

## Filling the Gap: SECOORA Members Partnering to Affordably Increase Observations and Build Capacity Along the Florida East Coast

### Primary Investigators:

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### Partners:

David Sharp (NOAA NWS)

James Oppenborn (St. Lucie County)

# Overview of the Project

1) Enhance meteorological, oceanographic, wave & ecosystem information at two data sparse locations on the Florida east coast

2) Support established stakeholder needs

Partners: NWS, FACT, St. Lucie County

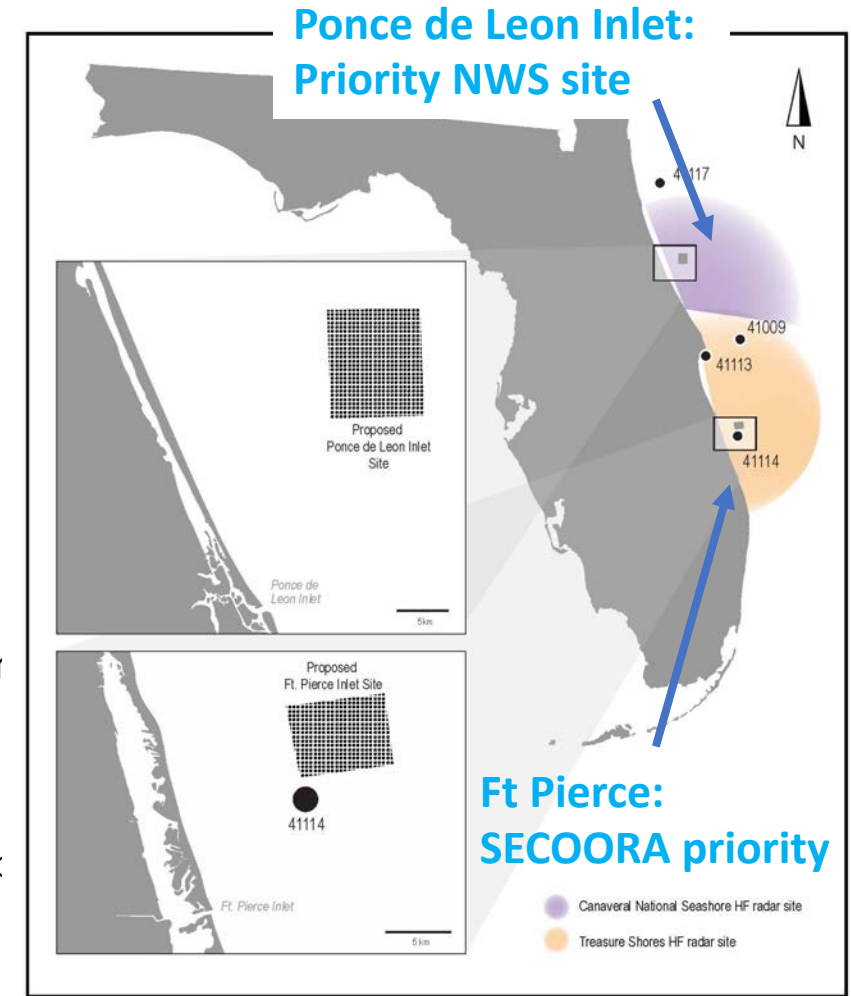
Others: USACE, Boat/surfing/diving communities, scientific institutions (HBOI, ORCA, FOS), marine rescue

3) Provide data & address SECOORA priorities:

**Coastal Hazards & Climate Variability:** wave modeling, sediment management, NHC/NWS storm prediction, GS intrusions, fog, ocean rescue, marine warnings

