

Examining the Movement Ecology and Habitat Utilization of Black Sea Bass (*Centropristis striata*) in Chesapeake Bay Using Telemetry Techniques



Samir Patel and Farrell Davis - CFF
Nicole Trenholm – Ocean Research Project
William Pappas – F/V Playin Hookey II

Movement and Habitat Utilization of Black Sea Bass:

Goals

- 1) Conduct seasonal rod and reel surveys inshore and offshore.
- 2) Deploy conventional spaghetti tags, acoustic telemetry tags, and pop-up satellite tags on caught BSB.
- 3) Compare environmental data and movement patterns, using CBIBS oceanographic buoy data, ancillary data from satellite tags, and temp/depth data loggers.
- 4) Utilize a network of citizen science volunteers from FishFinder* to deploy additional mobile receivers within the Bay and along the east coast.

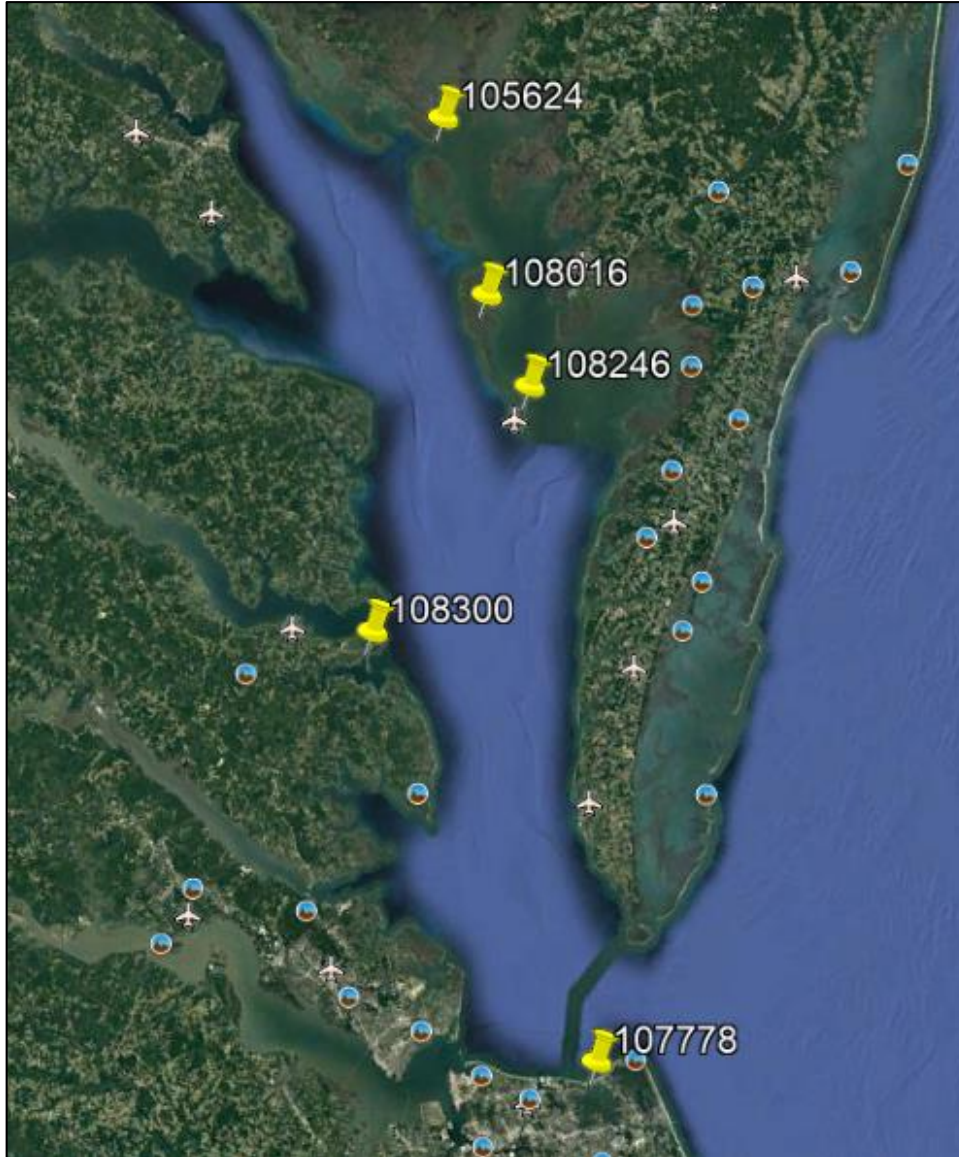
*<http://www.oceanresearchproject.org/programs/science/citizen-science/>

