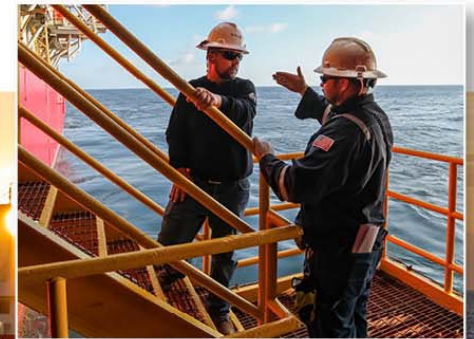


NOVEMBER 26, 2024



EC 346 A REEF IN PLACE PROPOSAL

AGENDA

- Facility Intro
- Reefing SARS Proposal
- 3 Studies to Qualify SARS Candidate
 - Fisheries Assessment
 - ROV-Based Marine Life Survey
 - Hydroacoustic Survey

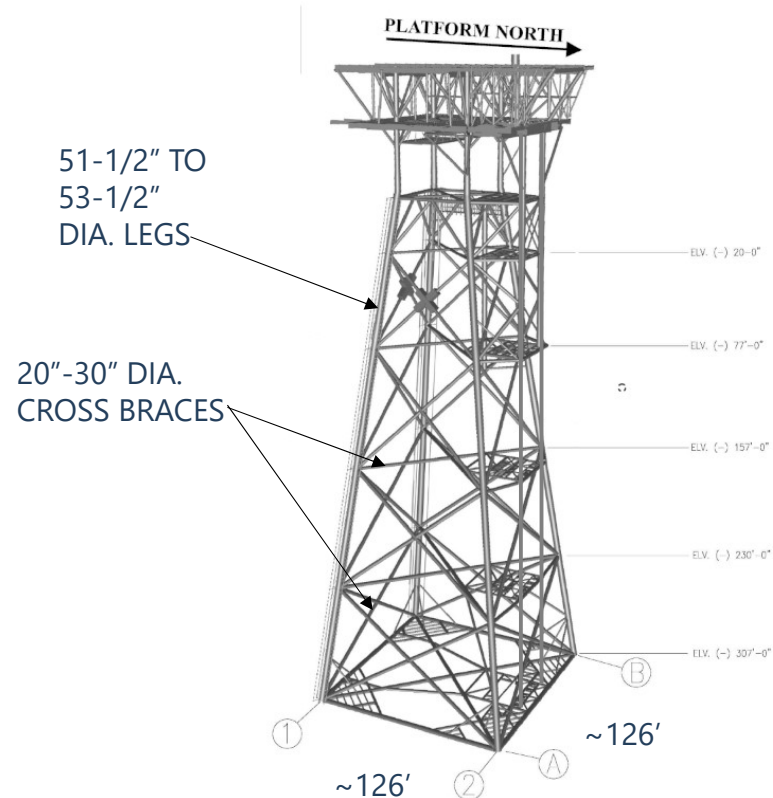


SARS QUALIFYING CRITERIA

- ✓ **The SARS designation would provide benefit to recreational and/or commercial fishing, or fish habitat.**
- ✓ **Removal of existing material from the EC 346A site would have a negative impact on fish populations.**
- ✓ **Designation as a SARS would not pose a threat to navigation.**
- ✓ **The area does not occupy currently trawlable bottom, (those water bottoms that are free of obstruction, such as existing oil and gas infrastructure).**
- ✓ **Inclusion of the SARS in the LARP would have an overall positive impact on user groups.**
- ✓ **For every SARS constructed, an area of equal size (not containing permitted or established artificial reefs) would be eliminated from an existing, adjacent planning area; a reasonable effort will be made to remove an area of higher shrimp effort, according to the best information available.**
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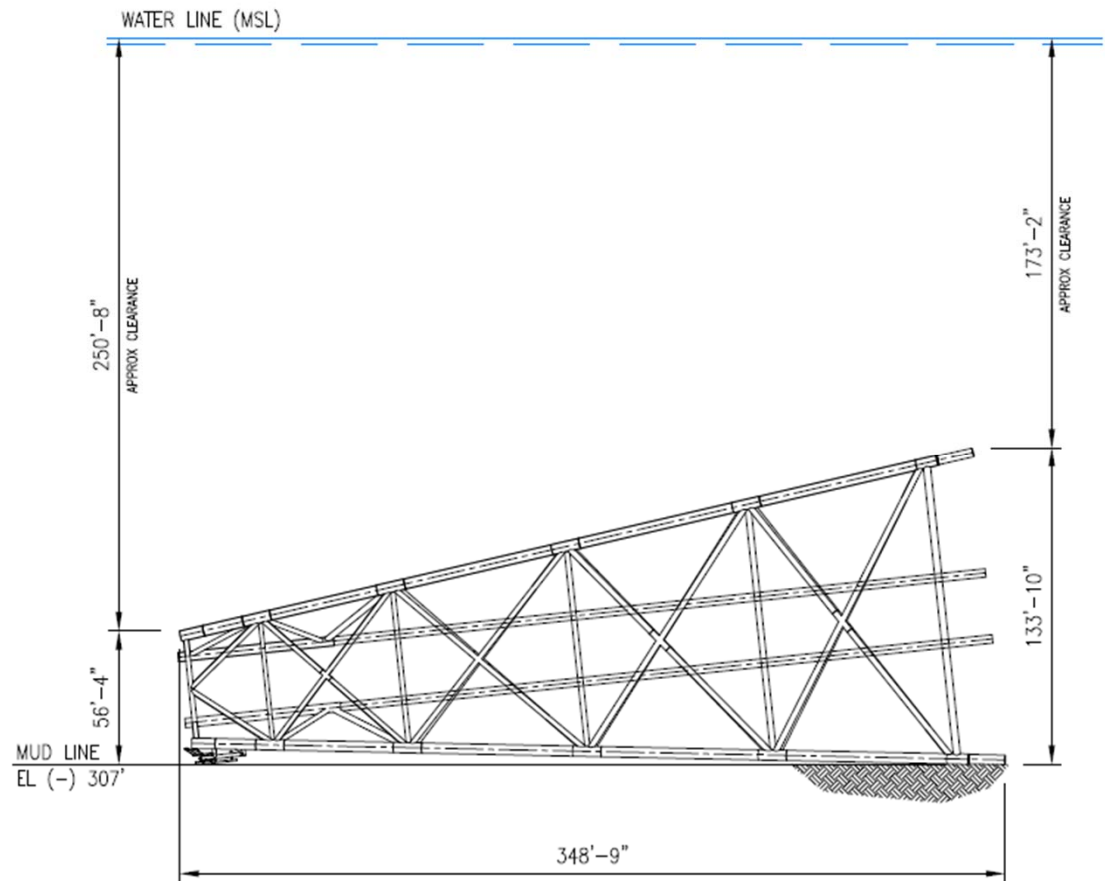
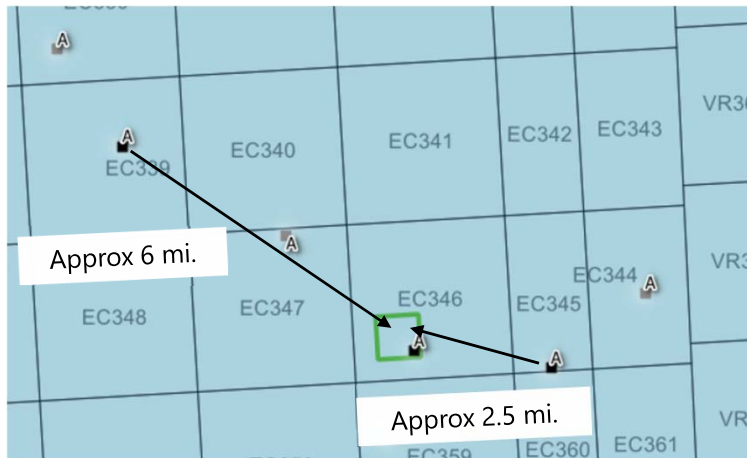
FACILITY PARTICULARS

