



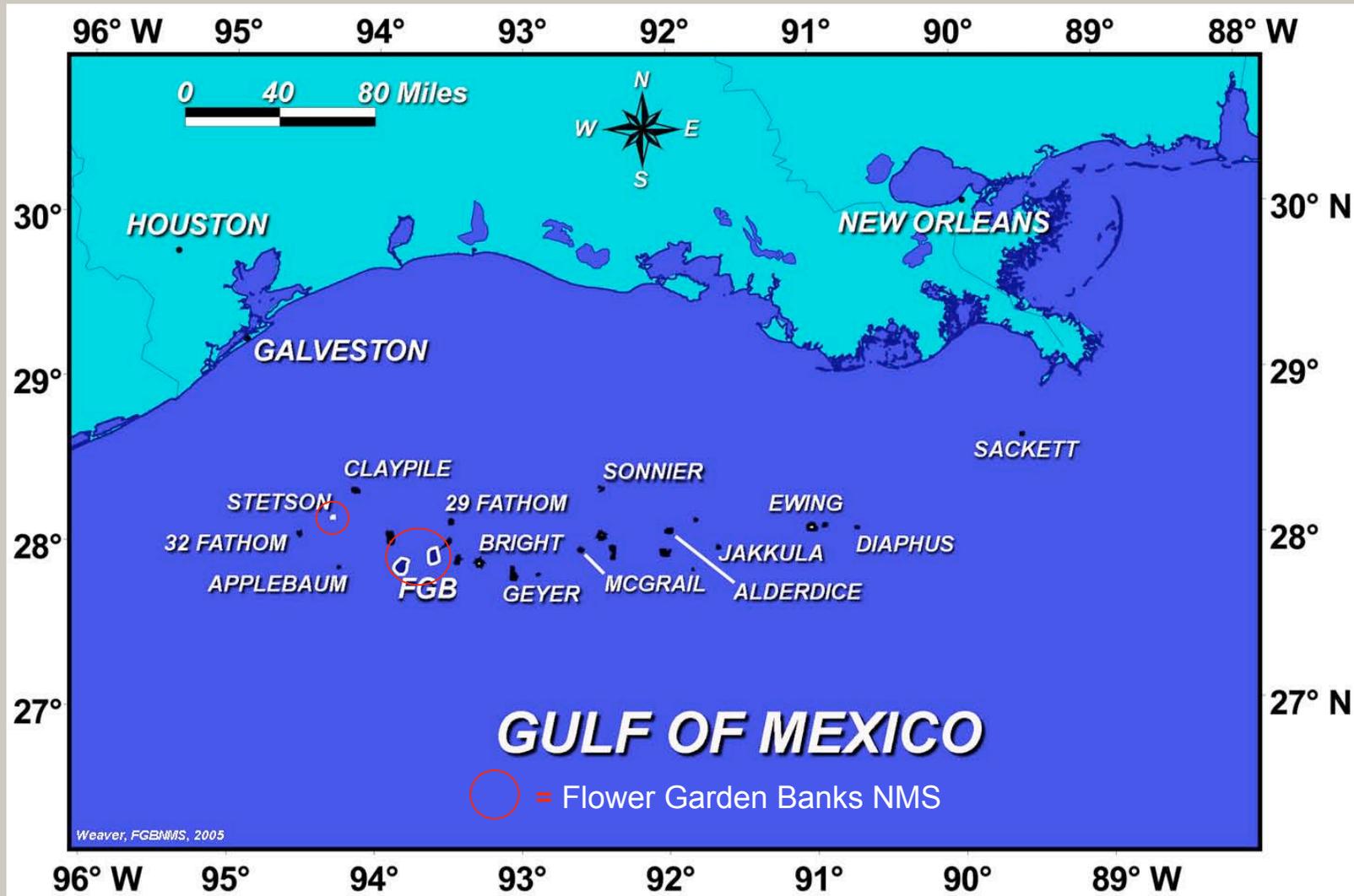
Sanctuary Advisory Council
Boundary Expansion Recommendation

December 6, 2007





Flower Garden Banks National Marine Sanctuary



Reefs and Banks in the Northwestern Gulf of Mexico



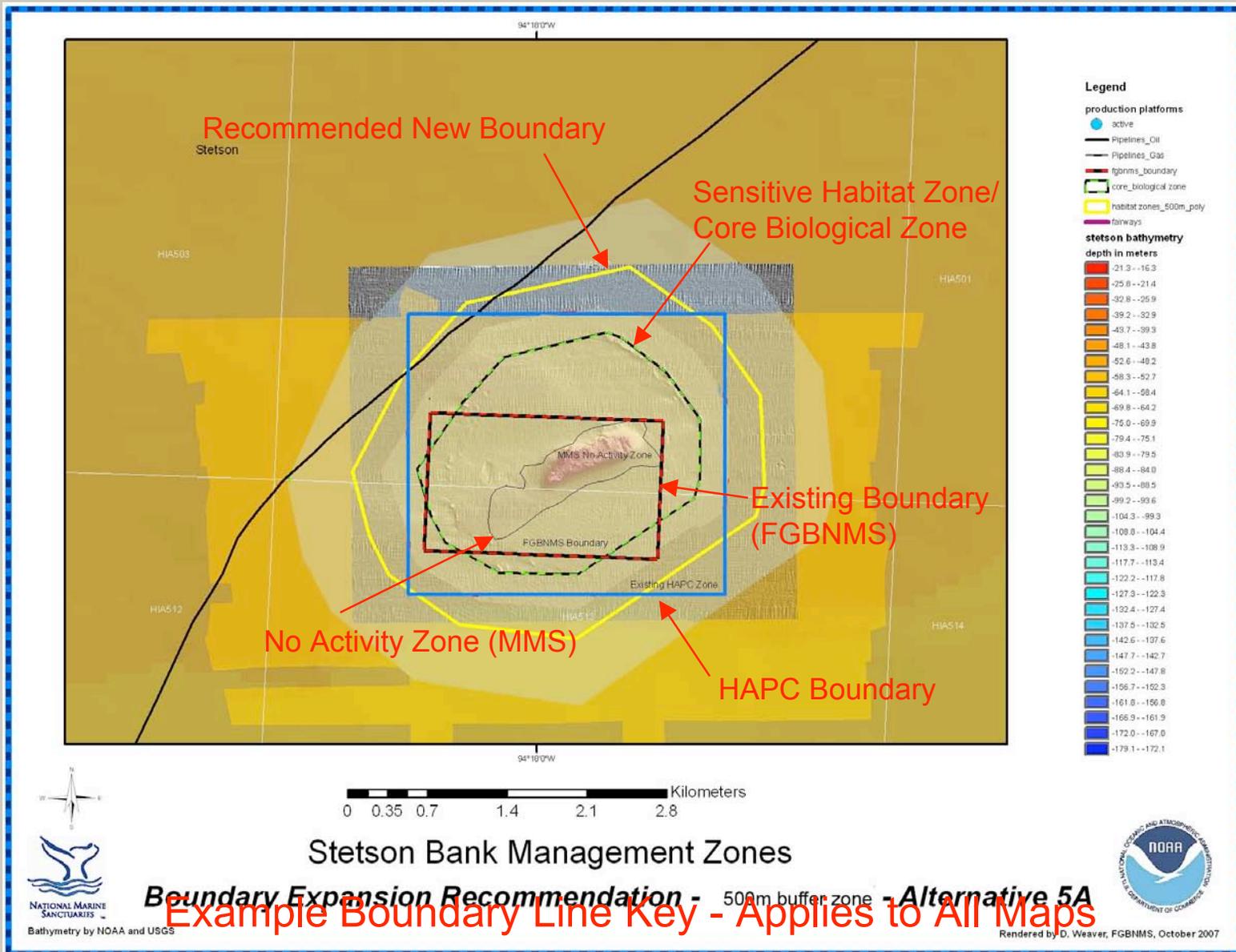
Flower Garden Banks National Marine Sanctuary



- The FGBNMS Advisory Council formed a Boundary Expansion Working Group to evaluate other habitats and topographic features within the Gulf of Mexico for inclusion under the management and protections of the FGBNMS. Areas considered include the Stetson Bank Ring, habitats between and adjacent to East and West Flower Garden Banks and other northwestern Gulf of Mexico banks.
- The working group developed a set of six alternatives for boundary expansion.
- The Sanctuary Advisory Council considered the working group recommendation at Council meetings held on 9/27/07 and 12/6/07. On 12/6/07, the Council made a final recommendation to sanctuary management and NOAA. The Council recommended alternative 5 as the preferred alternative, with boundaries based on the sensitive habitat zone/core biological zone and a 500 m buffer.
- The preferred alternative with proposed boundaries is presented here along with the other five alternatives.
- Working group members included: Clint Moore, Ian MacDonald, John Embesi, Frank Burek, James Sinclair, Steve Gittings, and FGBNMS staff member Emma Hickerson.

