

Future Oil & Gas Development in the Offshore Gulf of Mexico

Clint Moore

Oil & Gas Representative

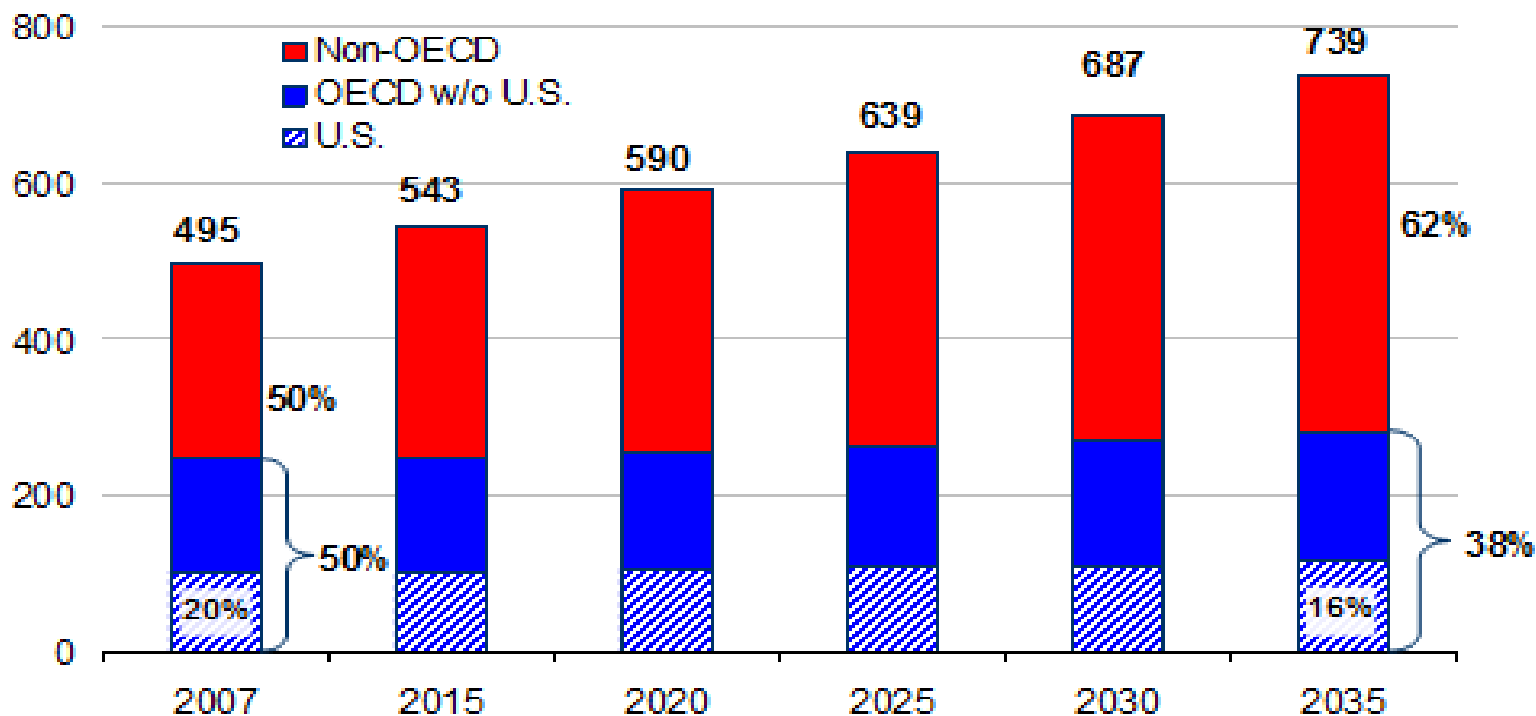
Flower Garden Banks National Marine Sanctuary Advisory Council

Presentation to
PLANO Executive Night Seminar
New Orleans, Louisiana
February 16, 2012

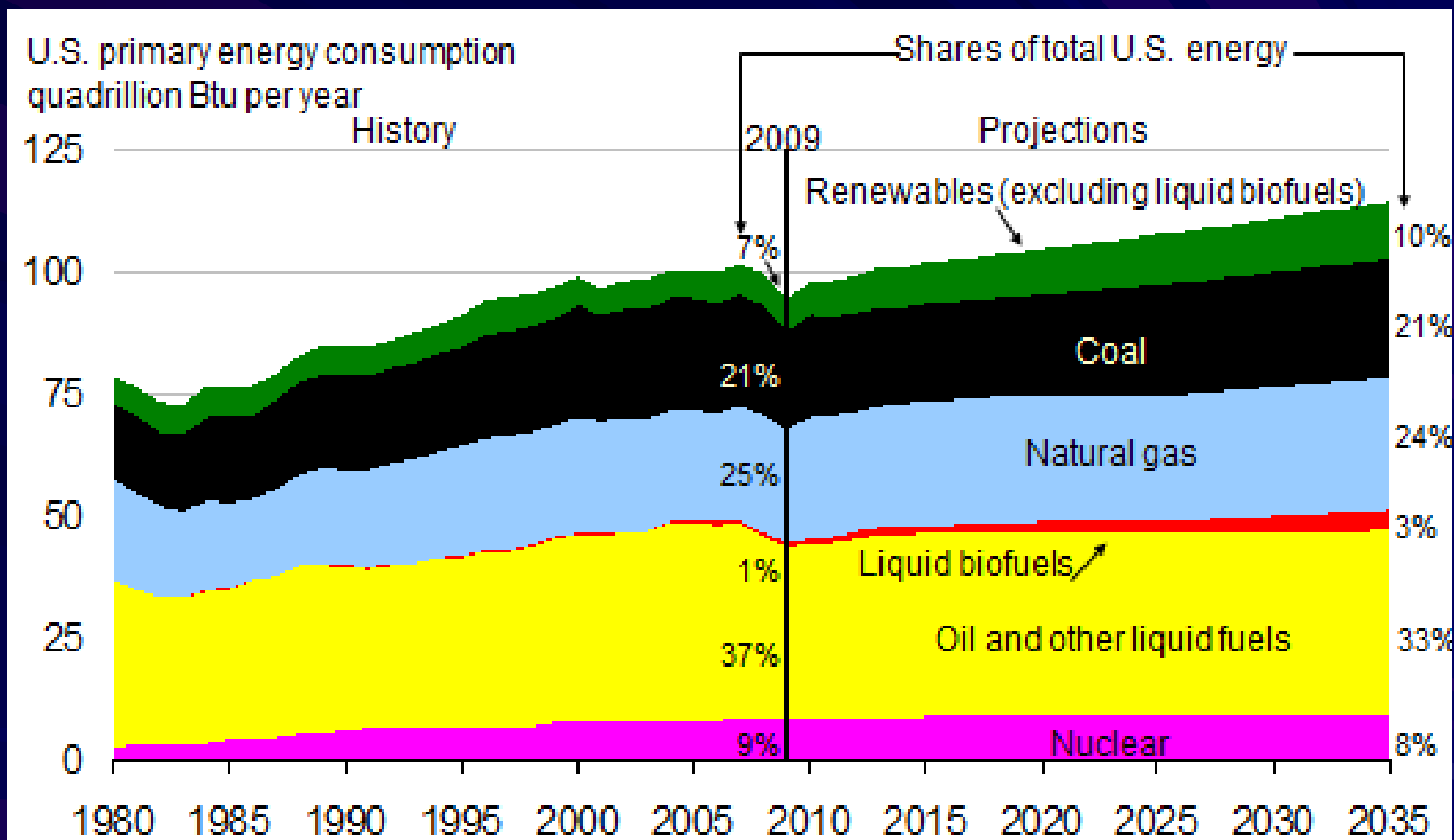
World Energy Demand Growing!

Non-OECD countries account for vast majority of the nearly 50% projected increase in global energy use by 2035