- 4-Leg, 6 Pile
- 307' WATER DEPTH
- Installed in 1988
- Active RUE Structure – Undamaged
- ROBUST STRUCTURE (51-1/2" to 53-1/2" Diameter Legs, 20"-30" Diameter Cross Structure)
- LARGE FOOTPRINT (~126' x 126' at Seafloor)



REEFING PROPOSAL (SARS REEF IN PLACE)

- Proposing to reef in place EC 346 A
- Planning to enhance with EC 339 A and EC 345 A



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3 STUDIES COMPLETED TO QUALIFY EC 346A SARS CONVERSION

Study 1: Fisheries and Navigational Assessment

- **Who is fishing and where?**
 - Profile fishing groups who utilize the oil and gas structures
- **Navigational hazards?**
 - Evaluate navigational hazards, including proximity to shipping lanes
- **Predicted impacts to fishing if reefed?**
 - Identify implications and/or benefits that, if reefed in place, EC 346A would have on fisheries groups

Study 2: Remotely Operated Vehicle (ROV) Survey

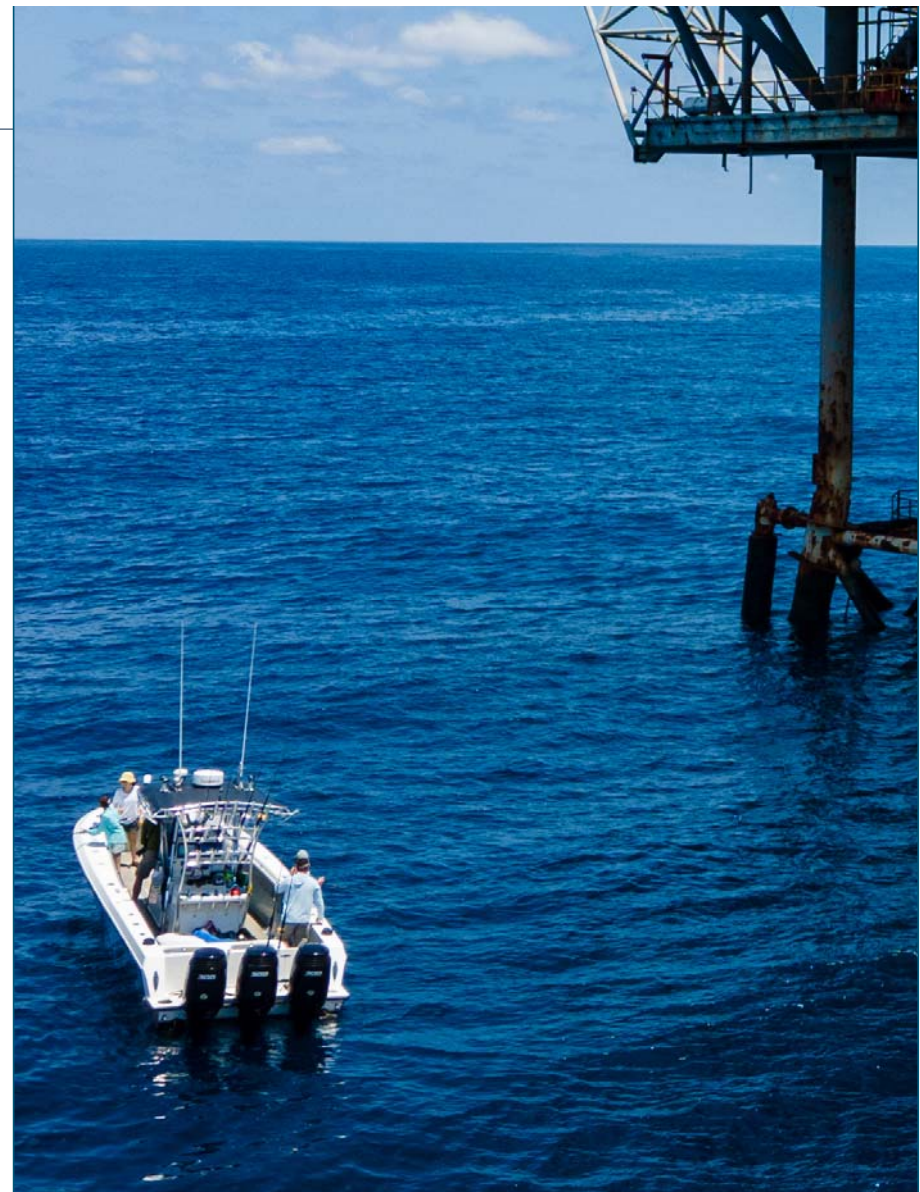
- **Collect video/images of marine life on EC 346A**
 - Visual data for analysis and to validate hydroacoustic survey results
- **What marine life is present and how much?**
 - Characterize abundance and biodiversity of marine life and invertebrate communities
- **Any unique marine life?**
 - Physical and biological site characterization; commercially important species presence