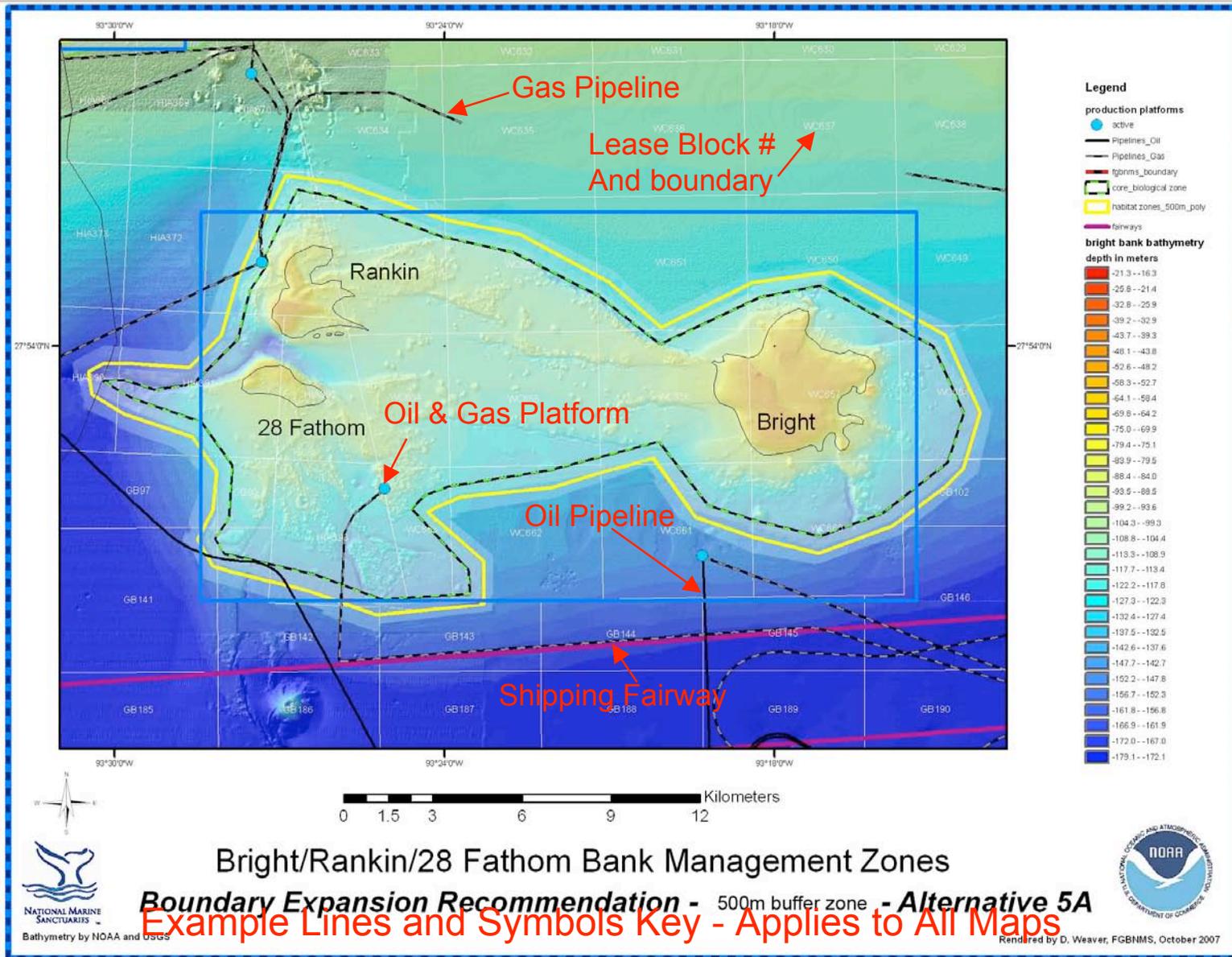


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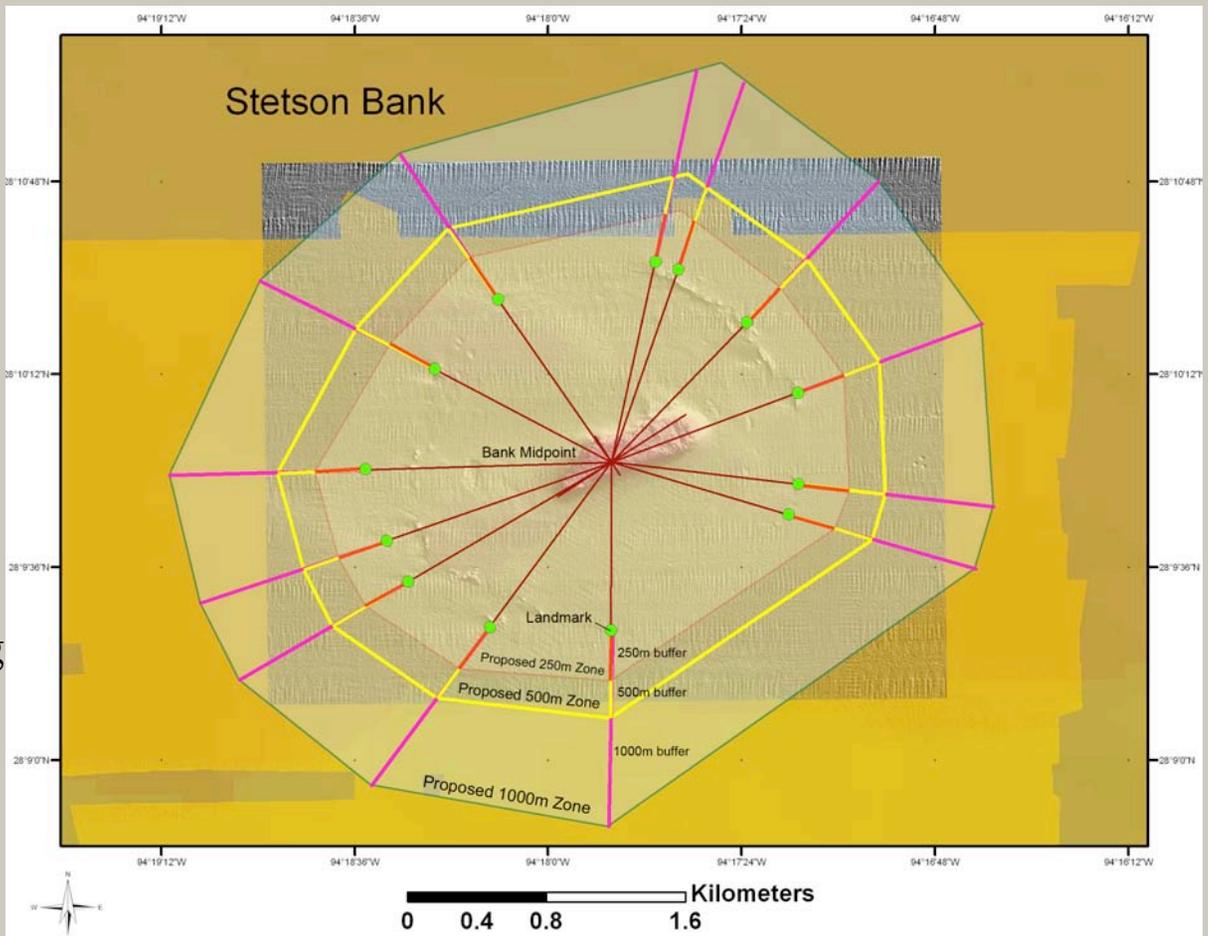
Flower Garden Banks National Marine Sanctuary



Boundary Selection Criteria

Based on:

- Seafloor topography
- Ground-truthing using ROV's and submersibles
- Prominent features defined as topography greater than 3m in vertical relief and 25m in diameter.
- Boundary of core biological zones developed by identifying outermost series of prominent features as landmarks, forming the vertices of an irregular polygon.



- Buffer zones developed from the outer landmarks of the core polygon, radiating from an approximate midpoint of the bank.

Working Group assessed:
250m, 500m, and 1000m buffers.
Proposed 500m buffer.



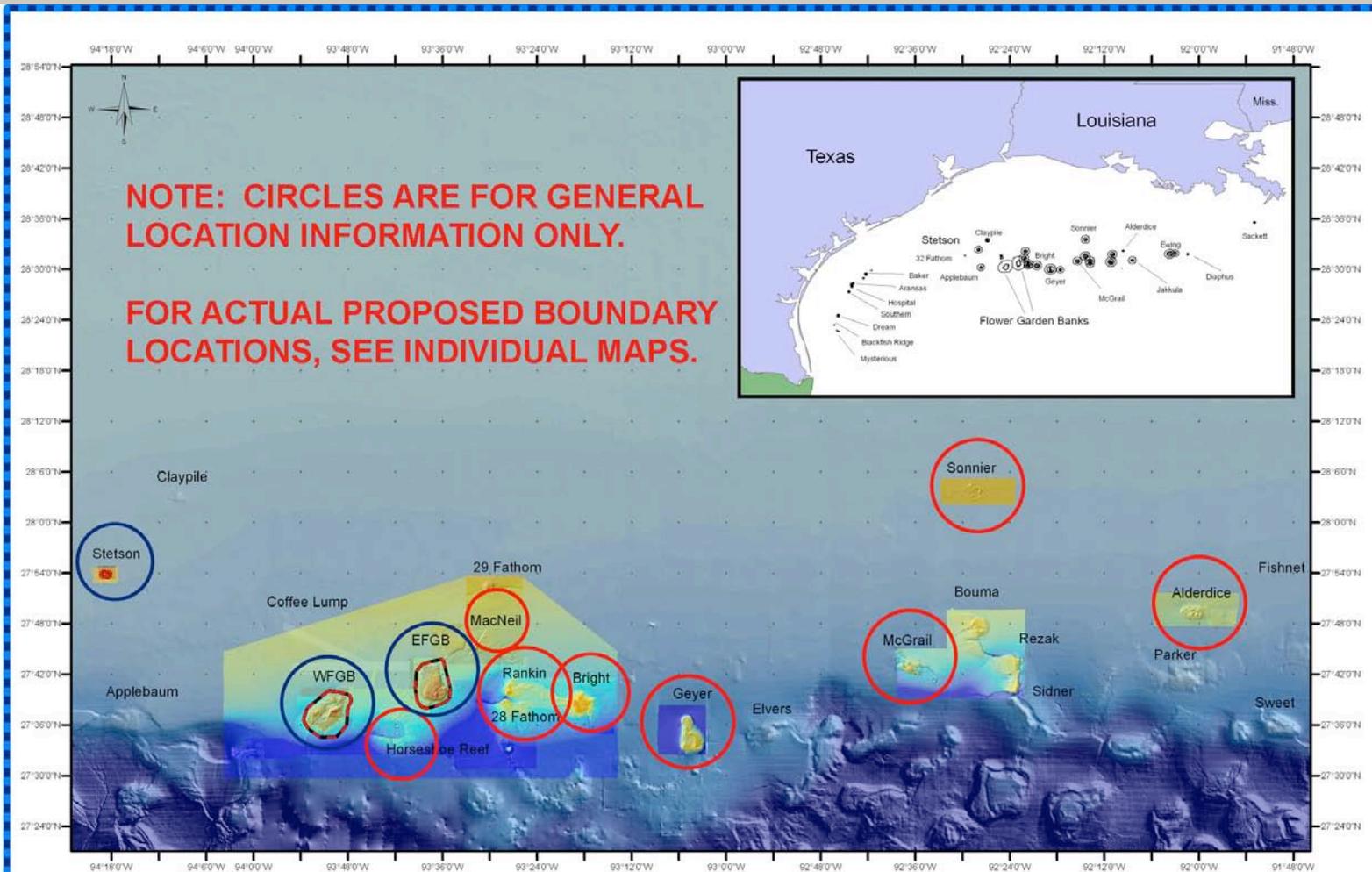
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The following maps summarize the Sanctuary Advisory Council's recommendation for boundary expansion, as of 12/6/07:

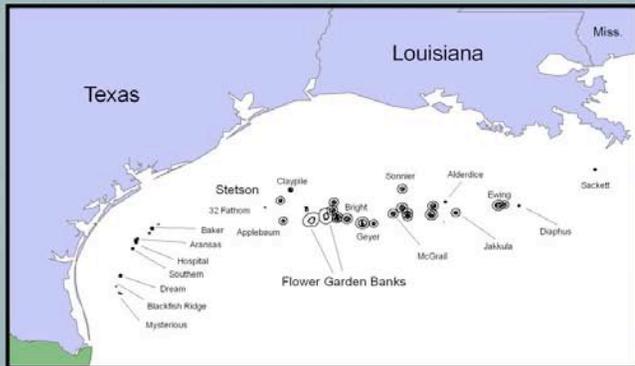


Flower Garden Banks National Marine Sanctuary



NOTE: CIRCLES ARE FOR GENERAL LOCATION INFORMATION ONLY.

FOR ACTUAL PROPOSED BOUNDARY LOCATIONS, SEE INDIVIDUAL MAPS.



