

# 2020 Hurricane Season: Preliminary Impacts & Assessments



## BTNEP Mgmt Conference Webinar November 5, 2020

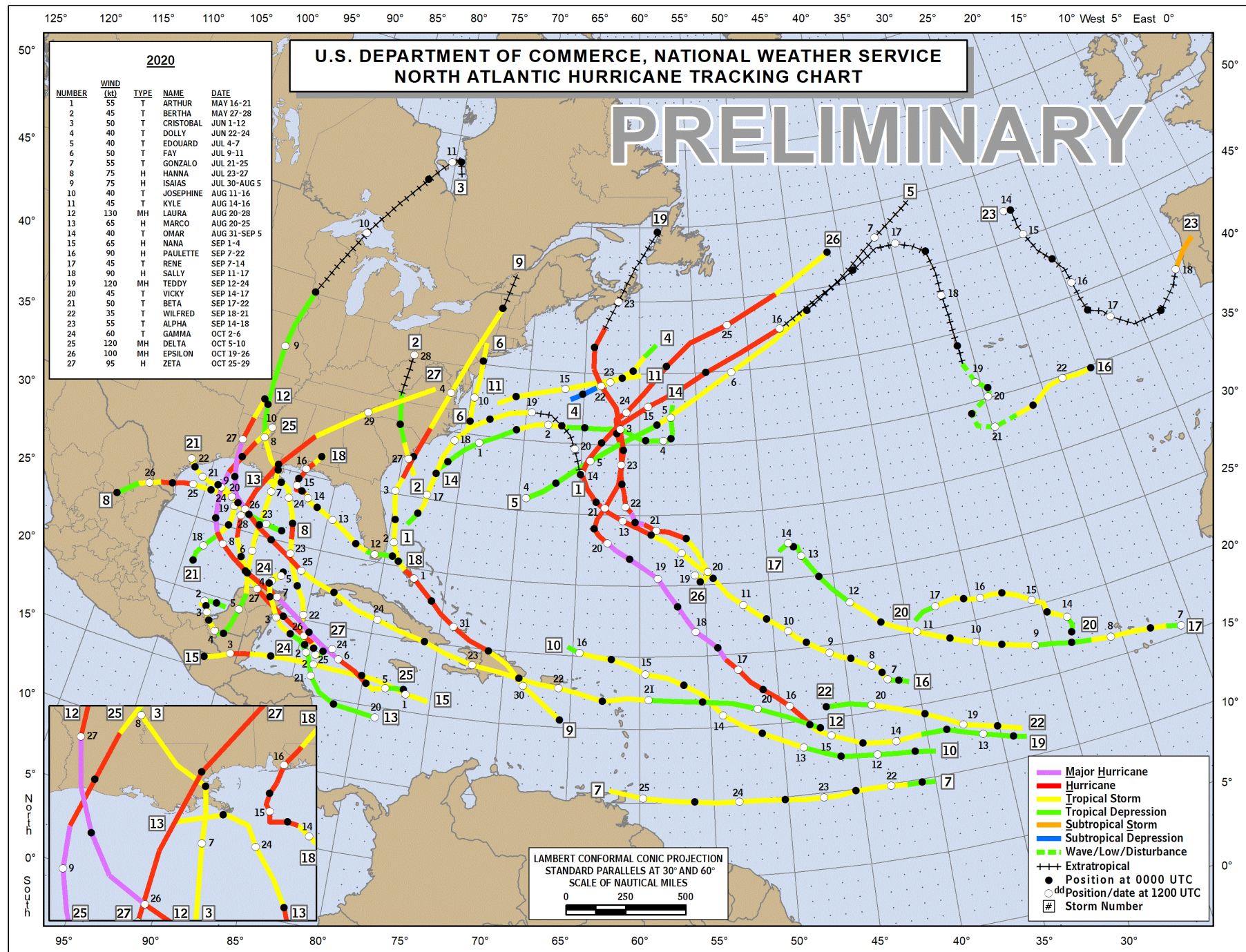
Darin M. Lee  
CPRA Operations Division  
Thibodaux Regional Office



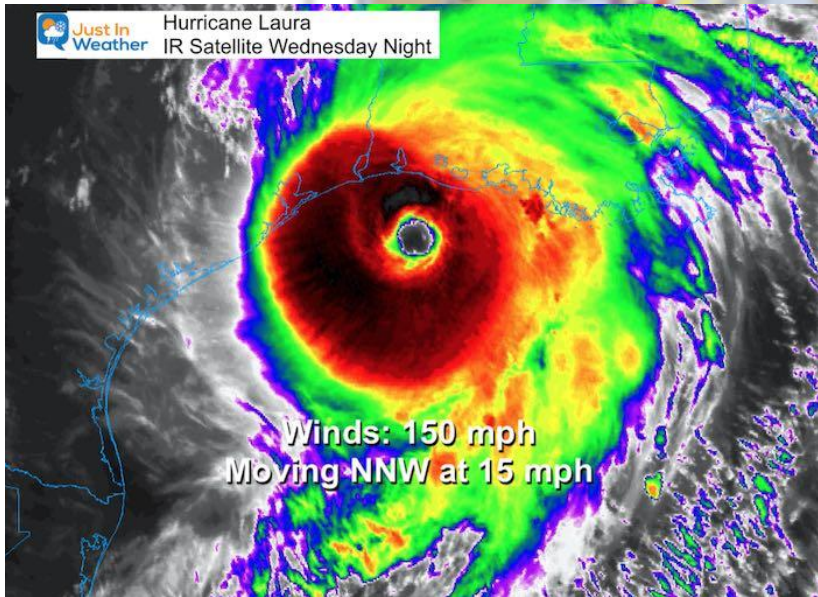
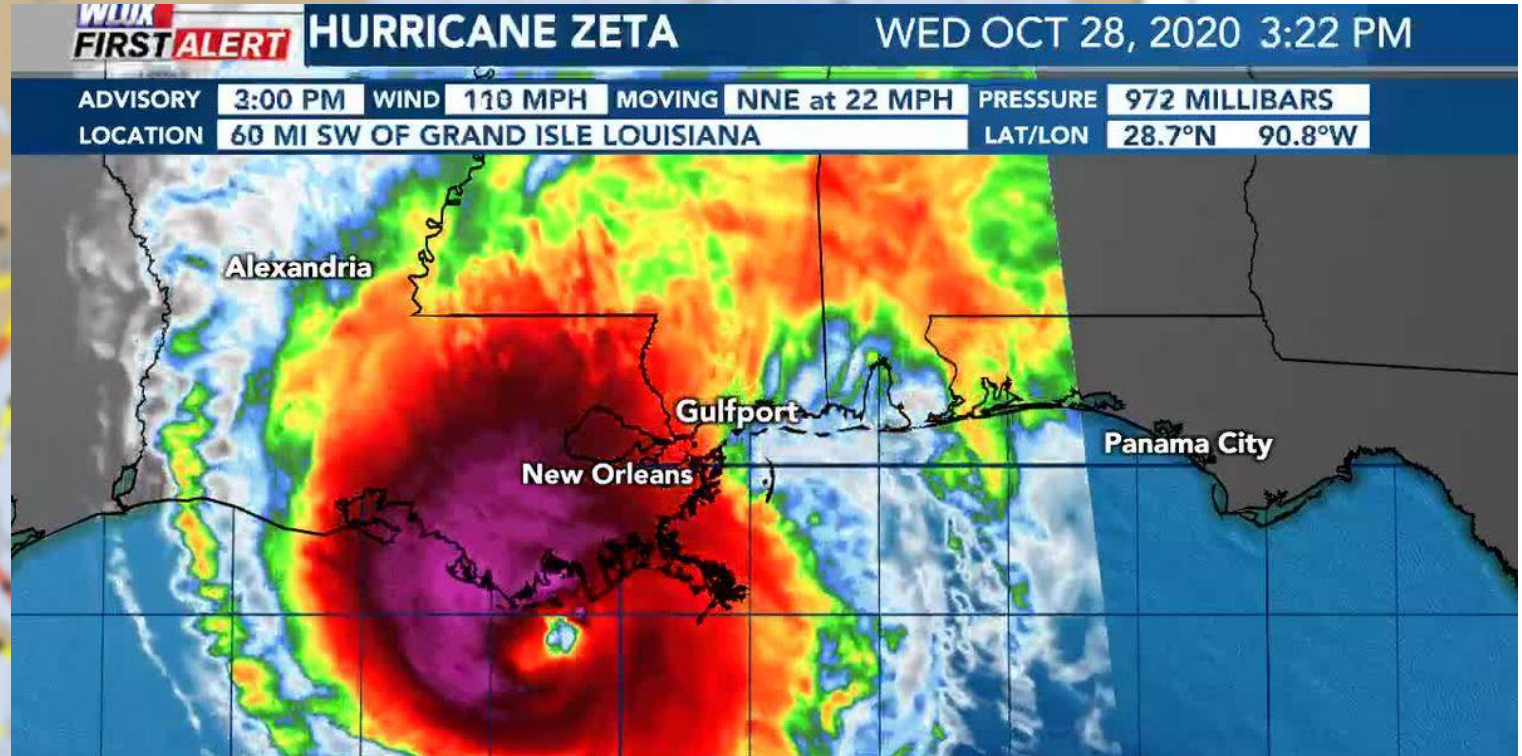
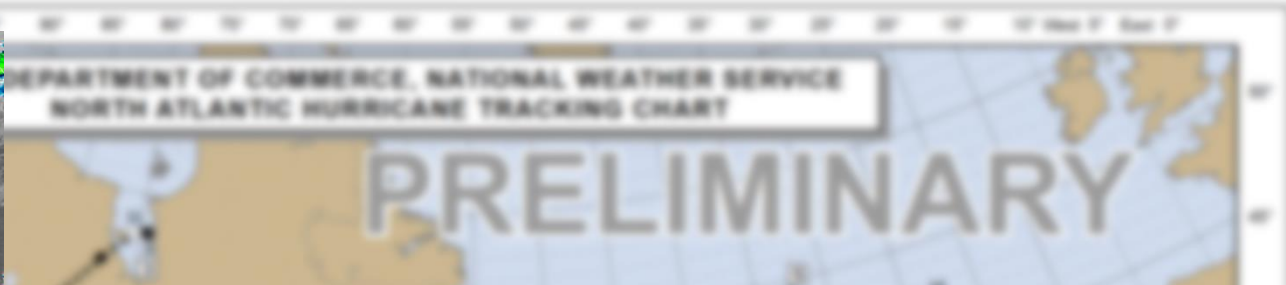
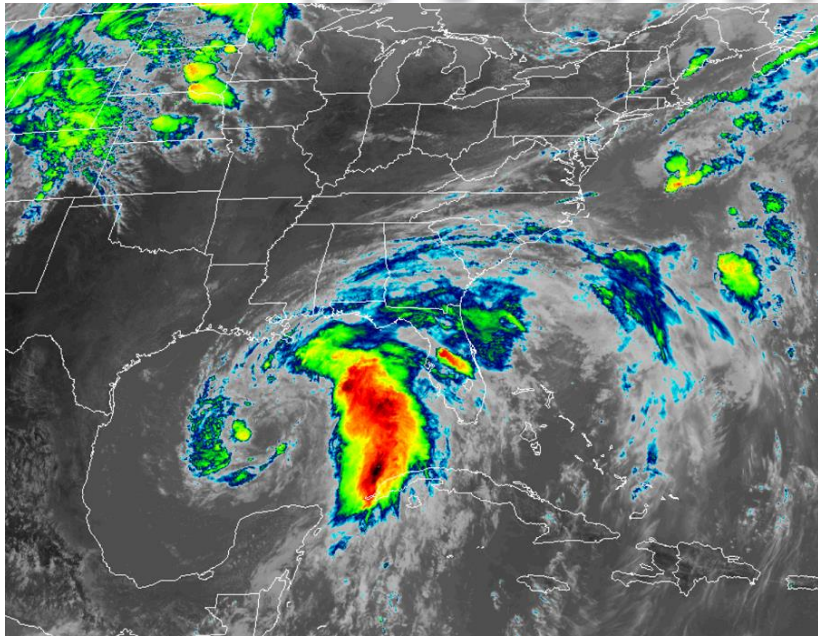
**committed to our coast**

