Science for Marine Spatial Planning

The Flower Garden Banks and MMS: Thirty Six Years of Effective Marine Spatial Management

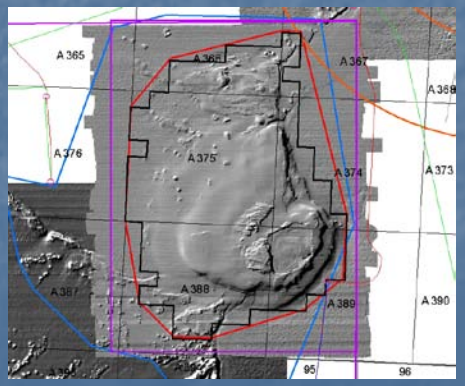
Gregory S. Boland

Biological Oceanographer

Minerals Management Service

Herndon Virginia

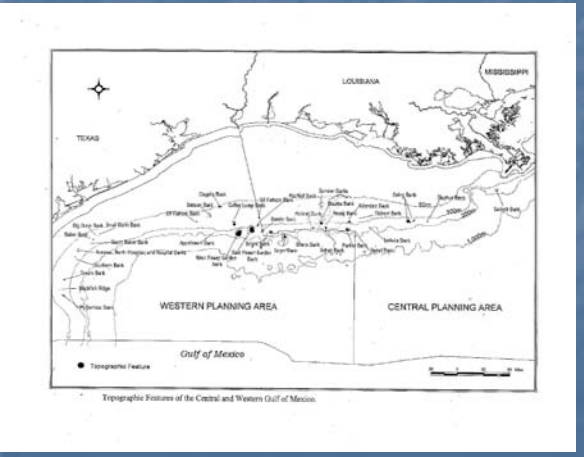
November 16, 2009



MMS

- Minerals Management Service is one of 8 Bureaus of the Department of the Interior
- Mission: Managing the ocean energy and mineral resources on the outer continental shelf of the U.S. while being stewards of the environment.
  - Not specifically fisheries related.

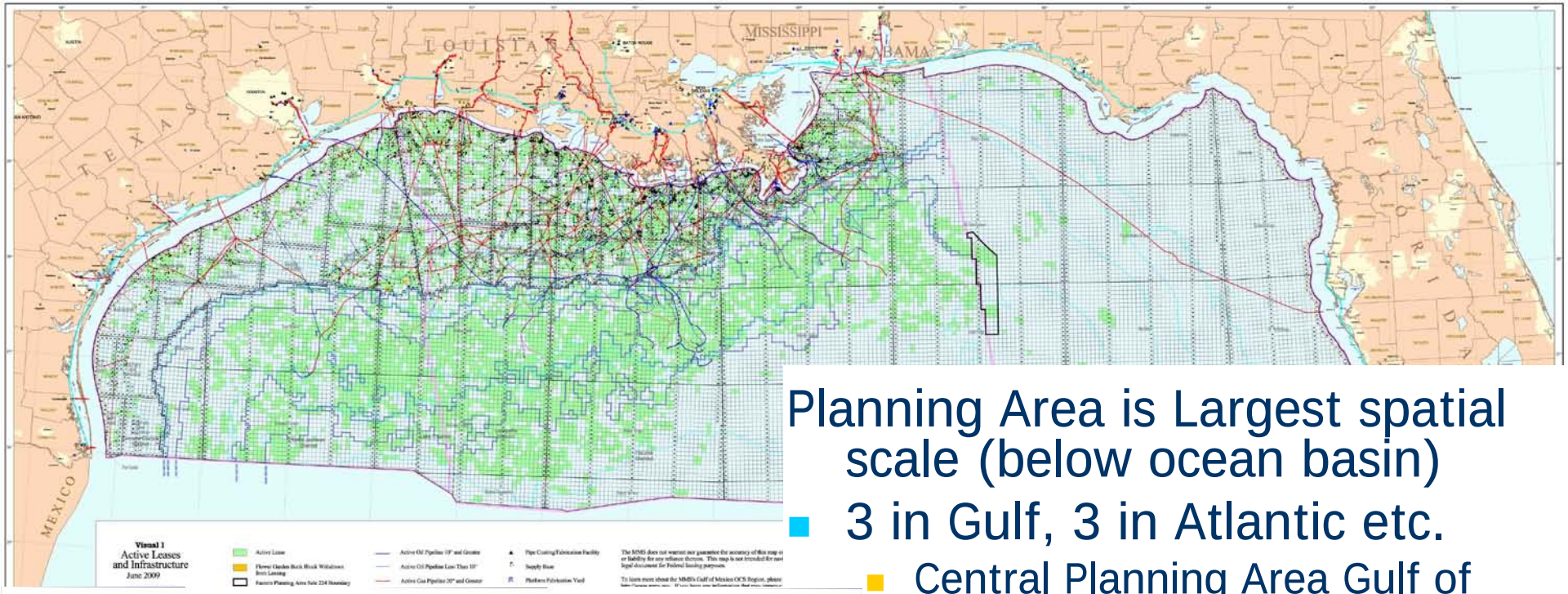
First Step: Explore and Describe the Environment