Blue = Boundary Adjustments

Red = New Areas

Boundary Expansion Recommendation - SAC 9/27/07



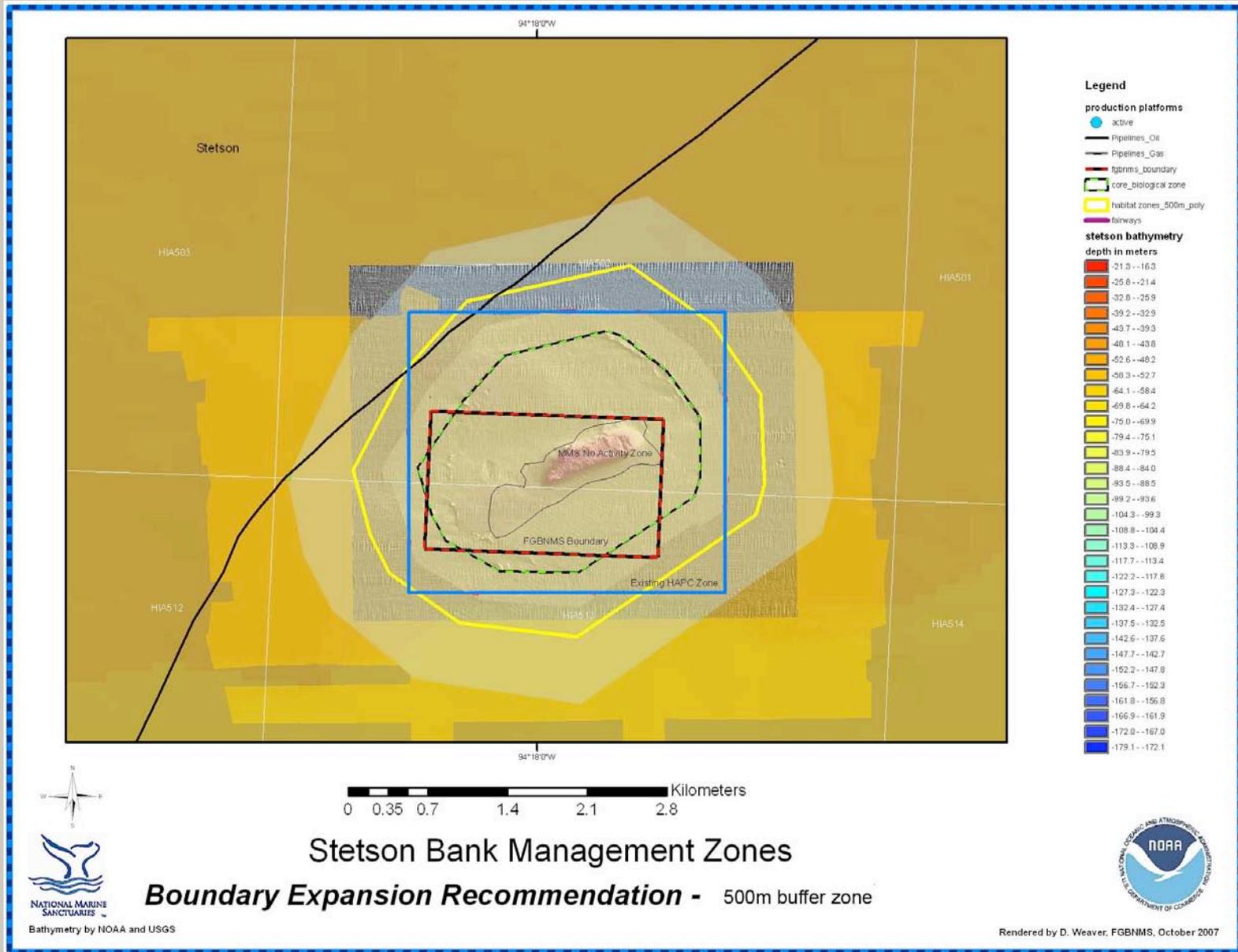
Bathymetry by NOAA and USGS



Rendered by D. Weaver, FGBNMS, October 2007

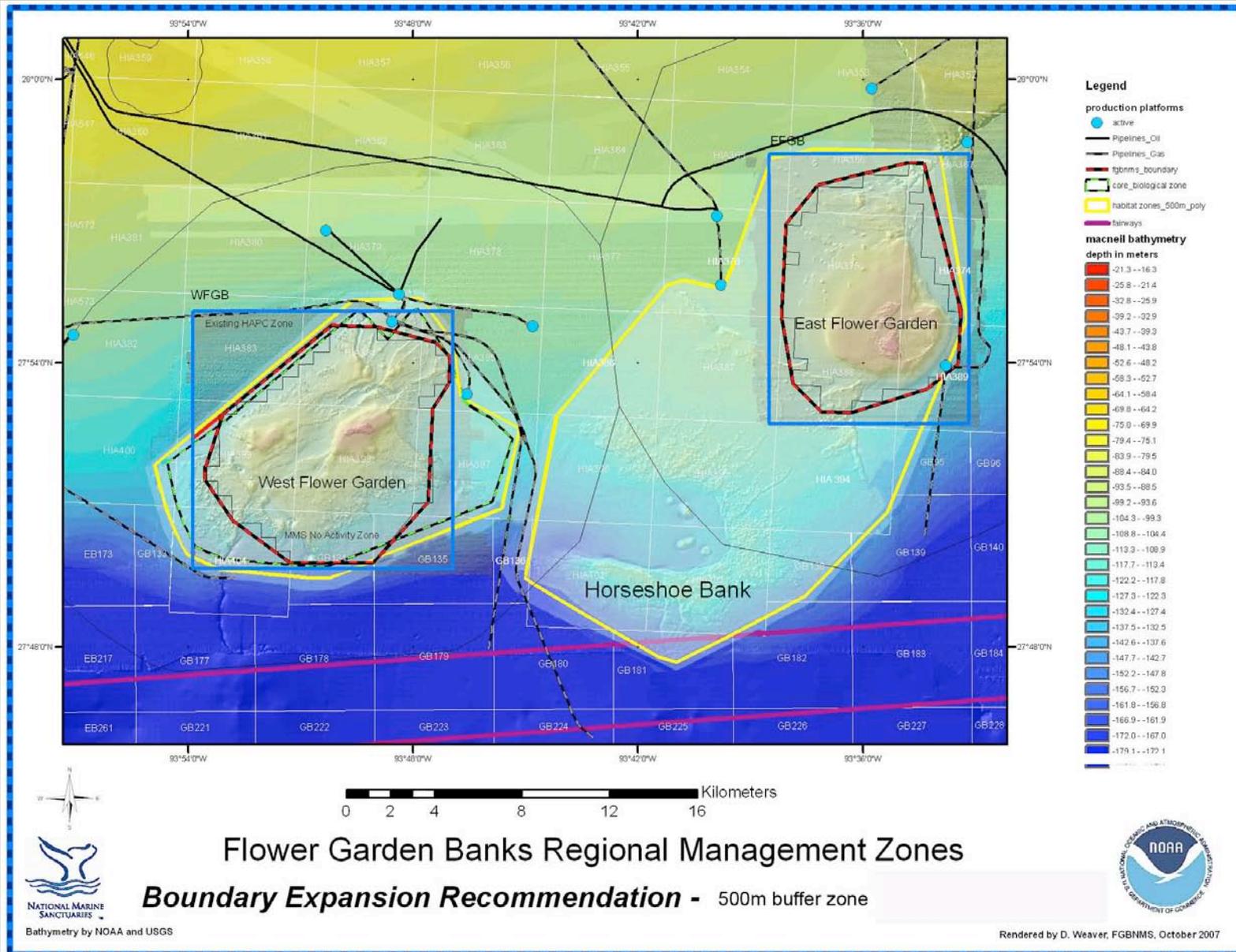


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Flower Garden Banks Regional Management Zones

Boundary Expansion Recommendation - 500m buffer zone



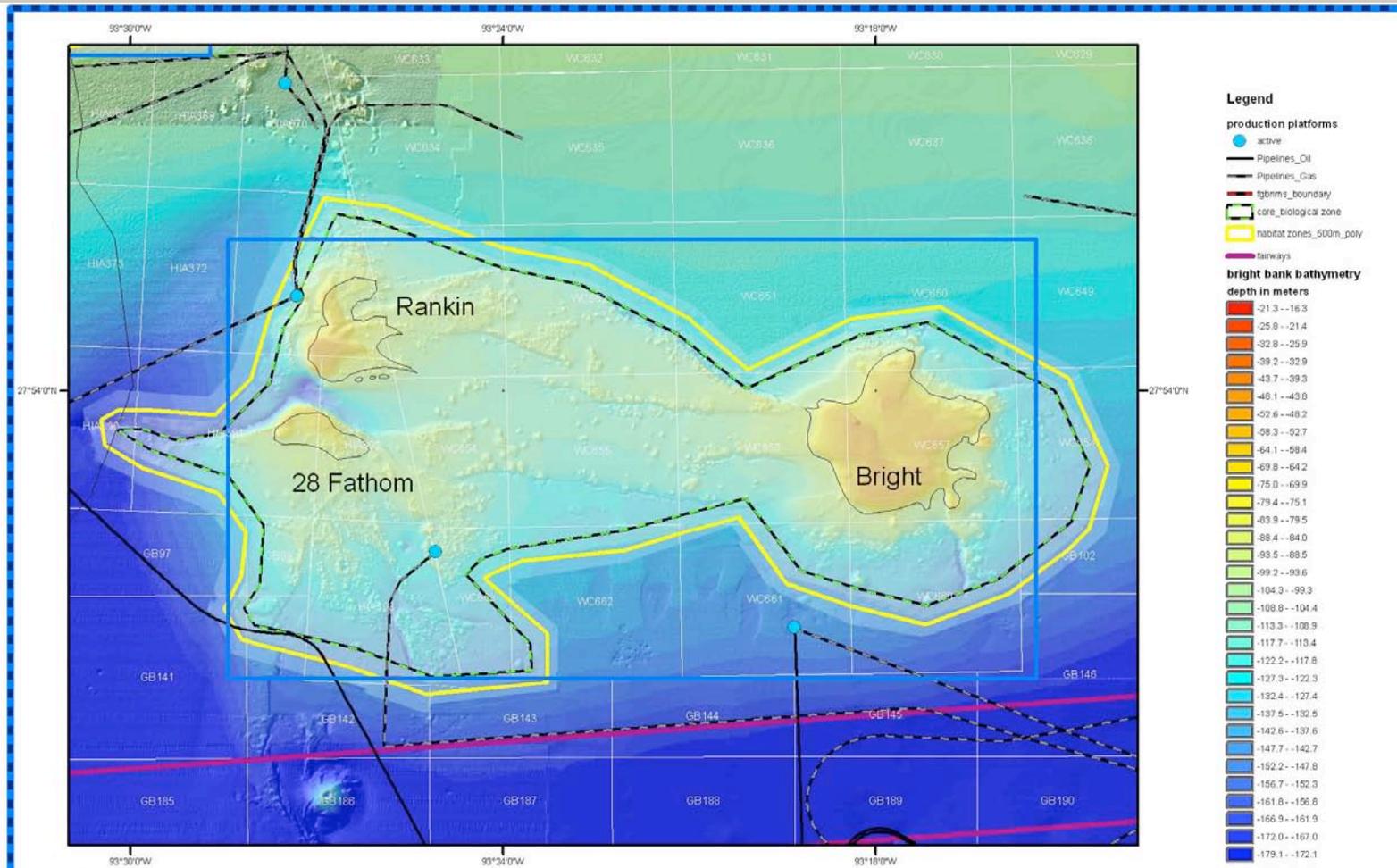
Bathymetry by NOAA and USGS



Rendered by D. Weaver, FGBNMS, October 2007



Flower Garden Banks National Marine Sanctuary



0 1.5 3 6 9 12 Kilometers



Bright/Rankin/28 Fathom Bank Management Zones *Boundary Expansion Recommendation - 500m buffer zone*

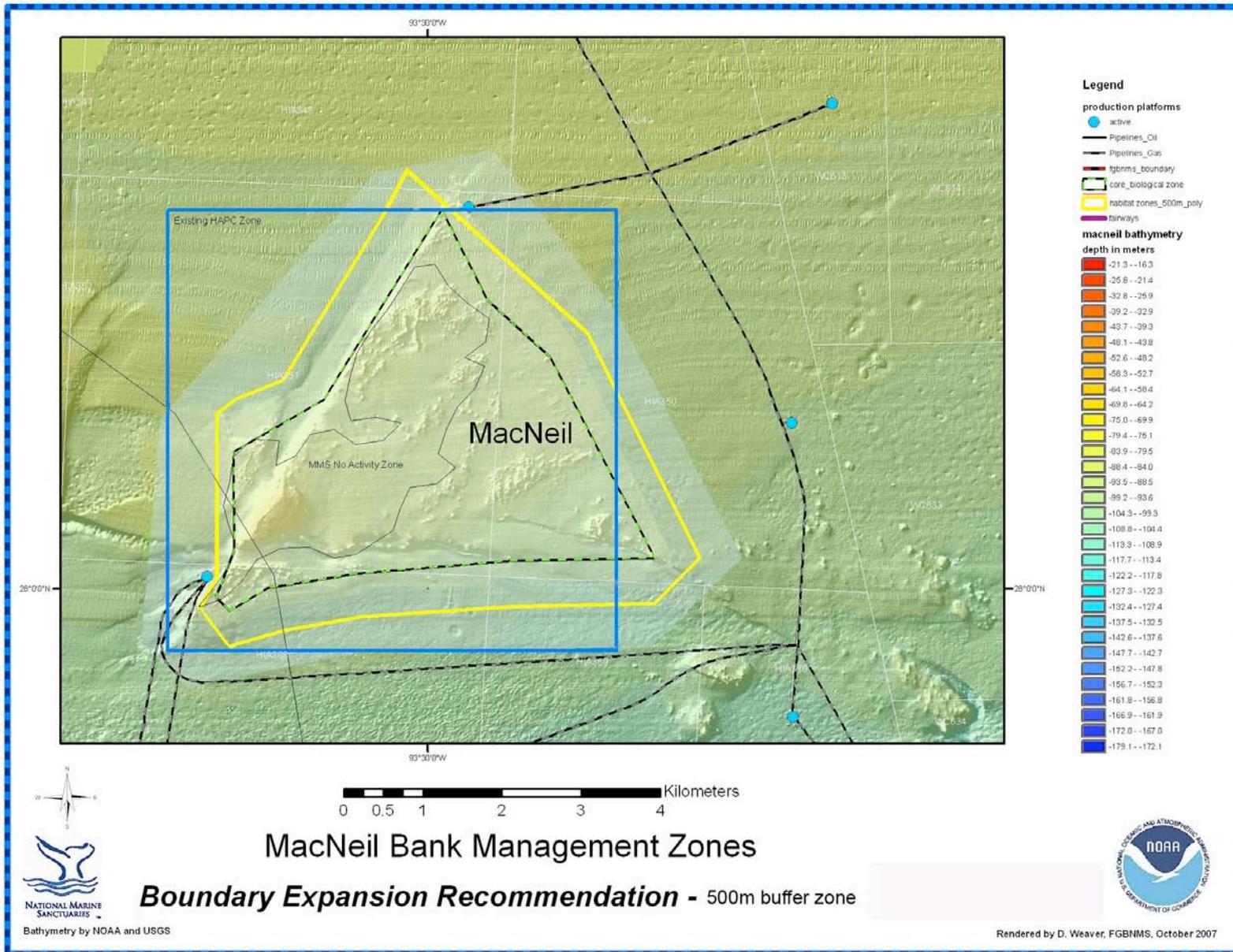
Bathymetry by NOAA and USGS



Rendered by D. Weaver, FGBNMS, October 2007

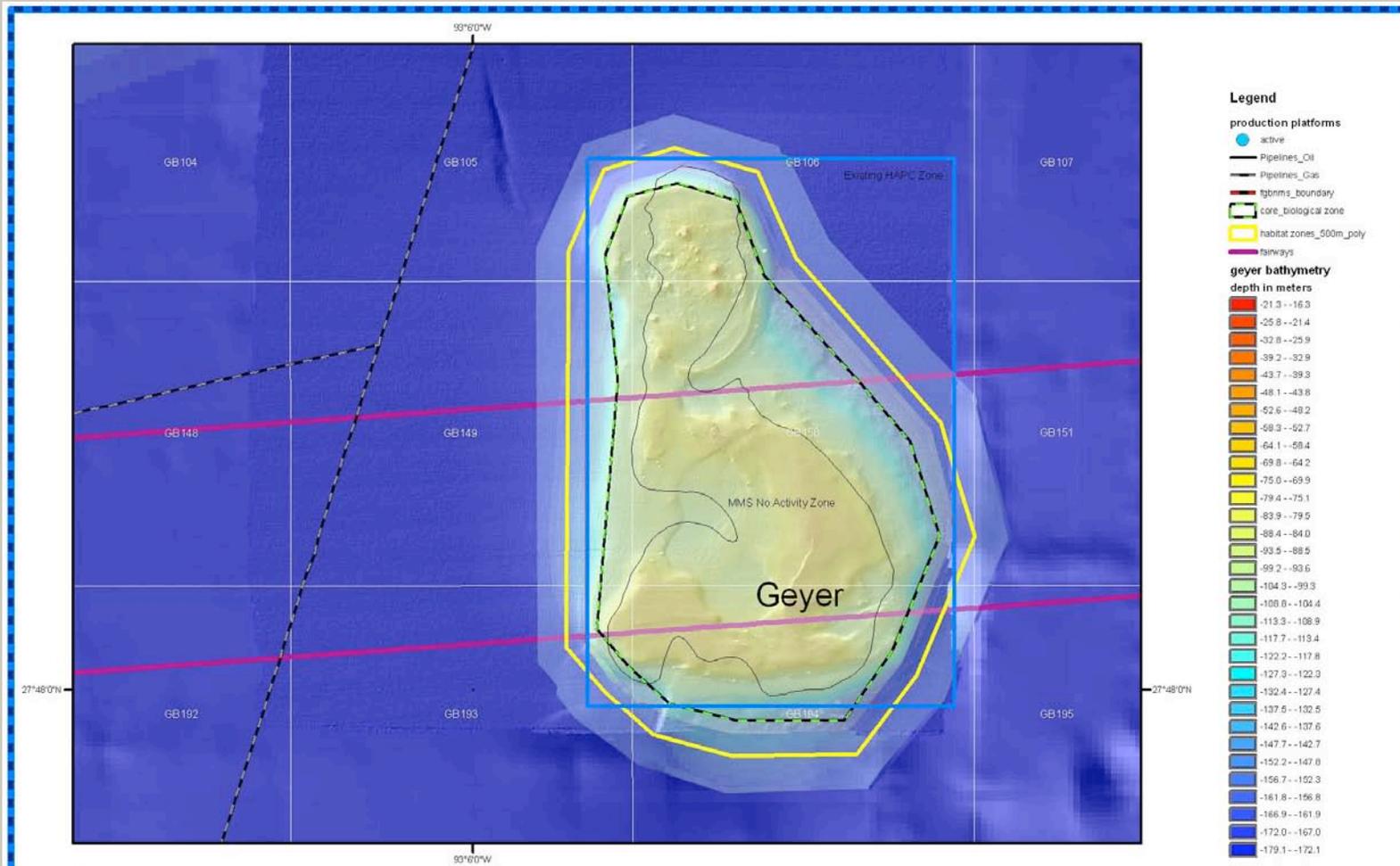


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Flower Garden Banks National Marine Sanctuary



