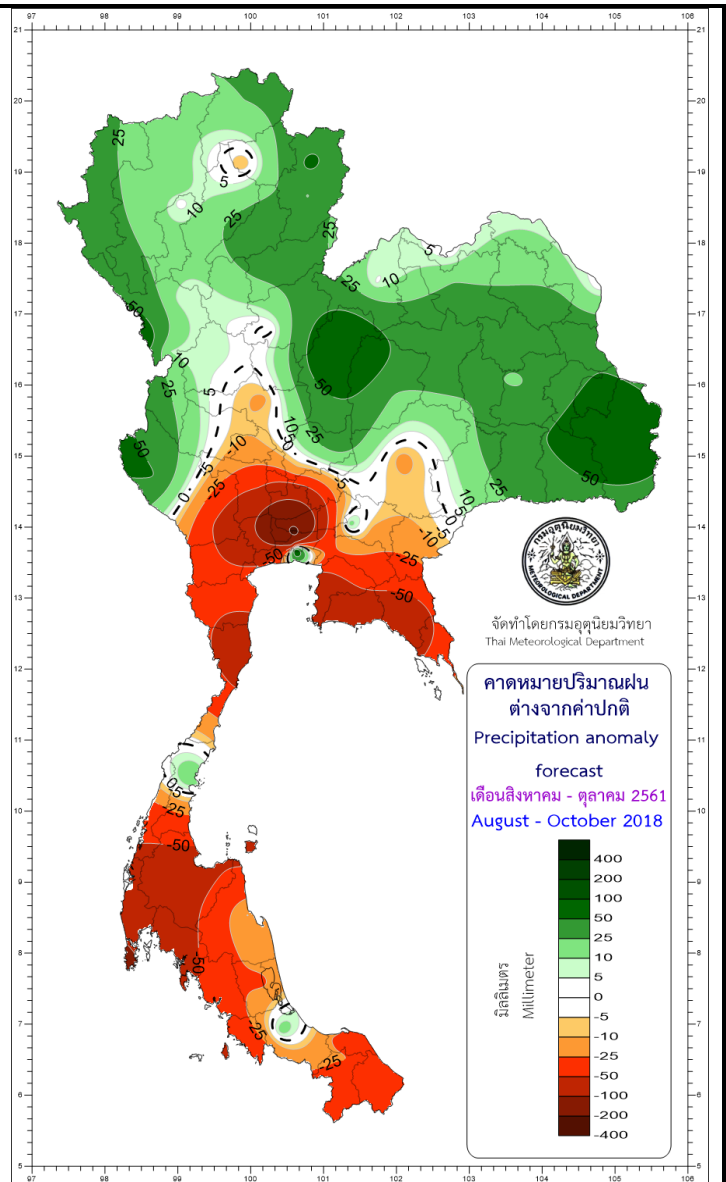
3. In October 2018, the mean total rain of the northern and northeastern parts will be about 10% below normal while that of other parts is to be 5% below normal.

Additionally, the mean temperature of Thailand in this October around the northeastern and central parts including with that of Bangkok Metropolis and Vicinity will be slightly above normal whereas that of other parts is to be near normal.

4. In November 2018, the mean total rain of the northern, northeastern and central parts will be about 30% below normal while that of the eastern part and Bangkok Metropolis and Vicinity is to be 20% below normal. However, the mean total rain of the Southern Thailand will be 10% below normal.

In addition, the mean temperature of Thailand in this November will be slightly above normal while that of the Southern Thailand is to be near normal.

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



## Thailand climate for September-October-November 2018 from baseline: 1981-2010

September 2018: Thailand will meet densely abundant rainfall period as the most abundant rainy month 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 southwestern monsoon prevails over Thailand. Besides, some influential tropical cyclones may move to dissipate near or toward Thailand directly, specifically around the eastern portion of the country.

October 2018: As being the transition month from the rainy to the winter seasons, the rain and temperature of the Upper Thailand will reduce and cool weather begins since the middle of this month. The reason is that the southwestern monsoon starts to transform to become the northeastern monsoon along with coldly high-pressure air mass areas from China begin to prevail over the Upper Thailand periodically.

As a result, the rainy low-pressure air mass trough placing over the central and eastern parts earlier will move downward to place over the Southern Thailand and the Gulf of Thailand during the 2<sup>nd</sup> half of this month. Consequently, the Southern Thailand will still meet densely abundant rainfall. Probably, some tropical cyclones may move near or toward the eastern portion of Thailand and then move continuously to the upper portion of the Gulf of Thailand or the Southern Thailand further.

