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Climate Monitoring and Prediction for the Maldives – October 2018

Prepared by Staff from Foundation for Environment, Climate and Technology, Sri Lanka and USA, Maldives Meteorological Service, and Columbia University
(Ruchira Lokuhetti, Lareef Zubair, Janan Visvanathan, Zahid and Michael Bell)

November 10, 2018

PACIFIC SEAS STATE

November 8, 2018

El Niño-level SSTs were observed in the October average, and the subsurface waters also continued to be warmer than average. However, the atmospheric variables showed mainly ENSO-neutral patterns, including the distribution of cloudiness/rainfall, sea level pressure and upper level winds. Only lower-level wind anomalies were weakly westerly in the eastern Pacific–a suggestion of El Niño.

(Text Courtesy IRI)

INDIAN OCEAN STATE

October 31, 2018

1 ^{0}C above average SST was observed around Maldives.

MJO INDEX

The MJO was significant in Phase 1 from Oct 1-7; in Phase 2 from Oct 8-13; and in Phase 3 from Oct 14 -16. Usually rainfall in Maldives is augmented in Phase 2.

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Highlights

Monitored: *During October, central parts of the country received rainfall above than is normal for the season by more than 240 mm; and most parts of southern islands and northern islands by up to 120 mm. The Northern Islands have been having a rainfall deficit in the last year compared to normal rainfall. Also, the Central Islands have a slight excess of rainfall compared to the average while the Southern Islands are having a good year. The sea surface temperature around Maldives is above 1 ^{0}C normal. This is extremely warm.*

Predictions: *IMD GFS model predicts up to 40 mm of rainfall in the southern islands; up to 20 mm in central islands; and up to 10 mm in northern islands on November 11th, 12th and 13th. On the 14th, up to 20 mm of rainfall is expected in central islands and up to 10 mm in northern and southern islands. Long Range Weather prediction simulations anticipate total rainfall up to 75 mm for central islands during November 9th -14th.*

Summary

CLIMATOLOGY

Monthly Climatology: In November, the whole country usually receives up to 200 mm rain. Wind is westerly. Usually in December, northern islands receive up to 150 mm while central and southern islands receive up to 200 mm and 250 mm rain respectively. Northern islands get north easterly wind while southern islands get northerly wind. In January northern islands receive up to 50 mm rain while central and southern islands receive up to 100 mm and 250 mm rain respectively. Wind is north easterly.

MONITORING

Weekly Rainfall Monitoring:

Date	Rainfall
19th October	Up to 20 mm in southern islands.
20th October	Up to 10 mm in southern islands.
21st October	Up to 30 mm in southern islands and up to 5 mm in northern islands.
22nd October	Up to 10 mm in southern islands.
23rd October	Up to 50 mm in southern islands; up to 20 mm in central; and up to 10 mm in northern islands.
24th October	Up to 10 mm in the entire island.
25th October	Up to 30 mm in central islands and up to 20 mm in southern islands.
26th October	Up to 50 mm in central islands and up to 20 mm in the northern and southern islands.
27th October	Up to 50 mm in central and southern islands and up to 20 mm in the northern islands.
28th October	Up to 50 mm in central islands; up to 30 mm in southern; and up to 20 mm in northern islands.
29th October	Up to 20 mm in central and southern islands.
30th October	Up to 50 mm in central islands and up to 30 mm in southern islands.
31st October	Up to 30 mm in central islands and up to 20 mm in southern islands.

Monthly and Seasonal Rainfall Monitoring: In October, Nilandhoo and Kolhuamdulu atolls received up to 60 mm of rainfall below the monthly average. Rest of the central islands received rainfall more than 240 mm above the monthly average; and southern northern islands up to 120 mm. The central islands received up to 600 mm of total rainfall; central *and southern* islands up to 300 mm.

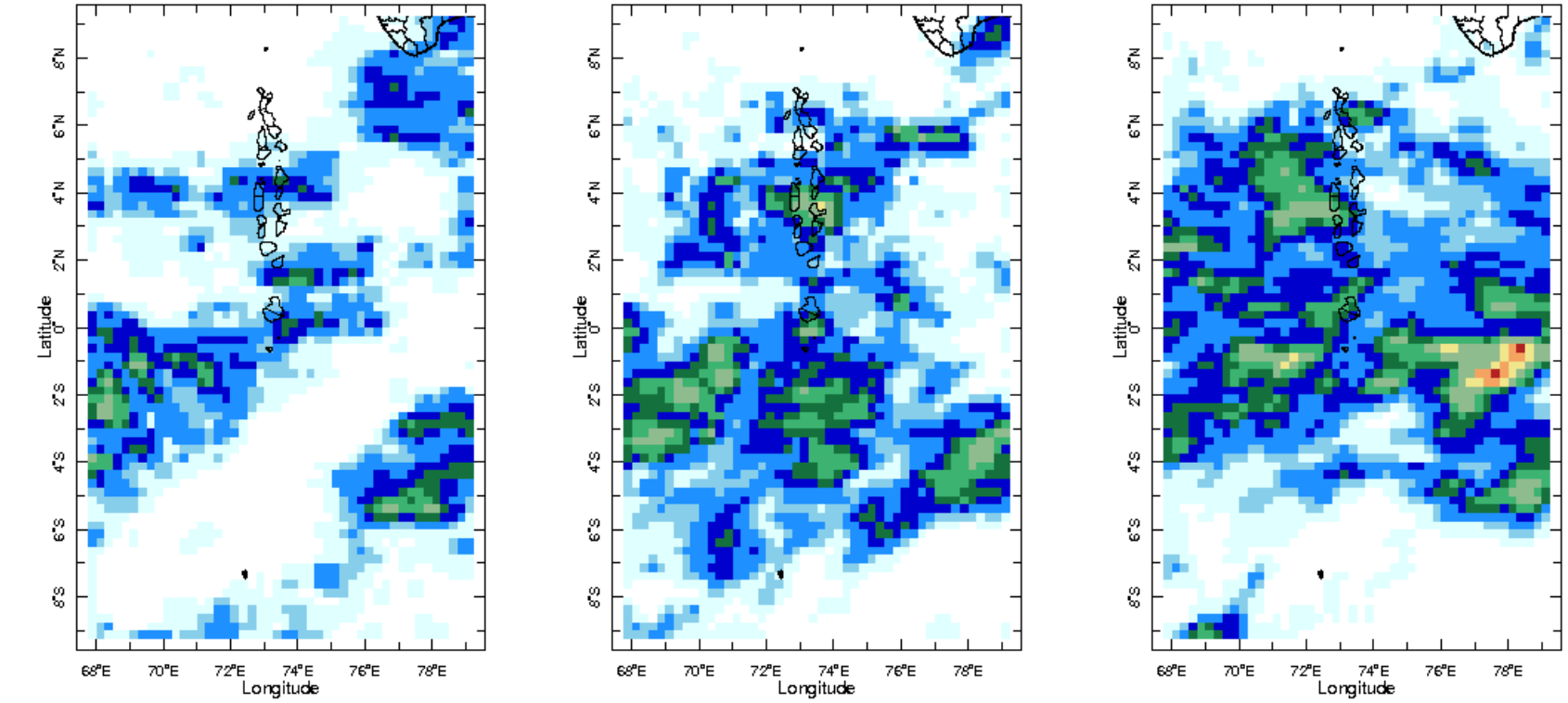
PREDICTIONS

Weekly Rainfall Forecast: According to IMD GFS daily rainfall up to 40 mm of is expected in the southern islands; up to 20 mm in central islands; and up to 10 mm in northern islands on November 11th, 12th and 13th. On the 14th, up to 20 mm of rainfall is expected in central islands and up to 10 mm in northern and southern islands. On the 15th and 16th, up to 20 mm rainfall is expected in the southern and central islands and up to 10 mm in the northern islands. On the 17th, up to 40 mm of rainfall is expected in the southern islands; and up to 10 mm in central islands.

