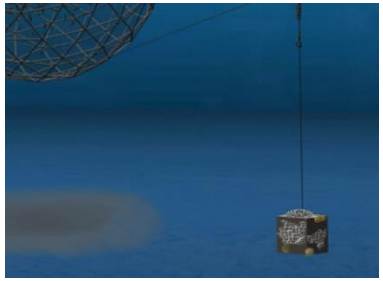
Tab S, No. 7(b)

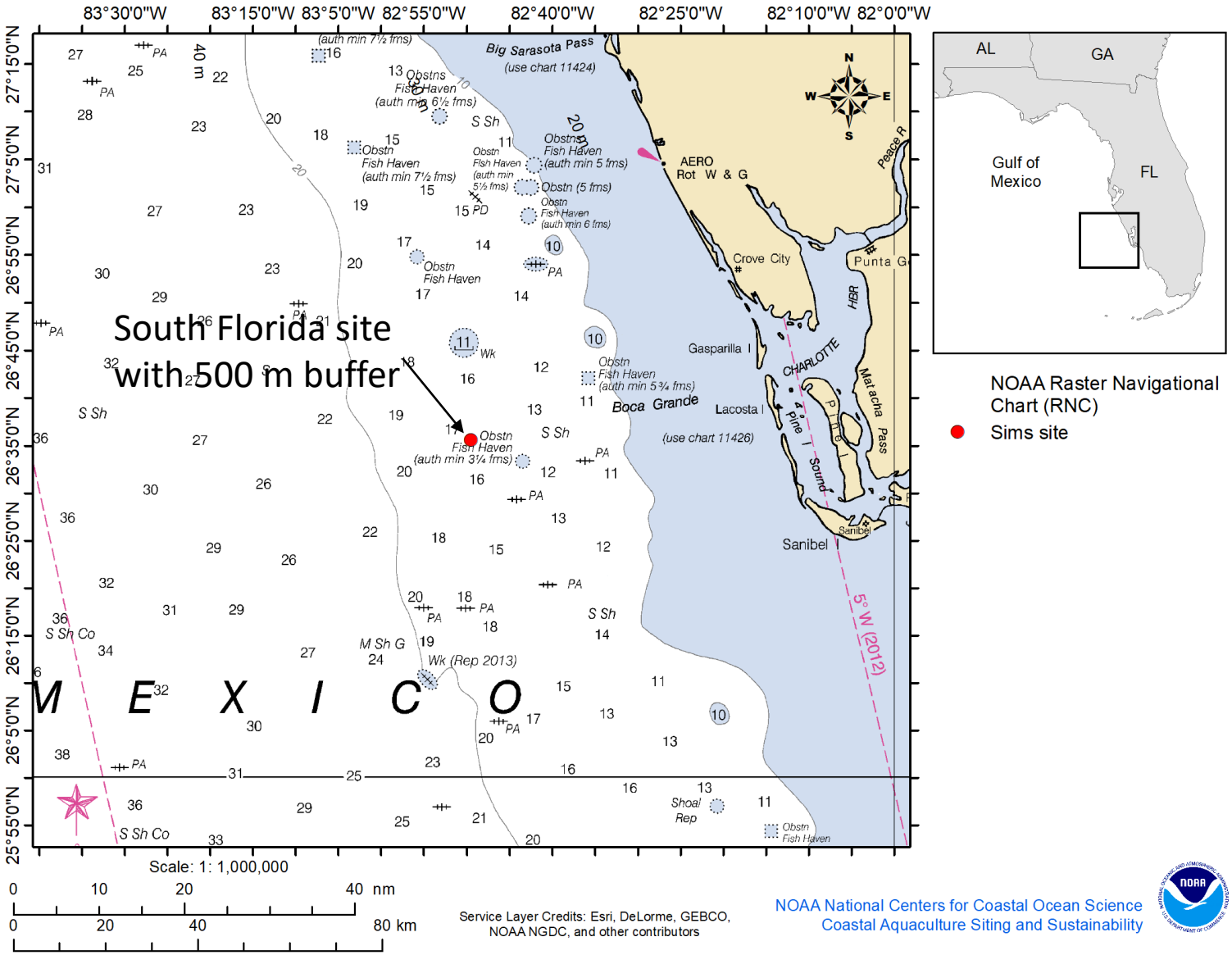


# SCREENING FOR FINFISH AQUACULTURE IN THE EASTERN GULF OF MEXICO WATERS (SOUTH FL SITE)

**Lisa C. Wickliffe, Ken Riley and James A. Morris, Jr.**

NOAA National Ocean Service
National Centers for Coastal Ocean Science

# Project Location

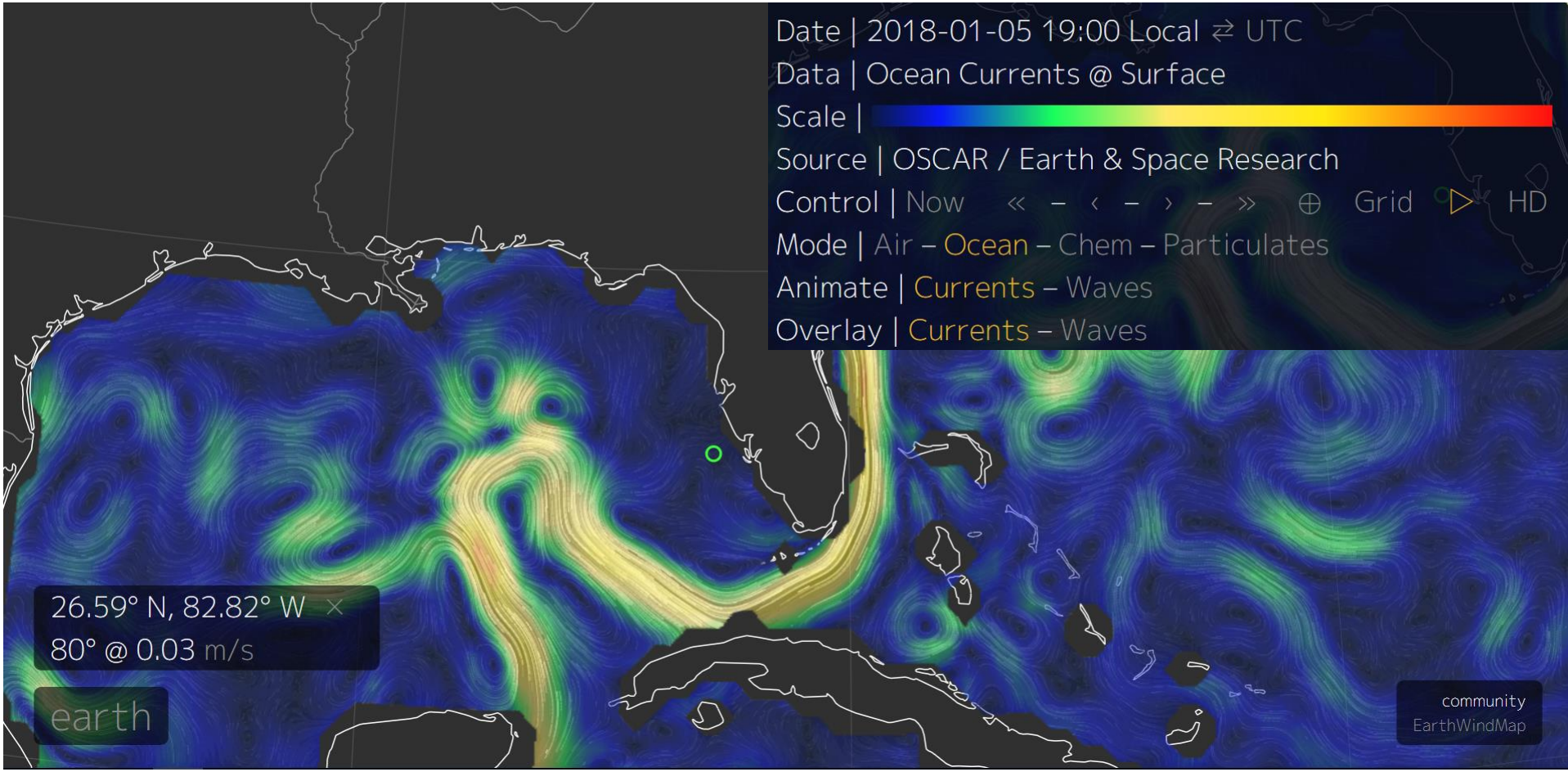


# South FL site physical data overview

| MODIS SST – NCEI | | | | |
|---|---|---|---|---|
| Source: Gulf AquaMapper climatologies for GOM | **Season** | **Temperature Climatological Mean** | | |
| | Summer | 27.62 | | |
| | Autumn | 25.22 | | |
| | Winter | 20.94 | | |
| | Spring | 27.55 | | |
| | | | | |
| Wave data | | | | |
| Station: 73364 | **Wave height (m)** | | | |
| | Annual mean (2014) | Annual max (2014) | Mean (2005 - 2014) | Max (2005 - 2014) |
| | 0.6775 | 4.2 | 0.770333 | 8.13 |
| | | | | |
| Surface Current data | | | | |
| Earth viewer: | 0.13 m/s | | | |
| | | | | |
| NOAA Tides & Currents: | **Mean monthly current speed (m/s)** | | | |
| Active stations in FL | Jan 2016 | Apr 2016 | Aug 2016 | Oct 2016 |
| Sunshine Skyway Bridge (near Tampa) | 0.40 | 0.42 | 0.42 | 0.43 |

