

HAB Research Funding and Programs: local to national (for Florida)

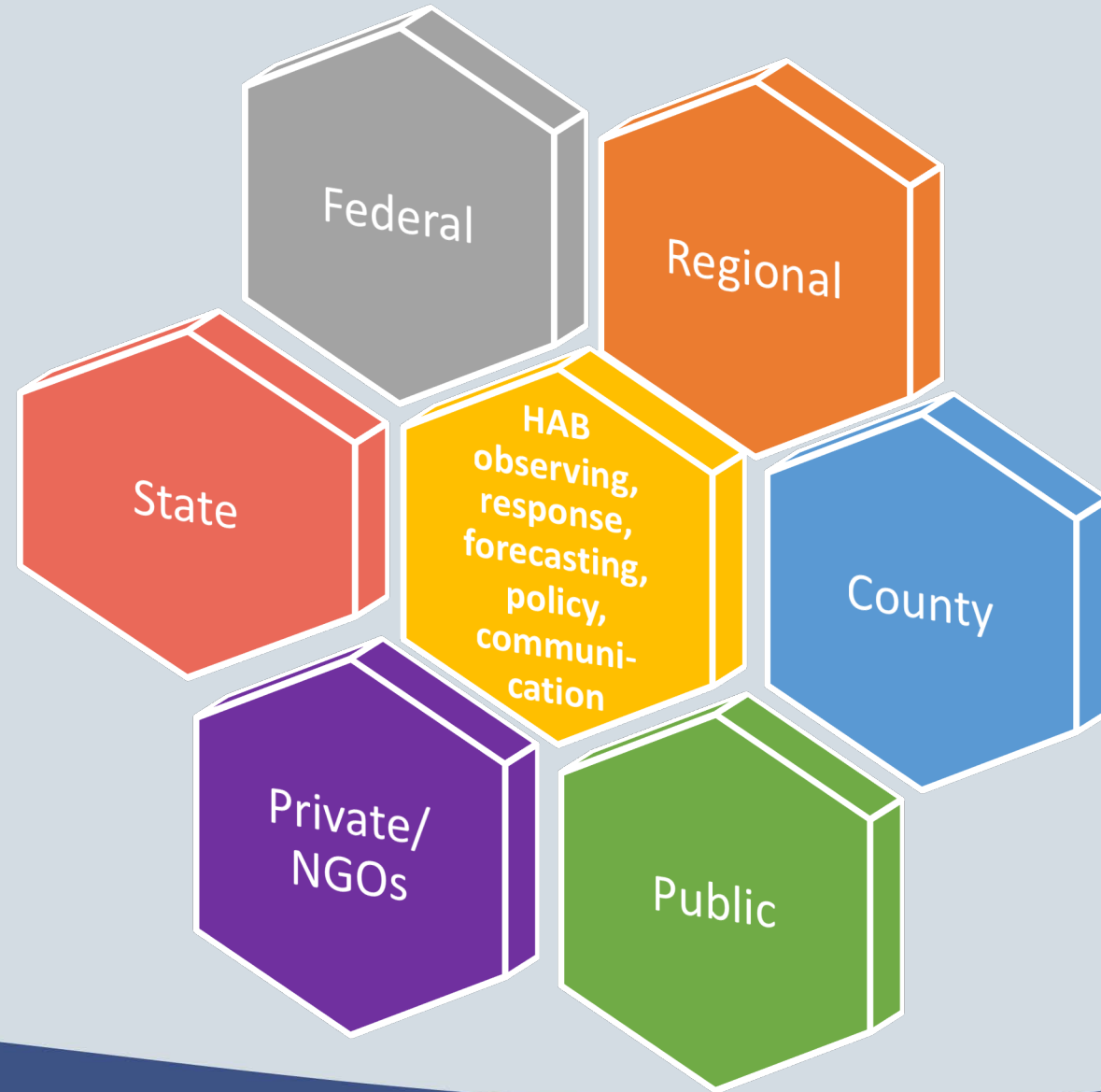
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Fish and Wildlife Research Institute



