Ten day Outlook for Belize

Date: 5/16/2015

Onset of the Rainy Season, 2015

Update prediction models indicated that the El Niño-Southern Oscillation (ENSO, warm event) will persists through the remainder of 2015 and will even intensify to the intensity of the 1987 event. This year 2015, is therefore an El Niño year.

Since 1980 the eastern Pacific has experience 11 ENSO events. Some have been weak, others have been mild, while a few such as the 1986-87 and the 1997-98 events were intense. ENSO disrupts the normal climatic conditions over many parts of the world, such as inducing drought conditions over Australia and Indonesia, and along the Pacific coast of Central America. It brings rain over the arid Pacific coast of Peru and suppresses hurricane development over the Caribbean. Over Belize ENSO years tend to increase the rainfall variability, producing dry spells in the rainy season

A review of the *onset* of the rainy season during 10 ENSO years for the Spanish Lookout and Belmopan areas of the Cayo District, and using a criteria for the onset of the rains as: '*the first day from 1 May with cumulative rainfall of 25 mm in two days, followed by four (4) rain-days during the preceding 7 days';* indicated the following:

1) Five (5) out of ten years the rainy season started during the last *dekad* (ten day) of May and the first *dekad* of June at Spanish Lookout. Two out of ten years the rains started during the second *dekad* of May (early onset), and two years out of ten the rains started during the second *dekad* in June. Only one (1) year in ten did the rains started during the first *dekad* of July (very late start) at Spanish Lookout in El Niño years.

2) Three years in ten there was no rain in May at Spanish Lookout during ENSO years.

3) Five (5) years in ten the rains started during mid-end of May (early *onset*) at Spanish Lookout.

4) There is a tendency of one or two day heavy rains in May that do not last, only to be followed by several consecutive dry days.

In the Belmopan area the scenarios related to the ***onset*** of the rains during El Nino years are as follow:

1) Three (3) out of ten years the rainy season began during the last *dekad* in May and the first *dekad* of June around Belmopan during El Niño years. One (1) out of ten years the rains started during second *dekad* of May (early onset), and five (5) out of ten years the rains started during the second *dekad* of June in the Belmopan area during ENSO years.

There were **no years** when the rains started in July (very later *onset*) at Belmopan during El Niño years.

2) When 1994 is included, the review indicates that nine (9) out of 11 years there were false start in the rains. Heavy shower events develop during the second or third *dekad* of May for two or three days, but soon diminished; only to be followed by seven to twelve (12) consecutive dry days.

3) The *onset* of the rains during ENSO years in the Belmopan area is generally during the second *dekad* in June, but may occur also during late May or early June. There is a higher tendency for **false starts** in the rains, characterized by sudden one to two days downpour that soon died away, then followed by short to medium periods of dry spell. There has been more than one false start of the rains during an ENSO year

The brief review of the onset of the rainy season at Spanish Lookout and Belmopan during El Nino years shows that rainfall behavior is variable, with a high tendency for false starts. There is a higher probability for the start of the rains to occur during the last *dekad* in May and the first *dekad* in June in the Spanish Lookout area, while around Belmopan, the onset of the rains is more probable during the second *dekad* in June in El Niño years.

Probability of *Onset* of the rains at Spanish Lookout and Belmopan during ENSO years

Spanish Lookout Onset Rain during ENSO Years

Criteria… First day with 25 mm cumulative rainfall, with at least 4 -raindays in the next seven (7) days.

Spanish Lookout	Onset of Rains in May, June and July								
	May			June			July		
Dekad (ten-days)	1	2	3	1	2	3	1	2	3
1983				■					
1987				■					
1991		■							
1995					■				
1998			■						
2003			■						
2005					■				
2007							■		
2010		■							
2013			■						
		2	3	2	2		1		
	0%	20%	30%	20%	20%	0%	10%	0%	0%

Belmopan: Onset Rain during ENSO Years

Criteria… First day with 25 mm cumulative rainfall, with at least 4 -raindays in the next seven (7) days.

Belmopan	Onset of Rains in May, June and July								
	May			June			July		
Dekad (ten-days)	1	2	3	1	2	3	1	2	3
1983					■				
1987				■					
1991					■				
1994			■						
1995					■				
1998						■			
2003					■				
2005					■				
2007					■				
2010		■							
2013			■						
		1	2	1	6	1			
	0%	9%	18%	9%	55%	9%	0%	0%	0%

Model Outlook, May 2015

The GFS-mnsprd and GFS Climate Model Outlooks initiated at noon on Friday, May 15, 2015 for the western Caribbean and Belize were favoring the seasonal dry conditions to persist for the next eight to nine days.

