

## Experimental Climate Monitoring and Prediction for the Maldives – July 2015

Prepared by Staff from Foundation for Environment, Climate and Technology, Sri Lanka and USA, Maldives Meteorological Service, and Columbia University

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25 August 2015

### PACIFIC SEAS STATE

August 20, 2015

During late July through early-August 2015 the SST was at a strong El Niño level. All atmospheric variables support the El Niño pattern, including weakened trade winds and excess rainfall in the east-central tropical Pacific. The consensus of ENSO prediction models indicate continuation of strong El Niño conditions during the August-October 2015 season in progress. Some further strengthening into fall is likely, with the event lasting into spring 2016.

(Text Courtesy IRI)

### INDIAN OCEAN STATE

July 15, 2014

~1 C° Warmer than usual  
Sea surface temperature was observed around Maldives

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### Highlights

Heavy rainfall was observed over the entire Maldives in July/ early-August 2015. This is the highest observed monthly rainfall this year. Due to this heavy rainfall the cumulative deficit of rainfall has come down to about 9% in northern islands and central islands and there is no deficit in southern islands. NOAA CFS models predict heavy rainfall in southern and central islands until the end of August while IRI seasonal predictions say that there shall be above average rainfall in the next 3 months with 80% probability. This is in keeping with what's typical during an El Niño.

### Summary

#### CLIMATOLOGY

**Monthly Climatology:** In July, August, September and October the rainfall is about 150 mm in northern islands and about 200 mm in central and southern islands. In July, August, September and October the entire country usually do not receive strong wind. The wind direction is usually easterly.

#### MONITORING

**Weekly Rainfall Monitoring:** During 8<sup>th</sup>- 22 August relatively high rainfall was observed in Maldives. Up to 60 mm rainfall was observed in Maldives on the 8<sup>th</sup> August and on the 9<sup>th</sup> the rainfall decreased down to about 10- 20 mm. Then again on the 10<sup>th</sup> up to 90 mm rainfall was observed throughout the country. On 11<sup>th</sup>, 12<sup>th</sup> and 13<sup>th</sup> southern and central islands received up to 60 mm rainfall while only light rainfall was observed in northern islands. During 14<sup>th</sup> – 16<sup>th</sup> only light rainfall was observed throughout the country. Once again up to 60 mm rainfall was observed on the 17<sup>th</sup> and 18<sup>th</sup> and thereafter until 22<sup>nd</sup> only light rainfall was observed. During 8<sup>th</sup>- 22<sup>nd</sup> August period very high rainfall was observed in the sea around the Maldives with magnitudes around 140 mm. This heavy rainfall was mostly observed in the sea south of Maldives but on the 18<sup>th</sup> the sea close to northernmost islands and well as the eastern sea received up to 140 mm rainfall.

**Monthly and Seasonal Rainfall Monitoring:** In July 2015 the entire country received below average rainfall except in northern islands. In northern island about 100 mm rainfall was observed in mid-July which is the highest observed rainfall in this region this year. It is also the highest amount observed in July in the past 5 years in northern islands. About 160 mm rainfall was observed in the first two weeks of August in central Maldives. This is also the highest observed rainfall this year in this region as well as the entire country. The gap between observed and expected amounts of rainfall in this region has reduced due to this heavy rain. Southern islands too received heavy rainfall reaching up to 120 mm in early-August. The rainfall deficit in this region is no longer visible.

#### PREDICTIONS

**Weekly Rainfall Forecast:** According to NOAA CFS models, heavy rainfall is expected in central and south central regions in Sri Lanka which shall be about 75 mm total rainfall for six days (24<sup>th</sup>- 29<sup>th</sup> August) Very heavy rainfall is expected in the western sea of Maldives during this period.

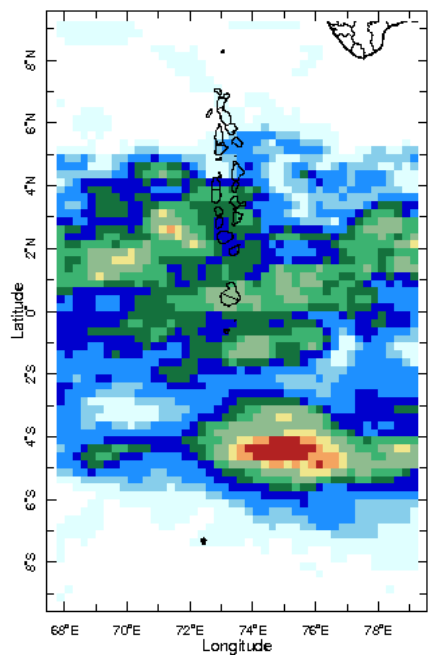
**Seasonal Rainfall and Temperature Prediction:** As per IRI Multi Model Probability Forecast for September to November, there is 80% probability for total 3 month precipitation shall be above average. The 3 month average temperature has a 70- 80% likelihood for north central and southern islands to be in the above-normal tercile during these 3 months.