energy consumption
quadrillion Btu



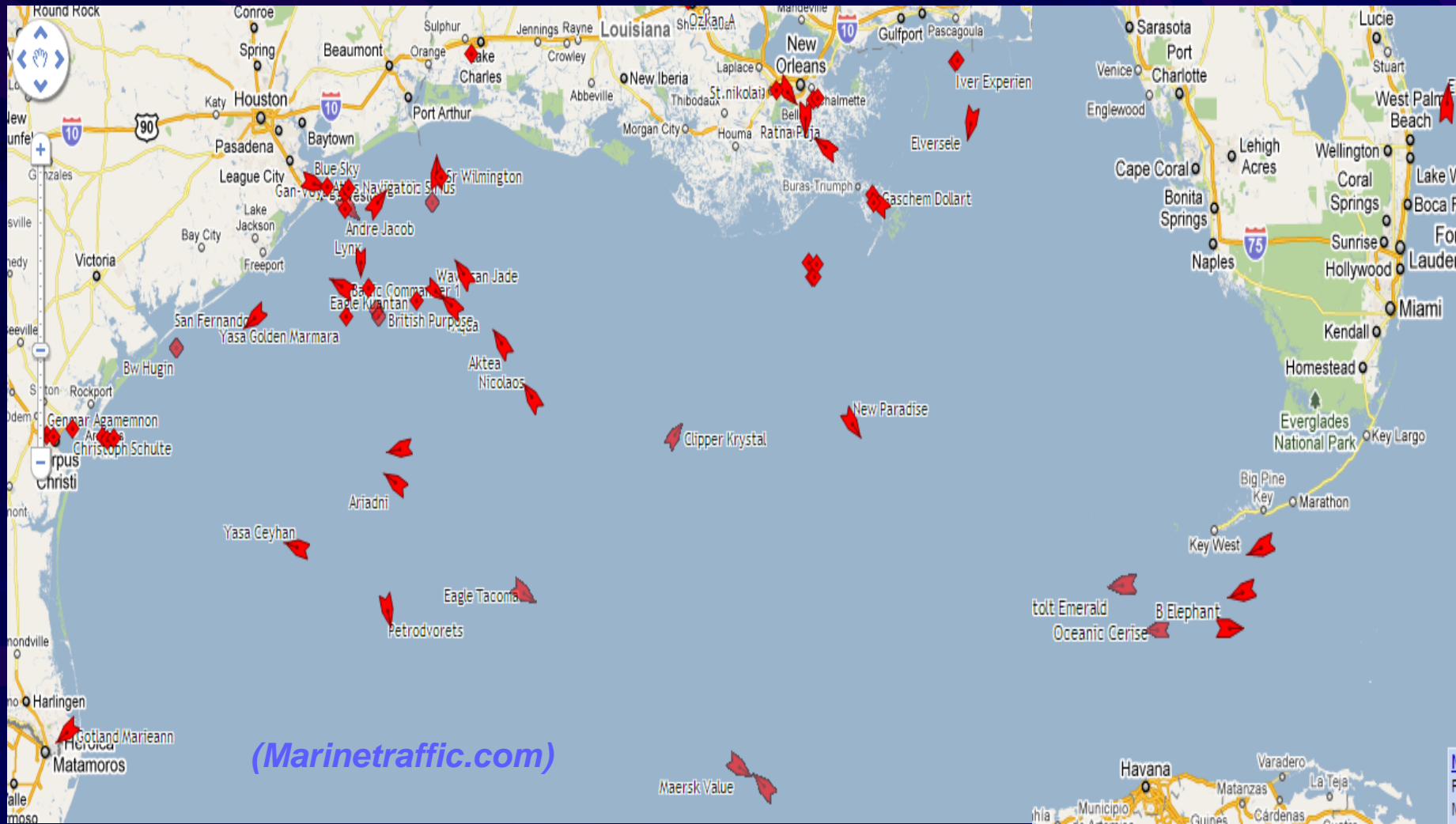
US Supply 2035 - still 78% Fossil Fuels



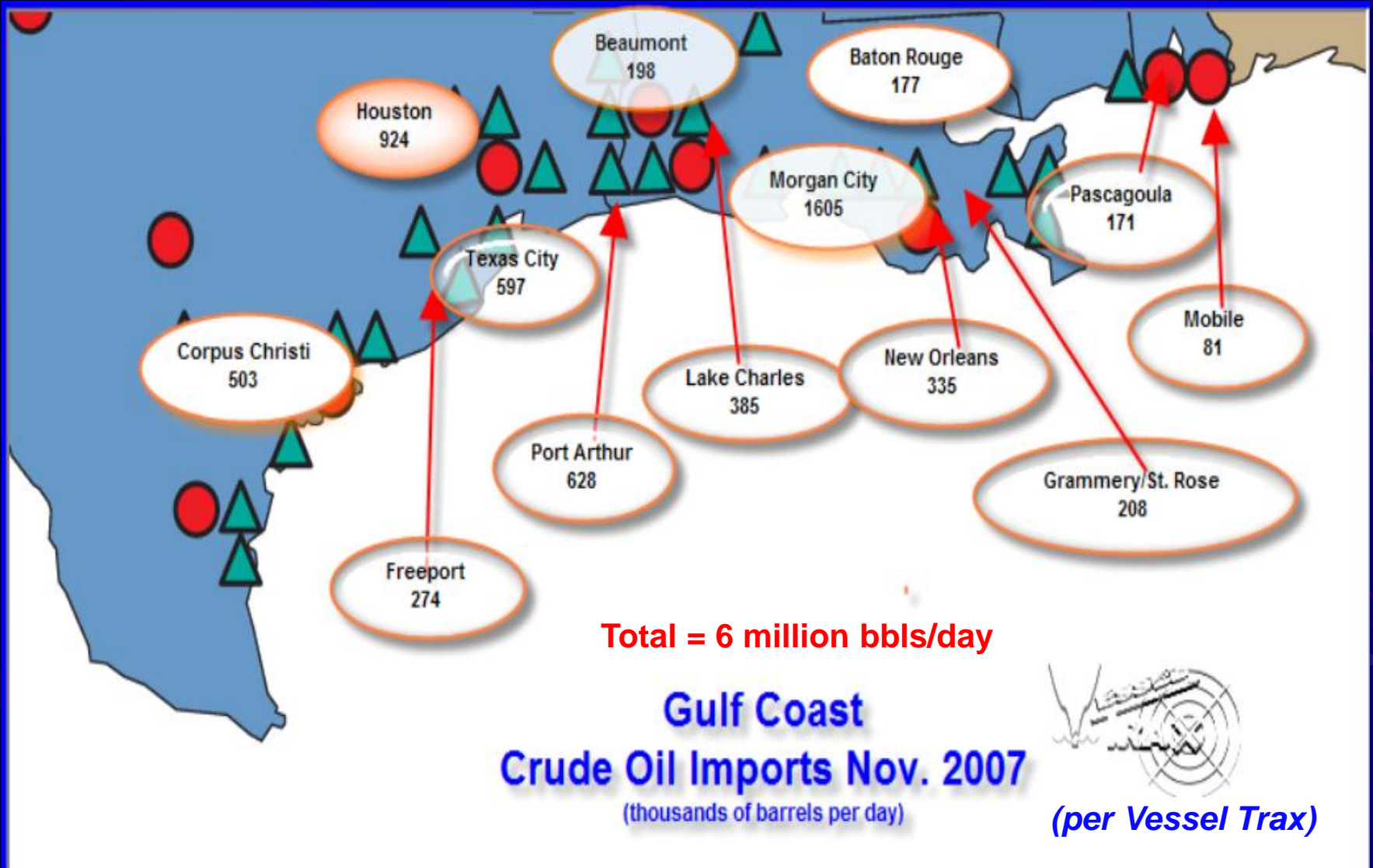
U.S. Oil Consumption & Supply

U.S. OIL DEMAND	Million Barrels/Day	Trillion Gallons/Year
U.S. Gasoline	9.5	146
U.S. Distillate & Fuel Oil	4	61
U.S. Jet Fuel & Kerosine	1.4	21
U.S. Residual & Bunker	0.6	9
U.S. Others - Chem, Lubes, etc.	4.5	69
Total U.S. Oil Demand	20	307
		0
Total World Oil Demand	86	1,318
Total World Oil Supply	86	1,318
U.S. OIL SUPPLY	Million Barrels/Day	Trillion Gallons/Year
U.S. Gulf Offshore Oil Production	1.5	23
U.S. Non-Gulf Oil & NGL Prod.	6	92
Gulf Coast Tanker Crude Imports	5	77
East Coast Tanker Crude Imports	1	15
West Coast Tanker Crude Imports	1	15
Refined Tanker & Pipeline Imports	2.3	35
N.A. Imports	1.5	23
Other supply	1.7	26
Total U.S. Oil Supply	20	307

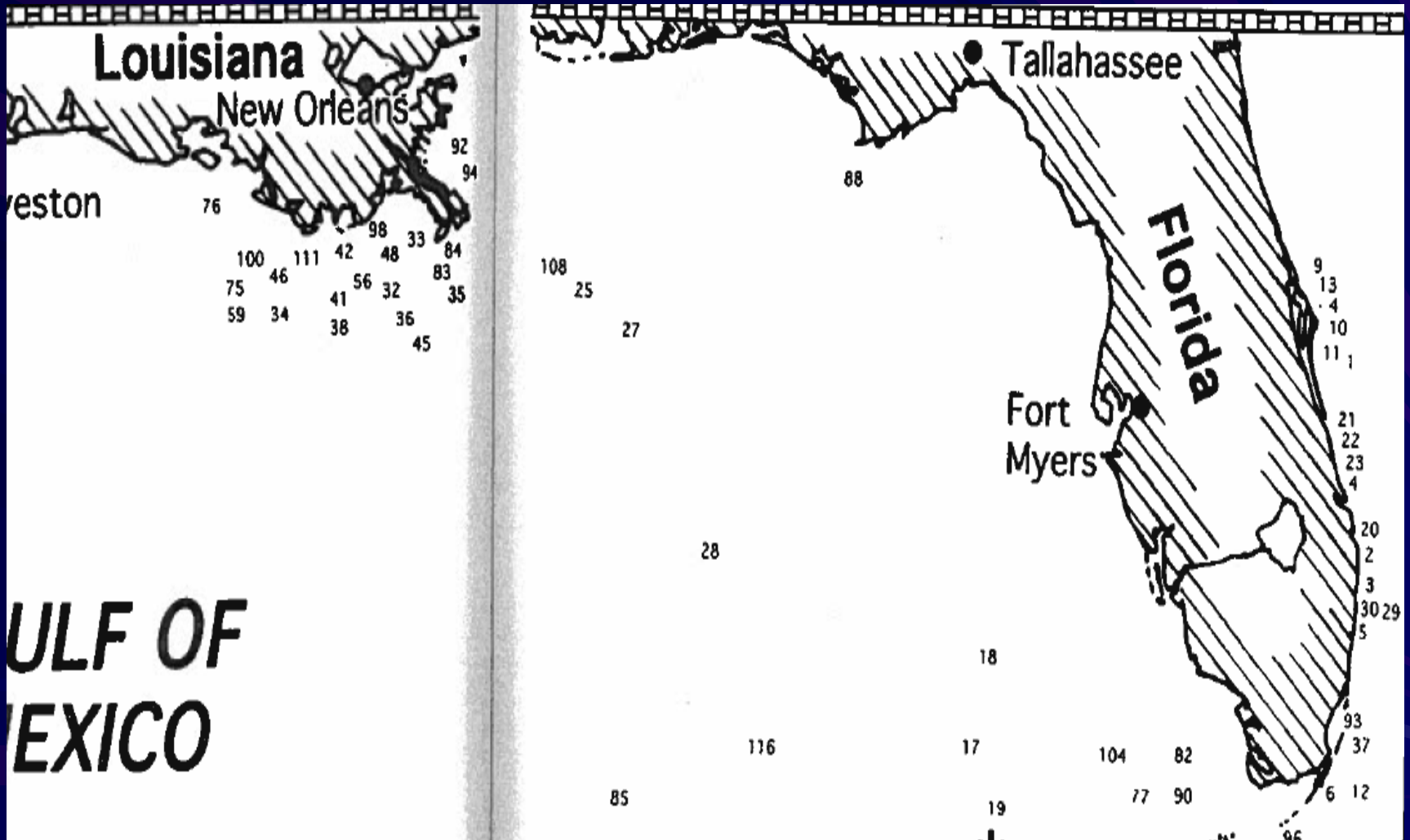
About 50+ Tankers in US Gulf of Mexico offloading 250 million gallons every single day



Gulf Coast Daily Tanker Oil Imports to Refineries

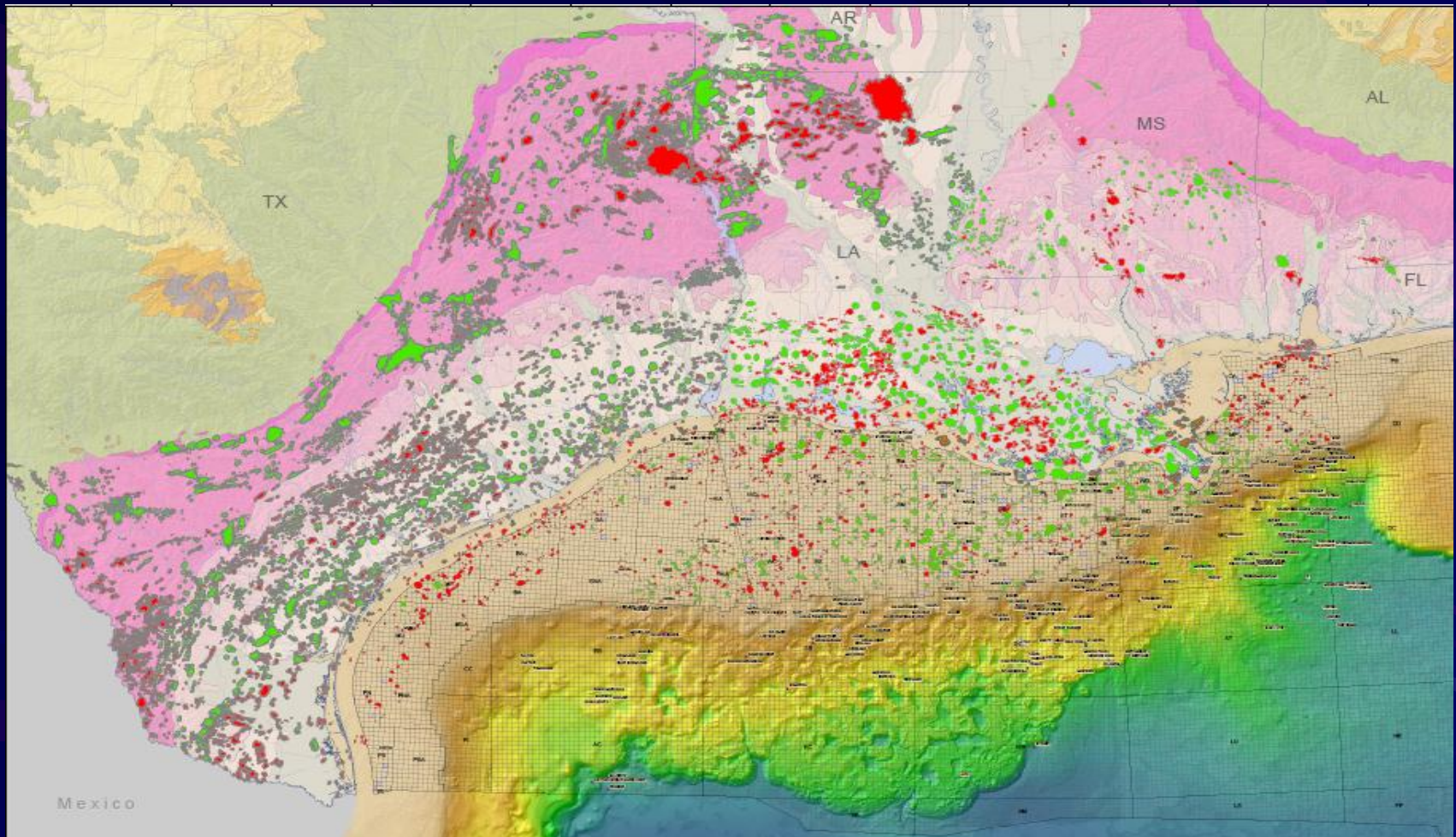


**25+ WW II Tankers Sunk by U-Boats
1.5+ Million Barrels spilled in Summer (90+ days) of 1942**



(from "Torpedoes in the Gulf", 1995)

Gulf of Mexico Oil & Gas Fields



Offshore Gulf of Mexico Oil & Gas

Historical Production

**14+ Billion Bbls Oil and 150+ Trillion cu-ft Natural Gas
(1.7 Trillion gallons of oil equivalent)**

Productive Fields' Remaining Producible Reserves

**14+ Billion Bbls Oil and 60+ Trillion cu-ft Natural Gas
(1 Trillion gallons of oil equivalent)**

Undiscovered Oil & Gas (BOEMRE Mean Estimate)