- Legend**
- production platforms**
 - active
 - Pipelines_Oil**
 - Pipelines_Gas**
 - fgbnms_boundary**
 - core_biological zone**
 - habitat zones_500m_poly**
 - railways**
 - geyer bathymetry**
 - depth in meters**
 - 21.3 -- -16.3
 - 25.8 -- -21.4
 - 32.8 -- -25.9
 - 39.2 -- -32.9
 - 43.7 -- -39.3
 - 48.1 -- -43.8
 - 52.6 -- -48.2
 - 58.3 -- -52.7
 - 64.1 -- -58.4
 - 69.8 -- -64.2
 - 75.0 -- -69.9
 - 79.4 -- -75.1
 - 83.9 -- -79.5
 - 88.4 -- -84.0
 - 93.5 -- -88.5
 - 99.2 -- -93.6
 - 104.3 -- -99.3
 - 108.6 -- -104.4
 - 113.3 -- -108.9
 - 117.7 -- -113.4
 - 122.2 -- -117.8
 - 127.0 -- -122.3
 - 132.4 -- -127.4
 - 137.5 -- -132.5
 - 142.6 -- -137.6
 - 147.7 -- -142.7
 - 152.2 -- -147.8
 - 156.7 -- -152.3
 - 161.8 -- -156.8
 - 166.9 -- -161.9
 - 172.0 -- -167.0
 - 179.1 -- -172.1



Geyer Bank Management Zones

Boundary Expansion Recommendation - 500m buffer zone



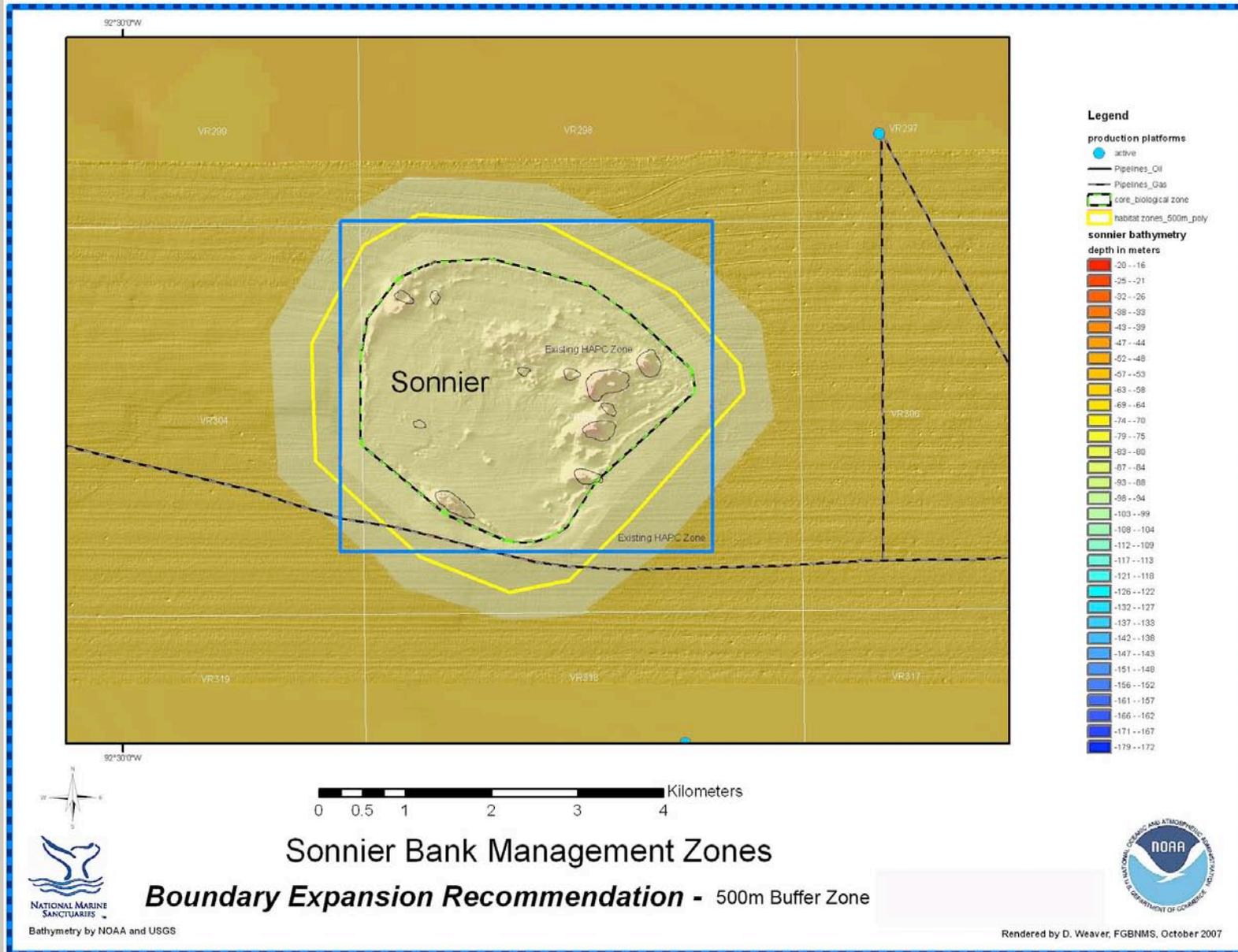
Bathymetry by NOAA and USGS



Rendered by D. Weaver, FGBNMS, October 2007

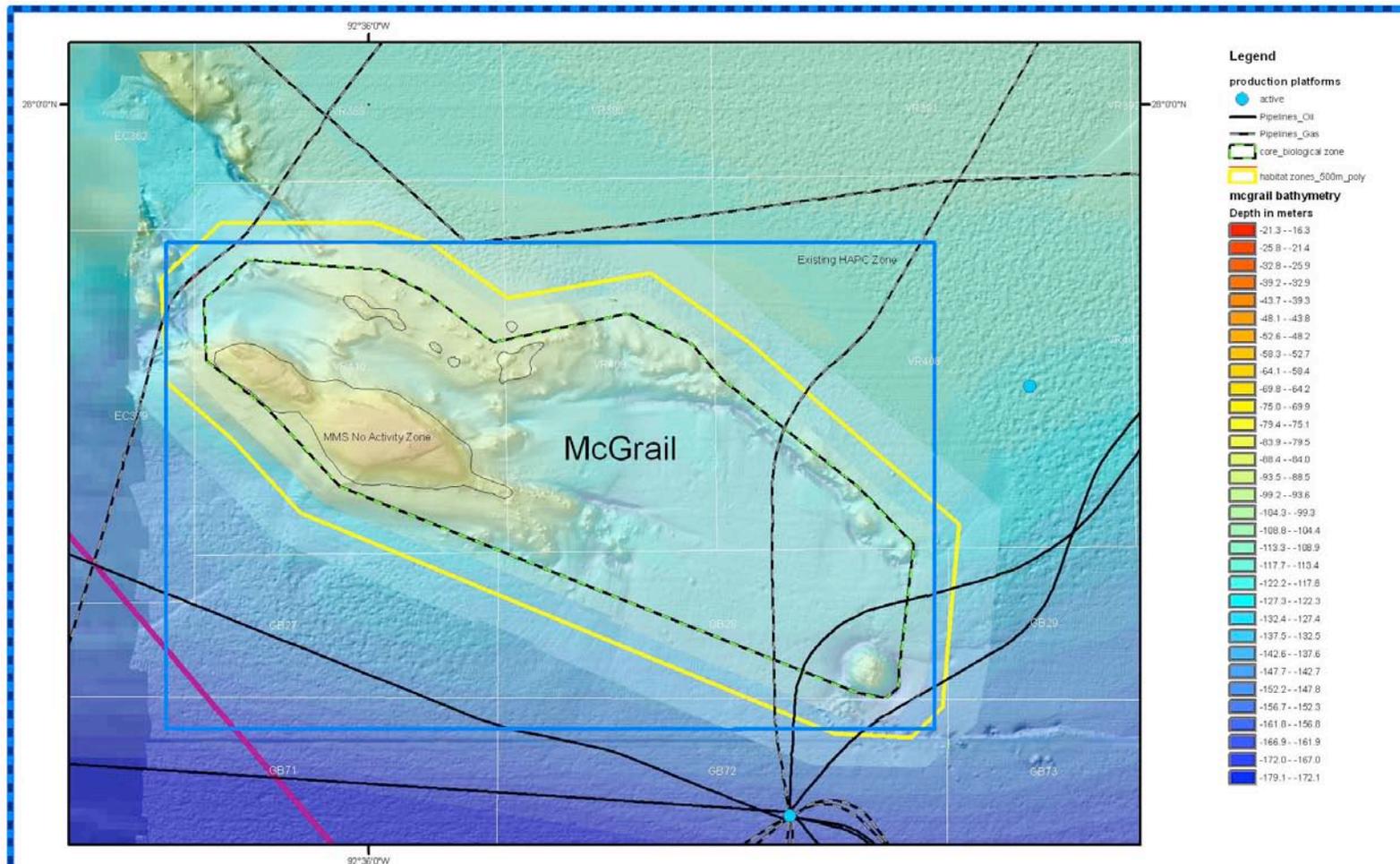


Flower Garden Banks National Marine Sanctuary





Flower Garden Banks National Marine Sanctuary



Legend

production platforms

- active
- Pipelines_Oil
- Pipelines_Gas
- ▭ core_biological zone
- ▭ habitat_zones_500m_poly

mcgrail bathymetry

Depth in meters

- 21.3 -- -16.3
- 25.8 -- -21.4
- 32.9 -- -25.9
- 59.2 -- -32.9
- 43.7 -- -39.3
- 48.1 -- -43.8
- 52.6 -- -48.2
- 58.3 -- -52.7
- 64.1 -- -59.4
- 69.8 -- -64.2
- 75.0 -- -69.9
- 79.4 -- -75.1
- 83.9 -- -79.5
- 88.4 -- -84.0
- 93.5 -- -88.5
- 99.2 -- -93.6
- 104.9 -- -99.3
- 108.8 -- -104.4
- 113.3 -- -108.9
- 117.7 -- -113.4
- 122.2 -- -117.8
- 127.3 -- -122.3
- 132.4 -- -127.4
- 137.0 -- -132.5
- 142.6 -- -137.6
- 147.7 -- -142.7
- 152.2 -- -147.8
- 156.7 -- -152.3
- 161.0 -- -156.8
- 166.9 -- -161.9
- 172.0 -- -167.0
- 179.1 -- -172.1