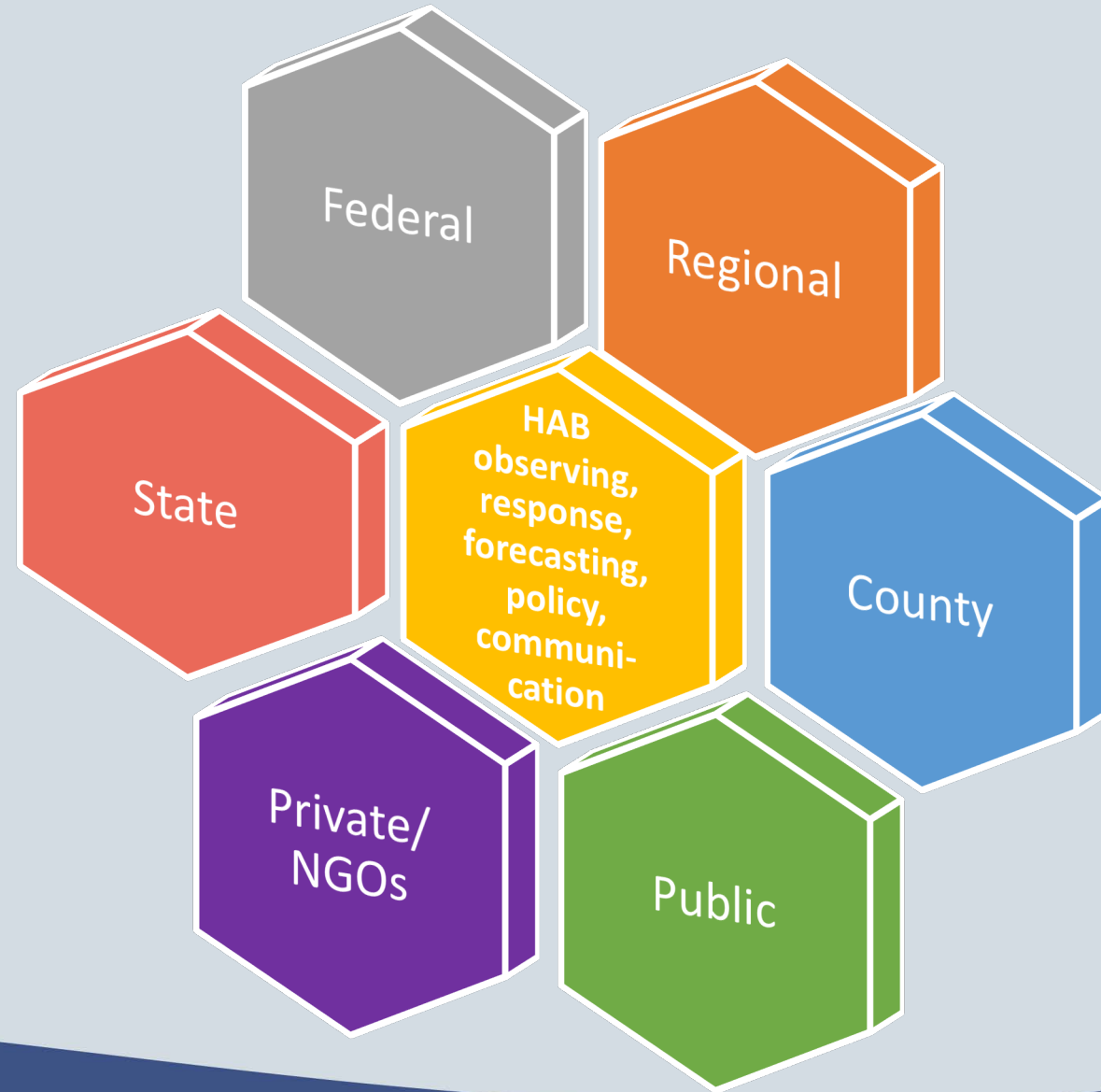
Network for red tide observing, response, forecasting, policy, socioeconomics, communication

