Weekly Report – September 26, 2025

Cooperative Institute for Satellite Earth System Studies (CISESS)

NOAA/NESDIS/STAR

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HIGHLIGHTS FOR NESDIS LEADERSHIP

Data and Information

A Metadata Template for Ocean Carbon, Ocean Acidification, and mCDR Data Management

This is a lightly edited article written by Cazzy Medley and originally posted on the Earth System Science Interdisciplinary Center website.

CISESS Scientist Li-Qing Jiang is first author on a new metadata template for ocean carbon, ocean acidification, and mCDR data management. Based on insights from two 2024 workshops, the template builds on the original ocean acidification metadata template developed by Jiang and his collaborators in 2015. The creation of this template was made possible through the contributions of many scientists from the ocean carbon, ocean acidification, and mCDR research communities, particularly those who participated in these workshops. The Carbon To Sea Initiative and the NOAA Ocean Acidification Program funded this development. To view the template, click here: "A metadata template for ocean carbon, ocean acidification, and mCDR data management (Version 4.5)".

(Li-Qing Jiang, CISESS, liqing.jiang@noaa.gov; Funding: NCEI)

SOCIAL MEDIA AND BLOG POSTS

Mid-September Storm Brings Rain Relief to the Mid-Atlantic

The extratropical cyclone that paid a call to the Mid-Atlantic around September 16 is the subject of CISESS Scientist and GOES-R Satellite Liaison for the National Weather Service Weather Prediction Center and Ocean Prediction Center Christopher Smith's latest blog post replete with informative graphics. Aside from gale-force winds stirring up waves that slammed the shores of the Outer Banks up to Delaware, of note was the storm's convective action, manifested by intense lightning that at times went off the Geostationary Lightning Mapper (GLM) scale, that is, greater than 255 flashes in 5 minutes. Pushing inland, the storm brought in much-needed rain, offering a welcome reprieve to parts of the Mid-Atlantic grappling with drought conditions.

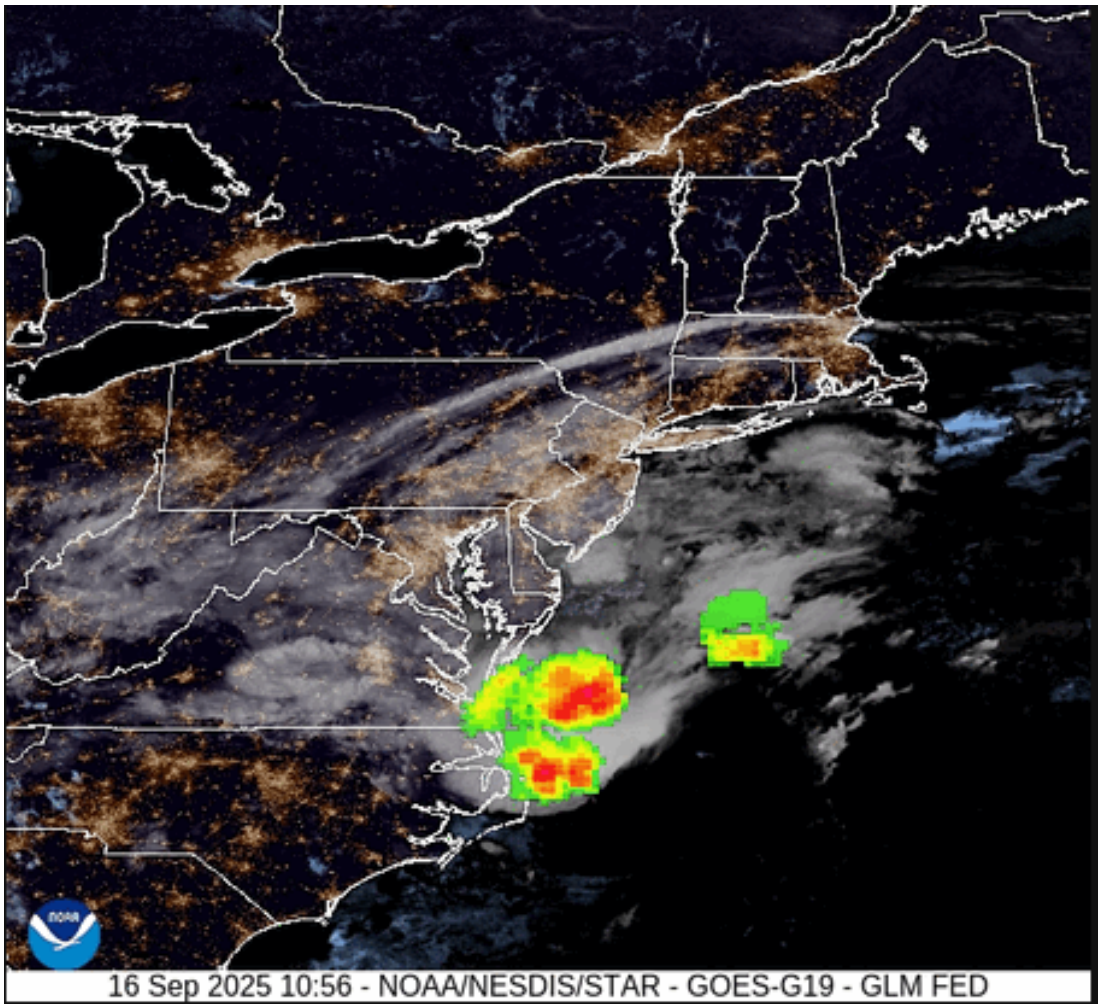

Figure: GOES-East CONUS GLM Flash Extent Density (colored areas) overlaid on Geocolor imagery at 1056 UTC 16 September 2025. Credit: NESDIS/STAR