McGrail Bank Management Zones

Boundary Expansion Recommendation - 500m buffer zone



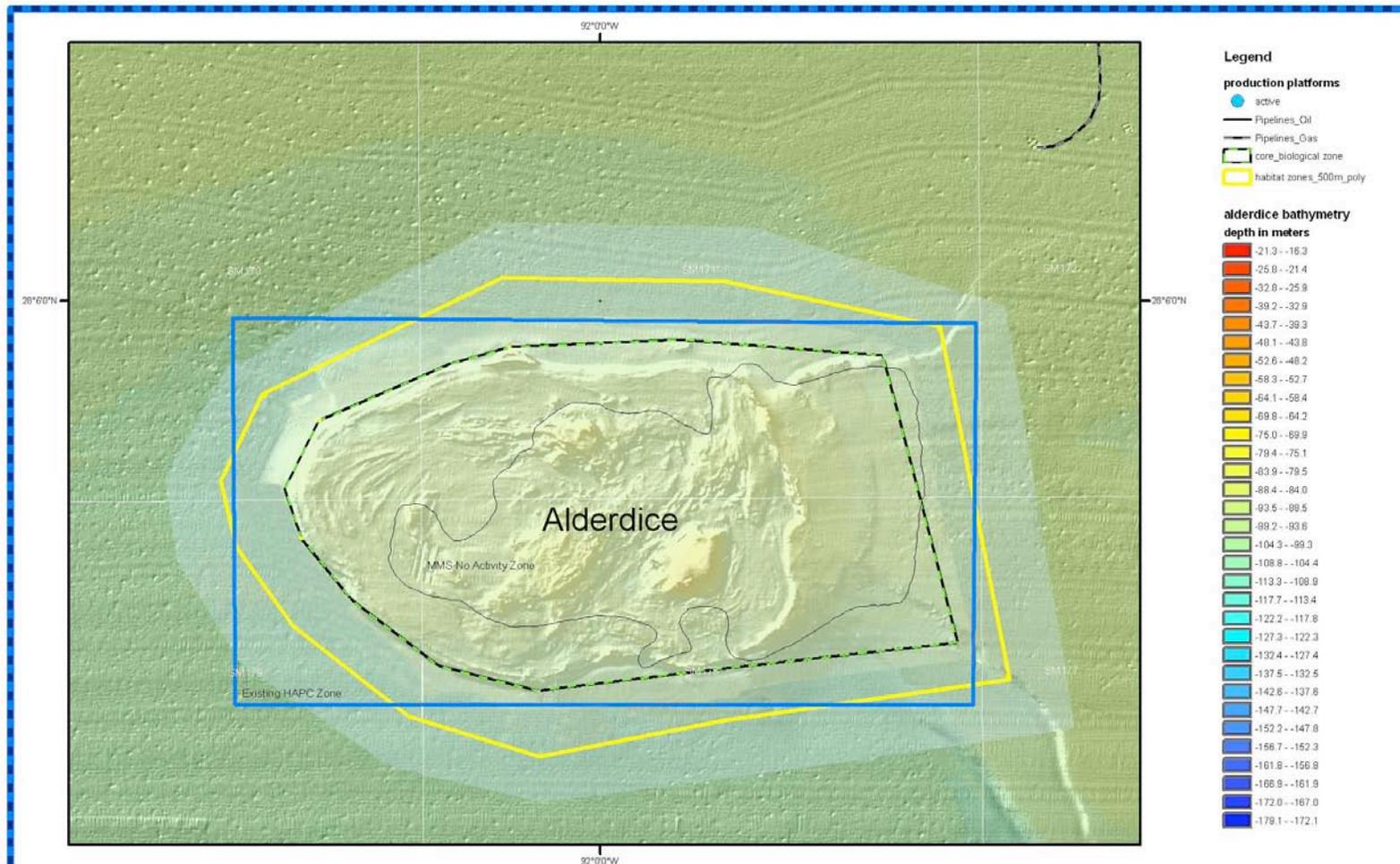
Bathymetry by NOAA and USGS



Rendered by D. Weaver, FGBNMS, October 2007



Flower Garden Banks National Marine Sanctuary



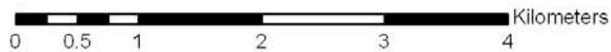
Legend

production platforms

- active
- Pipelines_Oil
- Pipelines_Gas
- core_biological zone
- habitat_zones_500m_poly

alderdice bathymetry
depth in meters

| | |
|---------------|-----------------|
| Red | -21.3 - -18.3 |
| Dark Red | -25.8 - -21.4 |
| Red-Orange | -32.0 - -25.9 |
| Orange | -39.2 - -32.9 |
| Light Orange | -43.7 - -39.3 |
| Yellow-Orange | -48.1 - -43.8 |
| Yellow | -52.6 - -48.2 |
| Light Yellow | -58.3 - -52.7 |
| Yellow-Green | -64.1 - -58.4 |
| Light Green | -69.8 - -64.2 |
| Green | -75.0 - -69.9 |
| Light Green | -79.4 - -75.1 |
| Green | -83.9 - -79.5 |
| Light Green | -88.4 - -84.0 |
| Green | -93.5 - -89.5 |
| Light Green | -99.2 - -93.6 |
| Green | -104.3 - -89.3 |
| Light Green | -108.8 - -104.4 |
| Light Green | -113.3 - -108.9 |
| Light Green | -117.7 - -113.4 |
| Light Green | -122.2 - -117.8 |
| Light Green | -127.3 - -122.3 |
| Light Green | -132.4 - -127.4 |
| Light Green | -137.5 - -132.5 |
| Light Green | -142.6 - -137.6 |
| Light Green | -147.7 - -142.7 |
| Light Green | -152.2 - -147.8 |
| Light Green | -156.7 - -152.3 |
| Light Green | -161.8 - -156.8 |
| Light Green | -166.9 - -161.9 |
| Light Green | -172.0 - -167.0 |
| Light Green | -178.1 - -172.1 |



Alderdice Bank Management Zones

Boundary Expansion Recommendation - 500m Buffer Zone



Bathymetry by NOAA and USGS



Rendered by D. Weaver, FGBNMS, October 2007



Flower Garden Banks National Marine Sanctuary



The Sanctuary Advisory Council recommendation for boundary expansion incorporates the following four active oil and gas platforms:

West FGB: **HIA384 - Offshore Shelf LLC**

East FGB: **HIA389A - W&T Offshore**

Rankin: **HIA371 - Tarpon Operating & Development**
 WC663 - ATP A&G

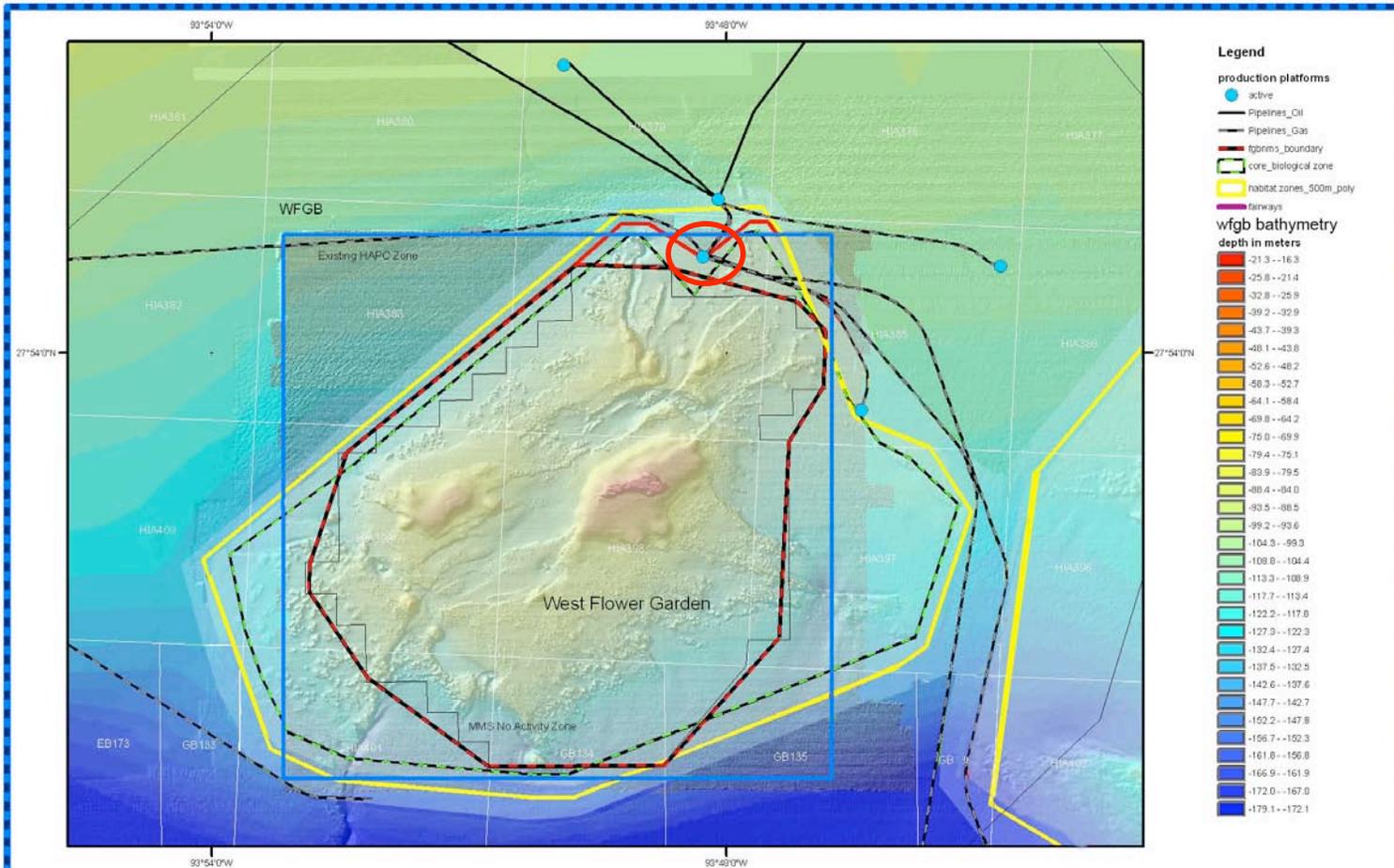


Flower Garden Banks National Marine Sanctuary



Oil & Gas
Infrastructure:

HIA384
Offshore Shelf
LLC



Legend

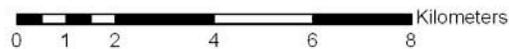
production platforms

- active
- Pipelines_Oil
- Pipelines_Gas
- igomms_boundary
- core_biological_zone
- habitat_zones_500m_poly
- fairways

wfgb bathymetry

depth in meters

- 21.3 -- -16.3
- 25.8 -- -21.4
- 32.8 -- -25.9
- 39.2 -- -32.9
- 43.7 -- -39.3
- 48.1 -- -43.8
- 52.6 -- -48.2
- 58.3 -- -52.7
- 64.1 -- -58.4
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- 142.6 -- -137.6
- 147.7 -- -142.7
- 152.2 -- -147.8
- 156.7 -- -152.3
- 161.8 -- -156.8
- 166.9 -- -161.9
- 172.0 -- -167.0
- 179.1 -- -172.1



West Flower Garden Bank Management Zones

Boundary Expansion Recommendation - 500m buffer zone - Alternative 5A



Bathymetry by NOAA and USGS



Rendered by D. Weaver, FGBNMS, October 2007

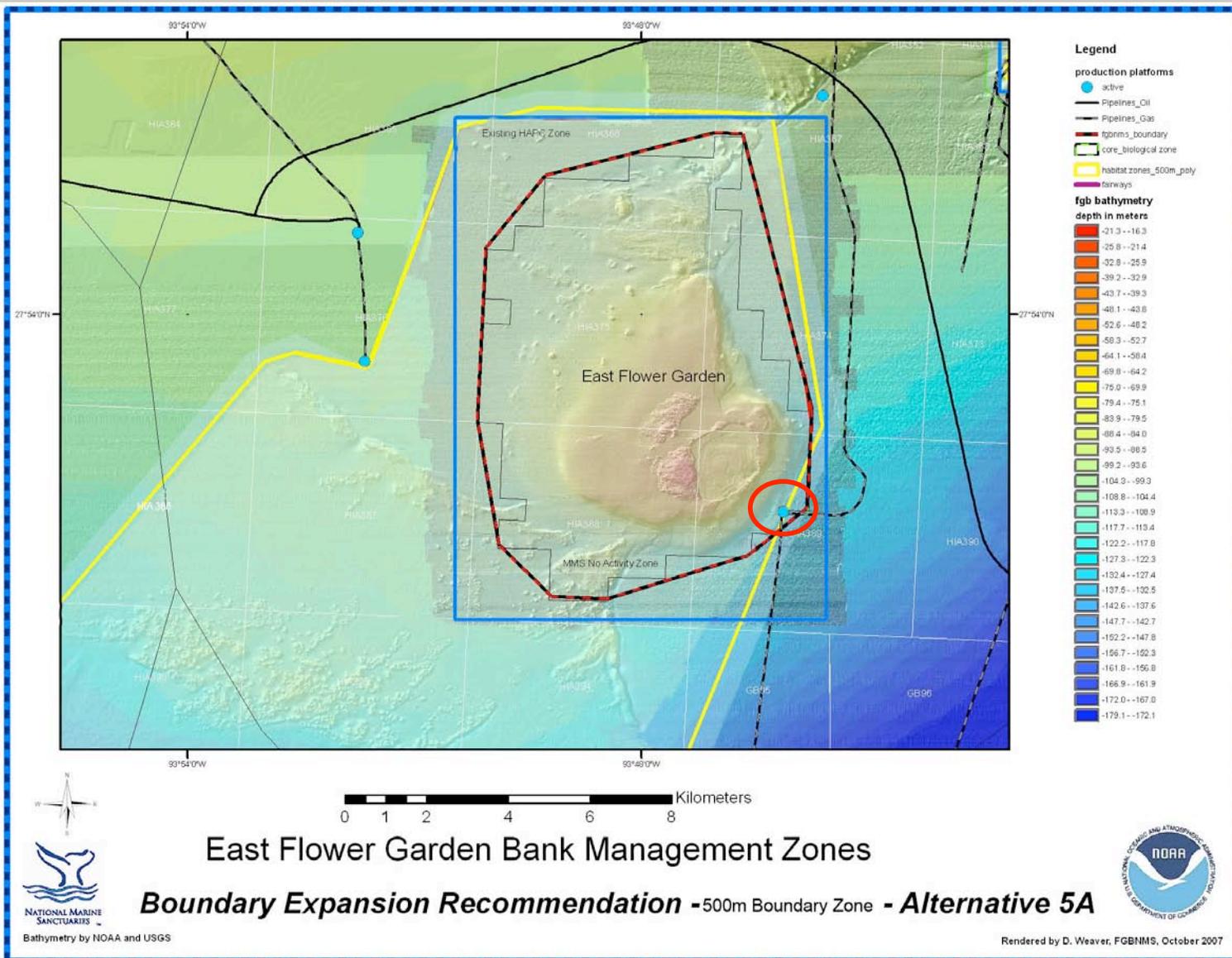


Flower Garden Banks National Marine Sanctuary



Oil & Gas
Infrastructure:

HIA389A
W&T OFFSHORE





Flower Garden Banks National Marine Sanctuary

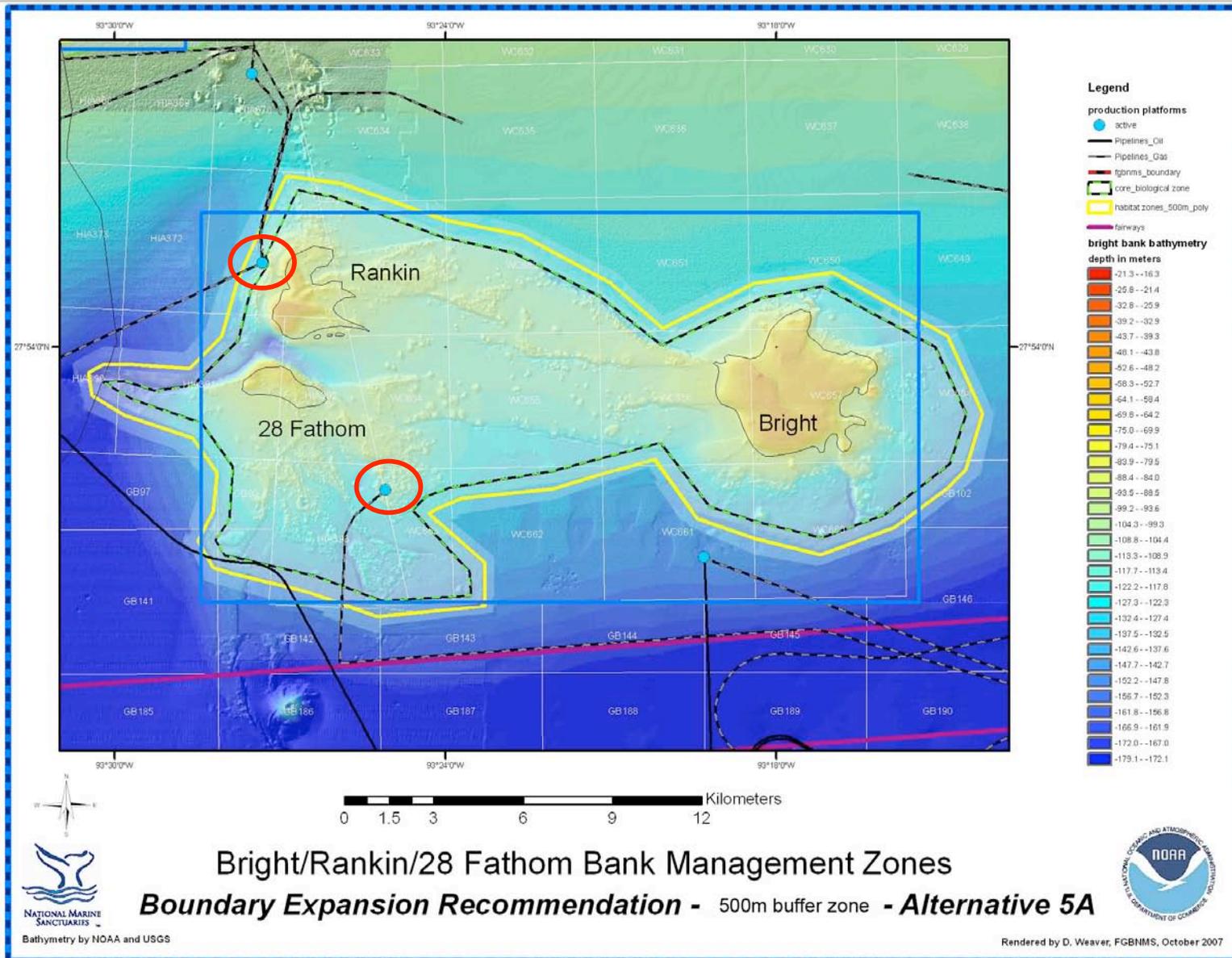


Oil & Gas Infrastructure:

**HIA371
TARPON
OPERATING
AND
DEVELOPMENT**

&

**WC663
ATP
OIL AND GAS
IN**



NATIONAL MARINE SANCTUARIES





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The following is a summary of the six alternatives considered by the Sanctuary Advisory Council. The SAC recommended alternative 5 to NOAA/FGBNMS.

ALTERNATIVE 1

No action



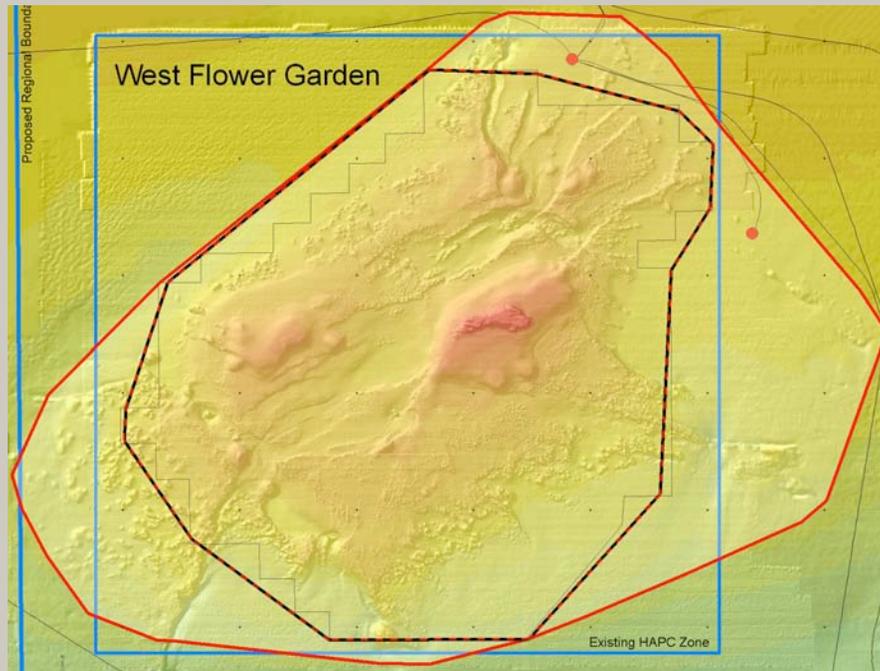
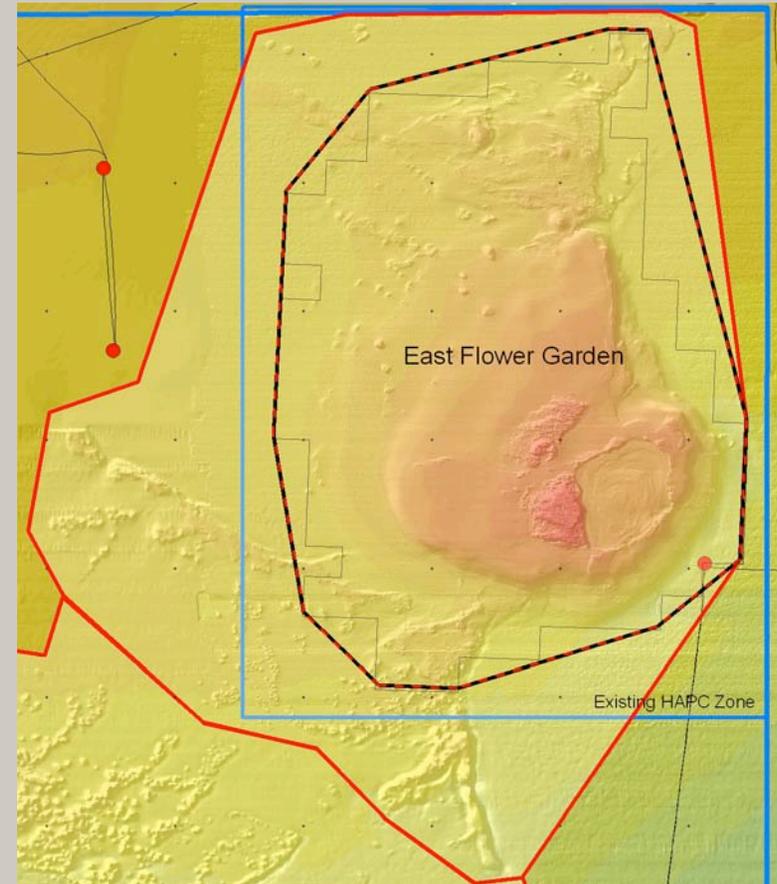
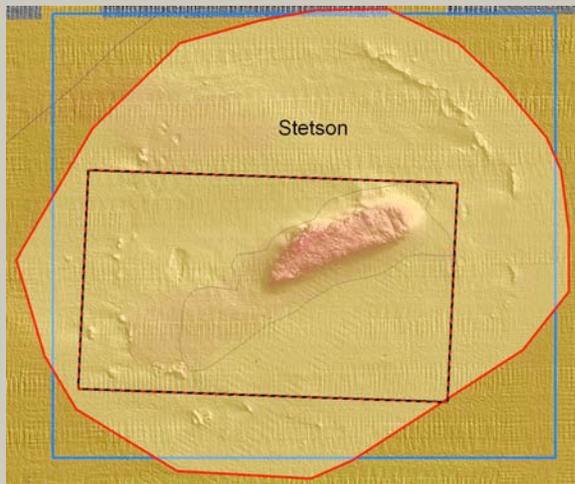
ALTERNATIVE 2

Modify existing boundaries for East and West Flower Garden Banks, and Stetson Bank through actions creating boundaries based on:

- A. Sensitive Habitat Zone/Core Biological Zone
- or
- B. HAPC boundary



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ALTERNATIVE 2



ALTERNATIVE 3

Alternative 2, plus:

Modify existing boundaries to East and West Flower Garden Banks to include Horseshoe Reef, through actions creating boundaries based on either:

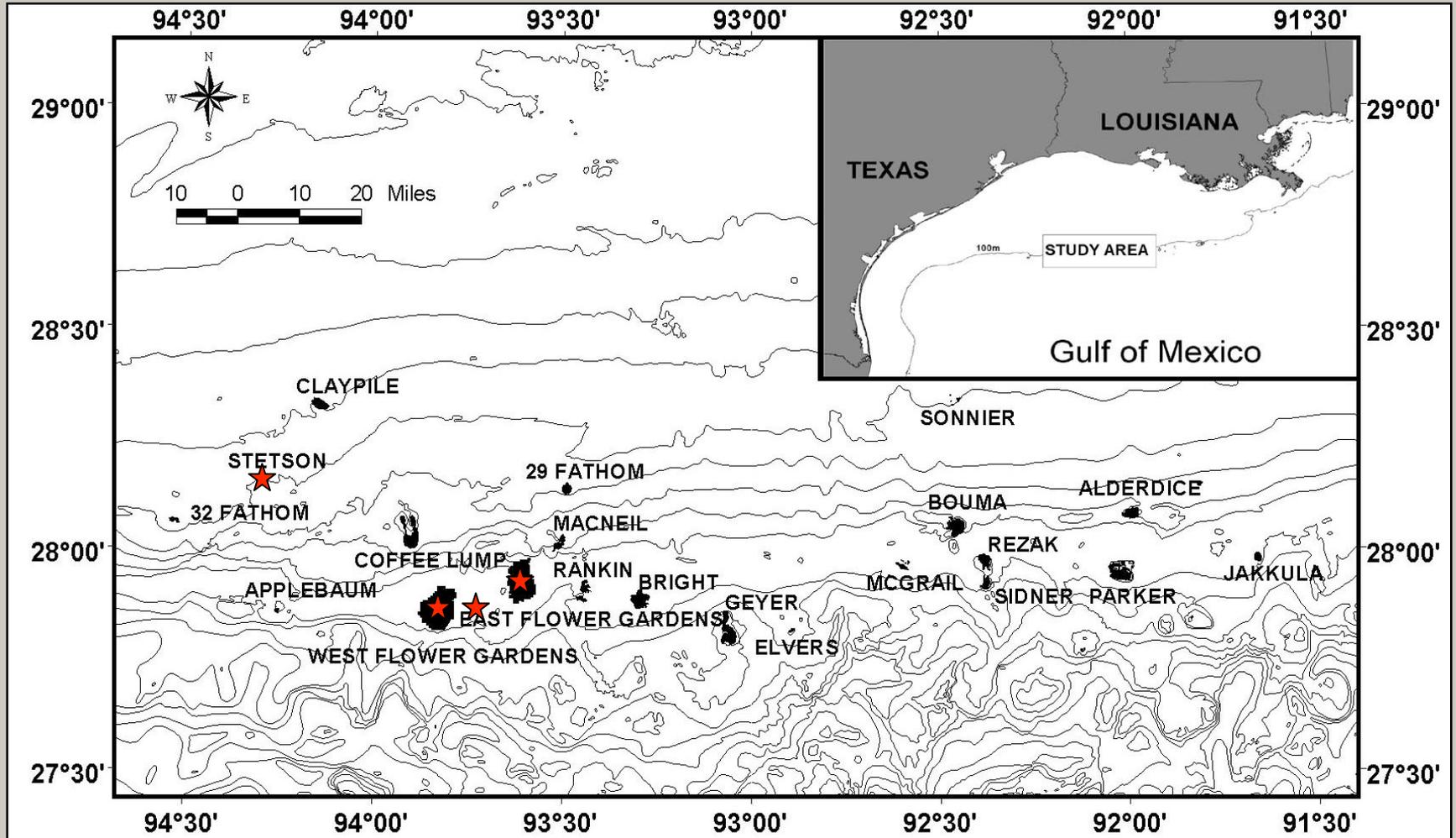
A. Sensitive Habitat Zone/Core Biological Zone encompassing EFGB, WFGB, and Horseshoe Reef

