March Forecast Update for Atlantic Hurricane Activity in 2002

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Forecast Summary

TSR reduces slightly its earlier forecasts but still anticipates an active 2002 Atlantic hurricane season with basin storm numbers and strikes on the USA and Caribbean Lesser Antilles being 0-10% above the 10 year average and 20-30% above the 30 year average.

The TSR (Tropical Storm Risk) early March forecast update for Atlantic hurricane activity in 2002 continues to anticipate another active hurricane season. The forecast relates to the Atlantic season from 1st June 2002 to 30th November 2002 and is based on data available through the end of February 2002. The reason for predicting above average activity in 2002 is our continued expectation for neutral ENSO conditions combined with warm tropical Atlantic sea surface temperatures and weaker than normal trade winds over the Caribbean Sea and tropical north Atlantic during July-September 2002. Our projections have fallen slightly from last month due to small shifts in each predictor favouring decreased hurricane activity.

Atlantic Total Numbers in 2002

		Intense Hurricanes	Hurricanes	Tropical Storms
TSR Forecast (±FE)	2002	2.8 (±1.9)	7.2 (±2.5)	12.5 (±3.6)
10yr Climate Norm (±SD)	1992-2001	2.9 (±2.0)	6.9 (±2.9)	11.5 (±4.1)
30yr Climate Norm (±SD)	1972-2001	2.1 (±1.5)	5.7 (±2.4)	9.5 (±3.6)
Forecast Skill at this Lead	1987-2001	12%	8%	10%

Key: Intense Hurricane = 1 Minute Sustained Wind > 95Kts = Hurricane Category 3 to 5
Hurricane = 1 Minute Sustained Wind > 63Kts = Hurricane Category 1 to 5
Tropical Storm = 1 Minute Sustained Wind > 33Kts
SD = Standard Deviation
FE (Forecast Error) = Standard Deviation of Errors in Simulated Real Time Forecasts 1992-2001
Forecast Skill = Percentage Improvement over Running 10-year Prior Climate Norm from Simulated Real Time Forecasts 1987-2001

Total Numbers Forming in the MDR, Caribbean Sea and Gulf of Mexico in 2002

		Intense Hurricanes	Hurricanes	Tropical Storms
TSR Forecast (±FE)	2002	2.8 (±1.8)	5.4 (±2.5)	9.3 (±3.7)
10yr Climate Norm (±SD)	1992-2001	2.9 (±2.0)	5.1 (±3.0)	8.3 (±4.3)
30yr Climate Norm (±SD)	1972-2001	1.8 (±1.6)	3.8 (±2.5)	6.4 (±3.7)
Forecast Skill at this Lead	1987-2001	13%	11%	9%

The Atlantic hurricane Main Development Region (MDR) is the region 10°N - 20°N, 20°W - 60°W between the Cape Verde Islands and the Caribbean. A storm is defined as having formed within this region if it reached at least tropical depression status while in the area.

USA Landfalling Numbers in 2002

		Hurricanes	Tropical Storms
TSR Forecast (±FE)	2002	1.7 (±1.1)	3.5 (±1.7)
Average (±SD)	1992-2001	1.2 (±1.2)	3.3 (±1.8)
Average (±SD)	1972-2001	1.2 (±1.3)	2.6 (±1.8)
Forecast Skill at this Lead	1987-2001	4%	11%

Key: Landfall Strike Category = Maximum 1 Minute Sustained Wind of Storm Coming Within 30km of Land
USA Mainland = Brownsville (Texas) to Maine

USA landfalling intense hurricanes are not forecast since we have no skill at any lead.

Caribbean Lesser Antilles Landfalling Numbers in 2002

		Intense Hurricanes	Hurricanes	Tropical Storms
TSR Forecast (±FE)	2002	0.4 (±0.4)	0.7 (±0.7)	1.7 (±0.9)
10yr Climate Norm (±SD)	1992-2001	0.3 (±0.5)	0.7 (±0.8)	1.5 (±0.9)
30yr Climate Norm (±SD)	1972-2001	0.2 (±0.4)	0.4 (±0.6)	1.1 (±1.0)
Forecast Skill at this Lead	1987-2001	2%	6%	2%

Key: Landfall Strike Category = Maximum 1 Minute Sustained Wind of Storm Coming Within 30km of Land
Lesser Antilles = Island Arc from Anguilla to Trinidad Inclusive

Key Predictors for 2002

The key factors behind our forecast for an active hurricane season in 2002 are the anticipated enhancing effects of July-September forecast 925mb U(east/west)-winds over the Caribbean Sea and tropical north Atlantic region (7.5°N - 17.5°N, 30°W - 100°W), and of August-September forecast SST for the Atlantic MDR. The current forecast anomalies (1972-2001 climatology) for these predictors are 0.49±0.84 ms^{-1} and 0.22±0.24 °C respectively. The corresponding forecast skills at this lead are 19% and 14%.

Further Information

Further information on the TSR forecast methodology, the TSR simulated real-time forecast skill 1987-2001 as a function of lead time, and on TSR in general, may be obtained from the 'Extended Range Forecast for Atlantic Hurricane Activity in 2002' document issued on the 3rd December 2001. Our next monthly forecast update for the 2002 Atlantic hurricane season will be issued on the 5th April 2002. Further regular monthly updates will follow through to early August 2002.