Study 3: Hydroacoustic Survey

- **Do these results align with what the ROV observed?**
 - Complement the ROV-based marine life assessment
- **How many fish?**
 - Quantify the total abundance of fish
- **How do the number of fish change with depth?**
 - Provide fish density and abundance estimates by depth interval



Study 1: Fisheries and Navigational assessment



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Fisheries and Navigational Assessment

Vessel Traffic

- ~1.5 nmi to nearest shipping lane
- Infrequent vessel traffic

Commercial Activity

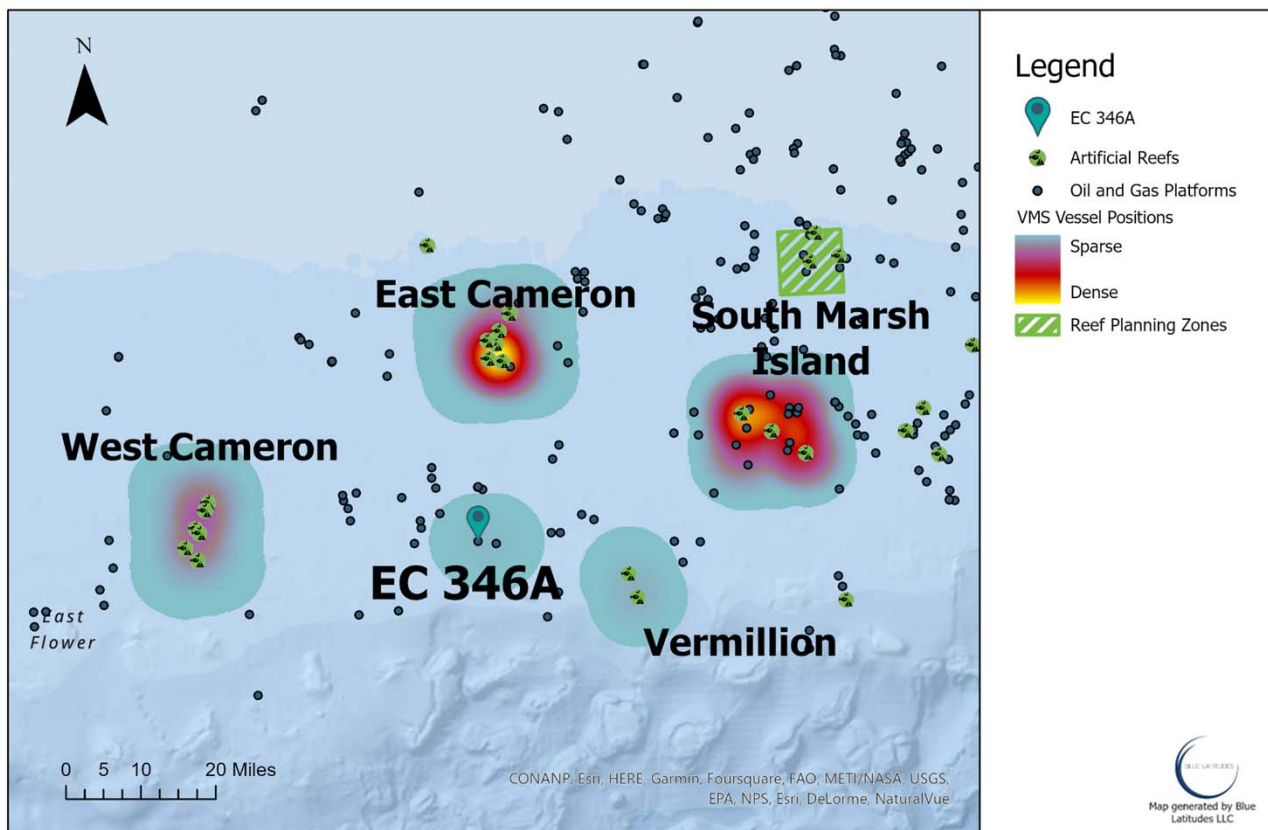
- Some commercial fishing activity occurs at the Site
- Commercial reef fish activity comparable to the Vermilion reef sites
 - If reefed, could expect similar function as seen at Vermilion

Recreational Activity

- Site is likely to have limited recreational activity

Trawling Activity

- EC 346A does not occupy trawlable bottom



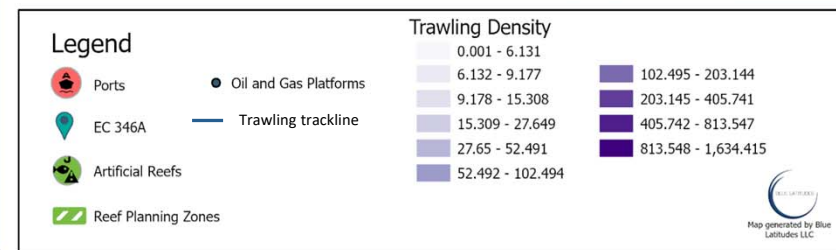
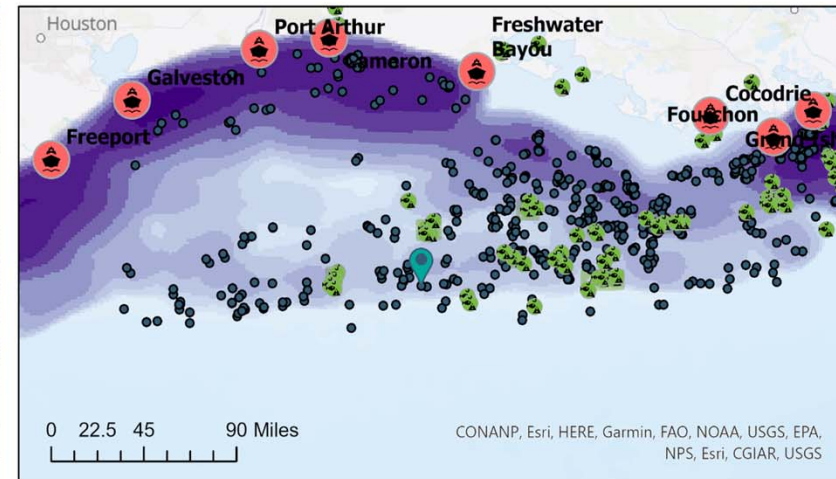
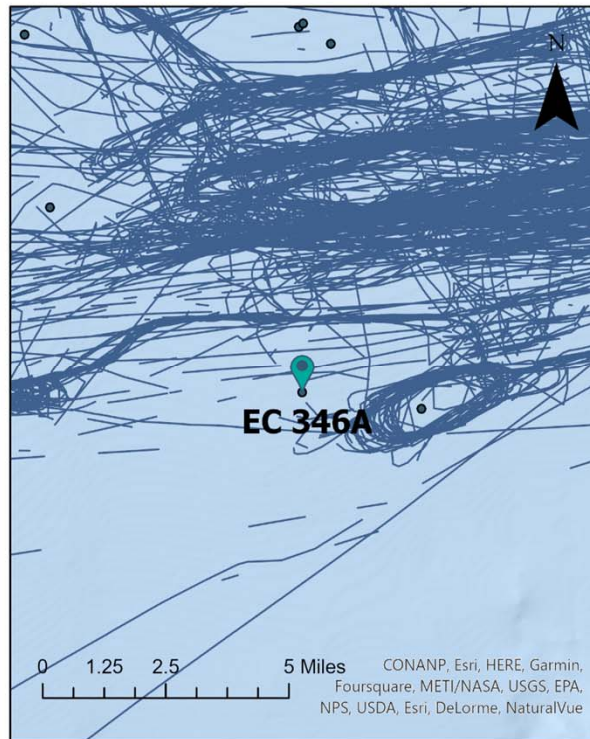
Fisheries and Navigational assessment