(Christopher Smith, CISESS, csmith70@umd.edu; Funding: GOES-R PGRR)

PUBLICATIONS

Shoreline Erosion and Coastal Dynamics of San Andrés Island
Citation: Cabarcas-Mier, Angélica, Wilmer Rey, Cristina Torrecillas, Alejandro Paladio-Hernandez, **Miguel Cahuich-López**, Paulo Salles, Juan J. Muñoz-Perez, Lucia de Santos-Medina, and Bismarck Jigena-Antelo, 2025: Assessment of the shoreline dynamics in San Andres Island: a remote sensing and EOF analysis approach. Reg. Stud. Mar. Sci., 90, 104435, https://doi.org/10.1016/j.rsma.2025.104435.
Summary: San Andrés Island (SAI) is part of the Archipelago of San Andrés, Providencia, and Santa Catalina in the Caribbean Sea, known for its rich biodiversity and varied ecosystems,

including mangroves, reef lagoons, and tropical forests. UNESCO designated the archipelago as the Seaflower Biosphere Reserve in 2000, and in 2005, much of it was established as a marine protected area. Preservation of SAI's ecosystems is vital, especially when faced with coastal challenges like beach erosion. In their paper published in the journal *Regional Studies in Marine Science*, CISESS Scientist Miguel Cahuich-López and colleagues present their assessment of shoreline variations in two regions of SAI using Sentinel-2 satellite images from 2015 to 2021, followed by empirical orthogonal function analyses, a common statistical tool for examining processes in coastal environments. The two study areas, one on the northern shoreline and the other on the southeastern shoreline, are areas with different exposures to storms, among other things. They report that coastal dynamics in both areas show a strong tendency toward shoreline erosion and that the physical processes influencing the evolution of the coastline in each area differ. This knowledge is essential for effective coastal management and the development of strategies for conservation and sustainable use of the island's natural resources.

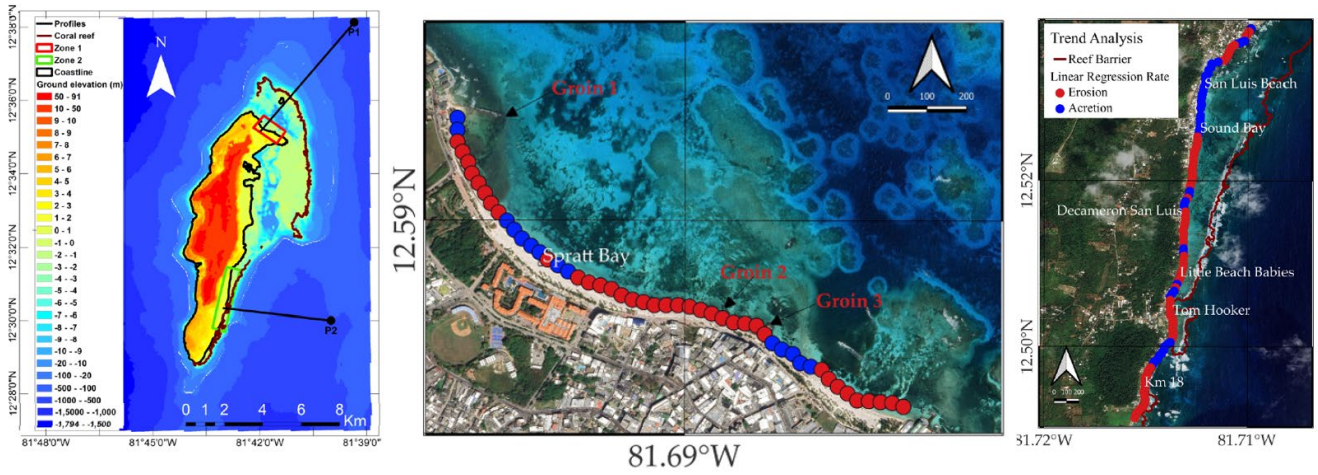

Figure: (Left panel) Topo-bathymetric view of SAI, with the two study areas outlined by red and green rectangles. Erosion and accretion trends based on Sentinel-2 images for the northern (middle panel) and southeastern (right panel) study areas.

(Miguel Cahuich-López, CISESS, mcahuich@umd.edu; Funding: ARL)

(Maureen Cribb, CISESS, mcribb@umd.edu, Funding: CISESS Task I)