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Experimental Climate Monitoring and Prediction

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12 July 2018

Highlights

- ***The NCEP weekly rainfall forecast predicts total rainfall up to 65 mm in Colombo, Ratnapura, Kalutara and Galle districts during 11th -17th July.***
- ***Between 3 - 9 Jul: up to 60 mm of rainfall was recorded in Kegalla district on the 9th.***
- ***From 1 - 7 Jul: minimum temperature of 15 ^{o}C was recorded from Nuwara Eliya district while Jaffna, Mullaitivu, Vavuniya, Trincomalee and Ampara districts recorded a maximum temperature between 35-40 ^{o}C.***
- ***From 3 - 9 Jul: up to 48 km/h, northwesterly winds were experienced by the entire island.***
- ***0.5 ^{o}C above average sea surface temperature was observed in the western seas of Sri Lanka.***

Monitoring

Rainfall

***Weekly Monitoring*:** On July 3rd, Monaragala district received up to 30 mm of rainfall; and Badulla district up to 20 mm. No significant rainfalls were recorded in any part of the island on the 4th. On the 5th, Gampaha, Colombo, Kegalla, Ratnapura and Galle districts received up to 5 mm of rainfall. On the 6th, Jaffna, Ratnapura and Badulla districts received up to 5 mm. On the 7th, Galle and Hambantota districts received up to 10 mm of rainfall; and Kalutara, Ratnapura, Nuwara Eliya and Matale districts up to 5 mm. On the 8th, Gampaha, Colombo, Matara, Hambantota, Ratnapura, Monaragala and Kandy districts received up to 10 mm of rainfall; and Puttalam, Kurunegala, Matale, Polonnaruwa, Ampara and Nuwara Eliya districts up to 5 mm. On the 9th, Kegalla district received up to 60 mm of rainfall; Colombo, Kalutara and Ratnapura districts up to 50 mm; Galle district up to 40 mm; Kurunegala, Kandy, Gampaha and Monaragala districts up to 30 mm; and Puttalam, Matale and Kandy districts up to 20 mm.

Total Rainfall for the Past Week: The RFE 2.0 tool shows total rainfall 50-75 mm of total rainfall in Colombo, Kalutara, Ratnapura and Galle districts; and up to 25-50 mm in Puttalam, Kurunegala, Gampaha, Matale, Kegalla, Nuwara Eliya, Badulla and Monaragala districts. Above average rainfall up to 25-50 mm is shown for Colombo and Galle districts and northern regions of Ratnapura district and southern regions of Monaragala district; and below average rainfall up to 10-25 mm is shown for Trincomalee, Batticaloa, Badulla districts and middle regions of Monaragala district and southern regions of Ratnapura district.

***Monthly Monitoring*:** During June - above average rainfall conditions were experienced by the western and south-western regions of the island. Ratnapura district received up to 210 mm above average rainfall; Kegalla, Nuwara Eliya and Kalutara districts up to 150 mm; and Puttalam, Kurunegala, Colombo, Galle and Matara districts up to 60 mm. The CPC Unified Precipitation Analysis tool shows up to 500 mm of total rainfall in Ratnapura district; up to 300 mm Kegalla, Colombo and Kalutara districts; up to ~200 mm Gampaha, Galle and Nuwara Eliya districts; and up to 150 mm in Jaffna, Vavuniya, Anuradhapura, Trincomalee, Polonnaruwa, Kurunegala, Matale, Kandy, Badulla, Monaragala, Ampara and Hambantota districts.

Ocean State (*Text Courtesy IRI*)

Pacific sea state: June 19, 2018

In mid-June 2018, the east-central tropical Pacific waters reflected ENSO-neutral conditions, as did all key atmospheric variables. The subsurface water temperature continued to be above-average, and this strengthened further during May. The official CPC/IRI outlook calls for neutral conditions through northern summer season, with a 50% chance of El Niño development during fall, rising to 65% during winter 2018-19. An El Niño watch has been issued. The latest forecasts of statistical and dynamical models collectively favor weak El Niño development during late summer, growing to possibly moderate strength during fall and winter; forecasters are largely buying into this scenario as the spring barrier is now mostly passed.

Indian Ocean State

0.5 ^{o}C above average sea surface temperature was observed in the western seas of Sri Lanka.

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Predictions

Rainfall

14-day prediction:

NOAA NCEP models:

From 11th – 17th Jul: Total rainfall between 55-65 mm in Colombo, Ratnapura, Kalutara and Galle districts; between 45-55 mm in Gampaha, Kegalla and Matara districts; between 35-45 mm in Puttalam, Kurunegala, Nuwara Eliya and Hambantota districts; and 25-35 mm in Kandy and Monaragala districts.

From 18th – 24th Jul: Total rainfall between 55-65 mm in Colombo, Kalutara and Galle districts; and between 35-45 mm in Gampaha, Kegalla and Ratnapura districts.

IMD NCMWRF Forecast:

14th July: Up to 20 mm of rainfall in Puttalam, Kurunegala, Gamapaha, Kegalla, Nuwara Eliya, Galle and Matara districts.

15th July: Up to 20 mm of rainfall in Puttalam, Kurunegala and Hambantota districts.

IRI Model Forecast:

From 3rd – 8th Jul: Total rainfall up to 75 mm expected in Colombo and Kalutara districts; and up to 50 mm in Gampaha, Kurunegala, Kegalla, Ratnapura, Matara and Galle districts.

MJO based OLR predictions

For the next 15 days:

MJO shall not have an impact on the rainfall in Sri Lanka in the next 5 days and shall suppress in the following 10 days.