# Satellite Derived Ocean Circulation (NOAA OSCAR Model)

https://earth.nullschool.net/



Wave Information Studies

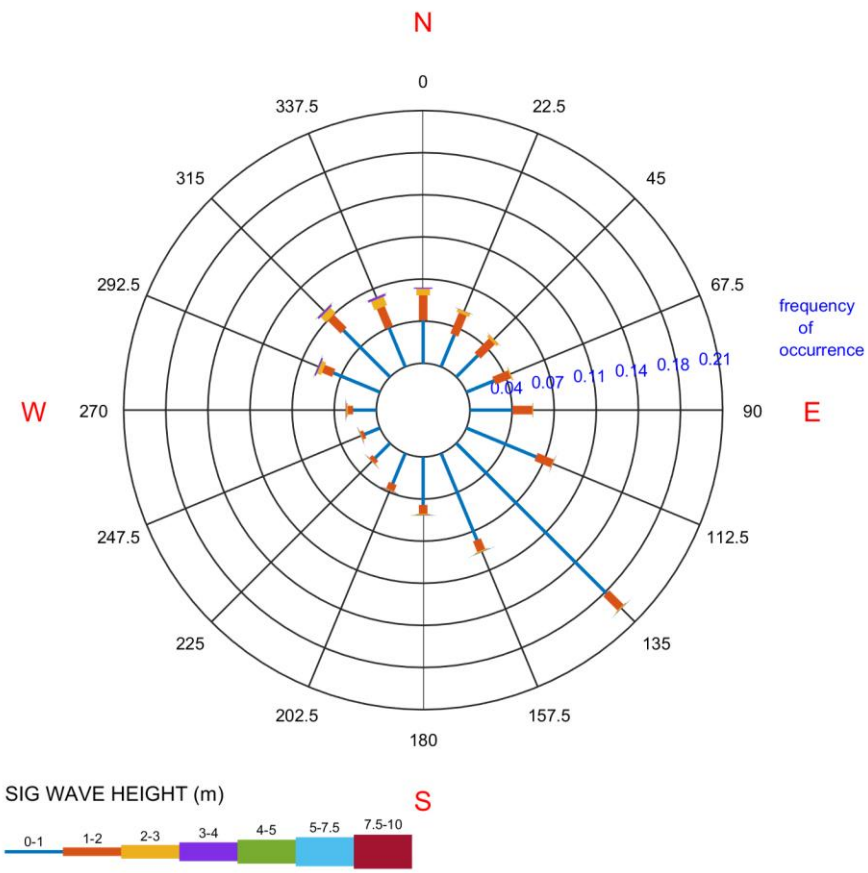
# Gulf of Mexico WIS Station 73364

01-Jan-1980 thru 31-Dec-2014

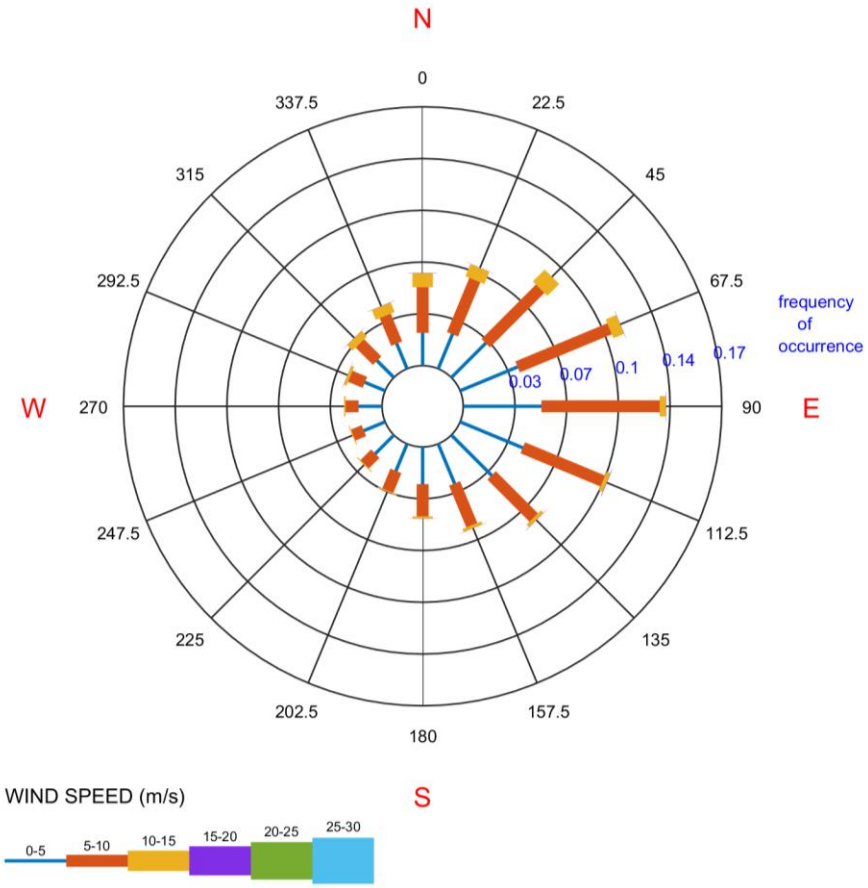
Long: -83.75° Lat: 26.6° Depth: 78 m