SARS Criterium assessed: **does not occupy currently trawlable bottom**

Trawling Activity

EC 346A does not occupy trawlable bottom

- On average, trawling vessels maintain avoidance zone of ~4.5 nmi
- Tracklines observed around neighboring platform (EC 345A) maintained avoidance zone of ~.5 nmi
- Closest area of high trawling activity was ~1.5-3 nmi southeast of EC 346A





Study 2: ROV Survey

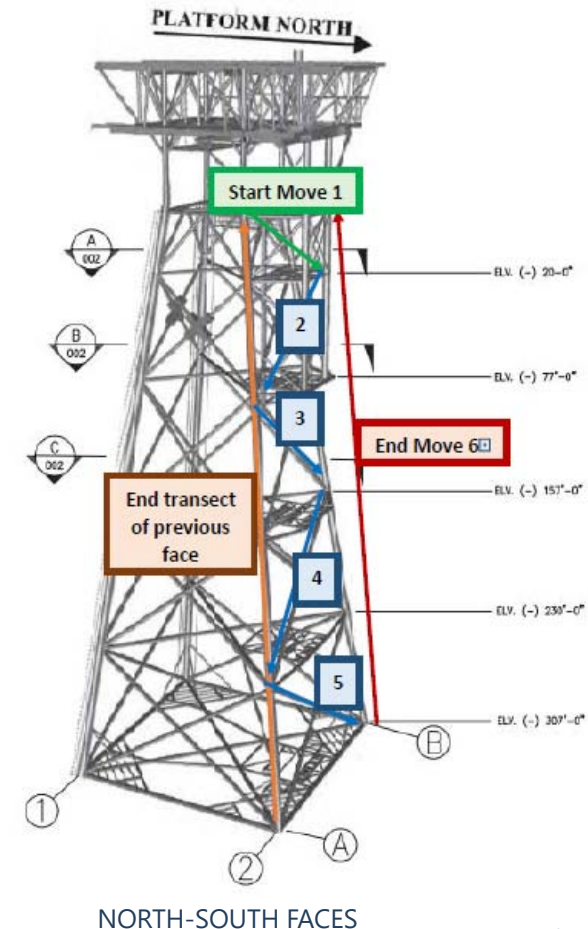
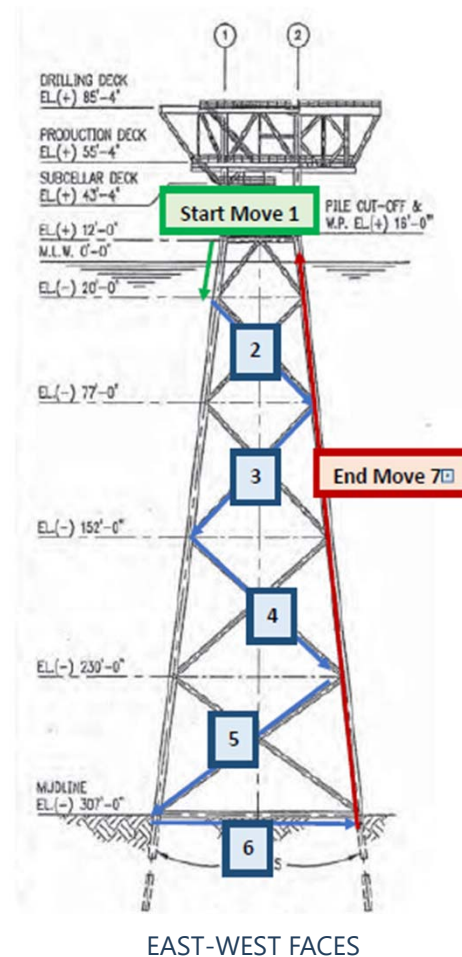


SARS QUALIFYING CRITERIA

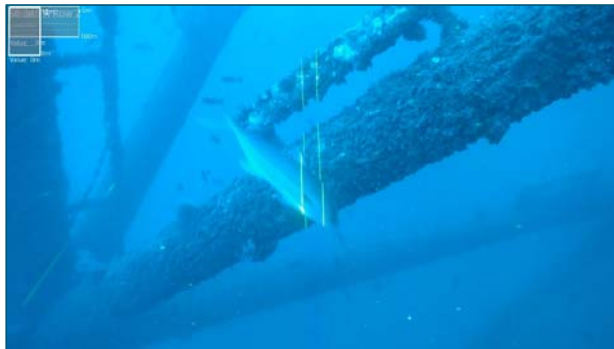
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VALUE DETERMINATION/BIOLOGICAL SURVEY

- BIOLOGICAL SURVEY
 - Blue Latitudes developed the protocols for the survey.
 - ROV conducted the survey November 9 - 10, 2023
 - Blue Latitudes evaluated the data and developed a report.
- SURVEY PROCEDURE
 - Survey followed diagonal braces down each face
 - Vertical survey conducted at each leg.
 - Mudline survey unable to be conducted due to site conditions; Drop-camera footage and SEAMAP data were used to analyze mudline