**45+ Billion Bbls Oil AND 230+ Trillion cu-ft Natural Gas
(3.5 trillion gallons of oil equivalent)**

25% of US Daily Oil Production – 14% of US Daily Gas Production

Oil & Gas Activity in GOM

100+ Offshore Operators – 500+ Offshore Companies

50,000+ Direct Offshore Workers

1 million+ impacted by offshore

60+ Years of Drilling & Production

55,000+ wells drilled to date

4,000+ deepwater (500'+ water depth) wells

400+ ultra-deepwater (5,000'+ water depth) wells

Only 50 Movable Offshore Drilling Units (MODU) working in the GOM in Fall 2011



Drillship



Semi-submersible



Jackup



Platform Rig

Platforms & Caissons



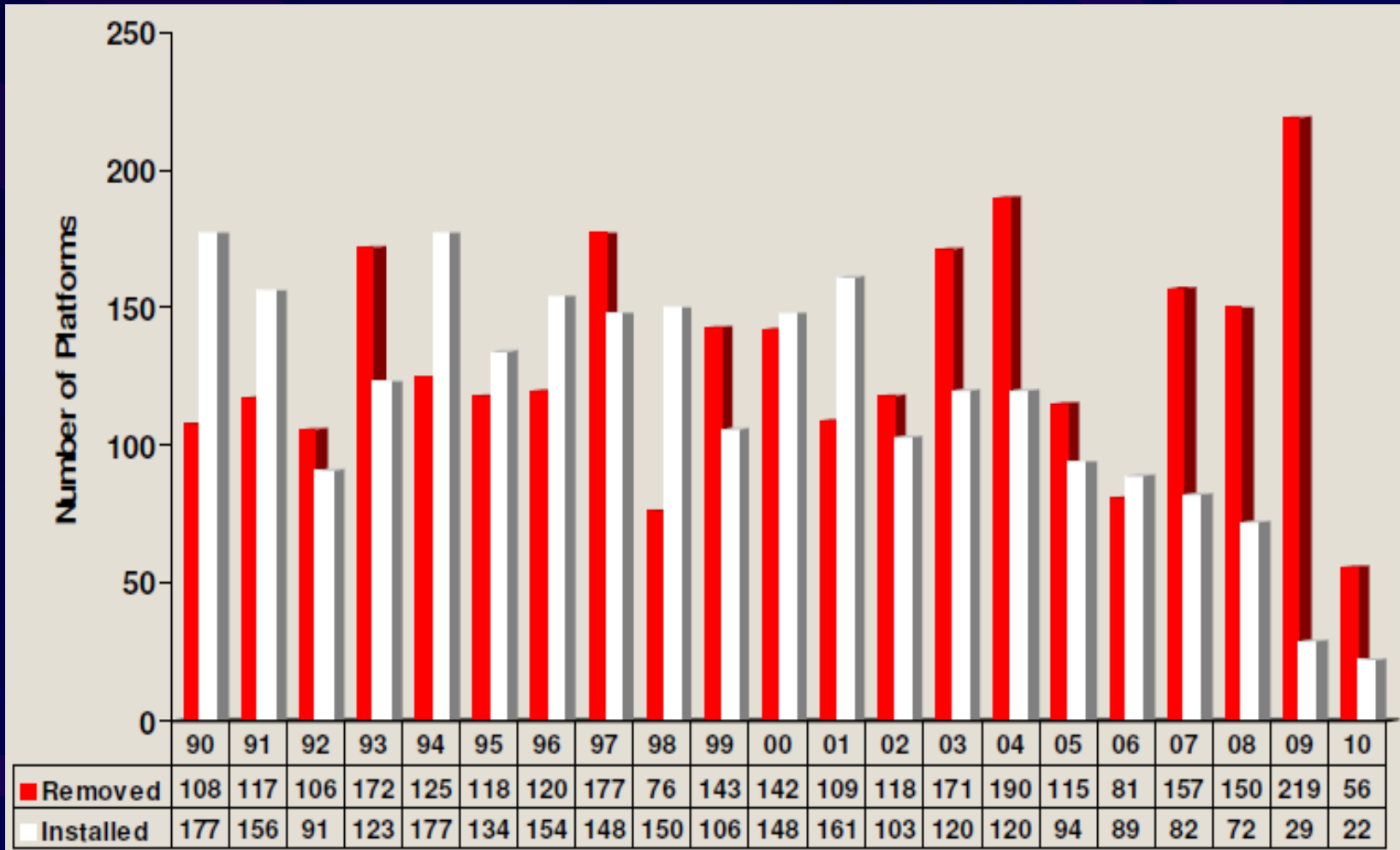
HI-A-389 – in FGBNMS



2,500+ Fixed Leg Platforms – 1,000+ Single Well Caissons

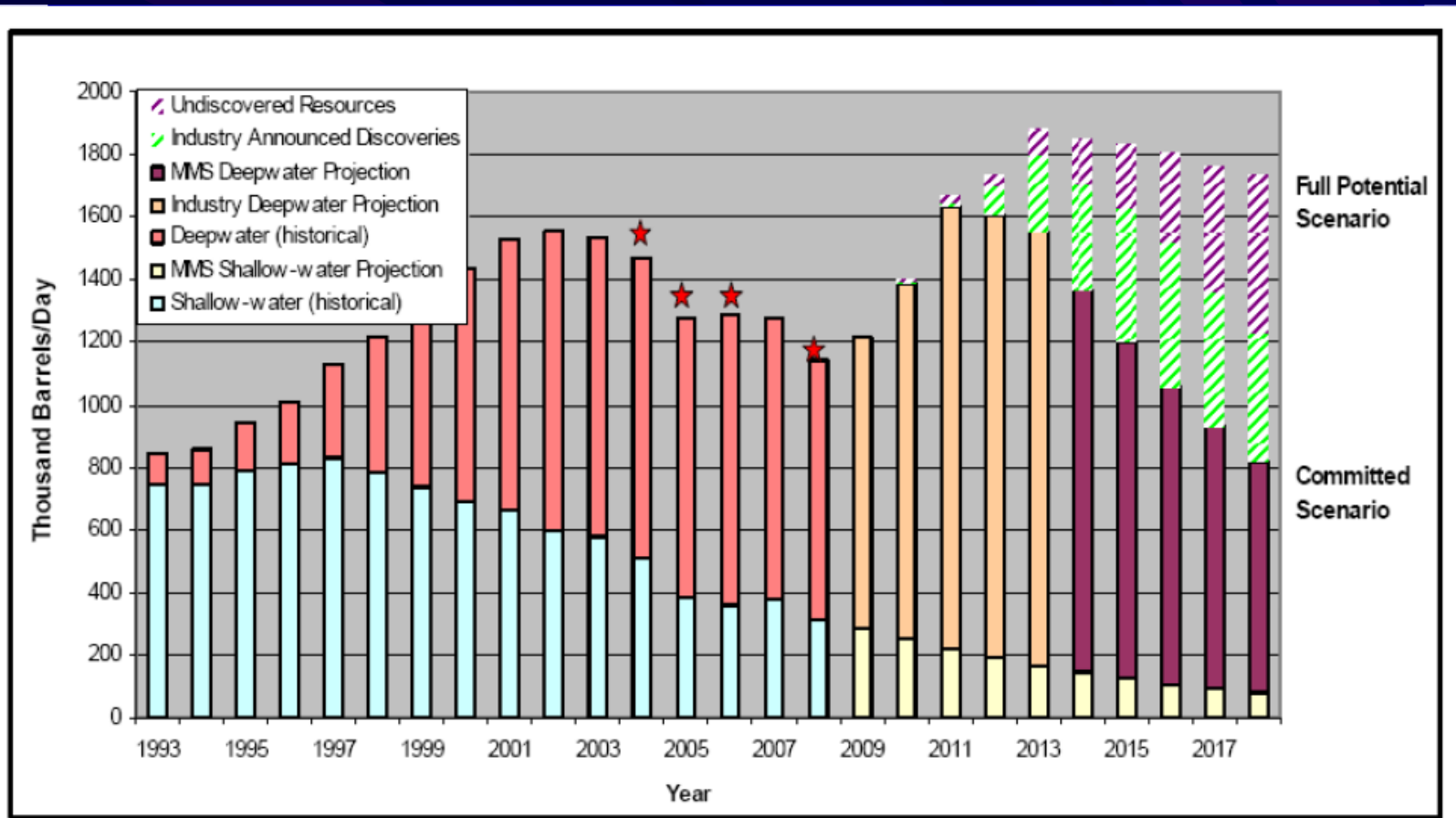
Platform Installation & Removals by Year

“Idle Iron Platforms” or Useful Long-term Reefs?



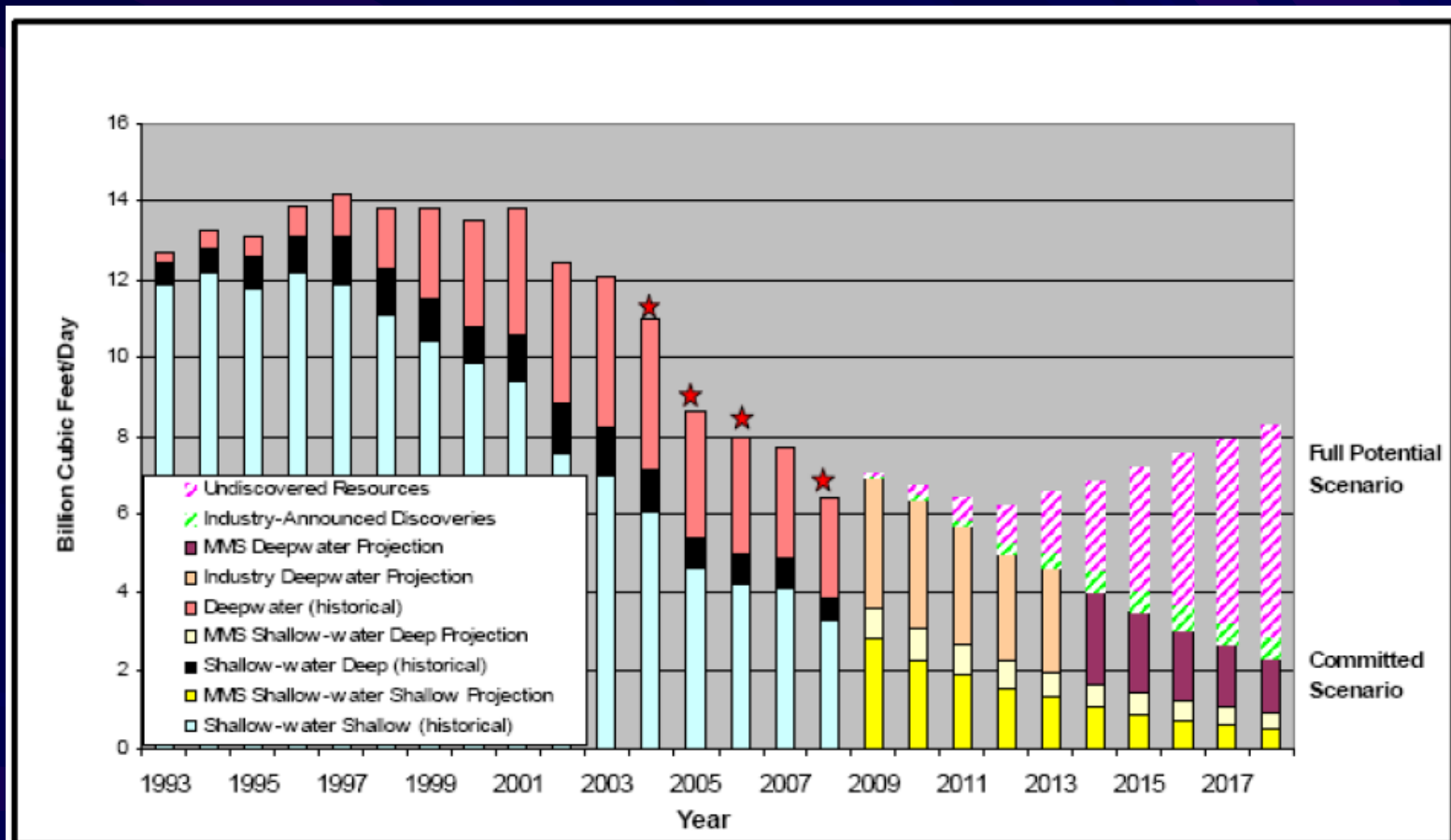
(BOEMRE - M.S. Falk – OOC RTR Conf - Nov. 2010)

Oil Production 1993 - 2018



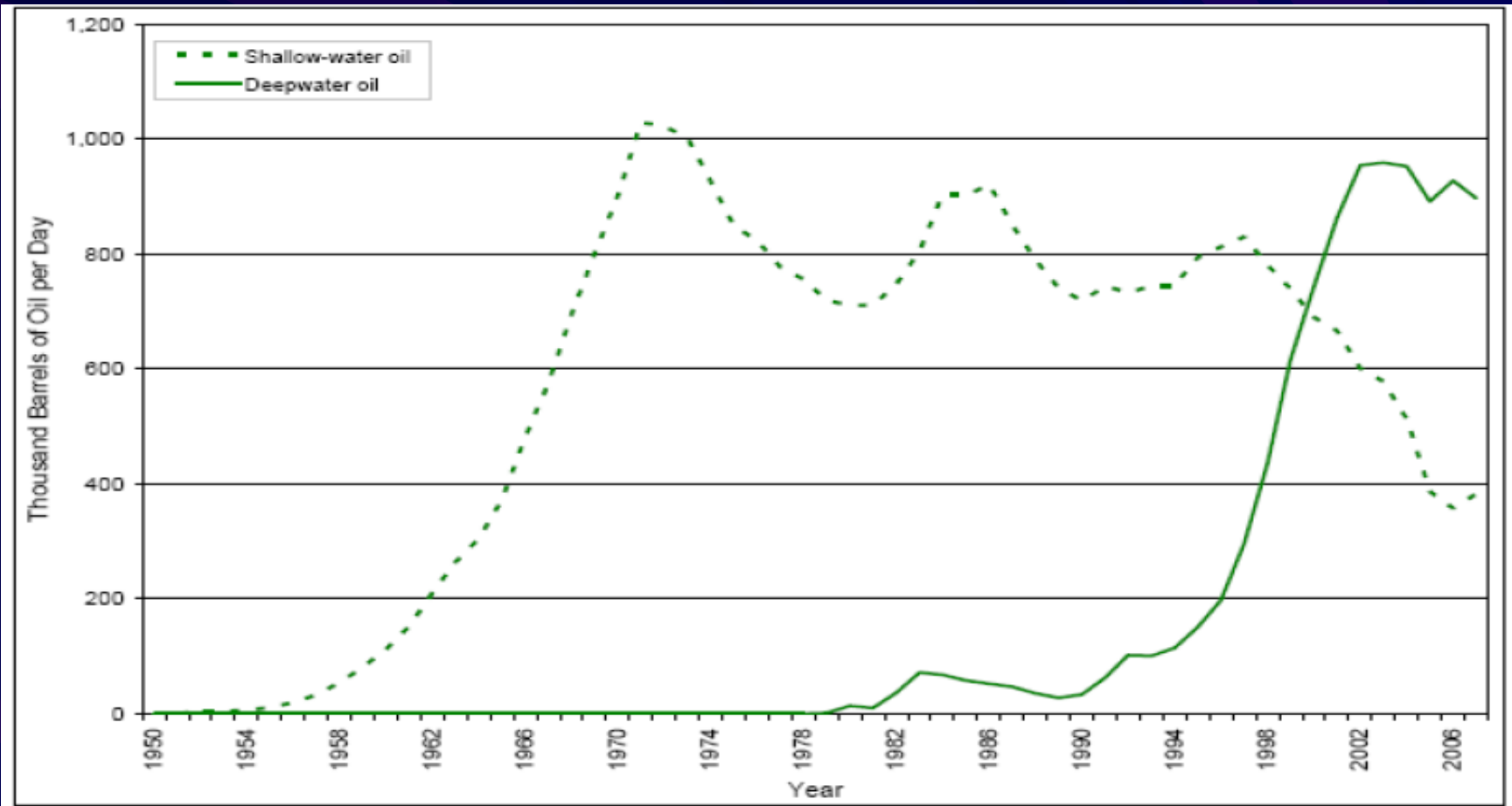
★ Indicates years with known anomalous data due to hurricane affected shut-in