Total Obs : 306813

## Wave Height and Direction



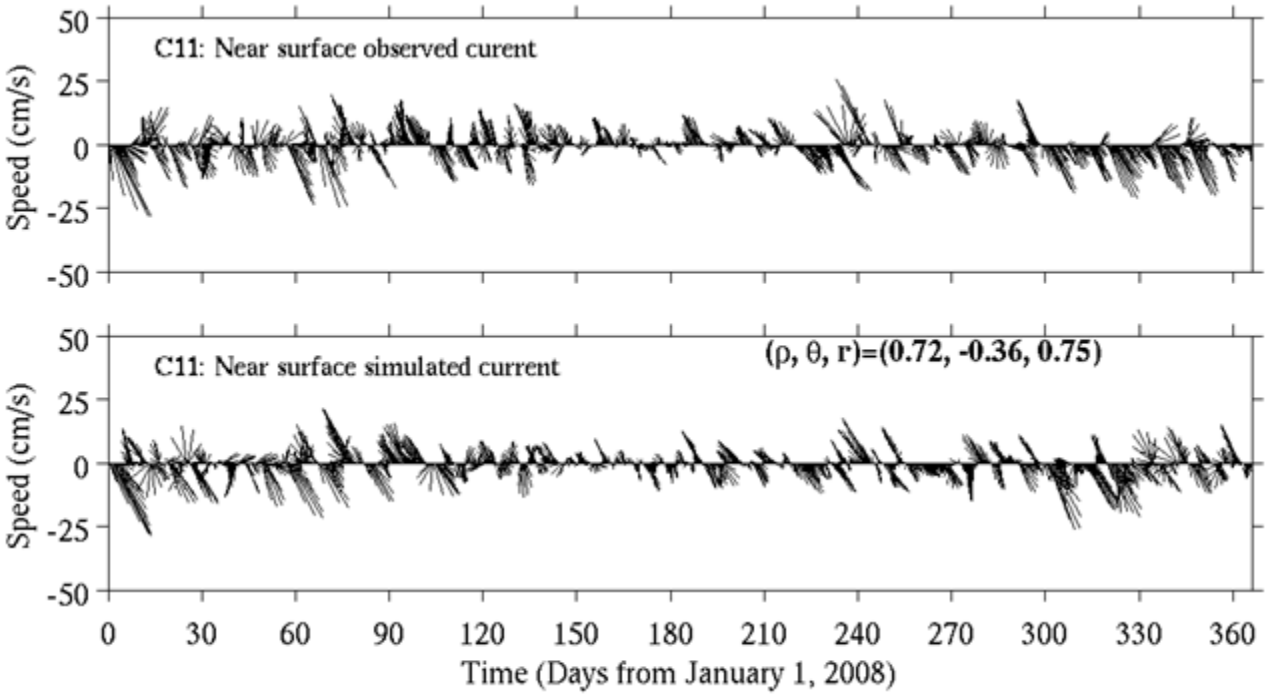

## Wind Speed and Direction



# Offshore Currents for Southwest Florida

**(data represent observations and model along 20 m contour)**

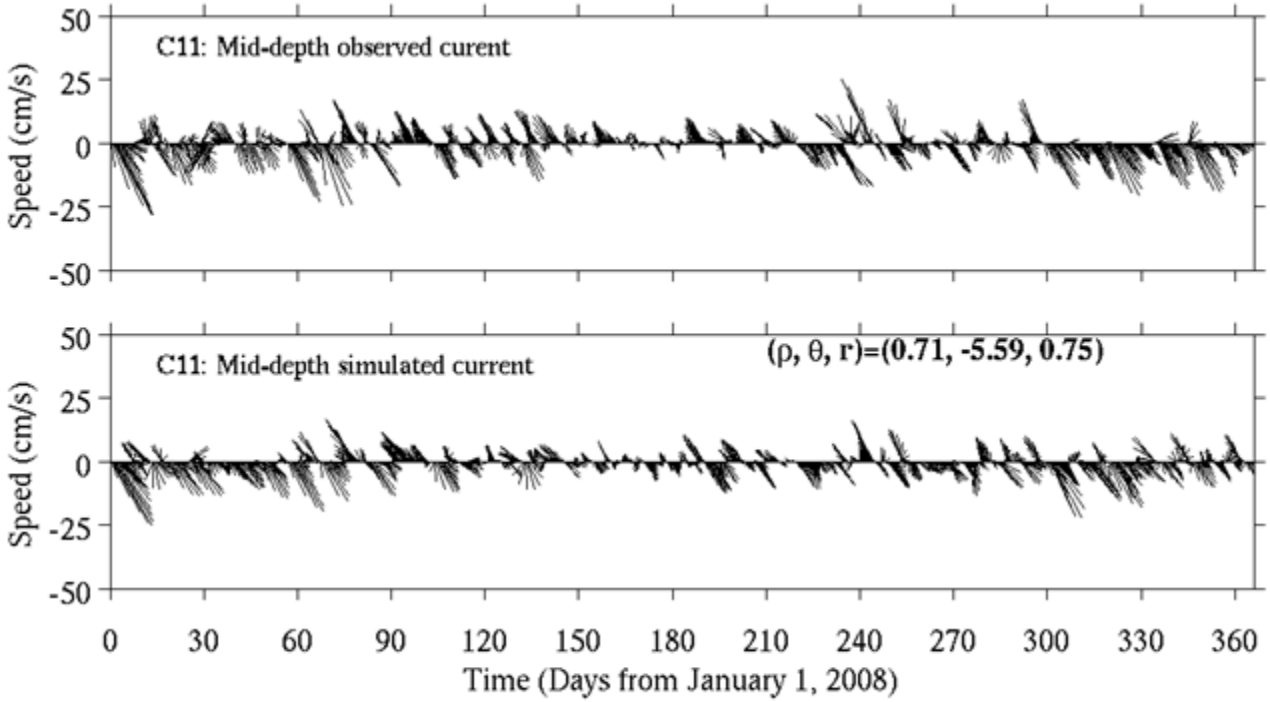
