Glider observations in the Southern MAB and implications for OOI PIONEER

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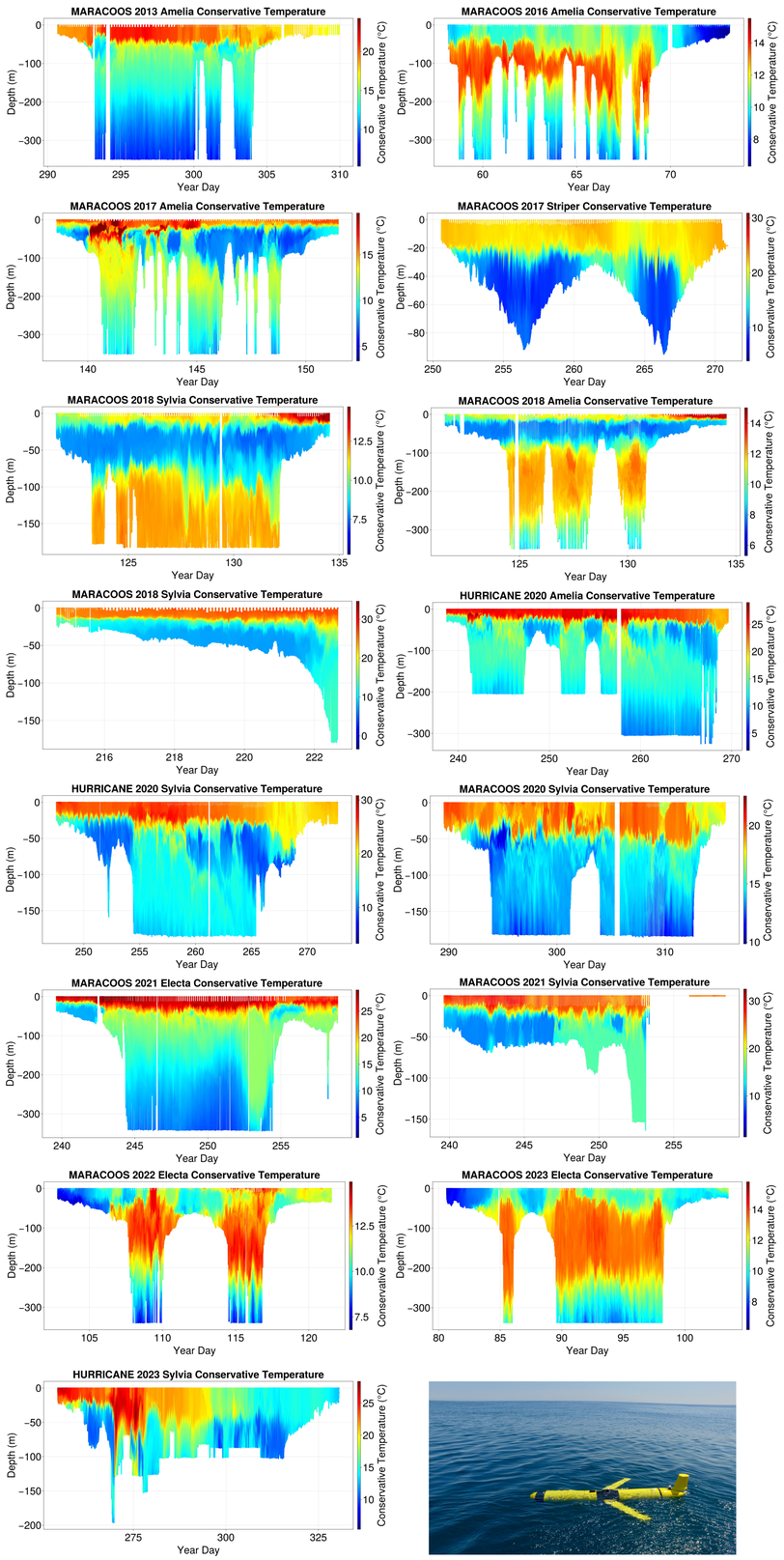
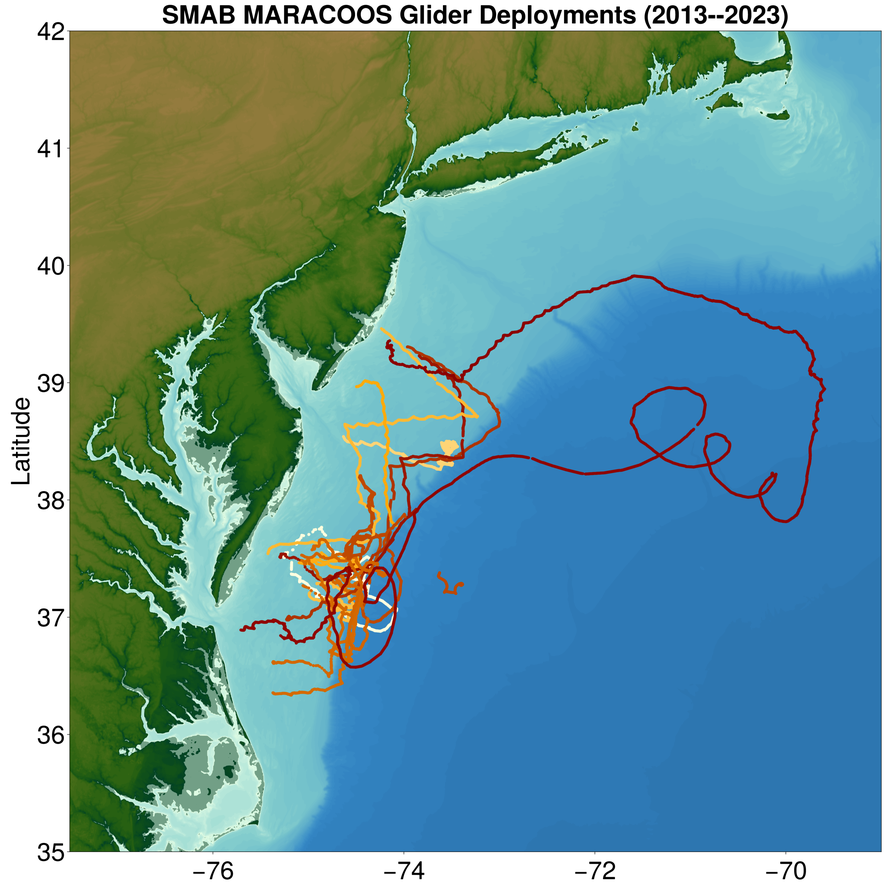
MARACOOS
Ocean Information for a Changing World