Gas Production 1993 - 2018

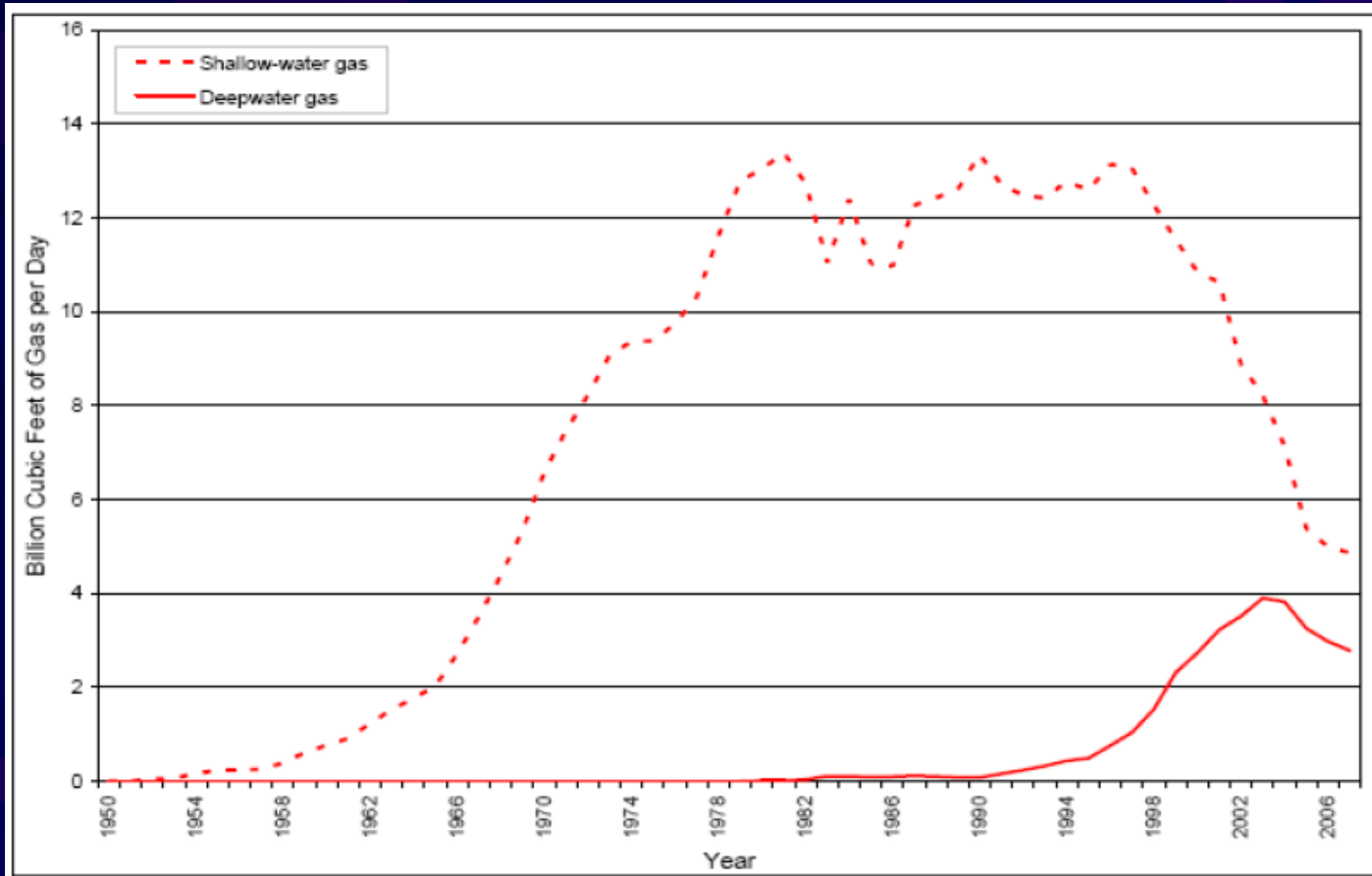


★ Indicates years with known anomalous data due to hurricane affected shut-in

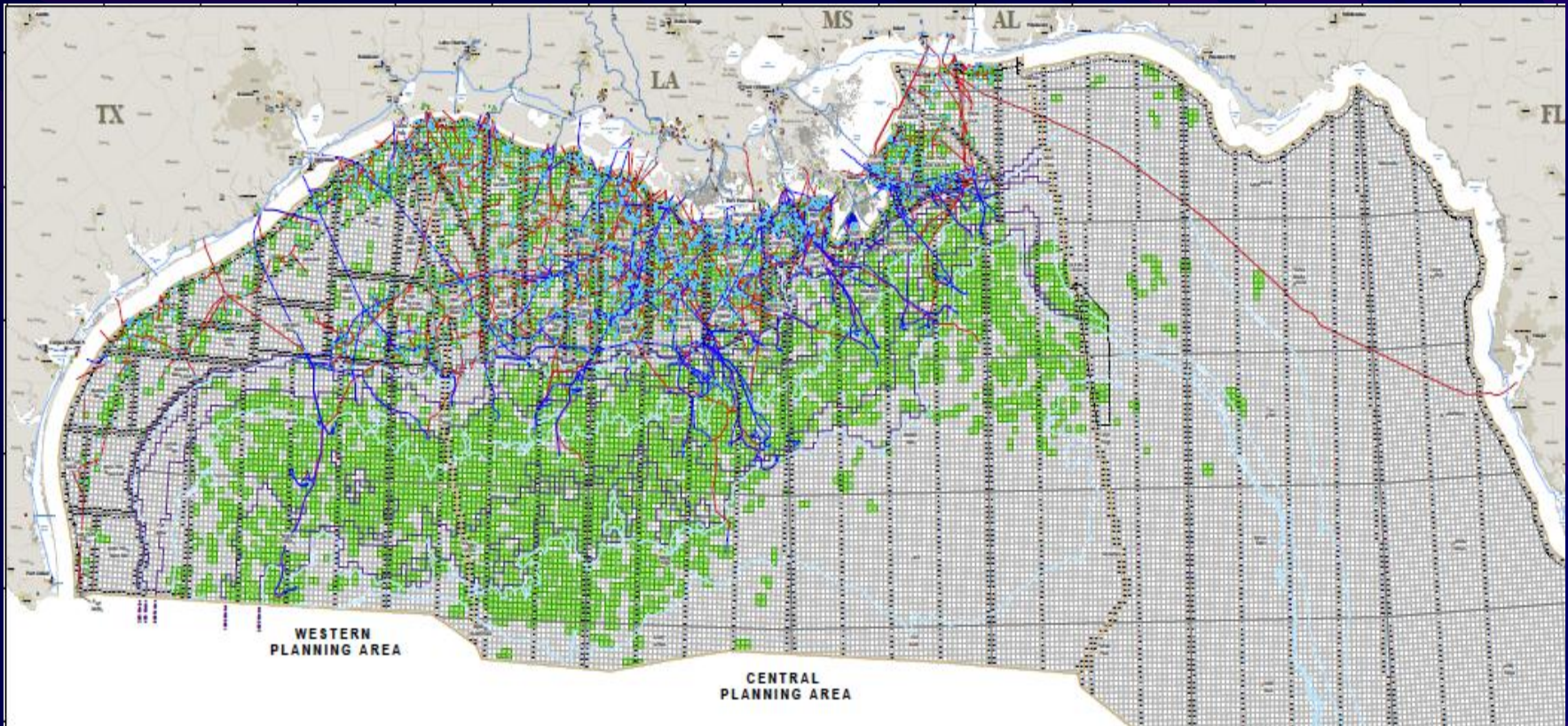
Oil Production – Shelf vs. Deepwater



Gas Production – Shelf vs. Deepwater



To Explore – Must have Leases



6,269 Active Federal Leases – 33.6 million acres leased

(per BOEMRE website Nov 2011)