## Near Surface Current



# Offshore Currents for Southwest Florida

**(data represent observations and model along 20 m contour)**

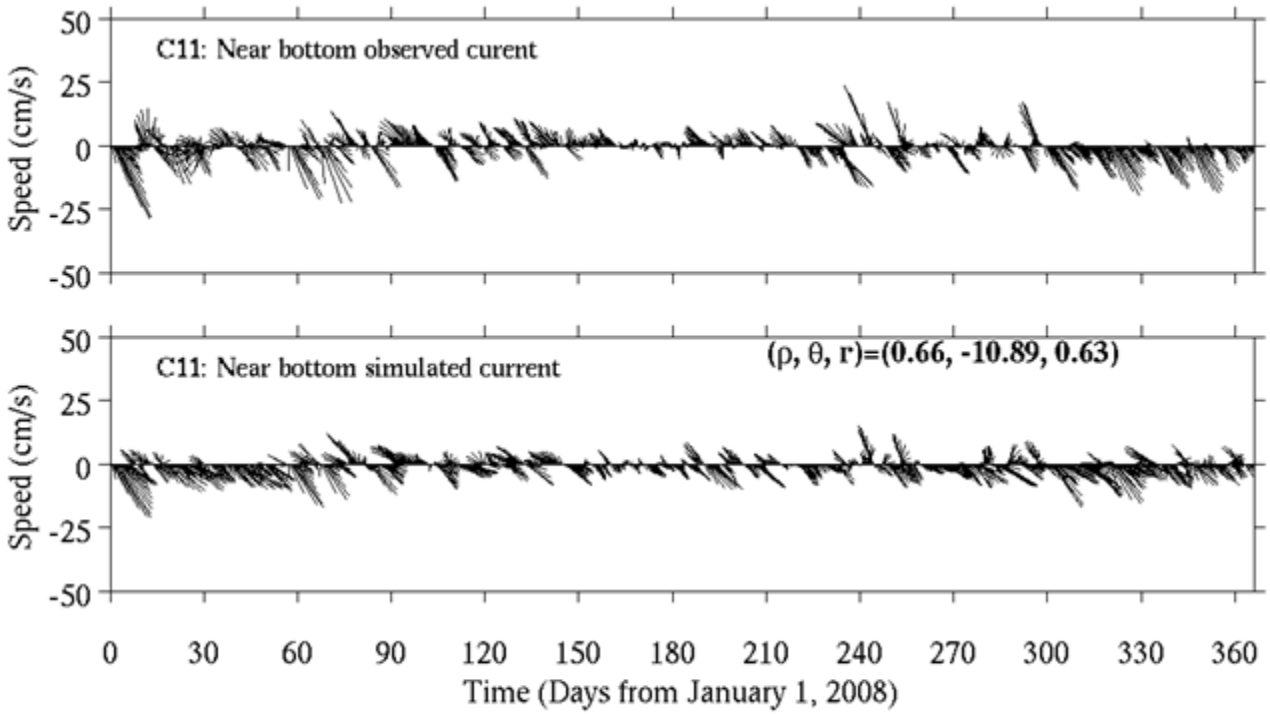
## Mid-Depth Current



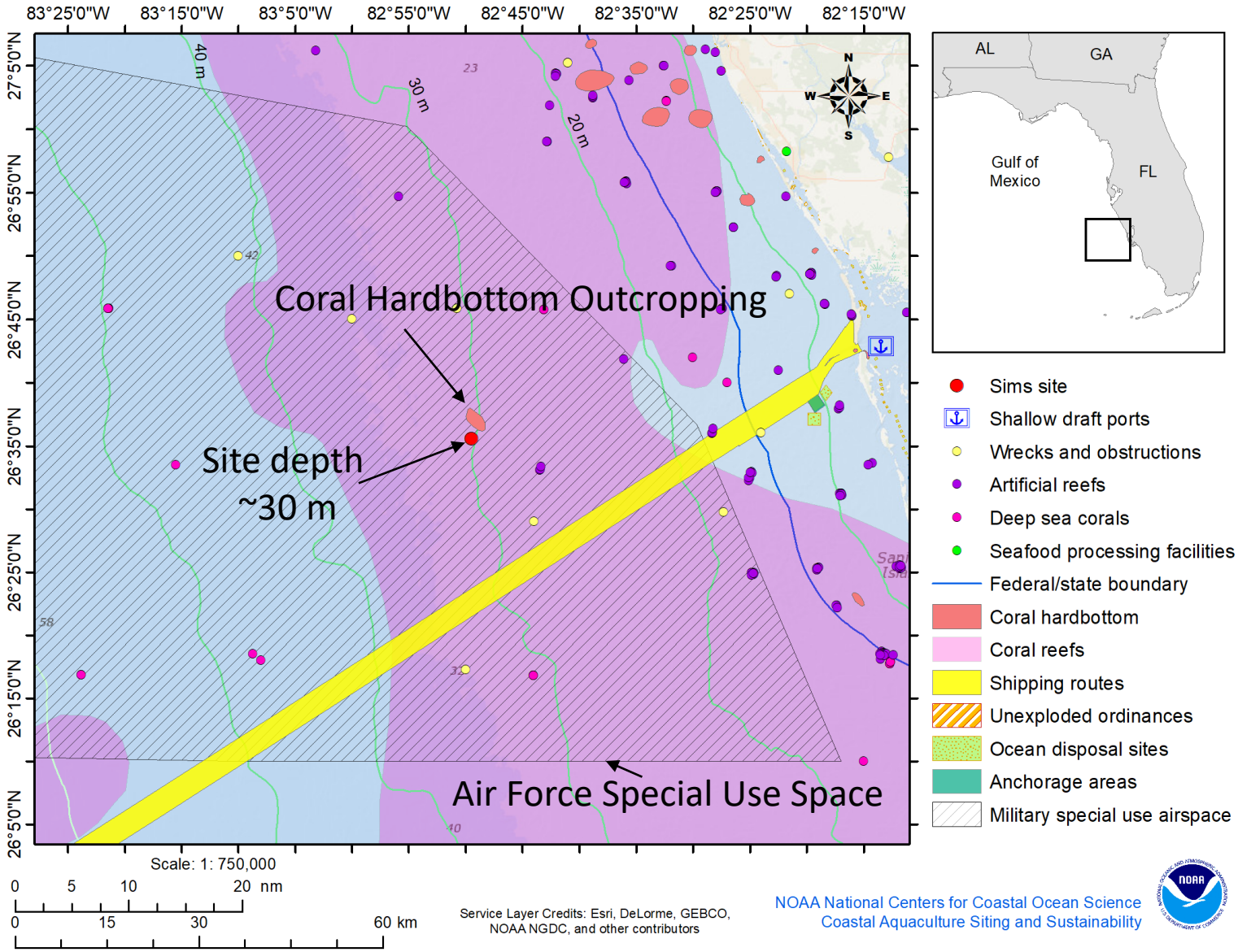
# Offshore Currents for Southwest Florida