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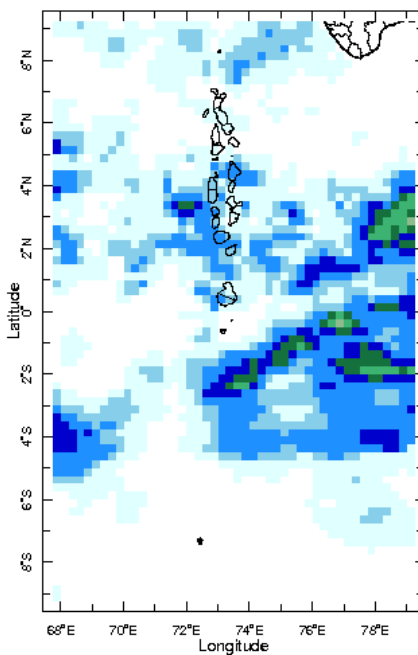
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## Daily Rainfall Monitoring

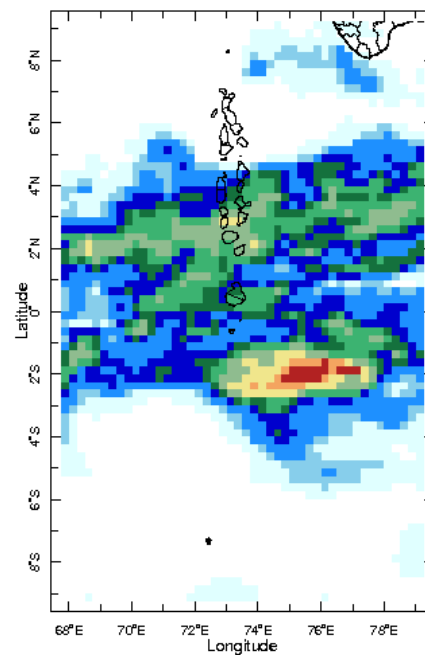
The following figures show the observed rainfall in the last 15 days in Maldives.



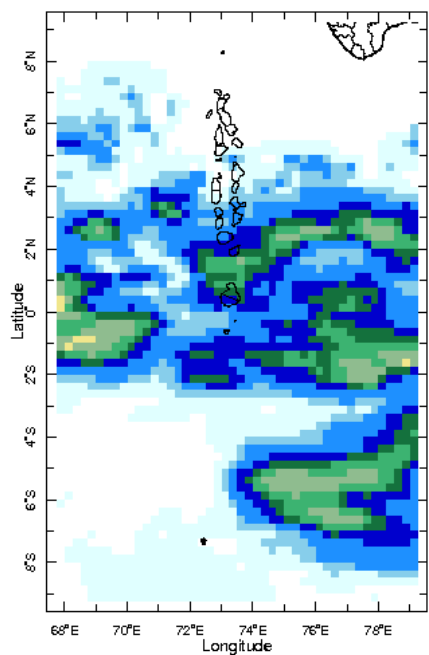
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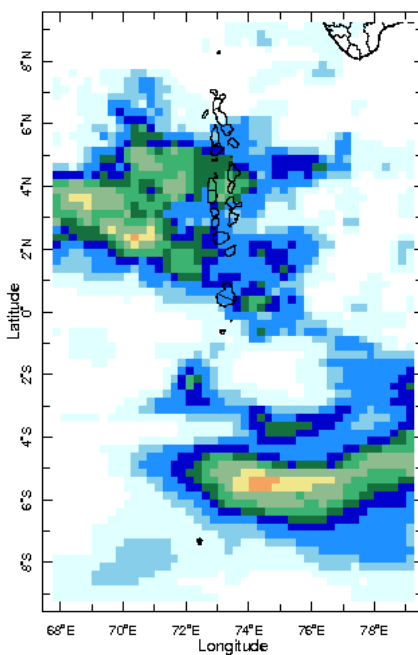
9 Aug 2015