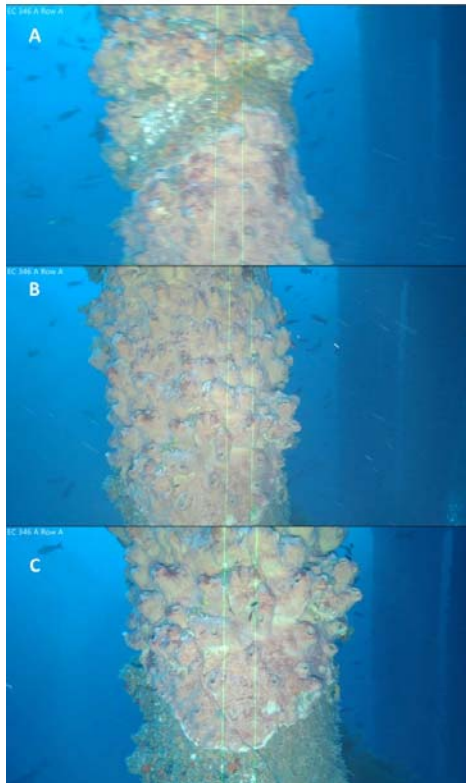
FINDINGS FISH



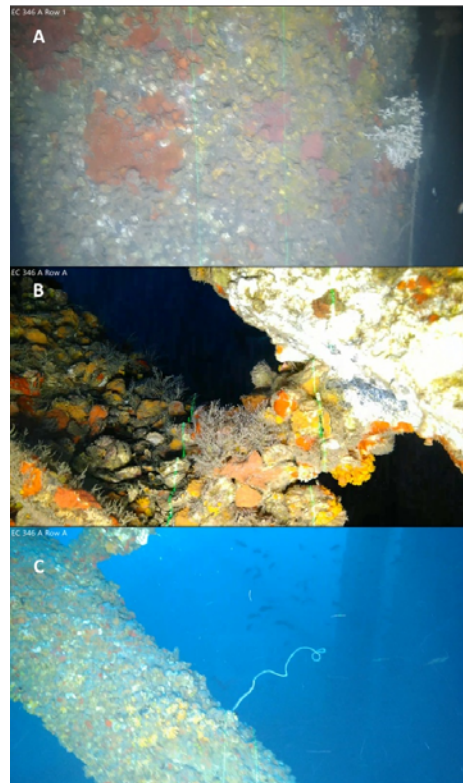
Numerous snappers and jacks were observed during the ROV survey. (A) gray snapper; (B) greater amberjack

- >8,000 individual fish and 29 unique fish species
- Six federally managed species were present: gray snapper, greater amberjack, scamp, red snapper, vermilion snapper, and Warsaw grouper.
- Most prominent species: Atlantic creolefish and Bermuda chub
- Other groups included damselfish, wrasses, blennies, sea basses, jacks, and small deep water fishes
- Two invasive species were observed: lionfish and regal damselfish

FINDINGS INVERTEBRATES



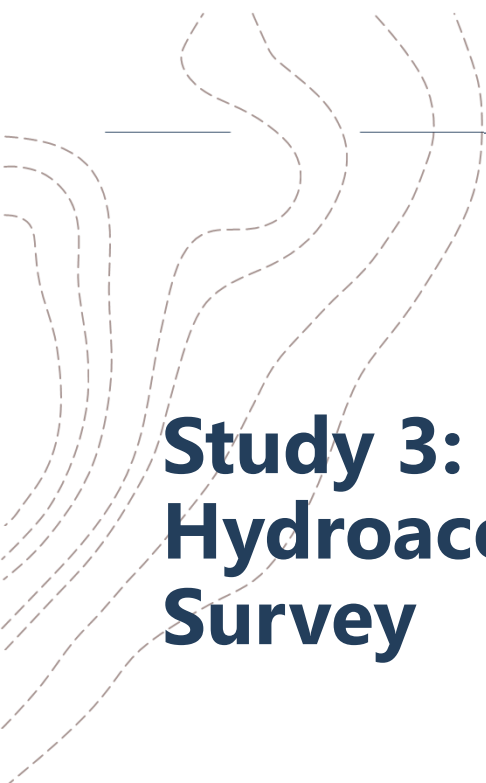
Sponges observed during the ROV survey.



Corals and hydroids observed during the ROV survey. (A) *Oculina*; (B) hydroids; (C) wire-like Antipatharian

EC 346 A platform structure was covered with dense marine growth that indicated a mature invertebrate community dominated by corals, sponges, and hydroids.

- *Oculina* sp.
- Sponges
- Antipatharians (black corals)



