

Flower Garden Banks National Marine Sanctuary Boundary Expansion Workshop

Informal Historical Perspective Bright Bank Geyer Bank Sonnier Bank



M/V *Black Seal* used for launch
Of DSRV *Diaphus*, 9/1978
Image by G. Boland



M/V *Fling* at mooring (G. Boland)

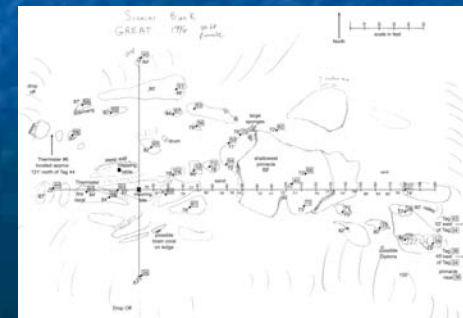
by

Greg Boland

Sonnier Bank Monitoring
Study map initiated by
Gulf Reef Environmental Action Team (GREAT)
1996

Minerals Management Service

July 19, 2007



Bright Bank Images

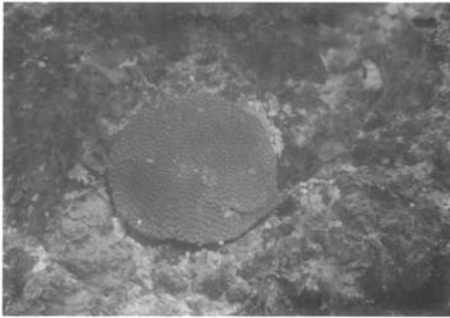
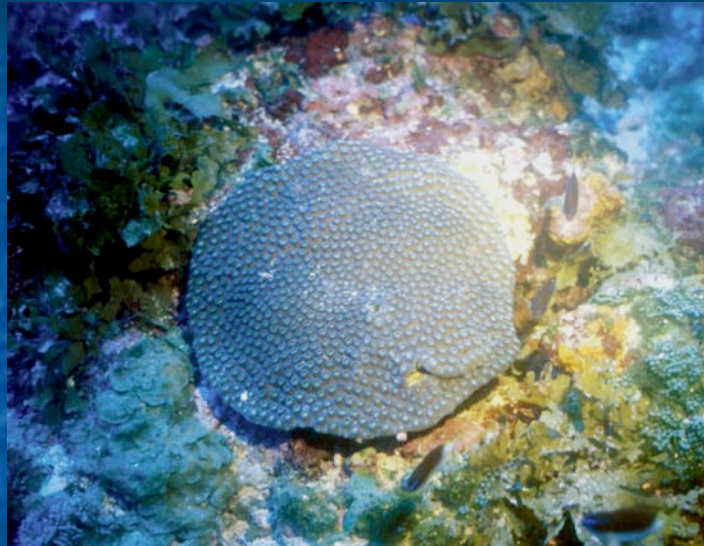


Figure VI-8. Bright Bank. Flat crust of the coral *Montastrea cavernosa* at 52 m depth. The crust is approximately 1 m in diameter. Abundant growths of the large-bladed Brown alga occur in the upper left and lower right, along with the grape-like masses of *Caulerpa* and what appears to be an adherent *Padina*-like alga in the lower left.



Figure VI-9. Bright Bank. *Lobophora variegata* almost totally covering algal nodules in Algal-Sponge Zone. Saucer-shaped Agariciid coral in center (approx. 8 cm diameter).



Figures from Bright and Rezak (1978)
Slide scan from same coral,
Montastrea cavernosa.