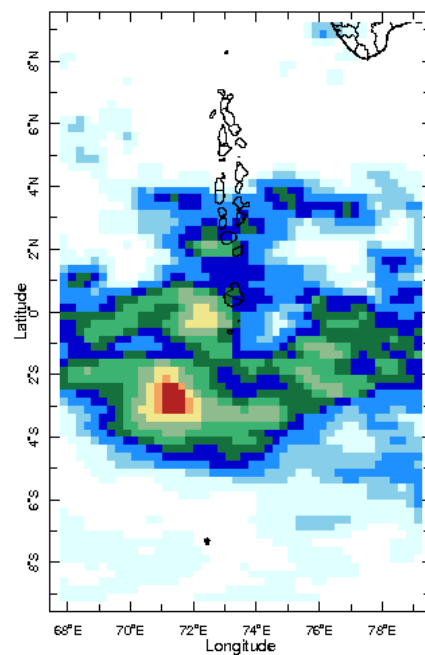
10 Aug 2015



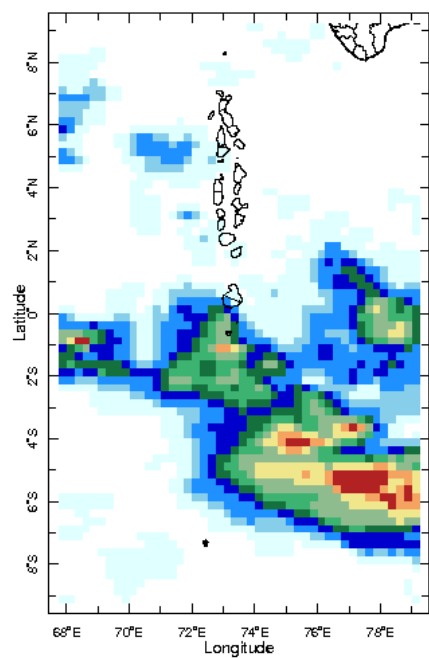
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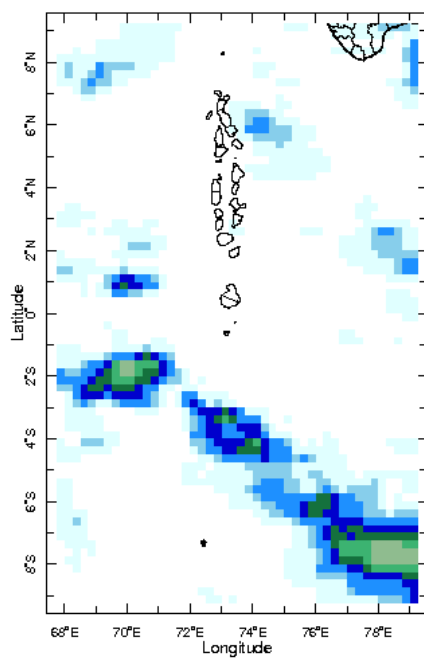
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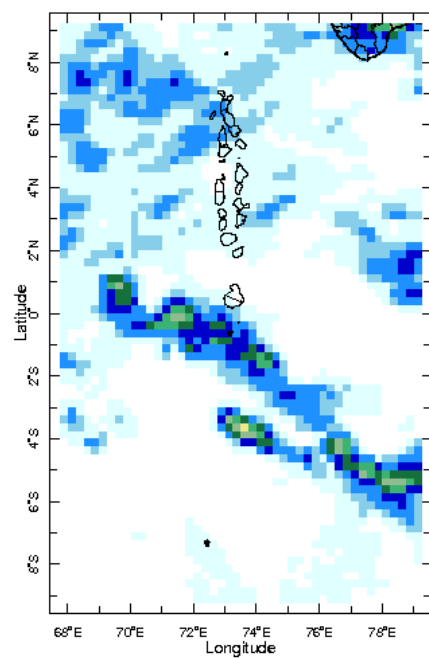
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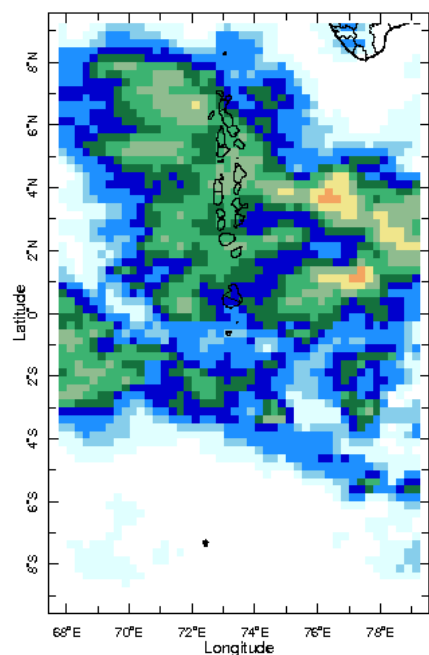
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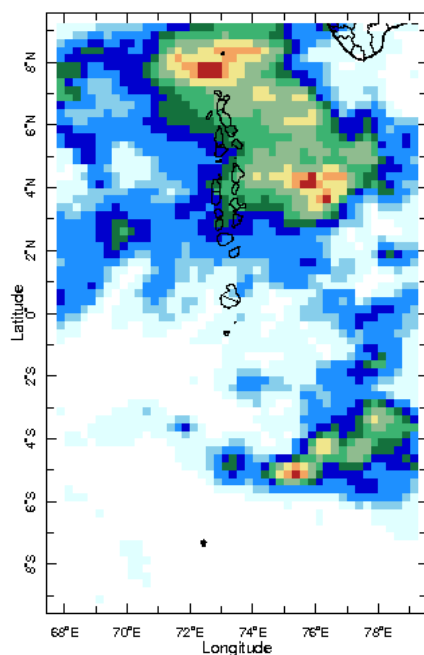
