

Comparison of MM5 and WRF Forecast Models, CMORPH and Hydro Estimator Satellite Estimates to Ground-Based Rain Gauge Data

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Overview

Our main objective was to compare the WRF and MM5 forecast modeling systems as well as the CMORPH and HE satellite models to rain gauge data in order to test the accuracy of each model. We focused our study on a particular weather event that occurred in El Salvador in early November 2009.



Impact

With the acquired information, we helped the Water Center for the Humid Tropics of Latin America and the Caribbean (CATHALAC) and the countries for whom CATHALAC provides meteorological data to better predict catastrophic landslide events, flooding and other severe weather events.



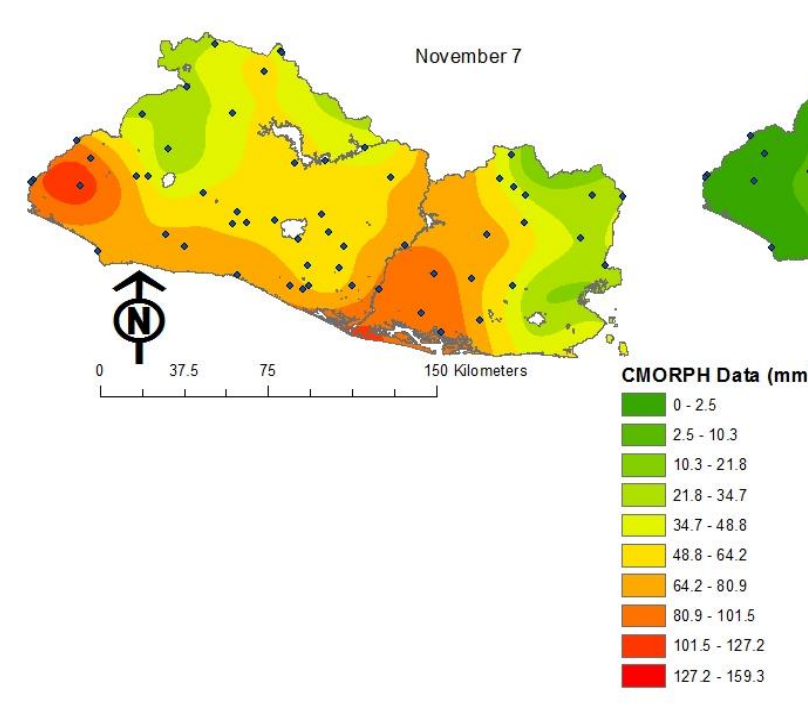
Acknowledgements

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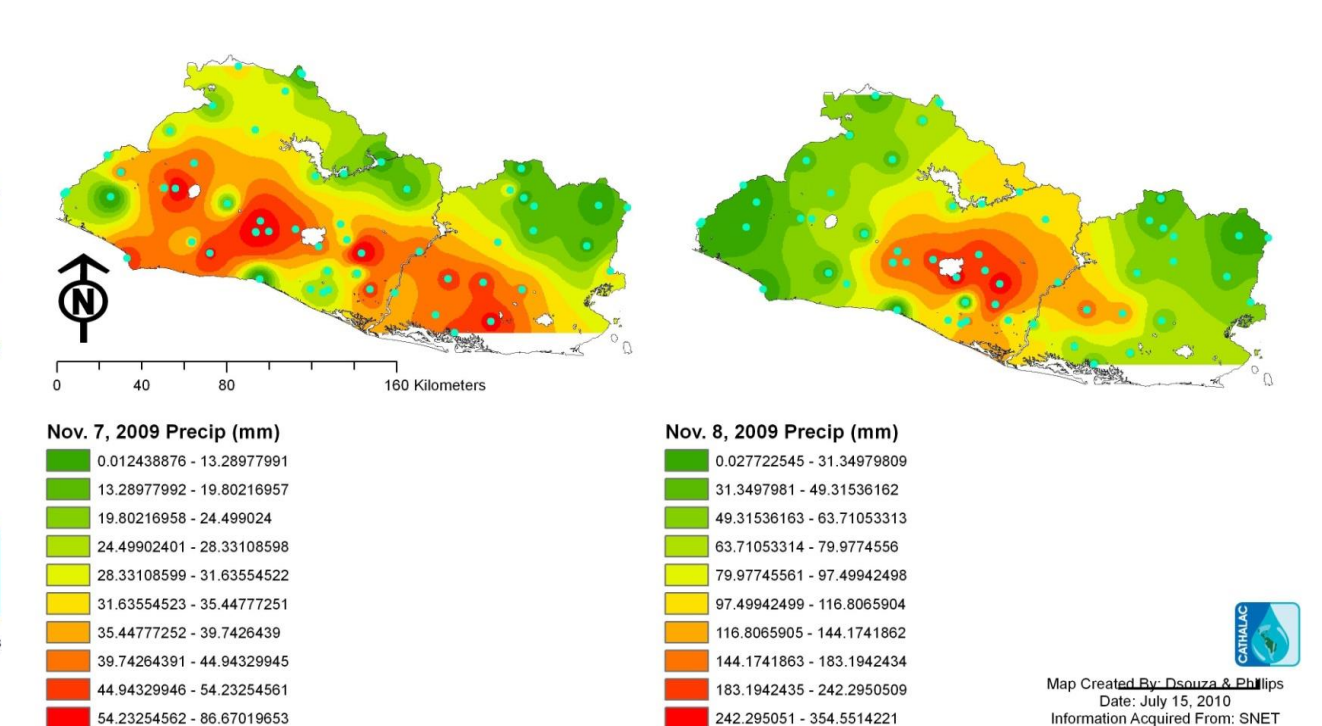
Key Findings

Our results show that CMORPH provided the most accurate predictions. Of the two forecast models, MM5 was the most accurate as well as the most user-friendly.

