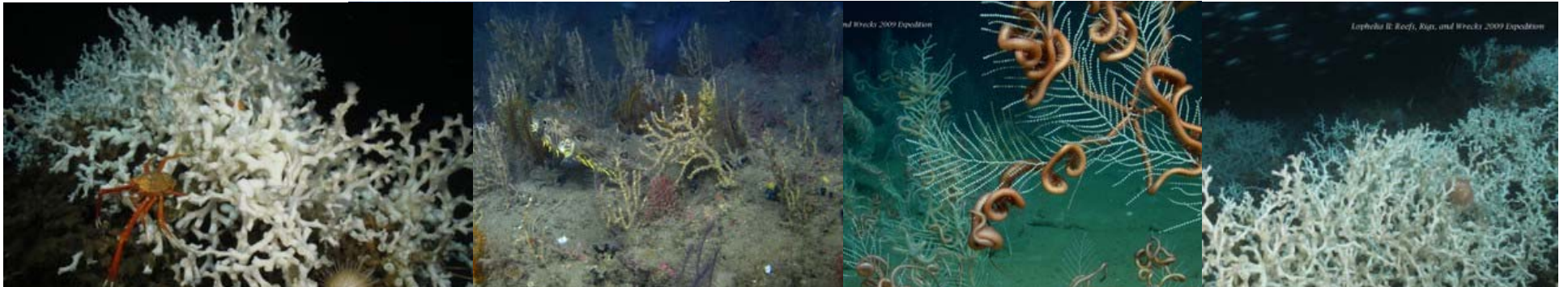




Tab N, No. 4

Coral Biology



Life in the Deep

Shallow

- LIGHT!
- Low nutrient-zooxanthellae
- Dynamic environment
 - Temp, salinity, etc.
 - Human forces



Deep

- No light!
- Low nutrient
- Slow growing (generally)
- Static environment
 - dark, low oxygen, cold 5-12°
 - High susceptibility



Mesophotic Corals

- Twilight zone
- Low light
- Edge habitat between shallow water corals and deep corals
- FGBNMS



Stony Coral

- ~80 species in the GOM database (not all deep)
- Reef building
- May be solitary