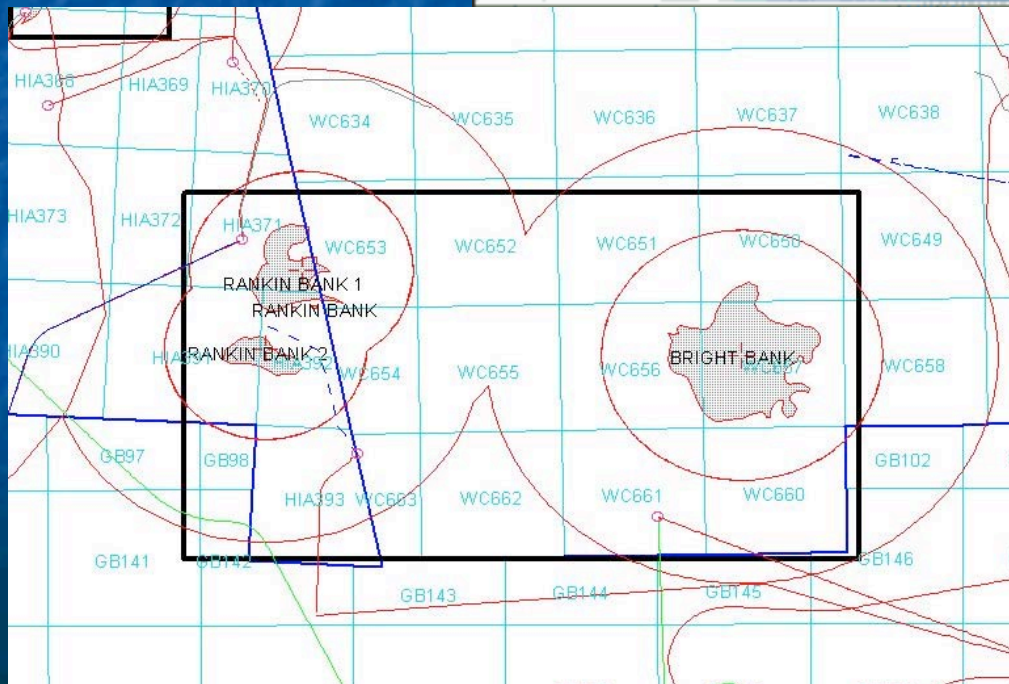
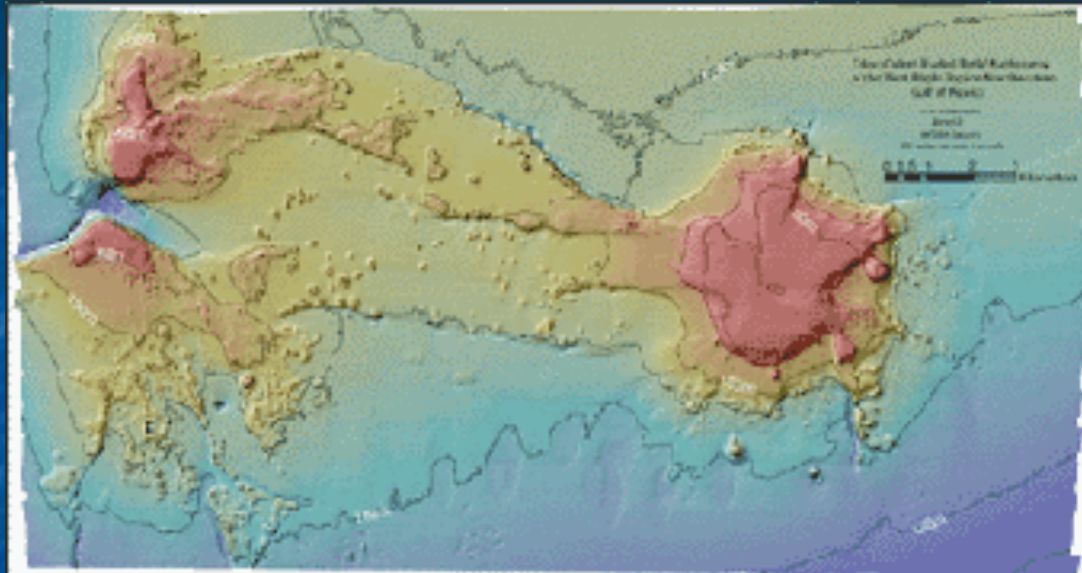
Clint Moore inside treasure hunter's excavation hole. Image by Clay Coleman