[1] International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

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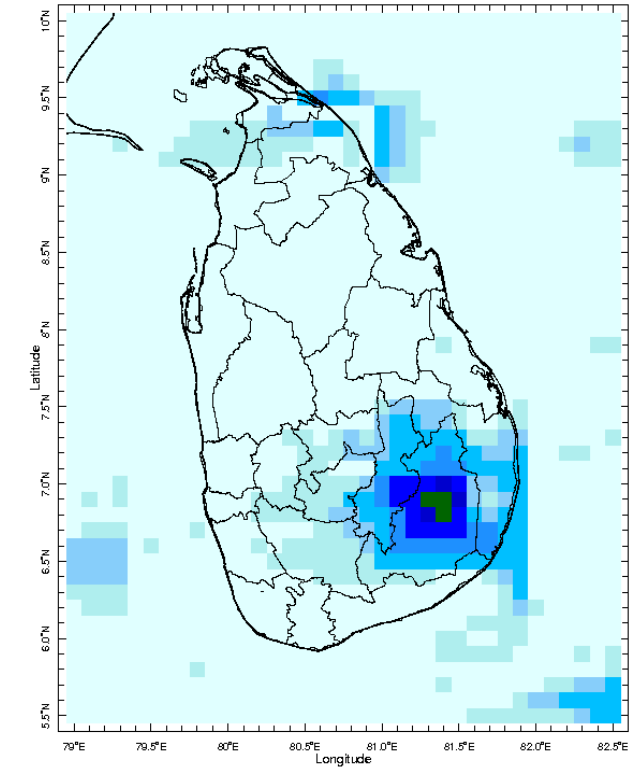
Weekly Hydro- Meteorological Report for Sri Lanka

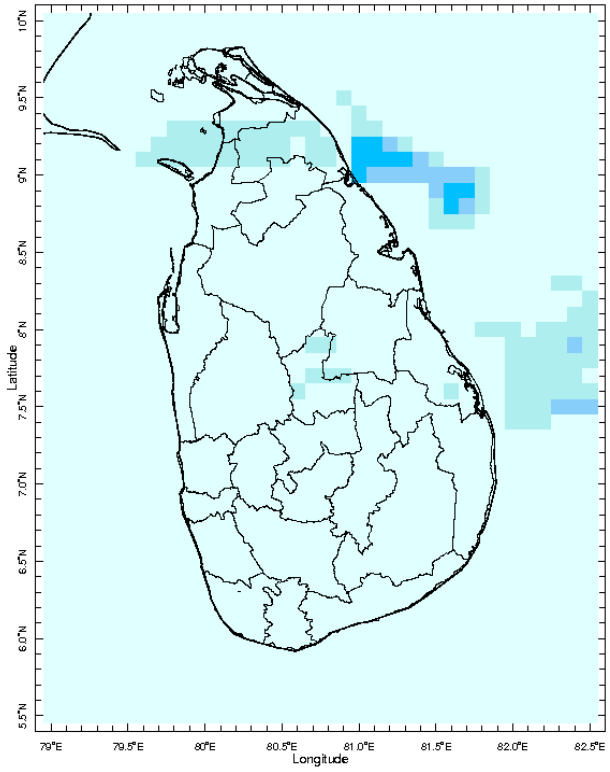
Inside This Issue

Daily Rainfall Monitoring

The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



3 Jul 2018



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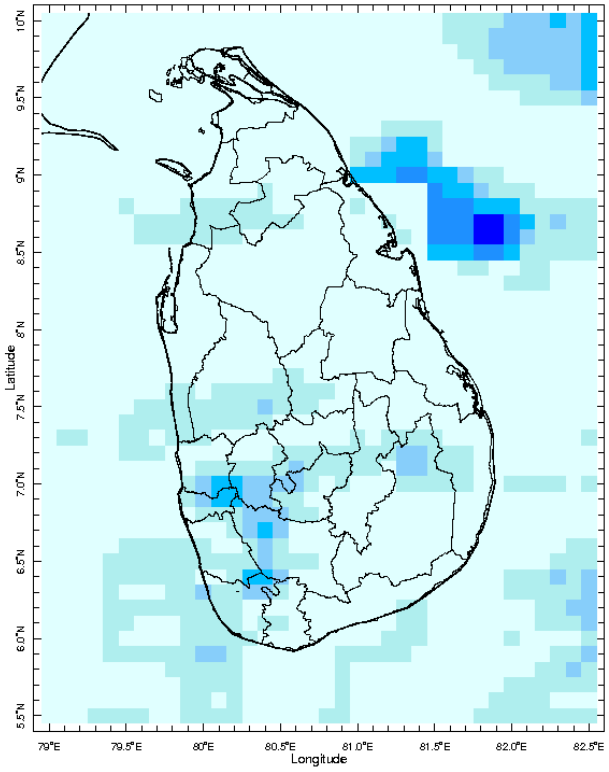

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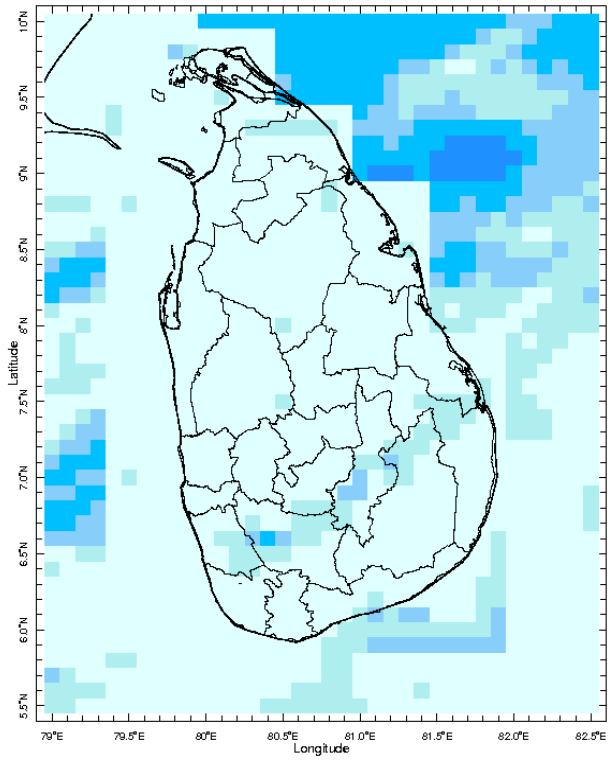