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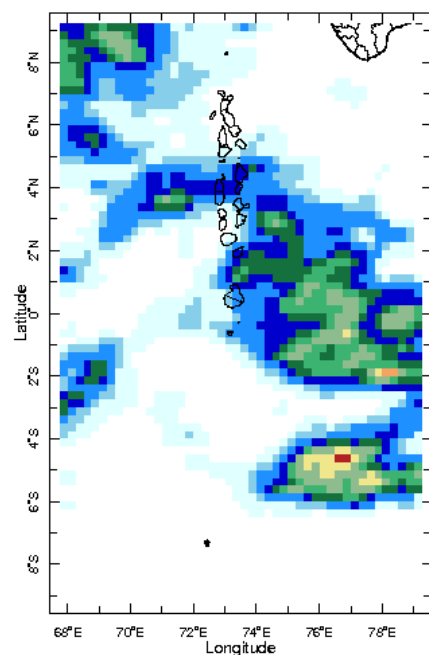
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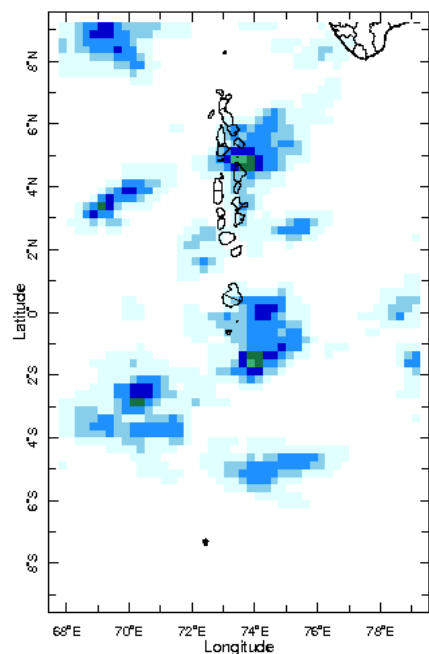
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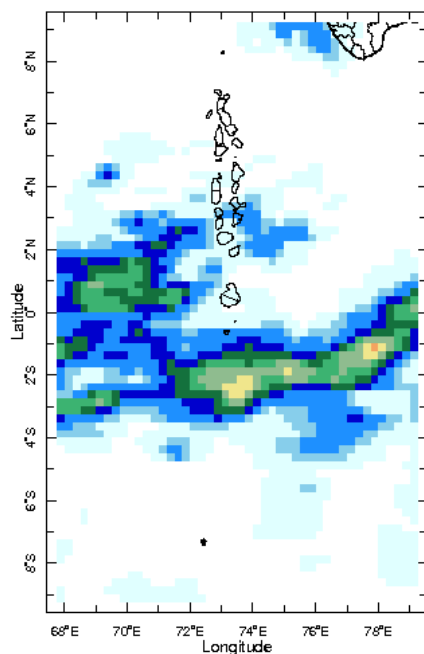
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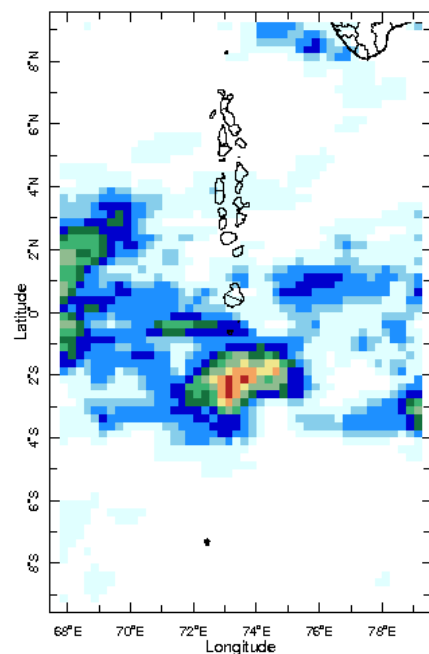
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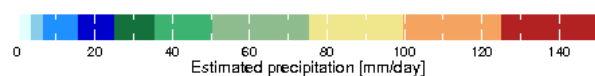
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21 Aug 2015