Image from 115 ft
Diploria strigosa 5-2007
By G. Boland



Bright/Rankin HAPC

Multibeam bathymetry of
Bright and Rankin Banks
from J. Gardner,
then at USGS



MMS database map
Indicating No Activity Zones,
1 and 3 mile Zones,
existing platforms
existing pipelines



Geyer Bank

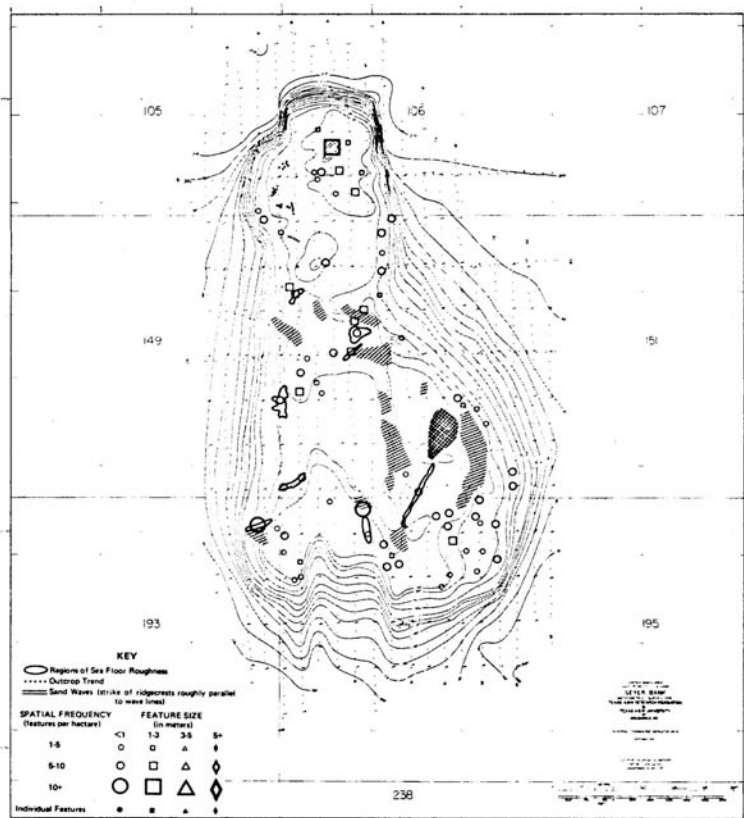
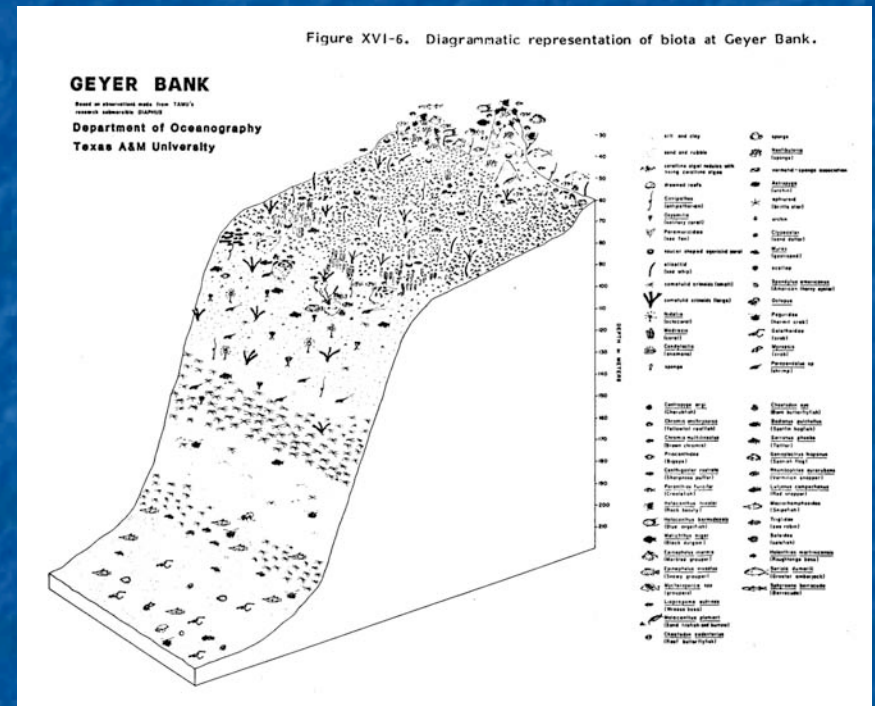