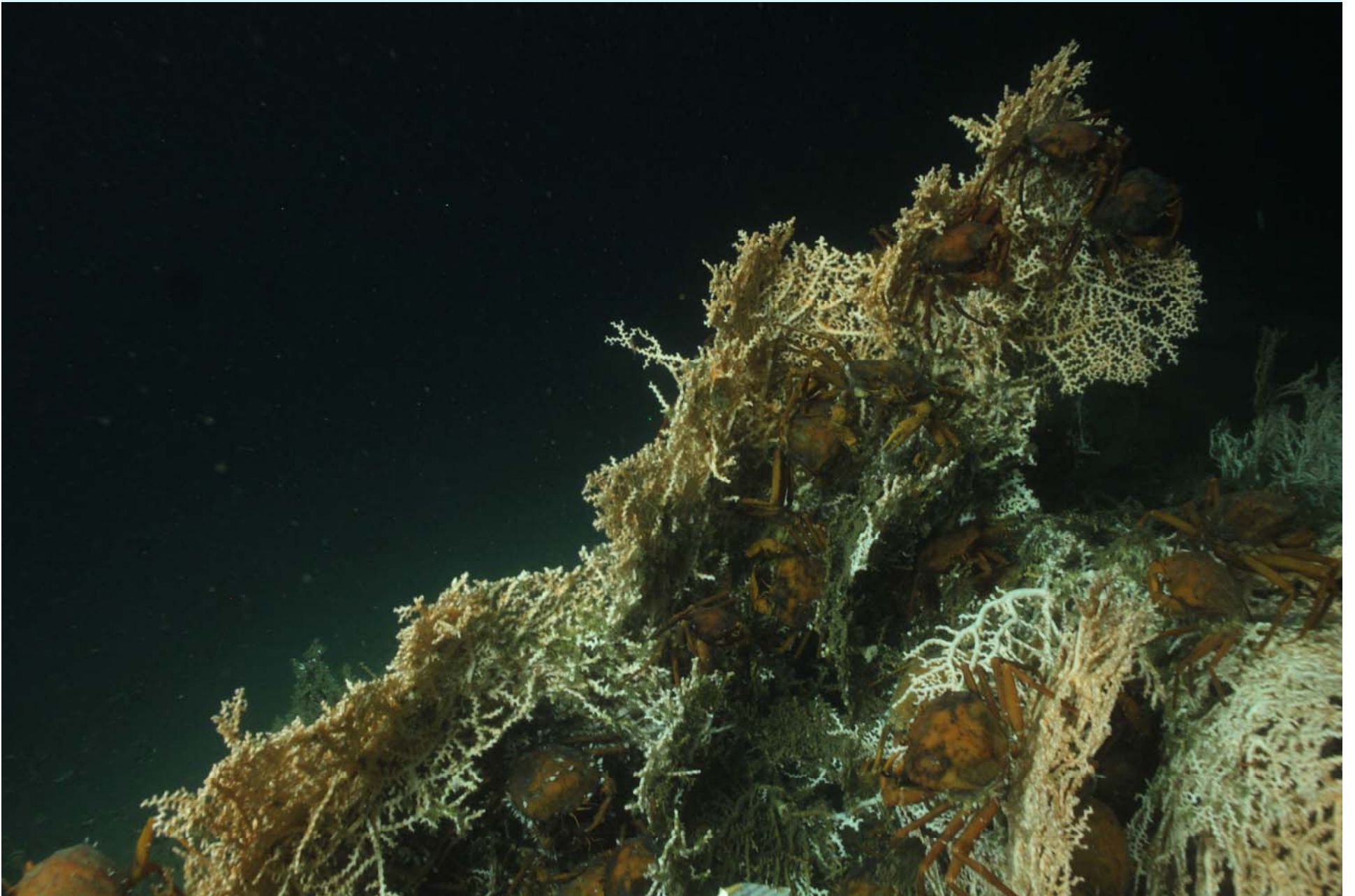
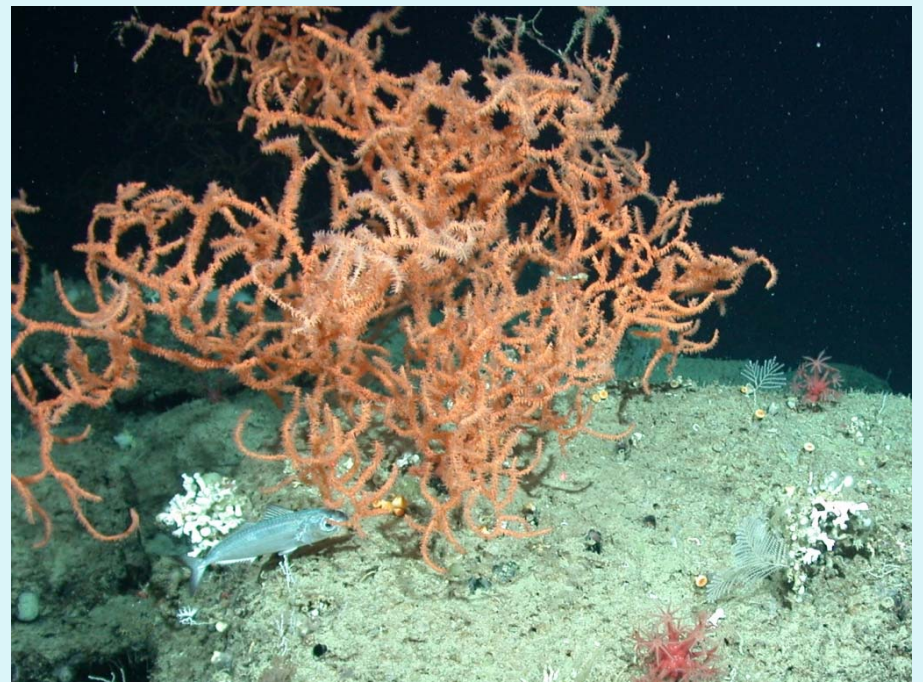