November 2018: The Upper Thailand will meet less rain with cool weather for the whole month. The reason is that the influential coldly high-pressure air mass areas from China will prevail over the Upper Thailand actively and periodically. Then, this will cause temperature to lessen to become cold weather (less than 8.0 °C.) at some areas, specifically at the northern and northeastern parts.

On the other hand, the Southern Thailand will still meet abundant rain, especially around the East Coast. The reason is that the influential northeastern monsoon prevails over and the rainy low-pressure air mass trough moves to place at the Southern Thailand and the Gulf of Thailand.

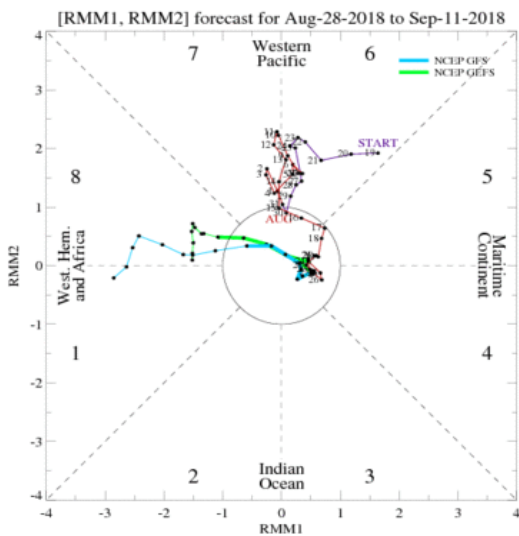
# Outlook of the phenomena influencing climate of Thailand

## 1. Madden Julian Oscillation (MJO)

During the past early August 2018, continuously weakening MJO prevailed over the western portion of the Pacific Ocean. Nevertheless, Kelvin and Rossby waves around the eastern portion of the Pacific Ocean influenced on tropical cyclones during the same period.

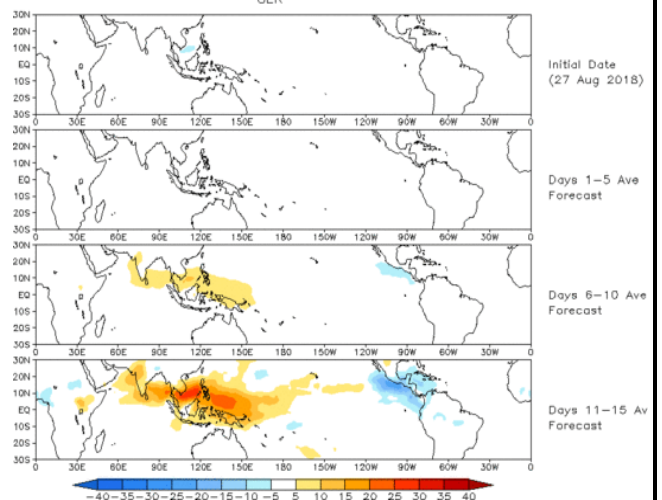
And from various MJO index forecast models, many models predict quite the same that for the next 2 – 3 weeks until middle September 2018, MJO will weaken continuously and move to dissipate around the western portion of the Pacific Ocean. This may influence on increasing probability of tropical cyclone development and on weakening southwestern monsoon. These characteristics will not influence on rain amount of Thailand.

Later during late September 2018, weakening MJO may influence on reducing rain amount of the central and lower portions of Thailand. Still, MJO needs to be under monitoring further. Also, tropical cyclones at the western portion of the Pacific Ocean may develop increasing at this period.



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

Prediction of MJO-related anomalies using GEFS operational forecast  
Initial date: 27 Aug 2018  
OLR

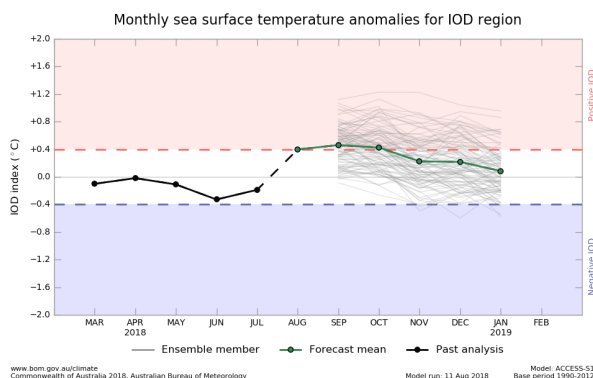


Three-phase forecast maps of mean OLR (Outgoing Longwave Radiation), each phase consists of 5 days. (source: IRI/CPC)

