

THE IMPACT OF HURRICANE MARIA ON PUERTO RICO'S LAND COVER

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On September 20, 2017, hurricane Maria made landfall over Puerto Rico. It entered the island at the southeast corner and followed a northwesterly trajectory from there. Hurricane Maria's strong winds and torrential rains caused extensive damage to the land cover of Puerto Rico. Land cover changes in tropical environments have been shown to significantly modify the surface-atmospheric interactions and can impact rainfall production. Herein, to quantify these changes, we utilized LANDSAT-8 satellite imagery to reconstruct Puerto Rico's landcover, before and after the hurricane passing. The resulting land cover analysis shows extensive vegetation damage on the eastern part of the island as well as in the north and central regions. These landcover changes significantly impacted the island's precipitation pattern during the 2017-2018 Dry Season (December to March); our analysis, using local observations revealed that central and western Puerto Rico experienced an increase in seasonal precipitation immediately following hurricane Maria. On the other hand, the "El Yunque" rain forest in the northeast experienced considerable deficits of precipitation. The observed anomaly for 2017-2018 rainy season appears to not have carried through to the next year.