Active Leases by Water Depth

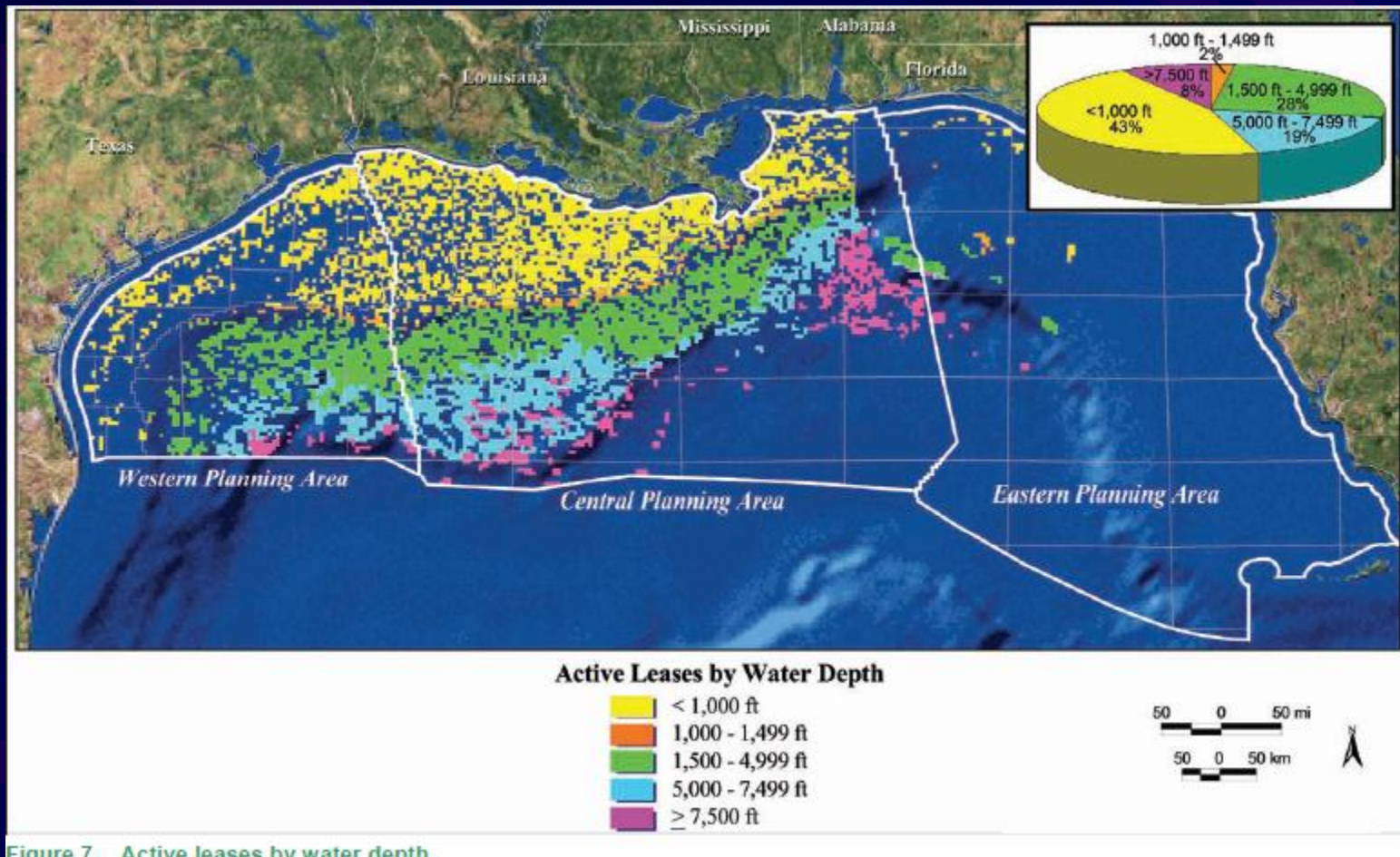
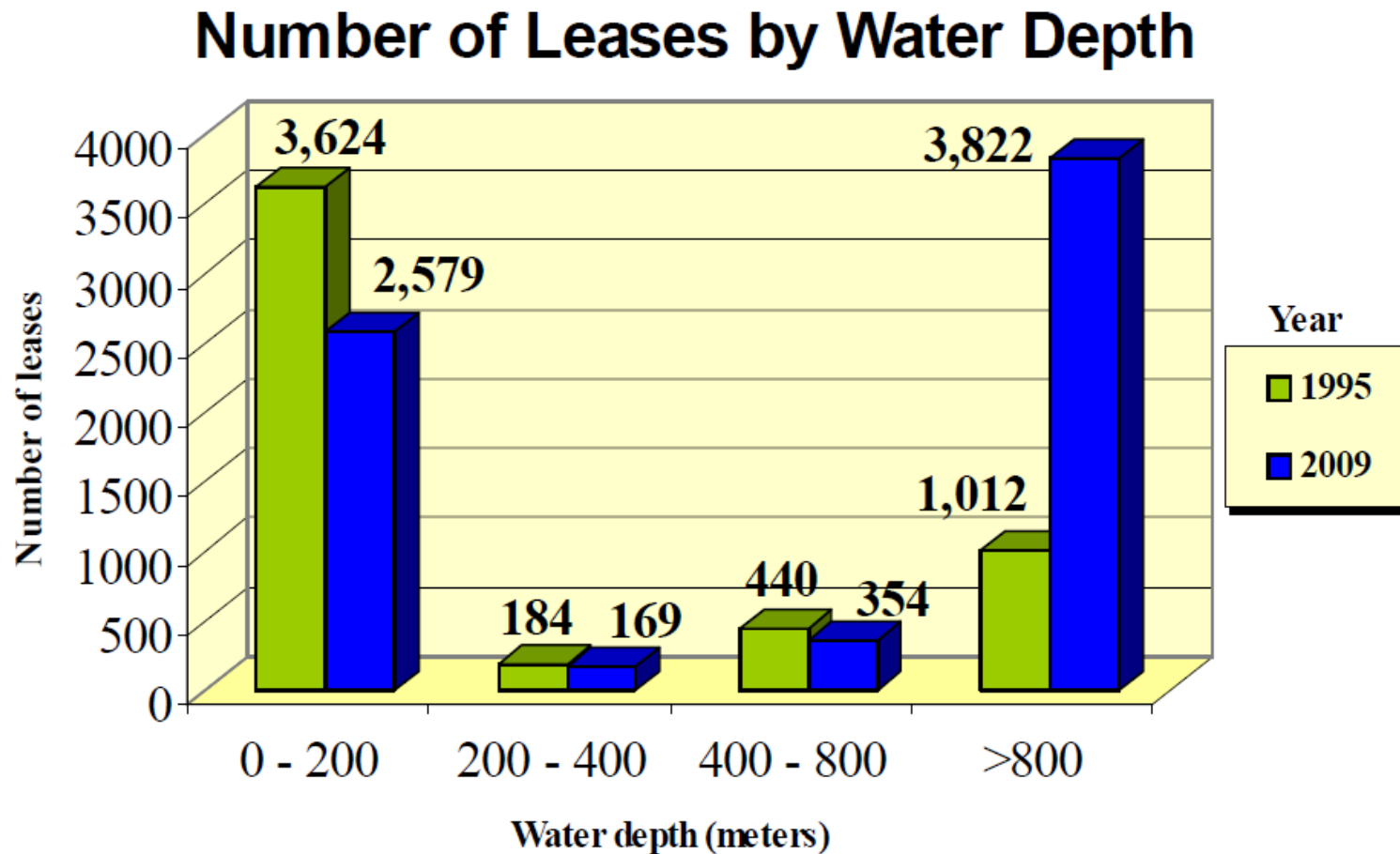
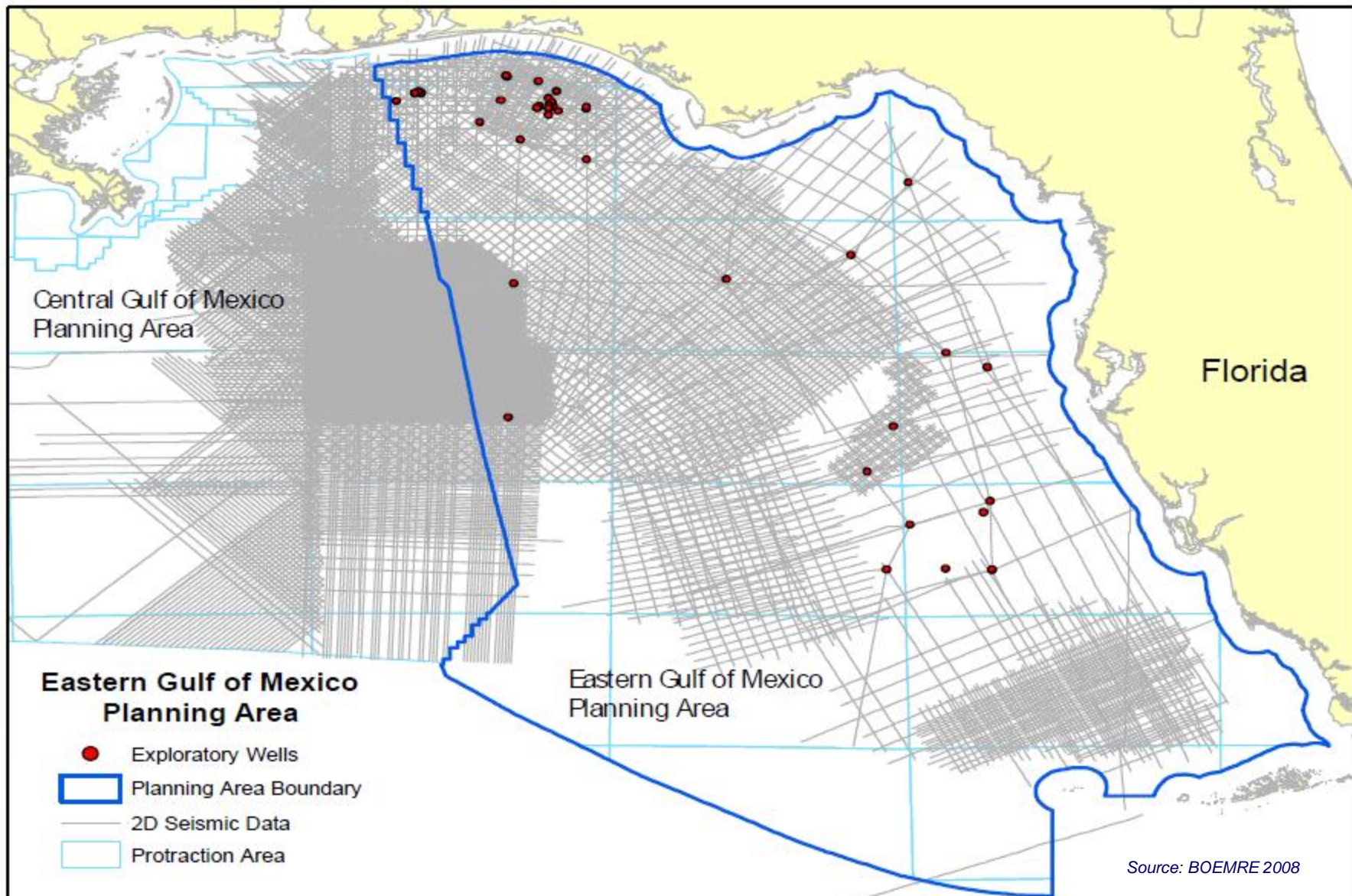


Figure 7. Active leases by water depth.

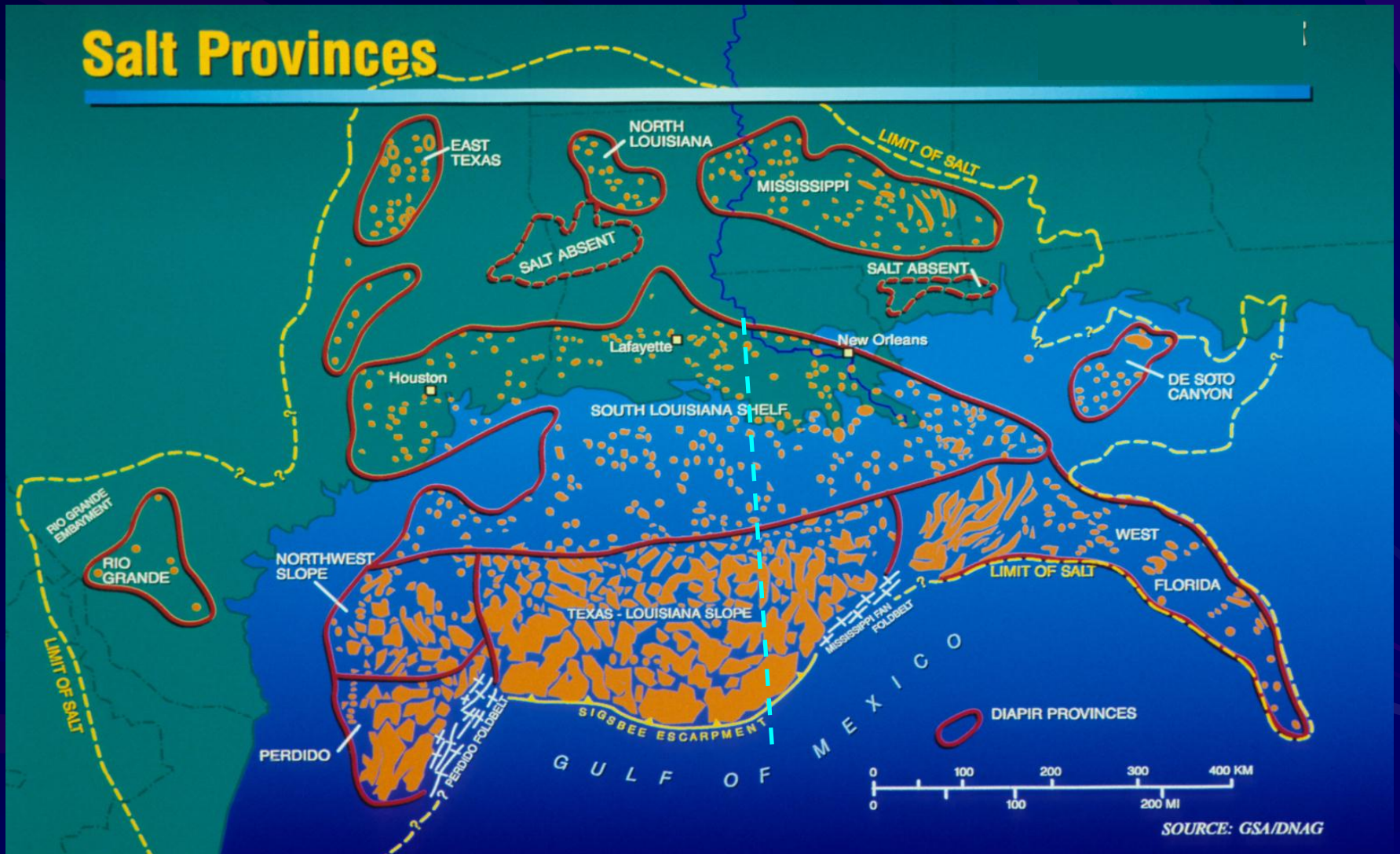
Leases by Water Depth - 1995 vs. 2009



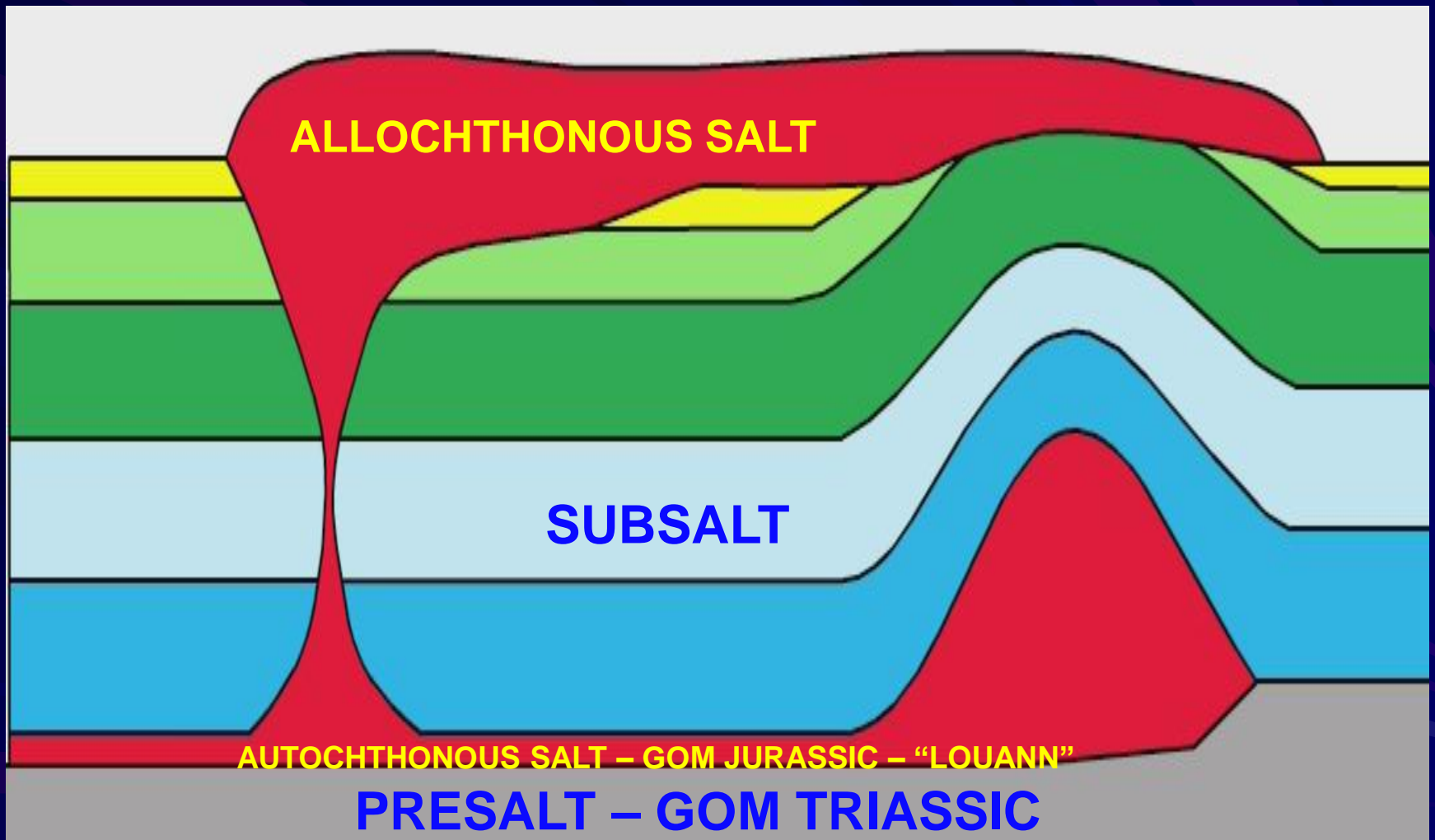
Eastern Gulf of Mexico Exploratory Wells and Seismic Data