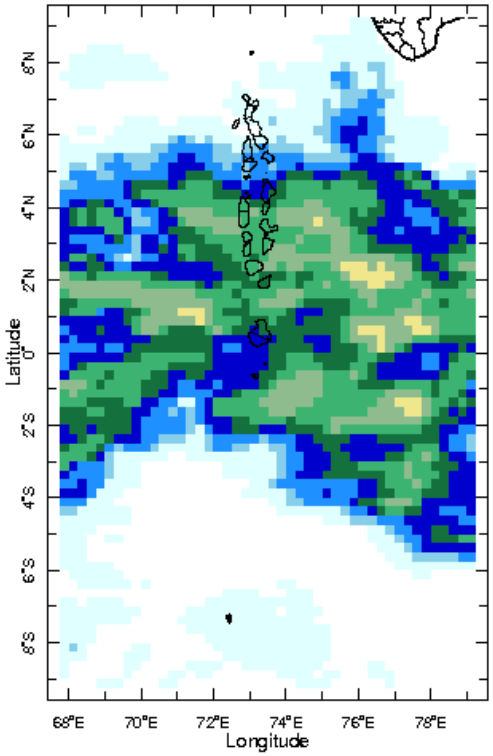
Inside this Issue

Daily Rainfall Monitoring

The following figures show the observed rainfall in the last 15 days in Maldives.



25 Oct 2018 26 Oct 2018 27 Oct 2018



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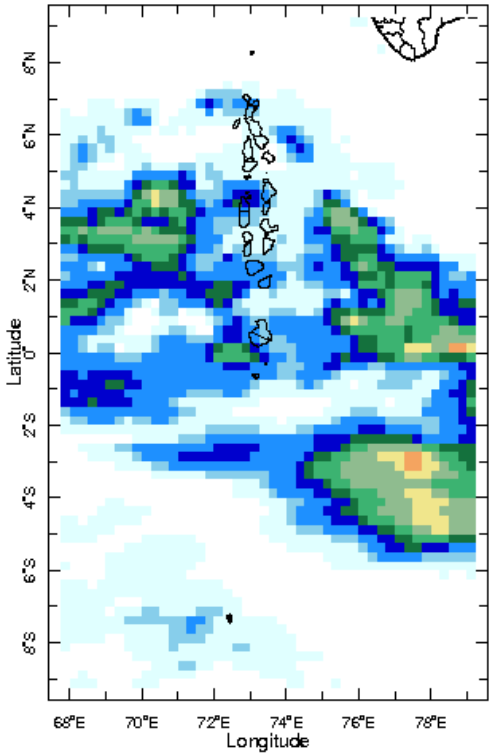

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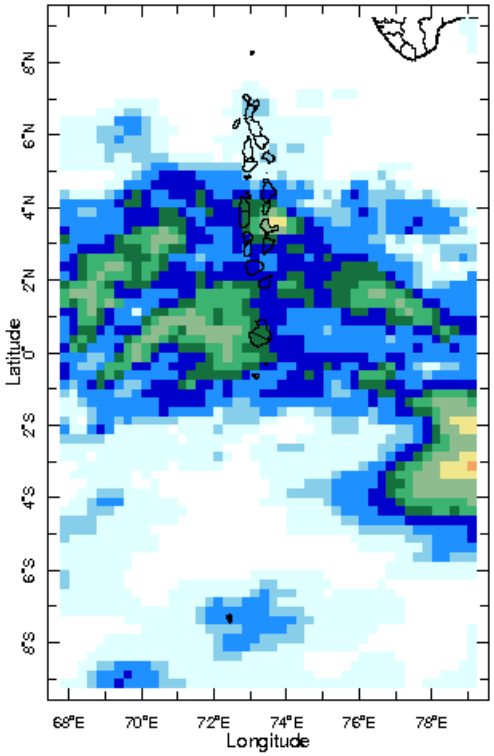
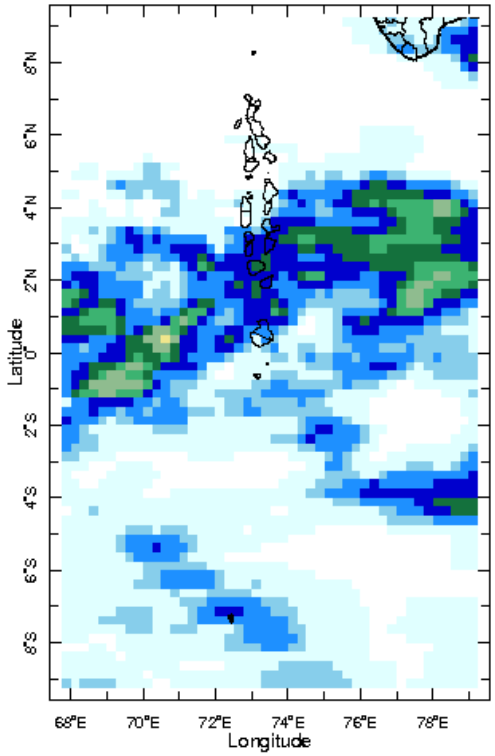
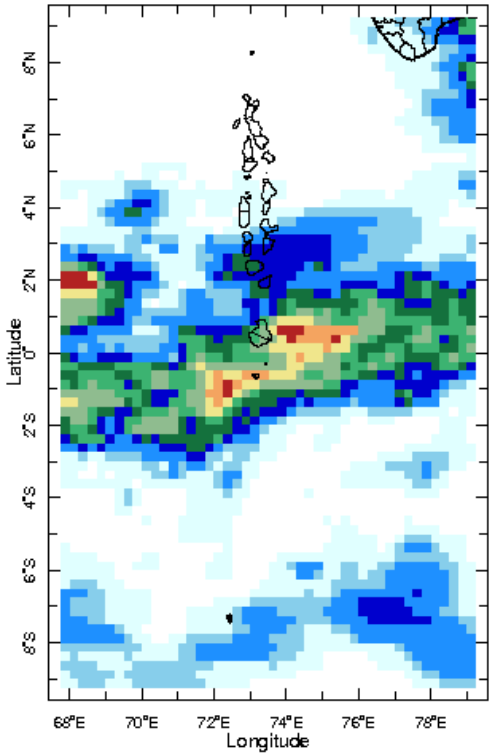