Movement and Habitat Utilization of Black Sea Bass: *Methods*

- Deploy a variety of electronic tags.
- Deploy passive tags.
- Deploy receivers in Chesapeake Bay
- Document environment through videography.



Movement and Habitat Utilization of Black Sea Bass: *Results*



Receiver deployment locations.

Vemco VR2W 69 kHz

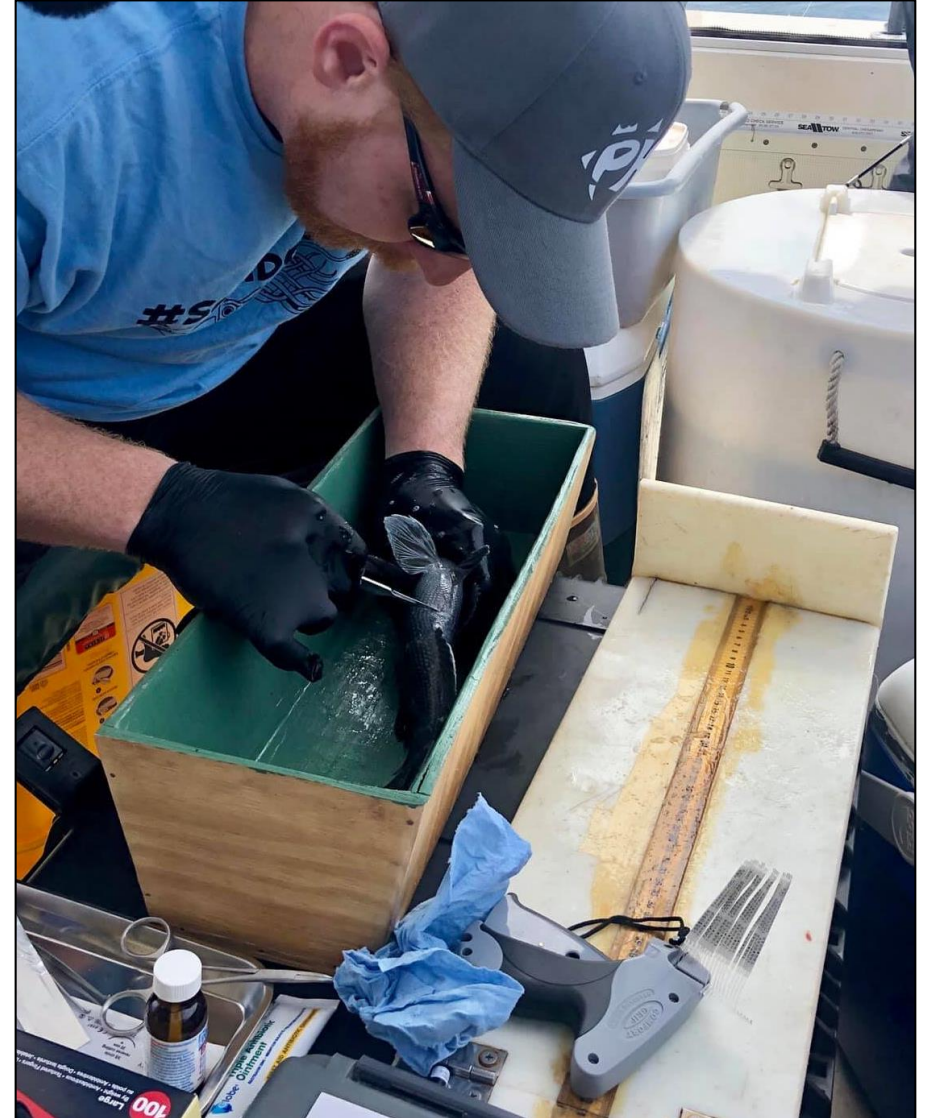
Update:

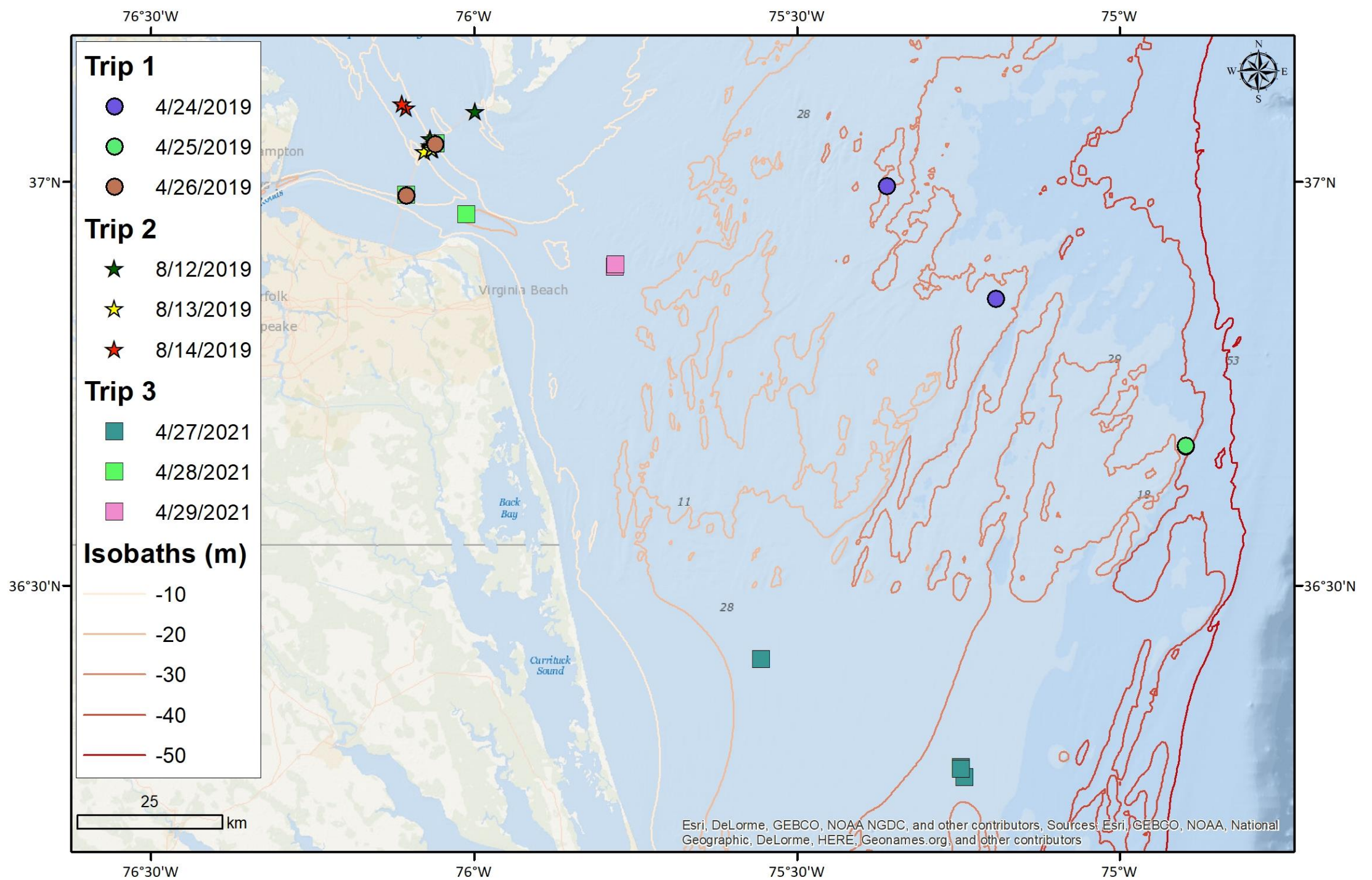
- Receivers recovered and redeployed in 2020.
- No black sea bass detections
- 23 independent fish detections
- Receiver lost at Lynnhaven
- Receiver added near Annapolis

Receivers deployed and maintained by Nicole Trenholm.