Louisiana Coastal Protection and Restoration Authority



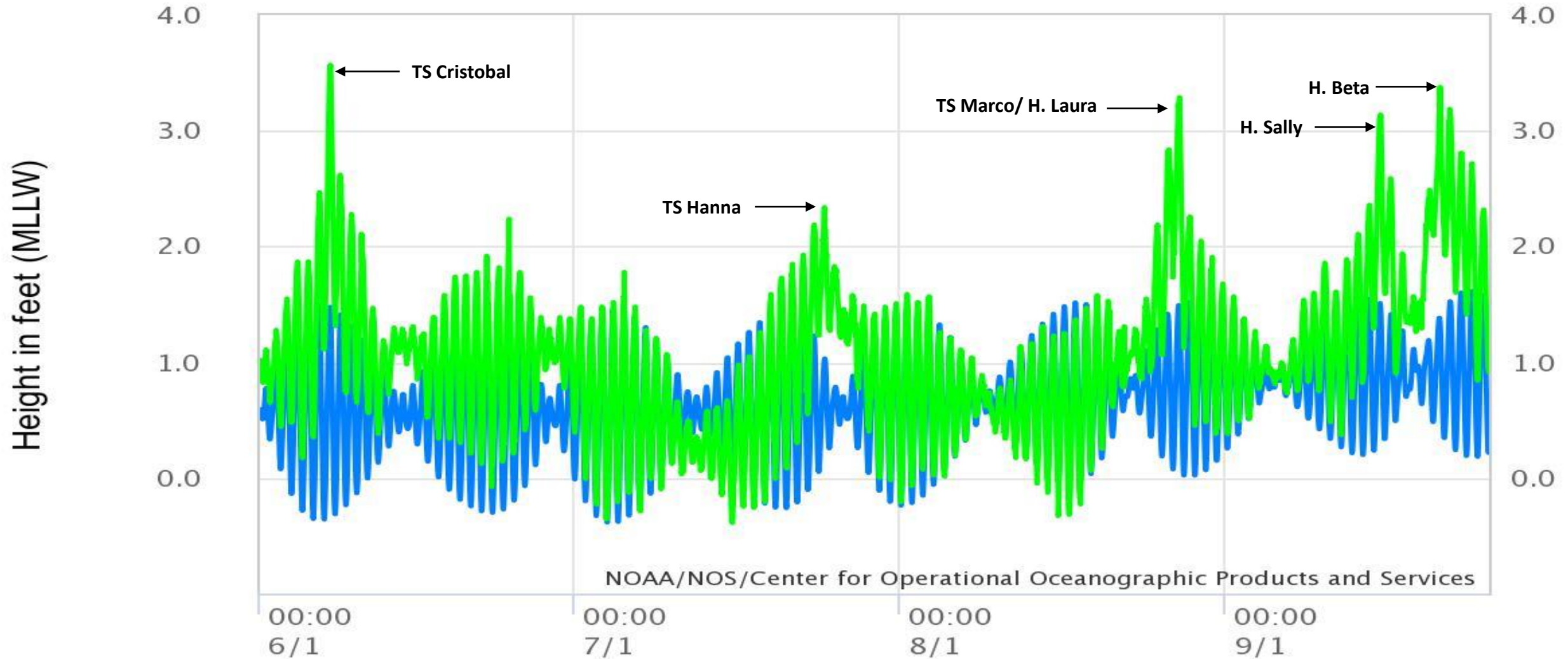








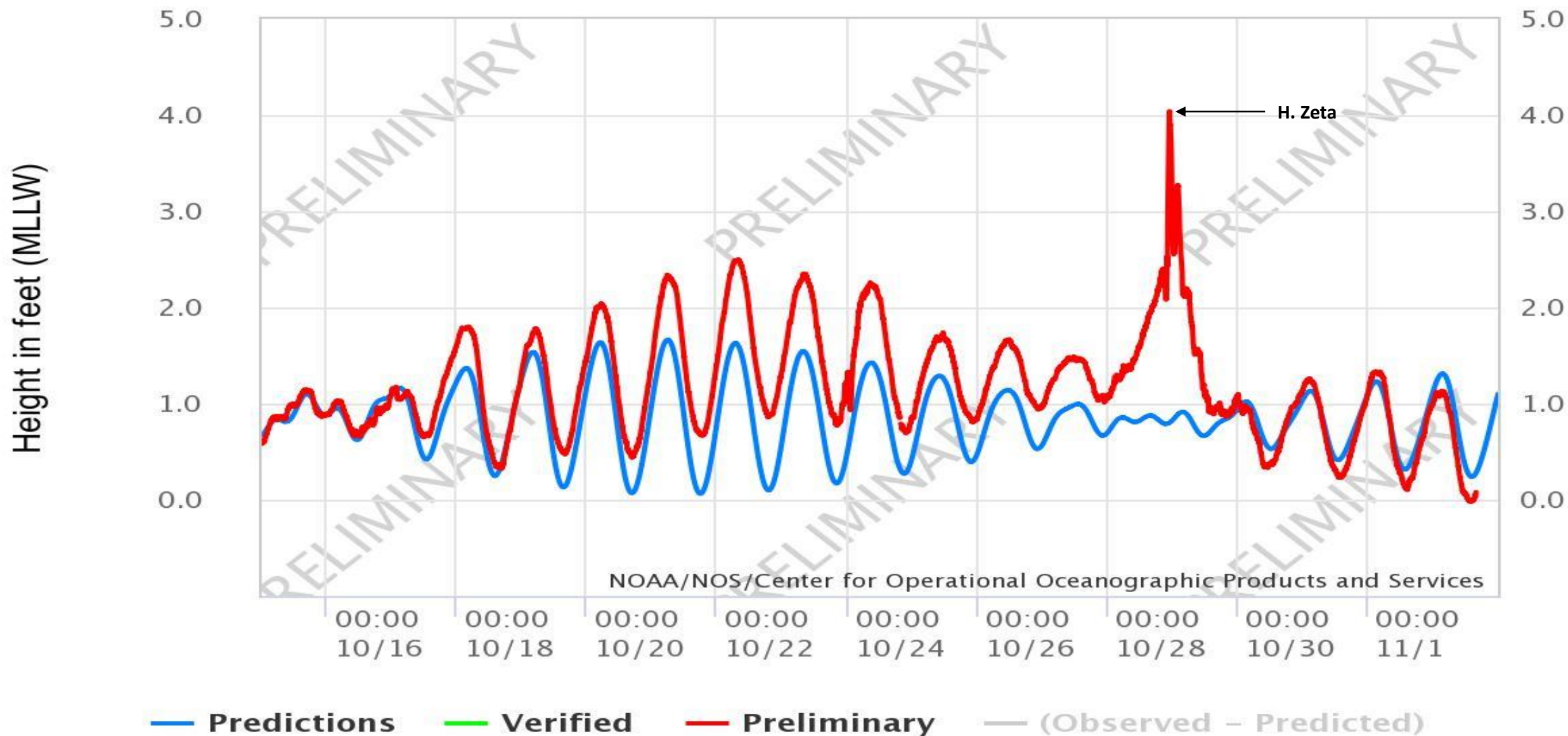
**NOAA/NOS/CO-OPS**  
**Verified Hourly Heights at 8761724, Grand Isle LA**  
**From 2020/06/01 00:00 GMT to 2020/09/25 23:59 GMT**