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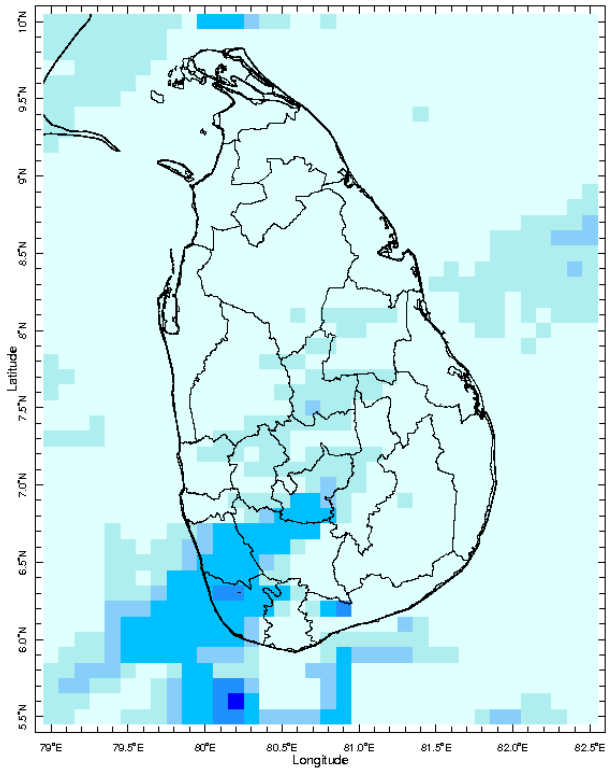

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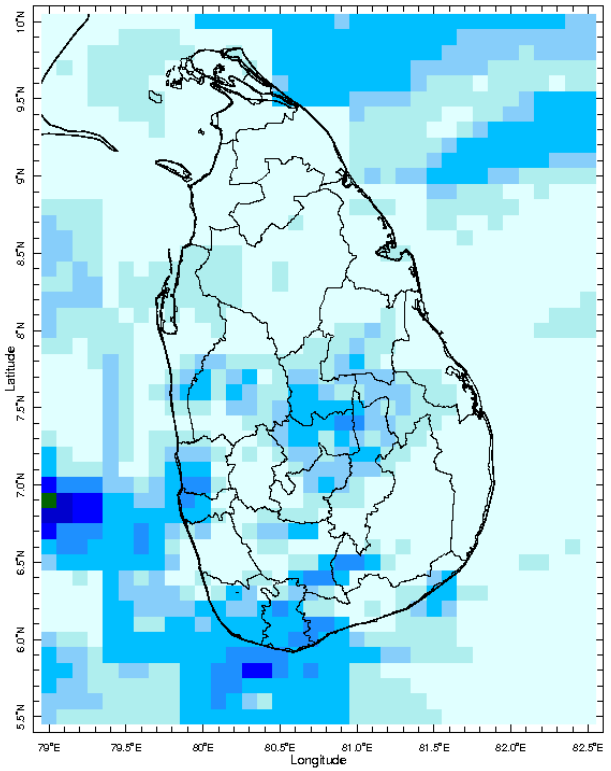
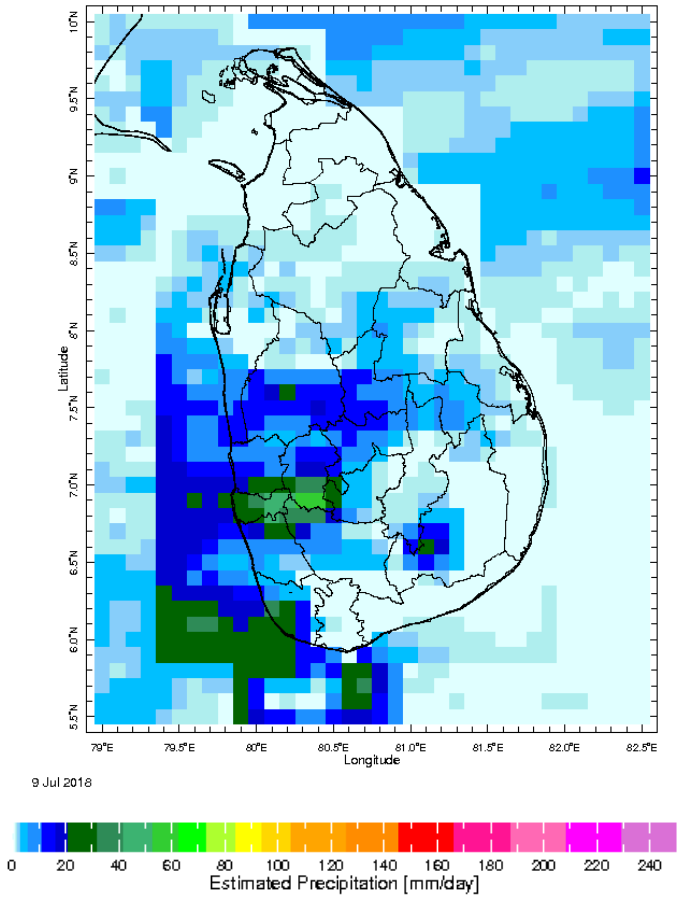
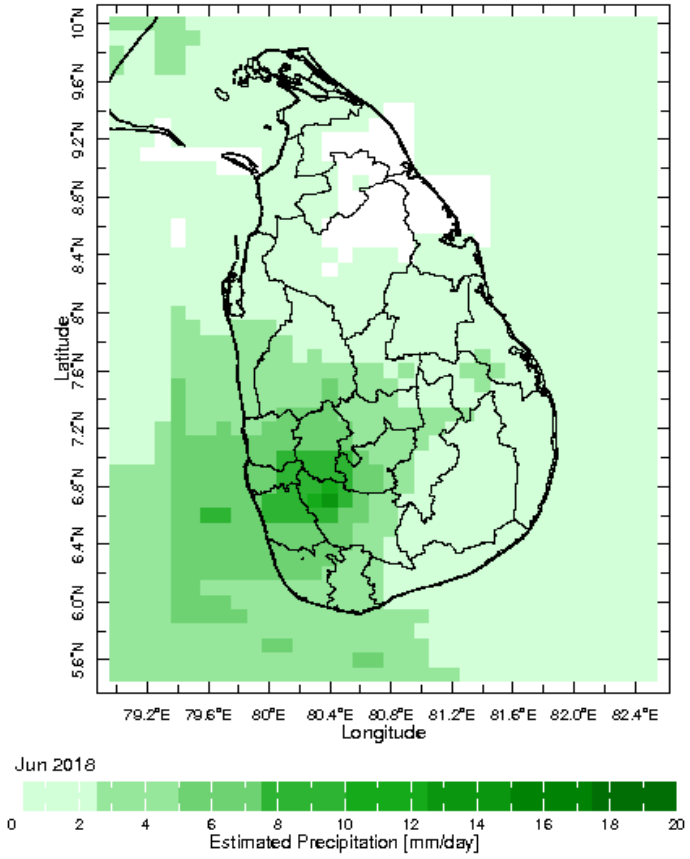