Movement and Habitat Utilization of Black Sea Bass: *Results*

- Three trips (out of 4) have been completed aboard F/V Playin Hookey II.
- Caught a total of 214 fish.
- Deployed:
 - 30 Vemco V9 tags (internal)
 - 8 Star Oddi CTD Tags (external)
 - 4 Wildlife Computers MiniPAT





Movement and Habitat Utilization of Black Sea Bass:

Results

TRIP 1

Site	Date	Sample Size	Length (Mean ± SD)
1	4/24/2019	21	34.7 ± 6.1 cm
2	4/24/2019	7	37.7 ± 8.4 cm
3	4/25/2019	20	39.0 ± 6.6 cm
TOTAL		48	36.9 ± 6.8 cm

TRIP 2

Day	Date	Sample Size	Length (Mean ± SD)
1	8/12/2019	72	15.0 ± 1.6 cm
2	8/13/2019	40	15.0 ± 1.1 cm
3	8/14/2019	2	15.0 ± 1.4 cm
TOTAL		114	15.0 ± 1.4 cm

Movement and Habitat Utilization of Black Sea Bass:

Results

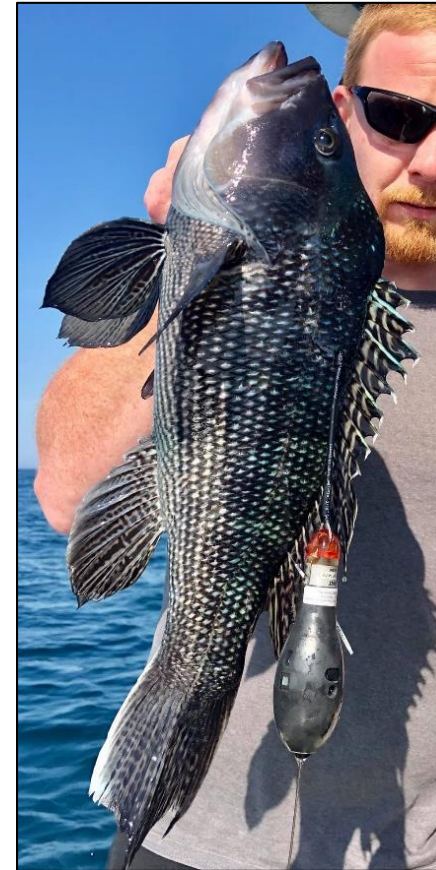
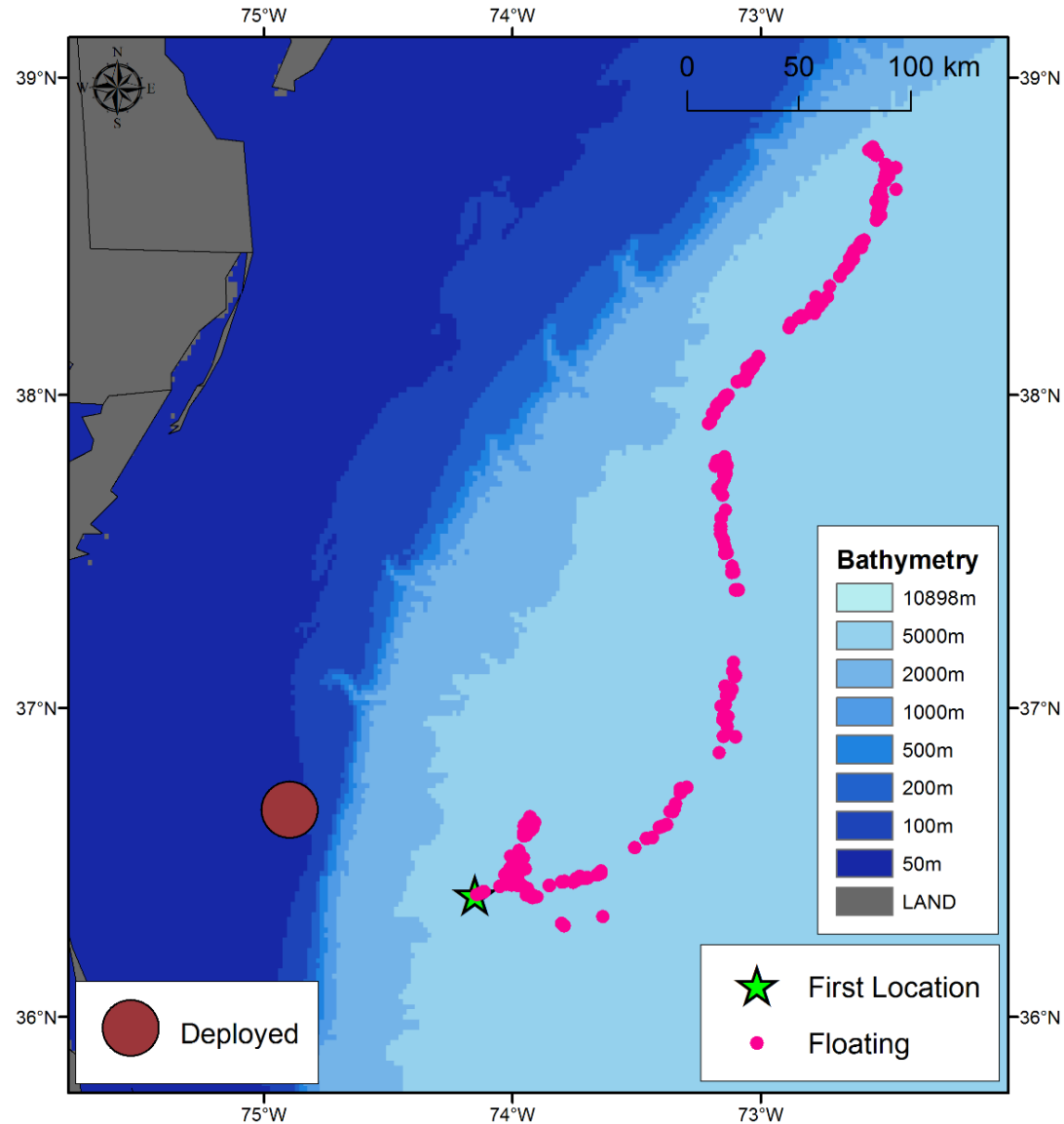
TRIP 3

Day	Date	Sample Size	Length (Mean \pm SD)
1	4/27/2021	24	33.3 \pm 7.3 cm
2	4/28/2021	0	N/A
3	4/29/2021	28	25.1 \pm 3.6 cm
TOTAL		52	28.9 \pm 6.6 cm