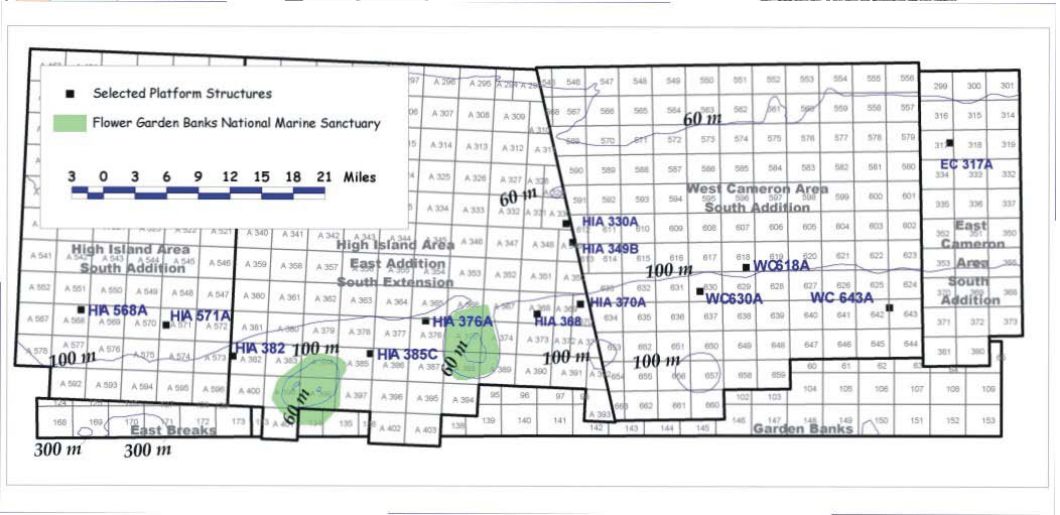


Topographic Features of the Central and Western Gulf of Mexico

- Early studies by MMS (BLM)
  - Baseline studies beginning early 1970s
  - Submersible exploration of all GOM topographic features
- Description of Habitat
- Sensitivities to Impacts
- Process Studies
  - Chemical
  - Physical Transport