Image courtesy E. Cordes

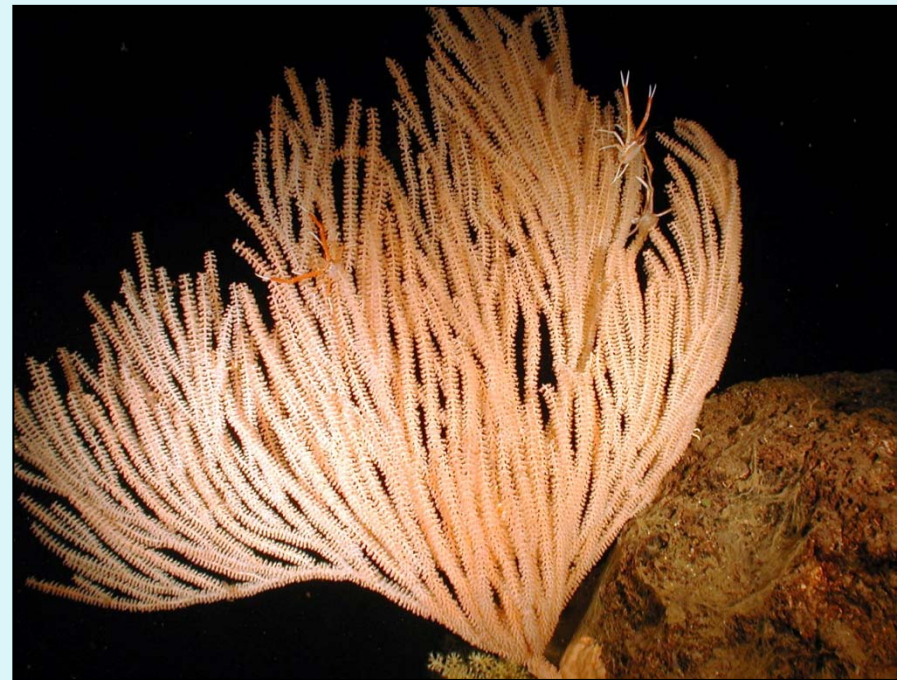
Black Coral

- ~50 species in the GOM database
- Black skeleton
- Both hard and soft substrates



Octocorals/Sea Fans

- > 145 species in the GOM database
- Not in the FMU
- Soft sediment/hard substrate



Benthic Boundary Layer

- What is it?
- Why do organisms need it?
- What do corals do?



Habitat for Other Species

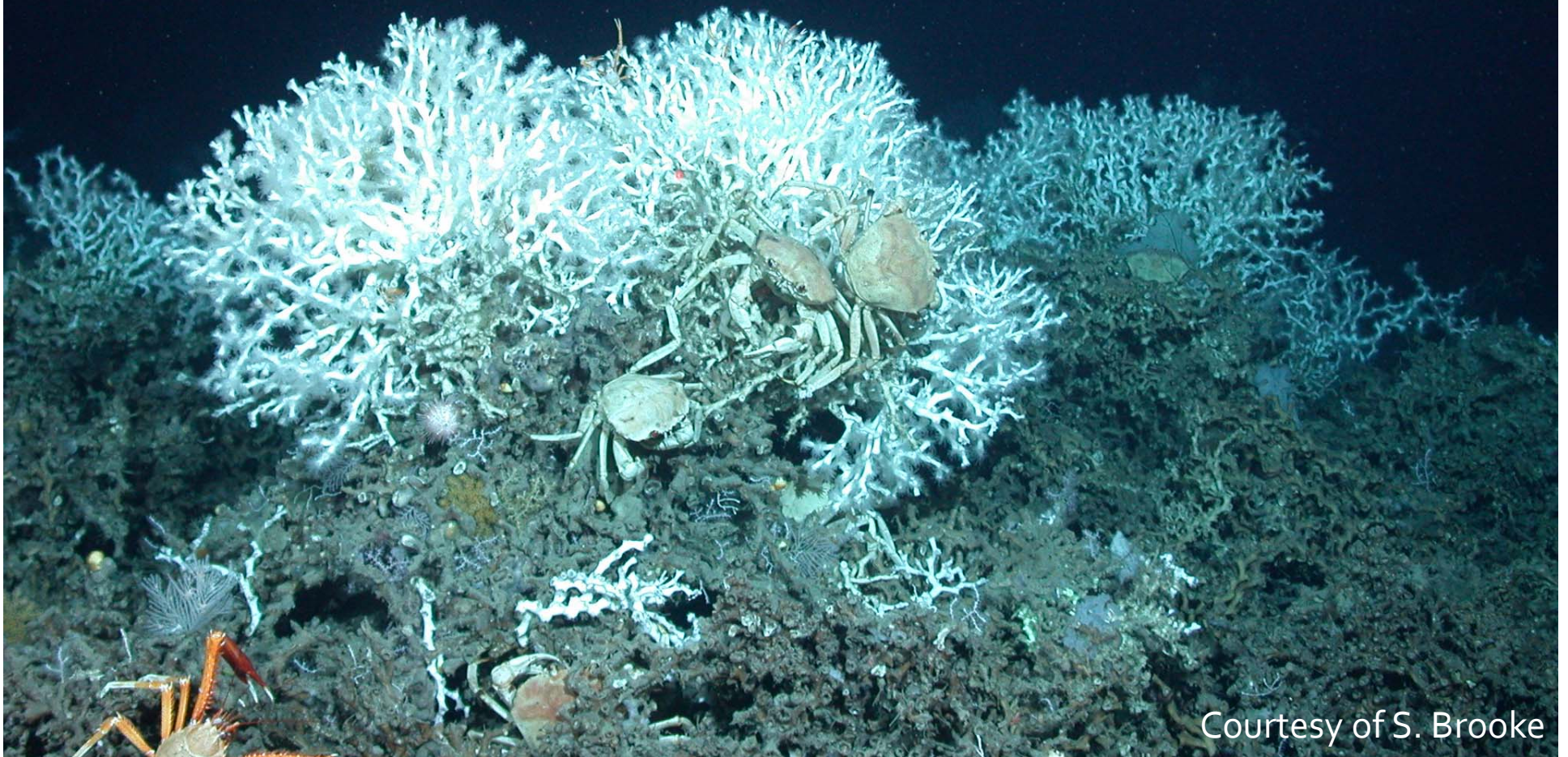
- Catsharks
 - Golden crabs
 - Snowy grouper
 - Blackbelly rose fish
- And more!