**Predictions**   **Verified**   **Preliminary**   **(Observed - Predicted)**



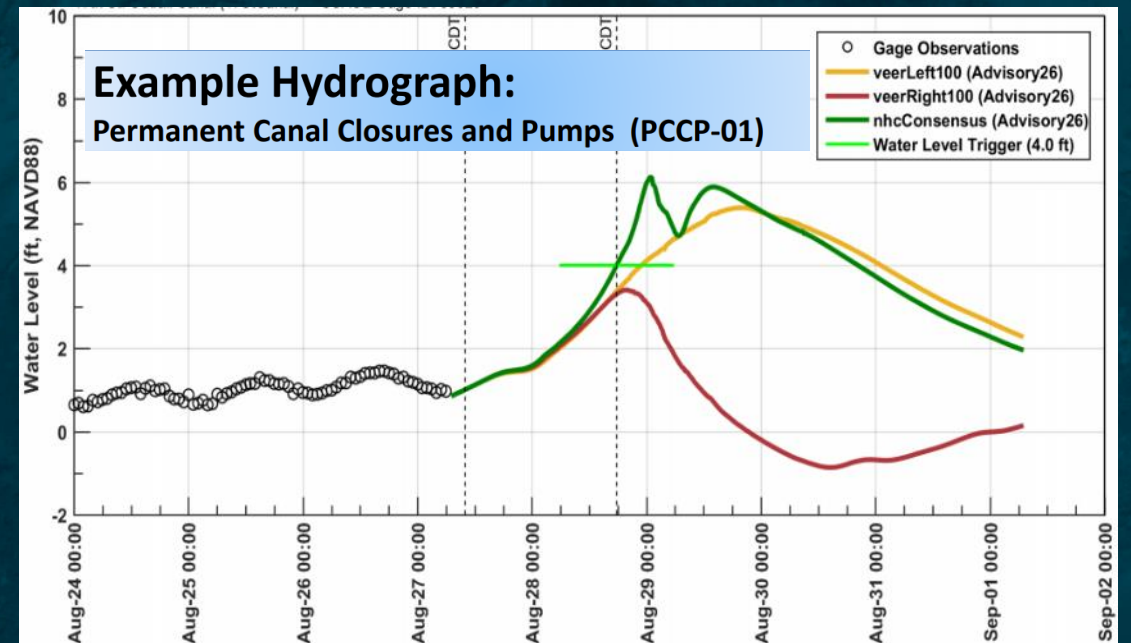
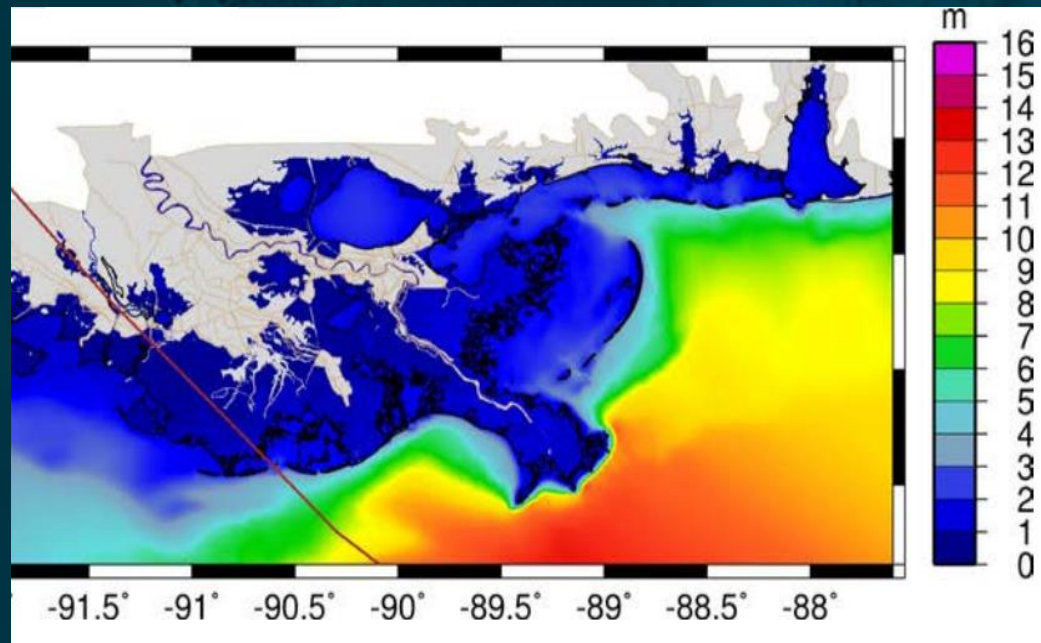
NOAA/NOS/CO-OPS  
Observed Water Levels at 8761724, Grand Isle LA  
From 2020/10/15 00:00 GMT to 2020/11/02 23:59 GMT





# Pre-Storm Activities

- » CPRA/LSU completed ADCIRC modeling, provided hydrographs to levee districts & parishes to inform decisions on gate closures





# Pre-Storm Activities



Empire Lock Closure  
(CPRA, USACE & Plaquemines Parish)  
*Diver inspection to insure closure of structure*



Gate Monitoring  
689 gates across the coast  
Monitored during both storms



# Pre-Storm Activities in SE Louisiana

## » Pre-positioned Pumps:

- 10 to Plaquemines Parish
- 6 to St. Bernard Parish
- 4 to St. Mary Parish

## » Delivered to St. Bernard Parish 3,000 filled sand bags and 26,000 more ready to be filled

## » Pre-positioned on Grand Isle five 500-KW generators





# Pre-Storm Activities on Grand Isle

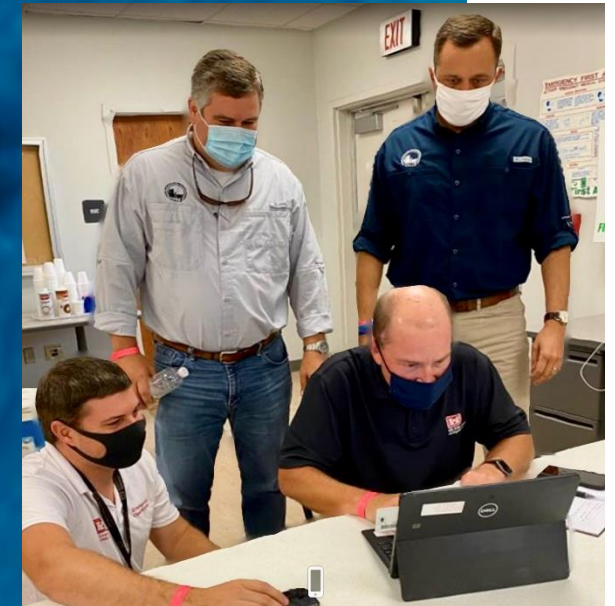


**Shoreline damaged during Tropical Storm Cristobal, restoration was underway  
Before Marco and Laura emergency shoring with sandbags**



# Redeployment Between Storms

Assets and attention Southwest Louisiana





- Delacroix back levee + highway provides low level of flood protection
- Back levee elevation is approx. 6 feet NAVD88
- back levee overtopped in a few areas but “patched” during the storm flood fighting
- Delacroix experienced flooding mostly over the highway from the bayou/western side





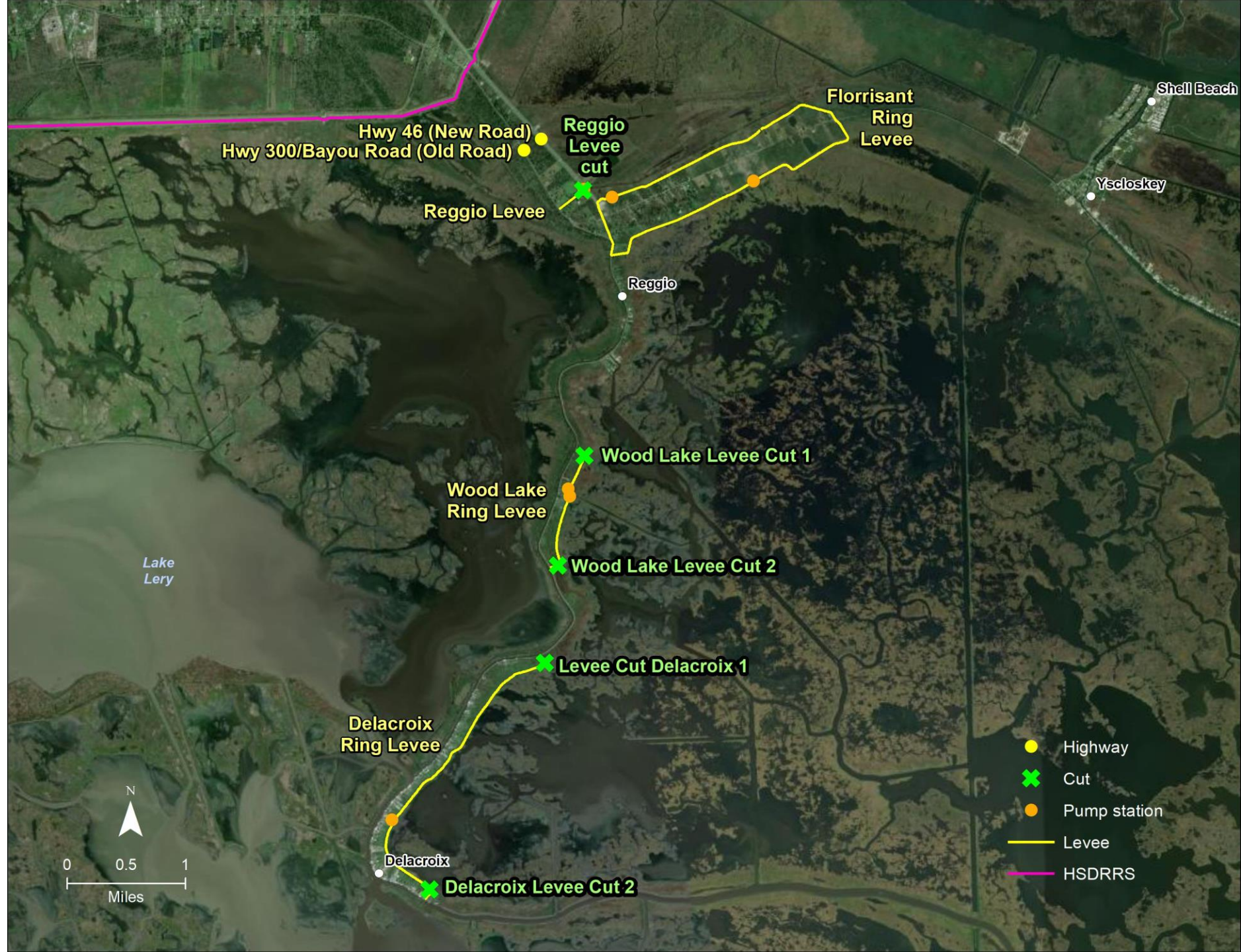
Flooded Delacroix Island, day after passage of Hurricane Sally (Sept. 16, 2020)