Spatial Planning Scales



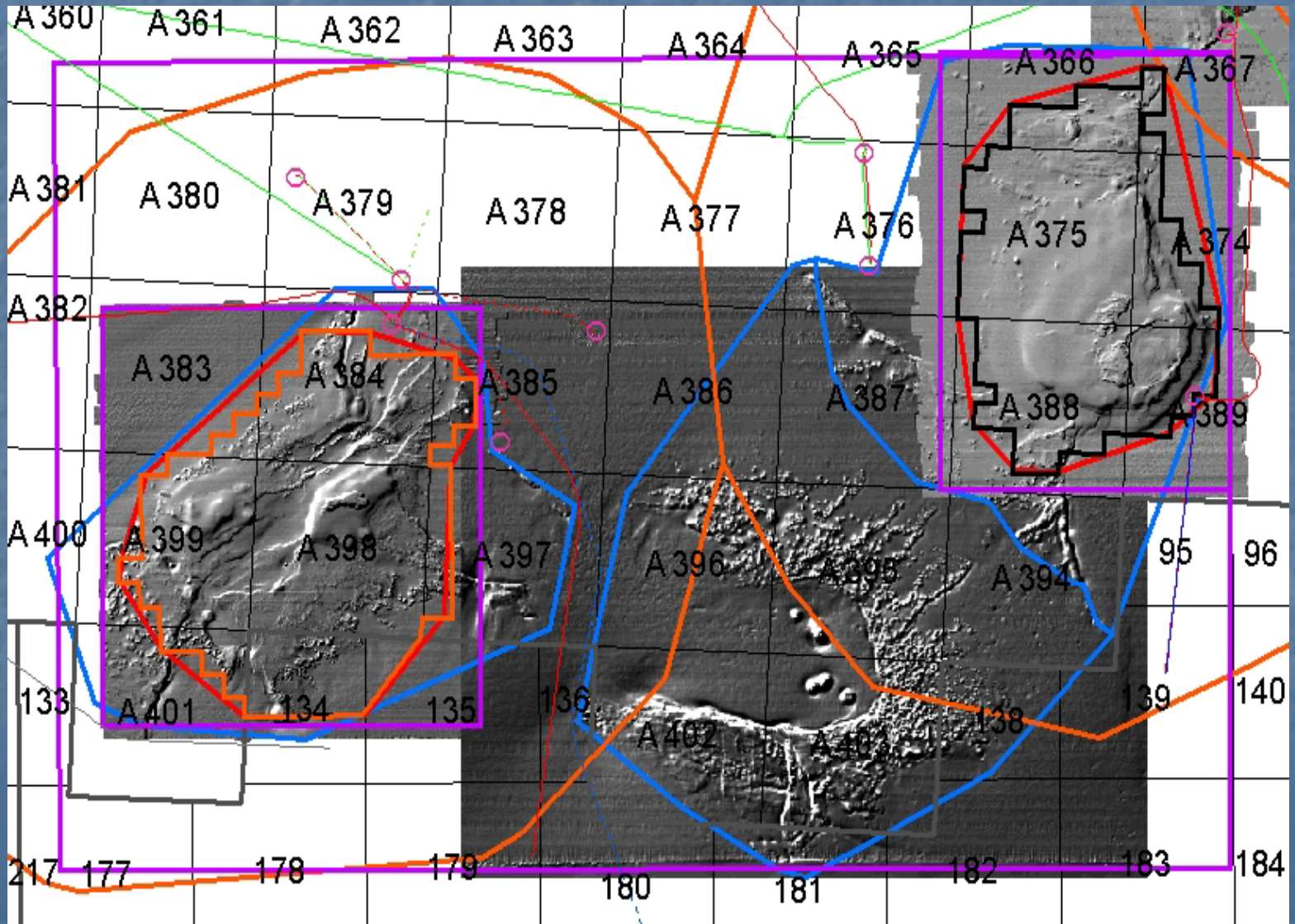


Planning Area is Largest spatial scale (below ocean basin)

- 3 in Gulf, 3 in Atlantic etc.
  - Central Planning Area Gulf of Mexico
    - Protractions (hundreds of lease blocks)
    - High Island Protraction for FGB
      - Lease Blocks 3 X 3 nautical miles
        - Boundaries described buy subdivision of a lease block by quarters to three levels “quarter-quarter-quarter system”