Image courtesy E. Cordes



Golden crab fishery



Courtesy of S. Brooke

Other Coral Fun Facts

- Pharmaceuticals- Coral reef associated species (esp. sponges)
- Ages- black, stony, octocoral
- Increase in the number of cruises (one scheduled for 2017!)
- Challenges to studying the Deep
 - \$\$

2015

- <http://oceanexplorer.noaa.gov/explorations/15pulleyridge/welcome.html>
- <http://oceanexplorer.noaa.gov/explorations/15biolum/welcome.html>
- <http://oceanexplorer.noaa.gov/explorations/15nautilus/welcome.html>

2014

- <http://oceanexplorer.noaa.gov/explorations/14pulleyridge/welcome.html>
- <http://oceanexplorer.noaa.gov/oceanos/explorations/ex1402/welcome.html>
- <http://oceanexplorer.noaa.gov/explorations/14nautilus/welcome.html>
- <http://oceanexplorer.noaa.gov/oceanos/explorations/ex1403/welcome.html>



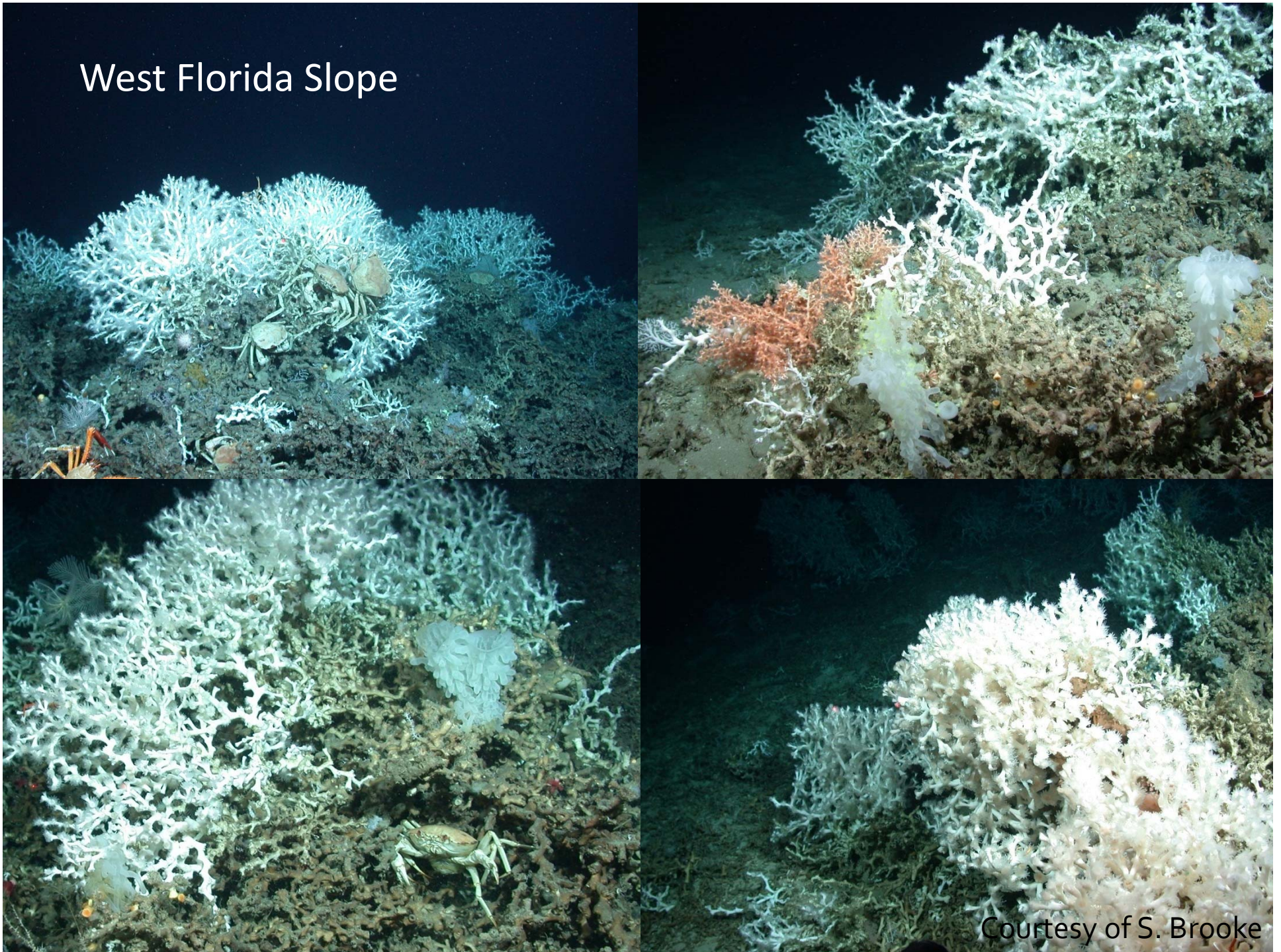


Coral Habitat Suitability Model

- Developed by NOAA
- When ground-truthed, held up in NEA
- <http://noaa.maps.arcgis.com/apps/webappviewer/index.html?id=99832718e8aa46c9a1b203578613341e>

