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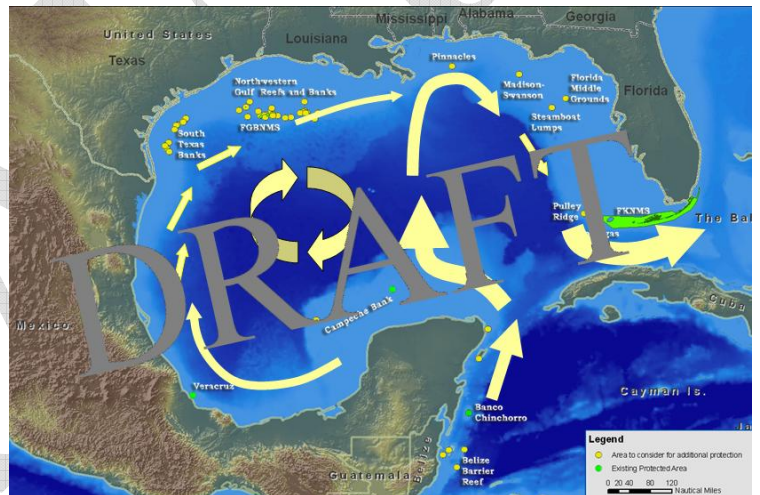
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### LEADING THE WORLD: CREATING AN INTERNATIONAL NETWORK OF MARINE PROTECTED AREAS IN THE GULF OF MEXICO

*President Bush could set a new precedent for marine conservation in the United States by establishing a network of special marine areas in the Gulf of Mexico—the largest such network in the Nation and among the first truly internationally connected networks in the World. This action would extend protection to a biologically-connected network of the Nation's northernmost coral reefs and banks and ensure conservation of sensitive habitats and communities critical to the Gulf's most recognizable and threatened living resources. At the same time, it would provide for recreational and ocean uses that are compatible with the primary objective of conservation and lead the Nation and its partners in the Caribbean to a new level of cooperative conservation.*

#### CREATING A NEW PARADIGM

Following on President Bush's leadership by establishing the world's largest marine protected area in July, 2006 – the Papahānaumokuākea Marine National Monument in July 2006 – a new opportunity exists to lead the world through further actions that will help define ocean conservation in the 21<sup>st</sup> century. Establishing a network in the comparably-complex Gulf of Mexico region will protect a network of sensitive marine areas that are interconnected critical deep water coral banks and hard-bottom communities vital to the health and sustainability of the region's marine resources.



Since 2002, The World Summit on Sustainable Development, the IUCN's World Parks Congress, the Convention on Biological Diversity, and the Group of 8 Nations have all called for establishing MPA networks by the year 2012. This discussion describes the opportunity for the United States to create such a network.

#### WHY THE GULF OF MEXICO?

Historically considered and managed as isolated environments, recent discoveries have documented important biological linkages between these underwater communities that are maintained by the clockwise motion of the Yucatan, Loop and Florida currents. Individual reefs and banks, some of which are connected by bathymetric ridges and scarps, provide a nearly-continuous "corridor" from Belize and Mexico, then into the Gulf itself. Though separated by large expanses of ocean water, the fishes, corals, and invertebrates common to these reefs and banks demonstrate that the health and vitality of resources "downstream" are linked closely to those located "upstream". Further, they are dependent on one another for the continued biological recruitment and replenishment.