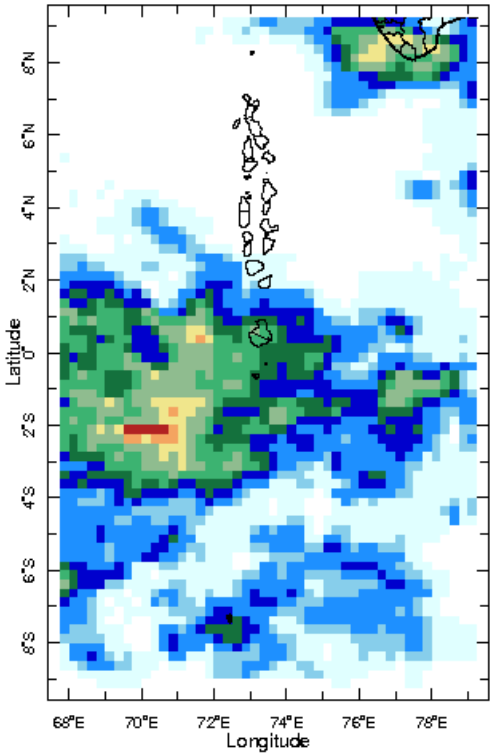
30 Oct 2018



31 Oct 2018



1 Nov 2018



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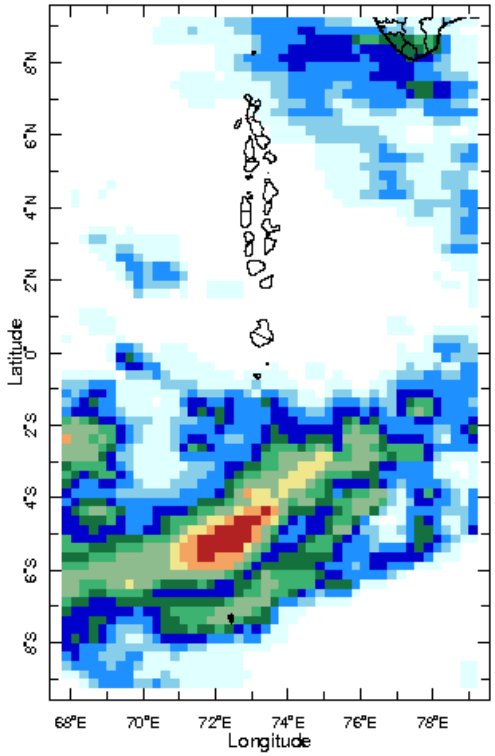
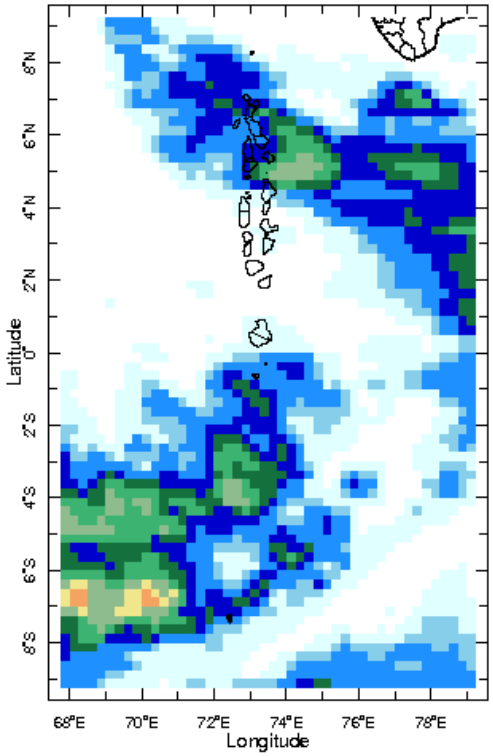
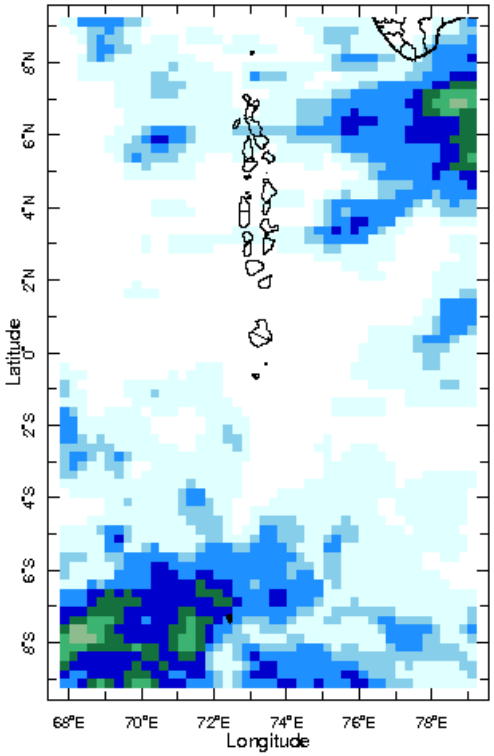


