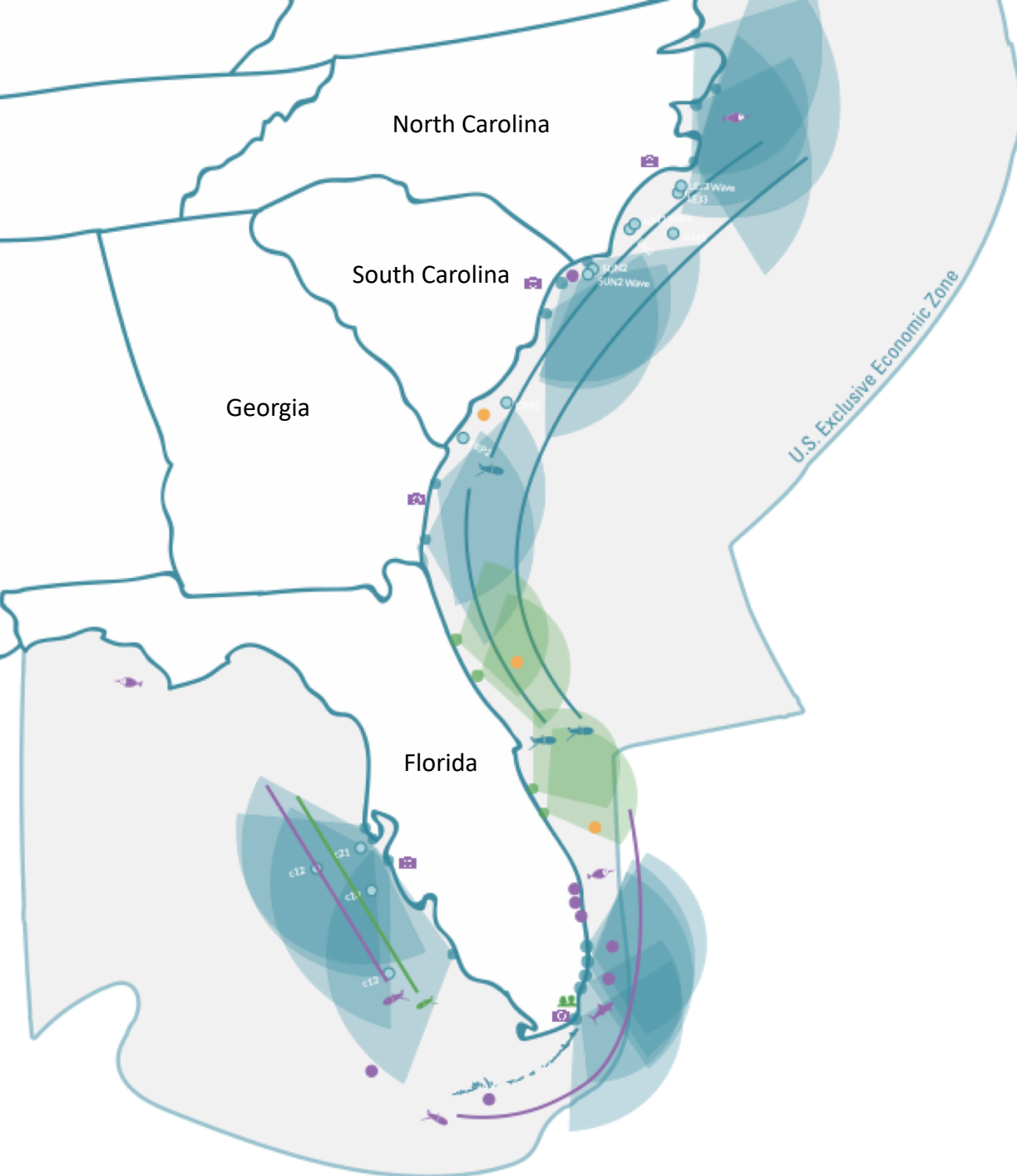


SECOORA Regional Glider Observatory

Catherine R. Edwards, SkIO/UGA
Chad Lembke, USF
Harvey Seim, UNC
Fumin Zhang, GT



Overview of the Project

Observatory-funded missions

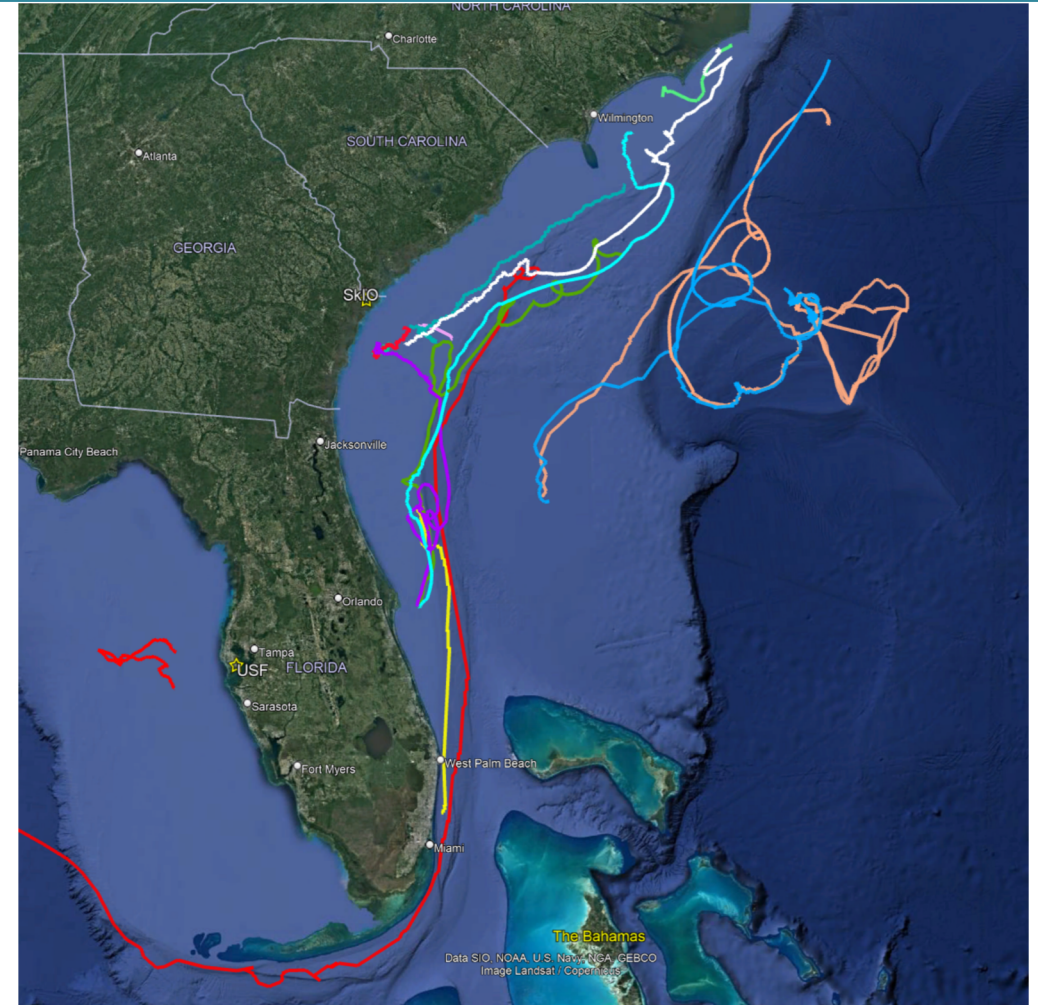
- 7 missions, 4 SECOORA observatory, 3 hurricane gliders
- 134 glider-days

Navy glider missions