In contrast to the relative isolation of the Northwestern Hawaiian Islands, the Gulf of Mexico region is very important for many human uses, which can be preserved so that conservation goals are met while respecting ongoing recreational and economic activity. Protection of these special areas must

carefully incorporate existing recreational and commercial uses into the management structure for the network. In the Gulf of Mexico, existing uses can, and do, co-exist with a highly protected network of marine areas

### **THE CONCEPT OF CONNECTING THE "ISLANDS IN THE STREAM"**

- ***The "Islands" are those special places anchored in the vast Gulf of Mexico that are oases for marine life.***
- ***The "Stream" is the river (loop current complex) in the sea always present in the Gulf that connects them.***

The periphery of the Gulf of Mexico is surrounded by an incredible diversity of hard-bottom features rising from the seafloor and forming a series of submerged "islands". Some of these features are ancient shorelines, others former seabeds thrust up by salt movement; still others originate from ancient coral reef growth. No matter what their origin, they now all serve as outposts for diverse communities of tropical and subtropical plants, invertebrates and fishes. These outposts, when taken together, form a chain of "jewels" encircling the Gulf of Mexico, and comprise a regional reservoir of Caribbean reef animals and plants.

The "Islands- the special places- in the Stream" in the US include:

- South Texas Banks
- Flower Garden Banks NMS
- NW Gulf Reefs and Banks
- Mississippi-Alabama Shelf Pinnacles
- Madison Swanson
- Florida Middle Grounds
- Steamboat Lumps
- Pulley Ridge
- Florida Keys NMS

Each oasis in the chain is linked to the others by currents. These currents are like a "liquid wind" that supplies and replenishes habitats of every kind in the ocean realm. Currents are the ocean's version of the breezes that disperse the seeds of dandelions and maples, and the spores of mushrooms. They carry water from the Caribbean Sea into and around the Gulf of Mexico supplying habitats that are often distant and isolated. These habitats are dependent upon nutrients and larvae carried by currents, which carry tropical species north into the Gulf, casting plant spores, animal larvae, and even adult creatures over huge expanses. As such, the continued health of each feature is linked to the connectivity created by the currents - damage to one jewel in the chain can impact the rest. The strength of these connects provide a clear basis for establishing a network of special places not only to protect each of these unique features, but the entire network as a system.

## **FOLLOWING ON SUCCESS AT PAPAĪANAUMOKUĀKEA**

The offshore areas of the Gulf of Mexico, and their resources, are currently managed under multiple authorities by several federal agencies. For example, MMS has historically protected topographic features through stipulations in leases that prevent drilling in sensitive zones, called no activity areas. Also, NOAA and the GMFMC have designated several of these same topographic features as Habitat Areas of Particular Concern, which provide limits on the types of fishing that can occur in the area, or closes the areas altogether. However, there is currently no unifying framework to comprehensively manage all of these areas and all of the activities affecting them.

The Gulf of Mexico provides the opportunity to establish the largest network of protected marine areas and unify these authorities so that it is managed in the most comprehensive and coordinated manner possible.

## **MAKING THE NETWORK INTERNATIONAL**

Like most ecosystems on earth, the Gulf of Mexico system does not obey international boundaries. Because of the current system that flows northward from the Caribbean along the Yucatan Peninsula into the Gulf of Mexico, hard-bottom habitats downstream from the Caribbean are prime areas for thousands of species of corals, sponges, fish and other tropical species. One of the major sources is the Meso-American Barrier Reef System (MBRS), the second longest barrier reef system in the world. It may represent what scientists call a center of diversity for the region, which means that it contains nearly all of the reef species present in the region. Other Caribbean reefs may have comparable diversity, but the sheer size of the MBRS and its proximity to the Gulf of Mexico leaves no question about the importance of the biological productivity of the MBRS for points north. It is a connected and interdependent system.

As in the U.S. portion of the Gulf of Mexico, important "oases" for marine life are found in the waters off Mexico and Belize. By forming partnerships with Mexico and Belize and providing needed support and guidance, the three nations could simultaneously complete an international Gulf-wide network.