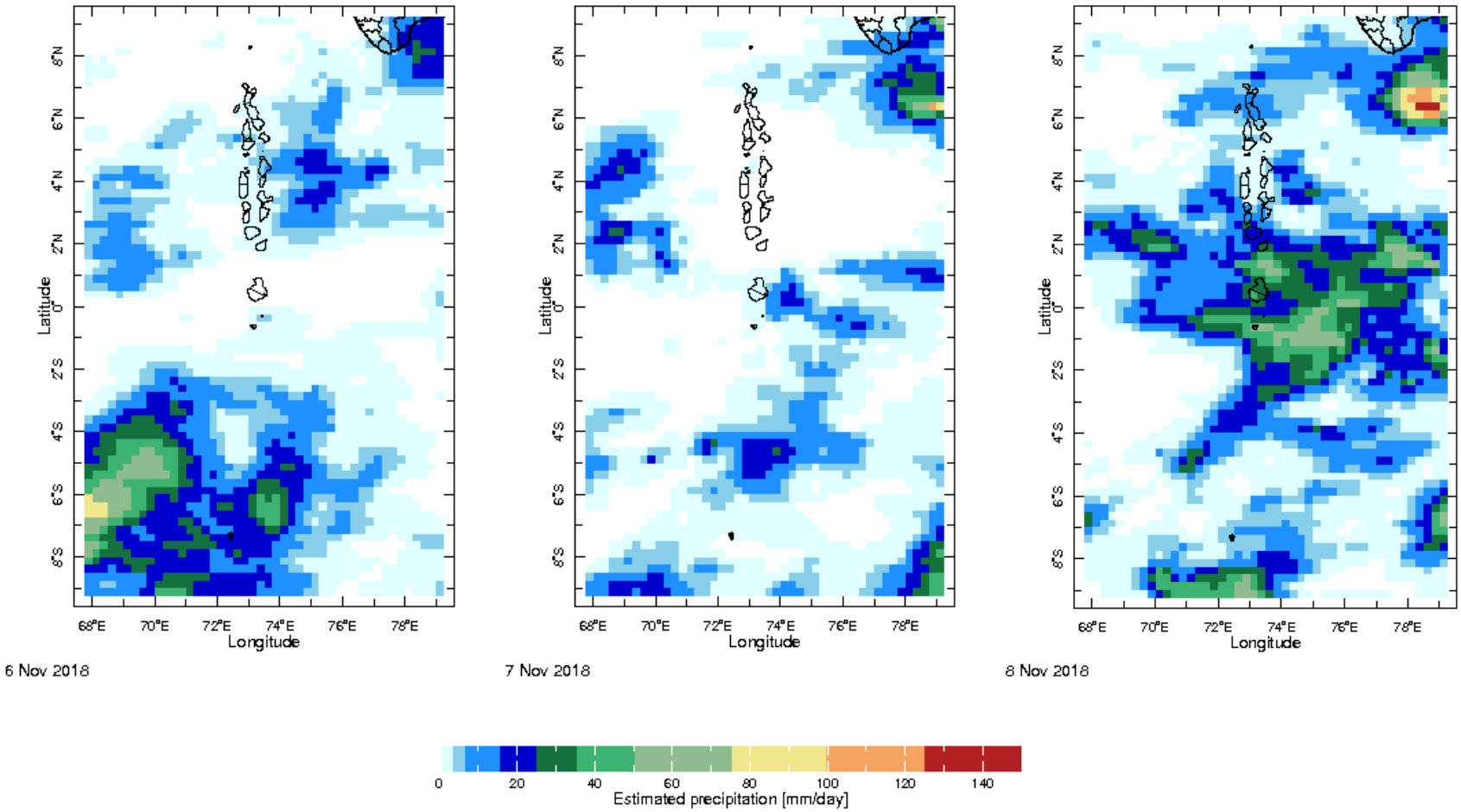
3 Nov 2018



4 Nov 2018

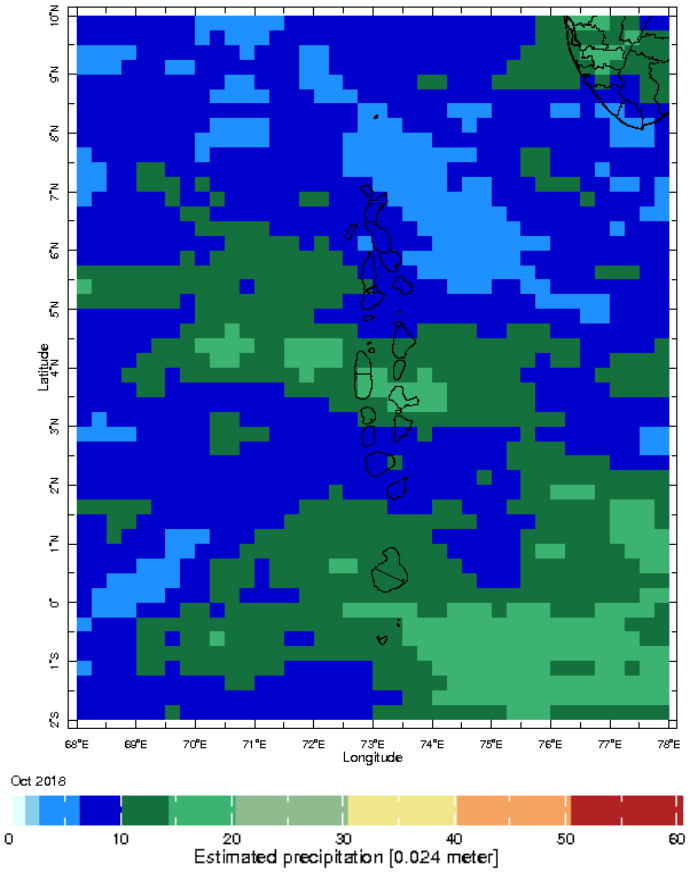


5 Nov 2018

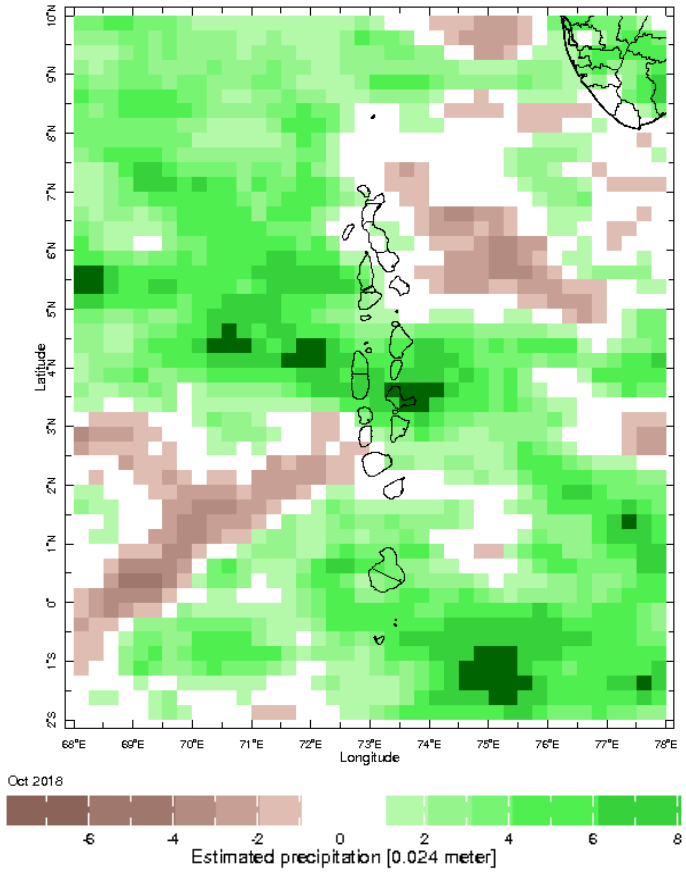

8°N
6°N
4°N
2°N
0°
2°S
4°S
6°S
8°S
Latitude
68°E
70°E
72°E
74°E
76°E
78°E
Longitude
6 Nov 2018
7 Nov 2018
8 Nov 2018
0
20
40
60
80
100
120
140
Estimated precipitation [mm/day]

Monthly Rainfall Monitoring

The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places with above average rainfall. Darker shades show higher magnitudes in rainfall



Monthly Average



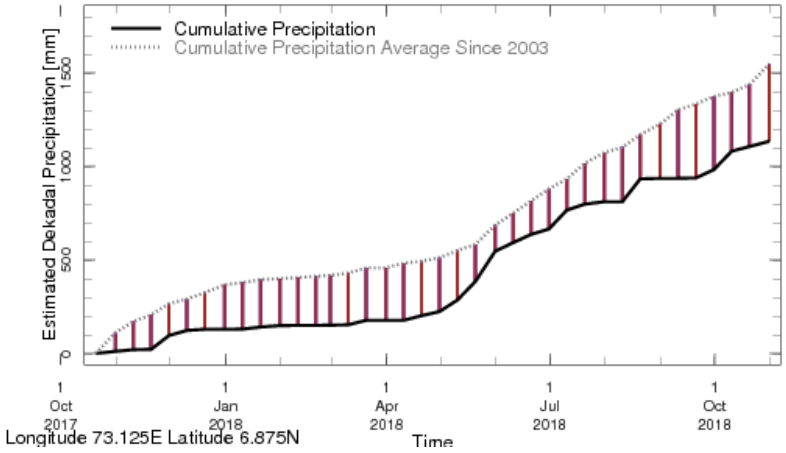
Monthly Anomaly

Monthly and Seasonal Monitoring

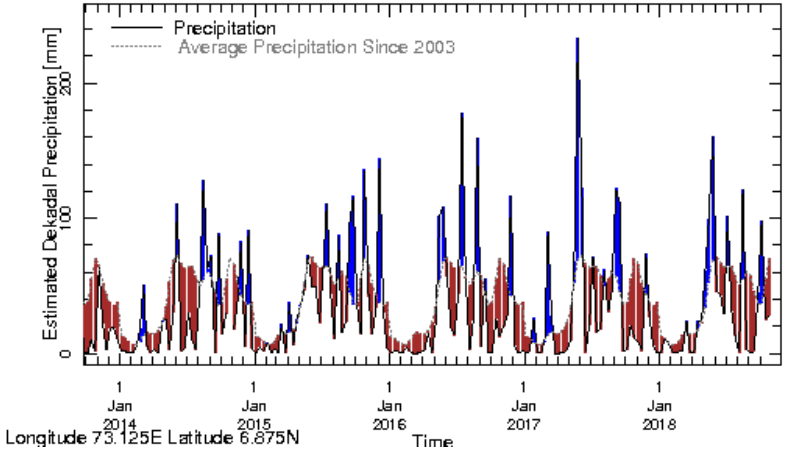
Northern Maldives:

Not Available

Rainfall in the current year (black) compared to rainfall in previous 5 years



Rainfall of past 365 days (black) compared to average rainfall since 2003.