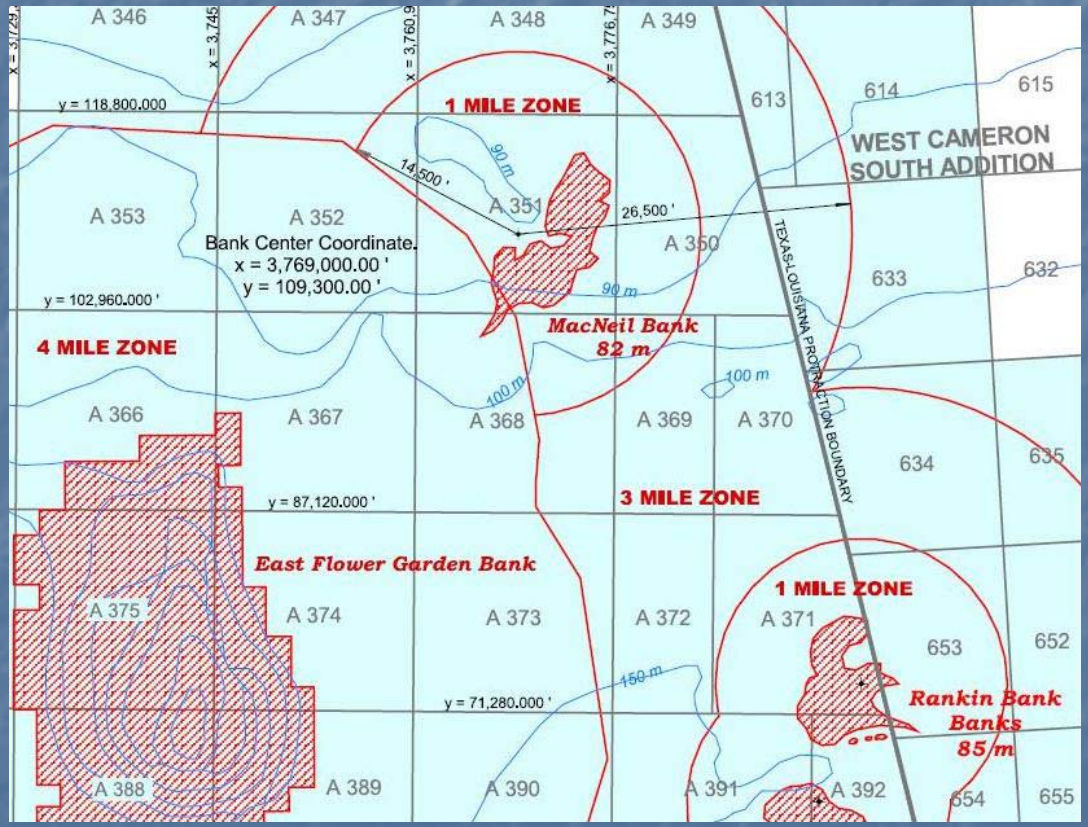
East and West Flower Garden Banks

Including No Activity Zone, Sanctuary Boundary, 4-mile shunting zone and infrastructure



Lease Stipulation Regulatory Measures

- No Activity Zones
- Shunting Zones
  - 1,000 m, 1 mile, 3 mile and 4-mile
  - 4-Mile shunting zone in the case of the FGB 1983

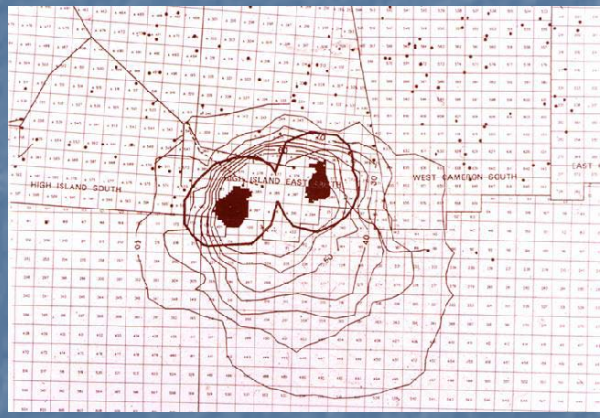


Ongoing Monitoring Phase

- Long-Term Monitoring replaced required industry monitoring for each project using demonstration of effectiveness of regulatory policy.
- Repetitive monitoring program established in 1988 now representing longest continuous coral reef monitoring data set in the world.
- Sanctuary designation 1992.
- Continuing shared cost for ongoing annual monitoring between MMS and NOAA Flower Garden Banks National Marine Sanctuary, 1994 to present.
- Beginning in 2009, field work and analysis managed by the FGB Sanctuary rather than contractor.

Other FGB Spatial-Related Management Issues

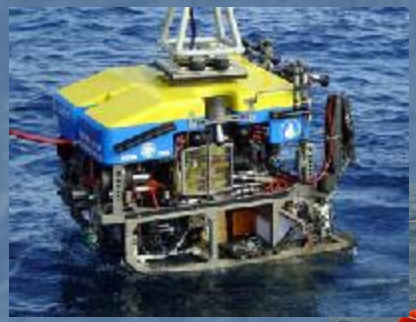
- MMS established oil spill notification process through spill model.
  - 30% probability of movement over the FGB in 3 days.
  - Notification of Sanctuary required for all affected lease blocks.
  - Modeling also contributes to decisions on lightering areas.



- Oil Spill Dispersant Notification: Federal On-Scene Coordinator (FOSC) Pre-Approval Recommendations.
  - Apply in water as deep as possible and as far from the Sanctuary as possible, in order to promote dilution of dispersed oil and minimize the effects on shallow-water organisms.
  - Application based on weather, sea state, water temperature, oil characteristics, history of spill, and risk of spill contact.
  - Notify NOAA to solicit information that could affect the decision (consideration of special seasonal events such as coral spawning) and allow timely implementation of monitoring.