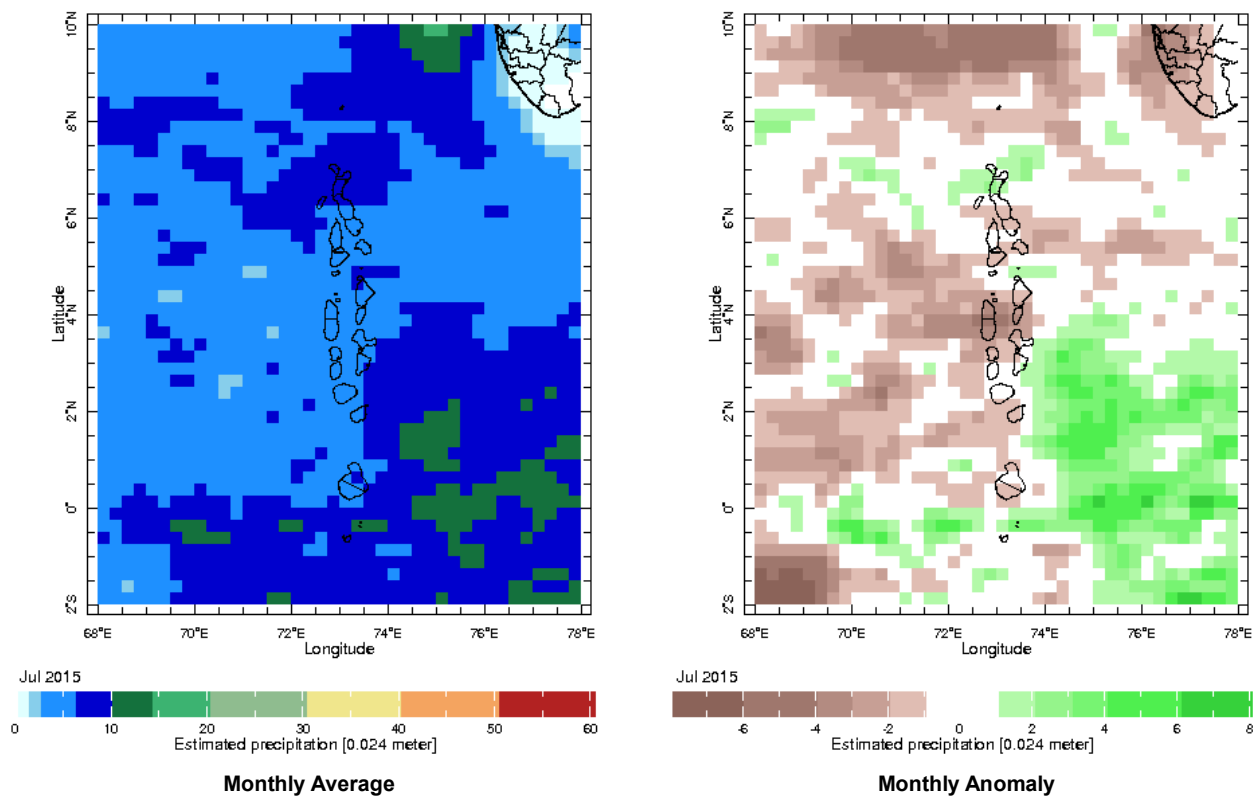


22 Aug 2015



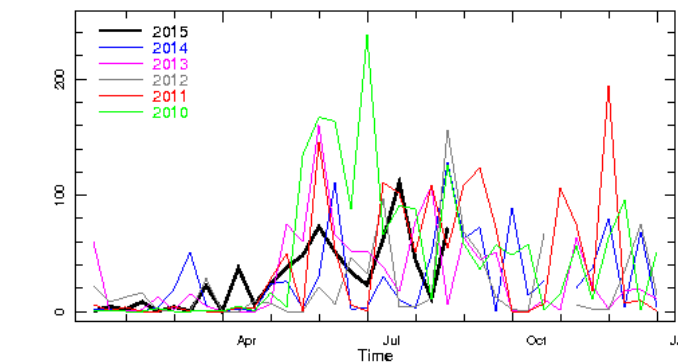
Monthly Rainfall Monitoring

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

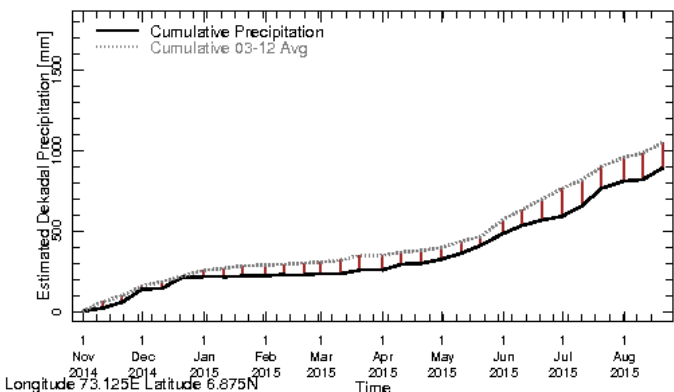


Monthly and Seasonal Monitoring

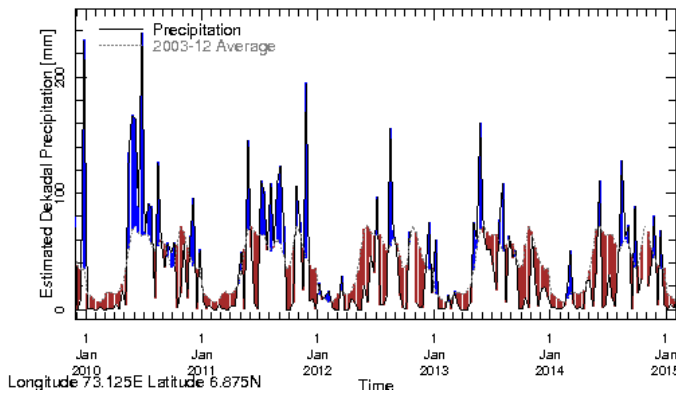
Northern Maldives:



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

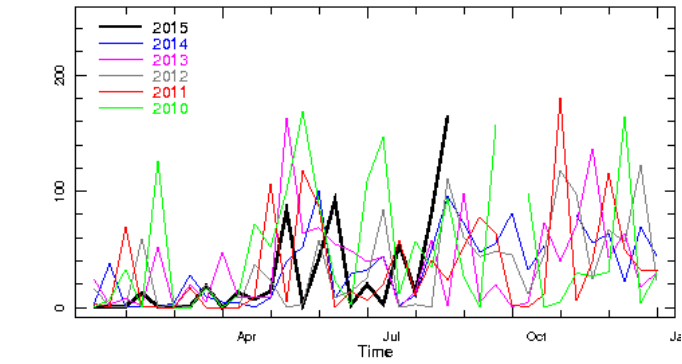


Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.