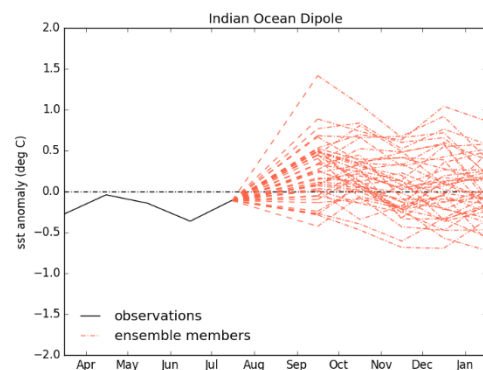
## 2. Indian Ocean Dipole (IOD)

During the past July till August 2018, IOD was still neutral. Moreover, from model forecasts of IOD index, IOD scenario probability and sea surface temperature around the Indian Ocean, they predict that IOD will still become neutral for the whole period from September until November 2018.

In other words, IOD will not influence on mean total rain and mean temperature of Thailand during the next three months.



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



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

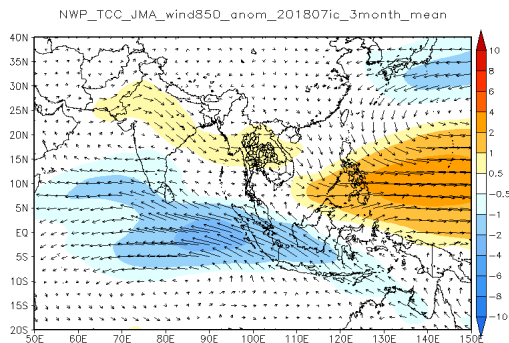
### 3. Monsoon

On average, the prevailing southwestern monsoon over Thailand during the past month was slightly above normal and periodically active. In this September 2018, the prevailing southwestern monsoon over Thailand is expected to be above normal active periodically and therefore Thailand will meet more rainfall.

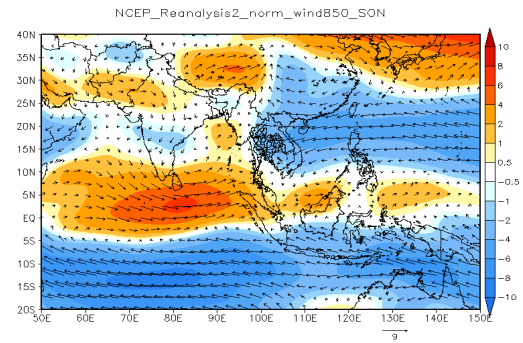
Later in October 2018, the southwestern monsoon prevailing over Thailand will become near normal active and transforms to become the northeastern monsoon prevailing over the upper portion of Thailand. From this reason, Thailand will meet lesser rain and reducing temperature at some periods.

Then in November 2018, the prevailing northeastern monsoon over Thailand will be above normal active in the Southern Thailand which receives more moisture from the Gulf of Thailand. Hence, the Southern Thailand will meet more rainfall.

On average during September until November 2018, the southwestern monsoon prevailing over Thailand will be above normal and for this reason Thailand will meet increasing rainfall than past months. Afterward, the southwestern monsoon will turn to become the northeastern monsoon causing the Upper Thailand to meet less rain and lower temperature.



Map of 'mean wind velocity' anomaly from normal at the 850-hPa (3 km) level during September until November 2018 (Tokyo climate center, JMA - Japan Meteorological Agency, Japan)

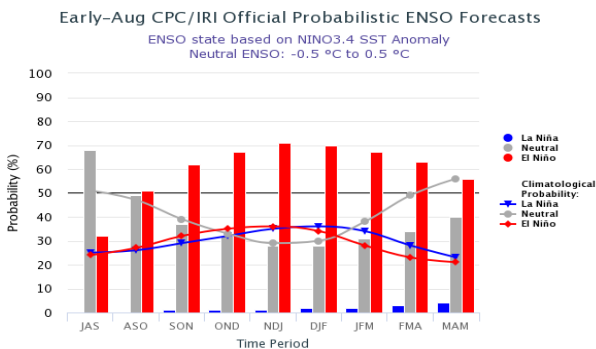


Map of mean wind velocity at the 850-hPa (3 km) level during September until November 2018 (NCEP - National Center for Environmental Prediction, NOAA, USA)