Figure XVI-2. Seafloor roughness, interpreted from side-scan sonar records.

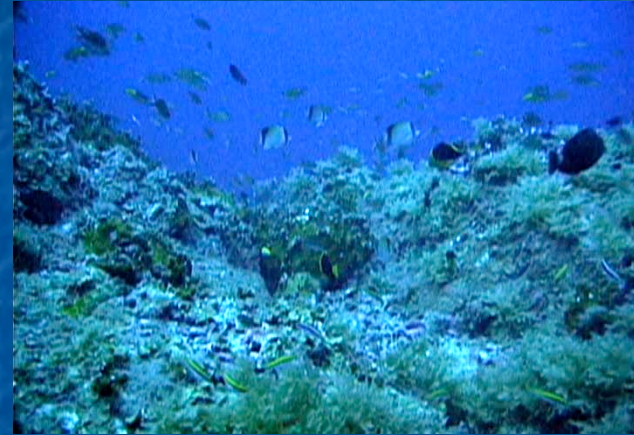


Original Geyer Bank bathymetry map and 3D profile from Rezak and Bright (1981).

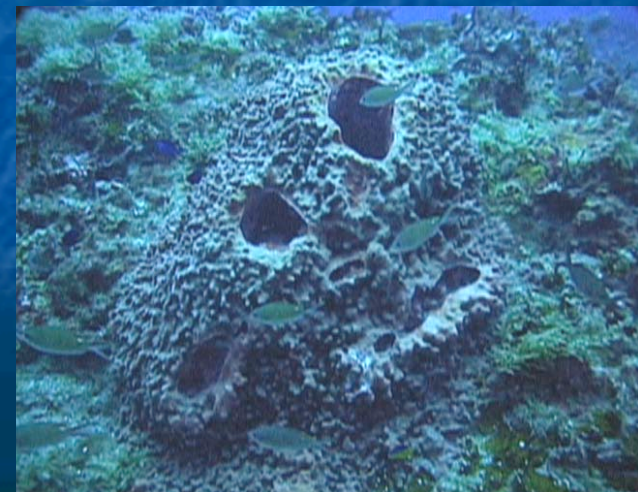
Geyer Bank Images



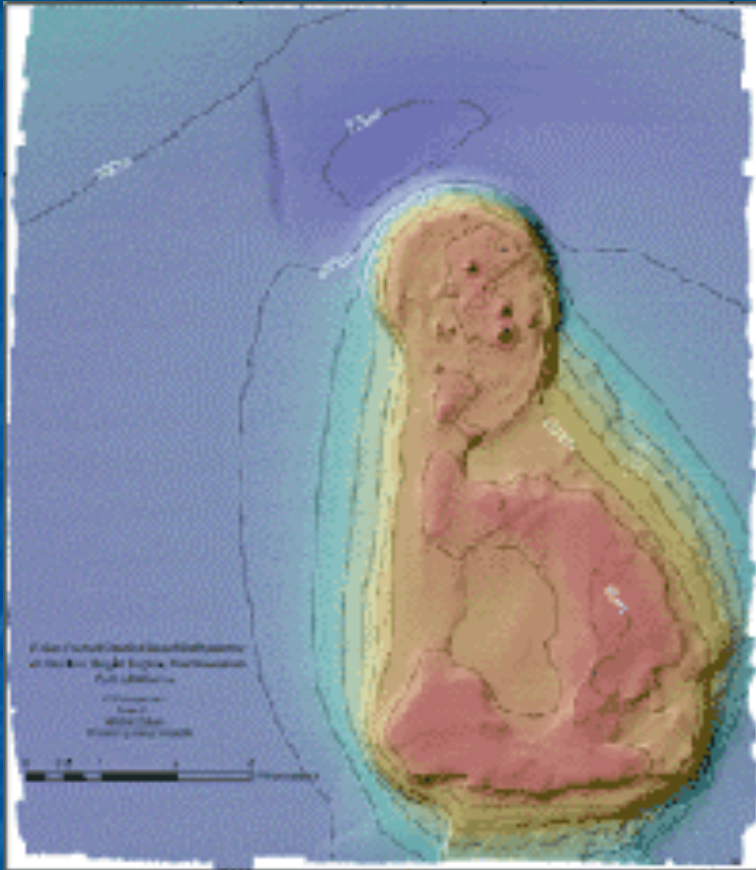
Geyer Bank 2001. Huge population of reef butterflyfish