or

B. Rectangular boundary encompassing EFGB, WFGB, and Horseshoe Reef



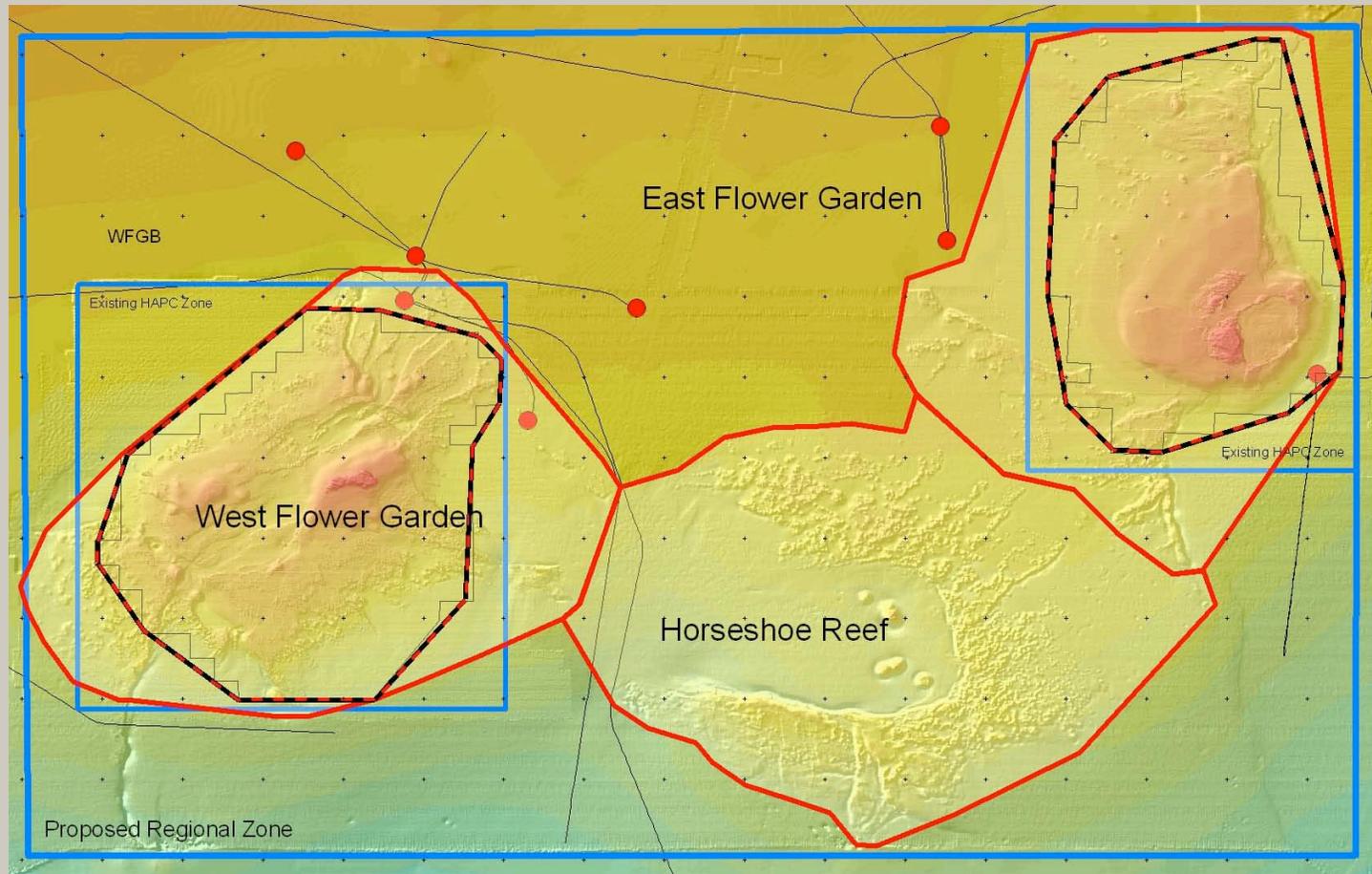
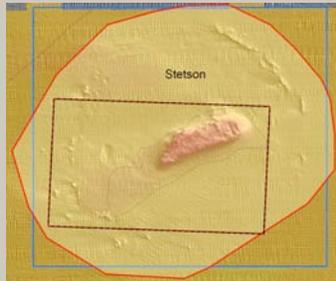
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ALTERNATIVE 3



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ALTERNATIVE 3



ALTERNATIVE 4

Alternative 3, plus:

Create Sanctuary boundaries to include priority areas:

- McGrail Bank
- Geyer Bank
- Bright Bank
- Sonnier Bank
- Alderdice Bank

Through actions creating boundaries based on either:

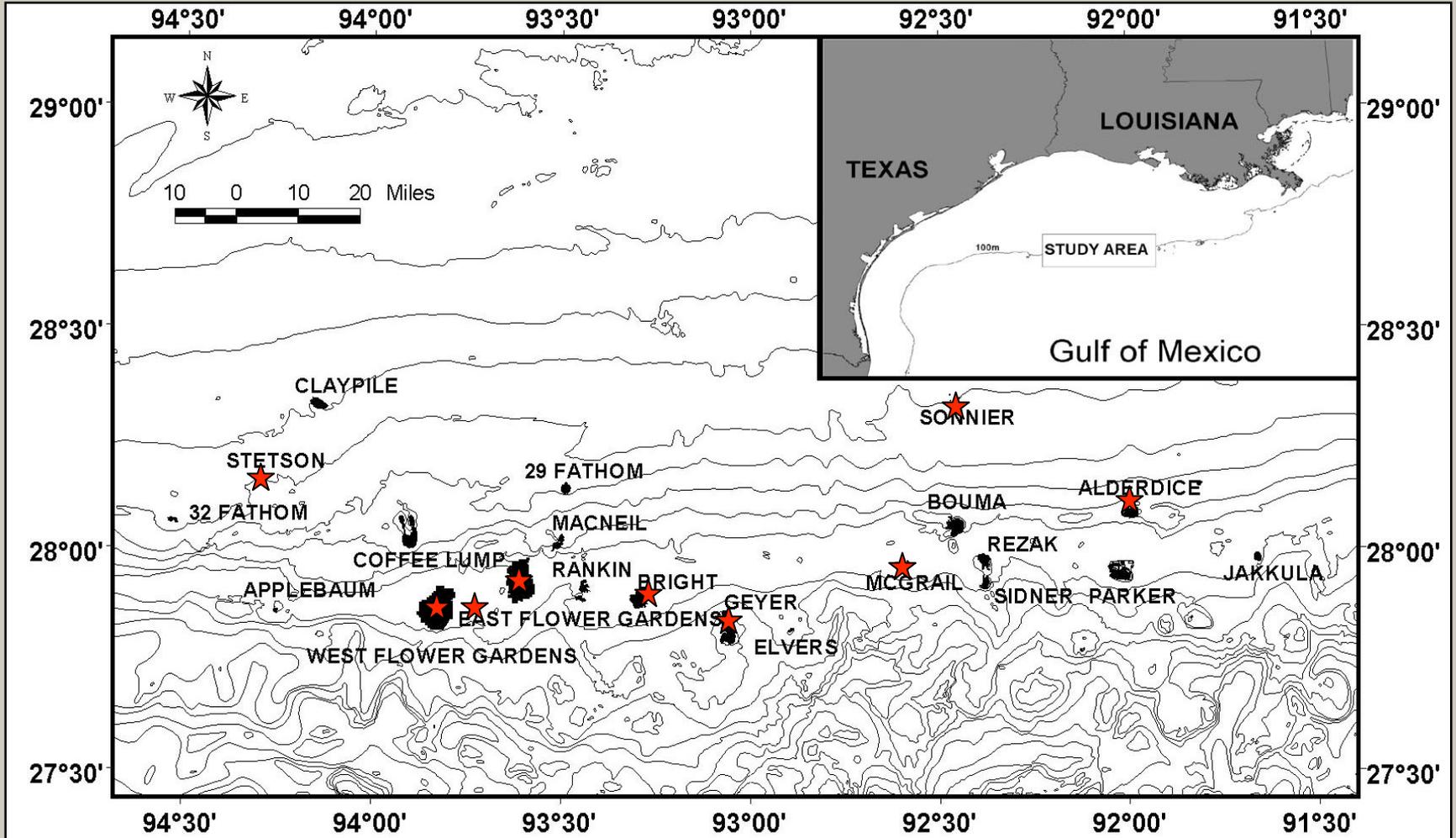
A. Sensitive Habitat Zone/Core Biological Zone

or

B. HAPC boundaries, with the exception of Bright Bank, see proposed alternate boundaries.



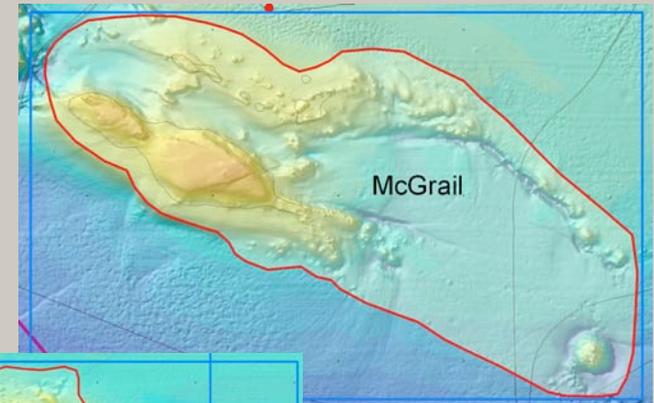
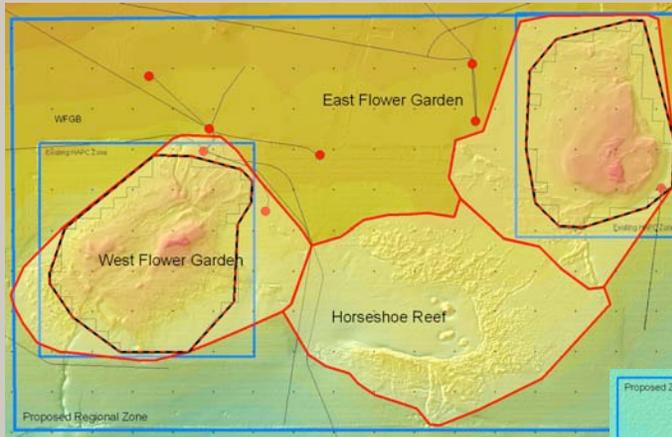
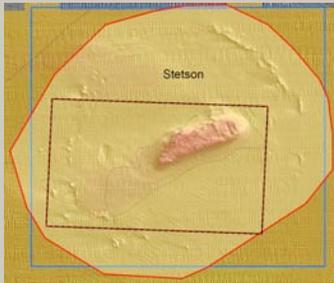
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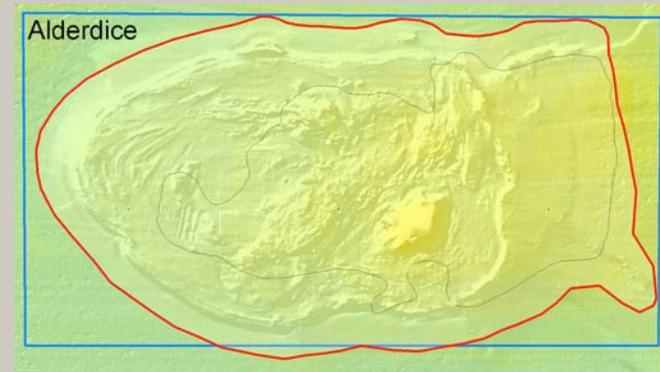
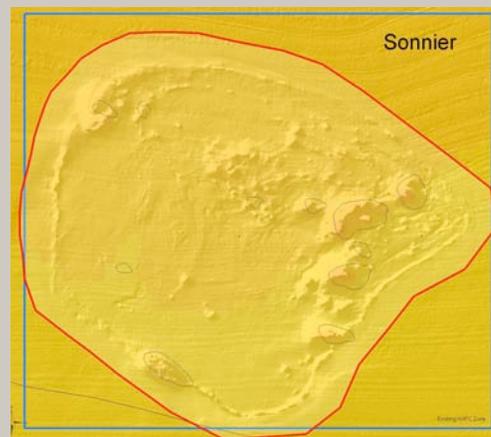
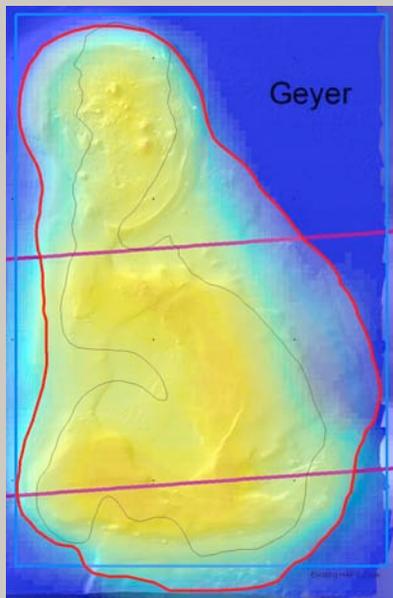
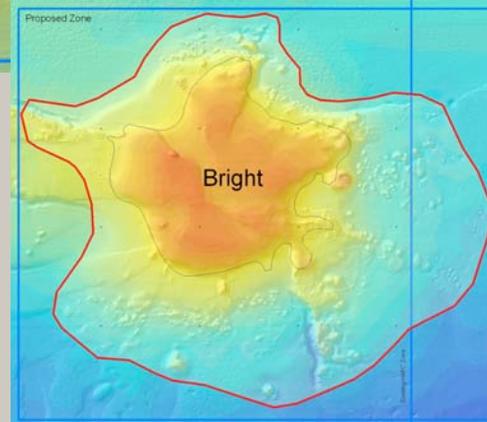
ALTERNATIVE 4