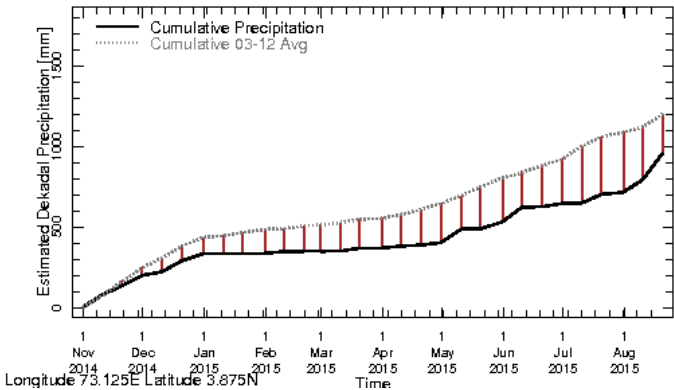


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

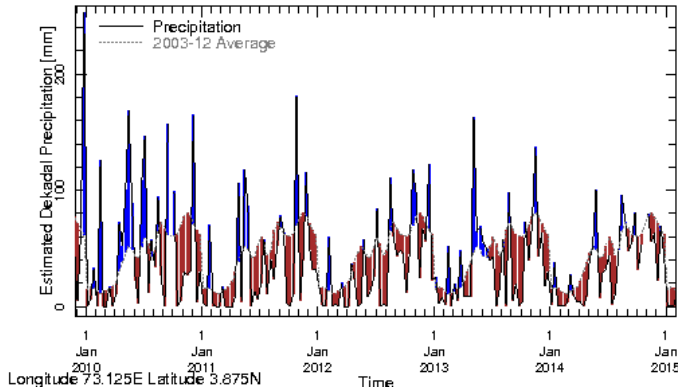
Central Maldives:



Longitude 73.125E Latitude 3.875N  
Rainfall in the current year (black) compared to rainfall in previous 5 years

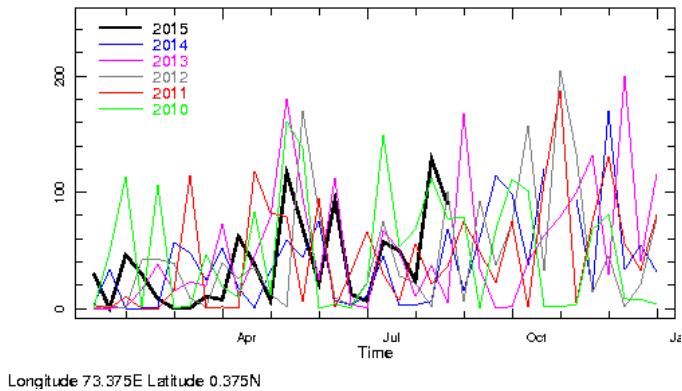


Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.

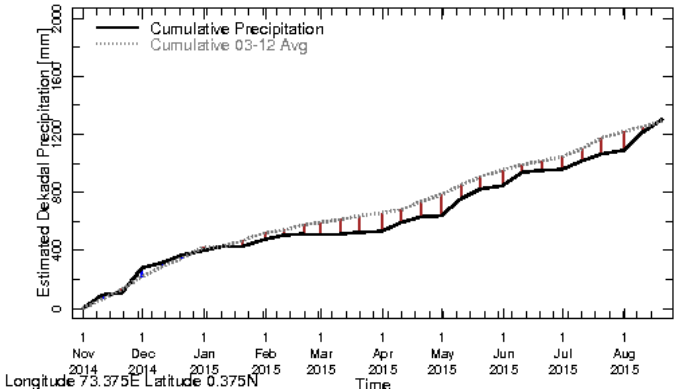


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

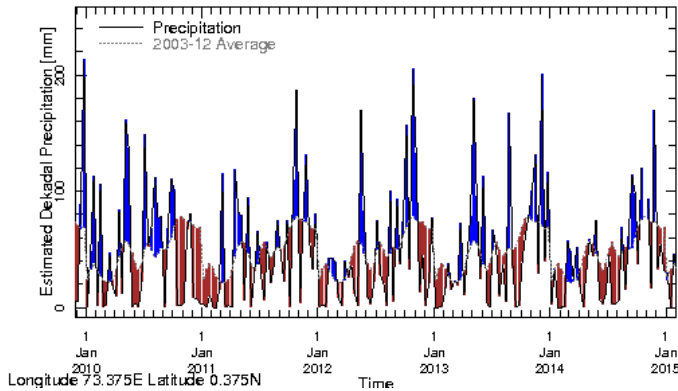
Southern Maldives:



