

Caribbean Impacts from the 2017 Hurricane Season

February 7, 2018

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Coastal, Environmental, Marine & Water Resources Engineering

2017 Caribbean Hurricanes



Leeward Islands



Irma Storm Track and Max Winds

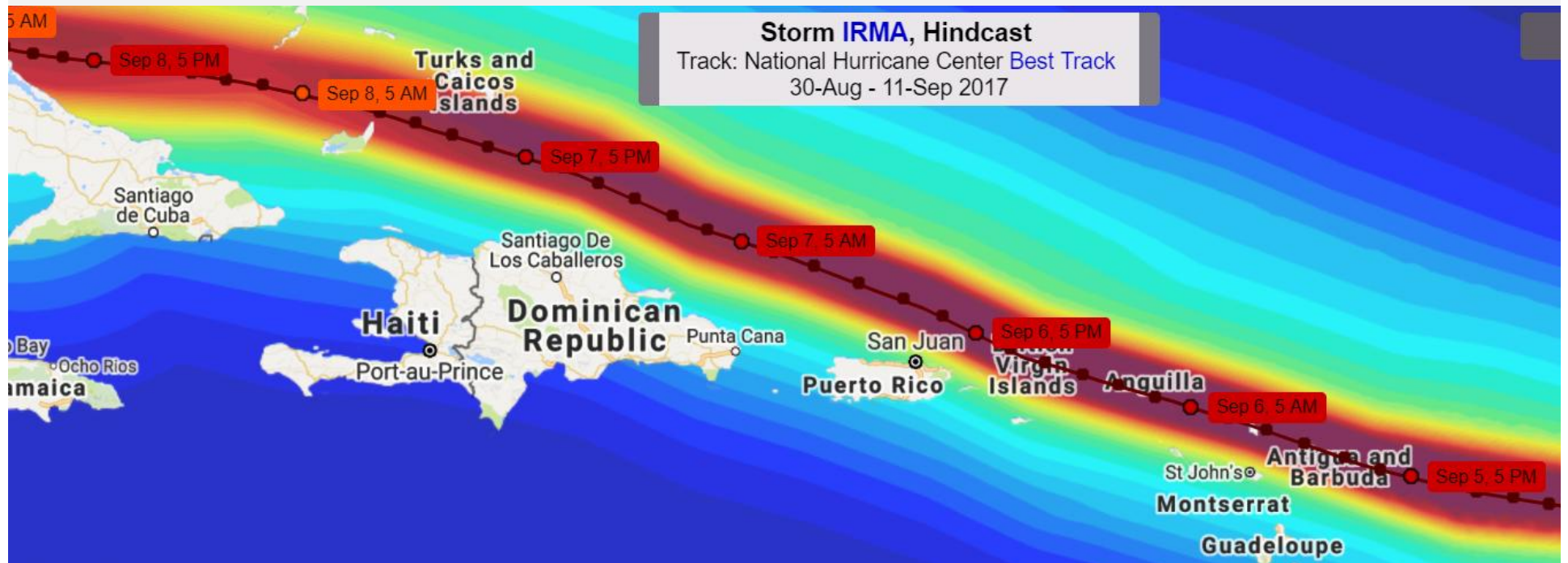
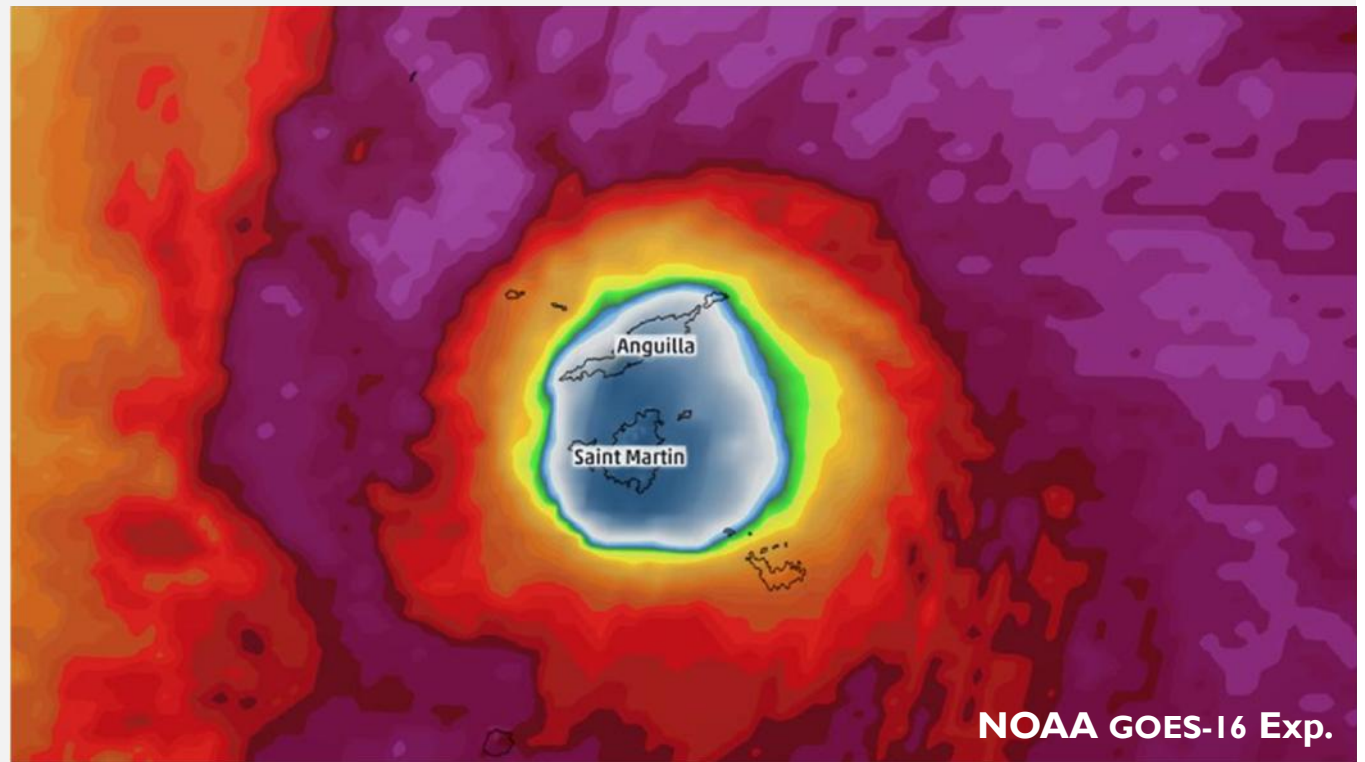