8 Jul 2018

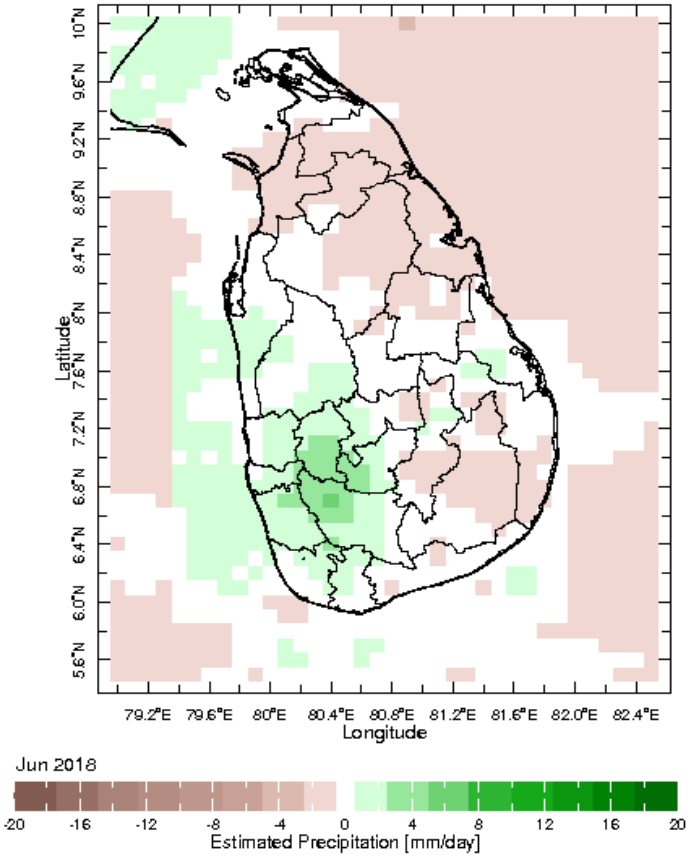

10°N
9.5°N
9°N
8.5°N
8°N
7.5°N
7.0°N
6.5°N
6.0°N
5.5°N
Latitude
79°E
79.5°E
80°E
80.5°E
81.0°E
81.5°E
82.0°E
82.5°E
Longitude
9 Jul 2018
0
20
40
60
80
100
120
140
160
180
200
220
240
Estimated Precipitation [mm/day]