Both models resolve a disturbed area of moisture and instability (low pressure) to move off the coast of Panama and Costa Rica after the next 48 to 72 hours. This instability center will intensify and increase in coverage as it drifts NNE towards eastern Jamaica. By the weekend of 23-24 May, this feature will weaken, but the broad area of moisture and instability will drift westwards towards the coast of Belize. The instability will reach Belize by late 24 May, resulting

in moderate to heavy outbreaks of showers especially over the northern half of the country at first; then spreading over the rest of the country by 25 May. This could mark the start of the rains as the models have the instability and a low pressure system persisting over the region for several days.

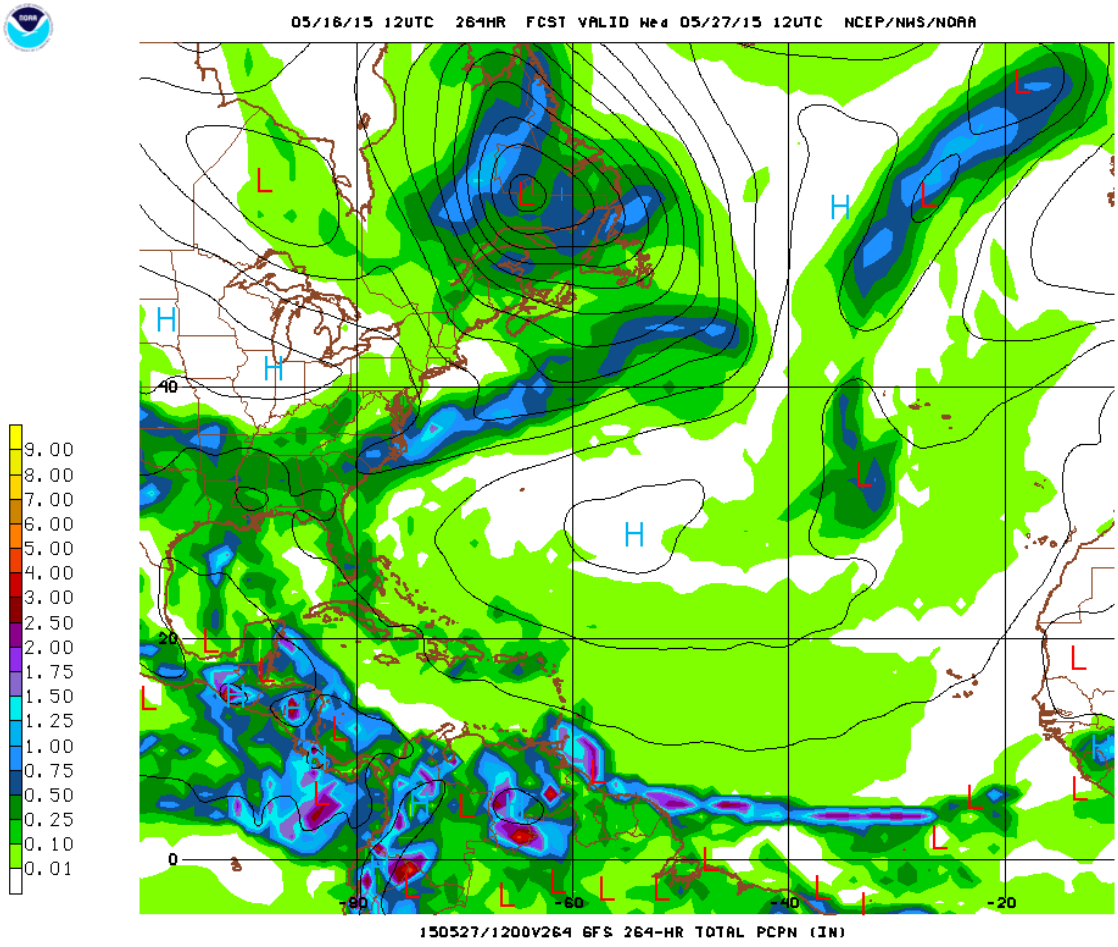

Figure 1: GFS 264 hr Model projections valid for 6:00 am, Wednesday, May 27, 2015, showing low pressure over Belize, and rain (0.5 – 1.00 inch/24 hrs) spreading over northern Belize.

R. Frutos
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