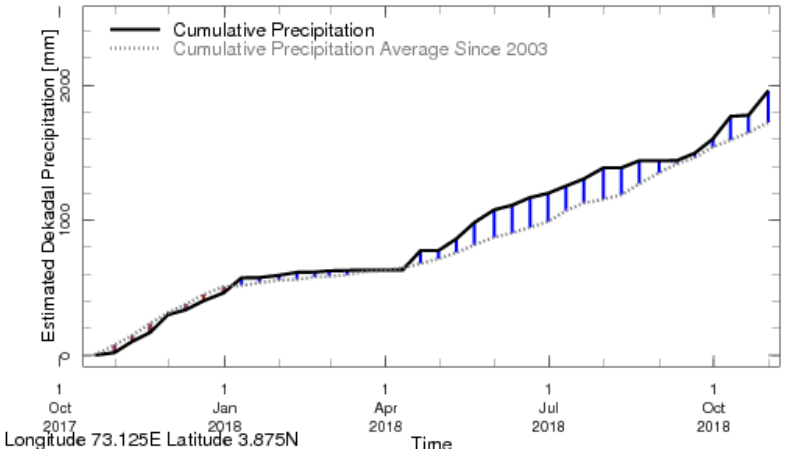


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

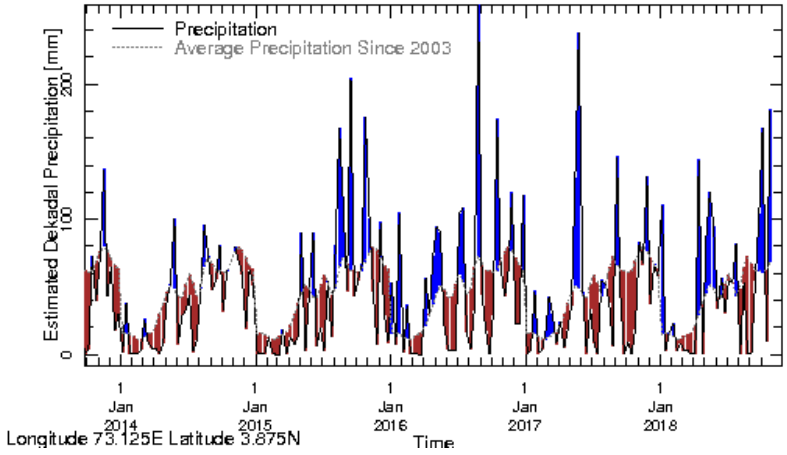
Central Maldives:

Not Available

Rainfall in the current year (black) compared to rainfall in previous 5 years

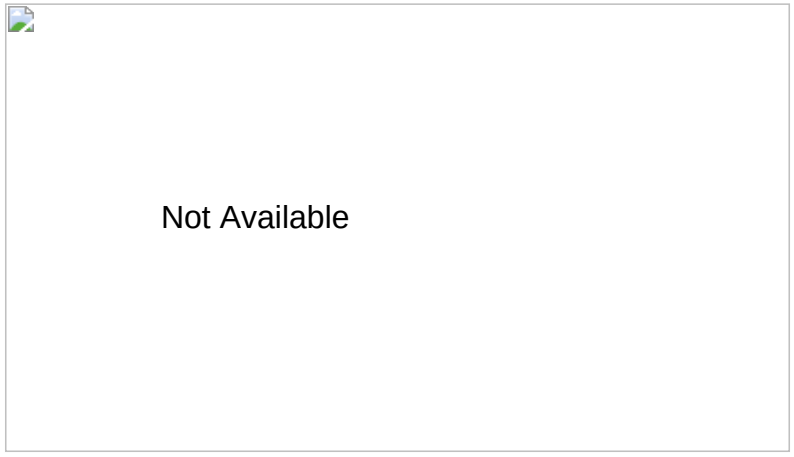


Rainfall of past 365 days (black) compared to average rainfall since 2003.

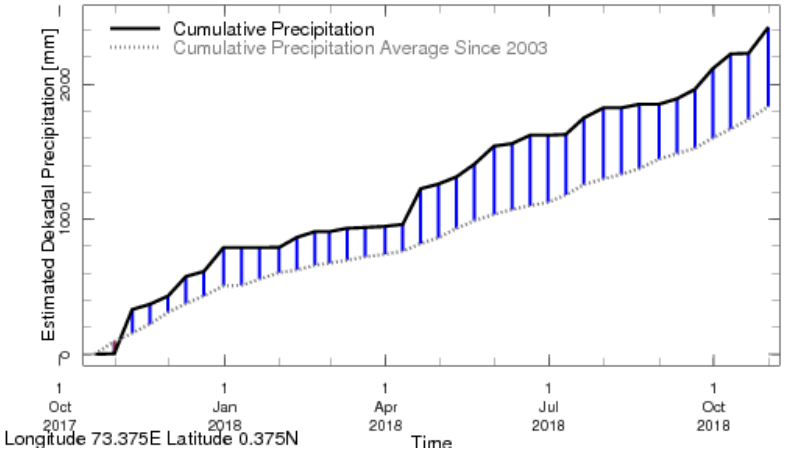


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

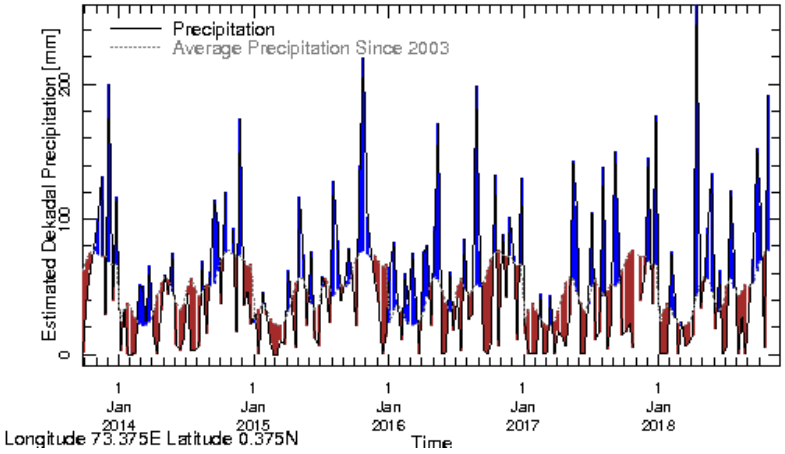
Southern Maldives:



Rainfall in the current year (black) compared to rainfall in previous 5 years

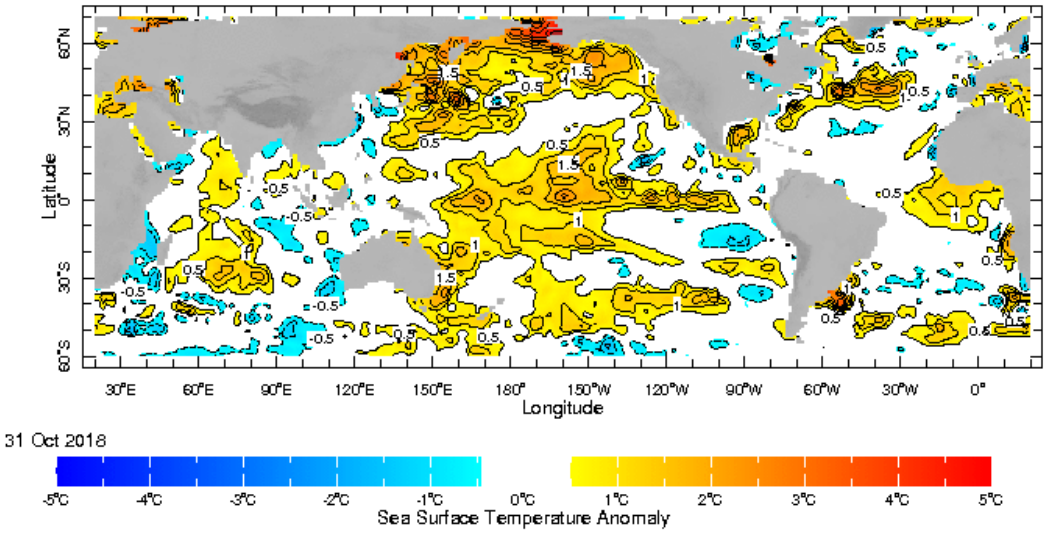


Rainfall of past 365 days (black) compared to average rainfall since 2003.



Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

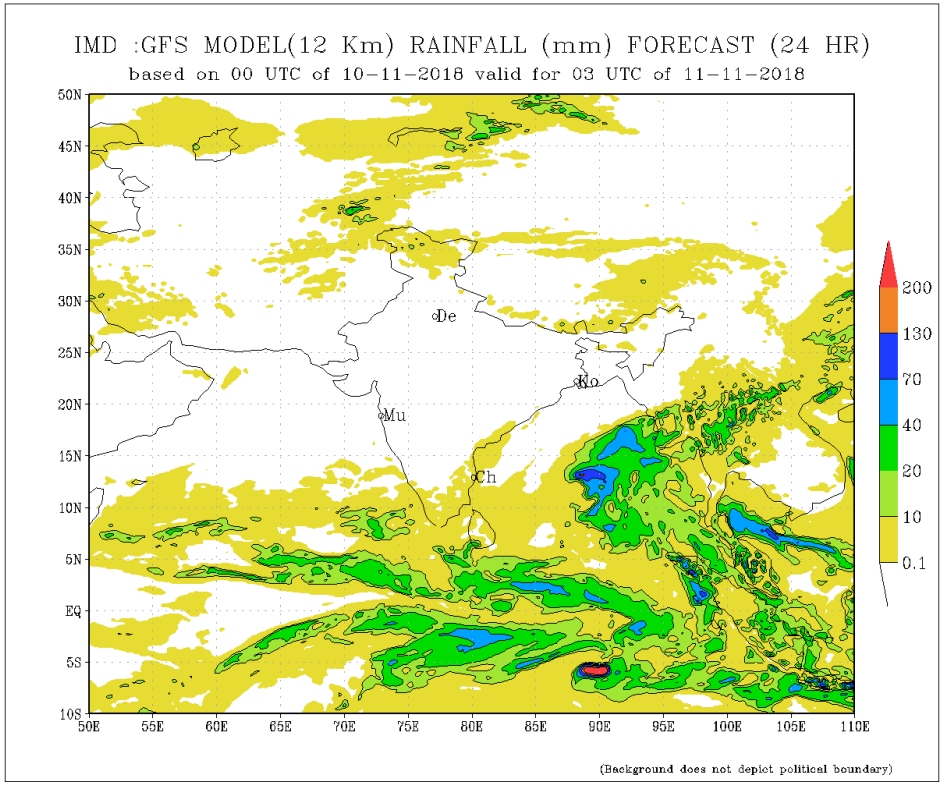
Ocean Surface Monitoring

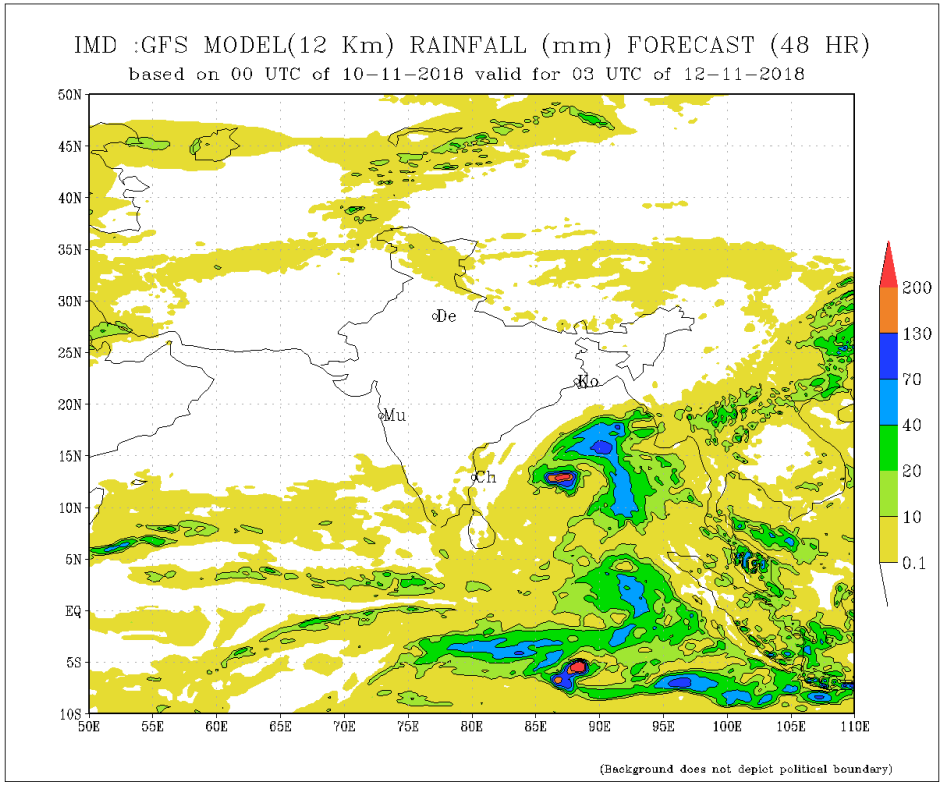


WORLDBATH topography

Daily Rainfall Forecast

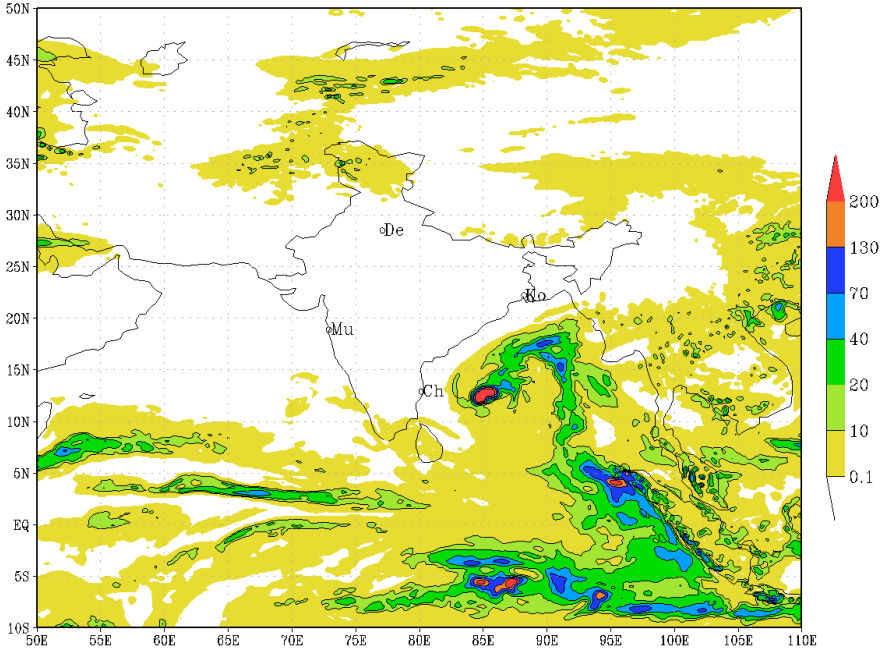
Daily Rainfall forecasts (up to 7 days ahead) from the IMD is provided in figures below. These predictions are from the GFS (T1534) model covering the entire south Asian region.





IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (72 HR)

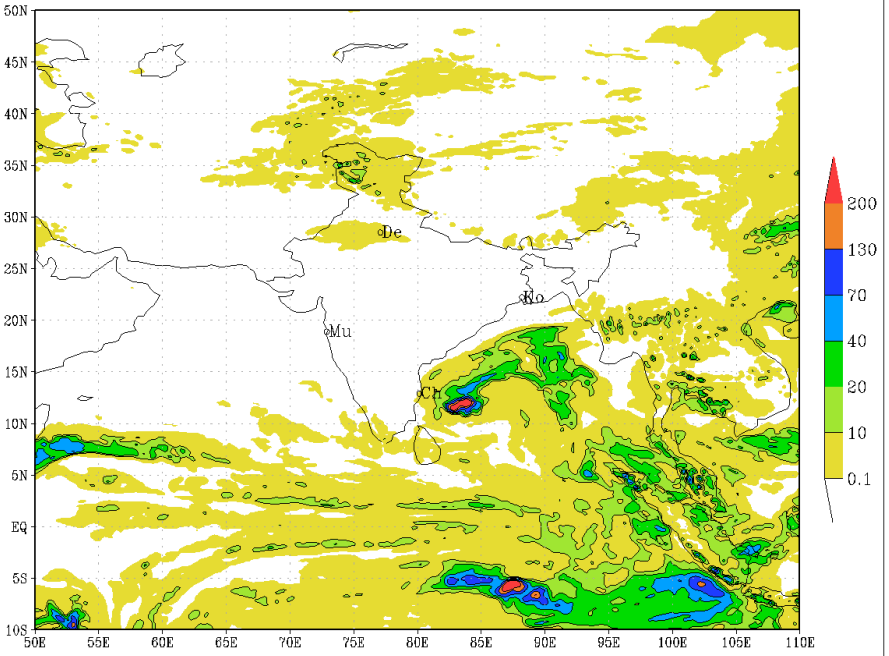
based on 00 UTC of 10-11-2018 valid for 03 UTC of 13-11-2018