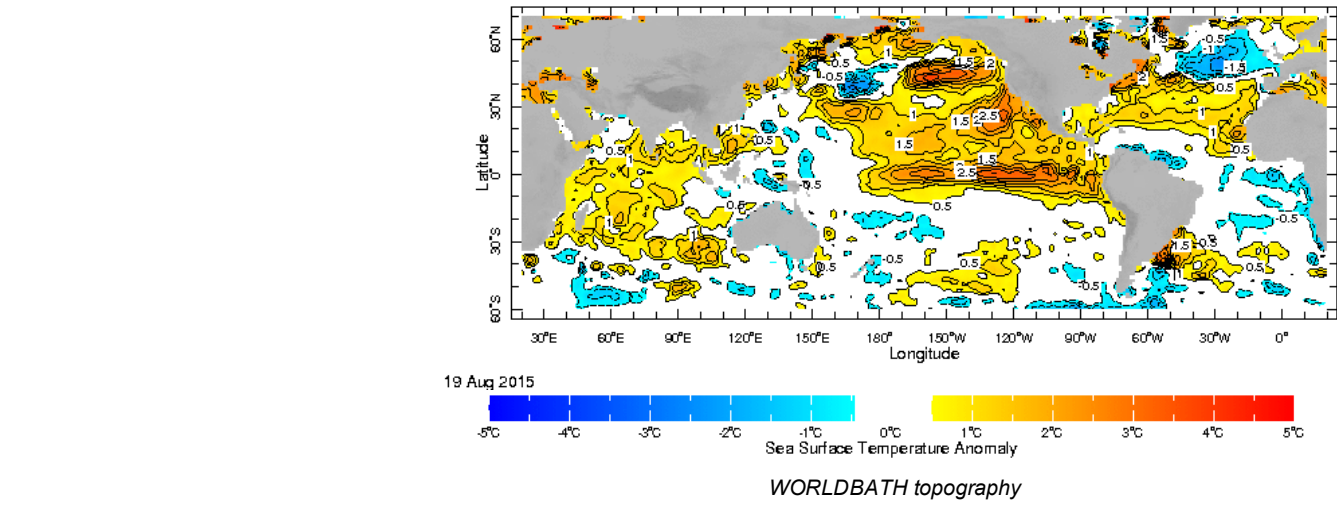
Longitude 73.375E Latitude 0.375N  
Rainfall in the current year (black) compared to rainfall in previous 5 years



Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.

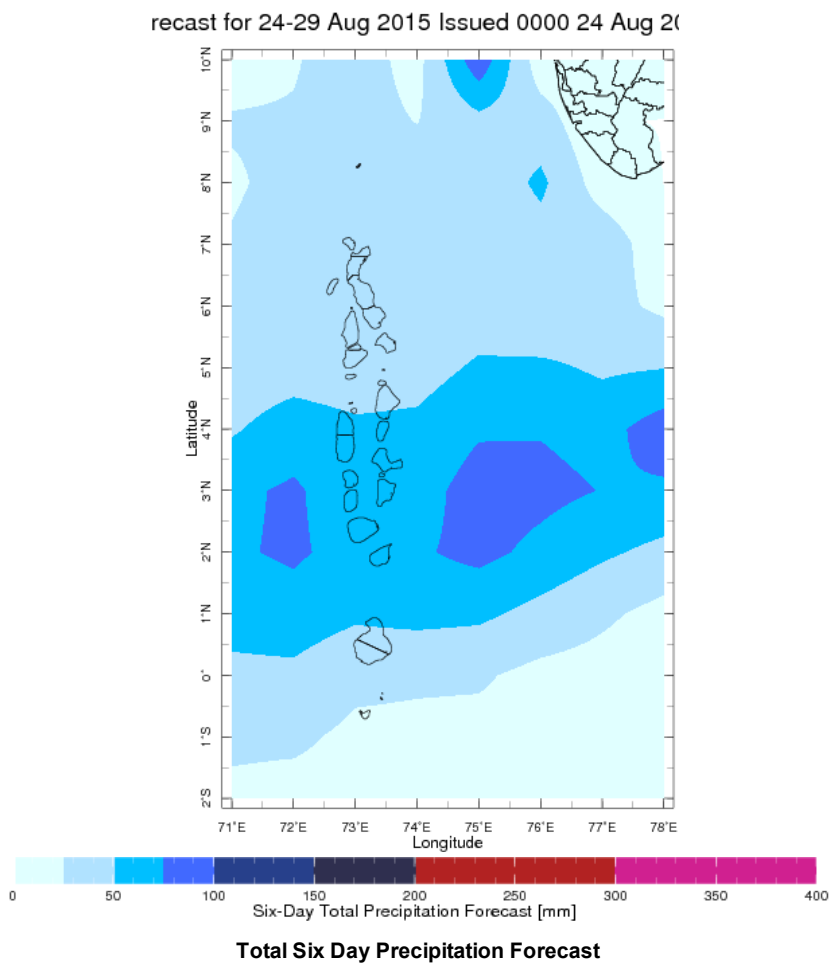
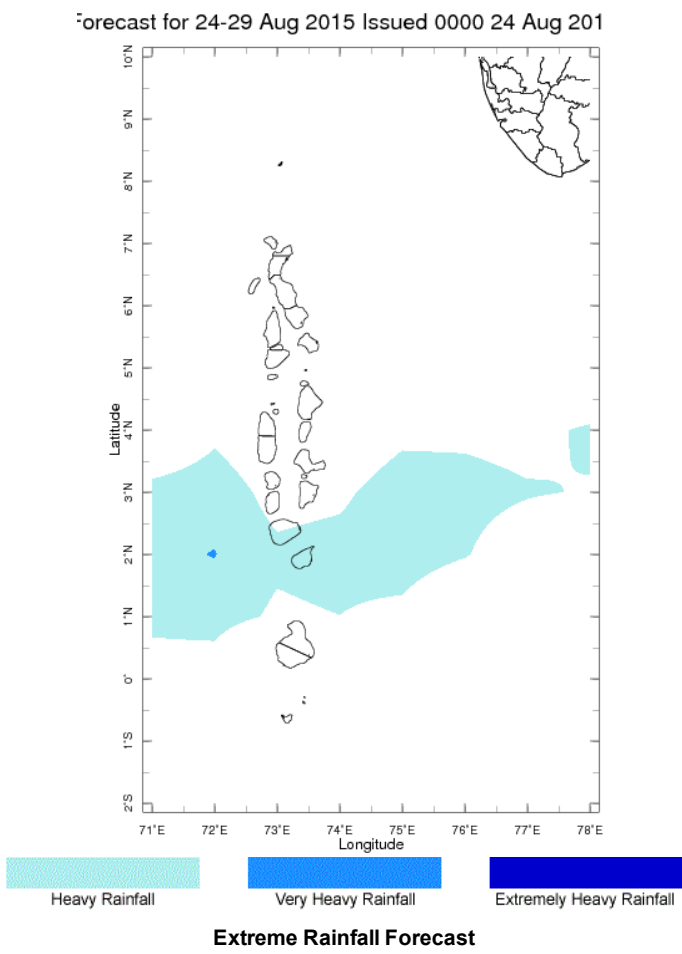