## Post-Storm dewatering:

- Parish cut levees for rapid drainage
- Two days to drain with cuts; then levees repaired
- Two more days for permanent and portable pumps to finish the job







Sep 16, 2020 at 10:41:42 AM  
N 29° 47' 55", W 89° 45' 53"  
Saint Bernard LA 70085





Sep 16, 2020 at 11:03:05 AM  
N 29° 47' 13", W 89° 46' 0"  
Saint Bernard LA 70085





Levee cut for drainage





## Grand Isle, LA - Hurricane Sally flooding

- Sustained tides above EL 2.5' NAVD88 initiates flooding from back/bayside of Town (N winds exacerbate bayside flooding)
- 9/14 Flooding begins (max flood waters EL 3.5')
- 9/15 Began setting up portable pumps for dewatering efforts (14 Pumps from CPRA)
- 9/16 Began dewatering efforts utilizing portable pumps and existing pump stations
- 9/19 Dewatering complete after 55 hours pumping





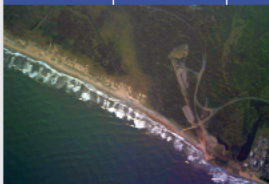




# Emergency Response Imagery

National Geodetic Survey

- NGS Home
- About NGS
- Data & Imagery
- Tools
- Surveys
- Science & Education
- 
- Search



The imagery posted on this site was acquired by the **NOAA Remote Sensing Division** to support NOAA homeland security and emergency response requirements. In addition, it will be used for ongoing research efforts for testing and developing standards for airborne digital imagery.

Tips for navigating the Emergency Response Imagery Viewer.

**Navigation**

National Geodetic Survey  
Pre-Event Imagery

**Contact Us**

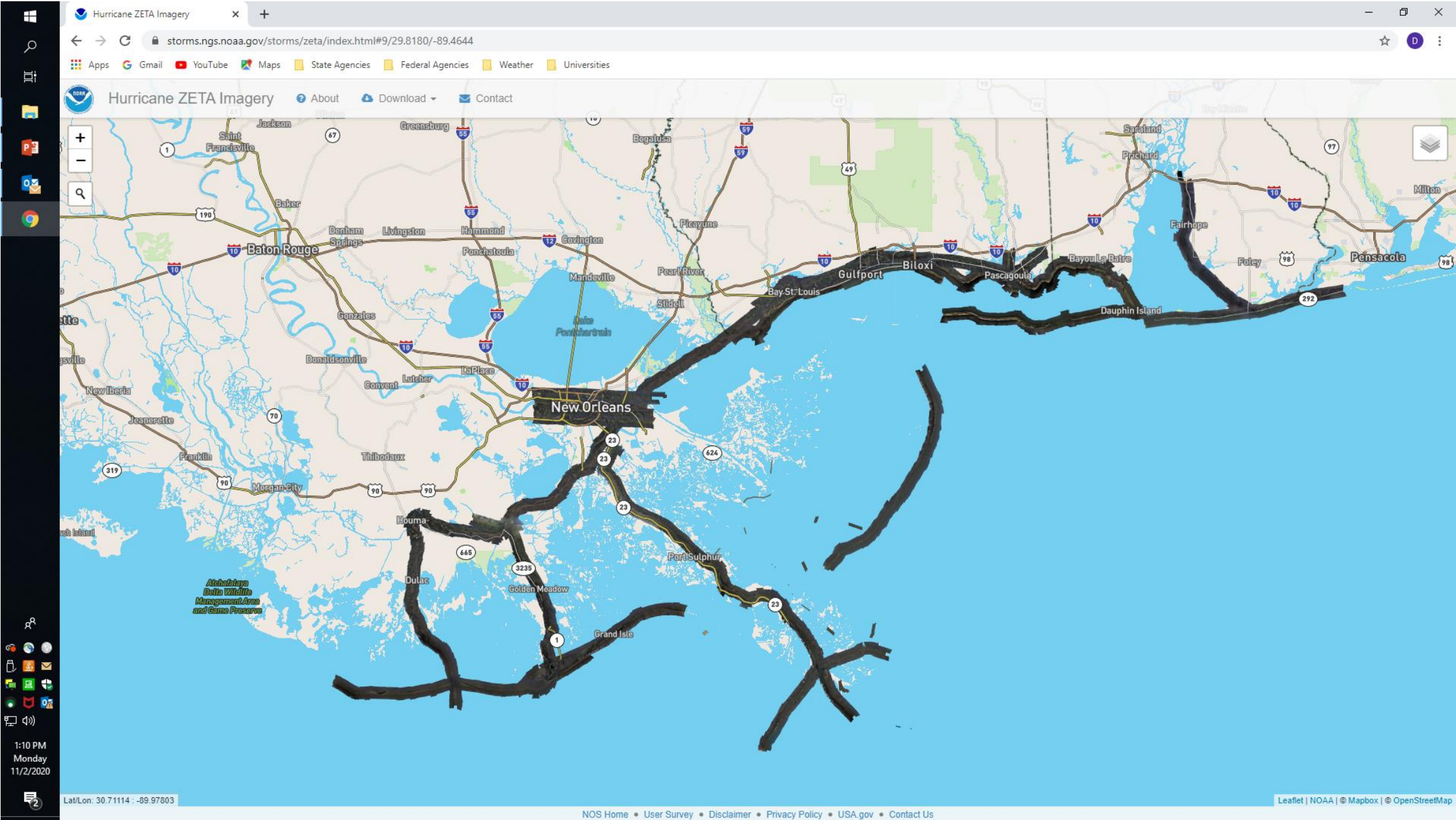
Content and Technical  
Issues  
Comments and Policy  
Issues

**Emergency Response Imagery:**

- Hurricane Zeta (2020)
- Hurricane Delta (2020)
- Hurricane Sally (2020)
- Hurricane Laura (2020)
- Hurricane Isaaias (2020)
- Nashville Tornadoes (2020)
- Hurricane Dorian (2019)
- Hurricane Barry (2019)
- Hurricane Michael (2018)
- Hurricane Florence (2018)
- Tropical Storm Gordon (2018)
- Hurricane Nate (2017)
- Hurricane Maria (2017)
- Hurricane Irma (2017)
- Hurricane Harvey (2017)
- Hurricane Matthew (2016)
- Louisiana Flooding (2016)
- Midwest U.S. Flooding (2015)
- Illinois Tornadoes (2015)
- Hurricane Arthur (2014)
- Hurricane Sandy (2012)
- Hurricane Isaac (2012)
- Hurricane Irene (2011)
- Joplin, MO Tornado (2011)
- Tuscaloosa, AL Tornado (2011)
- North Dakota Flooding (2011)
- Hurricane Earl (2010)
- Nor'Easter Nov09 (2009)
- Hurricane Ike (2008)
- Hurricane Gustav (2008)
- Hurricane Humberto (2007)
- Tropical Storm Ernesto (2006)
- Hurricane Wilma (2005)
- Hurricane Rita (2005)
- Hurricane Ophelia (2005)
- Hurricane Katrina (2005)
- Hurricane Dennis (2005)
- Hurricane Ivan (2004)