**(data represent observations and model along 20 m contour)**

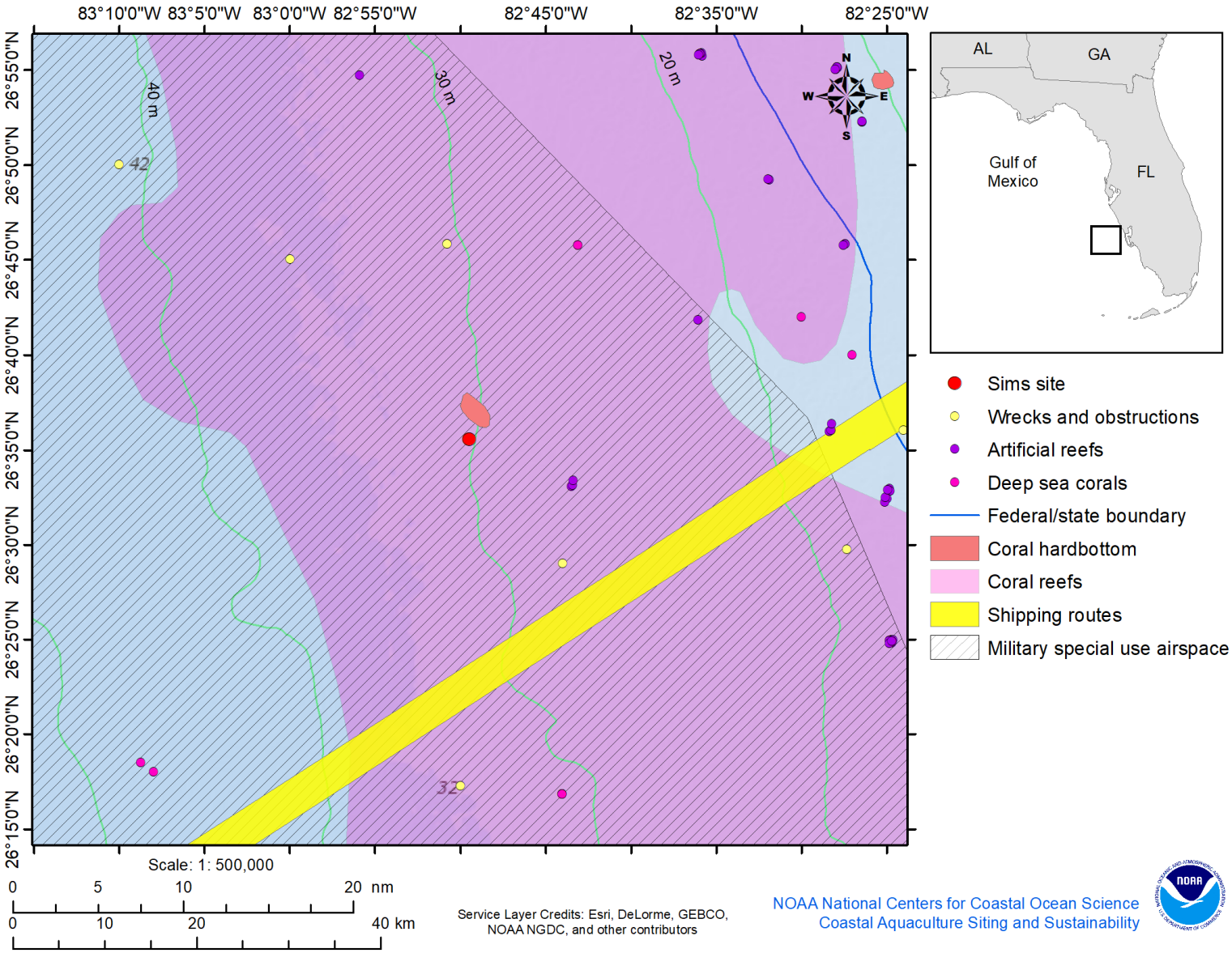
## Near Bottom Current