Study 3: Hydroacoustic Survey

TALOS
ENERGY

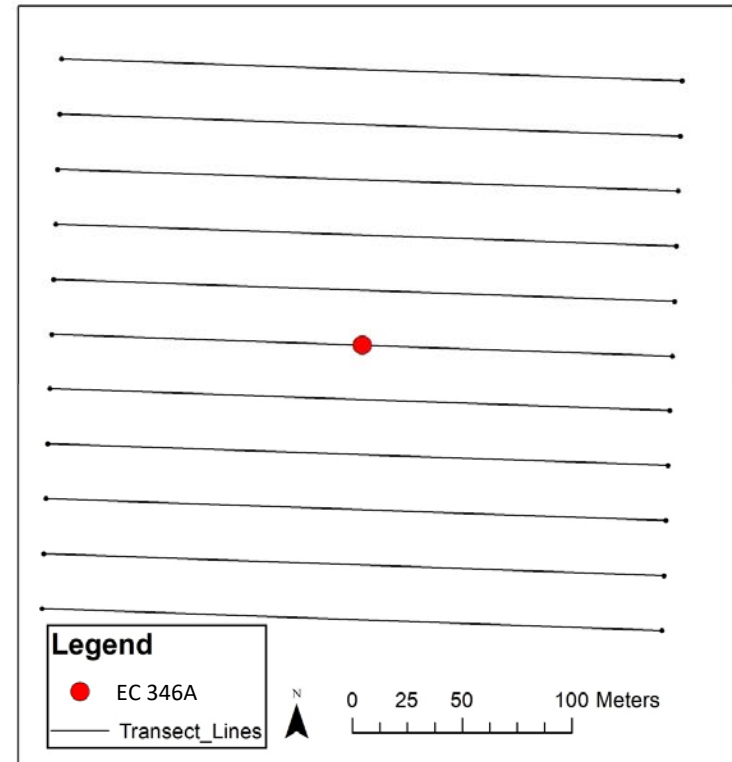


SARS QUALIFYING CRITERIA

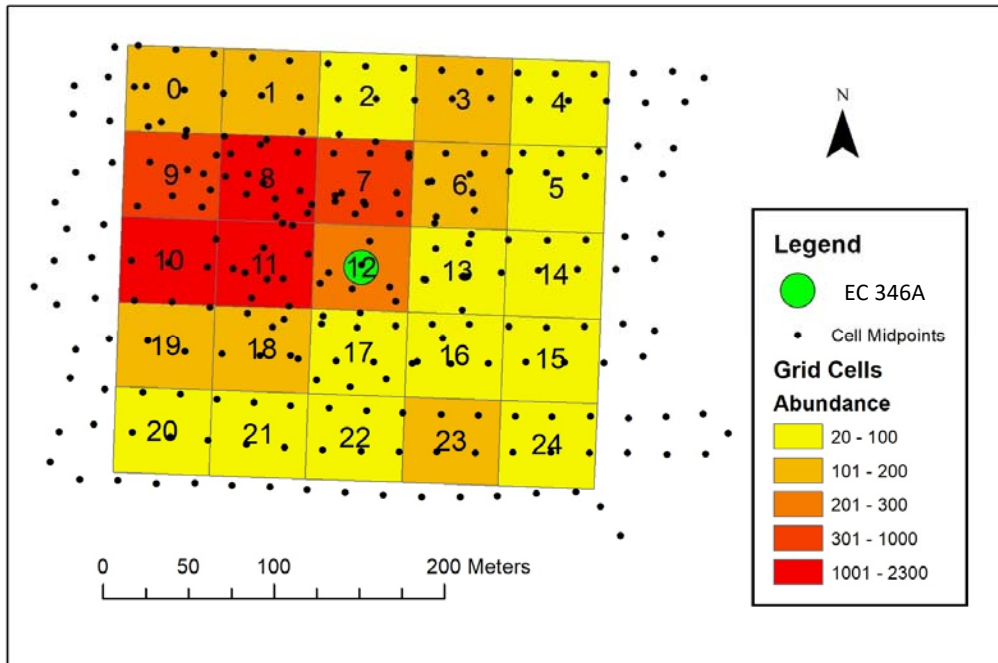
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VALUE DETERMINATION/BIOLOGICAL SURVEY

- HYDROACOUSTIC SURVEY
 - Blue Latitudes developed the protocols for the survey.
 - Blue Latitudes conducted hydroacoustic survey on September 14, 2023
 - Blue Latitudes evaluated the data and developed a report.
- SURVEY PROCEDURE
 - Survey followed parallel transect pattern
 - Sampling area = 250m x 250m



FISH (Density)

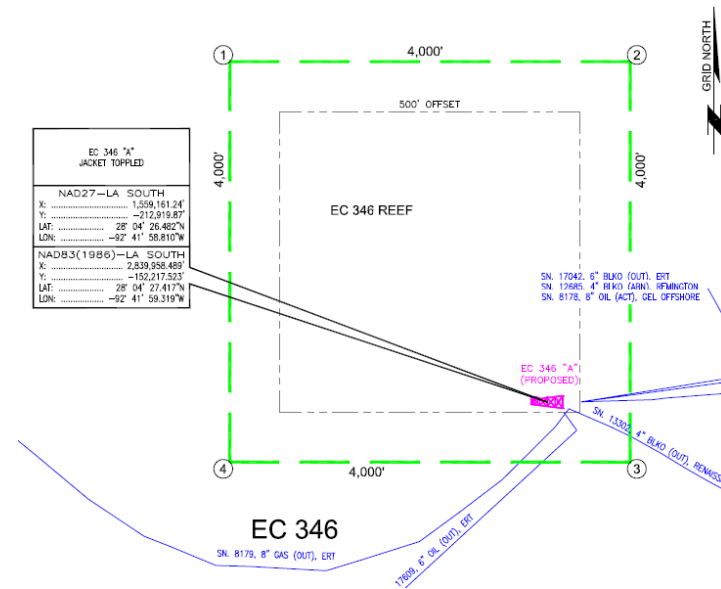


8,041 fish captured by hydroacoustic survey

- Most abundant species were Atlantic creolefish, Bermuda chub, jack spp. and snapper spp.
- Highest density of fish were around the platform
- Abundances comparable to those documented in previous studies

ADDITIONAL FINDINGS & NOTES

- Large school (77 individuals) of scalloped hammerheads observed during both September and November surveys.
- The marine life communities are distinctly different than those found on the surrounding sea floor
- Facility is in fine condition, robustly-built, and fairly “young” as GOM structures go.
- Immediate potential reef expansion:
 - EC 339 A
 - Removal scheduled for 2025
 - 3-Pile, 267’ Water Depth, Installed 2007
 - EC 345 A
 - Removal scheduled for 2025
 - 3-pile, 322’ Water Depth, Installed 2001



SUMMARY

- The marine life observed on EC 346A was both **abundant** and **diverse**.
- The invertebrate communities were comprised of several species of corals and sponges that provide **habitat for commercially important fish** species.
 - Notably **six federally managed species** including gray snapper, greater amberjack, red snapper, scamp, vermilion snapper, and Warsaw grouper were observed
- The marine life on the structure was **distinctly different than the surrounding seabed**.
- EC 346 could be a potential reef site to at least two other platforms within the next two years.