At depth of 115 ft. Image by G. Boland



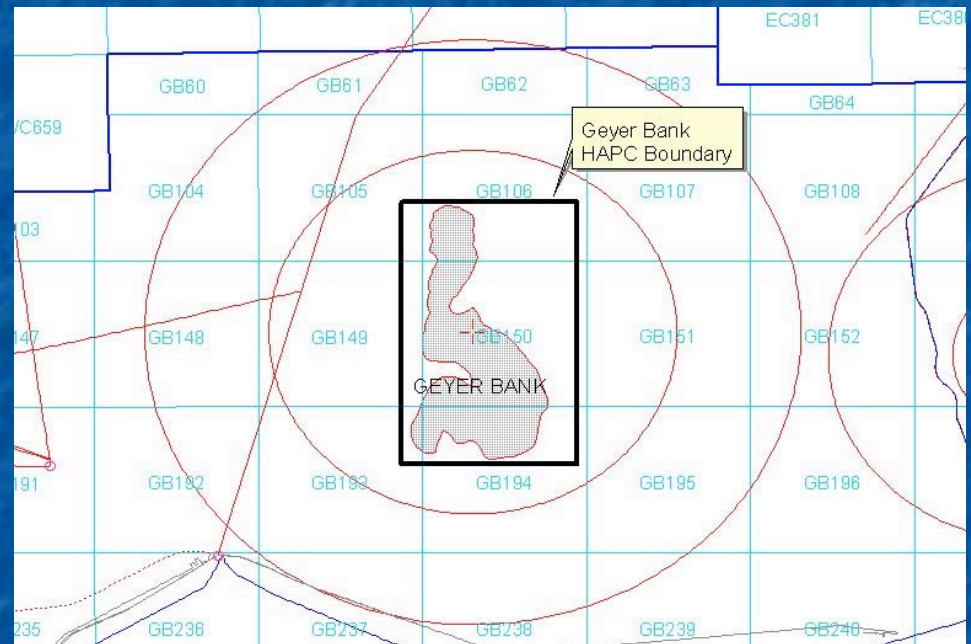
Geyer Bank video frame grabs,
Depth 115 ft. 5-2-2007 by G. Boland



Geyer Bank HAPC



Multibeam bathymetry of Geyer Bank from J. Gardner, then at USGS



MMS database map indicating No Activity Zones, 1 and 3 mile Zones, existing platforms, and existing pipelines