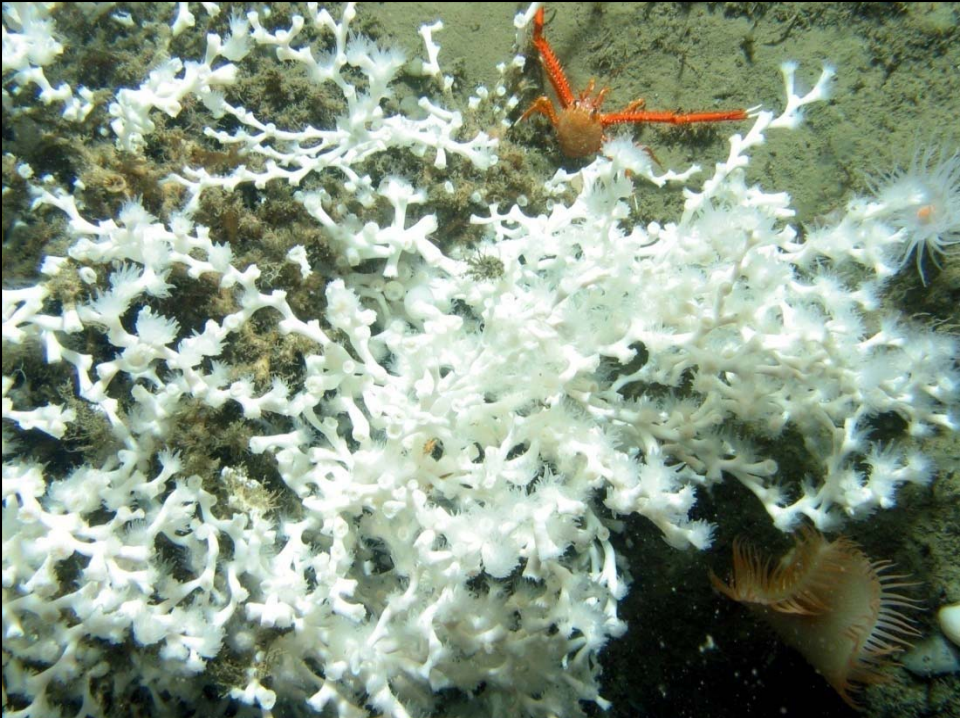
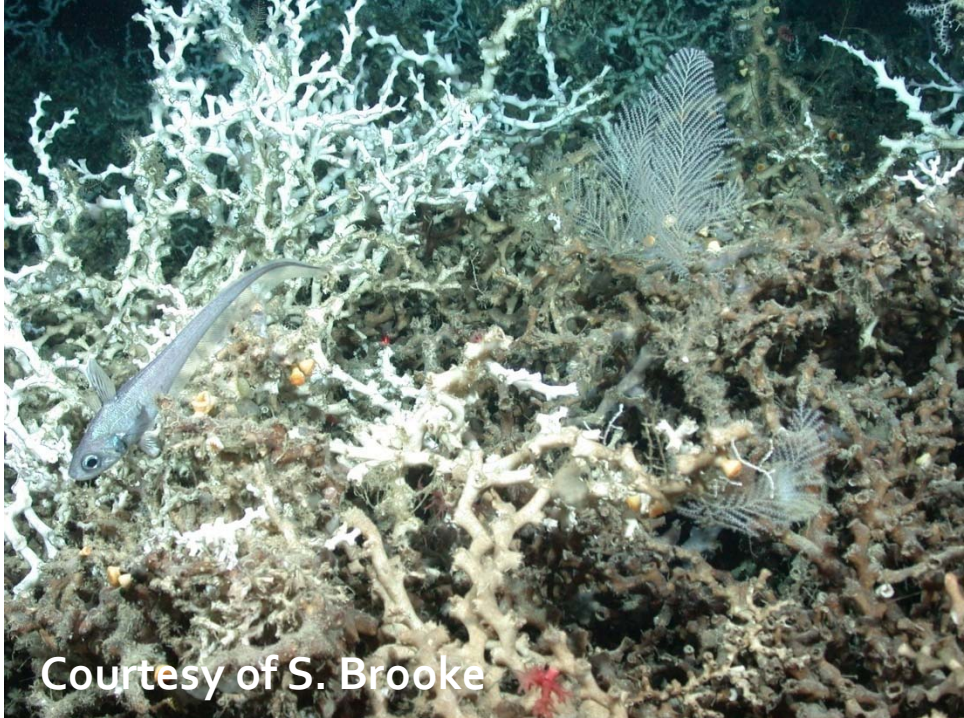