***Whether or not an international network could be established, establishing the U.S. network would be an important, indeed critical, first step.***

### Key Federal Partners in the Gulf

- NOAA National Marine Sanctuaries provide comprehensive ecosystem protection to the Flower Garden Banks and Florida Keys national marine sanctuaries through the National Marine Sanctuaries Act and Florida Keys NMS and Protection Act
- NOAA Fisheries and Gulf of Mexico Fishery Management Council manage fisheries through the Magnuson-Stevens Fisheries Management and Conservation Act
- Minerals Management Service manages oil, gas and mineral exploration through the Outer Continental Shelf Lands Act

**APPENDIX. Defining the "Islands in the Stream"**

Area	Description	Habitats	Species	Threats	Existing Protections
<b>South Texas Banks</b>	Banks crest at 56-70 m, with surrounding depths 60-80 m. Features high and low relief mid-shelf carbonate banks.	Black coral communities including limited populations of small corals. These communities are subject to frequent influxes of turbid water.	Grouper, greater amberjack, sharks, cobia, red and vermillion snapper, and numerous species of reef fish.	Fishing, bycatch, lost gear, anchoring.	Texas shrimp closure; longline and buoy gear restricted area
<b>Flower Garden Banks National Marine Sanctuary</b>	Northernmost coral reefs in continental US (42.5 sq nm), on outer shelf edge about 100 miles south of TX/LA border. Banks formed when bedrock uplifted by underlying salt domes and now host clear-water coral reefs. Banks crest at 15-20 m, surrounded by water depths to 150 m.	Sand flats, soft sediments, bank reefs, drowned reefs, pinnacles, hard substrate, algal sponge communities, brine seeps/flows, fault scarps and artificial reefs.	Stony and black corals, manta rays, spotted eagle rays, hammerhead sharks, three species of endangered sea turtles, and whale sharks; 23 coral species; over 850 other reef invertebrate species; approx. 250 fish species; 125+ algae species	Aquaculture and artificial reefs, climate change, coral disease, harvesting, rare species removal, bycatch, lost gear, invasive species, oil and gas infrastructure, pollutant discharge, shipping and transport, visitor use, and wildlife interactions.	National Marine Sanctuary; Habitat of Particular Concern; IMO International No-Anchoring Zone; MMS No Activity Zone
<b>North Texas-Louisiana Banks</b>	Mid-shelf and shelf-edge banks of high relief (4-50 meters) associated with salt domes and outcrops of limestone, sandstone, claystone and siltstone; smallest bank is about 20 square meters, the largest has an area of several hundred square meters.	Sand flats, soft sediments, bank reefs, drowned reefs, pinnacles, hard substrate, algal sponge communities, brine seeps/flows, fault scarps and artificial reefs.	Significant communities of a variety of black corals, solitary corals and branching corals; diverse invertebrate and reef fish communities, vermillion and red snapper, greater amberjack, grouper.	Aquaculture and artificial reefs, climate change, coral disease, harvesting, rare species removal, bycatch, lost gear, invasive species, oil and gas infrastructure, pollutant discharge, shipping and transport, visitor use, and wildlife interactions.	Some banks designated as Habitat of Particular Concern; some banks designated as MMS No-Activity Zones. Portions of these banks currently being considered as part of Flower Garden Banks NMS expansion
<b>Mississippi-Alabama Shelf Pinnacles</b>	Located south of Mobile Bay, these features are drowned reefs in water depths of 70-120 m and consisting of tall, steep-sided reef structures.	Deep rocky reefs, patch reefs, drowned reefs, pinnacles, hard bottom, algal sponge communities, brine seeps/flows, chemosynthetic communities, fault scarps. Considered to be critical spawning habitat for many commercially important species of groupers and snappers. Centrally located along the shelf edge, the topographic features possibly facilitate genetic exchange between the faunas of communities to the east and west. Lying directly in the path of the Loop Current intrusions, these are likely the first hard bottom communities to be encountered by species transported from the Caribbean.	Soft corals, sponges, crinoids, black corals, coralline algae, scamp, snowy grouper, red snapper, amberjack, rough-tongued bass, red barbler, spanish flag, vermillion snapper. The hydrocarbon and brine seeps found here support chemosynthetic communities that include tube worms and mussels	Oil & gas extraction, fishing, considered to be critical spawning habitat for many commercially important species of groupers and snappers	No Federal fishery management protections specific to this area
