

## Rainfall and severe flooding over Thailand in 2011

This year, flash flood affected some areas in upper Thailand since mid-May. In June, heavy rainfall occurred in many locations throughout the month caused by the influence of the active southwest monsoon and monsoon trough which lies across the upper Thailand. Moreover during late June, Thailand has dominated by the remnant of tropical depression "Haima" led to heavy rainfall in several areas especially in the northern part where flash floods and landslides has reported in some areas. In July, downpour rain continued in many areas in addition with tropical depression "Nock-Ten" moved into the area of Nan province on July 31 before weakening to the low pressure cell covering the northern part. This brought heavy rain to several areas resulted in widespread flooding in north and northeast parts.

During August to September, many areas such as northern, central and northeastern parts experienced wet condition caused by the active southwest monsoon and the rather active monsoon trough. Massive flooding persisted mainly in lower northern and central parts.

In October, the late rainy season, the northeast monsoon prevailed over Thailand since around mid-month. Meanwhile, the monsoon trough moved southward to lie across central Thailand, bringing occasional rain. The monthly rainfall amount has decreased from the previous month especially in central part, at 2% below normal.

However, associated with the high tide, severe flood and extensive damage in the lower northern part has extended to the central part including the Chao Phraya River Basin, most areas of northern, eastern and western Bangkok and its vicinity.

The rainfall amount of Thailand since 1 January to 31 October was 1822.4 millimeters, about 28 percent above normal and the October rainfall was 201.8 millimeters, 10 percent above normal. Seasonal rainfall from May to October in 2011 was above normal of 20 – 60% for most Meteorological Station in northern part and of 10 - 40% with below normal in some areas in central part.

The rainfall average compare to normal in the lower northern and central parts where were the most affected areas are shown as in figure 1. Figure 2 shown the Accumulative Rainfall of Met Station in Northern and Central Part. Detail of monthly rainfall and departures from normal in each part are tabulated in table below.