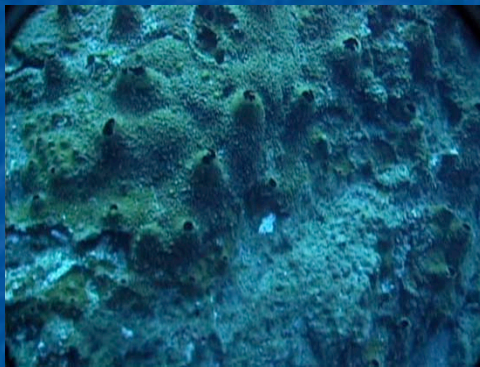


Sonnier Bank Images

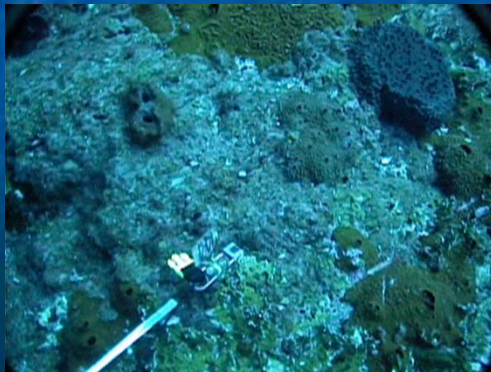
Pre-2005 Hurricanes



1996

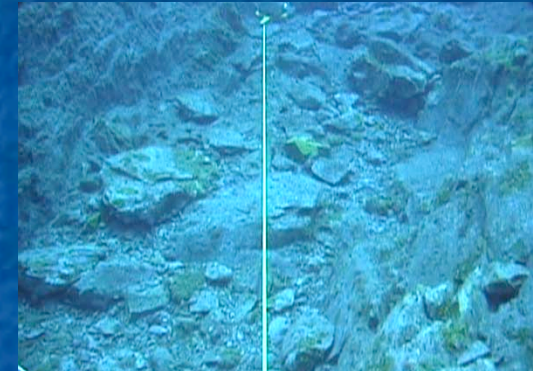


2002



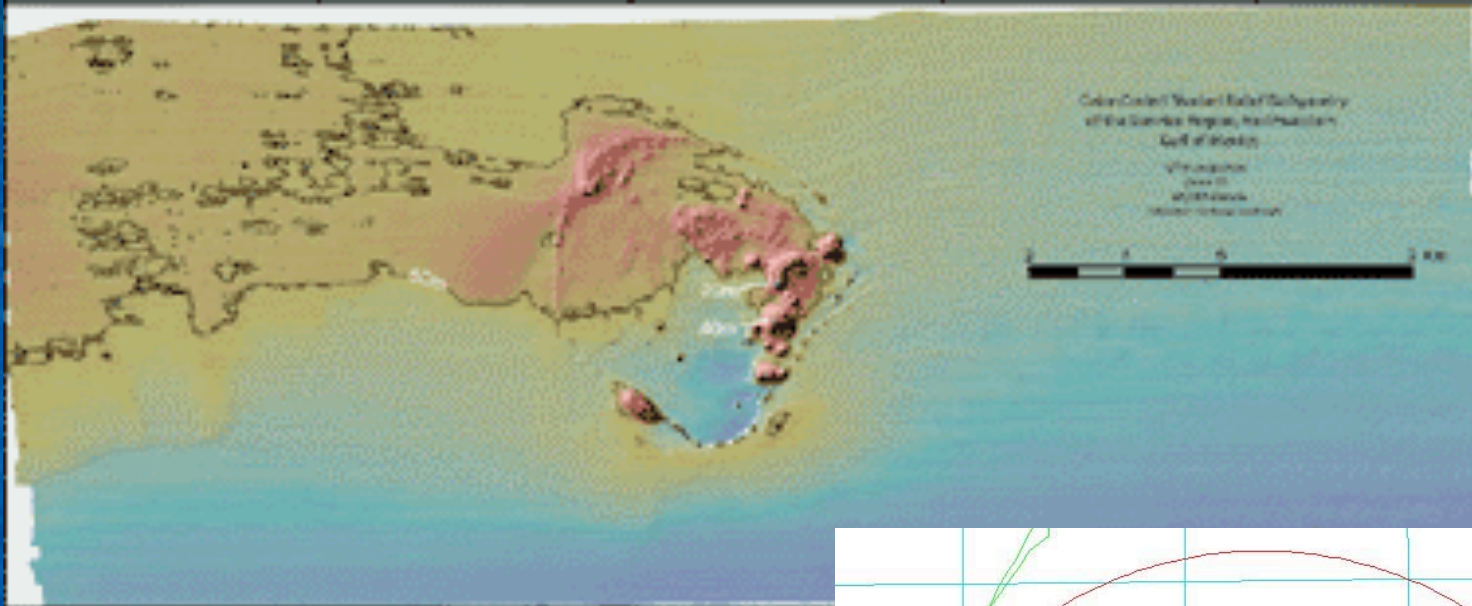
2002

Post-2005 Hurricanes

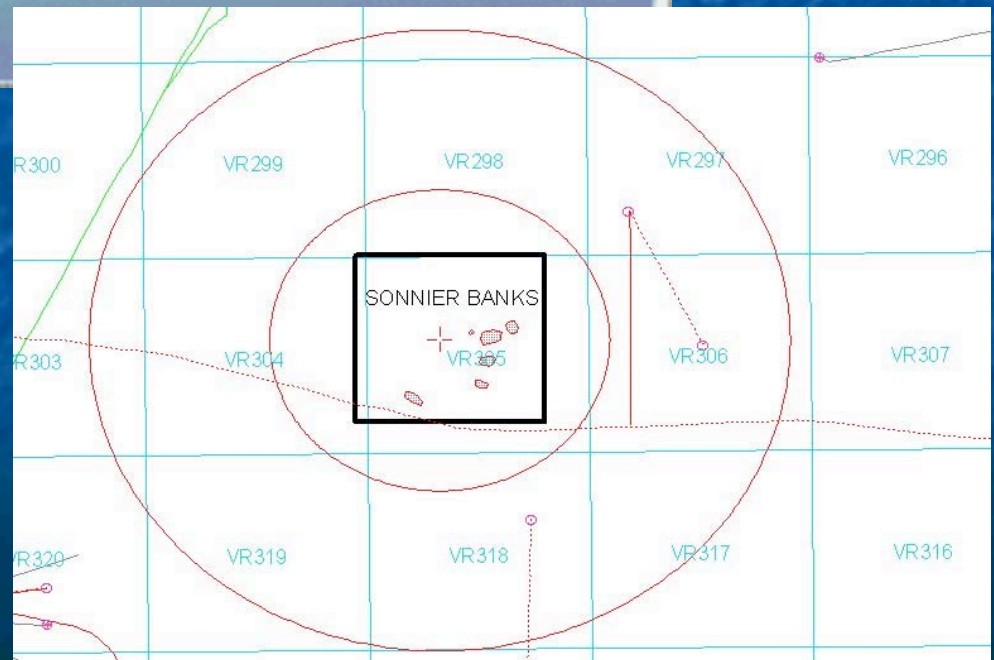


Video frame grabs
from 5-1-2007

Sonnier Bank HAPC



Multibeam bathymetry of Sonnier Bank from J. Gardner, then at USGS