https://storms.ngs.noaa.gov/









**North Breton Island breach - Hurricane Sally  
(picture September 18, 2020; USFWS) breached W to E**



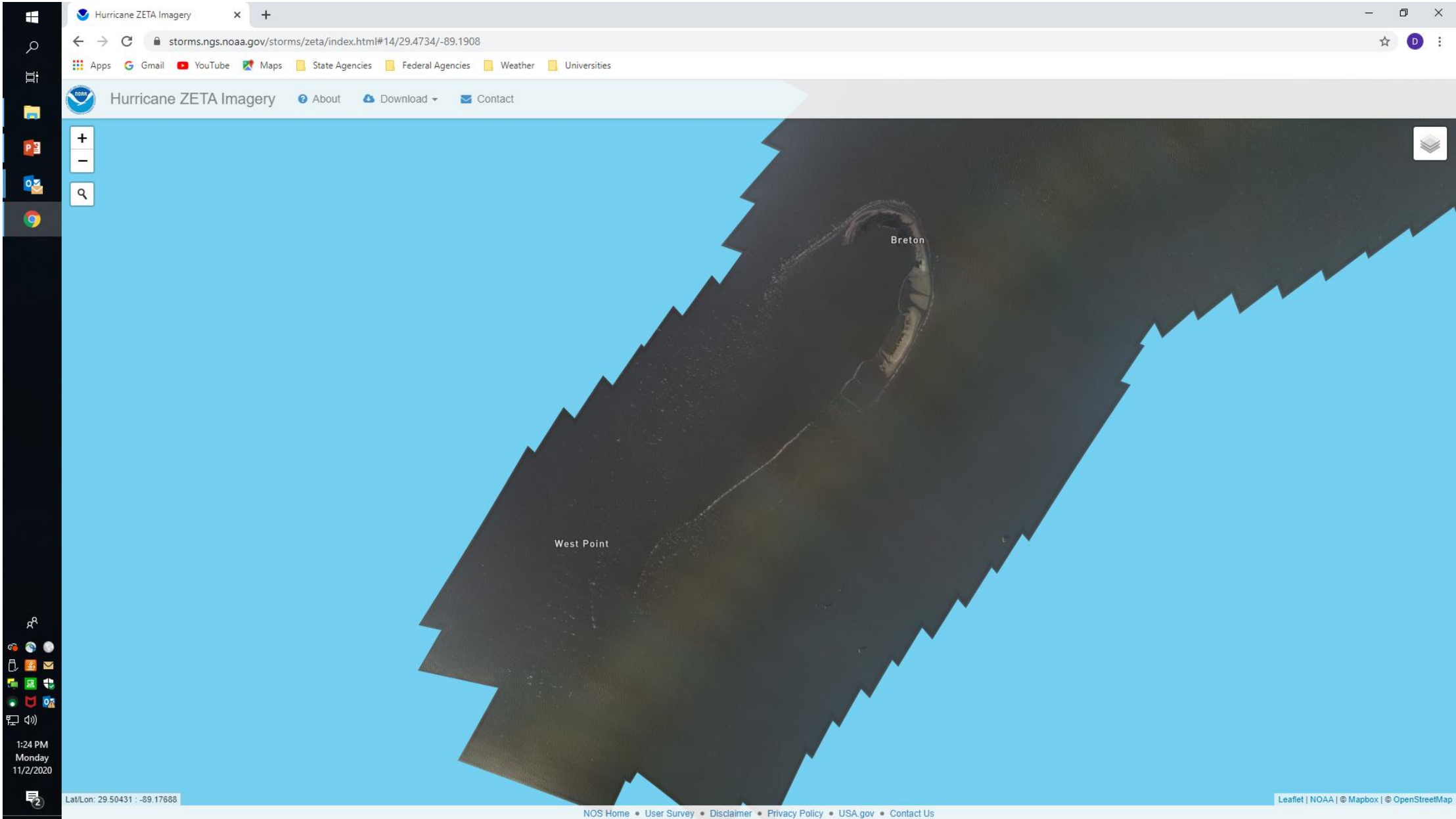


**North Breton Island breach - Hurricane Sally  
(picture September 18, 2020; USFWS) facing North**