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

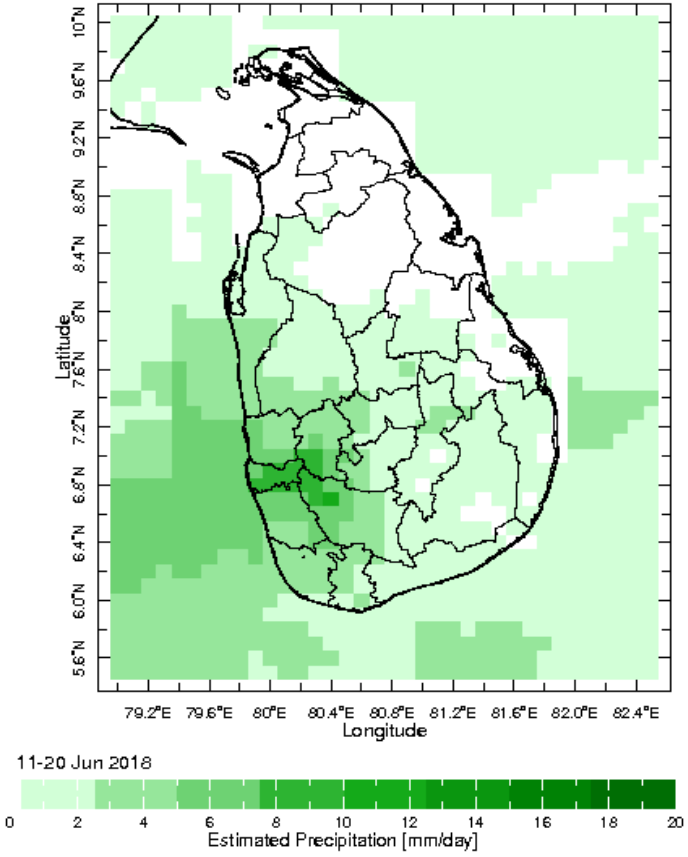


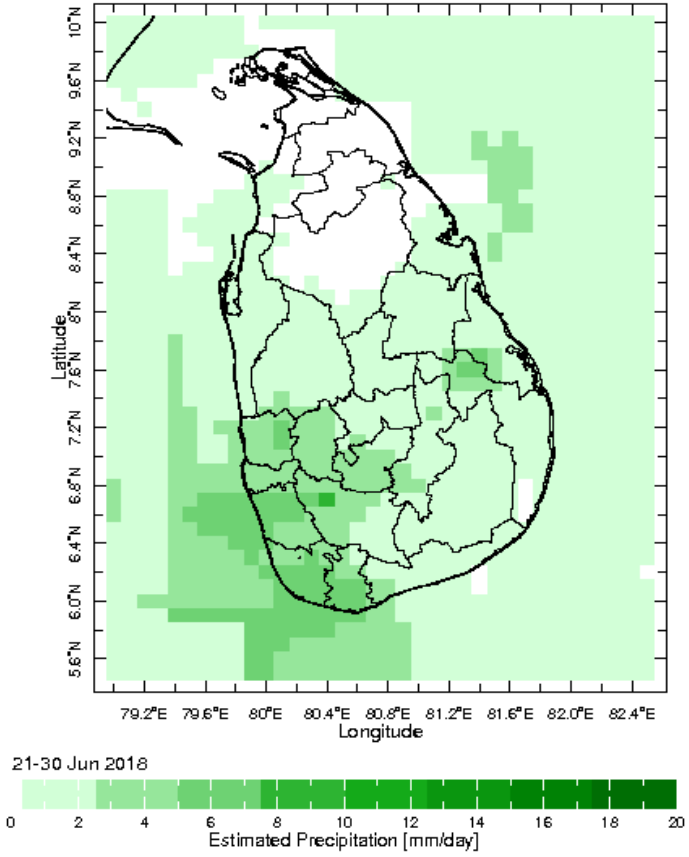
Monthly Average



Monthly Anomaly

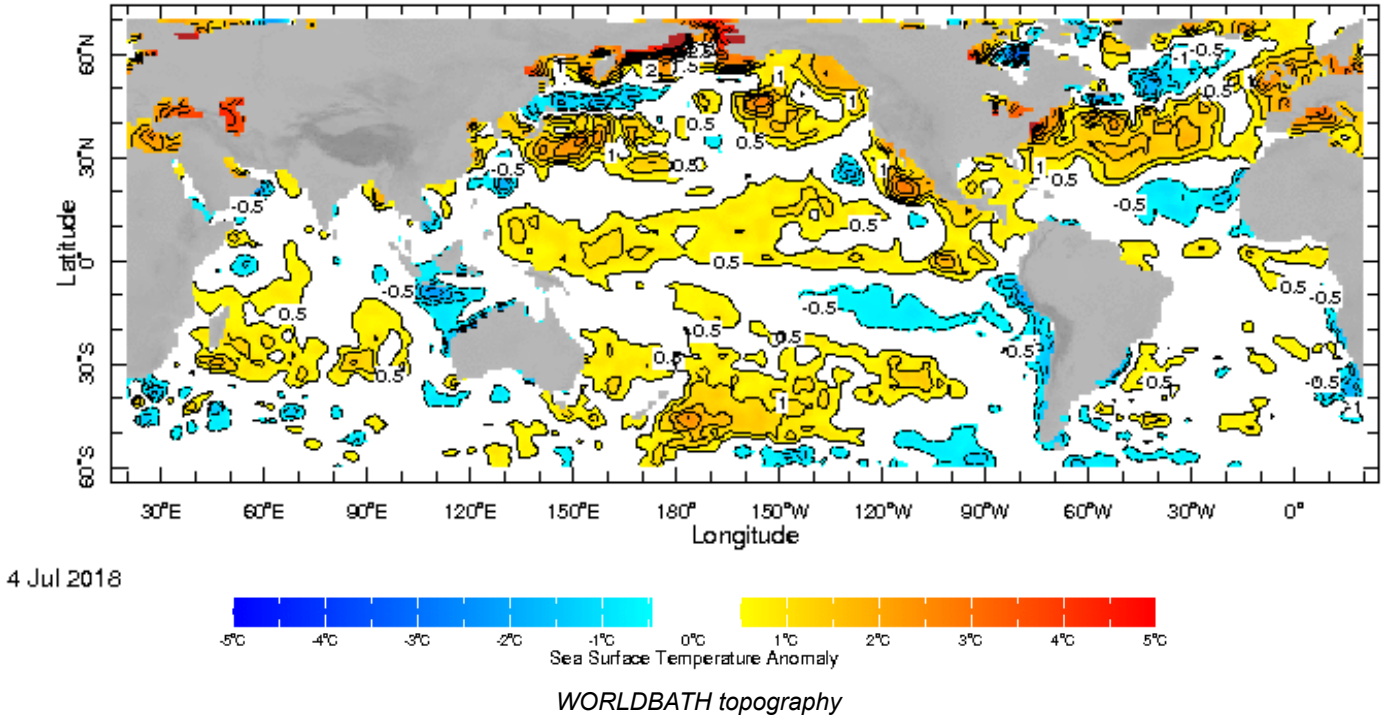
Dekadal (10 Day) Satellite Derived Rainfall Estimates