- Network is diverse and consists of many “hubs”
- Internal support to each hub is balanced with support from funding sources that typically span multiple hubs
- Funding changes from year to year
 - Scale of event
 - Appropriations
 - Specific programs including grants
- Interdisciplinary programs require sustained (and often highly leveraged) funding
- Coordination at the state level can help unify hub under FWC’s Florida Center for Red Tide Research



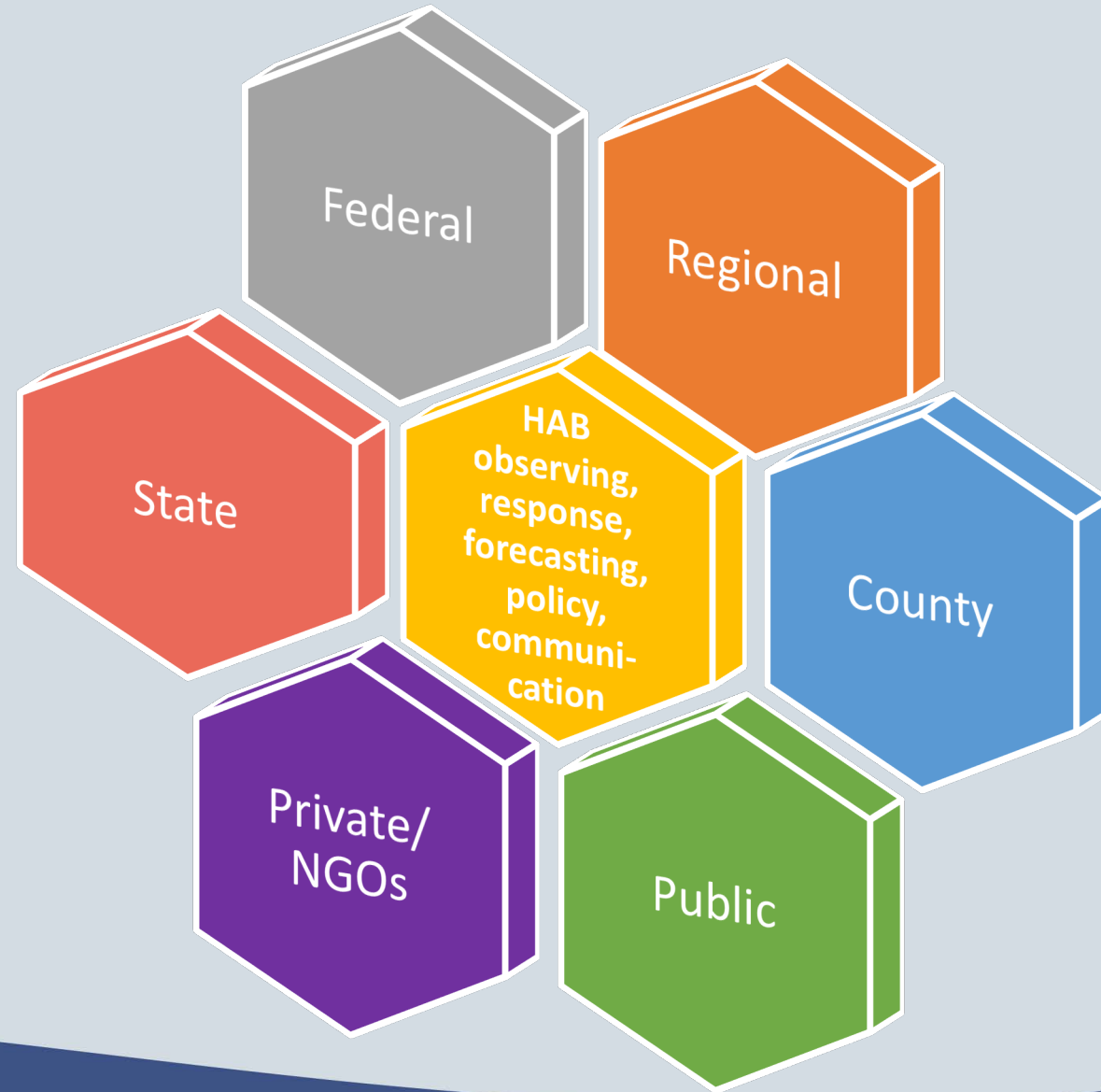
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- Gulf of Mexico Alliance funded Balmoral Group project through Gulf Star program
→ wrapping up soon
- GCOOS-led grant program focused on socioeconomics impacts starts soon
- Smaller efforts focused on 2017-2019 bloom in particular point to need for unified framework for assessing socioeconomic impacts (which has also been recognized by NOAA as part of national effort to examine blooms of significance).