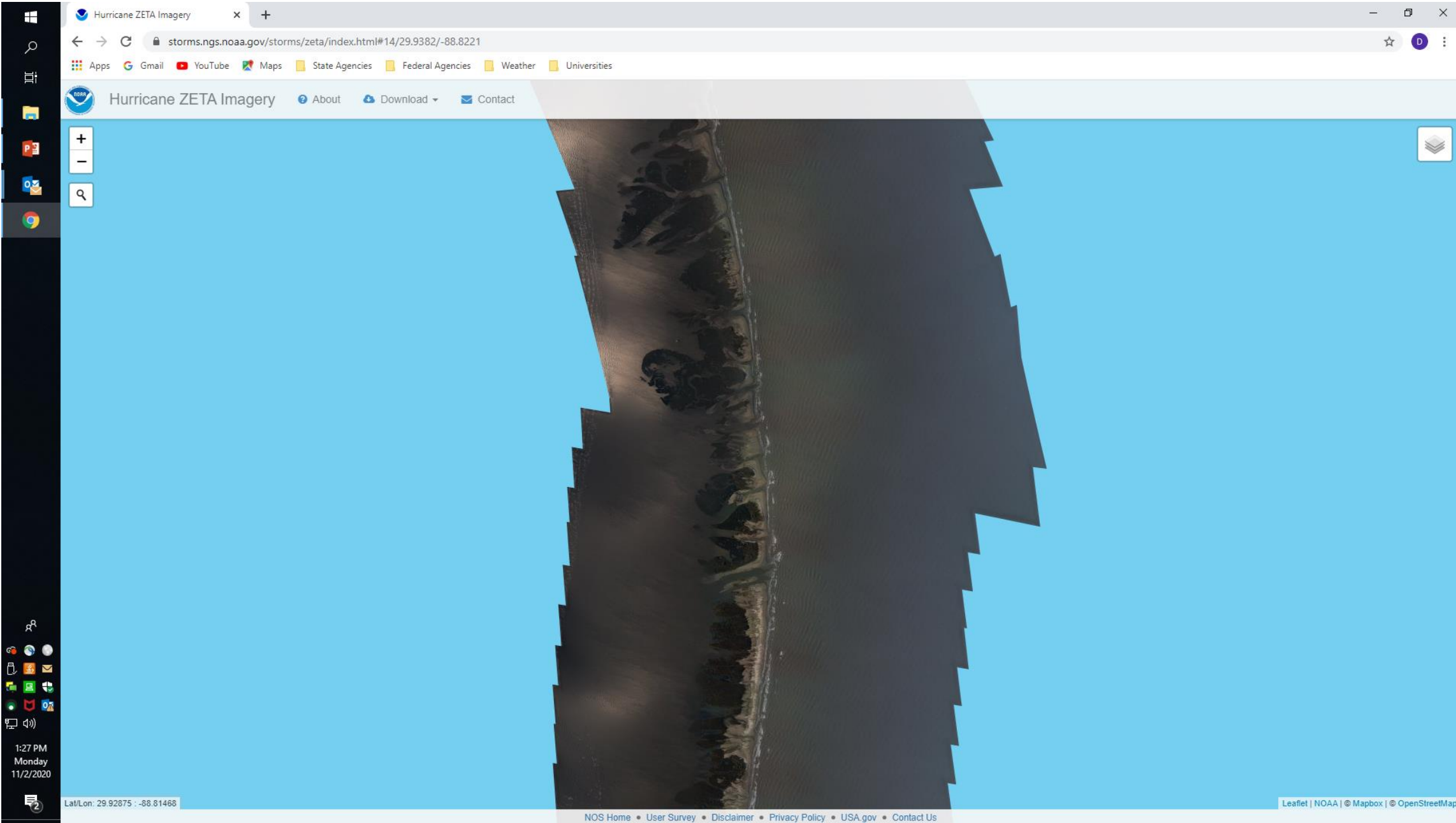


# Post – Zeta Breton Island



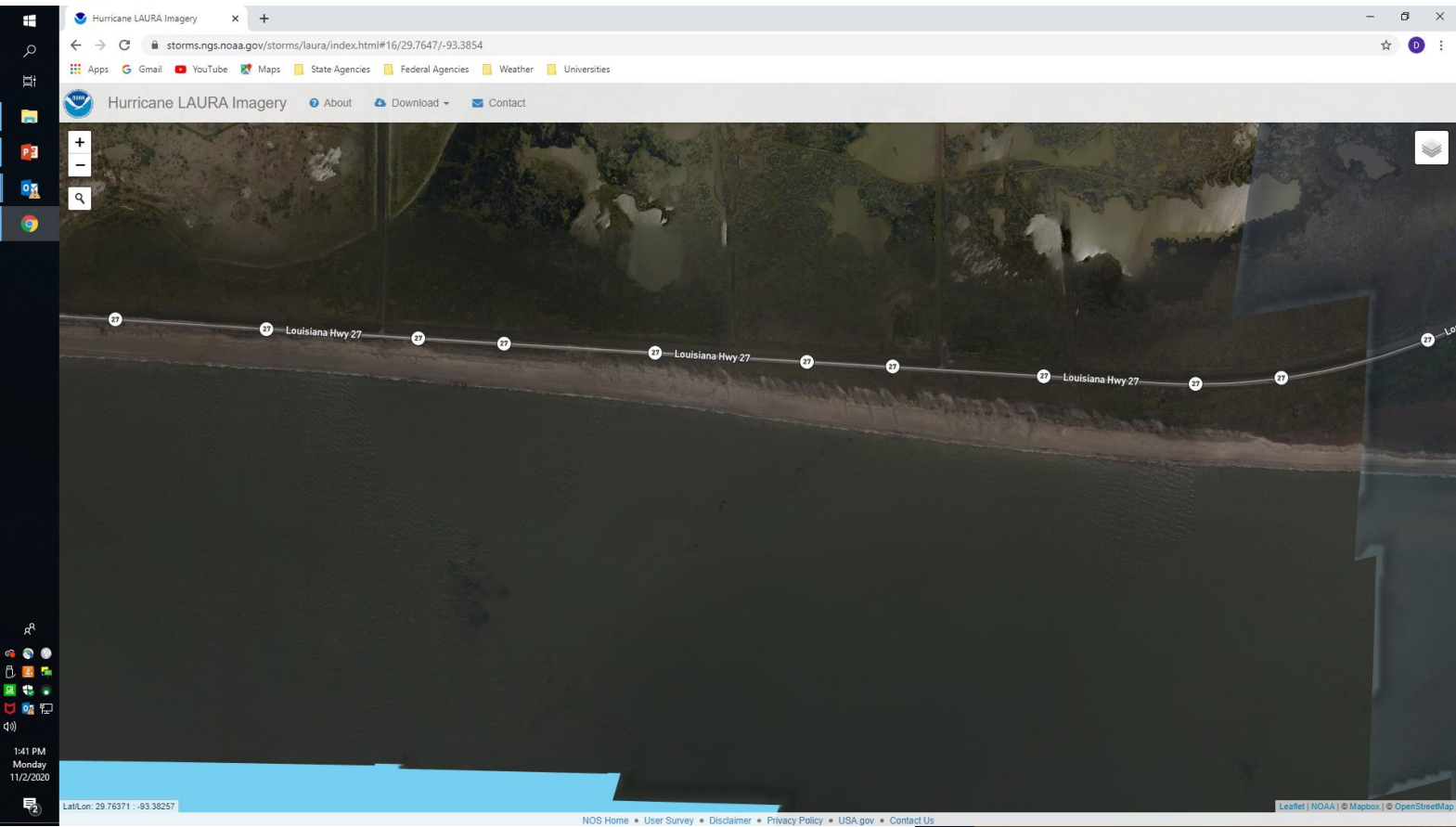


# Post – Zeta Northern Chandeleurs



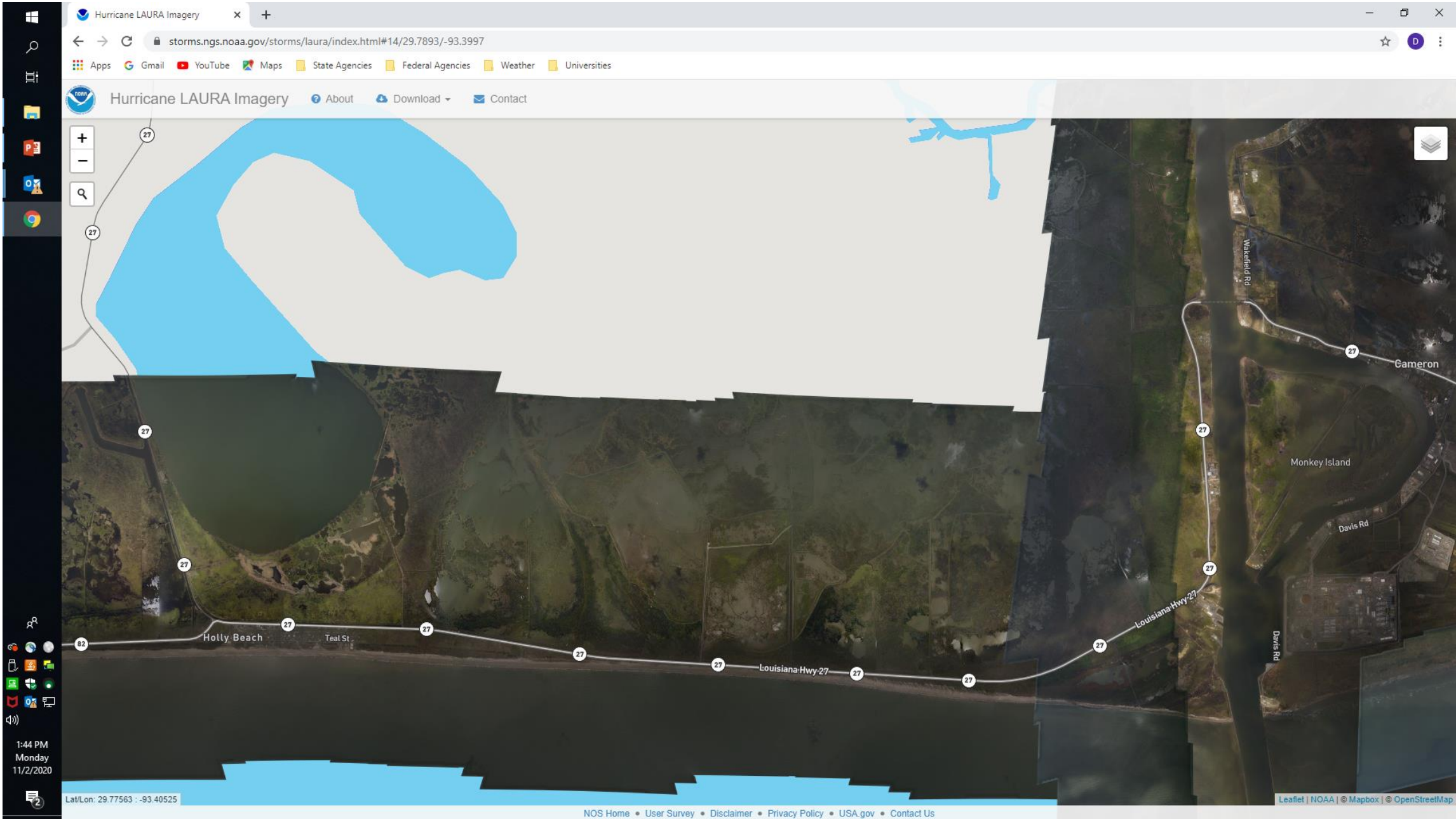


# Post Laura vs Post Delta Cameron Shoreline



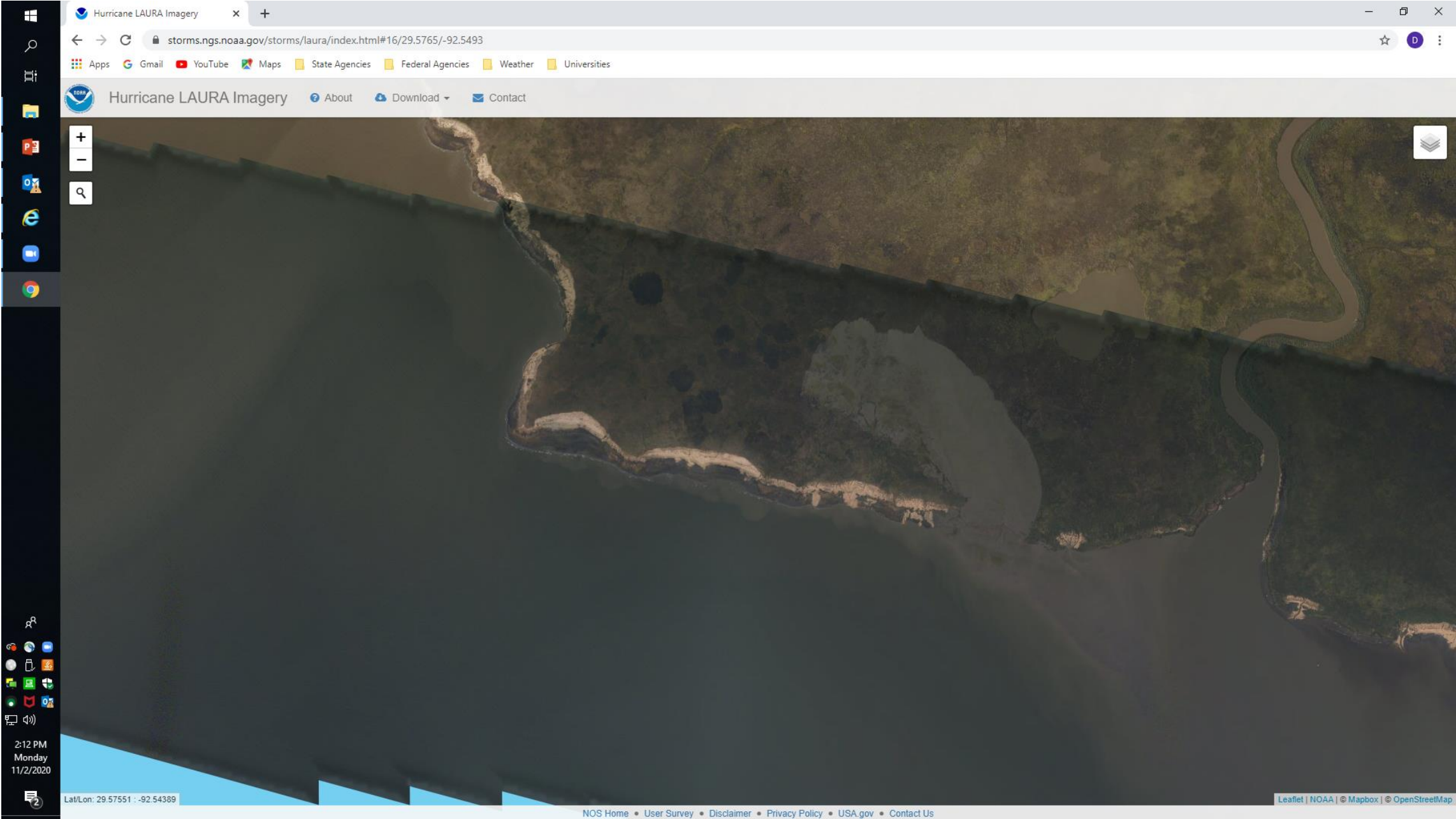