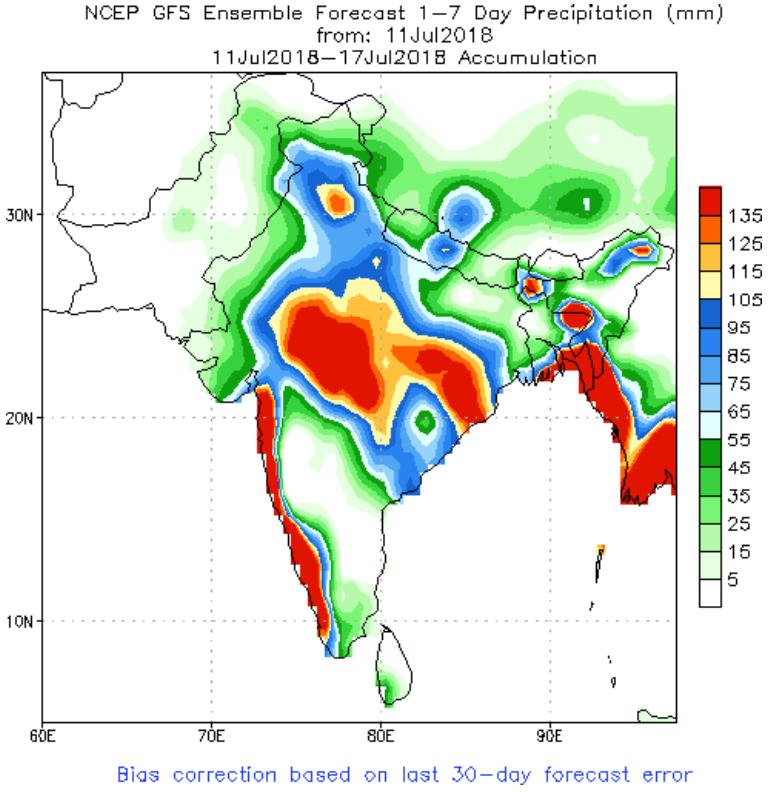


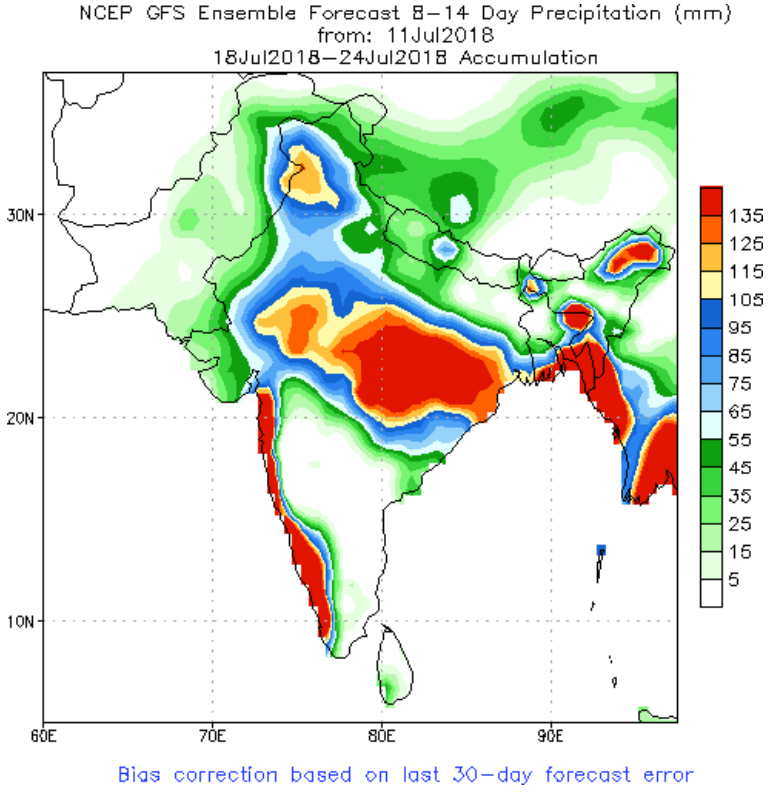
Weekly Average SST Anomalies

Weekly average Sea Surface Temperature (SST) anomaly in the world from NOAA NCEP