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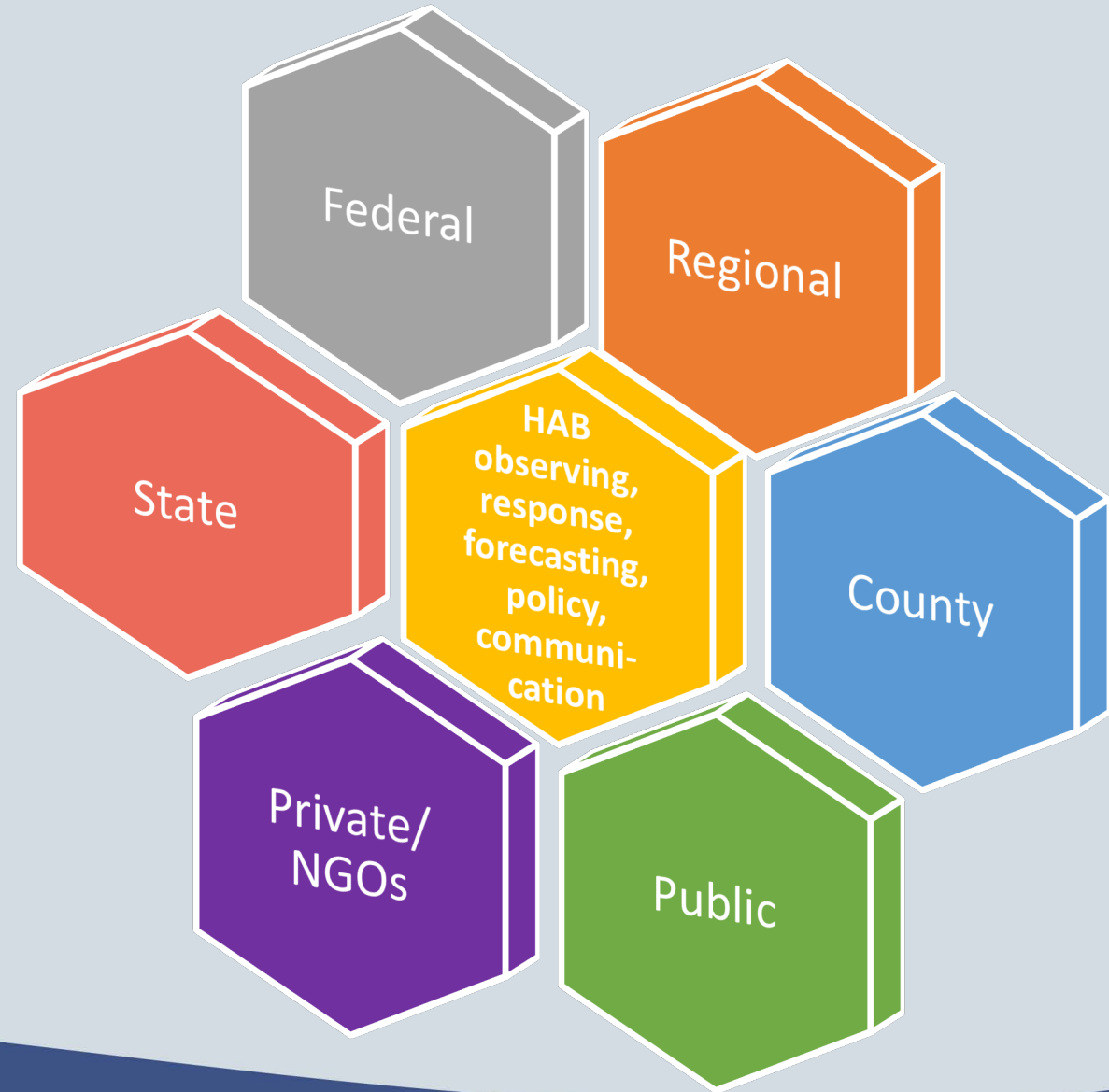
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- Communication specifically recognized by FL HAB Task Force in 2020 RFP