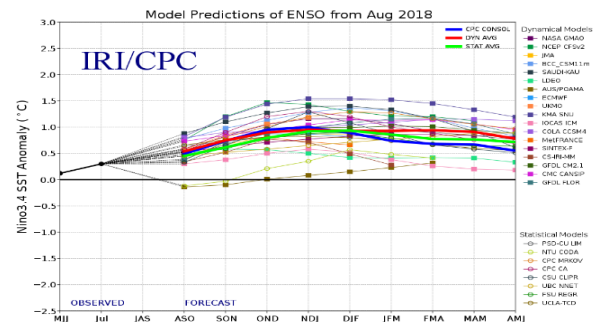
### 4. El Niño Southern Oscillation (ENSO)

During the past July 2018, the ENSO phenomenon was neutral (not above or equal to 0.5 or below or equal to -0.5) as mean sea surface temperature was +0.4 above normal (Nino 3.4 = 0.4). And from NOAA *El Niño/Southern Oscillation (ENSO) Diagnostic Discussion (short: 5 pages)*, IRI *ENSO forecast*, and NOAA *ENSO: Recent Evolution, Current Status and Predictions (long: 32 pages)*, 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 2018 and may develop to become *El Niño* during September until November 2018. At present, ENSO does not affect on rain amount of Thailand.



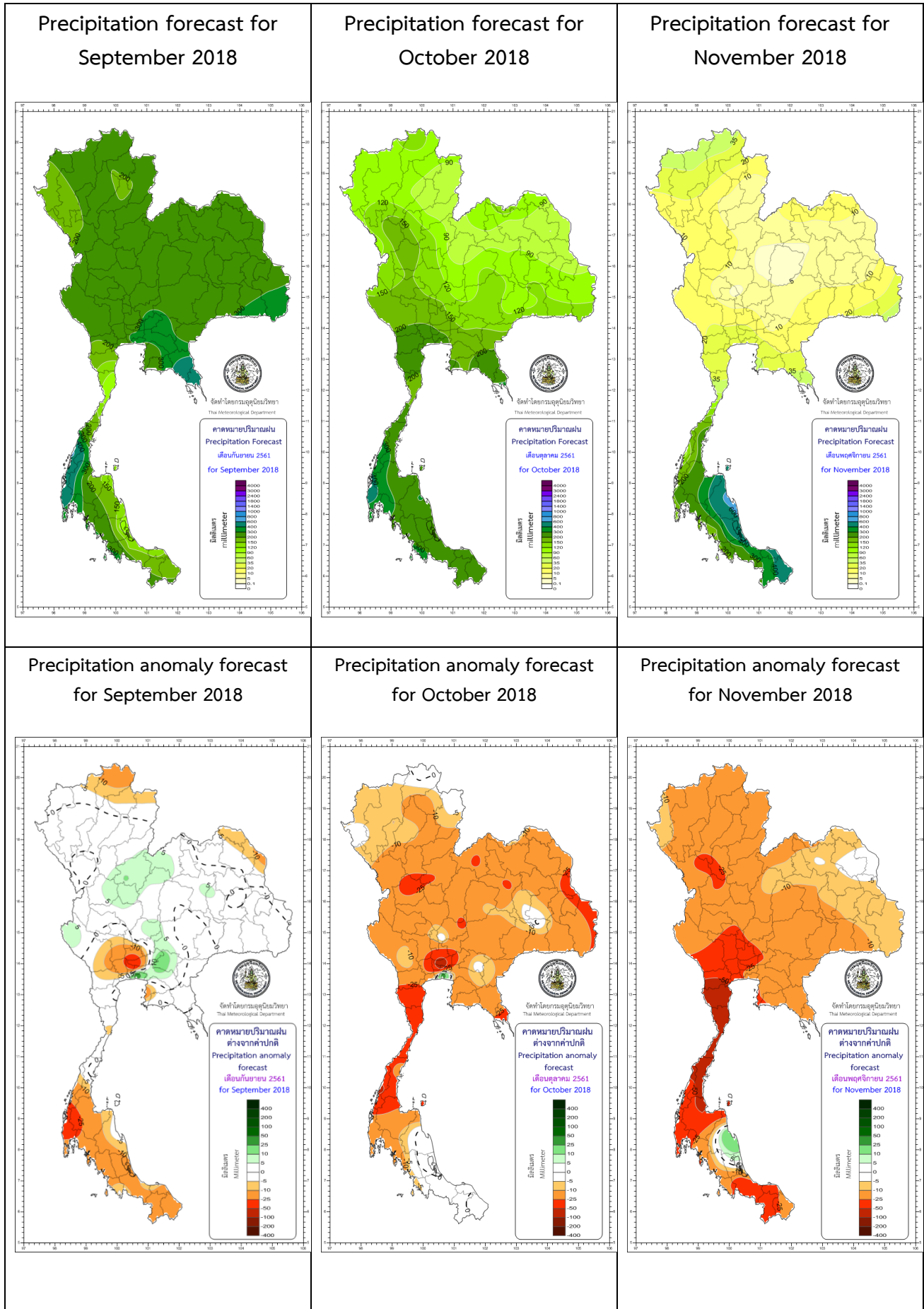
Graph of ENSO scenario probability forecasts (source: IRI/CPC)



