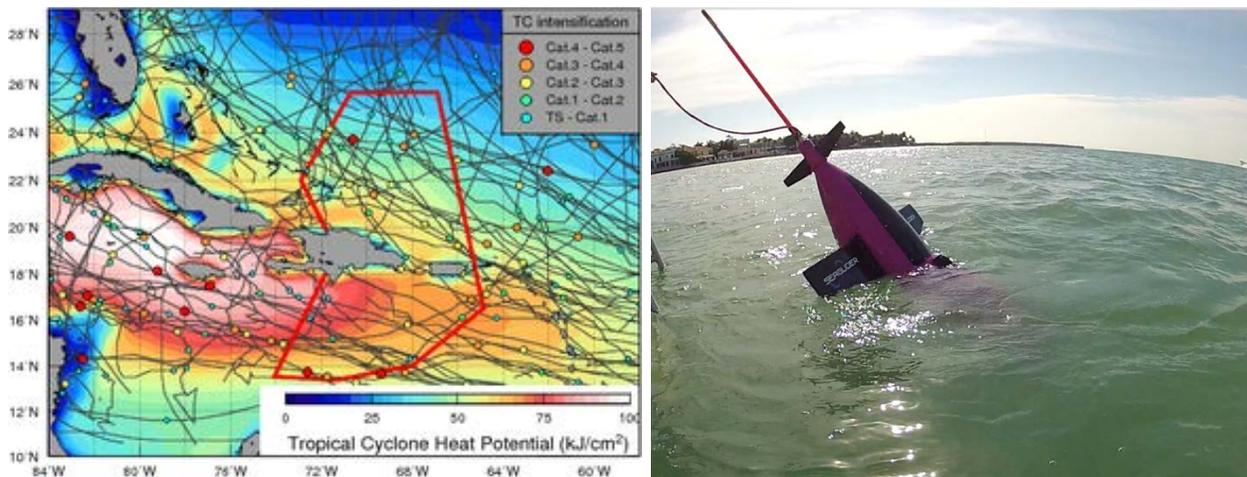


# Hurricane Underwater Gliders in the Caribbean Sea and Tropical North Atlantic Ocean

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This is a multi-institutional effort that brings together the research and operational components within NOAA and members of the university community to implement and carry out sustained and targeted ocean observations using underwater gliders in the Caribbean Sea and the southwestern tropical North Atlantic Ocean. The upper ocean thermal structure in this region has been linked to rapid intensification of hurricanes, and to the seasonal Atlantic hurricane activity. However, there are only a few (<300) upper ocean thermal observations carried out per year in this region. This project provides 4,500 to 5,500 profile observations per year. The main objectives of this work are to implement upper ocean observations using underwater gliders to evaluate their impact on and to improve: (1) hurricane intensity forecasts and (2) hurricane seasonal forecasts; using a combination of these new sustained observations, targeted observations, data analysis, and current NOAA operational forecast models. The first mission of the AOML underwater glider operations was successfully carried out between July-November 2014. During this mission, 2800 temperature and salinity profiles were collected including observations obtained under hurricane wind conditions.



(left) Underwater Glider. (right) The two regions (bounded with red lines) where Seagliders will be deployed. Tracks of Cat. 1-5 cyclones (in grey) in a region of the Atlantic Warm Pool during 1993-2011, with circles indicating the location of their intensification. The background color is the Tropical Cyclone Heat Potential (proportional to the upper ocean heat content).