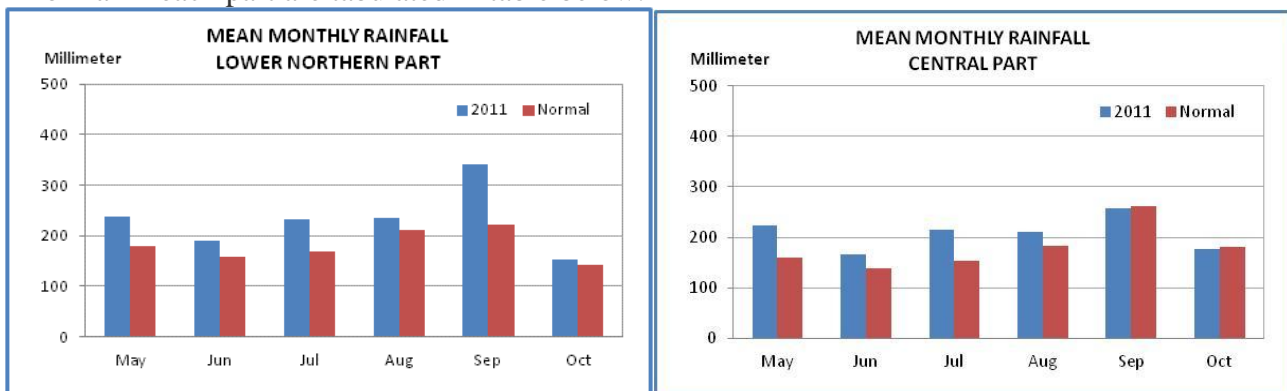


Figure 1 Mean Monthly Rainfall in Lower Northern and Central Part

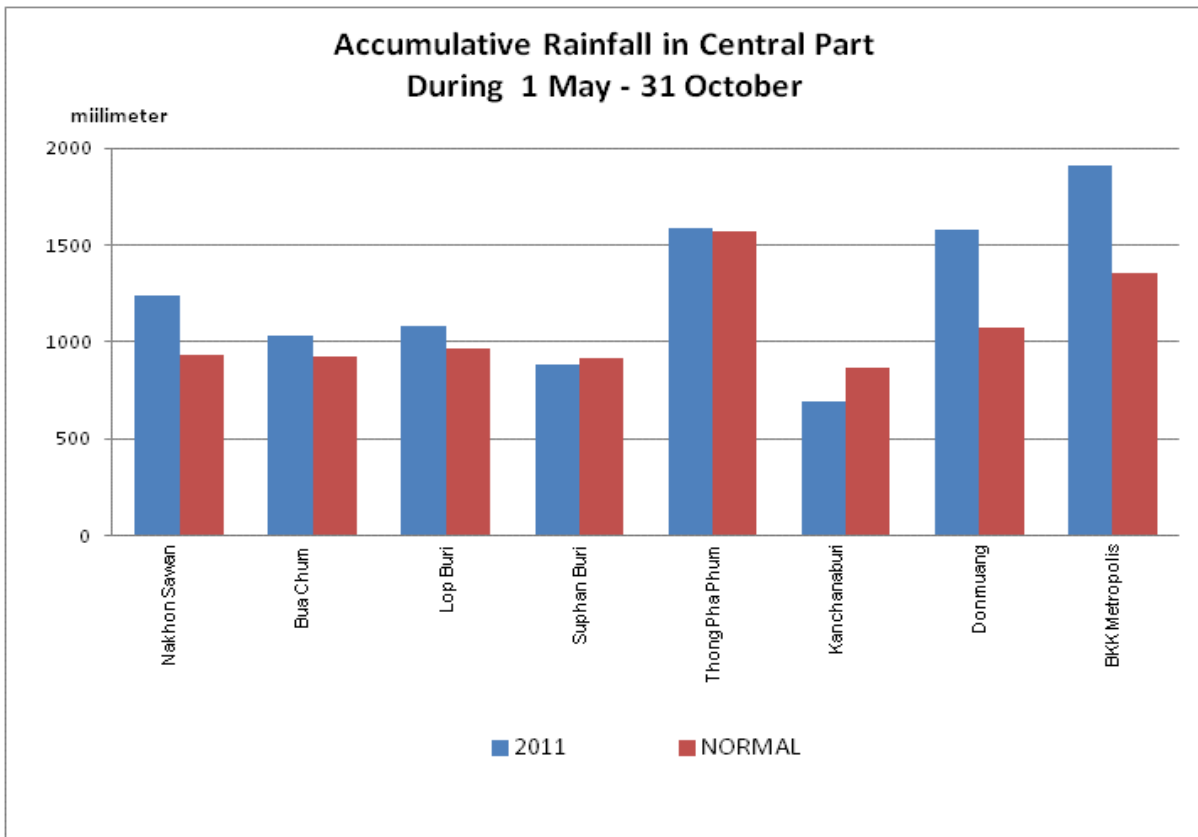
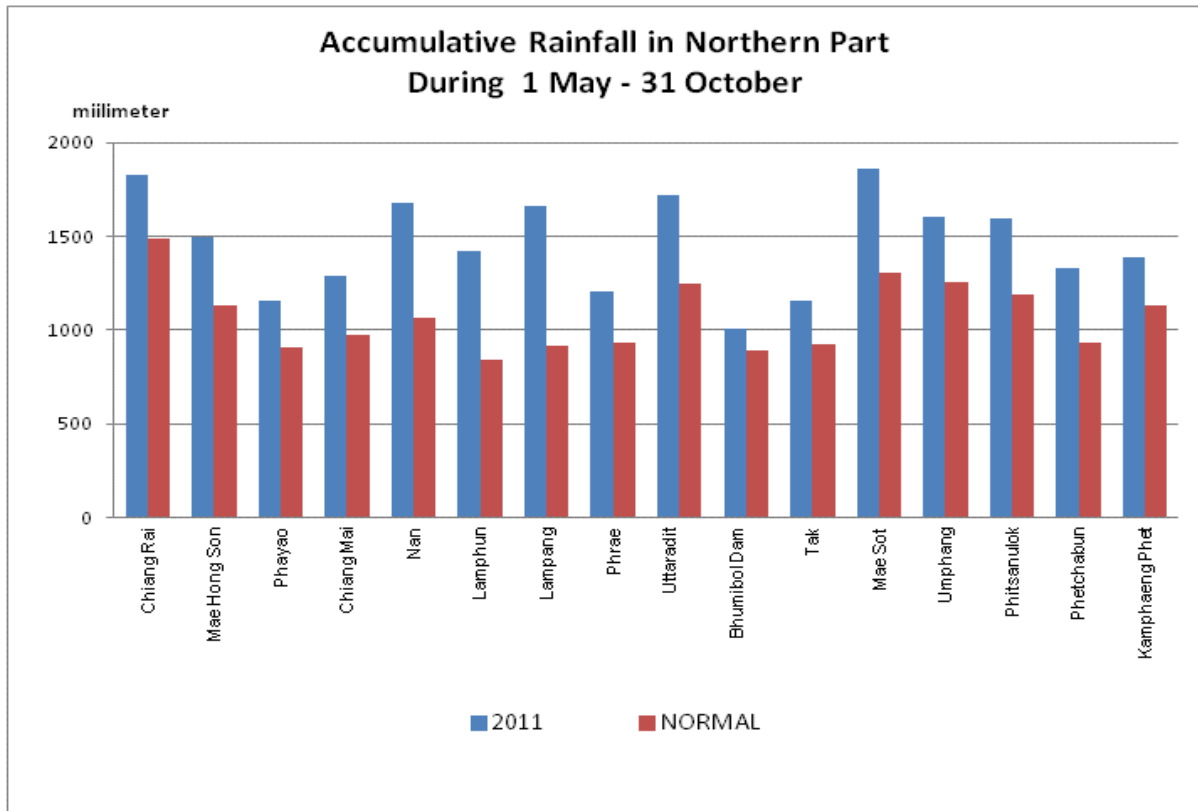