TALOS
ENERGY



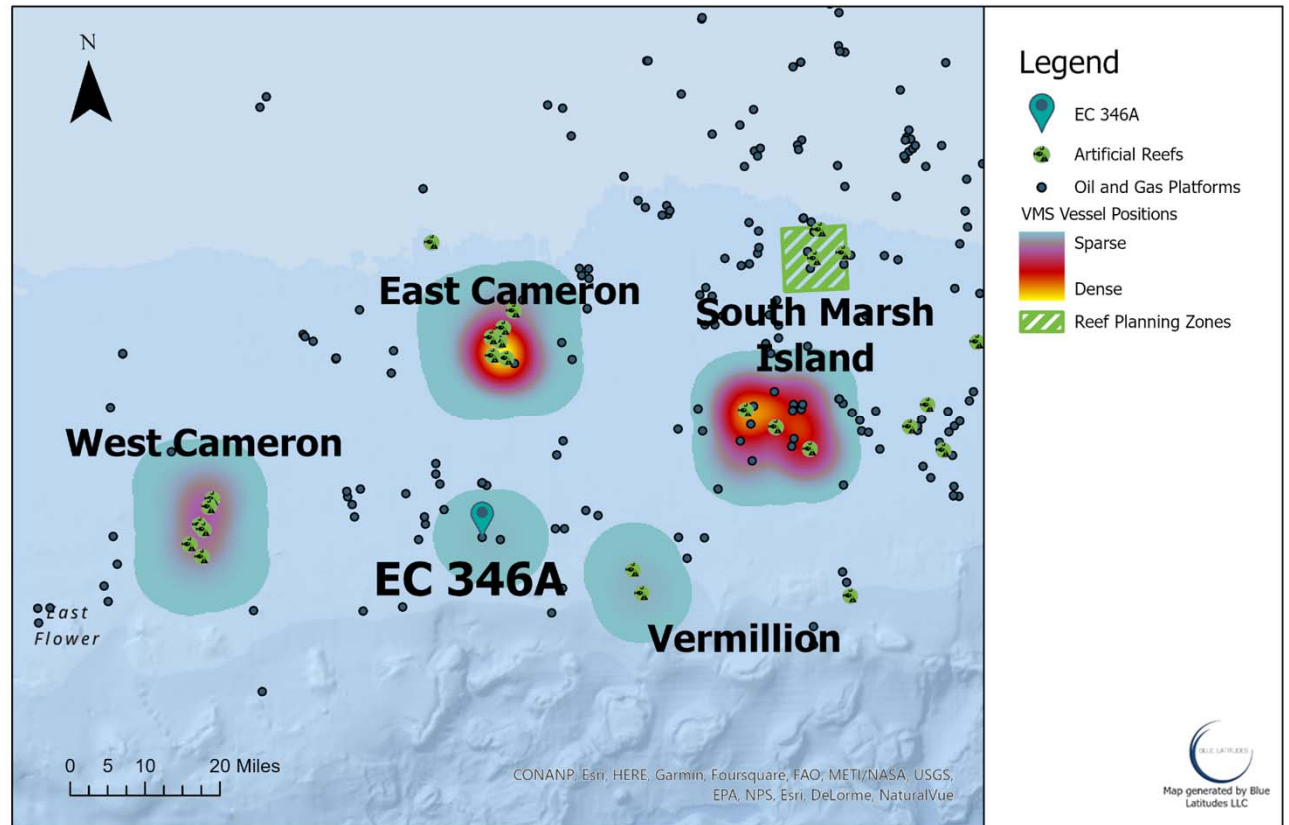
TALOS
ENERGY

Fisheries and Navigational Assessment

SARS Criterium assessed: designation would provide benefit to recreational and/or commercial fishing, or fish habitat.

Commercial Activity

- Some commercial fishing activity occurs at the Site
- Benefit to commercial fisheries species likely due to limited fishing pressure
- Commercial reef fish activity comparable to the Vermilion reef sites
 - If reefed, could expect similar function as seen at Vermilion



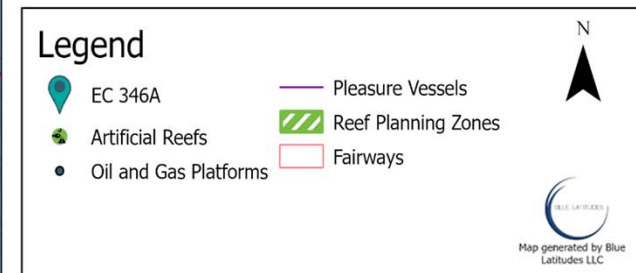
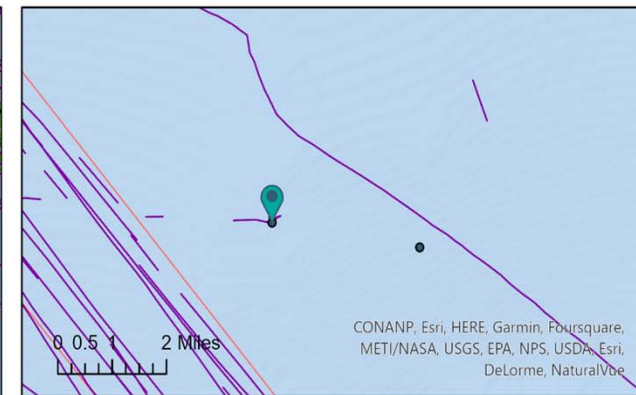
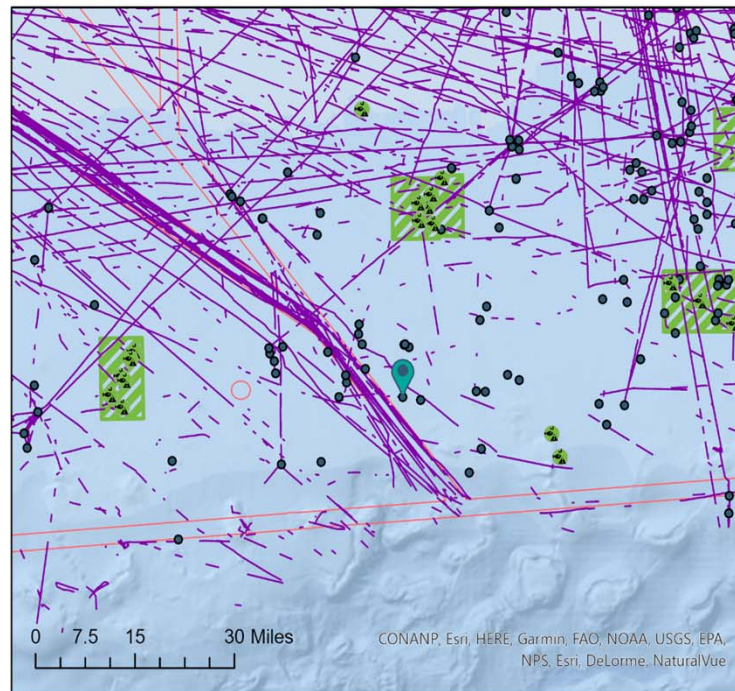
Fisheries and Navigational Assessment

SARS Criterium assessed: designation would provide benefit to recreational and/or commercial fishing, or fish habitat

Recreational Activity

- >1% classified as 'pleasure' vessels
- Average one-way distance traveled by recreational fishers = 35 nmi
- Charters may run up to 100 nmi for pelagic species
- Site is likely to have limited recreational activity
- Benefit to recreational fisheries species due to limited fishing pressure