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Efforts to make observations more routine and synthesis of historical data to inform forecasting and future observation networks engages full hub of partners and associated funded sources.

This program must provide long-term time series and be adaptive to build in technological advances that contribute to jumps in our interdisciplinary knowledge of bloom dynamics and associated impacts.



Historical/contemporary funding – Federal (NOAA- Quay Dortch)

- NSF/NIEHS Centers for Oceans and Human Health
 - Three 5-year funding cycles since initiation; in Y2 of third cycle
 - Multi-center cores and individual PI projects
 - First cycle: NSF/NIEHS Center for Oceans and Human Health Center (COHH) at the University of Miami Rosenstiel School
 - exploring the interactions between *Karenia brevis*, the environment, and **human health effects**
 - University of Miami Oceans & Human Health Center: Florida International University (FIU), the Centers for Disease Control and Prevention (CDC), the Miami Dade County Dept of Health, the University of Florida, Mote Marine Lab, FWC-FWRI, FDOH, and more
 - Second cycle: NSF/NIEHS Woods Hole Center for Oceans and Human Health
 - Build capacity and expertise for in situ biological HAB observing network (linking IFCBs w/ discrete observations)
 - FWC-FWRI partners with WHOI and Gulf of Maine HAB network
 - Current cycle: Greater Caribbean Center for Ciguatera Research (Florida Gulf Coast University); NSF/NIEHS Woods Hole Center for Oceans and Human Health