- 1 shallow, 2 deep in SAB
- 351 glider-days
- SECOORA/GCOOS collab on “experimental glider” (LA-SC, 102 days)

Hurricane gliders, Saildrone collaboration

Expanding autonomy of piloting, planning



Saildrone collaboration



B. Prueitt, GRNMS



F. McQuarrie, UGA

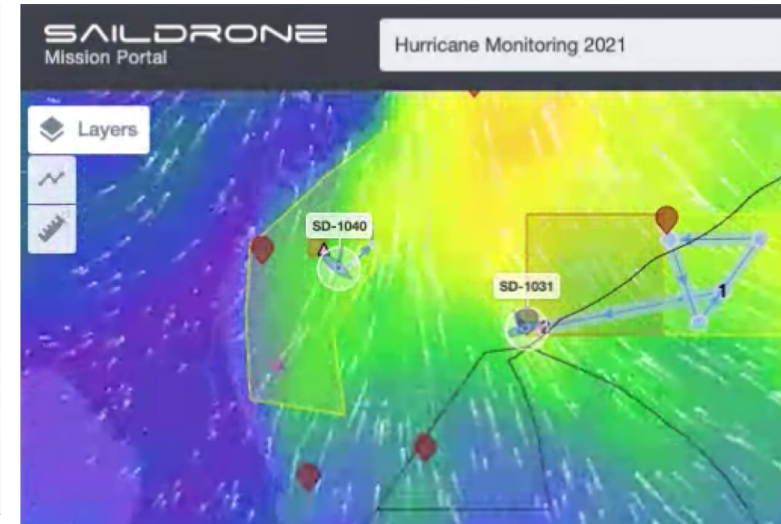
NOAA AOML, PMEL scientists, led by C. Zhang and G. Foltz