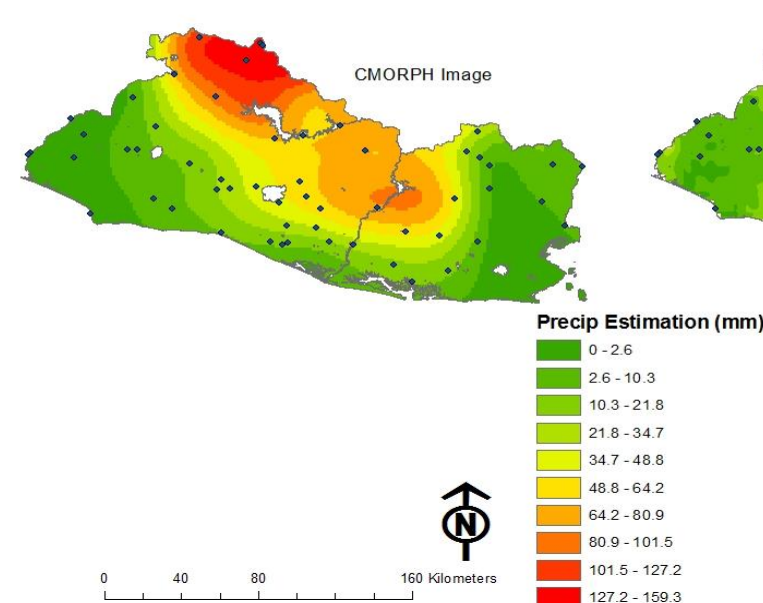
CMORPH Data for Nov 7 and 8



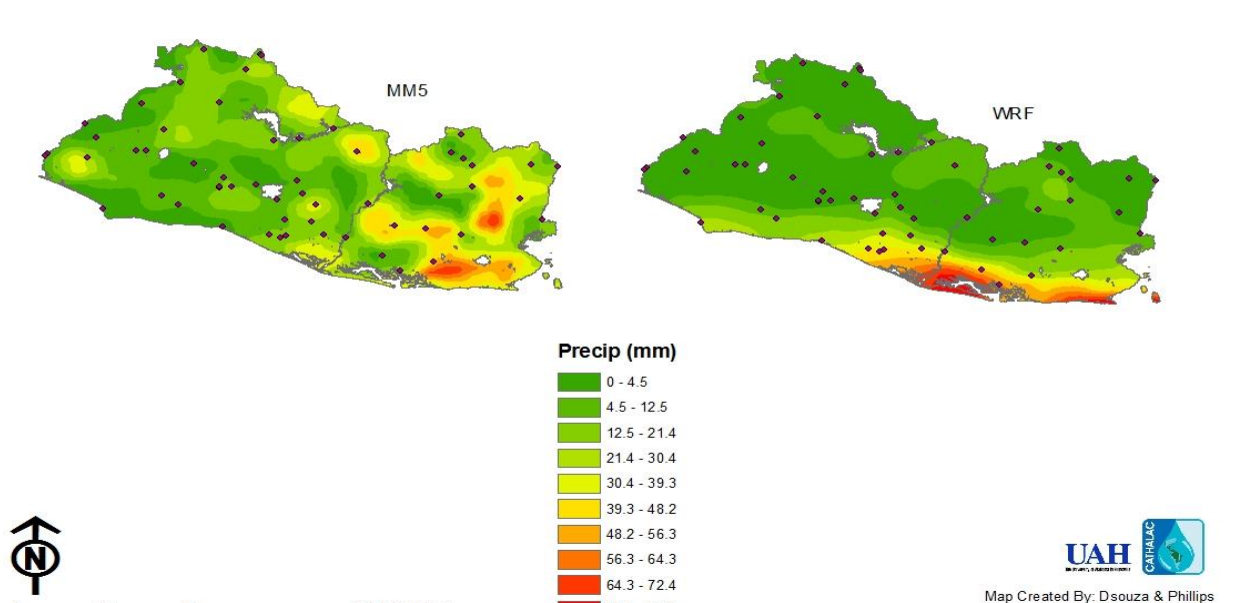
Rain Gauge Precipitation Data for Nov 7 and 8, 2009 in El Salvador



CMORPH vs. HE Data for November 8, 2009



MM5 vs. WRF Forecast for November 7, 2009



Explanation

The goal of our research was to determine the accuracy of each model so that weather predictions will be as accurate as possible, better informing the public. This is also a key goal to the AAS: “to enhance and share humanity’s scientific understanding of the Universe.”