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](http://www.tmd.go.th/en) and [www.climate.tmd.go.th](http://www.climate.tmd.go.th) \*\*

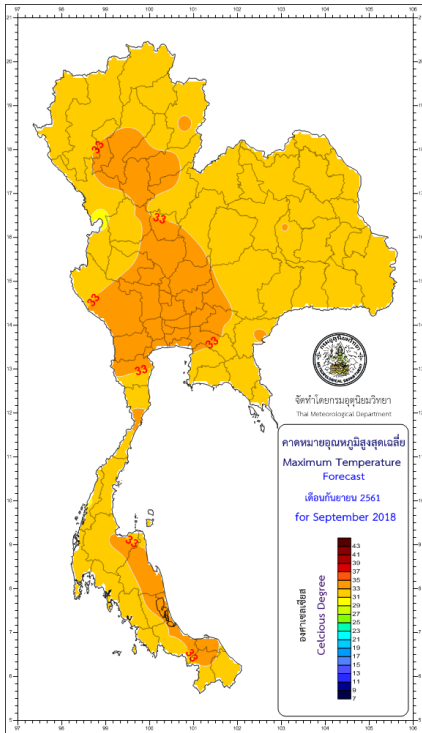
## Precipitation Anomaly (mm/month) Forecast:



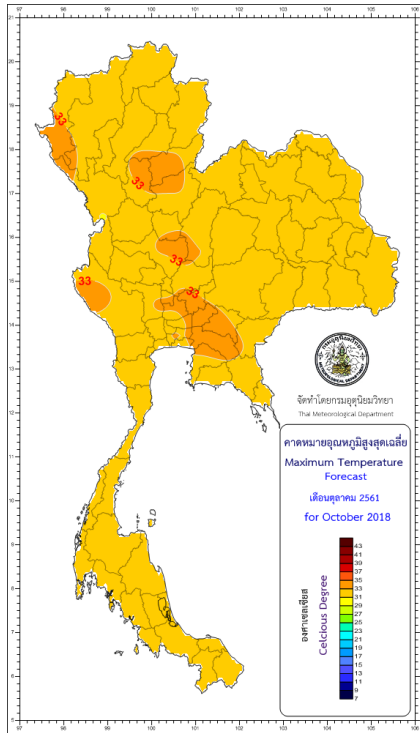


## Mean Maximum Temperature (°C) and Anomaly (°C) Forecast:

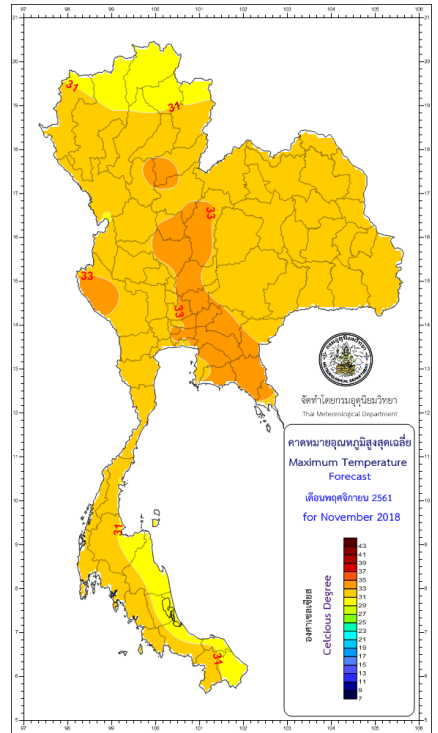
Mean maximum temperature forecast for September 2018