*recreational data is limited, therefore recreational activity may be underestimated

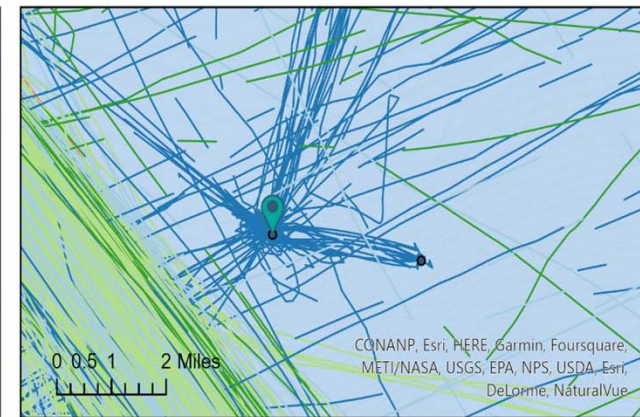
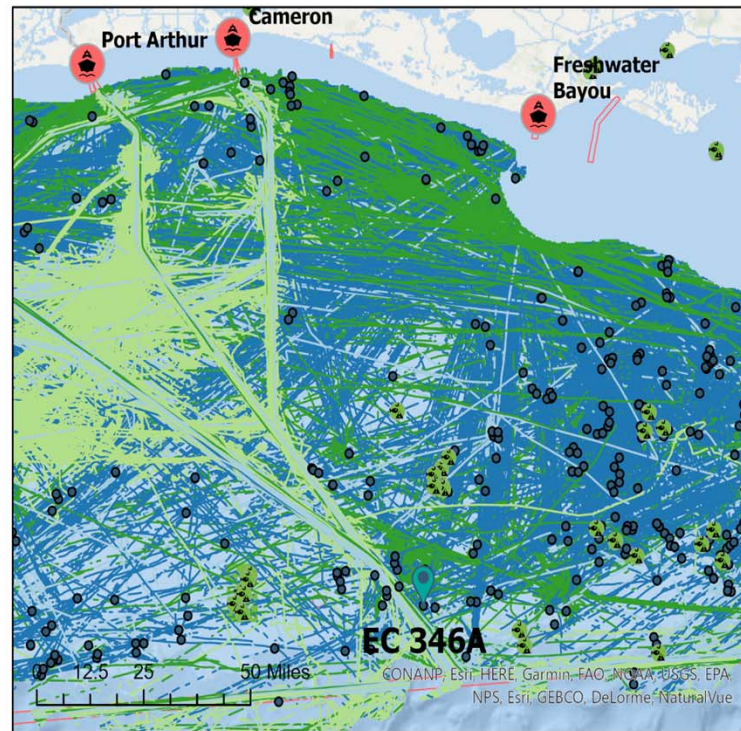


Fisheries and Navigational Assessment

SARS Criterium assessed: Designation as a SARS would not pose a threat to navigation

Vessel Traffic

- ~1.5 nmi to nearest shipping lane
- Infrequent vessel traffic
 - Majority of historic vessel traffic around the site were vessels directly servicing EC 346A



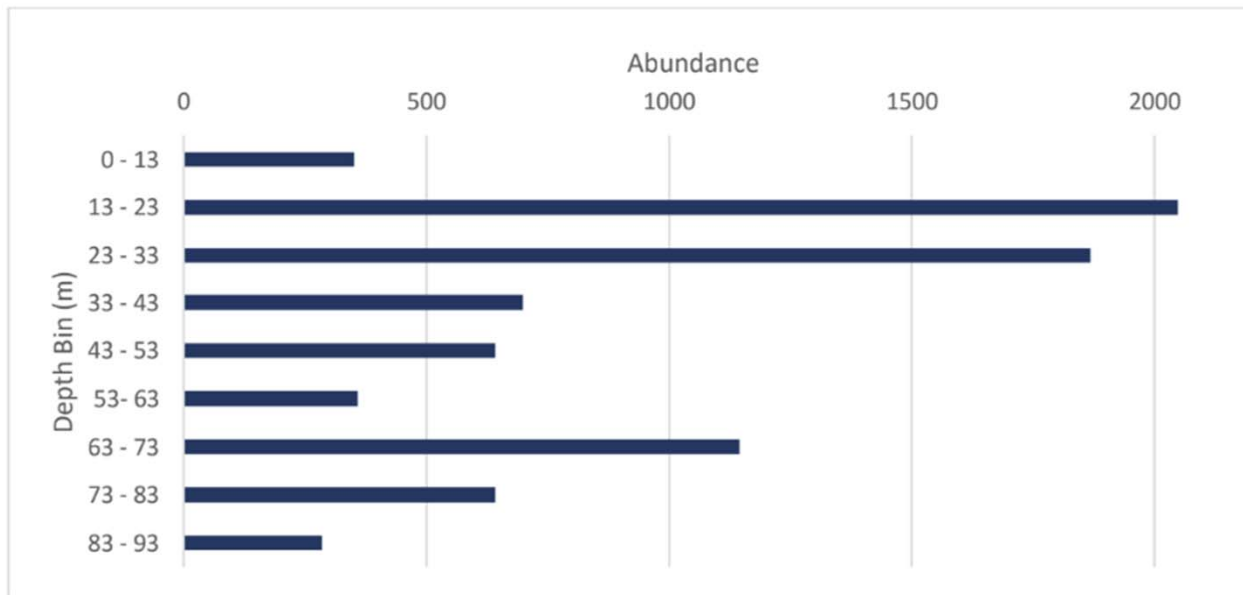
Legend

- | | |
|-----------------------|-----------|
| Ports | Fairways |
| EC 346A | Tanker |
| Artificial Reefs | Tug/Tow |
| Oil and Gas Platforms | Cargo |
| Reef Planning Zones | Passenger |

N

Map generated by Blue Latitudes LLC

FISH (VERTICAL DISTRIBUTION)



- Abundance highest between 13 – 33 m (schools of Atlantic creolefish, Bermuda chub, horse-eye jacks, yellow jacks, among other species)
- Peak again between 63 – 73 m (red snapper, groupers, and Atlantic creolefish)
- If reefed in place via toppling, the reef will continue to support snappers (e.g., red and gray snapper), groupers (e.g., Warsaw), jacks (e.g., greater amberjack), Atlantic creolefish, Oculina and Antipatharian corals, and sponges, among other species of fish and invertebrates