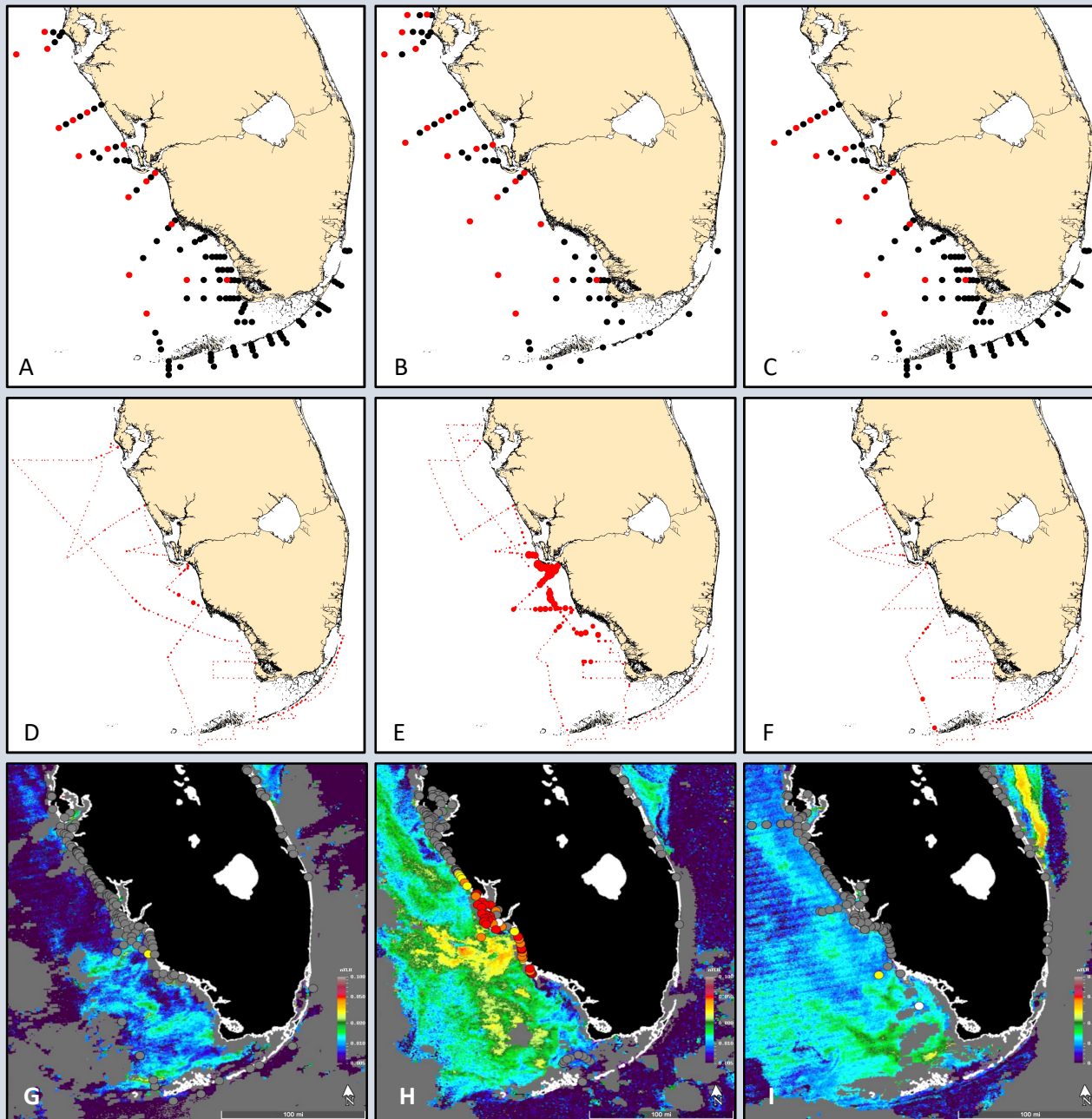
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 - Second cycle: NSF/NIEHS Woods Hole Center for Oceans and Human Health
 - Build capacity and expertise for in situ biological HAB observing network (linking IFCBs w/ discrete observations) → Florida Sea Grant funding for FL IFCB deployments → Increased state investment in IFCB program
 - Clarissa Anderson → California's plan for implementation of IFCB observation network

Historical and contemporary state funding

- FWC-FWRI
 - Internal state research and monitoring programs focused on red tide and related wildlife impacts since 1953, work closely with FDACS
 - Mote/FWC Cooperative Red Tide Program, Mote Red Tide Mitigation and Technology Initiative
 - USF/FWC Red Tide observing and forecasting collaboration
 - HAB Task Force Grant Program
- FDOH
 - Internal programs focused on monitoring, tracking, and responding to human health issues related to red tide
 - Targeted external studies (e.g., with CDC, Mote)
- FDEP
 - Internal/external programs focused on water quality monitoring
 - Protecting Florida Together (water quality, restoration)