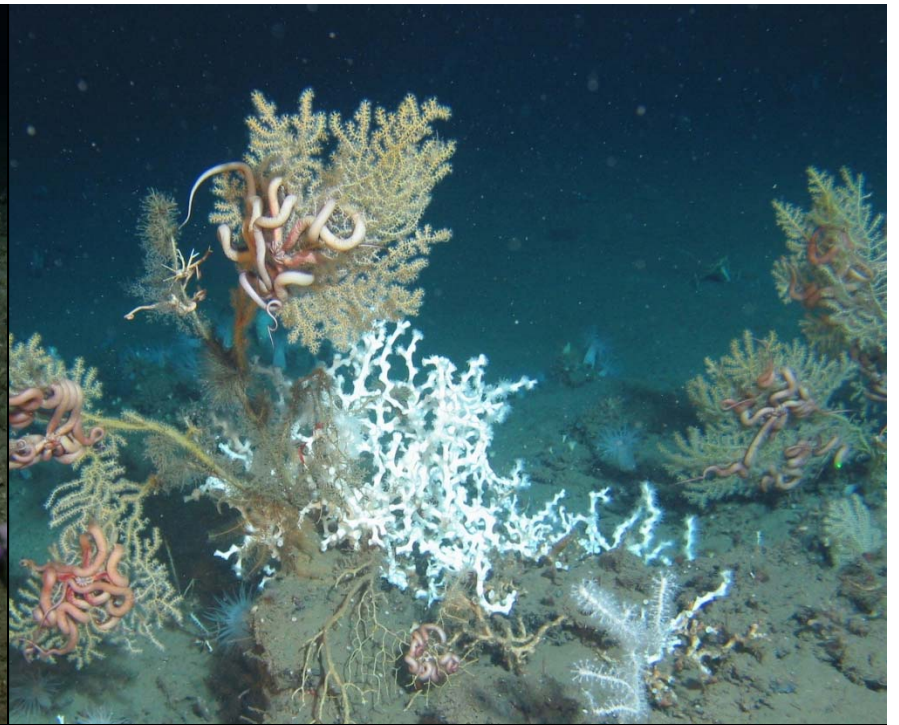
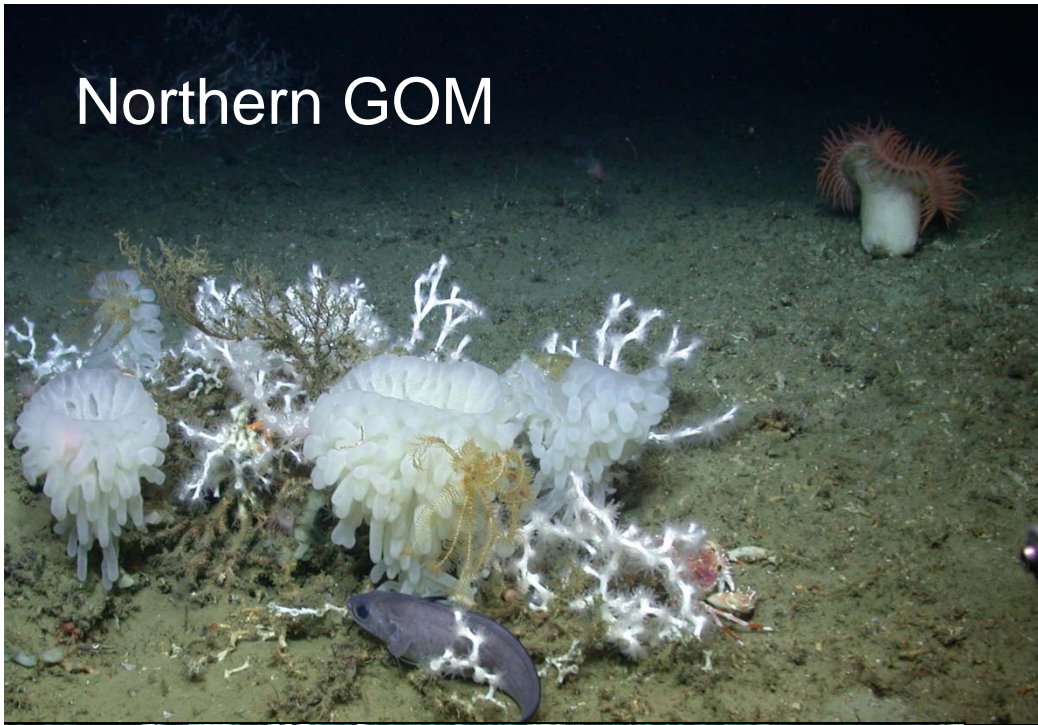