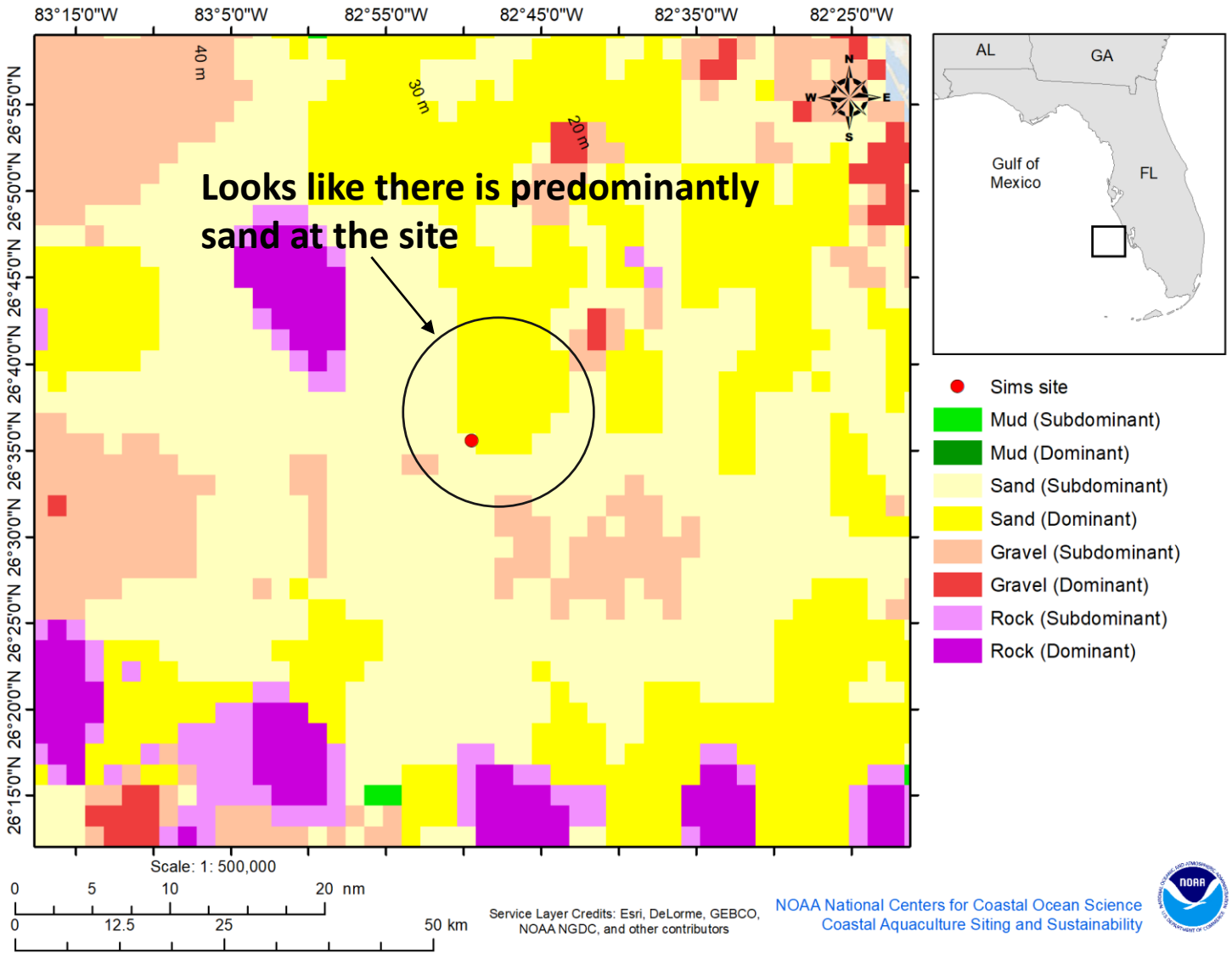
# Initial constraints at 1:750,000



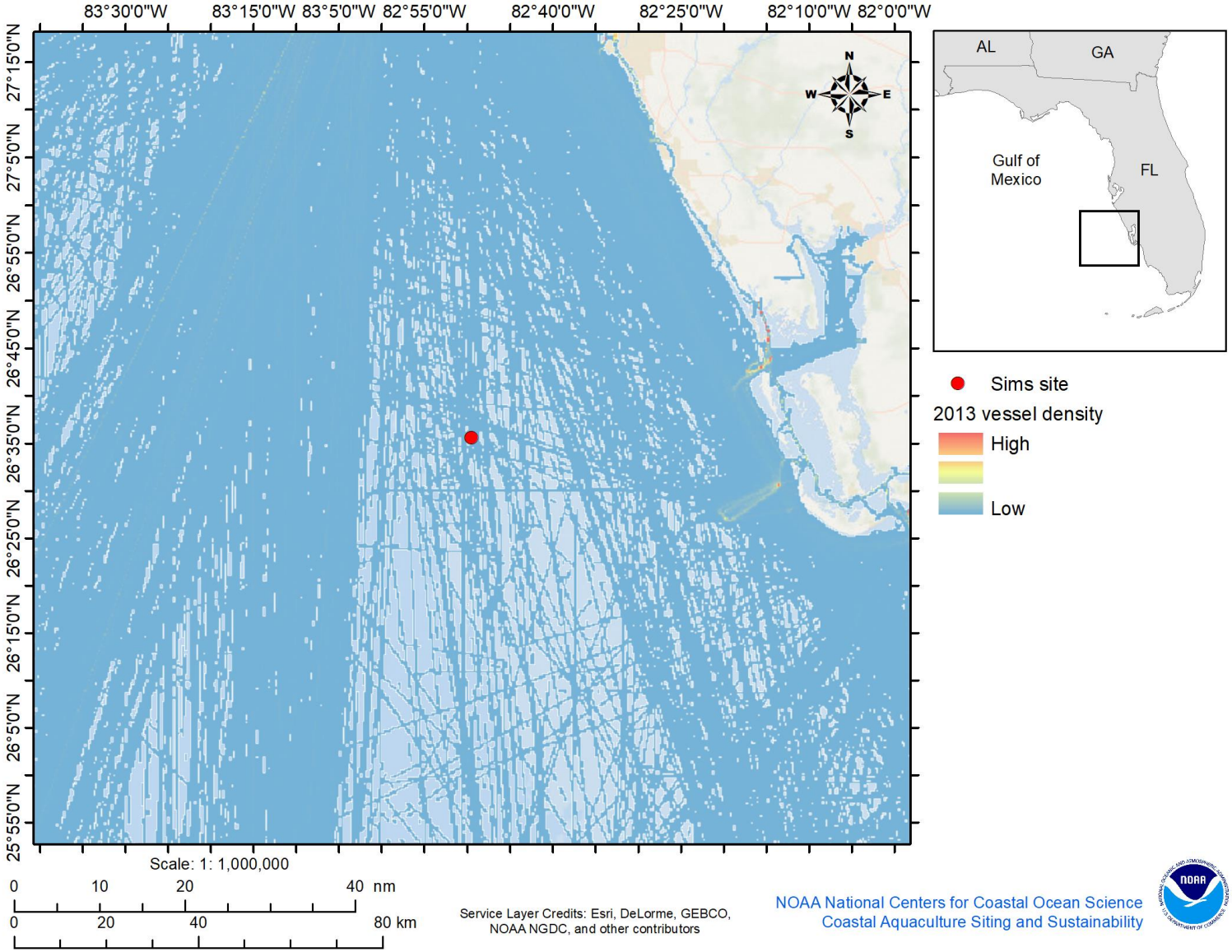
# Initial Constraints – zoomed 1:500,000