(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (96 HR)

based on 00 UTC of 10-11-2018 valid for 03 UTC of 14-11-2018



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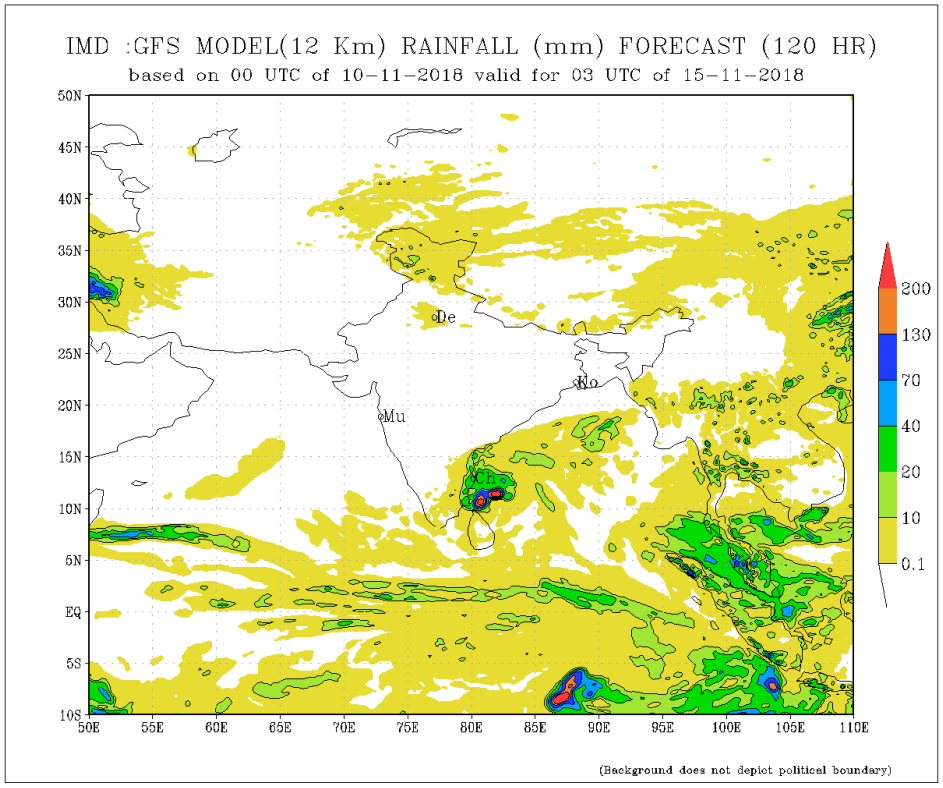
IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (120 HR)
based on 00 UTC of 10-11-2018 valid for 03 UTC of 15-11-2018
50N
45N
40N
35N
30N
25N
20N
15N
10N
5N
EQ
5S
10S
50E
55E
60E
65E
70E
75E
80E
85E
90E
95E
100E
105E
110E
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70
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20
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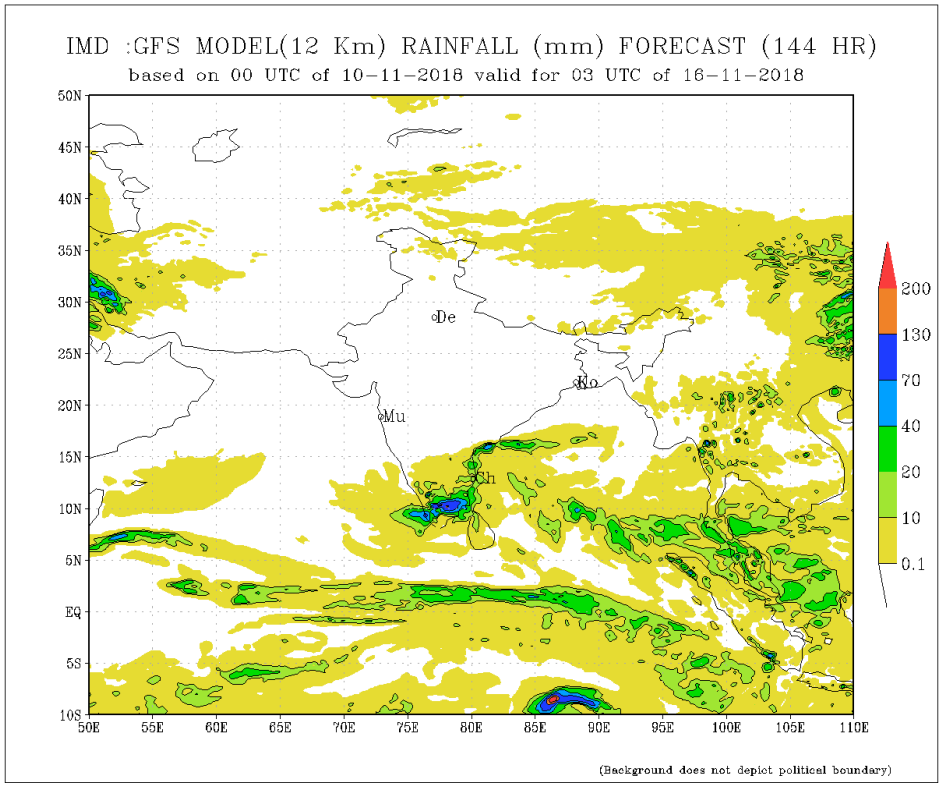
0.1
(Background does not depict political boundary)


IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (144 HR)
based on 00 UTC of 10-11-2018 valid for 03 UTC of 16-11-2018
50N
45N
40N
35N
30N
25N
20N
15N
10N
5N
EQ
5S
10S
50E
55E
60E
65E
70E
75E
80E
85E
90E
95E
100E
105E
110E
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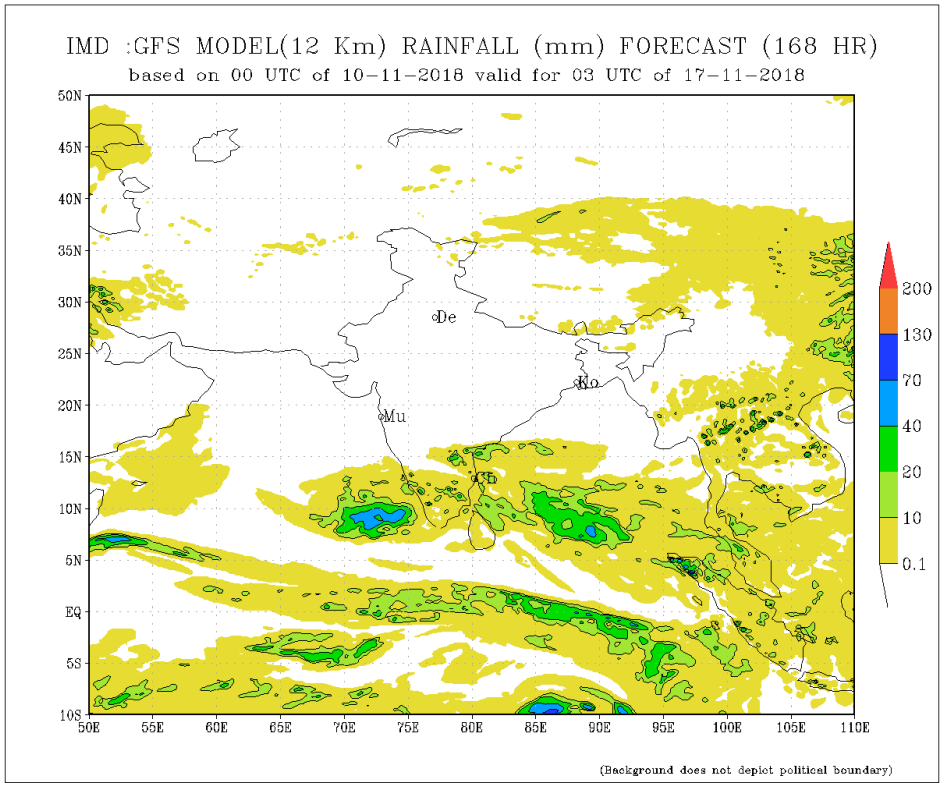
0.1
(Background does not depict political boundary)


IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (168 HR)
based on 00 UTC of 10-11-2018 valid for 03 UTC of 17-11-2018
50N
45N
40N
35N
30N
25N
20N
15N
10N
5N
EQ
5S
10S
50E
55E
60E
65E
70E
75E
80E
85E
90E
95E
100E
105E
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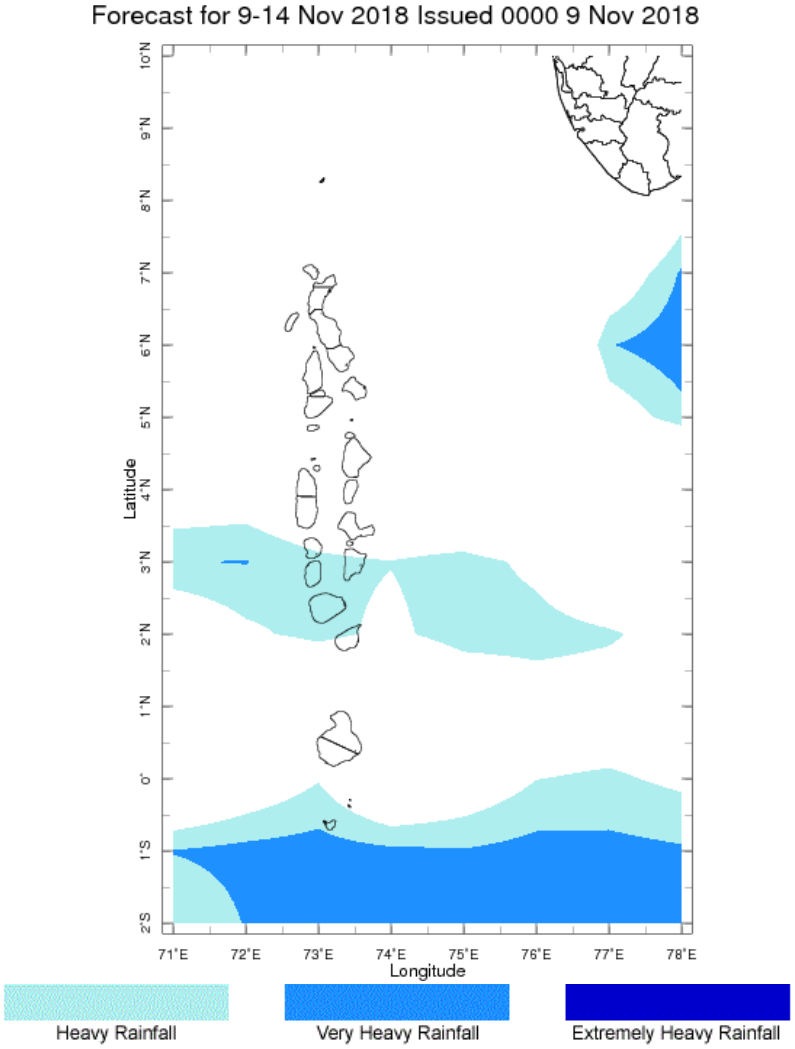
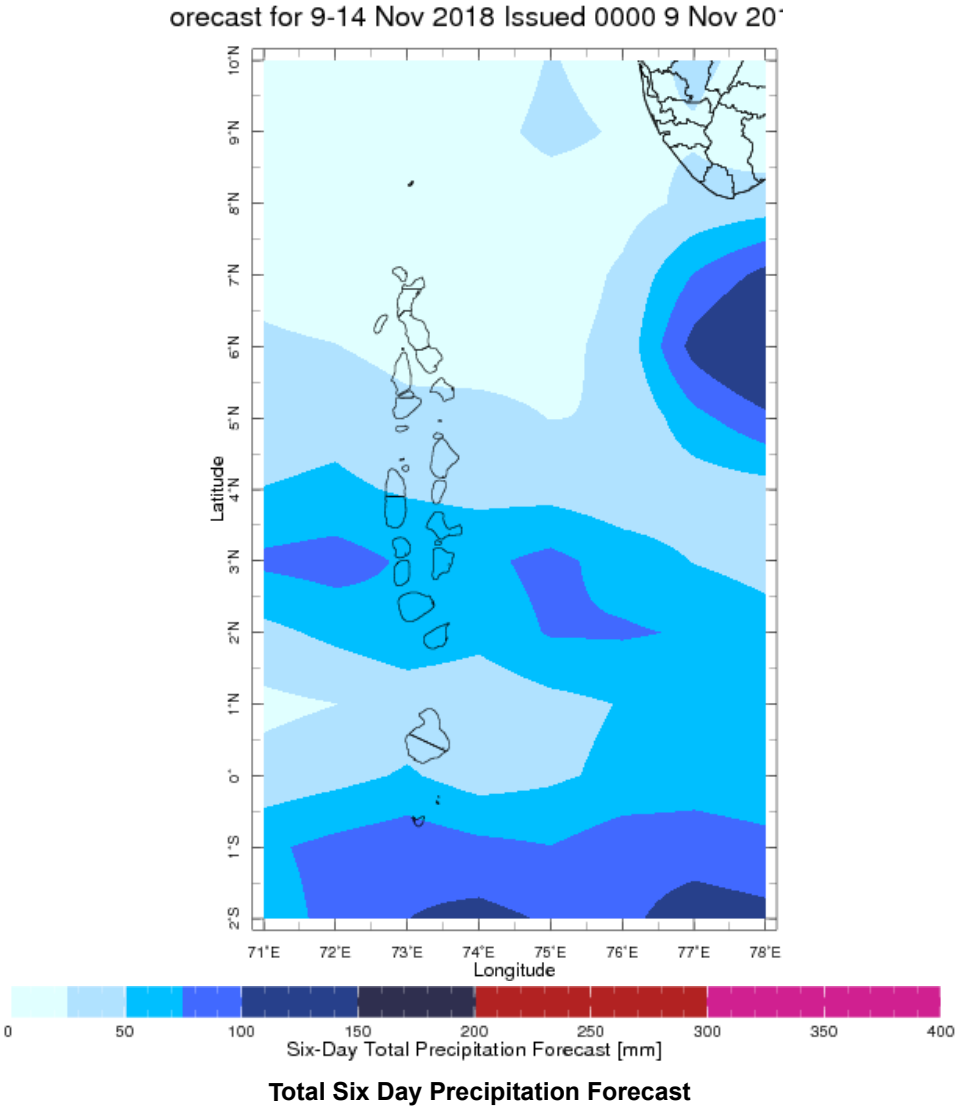
0.1
(Background does not deplot political boundary)

Weekly Rainfall Forecast

Total rainfall forecast from the IRI for next six days is provided in figures below The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.



Extreme Rainfall Forecast



Total Six Day Precipitation Forecast