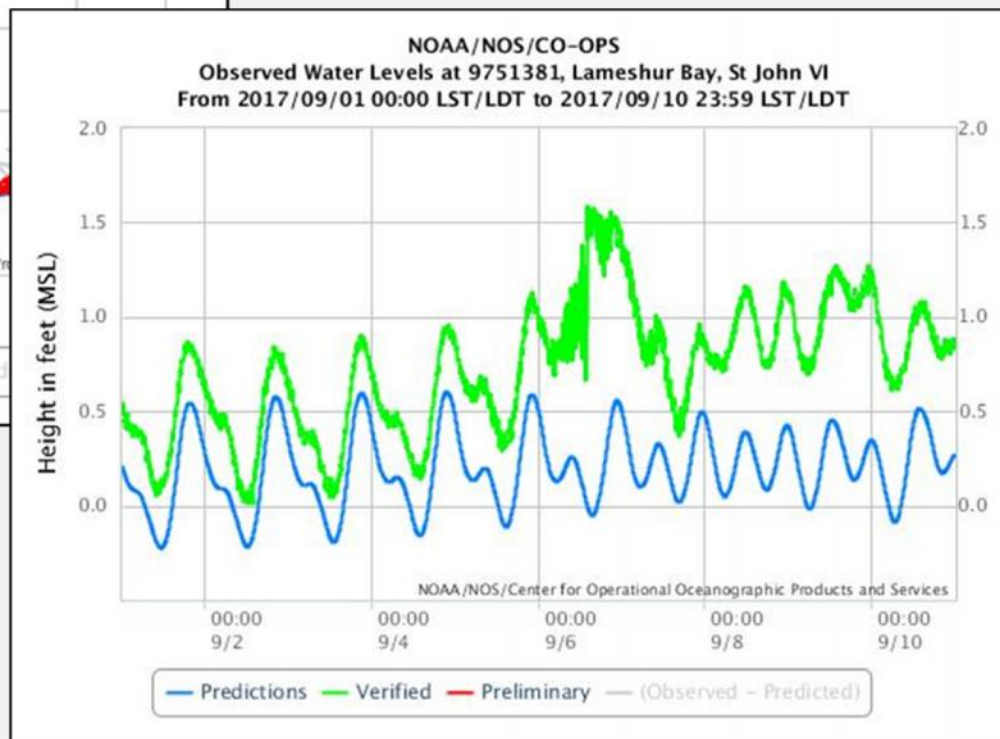
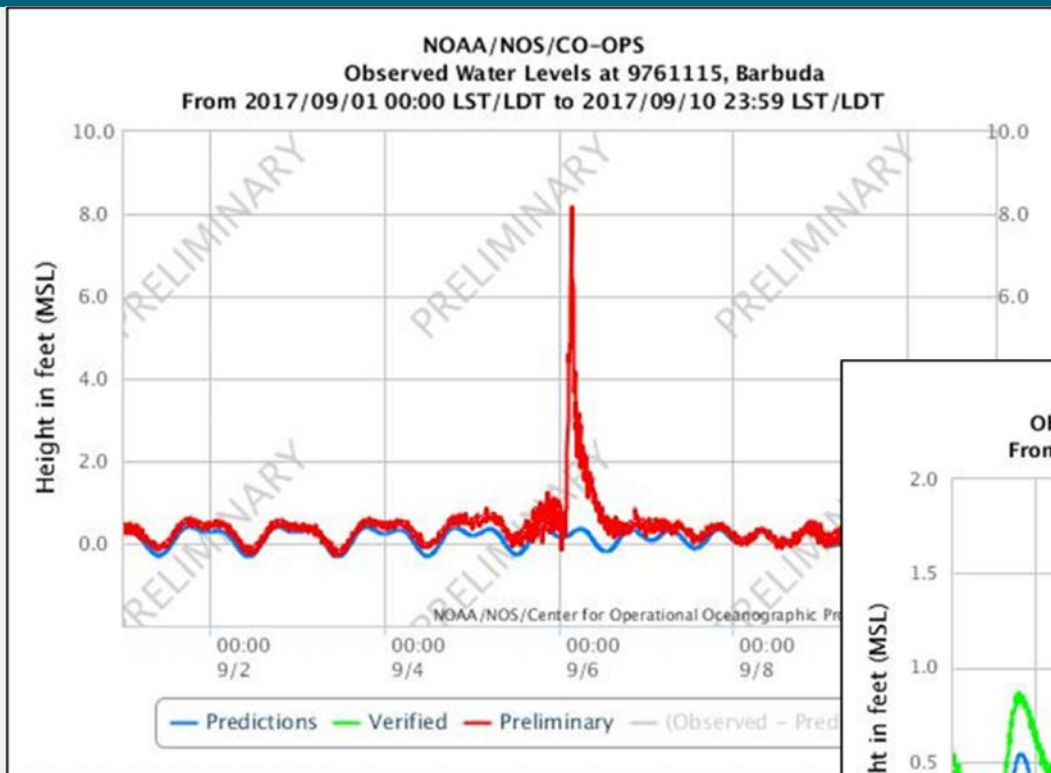
Image Source: <http://nc-cera.renci.org/>