Same MMS Management Process Applies to Other Habitat Types

- Deepwater chemosynthetic communities and deepwater corals.
- Same Adaptive Management Approach.
- Studies used to explore distribution of sensitive communities and impacts in deepwater; GOM best understood chemo systems in the world.
- Notice to Lessees updated over time to extend avoidance and buffer distances from even potential sites of sensitive communities unless demonstrated absence.
- Other protected habitat types also include:
  - Live Bottom
    - Pinnacle Trend (specific pinnacle trend block identified)
    - Low Relief Live Bottom
  - Potentially Sensitive Biological Features above 400 m

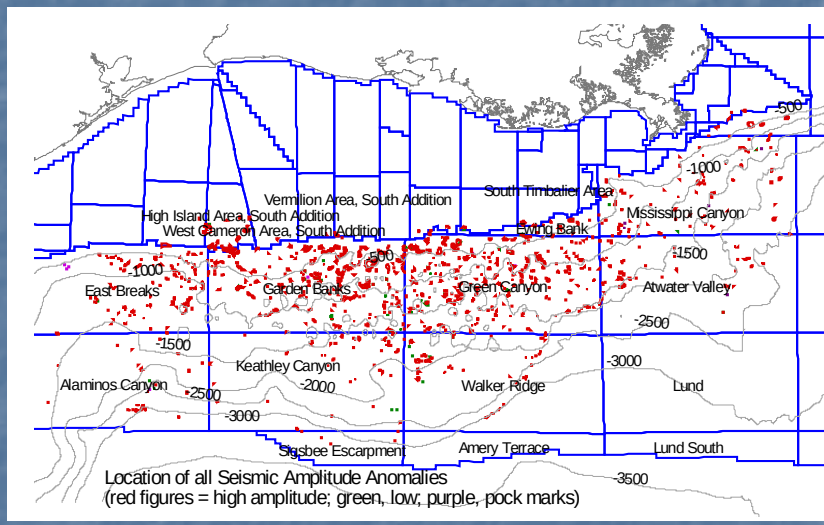


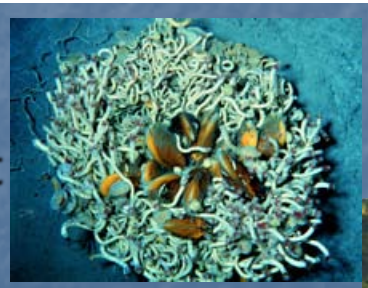
Example for Deep Coral Habitats and Chemosynthetic Communities, Gulf of Mexico

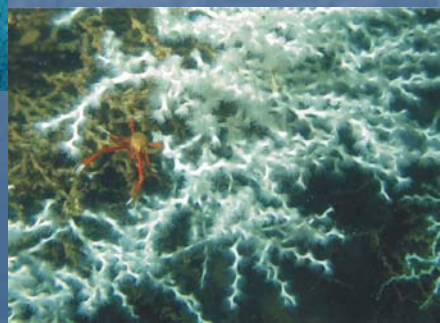
NTL-2000-G20 Deepwater Chemosynthetic communities

- Relocation
- Additional information
- ROV info for placement of anchors
- ROV surveys
- Water depths > 400 m
- Keep muds and cuttings ≥ 1,500 ft away
- No bottom- disturbing activities within 250 ft