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown



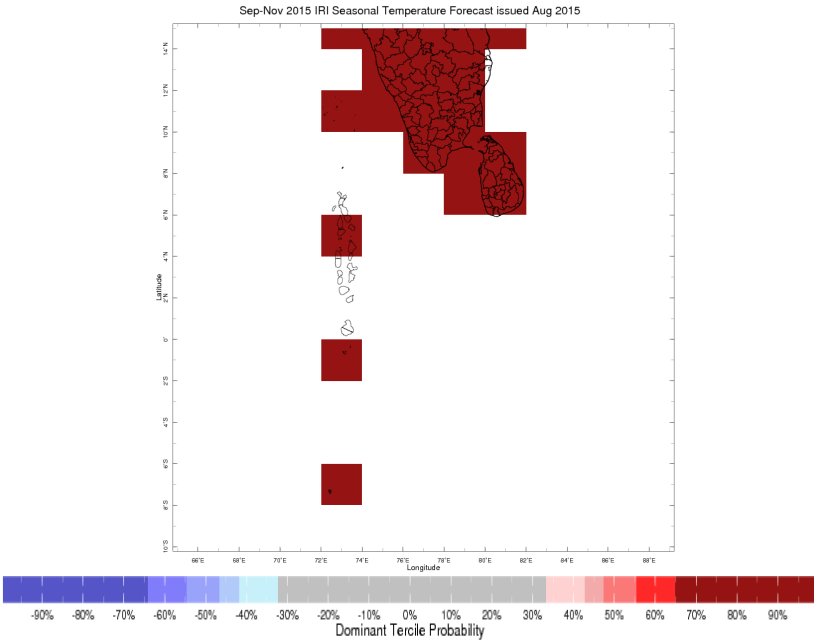
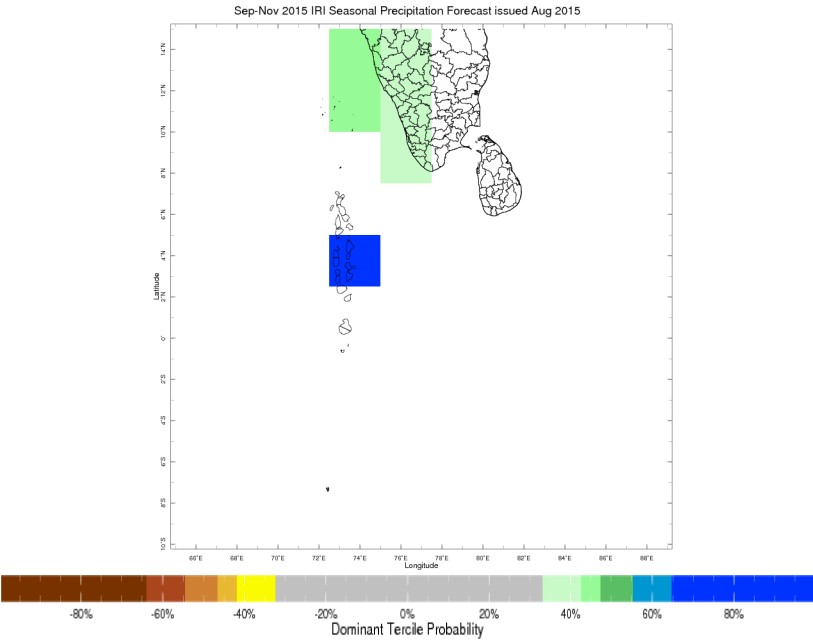
Weekly Rainfall Forecast

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.



# Seasonal Rainfall and Temperature Forecast

Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant tercile probability levels. The upper side of the color bar shows the colors used for increasingly strong probabilities when the dominant tercile is the above-normal tercile, while the lower side shows likewise for the below-normal tercile. The gray color indicates an enhanced probability for the near-normal tercile (nearly always limited to 40%).



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