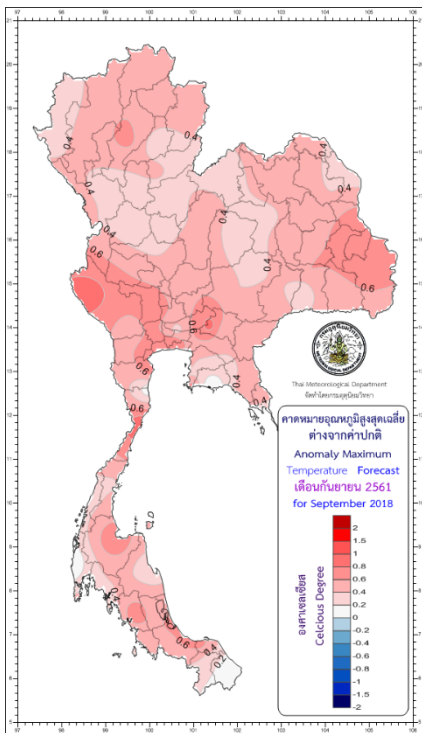
Mean maximum temperature forecast for October 2018



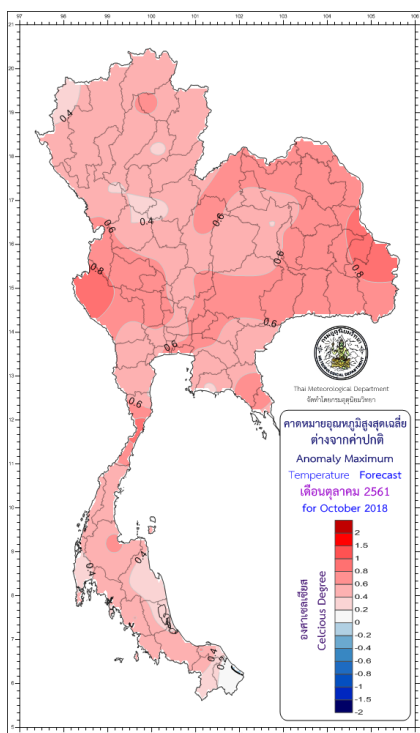
Mean maximum temperature forecast for November 2018



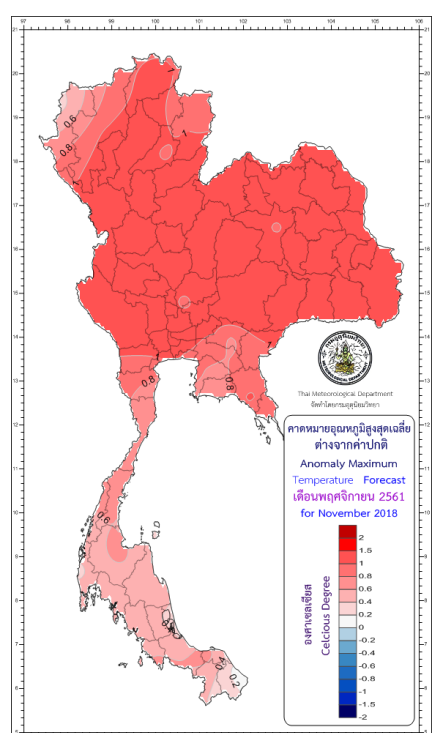
Mean maximum temperature anomaly forecast for September 2018