Movement and Habitat Utilization of Black Sea Bass: *Results*



MINIPAT 1

Deployed: April 25, 2019

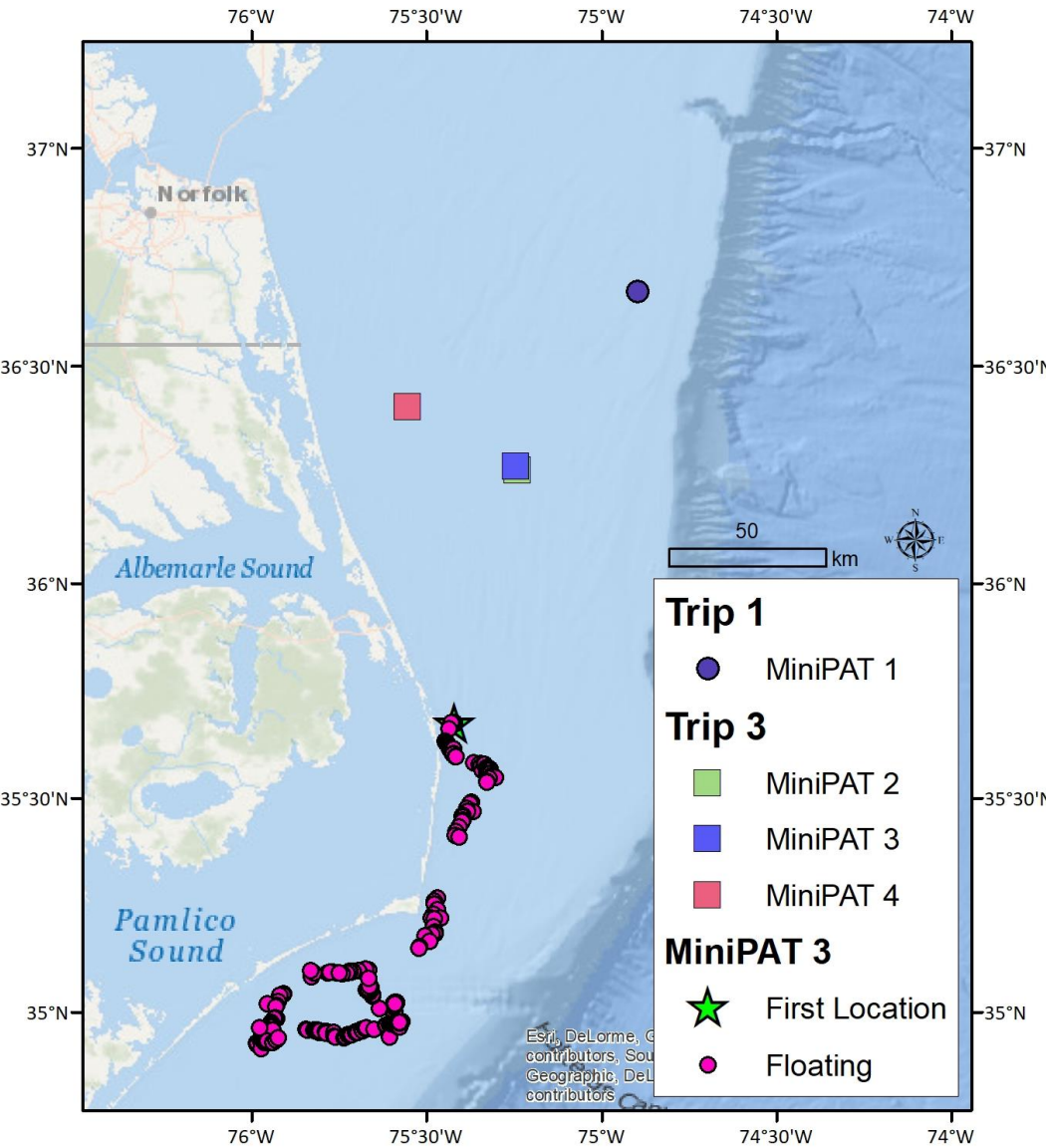
Released: May 28, 2019

Fish Length: 46 cm

Average Temperature: 9.4°C

Depth: 35 m

Movement and Habitat Utilization of Black Sea Bass: *Results*



MINIPAT 3

Deployed: April 27, 2021
Released: May 9, 2021
Fish Length: 48 cm
Average Temperature: 13.9°C
Depth: 34 m

