

SSC Louisiana Eco Forecasting Earthzine Video Transcript

>>Lily Thompson: The Stennis DEVELOP team's project goal was to cooperate with the National Wildlife federation to aid in analyzing wetland losses or gains in 4 specific restoration project areas. Using GIS data the team created bounding polygons defining the Wax Lake Delta, Bohemia Spillway, Caernarvon diversion, and Davis Pond diversion restoration sites. A change-detection between land cover maps pre- and post restoration project will demonstrate how much wetland area was gained or lost in each site.

>>Ross Reahard: My name is Ross Reahard, I am a graduate student at the University of New Orleans.

>>Allison Lanclos: My name is Allison Lanclos and I am a recent graduate of Southeastern Louisiana University.

>>Rebekah King: My name is Rebekah King. I'm a undergrad geology student at the University of Southern Mississippi.

>>Jamie Thompson: My name is Jamie Thompson. I'm an undergraduate computer science student at the University of Southern Mississippi.

>>Lily Thompson: I'm Elizabeth Thompson, I'm a undergraduate geology major at the University of New Orleans.

>>Rebekah King: Southeast Louisiana contains 40% of the wetlands in the United States. Louisiana's subsiding wetlands have created the numerous community concerns throughout the state. Its multi-billion dollar annual revenue relies on this fragile ecosystem, which is disappearing at an alarming rate. The loss of wetlands endangers the seafood industry and compromise the first line of defense against storm surge.

>>Jamie Thompson: The Stennis Team has partnered with the National Wildlife Federation, Coalition to Restore Coastal Louisiana, Coastal Wetlands Planning, Protection, and Restoration Act, and the Environmental Defense Fund. The team provided land change data, as well as a methodology for future land change projects, which would benefit ongoing wetland research by our partners. Dr. Alisha Renfro, a coastal scientist with the National Wildlife Federation, explains the benefits of this partnership.

>>Dr. Alisha Renfro: We need to learn what we can from the structures that we have, and we do have these small scale freshwater structures at Caernarvon and Davis Pond. And then we have the Wax Lake Outlet, which has amazingly built land, so it's important for us to get as much information as we can from those, from those existing diversions.

I think this will kind of be a really great baseline to work in the future to see whats been done in the past, kind of keep a consistent look at, Ok if we put a new diversion in and we can then compare it to data that's already been collected, Is this diversion going to perform better, or is it doing worse than we expected.

>>Ross Reahard: Wetland area changes relied on data obtained by the NASA Earth Observing System. Satellite imagery used for this project included data from Landsat 4TM, Landsat 5TM, and ASTER. All project data was acquired through United States Geological Survey Global Visualization Viewer, GloVis. Pre-restoration and post restoration land cover classification were completed for each of the 4 designated study sites. Subsequently, a change detection, mapping land losses and gains, between the two data sets was run using ERDAS Imagine 8.7

>>Lily Thompson: By calculating the change detections, we can assess the effectiveness of each diversion at each restoration site.

>>Ross Reahard: The Davis Pond Diversion and the Wax Lake Outlet both showed a net gain during the study period. Davis Pond gained a total of 646 Hectares between 2000 and 2011. With Wax Lake gaining a total of 9653 Hectares during the study period of 1983 to 2011

>>Allison Lanclos: Caernarvon Freshwater Diversion experienced a net loss of 13191 Hectares from 1976 to 2011. Bohemia Spillway change detection shows a net loss of 528 Hectares from 1983 to 2011. This change detection displays pre- and post Hurricane Katrina in Caernarvon Freshwater Diversion and Bohemia Spillway area with a net loss of 20692 Hectares.

>>Ross Reahard: One of the terms objectives included investigating the potential threat of invasive species to Louisiana's wetlands. The industrious port of New Orleans makes the surrounding wetlands extremely vulnerable to invasion, and the fragile wetland ecosystems around the Gulf of Mexico need the highest level of protection. Python molarus bivittatus is a species that was introduced to the Florida Everglades, that has rapidly degraded the native plant and animal populations. Louisiana shares the Everglades' sub-tropical climate, making it a potential habitat for the species.

>>Allison Lanclos: The species distribution projection map displays the current spatial extent habitat for the Burmese Python, an invasive species in the Florida Everglades, as well as sustainable habitat for the species in the future. The results of the jackknife feature displayed individual contributions of each bioclimatic variable.