Mean maximum temperature anomaly forecast for October 2018

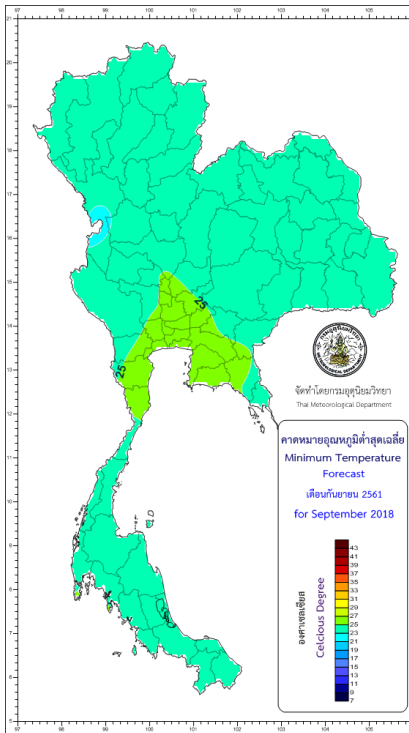


Mean maximum temperature anomaly forecast for November 2018

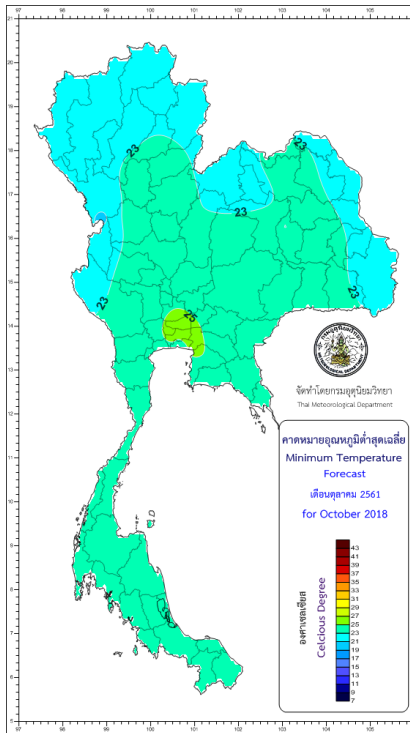


## Mean Minimum Temperature (°C) and Anomaly (°C) Forecast:

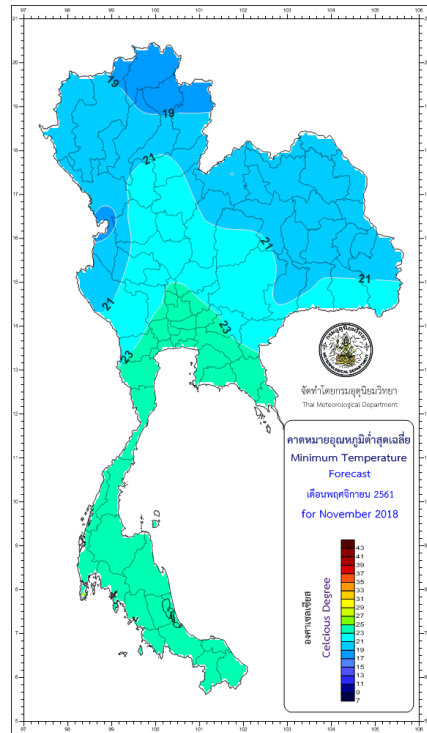
Mean minimum temperature forecast for September 2018



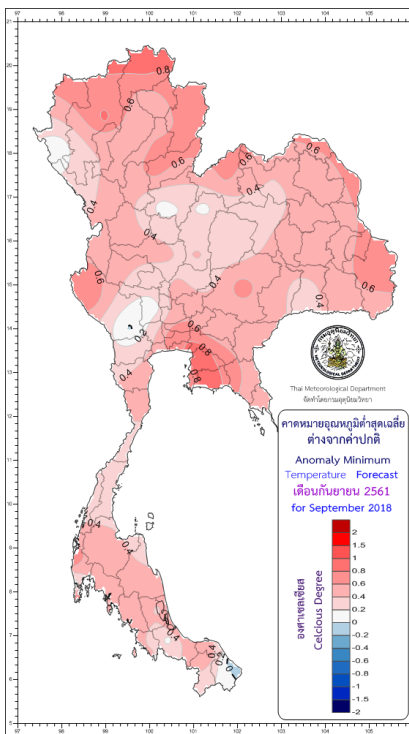
Mean minimum temperature forecast for October 2018



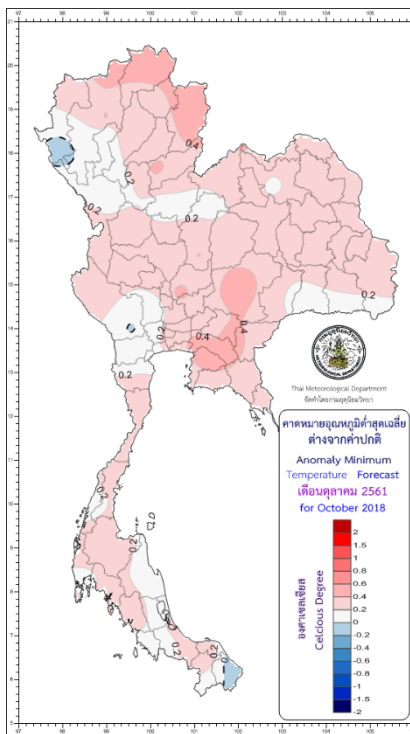
Mean minimum temperature forecast for November 2018



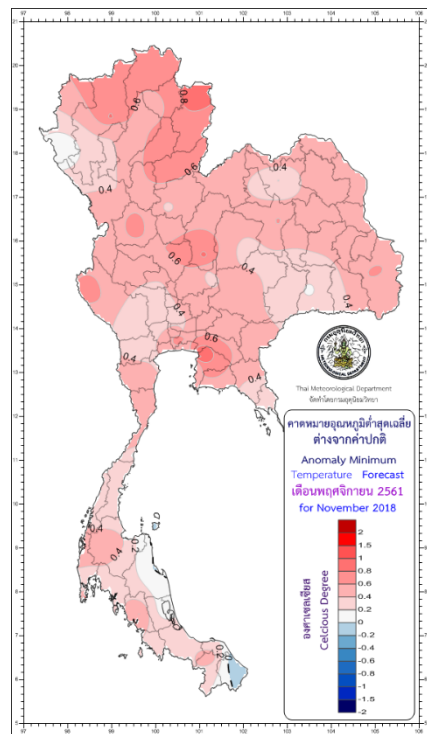
Mean minimum temperature anomaly forecast for September 2018