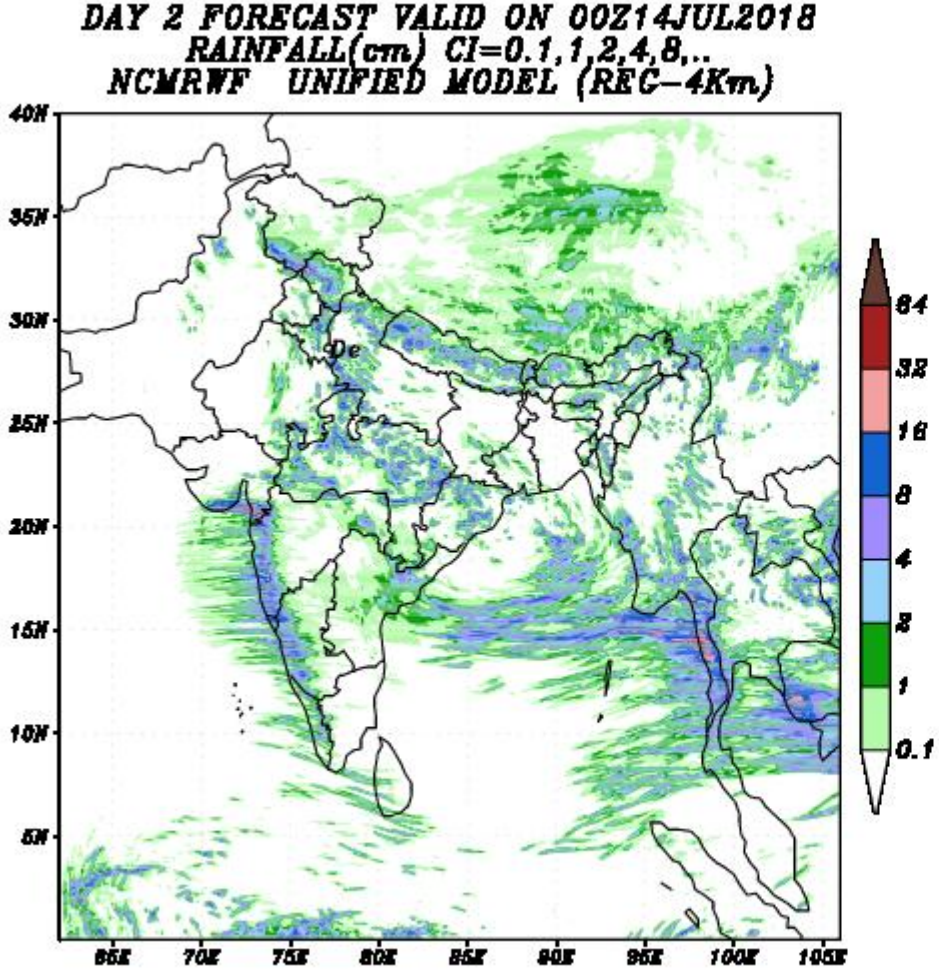


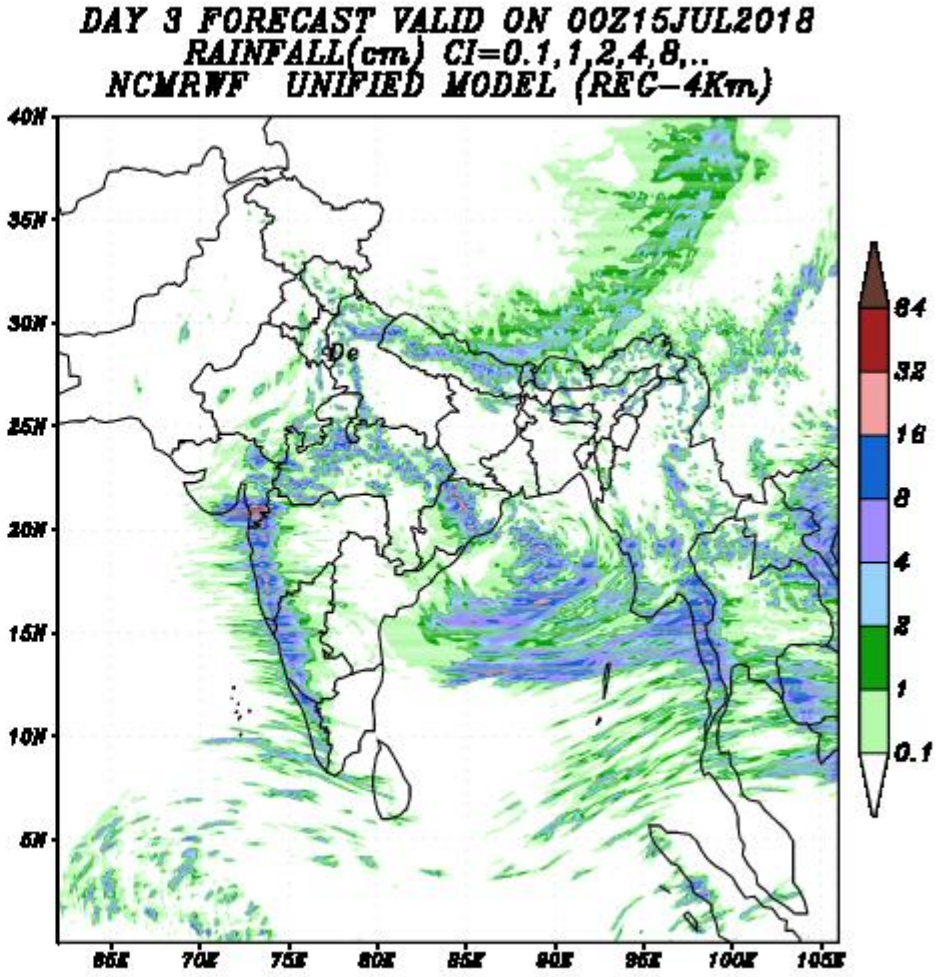
NCEP GFS 1- 14 Day prediction





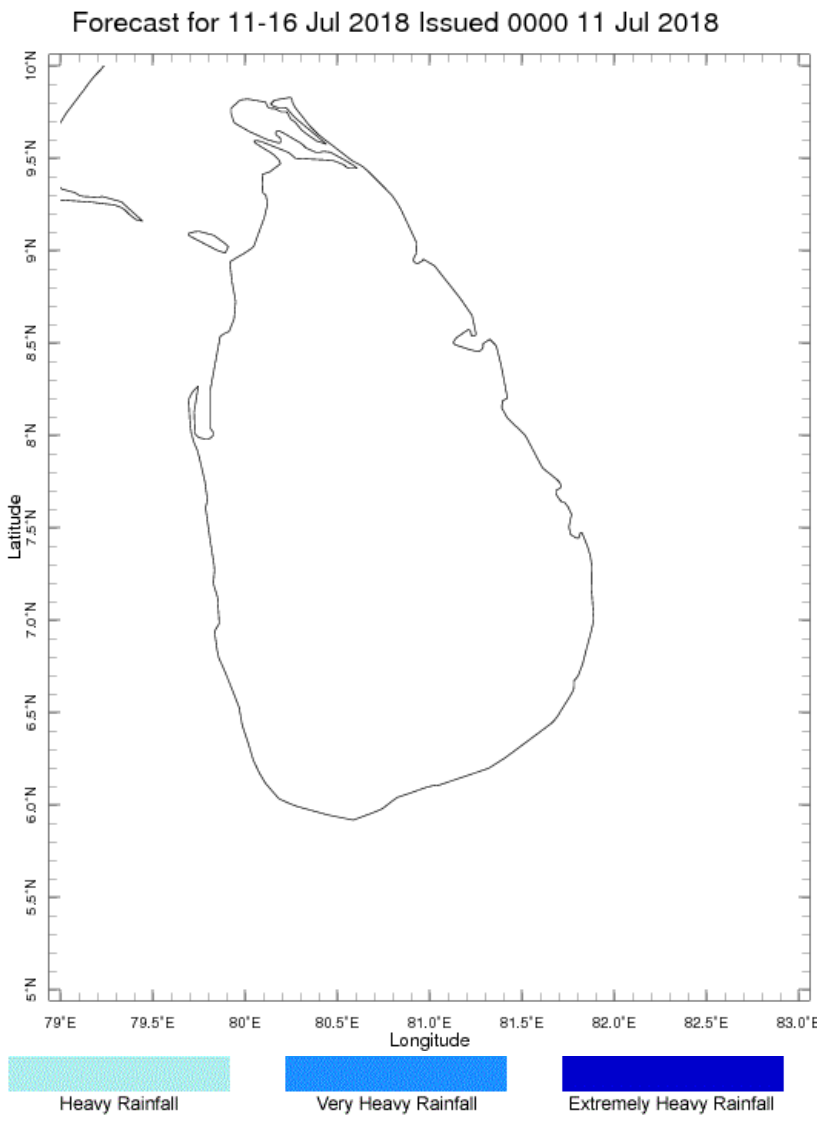