Hurricane Irma

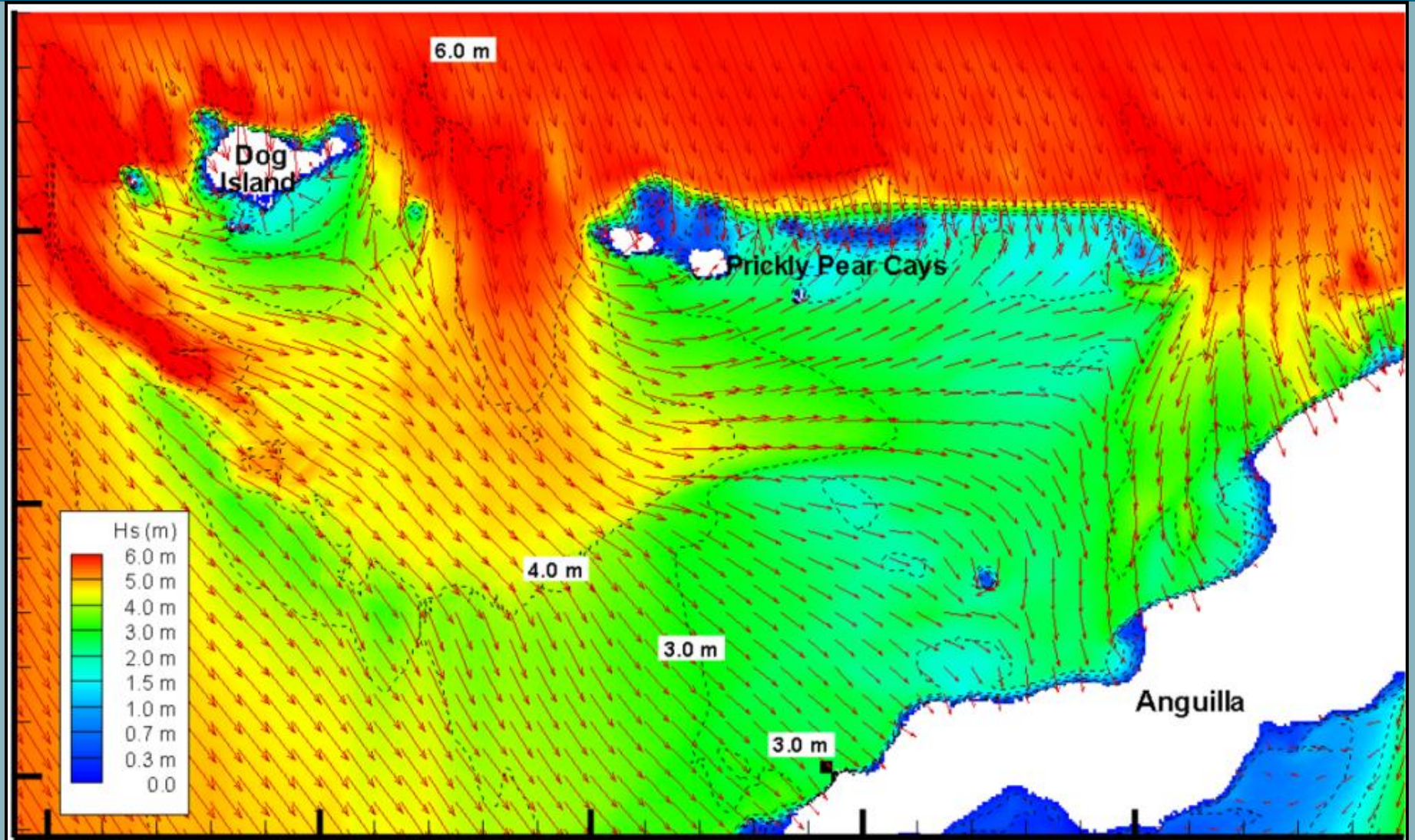
- Sept 6-8, 2017
- Cat 5
- 185 mph sustained winds
- Eyewall passes over Barbuda, St Maarten, Anguilla, BVI, USVI, Turks & Caicos



Measured Water Levels



Waves – spatial variation



Damage Observations



Resort/Tourism Infrastructure



BEYC

**Saba
Rock**



Beachfront Roads



Marine Infrastructure



Marine Infrastructure – Fixed Docks



Marine Infrastructure – Fixed Docks



Marine Infrastructure – Impact



Marine Infrastructure – Fixed Docks



Marine Infrastructure – Impact



Marine Infrastructure – Fixed Docks



Floating Docks



Pre



Post

Floating Docks



Marine Infrastructure



Hurricane Hole?



Hurricane Hole?



Environmental Impacts



**Styrofoam
Bits**

Beaches



Beaches - Anguilla

**Pre-
Irma**



Post-Irma



Pre-Project





Current Recovery Situation

- ▶ **Barbuda: < 20% evacuees have returned**
- ▶ **Electricity Restoration: 60% BVI, 90+% USVI and Anguilla, 70% St Martin**
- ▶ **Partial charter yacht fleet and marinas open**
- ▶ **USVI water quality testing on beaches**
- ▶ **Ongoing restoration and rebuilding – roads, hotels, homes, etc.**



Takeaways from Hurricane Impacts

- ▶ **Record-setting storms caused damage to infrastructure and tourism industry**
- ▶ **Validates expected performance of marine structure impacts from large hurricanes**
- ▶ **Improve resiliency when rebuilding**
- ▶ **Recovery efforts will take years**

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