<b>Madison Swanson</b>	Approx. 115 sq. nm composed of "drowned reefs" or "fossil reefs" at water depths of 30-120 meters.	Deep rocky reefs, ledges, paleo shoreline, drowned patch reefs pinnacles, sand waves, hard bottom chemosynthetic communities, submarine canyons, fault scarps soft sediments, algal/sponge communities, brine seeps/flows.	Oculina coral, soft coral, sponges, crustose coralline algae, arrow crabs, crinoids, basket stars, hermit crabs, amberjack, gag, scamp, snowy grouper, red snapper, rough-tongued bass, batfish, red barbler, butterflyfish. Important ecologically as areas of high biodiversity and as source areas supporting the spawning aggregations of the more economically important reef fish species (Gag grouper) of the Southeastern US.	Fishing impacts may have affected the benthic communities and habitat features of Madison Swanson. Threats also include oil and gas exploration and development and water redirection.	HAPC - Closed to all fishing except for highly migratory species
<b>Florida Middle Ground</b>	348 sq nm area composed of "drowned reefs" or "fossil reefs". Water depths 20-120 m	Deep rocky reefs, ledges, paleo shoreline, drowned patch reefs pinnacles, sand waves, hard bottom chemosynthetic communities, submarine canyons, fault scarps soft sediments, algal/sponge communities, brine seeps/flows.	Best known and most important area on the west coast of Florida in terms of coral communities. Many commercially important species including striped mullet, spotted sea trout, spanish mackerel, king mackerel, snappers and groupers: rough-tongued bass, red barbler, spanish flag, creole fish, amberjack, almaco jack, yellowtail reef fish, black coral, soft coral and fire coral, some stony coral.	Fishing impacts may have affected the benthic communities and habitat features of the Florida Middle Ground. Oil and gas exploration and development and water redirection are also potential threats.	HAPC - prohibited activities include coral harvest, longlines, traps, pots and trawlers
<b>Steamboat Lumps</b>	Area of 104 sq nm composed of "drowned reefs" or "fossil reefs" at water depths 50-120 m	Deep rocky reefs, ledges, paleo shoreline, drowned patch reefs pinnacles, sand waves, hard bottom chemosynthetic communities, submarine canyons, fault scarps soft sediments, algal/sponge communities, brine seeps/flows.	Roughtongue bass, red barbler, spanish flag, creole fish, red snapper, vermillion snapper, scamp, gag, red grouper, amberjack, almaco jack, yellowtail reef fish, black corals. Gag grouper spawning aggregation site.	Fishing impacts may have affected the benthic communities and habitat features of Steamboat Lumps. In addition, oil and gas exploration and development and water redirection are potential threats.	Closed to all fishing except for highly migratory species
<b>Pulley Ridge</b>	1300 sq nm area on the southwest Florida shelf about 250 km west of Cape Sable. Pulley Ridge is 100 km long and approximately 5 km across and consists of a series of north-south oriented, drowned barrier islands ranging 60-100 m deep.	Plate-like corals, coral mounds, patches of algae, sand patches.	Deepest U.S. coral reef. Photosynthetic corals, sponges, fleshy and calcareous algae, soft corals, more than 60 fish species.	Fishing activities	HAPC - prohibited activities include coral harvest, longlines, traps, pots and trawlers
<b>Florida Keys/Tortugas National Marine Sanctuary</b>	151 square nautical miles; northern half of Tortugas Bank is 20-50 m deep; Riley's Hump (reef fish spawning aggregation site) is 30-50 m deep, sloping to the south into deep water	Coral banks, patch reefs, sandy patches, deep soft sediments	Corals, soft corals, black coral, sponges, crinoids, red-tailed triggerfish, grouper/snapper complex, at least 400 fish species. Sherwood Forest - large mushroom-shaped corals interspersed with lush growths of soft corals and colorful sponges.	Fishing activities, large-ship anchor damage, recreational use	National Marine Sanctuary; no-take marine reserve