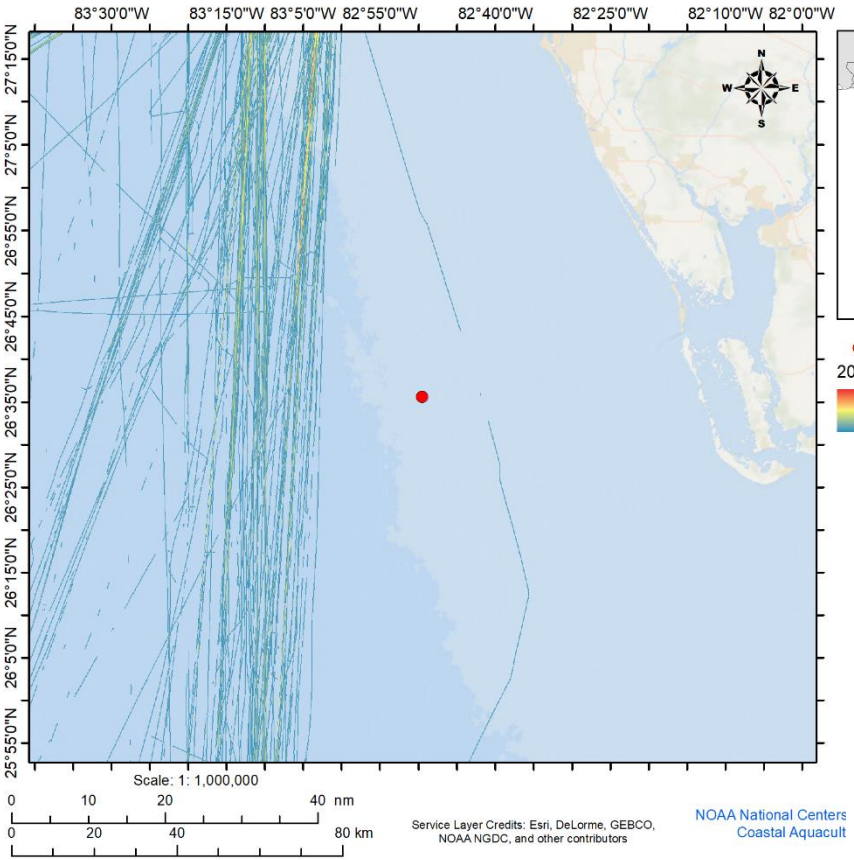
**US SEABED substrate type:** given the size of the operation, depositional models would most likely have the effluent in the sandy areas – NOT on the coral outcropping to the NW