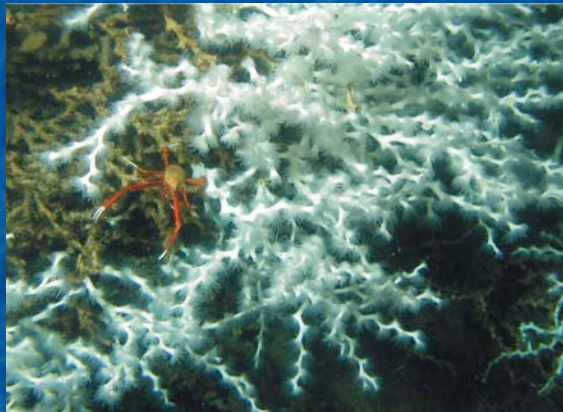
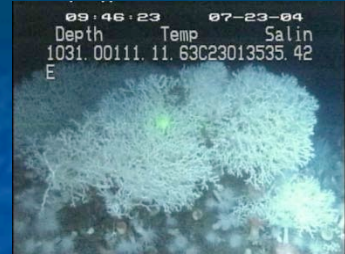


MMS database map indicating No Activity Zones, 1 and 3 mile Zones, existing platforms, and existing pipelines

Deepwater Corals

Deepwater coral habitats in the Gulf of Mexico are a relatively recent discovery

First known from the 1950's but largest known community not discovered until 1991 just east of Mississippi Delta.