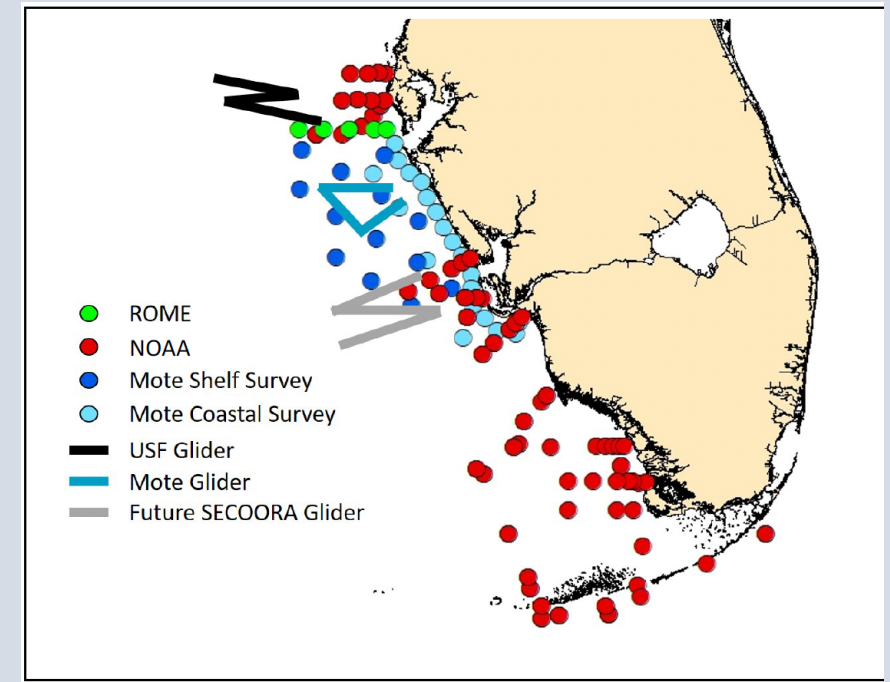




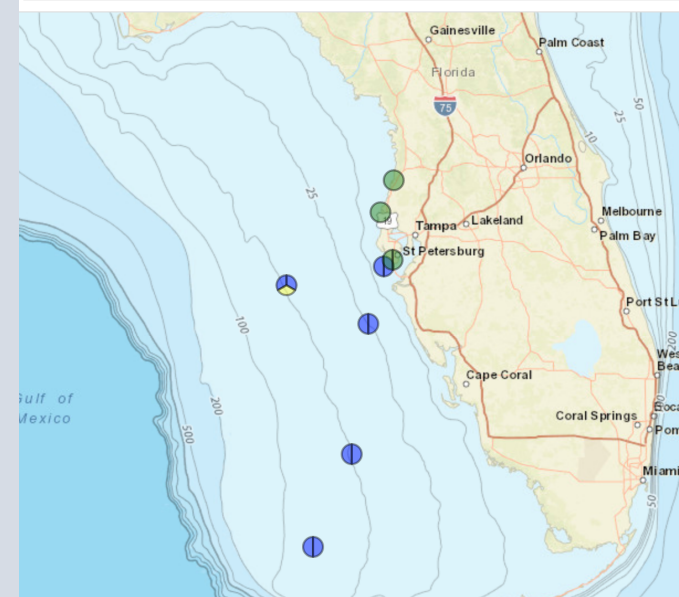
WS19266 Sept. 23 – 29, 2019

WS19322, Nov. 18 – 24, 2019

WS20006 Jan. 6 – 11, 2020



USF Coastal Ocean Monitoring and Prediction System



Partners and funding sources are numerous and include NOAA, IOOS regional associations GCOOS and SECOORA, NAS, NSF, FWRI, Mote Marine Laboratory, USF, USGS, and many others

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Vision for network exists and is evolving with the goal of maintaining core observations that inform adaptive research.

- Sustained funding for core observations
- Integrated research network to maximize resources and enhance observation network
- Framework that can link observations with outcomes → bloom response, socioeconomic impacts, directed communications