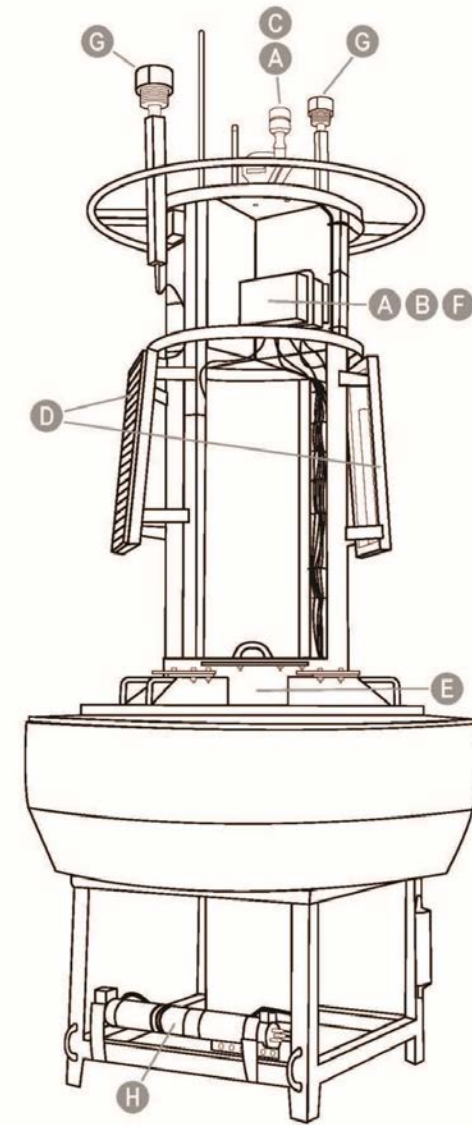
**Marine Operations:** wave buoys w/in HFR footprints (validation), near inlets, river entrances, model hindcasts, commercial shipping (Port Canaveral), commercial fishing, surf forecasts (specific gap)

**Ecosystems:** acoustics tracking, sea turtle nesting, natural (ECA), artificial, & deep reef (Oculina Banks) function; Platform for EOVs: biogeochemistry, OA, HABs, Harmful discharges (turbidity/contaminants)

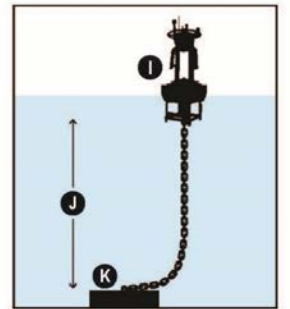


# Accomplishments & Timeline

- All purchasing complete – no major supply chain issues!
- Buoys delivered mid-July
- Fabrication/assembly of power/sensing/datalogger systems started
- Began permitting with USACE, USCG AToN permit to follow.
- Site visits planned, pending weather window
  
- FAU visit to UNCW **next week** for equipment/operations training
- Buoys assembled & shipped & burn-in beginning **mid-August**
- Telemetry activated **late Fall 2023**
- R/V Hogarth deployment likely **late Fall or Early Spring**
- Engagement with stakeholders/end-users ongoing



- Telemetry System**
- A. MetOcean Hecto Iridium SBD Modem and Iridium Antenna
  - B. Integrated XBEE RF radio system for on-site communications
  - C. MetOcean Iridium Edge Solar (secondary GPS tracking)
- Power System**
- D. Two 30W PV Panels
  - E. 55 Ah Battery (AGM or LFP) with appropriate charge controller
- Data System**
- F. Campbell CR1000X Datalogger
  - G. Two Gill GMX500 Met Sensors (wind speed and direction, air temp, barometric pressure, relative humidity and GPS)
  - H. Seabird SBE-37SIP (water temp, conductivity, salinity)
- Buoy System**
- I. Mooring Systems G-2000 Buoy
  - J. 3/4" all chain mooring, 2:1 scope
  - K. 2000# double stack railroad wheel anchor



# Challenges and Looking Ahead

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- No major issues yet!
- Platform leveraging discussions with scientists: “Extend” IRLON system offshore, In situ holographic microscope, full ADCP, benthic monitoring platform
- Buoy visits planned for FAU oceanography classes (next-generation)
- Planned dissemination, working with FAU HBOI outreach office :
  - Data stream demonstrations to local Ft. Pierce end-users
  - Daytona Chamber of Commerce & nearby municipalities