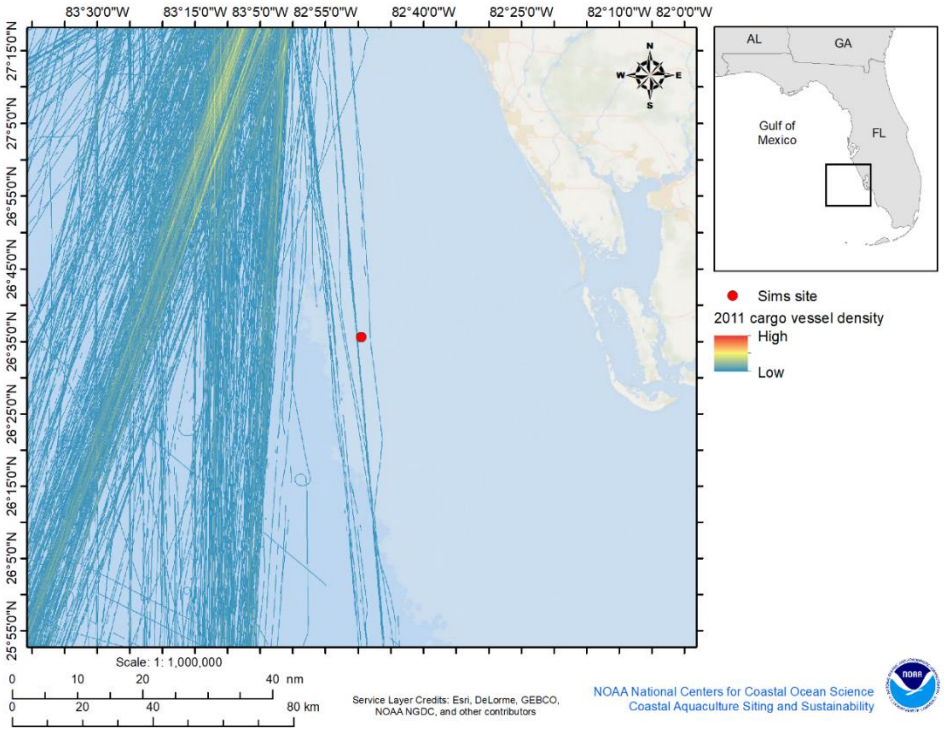


# AIS Vessel Density



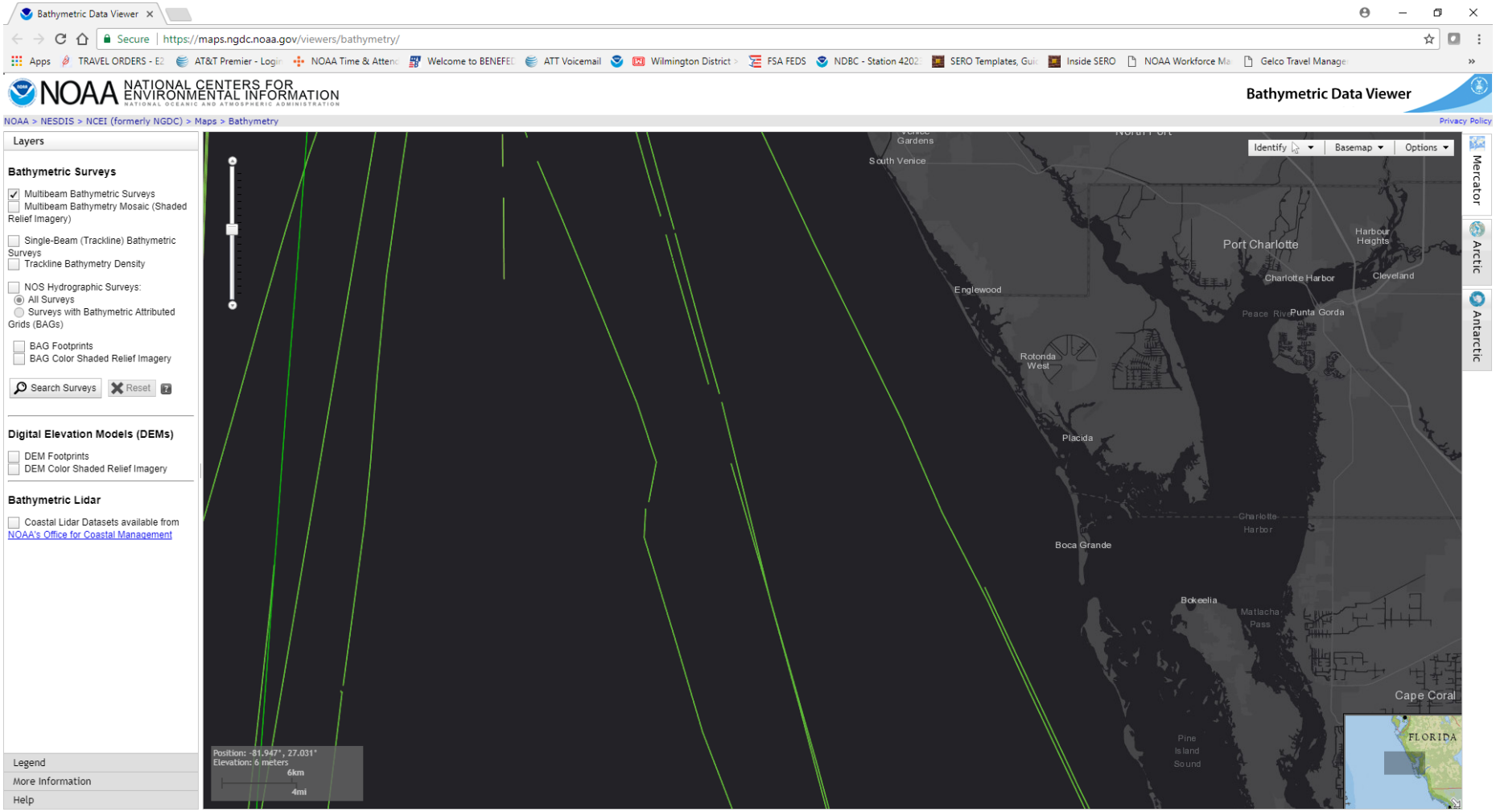
# Tanker and Cargo vessel density alone




No immediate issues with tanker traffic;
Very slight interference with Cargo traffic

# NOAA Multibeam Bathymetric Surveys

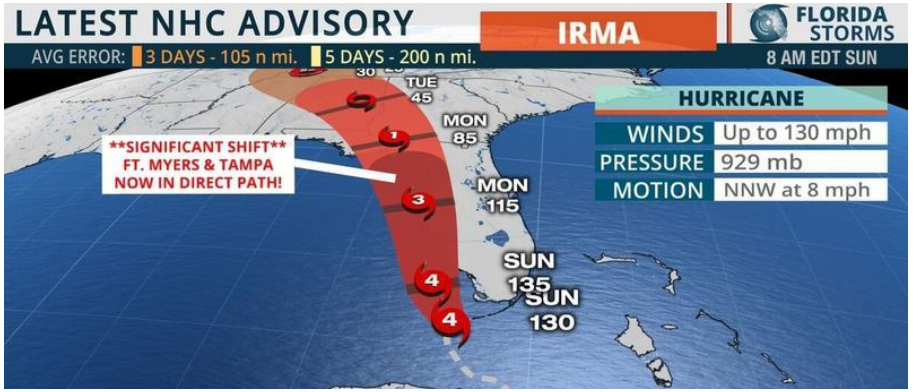
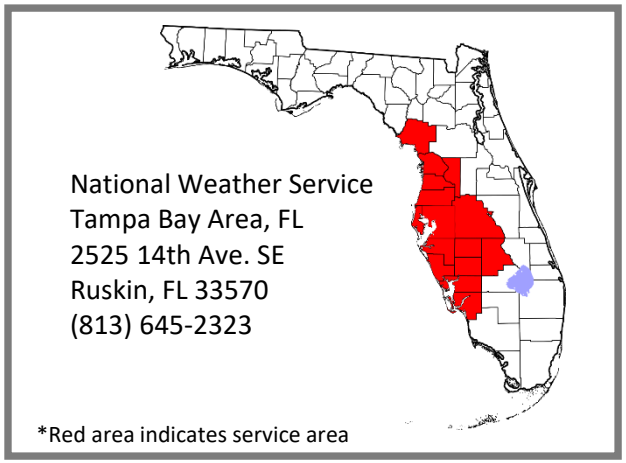


# NOAA Multibeam Bathymetric Surveys

Survey ID: NF-13-10T
Platform Name: Nancy Foster
Survey Start Date: 2013-09-20
Survey End Date: 2013-09-23
Source Organization: National Oceanic and Atmospheric Administration (NOAA)
Chief Scientist: None
Instrument: Kongsberg EM1002 and Reson SeaBat 7125
File Count: 100
Track Length: 1526 km
Total Time: 68 hours
Bathymetry Beams: 284.986719 million
Amplitude Beams: 284.986719 million
Sidescan: 689.809408 million pixels

Survey ID: USF2002Fla
Platform Name: Bellows
Survey Start Date: 2002-04-17
Survey End Date: 2002-07-14
Source Organization: University of South Florida (USF)
Chief Scientist:
Instrument: Simrad EM3000
File Count: 577
Track Length: 2246 km
Total Time: 136 hours
Bathymetry Beams: 431.678842 million
Amplitude Beams: 431.678842 million
Sidescan: 3480.623104 million pixels

# Offshore Weather Description for Southwest Florida

## (adapted from NOAA Coast Pilot 5, Edition 45, 2017)

Along the coast from Key West to Tampa Bay, the major weather hazards include tropical cyclones, thunderstorms, and cold fronts. Tropical cyclones, which can occur in any month, are mainly a threat in June, August, September, and October. Seventeen tropical cyclones have approached the coastline between Key West and Tampa Bay since 1950. The chance of a tropical cyclone encounter decreases along the west coast, north to Fort Myers and Tampa Bay. Thunderstorms develop on about 60 to 80 days annually along this section of the coast. They are least likely near Key West and most likely in the Tampa Bay area. While they can occur at anytime, they are most likely from June through September, during the late afternoon and evening hours; at sea they frequently occur at night. During the summer months, thunderstorms are observed on about 10 to 20 days per month. From fall through spring, cold fronts occasionally reach these waters generating strong, gusty winds which kick up rough seas. While gales are infrequent, winds of 28 knots or more occur about 2 to 3 percent of the time off Fort Myers. Wave heights of 10 feet or more are encountered 3 to 5 percent off Fort Myers. Visibilities drop below 2 miles about 1 percent of the time from December through April. Along the coast, a shallow ground fog may form, but this usually dissipates with the rising sun.