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ALTERNATIVE 4





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ALTERNATIVE 5 - Recommended by Advisory Council

Alternative 4, plus:

Create Sanctuary boundaries to include:

- MacNeil Bank
- Rankin Bank *
- 28 Fathom Bank *

Through actions creating boundaries based on either:

A. Sensitive Habitat Zone/Core Biological Zone

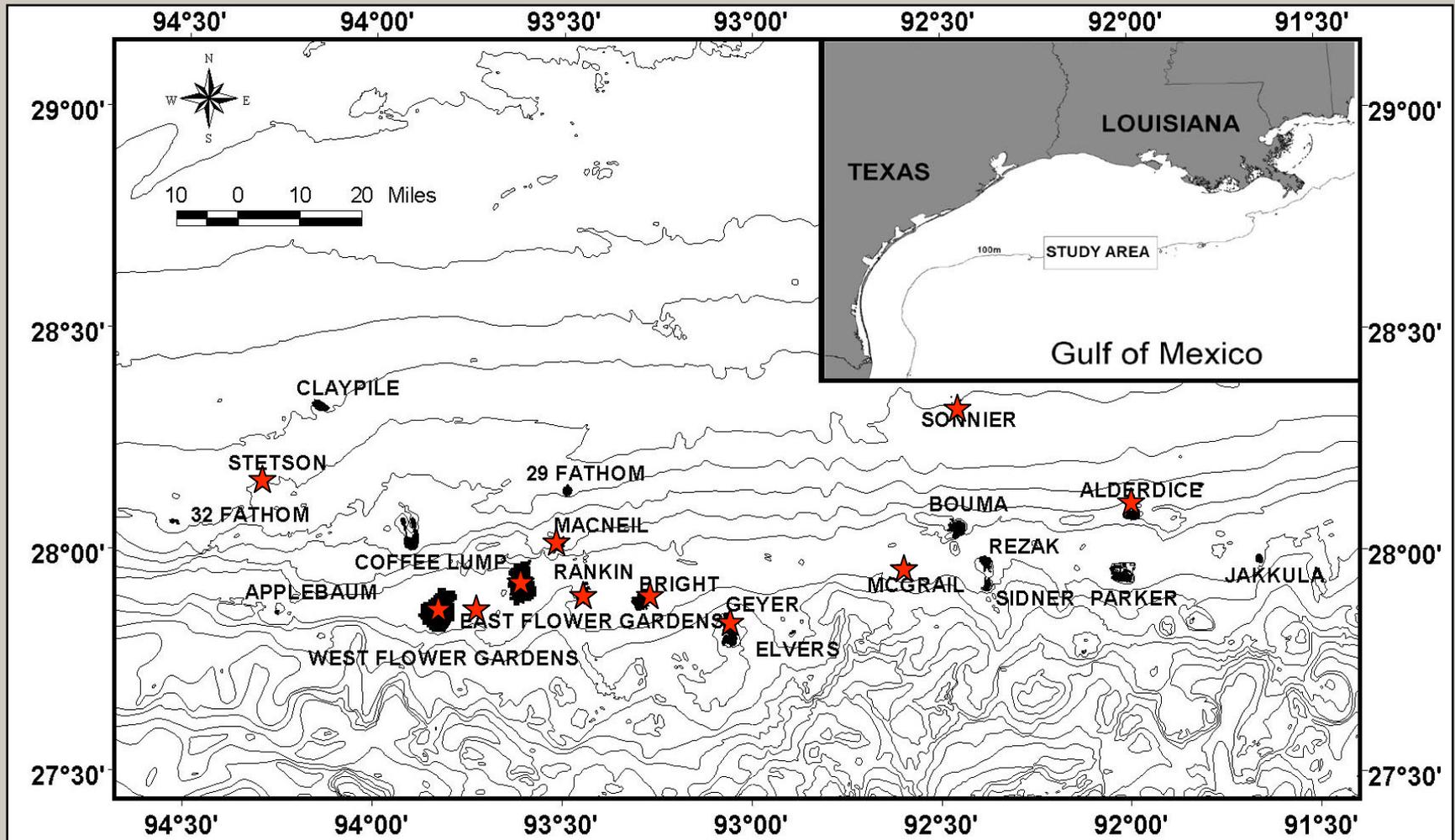
or

B. HAPC boundaries

- SHZ and HAPC for Rankin and 28 Fathom Bank are connected to Bright Bank
- SAC proposed irregularly shaped boundaries around the Sensitive Habitat Zone



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ALTERNATIVE 5 - Advisory Council Recommendation



ALTERNATIVE 6

Alternative 5, plus:

Create Sanctuary boundaries to include all HAPC reefs and banks including:

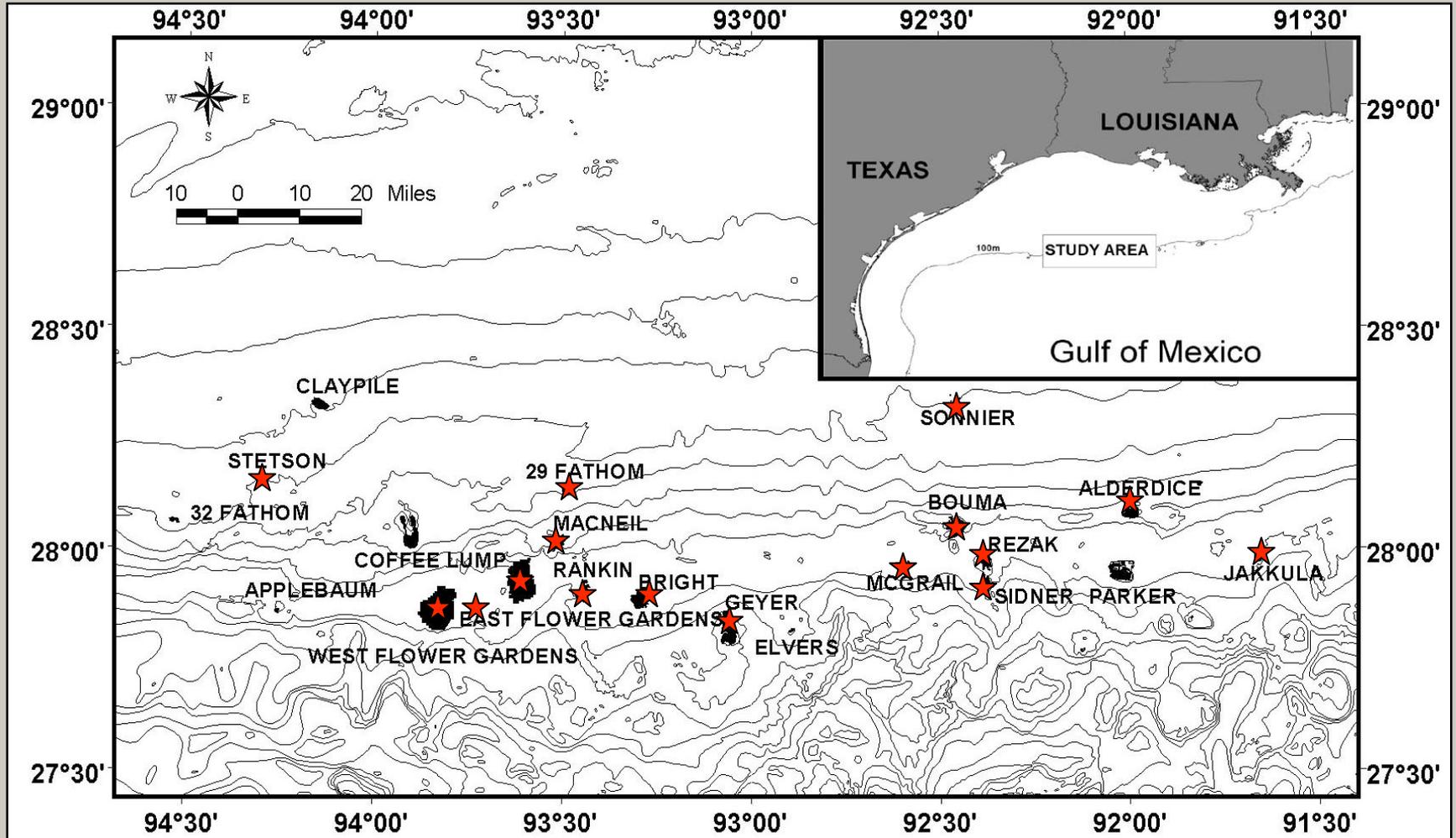
- 29 Fathom Bank
- Bouma Bank
- Rezak Bank
- Sidner Bank
- Jakkula Bank

Through actions creating boundaries based on either:

- A. Sensitive Habitat Zone
- or
- B. HAPC boundaries



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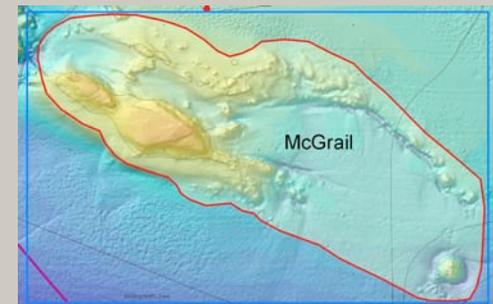
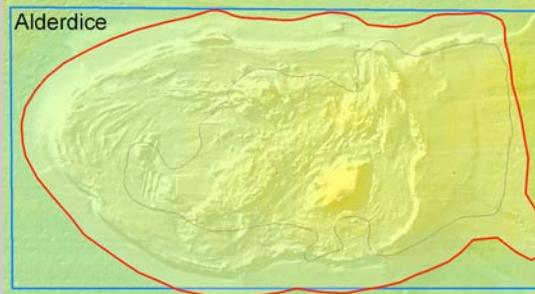
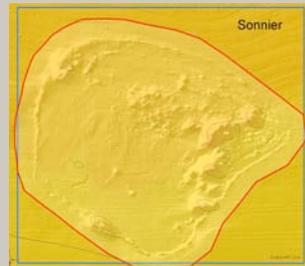
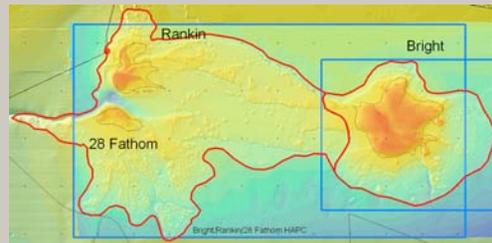
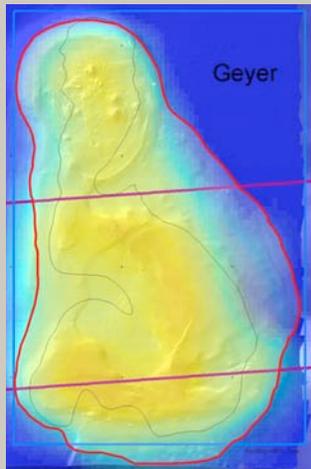
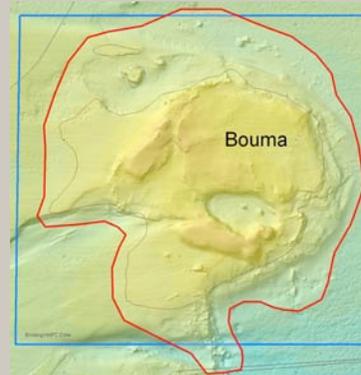
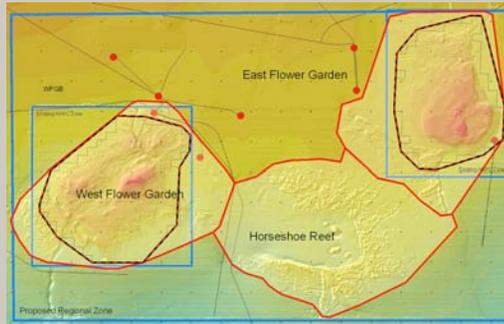
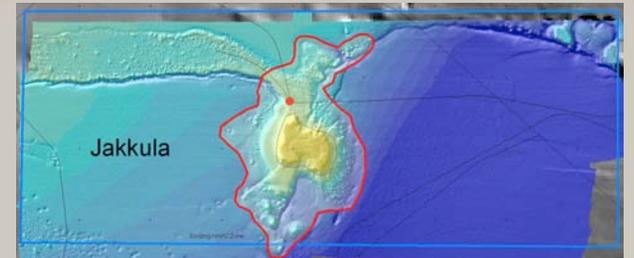
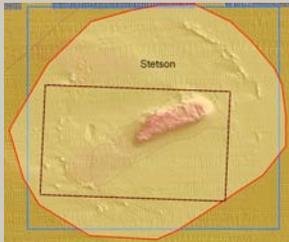
ALTERNATIVE 6



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ALTERNATIVE 6





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More Info: <http://flowergarden.noaa.gov>

Or contact: fgbmanagementplan@noaa.gov