WRF Model Forecast (from IMD)



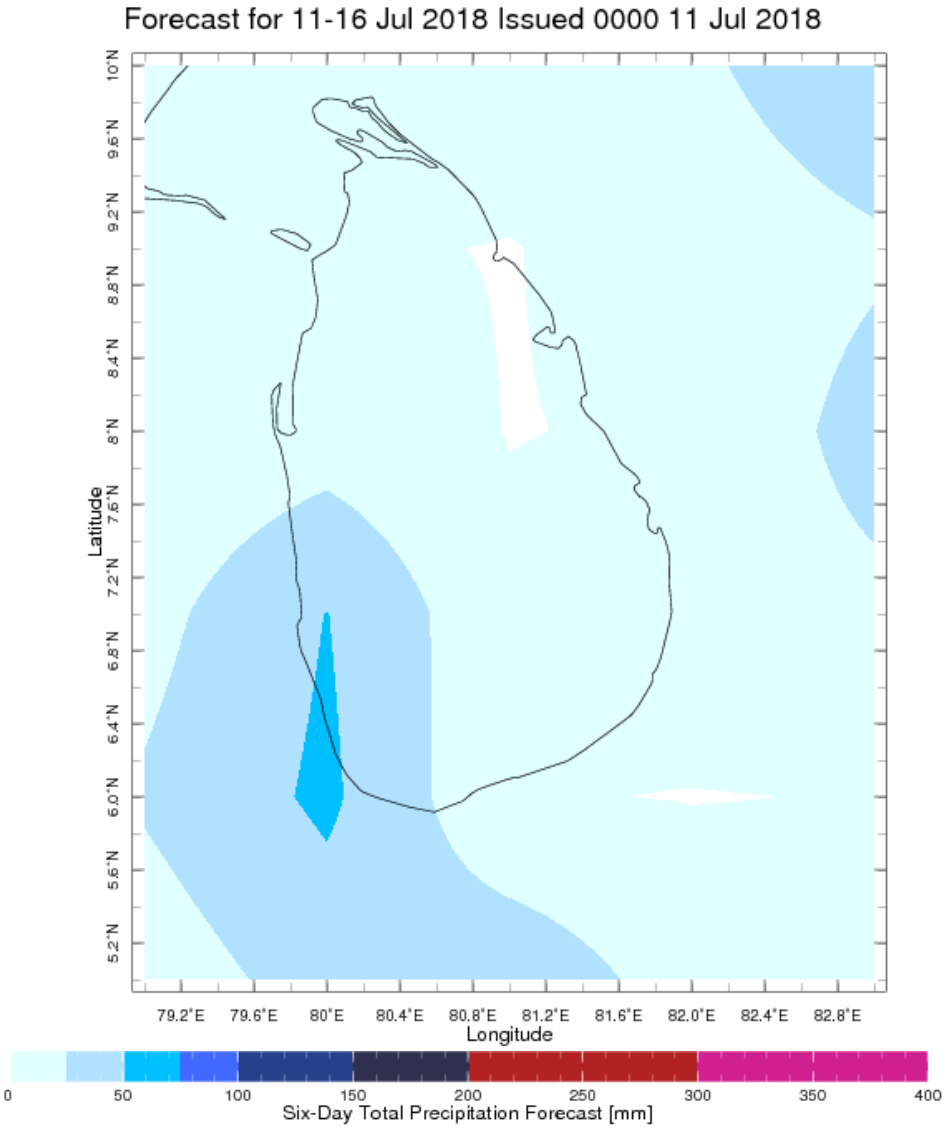


Weekly Rainfall Forecast from IRI

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