# Post Laura Cameron Shoreline



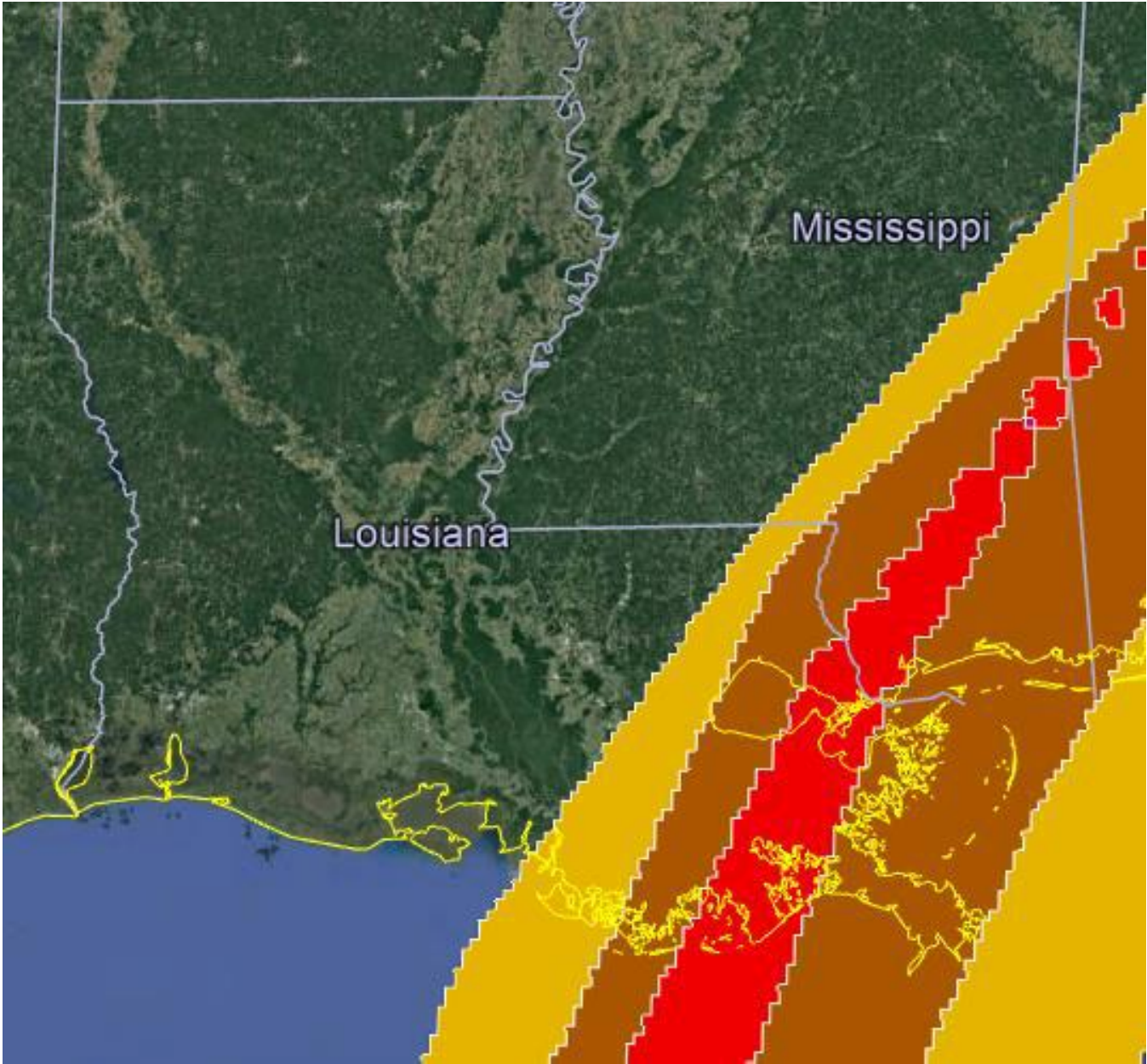


# Post – Laura Mud Wave



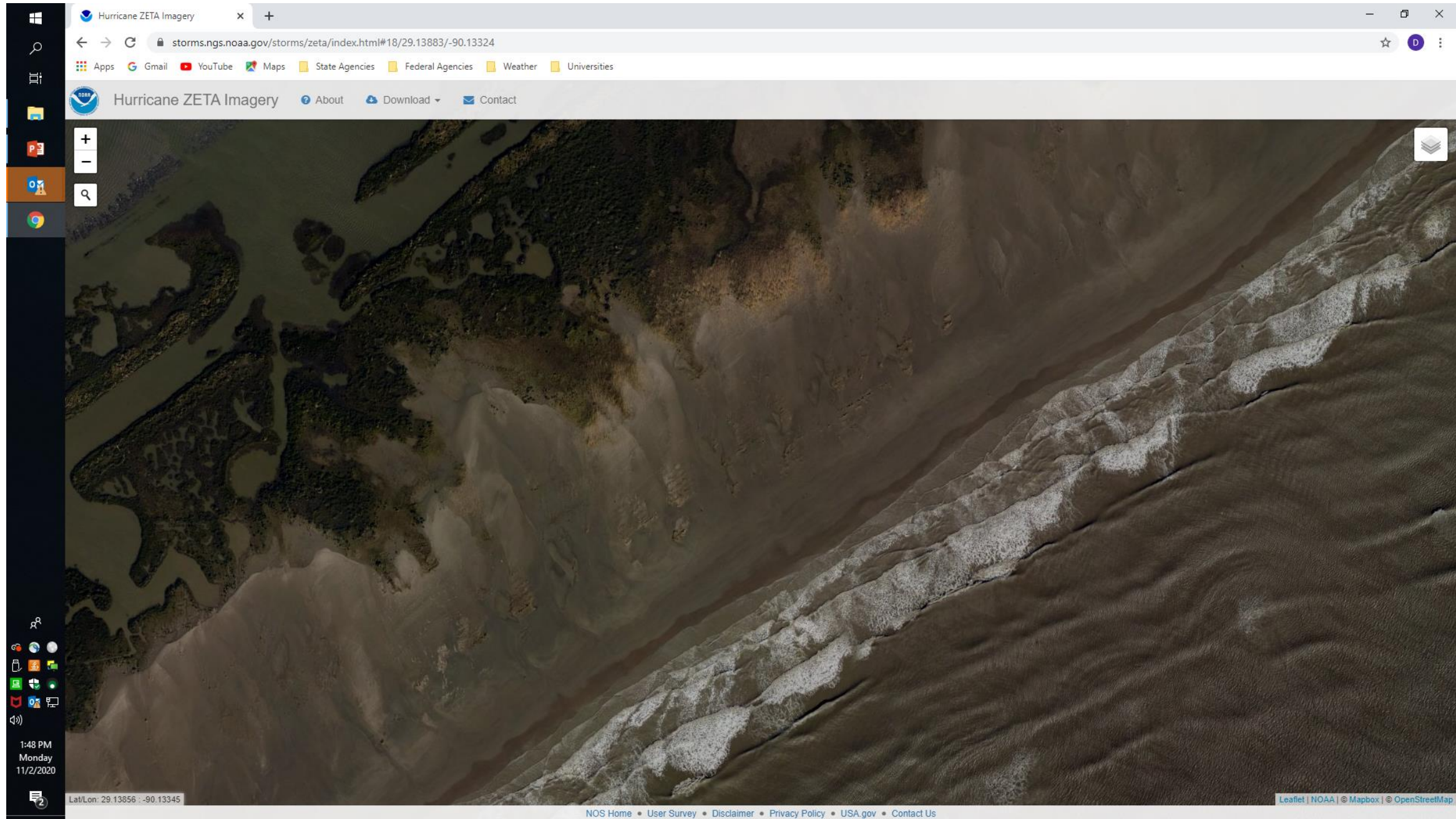


NWS – Zeta Wind Field



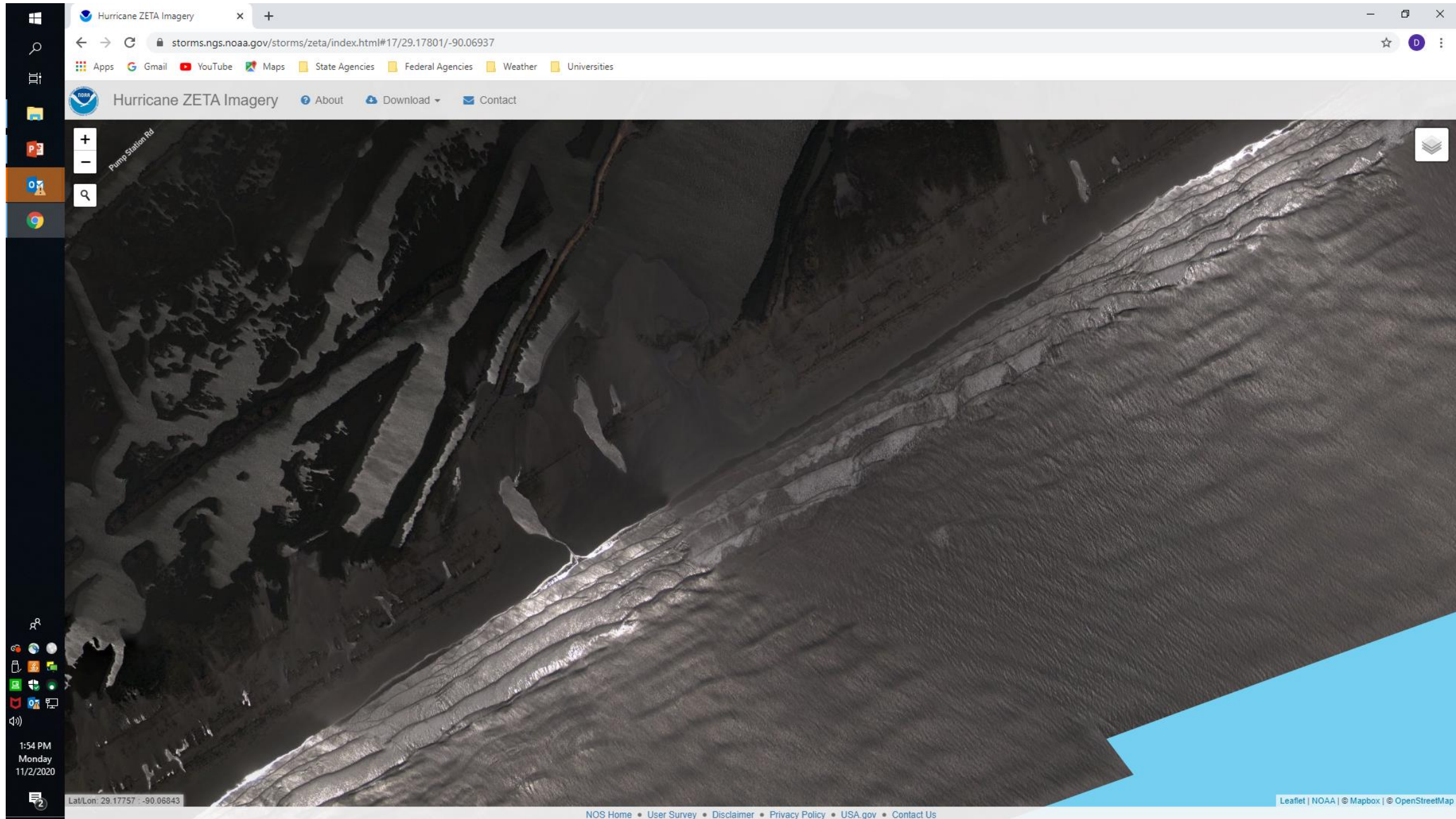


# Post – Zeta Caminada Headland





# Post – Zeta Elmer's Parking Lot



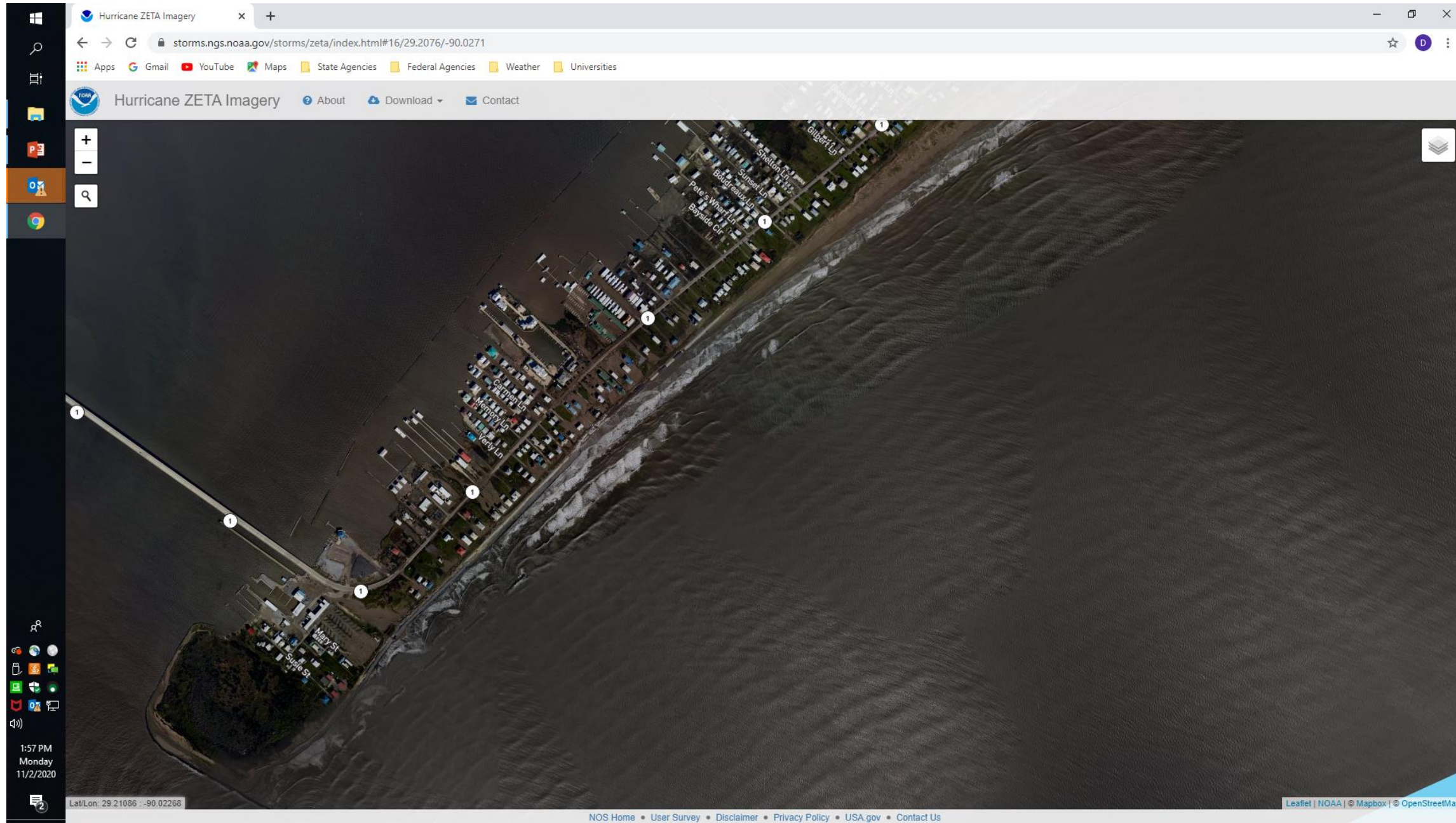