West Florida Slope



Courtesy of S. Brooke

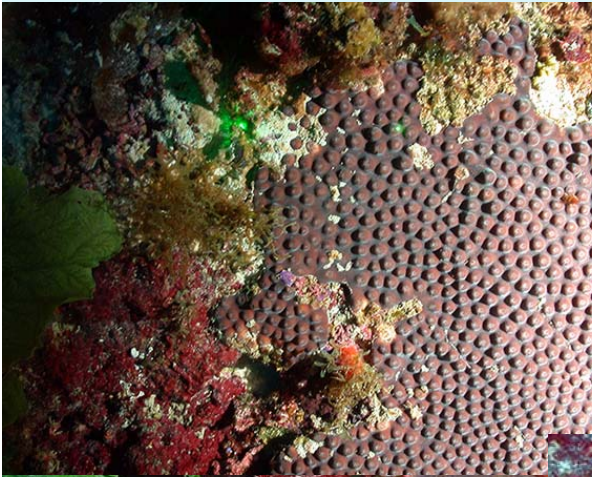
Northern GOM



Courtesy of S. Brooke

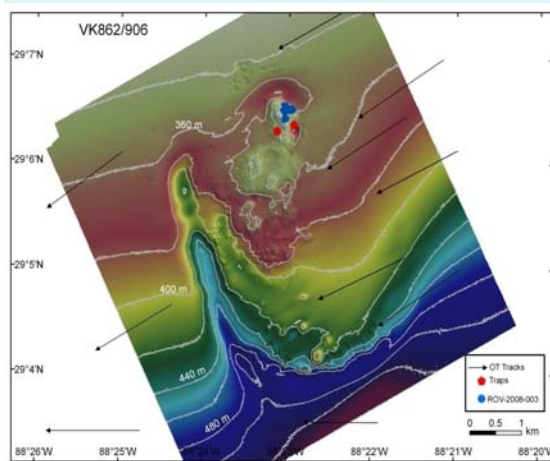
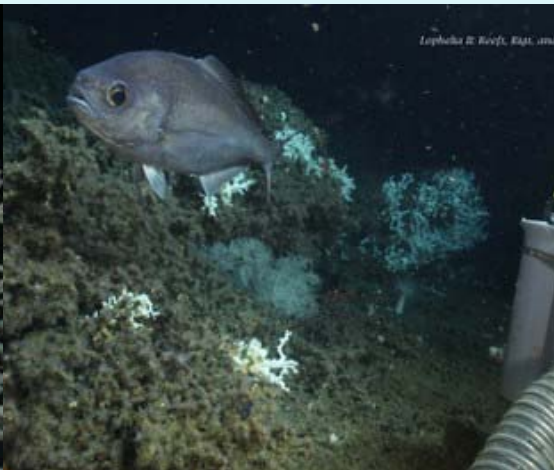
Pulley Ridge Photos