Lophelia coral colony at block VK 862, depth 1,500 ft

MMS was first to move forward with multidisciplinary studies investigating the distribution and ecology of deepwater coral communities in the Gulf of Mexico.



8-ft tall black coral tree at VK 862, depth 1,016 ft

Management Implications:

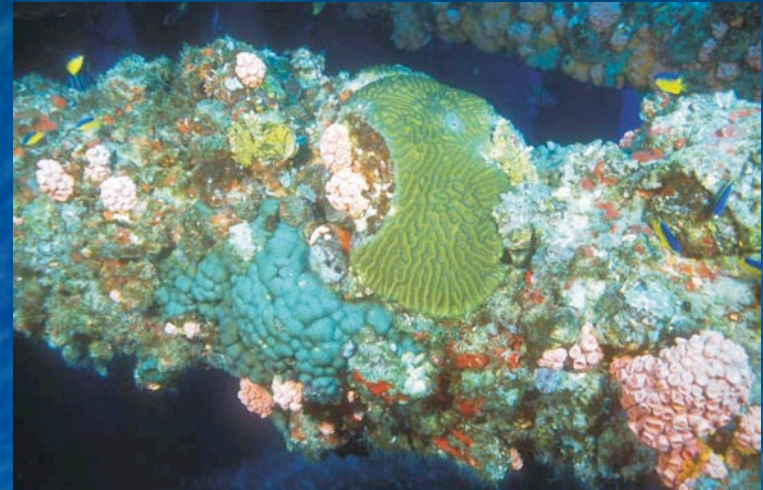
- **MMS involved in funding research of the resource from the beginning but not just for the science. Study results serve to fulfill the MMS mission of environmental protection.**
- **Direct use of information in modification of existing Notice to Lessees; adaptation of policy using science results as they are obtained.**



Platforms?



Diploria strigosa HIA 389 A (inside FGB Sanctuary) (Boland 2002)



Diploria strigosa and *Madracis decactus* WC 643 (Sammarco et al. 2004).



Montastrea cavernosa WC 643 (Sammarco et al. 2004).



Black coral *Plumapathes pennacea* WC 630 (Boland and Sammarco 2005)

References

- Boland, G.S. 2002. Fish and epifaunal community observations at an artificial reef near a natural coral reef: Nineteen years at High Island platform A-389A, from bare steel to coral habitat. Proceedings: Gulf of Mexico Fish and Fisheries: Bringing together new and recent research. New Orleans, LA October 24-26, 2000. MMS 2002-004 p 372-392.
- Boland, G.S. and P.W. Sammarco. 2005. Observations of the antipatharian “black coral” *Plumapathes pennacea* (Pallas, 1766) (Cnidaria: Anthozoa), northwest Gulf of Mexico. *Gulf of Mexico Science* 23: 127-132.
- Bright, T.J. and R. Rezak. 1978. Northwestern Gulf of Mexico Topographic Features Study. Final Report to Bureau of Land Management, USDI, contract # AA550-CT7-15. 668 p.
- Rezak, R. and T.J. Bright. 1981. Northern Gulf of Mexico Topographic Features Study. Volume Four. Final Report to Bureau of Land Management, USDI, contract # AA551-CT8-35. 165 p.
- Sammarco, P.W., A.D. Atchison, D.A. Brazeau, G.S. Boland, and D.F. Gleason. 2004. Expansion of coral communities within the northern Gulf of Mexico via offshore oil and gas platforms. *Marine Ecology Progress Series*. 280:129-143.