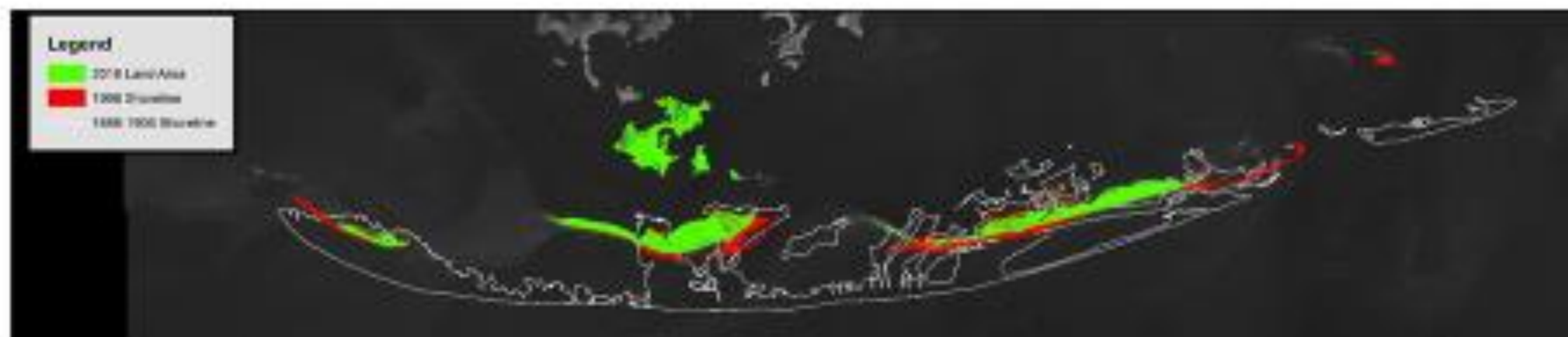
# Post – Zeta West Bell Pass



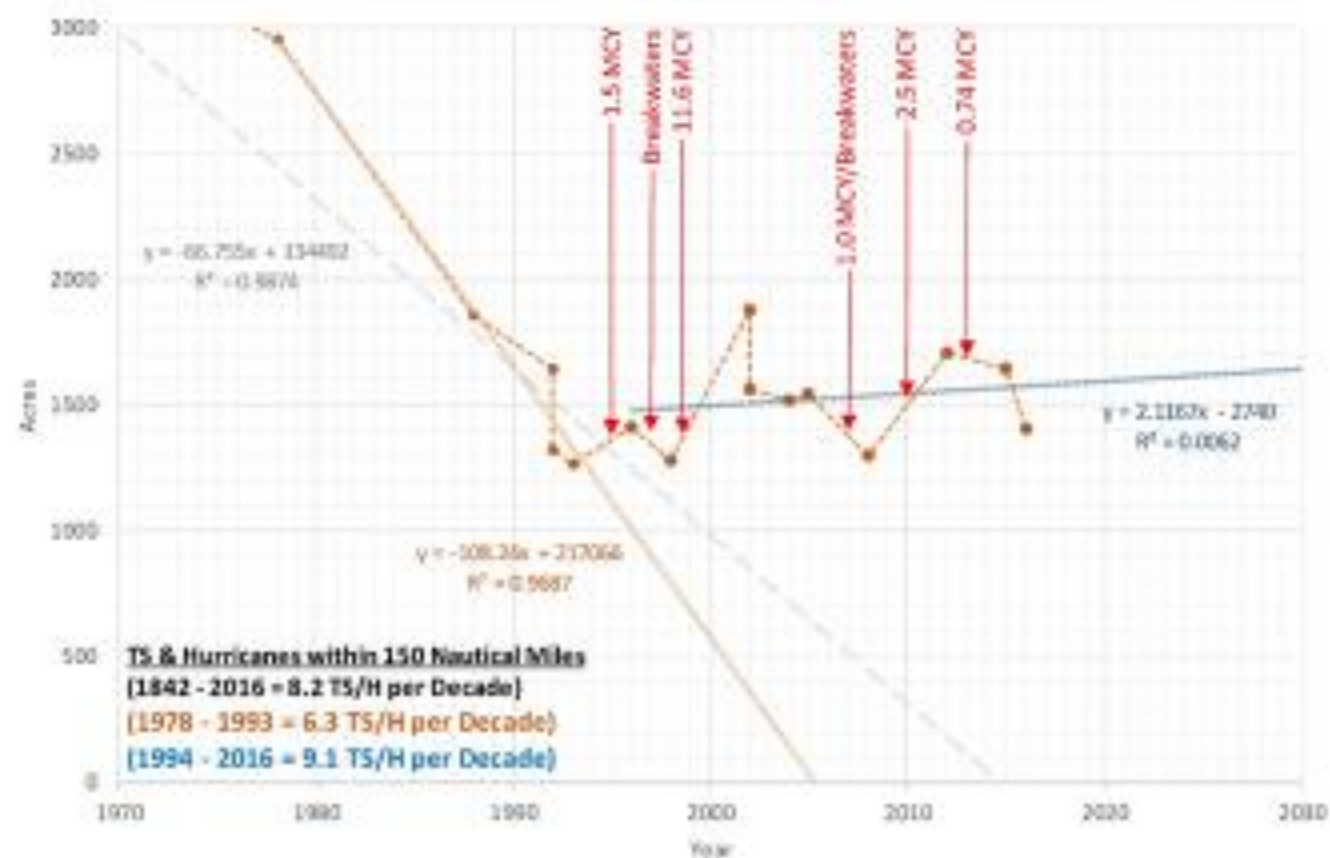


# Post – Zeta Grand Isle





### Isles Dernieres







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[www.coastal.la.gov](http://www.coastal.la.gov)