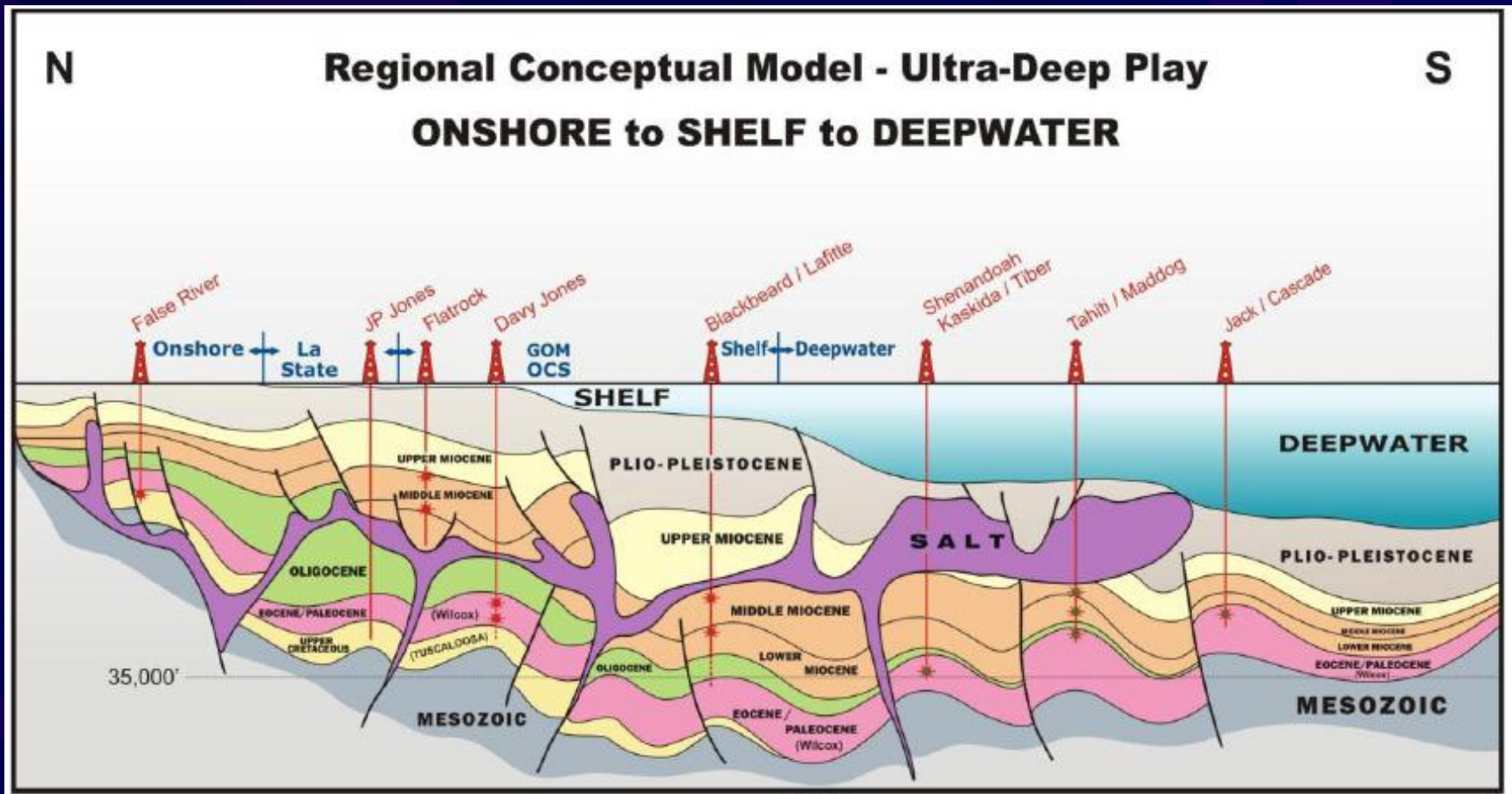
Salt Provinces in Northern Gulf of Mexico



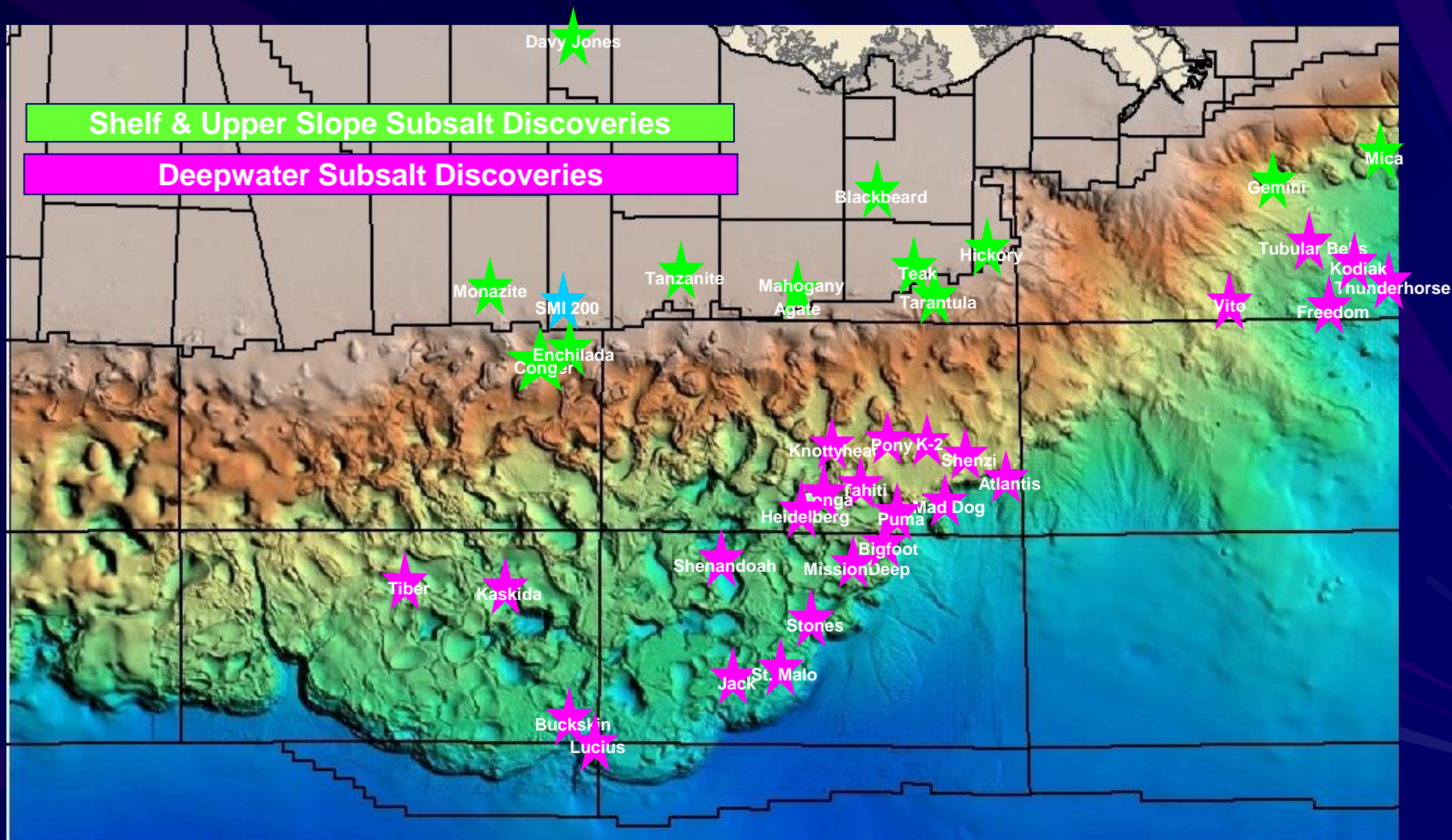
Subsalt vs. Presalt



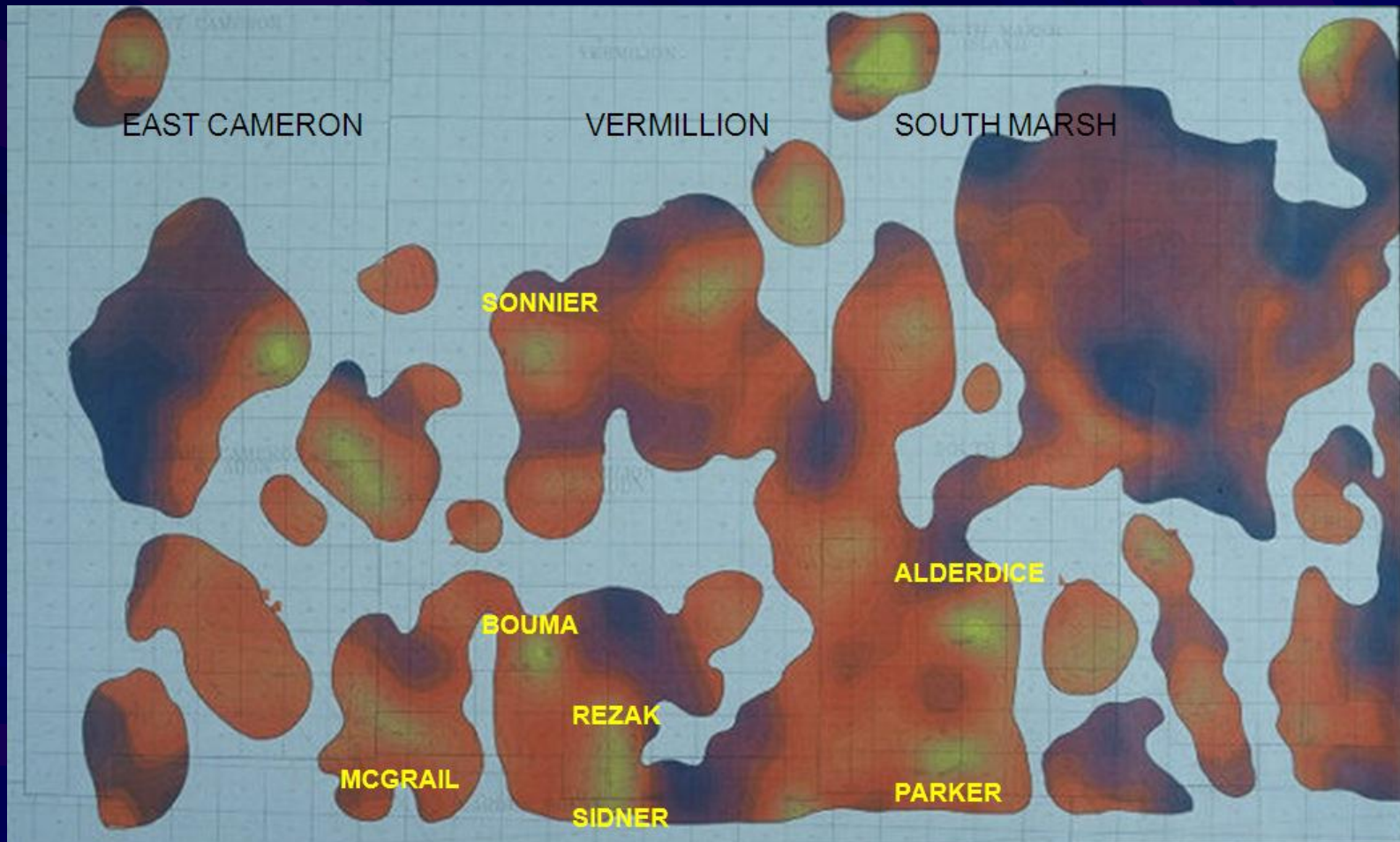
Subsalt Deep Drilling Grows in GOM



U.S. Gulf of Mexico Subsalt Discoveries



Bank Salt Domes connected to Big Salt Sheets



(adapted from Moore & Brooks, 1995)

Large GOM Natural Oil Seeps – 1910 Article 38 Years before 1st offshore GOM well

APRIL 9, 1910.