Figure 2 Accumulative Rainfall of Met Station in Northern and Central Part

**Monthly and Accumulative Rainfall of Thailand in 2011**

<b>PART</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>1 Jan - 31 Oct</b>
<b>NORTH (UPPER)</b>											
Rainfall amount (mm.)	8.0	1.4	86.9	129.7	253.1	242.4	281.1	314.3	278.2	112.6	1707.7
Departure from normal (mm.)	1.1	-7.9	65.5	56.3	85.4	96.5	89.6	74.6	76.7	8.1	545.9
Departure from normal (%)	16	-85	306	77	51	66	47	31	38	8	47
<b>NORTH (LOWER)</b>											
Rainfall amount (mm.)	2.6	12.3	126.4	110.4	236.9	190.3	232.8	234.8	341.5	153.2	1641.2
Departure from normal (mm.)	-2.4	-1.2	98.6	47.2	57.7	33.2	64.7	23.8	118.4	11.5	451.5
Departure from normal (%)	-48	-9	355	75	32	21	39	11	53	8	38
<b>NORTH</b>											
Rainfall amount (mm.)	5.3	6.8	106.6	120.0	245.0	216.3	256.9	274.9	309.8	132.9	1674.5
Departure from normal (mm.)	-0.6	-4.6	82.0	51.7	71.6	64.8	77.1	49.6	97.5	9.8	498.9
Departure from normal (%)	-10	-40	333	76	41	43	43	22	46	8	42
<b>NORTHEAST</b>											
Rainfall amount (mm.)	0.2	15.1	23.1	79.0	201.1	187.2	319.8	324.8	352.2	182.5	1685.0
Departure from normal (mm.)	-3.9	-2.6	-14.6	-7.1	18.8	-22.7	111.9	66.0	110.3	71.2	327.3
Departure from normal (%)	-95	-15	-39	-8	10	-11	54	26	46	64	24
<b>CENTRAL</b>											
Rainfall amount (mm.)	1.4	21.5	123.8	112.9	222.6	165.8	214.9	211.8	256.9	177.0	1508.6
Departure from normal (mm.)	-4.8	9.1	93.2	38.3	62.7	27.2	62.4	27.9	-4.1	-3.7	308.2
Departure from normal (%)	-77	73	305	51	39	20	41	15	-2	-2	26
<b>EAST</b>											
Rainfall amount (mm.)	0.0	47.4	116.2	136.3	169.4	277.5	258.4	333.5	465.9	272.9	2077.5
Departure from normal (mm.)	-14.7	18.4	61.6	40.0	-42.0	5.3	-7.5	22.0	132.7	44.5	260.3
Departure from normal (%)	-100	63	113	42	-20	2	-3	7	40	20	14
<b>SOUTH (EAST COAST)</b>											
Rainfall amount (mm.)	176.8	20.7	557.0	63.9	124.8	121.4	141.4	157.6	122.3	241.3	1727.2
Departure from normal (mm.)	116.8	-15.3	506.6	-9.1	-12.7	12.3	28.0	29.4	-21.3	-11.0	623.7
Departure from normal (%)	195	-43	1005	-13	-9	11	25	23	-15	-4	57
<b>SOUTH (WEST COAST)</b>											
Rainfall amount (mm.)	63.7	20.1	424.2	118.0	267.1	231.7	361.9	461.3	446.9	308.0	2702.9
Departure from normal (mm.)	40.8	-8.6	353.7	-43.0	-47.9	-88.5	9.5	57.2	6.7	-49.7	230.2
Departure from normal (%)	178	-30	502	-27	-15	-28	3	14	2	-14	9
<b>OVER COUNTRY</b>											
Rainfall amount (mm.)	34.9	19.3	191.0	103.6	206.1	199.7	259.0	287.3	319.7	201.8	1822.4
Departure from normal (mm.)	18.2	-1.5	150.3	17.0	18.6	10.0	57.4	44.6	67.0	17.8	399.4
Departure from normal (%)	109	-7	369	20	10	5	29	18	27	10	28

**The base period for the normal is 1971 – 2000.**

Climatological Center

Meteorological development Bureau

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