- Mesophotic

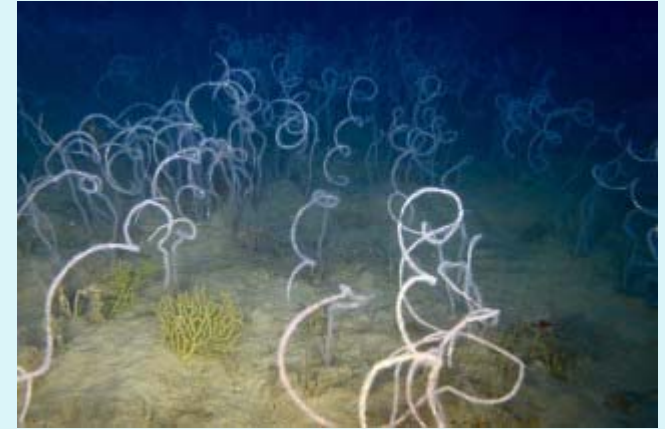
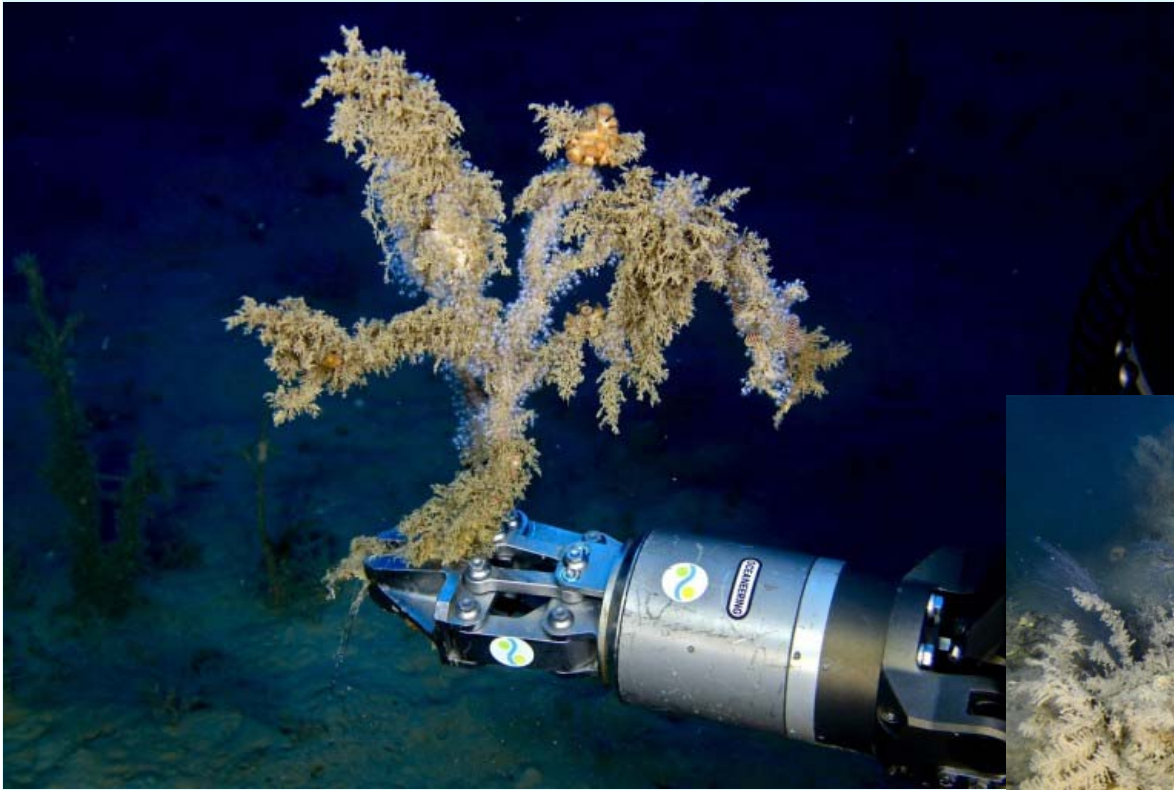


Viosca Knoll/Northeastern Gulf

- <https://youtu.be/VpKAOHQV2JE>



South Texas Banks



Photos from: South Texas Banks Expedition (Schmidt Ocean Institute)

Evidence of Fishing Gear



Images courtesy of E. Cordes

Gulf Council Data Portal

Coral portal website: <http://portal.gulfcouncil.org/>

- Online mapping for review, discussion, and decision making
- Improved access to the 'data' supporting management decisions
- Explore distribution and diversity patterns of corals in the Gulf of Mexico
- GIS data download capabilities
- View individual coral record information (Name, Species, Depth, and Source)



The screenshot displays the Gulf Council Portal website. At the top, there is a banner with the Gulf of Mexico Fishery Management Council logo on the left, a map of the Gulf of Mexico in the center, and two underwater photographs of coral reefs on the right. Below the banner, the text "Gulf Council Portal" is prominently displayed. To the right of this text is a navigation menu with links for "Map Apps", "NEW", "Blog", "Learning", "Decision Support Tools", "Help Videos", "Coral Literature", "GIS Data Download", and "Contact Us".

Below the navigation menu, the section "Gulf Council Mapping Applications:" is highlighted. It features four application tiles, each with a thumbnail image, a title, a brief description, and a colored button:

- Coral Viewer**: This viewer displays coral locations in the Gulf of Mexico. (Red button)
- Predictive Modeling of Deep-sea Coral Habitat Viewer**: This viewer displays predictive modeling of Deep-sea Coral Habitat in the GOM. (Blue button)
- Coral HAPC Viewer**: This viewer displays Coral Habitat Areas of Particular Concern in the Gulf of Mexico. (Orange button)
- Spiny Lobster Management**: This viewer displays Closed Lobster Areas in the South-east Gulf of Mexico. (Green button)

At the bottom of the page, there is a dark footer bar with icons and text for "Links", "Connect With the Gulf Council", and "Gulf Council News".