SCIENTIFIC AMERICAN SUPPLEMENT No. 1788.

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THE OIL FIELDS OF THE GULF OF MEXICO.

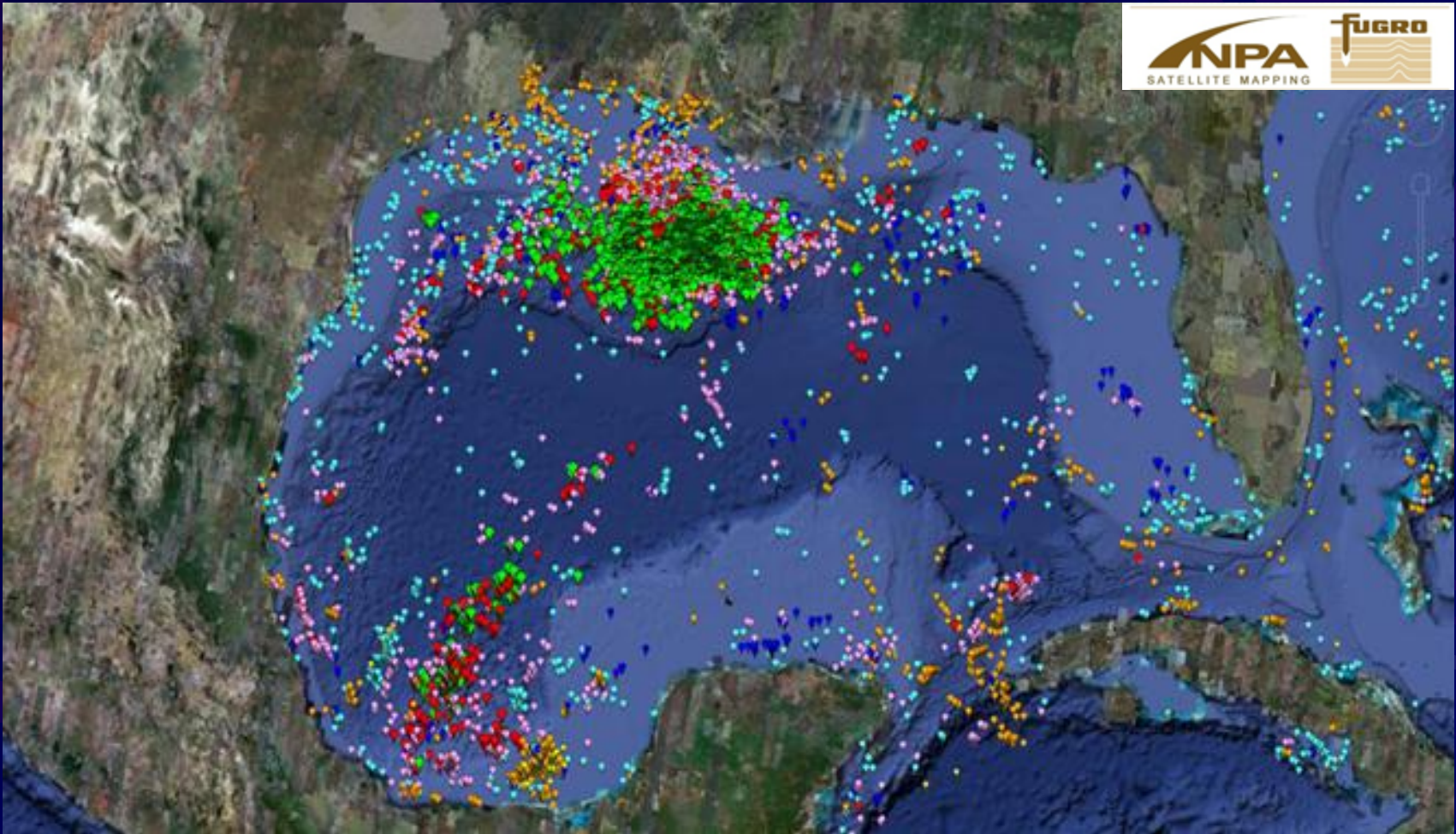
THEIR GEOLOGICAL PLACE.

BY LIEUT. JOHN C. SOLEY, U. S. N.

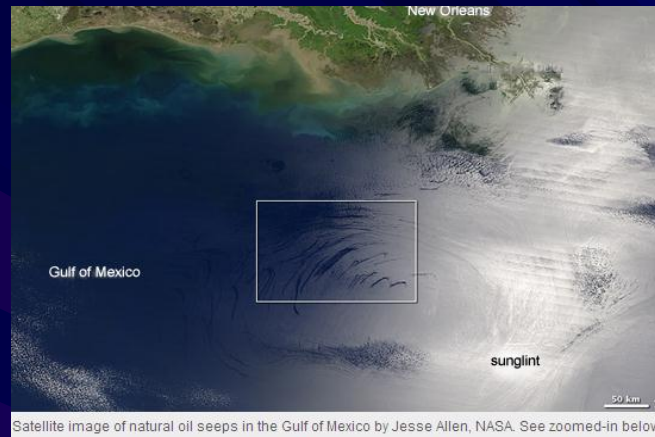


FIELDS OF FLOATING OIL IN THE GULF OF MEXICO.

Natural Oil Seeps (Green) from Satellite Data are estimated from 2,000 – 10,000+ BOPD



Large GOM Natural Oil Seeps - Photo



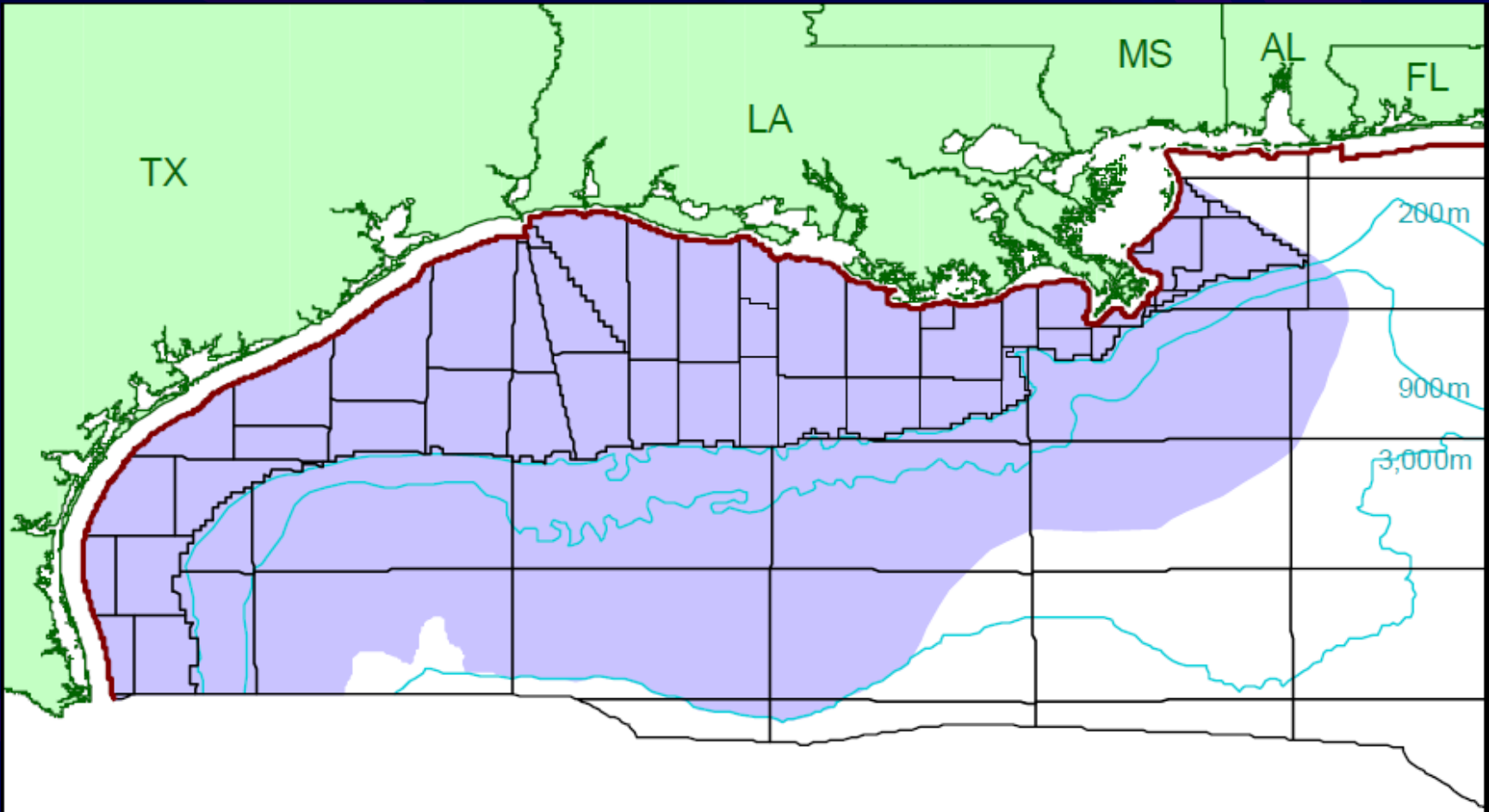
Satellite image of natural oil seeps in the Gulf of Mexico by Jesse Allen, NASA. See zoomed-in below.



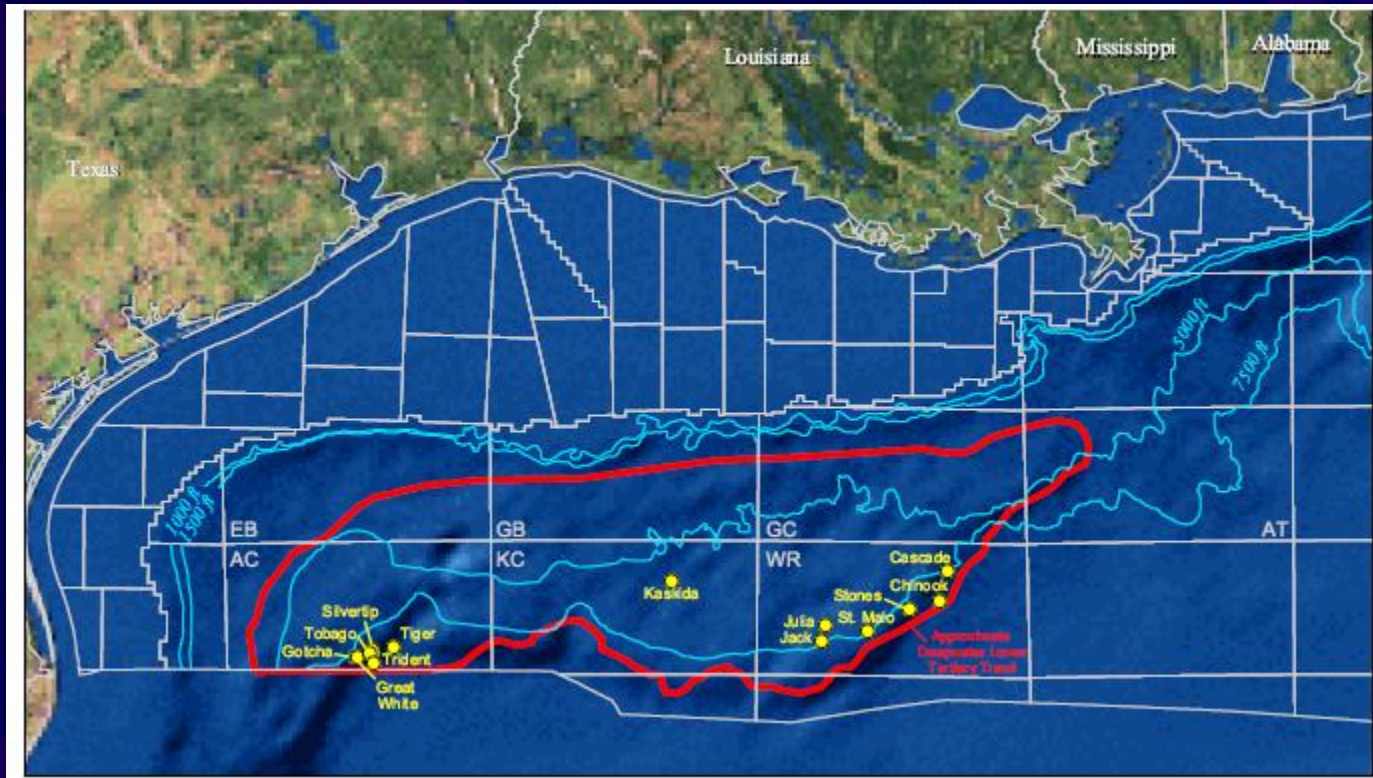
Satellite image of natural oil seeps in the Gulf of Mexico. Jesse Allen, NASA. See above for reference.