Glider Temperature in SMAB (2013 – 2023)

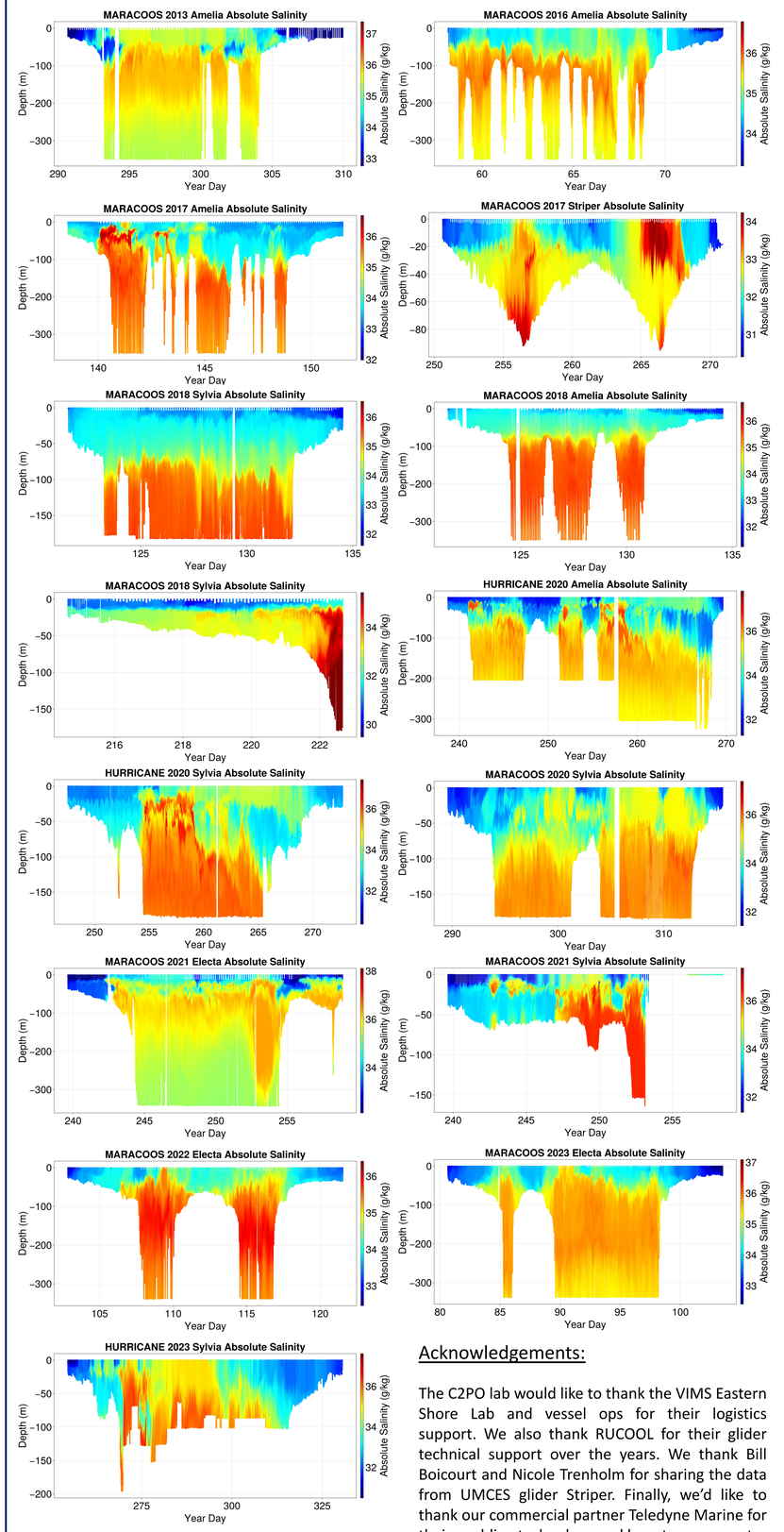


SMAB MARACOOS Glider Deployments (2013--2023)



- NOAA IOOS & VIMS funded glider observations over a 10 year period demonstrate a highly dynamic SMAB region with significant variabilities across a range of space and time scales.
- Physical oceanography of the shelf and slope of the southern MAB is influenced by the complex interplay of seasonal heating/cooling, riverine runoffs, WCR, Gulf Stream, slope water intrusions, storms, and internal tides/waves.
- Observations in and around submarine canyons in the southern MAB (Washington, Norfolk, Wilmington Canyons) show upwelling and downwelling circulation inside the canyones modulated by internal tides. Canyons' role in facilitating cross-shelf-slope exchange in the MAB is not well-quantified.
- Due to the large riverine runoffs, close proximity to the Gulf Stream, and very different shelf geometries, the SMAB PIONEER will likely show measureably different fluxes and patterns of transport of heat, freshwater, and nutrients.
- Sustained IOOS funded glider observations mainly due north of the OOI PIONEER site will provide valuable complementary dataset for future shelfwide scale investigations of water mass changes and circulation dynamics in the southern MAB.

Glider Salinity in SMAB (2013 – 2023)



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