

Hurricane Impacts on Small Island Communities: Case study of Hurricane Matthew on Great Exuma, The Bahamas

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Great Exuma has been a UNESCO Eco-hydrology Project Site with a focus on coastal restoration and flood management. Great Exuma and its largest settlement, George Town, support a population of just over 8,000 people on an island dominated by extensive coastal wetlands. The Victoria Pond Eco-Hydrology project restored flow and drainage to highly-altered coastal wetlands to reduce flooding of the built environment as well as regain ecological function. The project was designed to show the value of a protected wetland and coastal environment within a populated settlement; demonstrating that people can live alongside mangroves and value "green" infrastructure for flood protection. The restoration project was initiated after severe storm flooding in 2007 with Tropical Storm Noel. In 2016, the passing of Hurricane Matthew had unprecedented impacts on the coastal communities of Great Exuma, challenging past practices in restoration and flood prevention. This talk reviews the loss of natural capital (for example, fish populations, mangroves, salt water inundation) from Hurricane Matthew based on a rapid response survey of Great Exuma. The surprisingly find was the impact of storm surge on low-lying areas used primarily for personal farms and small-scale agriculture. Although women made up the overwhelming majority of people who attended Coastal Restoration workshops, women were most adversely impacted by the recent hurricane flooding with the loss of their small low-lying farms and gardens. Although increasing culverts in mangrove creeks in two areas did reduce building flood damage, the low-lying areas adjacent to mangroves, mostly ephemeral freshwater wetlands, were inundated with saltwater, and seasonal crops in these areas were destroyed. These ephemeral wetlands were designed as part of the wetland flooding system, it was not known how important these small areas were to artisanal farming on Great Exuma. The size and scope of Hurricane Matthew passing through the entire country presents a unique opportunity use a rapid response method to document coastal impacts to better understand how to plan coastal restoration. Small farms managed primarily by women accounted for about 35% of the fresh produce eaten by local Bahamians (not tourists), and the loss of local production may be permanent.