Coordinated sampling with gliders, cross-calibration with buoys

First use of Saildrones in the Gulf Stream, first within eye of hurricane

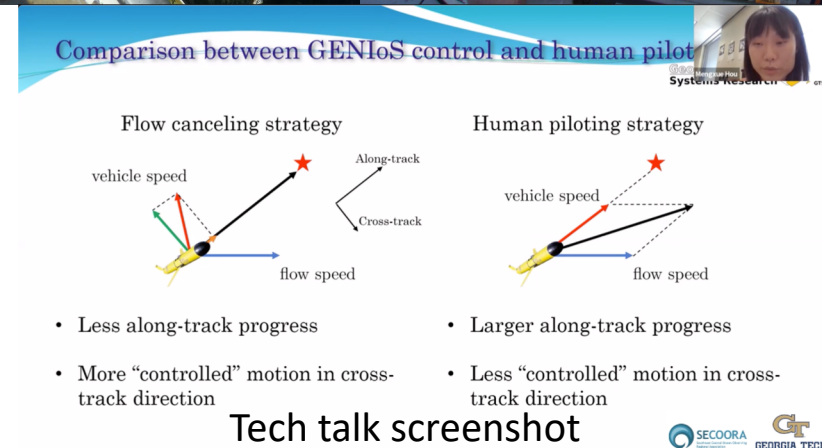
Hurricane Sam

Captured by SD 1045's onboard camera during
Category 4 Hurricane Sam, Sept. 30 2021



Accomplishments

- Met/exceeded all requirements for deployments, glider-days
- Continued success with external funding (>\$400k to date, \$160k year 1, \$675k pending)
- Team experience skyrocketing through cross-training, new monthly tech talk/webinar series
- Tested new algorithms to correct unpumped CTD data using dynamic flight model (Merckelbach, 2019)
- Advances in autonomy: waypoint planner, anomaly detection, GENIoS path planning



Accomplishments, continued

- Hurricane Gliders: data assimilated into NOAA RTOFS model
- First use of Navy's GHOST automated piloting system for non-Navy mission
- Saildrone coordination, cross-calibrations with NDBC, CDIP buoys, OMAO vessel operations (12 presentations, 2 publications)
- Thanks to charter/vessel partners: Coastal Studies Institute, Reed Meredith, Latitude 31, Gray's Reef NMS, R/V Savannah, Fin Factor Charters, Sea Leveler, Dave Scott, UNC-W, GA MAREX, and SC DNR



Challenges

- Aging glider fleet reduced in-water time for several deployments
- Rising costs for operations, personnel
- Vendor/service issues 🙅
- No hurricane gliders supplemental funding for 2022 hurricane season
- Logistics/risk of Navy glider operations



4am leaving the marina: nothing to see here!

Photo credits: F. McQuarrie, C. Edwards, K. Dreger



Looking Ahead

- New partners/stakeholders
- Leveraged investments in passive acoustic monitoring
- GENIoS release for beta-testing
- 2022 Saildrone operations
- New external funding for 2023-2024 seasons: \$675k (start thinking of names!)

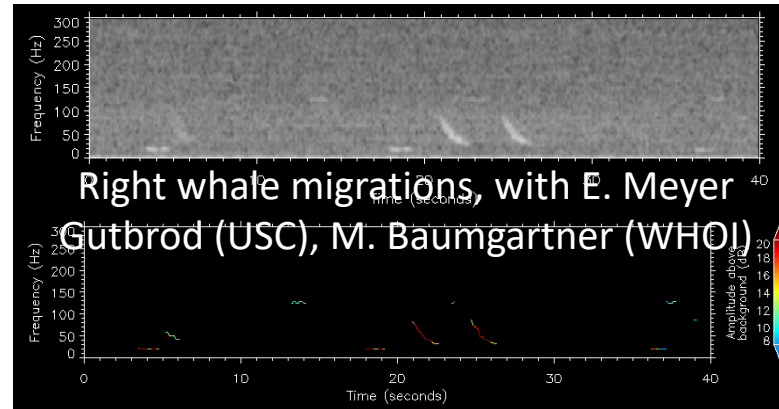


Photo credits: C. Edwards, Capt. Joe Smith