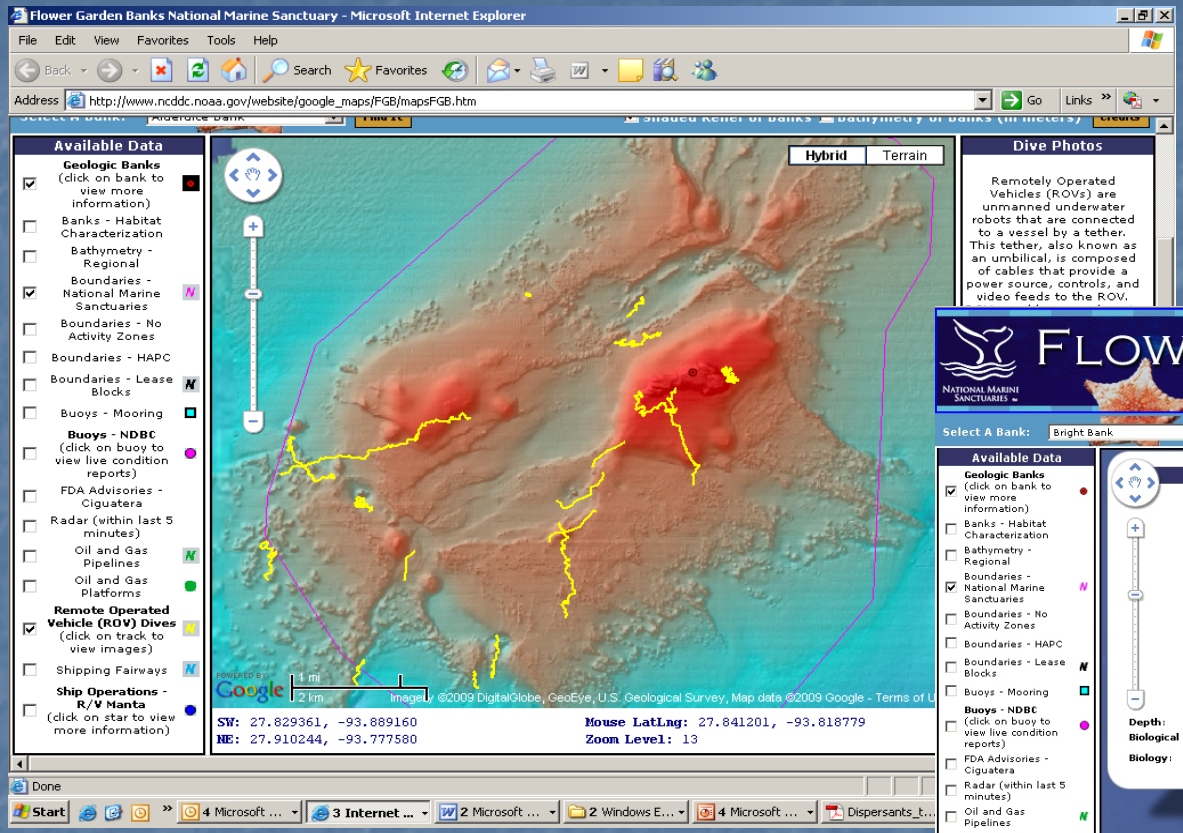
- *Soon to be modified in revised NTL using recent studies data and adaptive management
  - 300 m water depth
  - Increase of avoidance distances

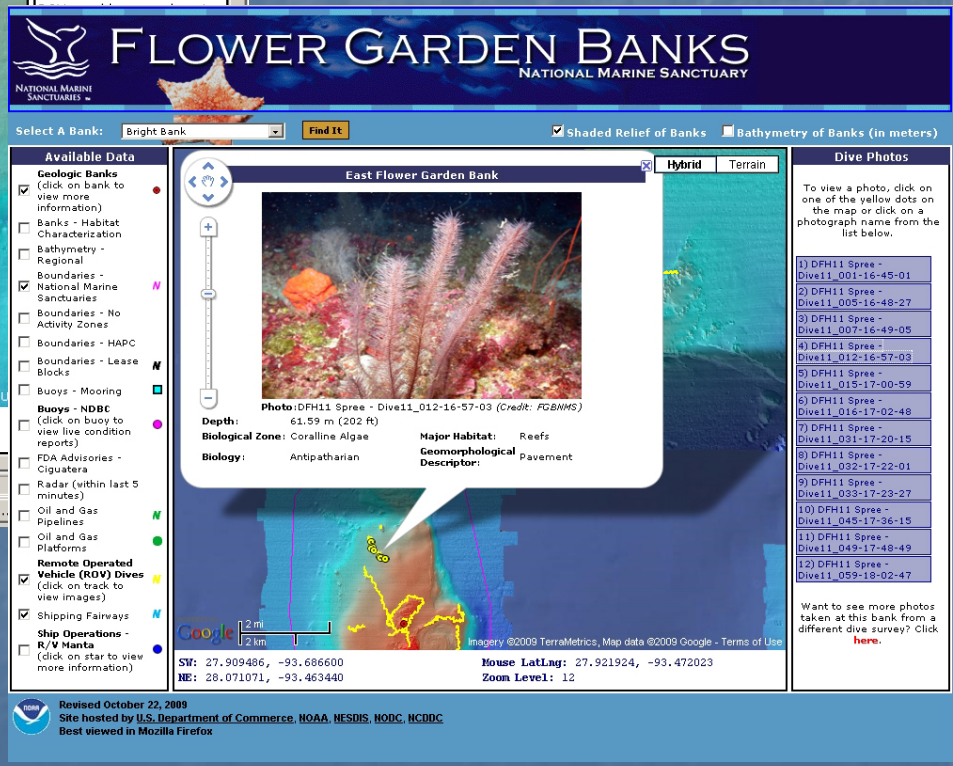






New FGB GIS Interactive Database





http://www.ncddc.noaa.gov/website/google_maps/FGB/mapsFGB.htm