(from NASA Earth Observatory news release from February 3, 2009 per Geology.com)

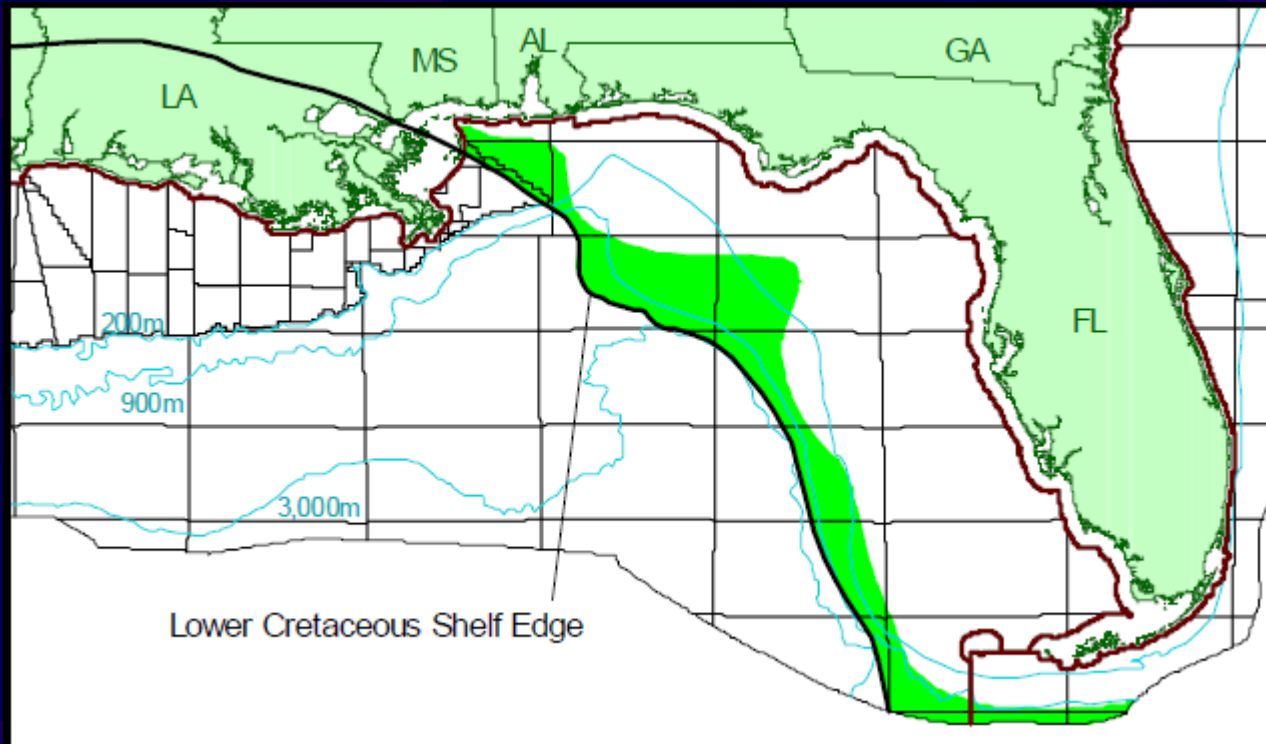
Deep Miocene Play



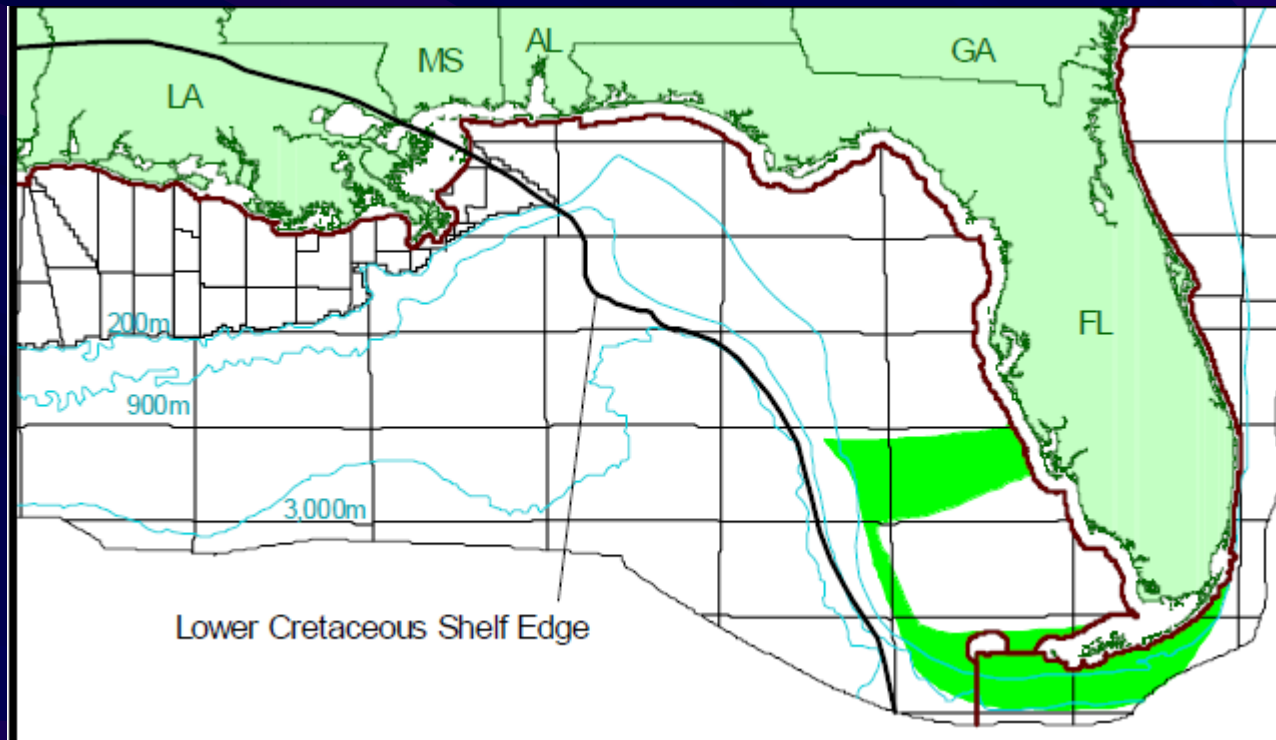
Deep Lower Tertiary Play



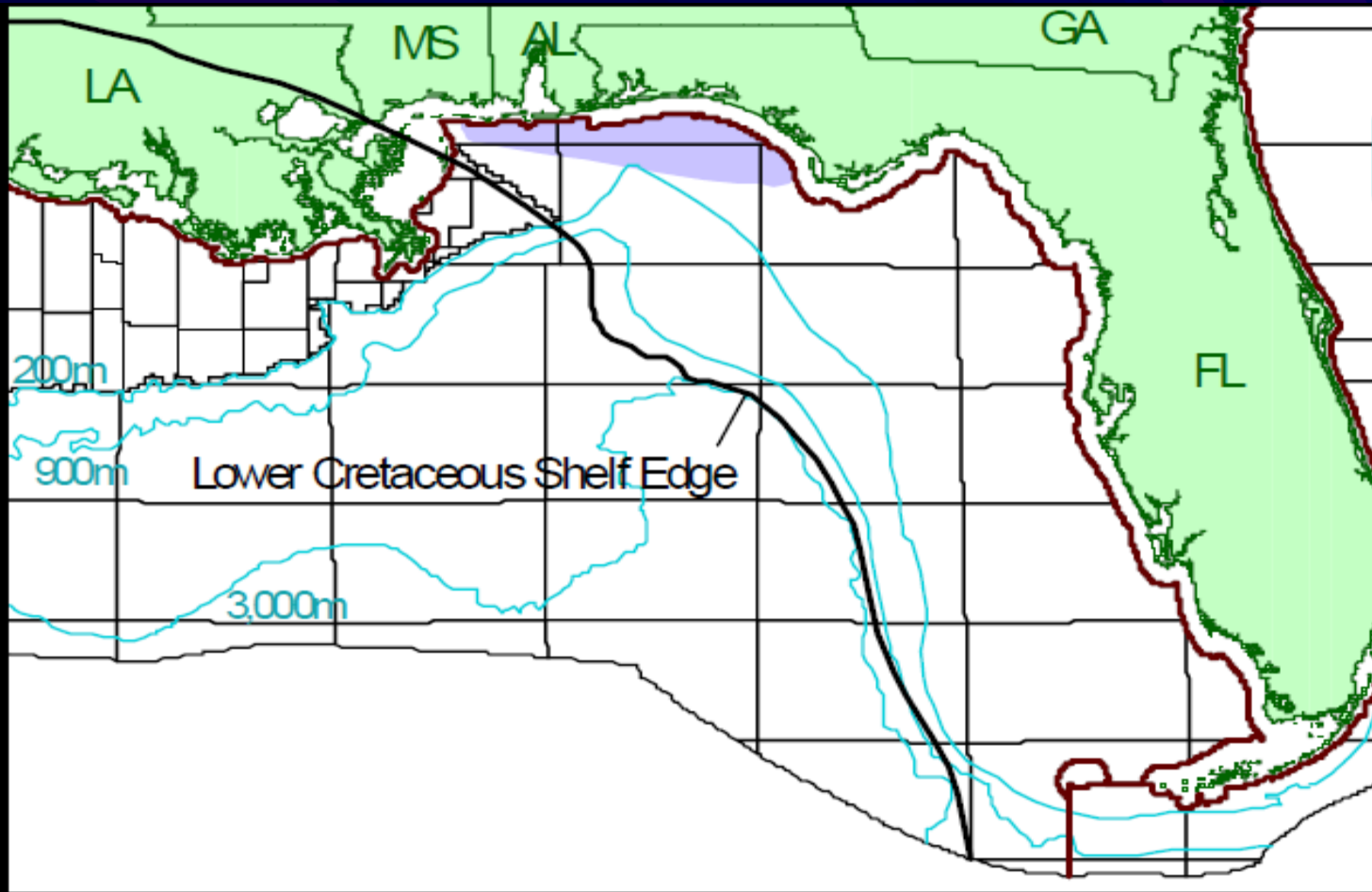
Lower Cretaceous Carbonate Shelf Margin Play



Lower Cretaceous Sunniland Carbonate Oil Play

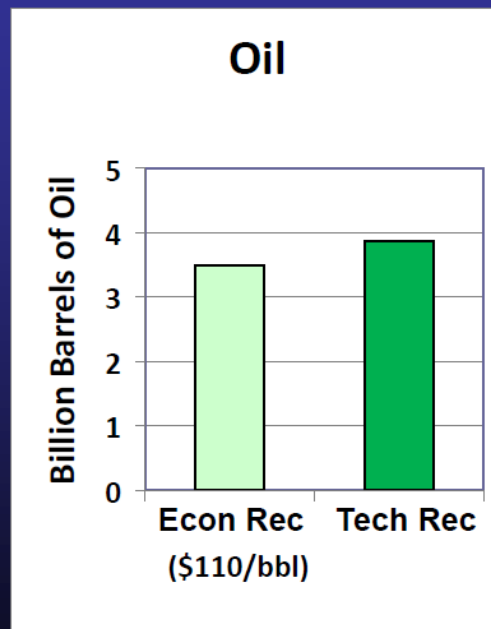


Upper Jurassic Norphlet Gas Sand Play



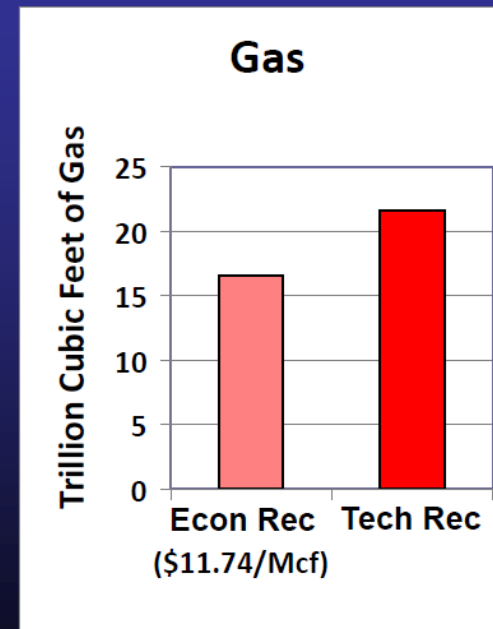
Florida's Future Main Gas Supply Now is from Jurassic-Norphlet off Alabama Will need same JN Gas off Florida Panhandle

Eastern Gulf of Mexico OCS Area Undiscovered Oil and Gas Resources



Oil Resources:

2.8 – 5.5 billion barrels



Gas Resources:

18 – 26 Trillion Cubic Feet

Florida Oil & Gas Consumption & Supply

3rd Biggest Oil Consuming State

900,000 barrels per day
1.3 billion gallons per year

6th Biggest Natural Gas Consuming State

2.5 BCF per day
942 BCF per year

Gulfstream 36" Pipeline – Mobile-Tampa – 1.26 BCF per day

Florida produces less than 1% of its daily consumption

U.S. Total Gas Demand

63 BCF per day
23,000 BCF per year

America's Future Offshore Oil & Gas?

Gulf of Mexico is #1

Alaska is #2

Undiscovered Technically Recoverable Oil and Gas Resources 2006 National Assessment Results