Mean minimum temperature anomaly forecast for October 2018



Mean minimum temperature anomaly forecast for November 2018



**\*\*\* Caution: \*\*\***

**September 2018:** Some tropical cyclones often develop at the western side of the North Pacific Ocean and move northwesterly through the South China Sea. As a result, Thailand will meet dense rainfall with heavy to very heavy rain at some areas.

**October & November 2018:** Some tropical cyclones favor a high chance to pass the tip of the Indochina Peninsula and then move near or past the Southern Thailand. Consequently, Thailand will meet densely abundant rainfall with heavy to very heavy rain at some areas. Accordingly, the public should follow weather forecast news and warnings about tropical cyclones 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)					
	September 2018			October 2018			November 2018			September		October		November	
	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	200-250	17-19	Near Normal	90-120	9-12	10 % Below Normal	10-30	2-4	30 % Below Normal	218.3	18.3	124.1	12.0	32.9	4.1
Northeastern	210-260	17-19	Near Normal	90-120	8-11	10 % Below Normal	10-20	1-3	30 % Below Normal	242.0	17.7	117.1	10.4	19.5	2.9
Central	230-280	18-20	Near Normal	160-200	12-15	5 % Below Normal	10-30	2-4	30 % Below Normal	257.3	19.2	187.1	14.4	37.2	4.1
Eastern	300-350	19-21	Near Normal	190-230	14-17	5 % Below Normal	30-50	4-6	20 % Below Normal	330.1	19.9	225.1	16.5	53.3	5.6
Southern Thailand (East Coast)	120-160	15-17	5 % Below Normal	220-270	16-19	5 % Below Normal	270-320	15-17	10 % Below Normal	149.8	16.7	255.3	18.6	357.2	16.3
Southern Thailand (West Coast)	350-450	21-23	5 % Below Normal	300-400	20-23	5 % Below Normal	160-200	15-17	10 % Below Normal	423.7	22.4	366.5	22.8	193.3	16.2
Bangkok Metropolis and Vicinity	300-350	20-22	Near Normal	250-300	15-18	5 % Below Normal	30-50	4-6	20 % Below Normal	334.3	21.1	292.1	17.5	49.5	5.8

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

Part	Prediction									Normal (Baseline period 1980-2010)					
	September 2018			October 2018			November 2018			September		October		November	
	Mean Tmax	Mean Tmax	Comparing to Normal	Mean Tmax	Mean Tmax	Comparing to Normal	Mean Tmax	Mean Tmax	Comparing to Normal	Mean Tmax	Mean Tmin	Mean Tmax	Mean Tmin	Mean Tmax	Mean Tmin
Northern	32-34	23-25	Near Normal	31-33	22-24	Near Normal	31-33	19-21	Slightly Above Normal	32.2	23.5	31.9	22.5	31.0	19.5
Northeastern	31-33	24-26	Near Normal	31-33	22-24	Slightly Above Normal	31-33	19-21	Slightly Above Normal	31.9	24.0	31.4	22.8	30.7	20.3
Central	32-34	24-26	Near Normal	32-34	24-26	Slightly Above Normal	32-34	21-23	Slightly Above Normal	32.9	24.7	32.4	24.2	31.9	22.6
Eastern	31-33	24-26	Near Normal	32-34	23-25	Near Normal	32-34	22-24	Slightly Above Normal	31.9	24.7	32.0	24.1	32.1	23.0
Southern Thailand (East Coast)	32-34	24-26	Near Normal	31-33	23-25	Near Normal	30-32	23-25	Near Normal	32.3	24.1	31.4	23.8	30.3	23.4
Southern Thailand (West Coast)	31-33	23-25	Near Normal	31-33	23-25	Near Normal	31-33	23-25	Near Normal	31.1	23.9	31.2	23.7	31.4	23.5
Bangkok Metropolis and Vicinity	32-34	25-27	Near Normal	32-34	24-26	Slightly Above Normal	32-34	24-26	Slightly Above Normal	32.8	25.0	32.6	24.8	32.4	23.9

**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 September 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.