MINIPAT 2

Deployed: April 27, 2021
Fish Length: 44 cm

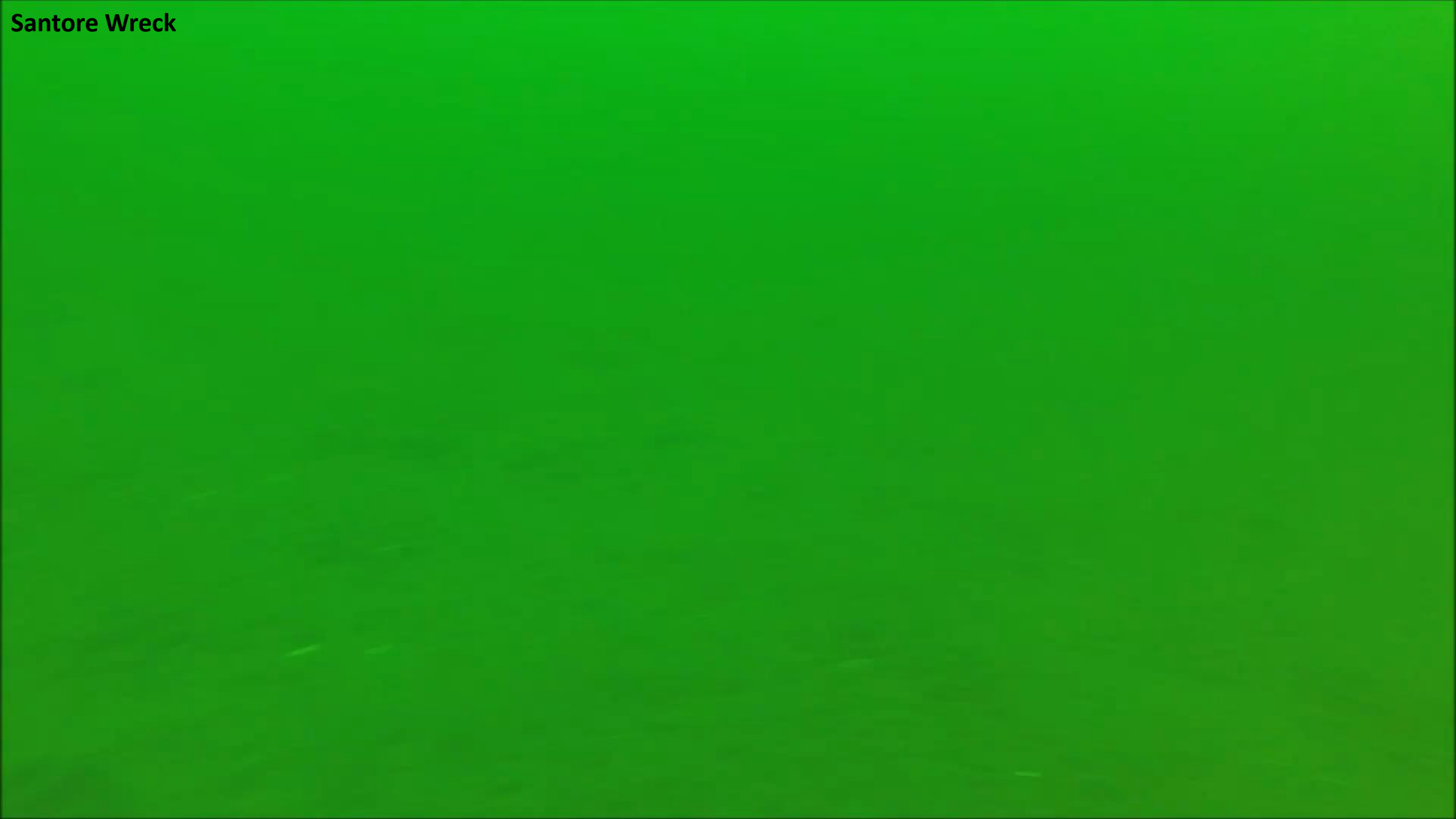
MINIPAT 4

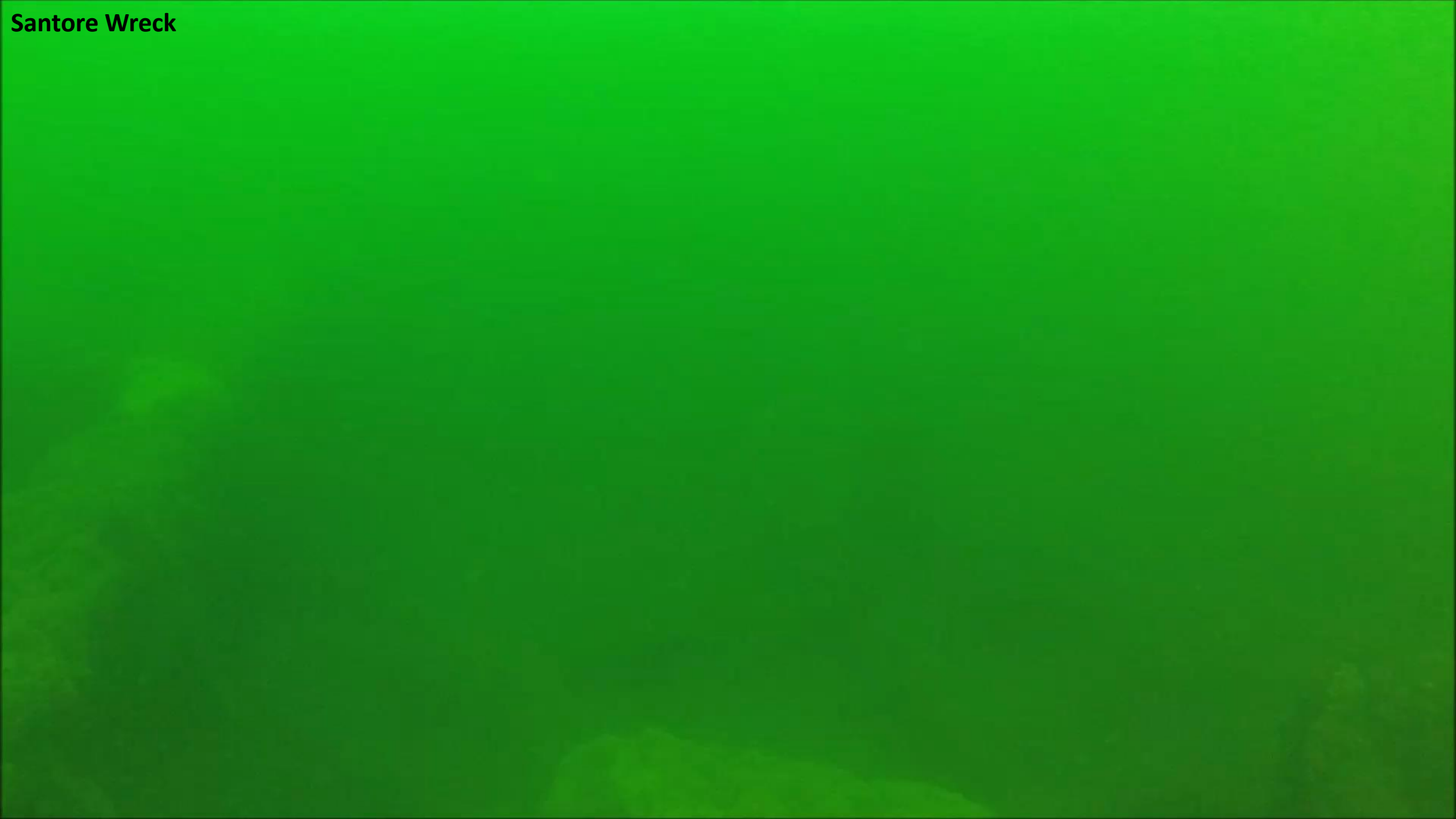
Deployed: April 27, 2021
Fish Length: 46 cm



Cape Henry Chilore Wreck







Santore Wreck



Santore Wreck

Movement and Habitat Utilization of Black Sea Bass: *Future Plans*

- Next trip scheduled for August 10 – 12, 2021.
- Plan to sample primarily from nearby wrecks or within Chesapeake Bay.
- Plan to deploy remaining electronic tags:
 - 10 Vemco V9s
 - 20 Star Oddi CTDs



Coonamesett Farm
Foundation



Black Sea Bass Tagging
Chesapeake Bay

cfarm.org