

## **Alaska's Arctic Offshore Activity\***

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### **Abstract**

The Arctic Outer Continental Shelf (OCS) has seen a resurgence of leasing activity. Over the past 5 years industry has spent over \$2¾ billion in high bids in acquiring Federal Arctic leases in the Beaufort and Chukchi seas. The most recent published resource assessment by the Mineral Management Service (MMS) in 2006 indicates mean undiscovered technically recoverable oil and gas resources in these two areas exceed 42 billion barrels of oil equivalent.

Industry has a long history of activity in the Arctic offshore. There has been seismic activity in these waters for over forty years though activity levels have varied widely over time. Activity peaked in the mid-1980s when more than 30,000 miles of 2D data were acquired in a single year. This was followed by a fifteen-year period with little seismic activity. Recently 3D seismic data has been acquired in areas of high interest.

Since 1979 there have been thirteen Arctic sales that resulted in awarding 1794 leases. Currently there are almost 700 active leases. The majority of the leasing occurred in two periods, the 1980s or during the past five years. During this 30-year period there have been 35 exploration wells drilled in Arctic OCS waters, 30 of these in the Beaufort Sea and 5 in the Chukchi Sea. No drilling has occurred on the leases acquired in the past five years. Two recent attempts to drill in the Beaufort and Chukchi Seas were postponed due to litigation.

Oil has been produced from the Federal/State unit at the Northstar field since 2001 and a Federal/State development at Liberty Field is continuing to move forward. Two new drilling plans for 2010 open-water season have been submitted, one in the Beaufort and one in the Chukchi. Additional plan(s) are anticipated for 2011.

Several future events will impact Arctic OCS Oil and Gas activities. A decision to build a natural gas pipeline from the North Slope will provide an outlet for OCS gas production. An oil discovery would help fill the unused capacity in the Trans Alaskan Pipeline, currently flowing at only 1/3 of its capacity. Property tax revenue from onshore infrastructure and pipeline tariffs would add significantly to North

Slope and State government receipts. The challenging physical, technical and legal environment of the Arctic OCS suggests long lead times until first production from any discoveries.

### **Selected References**

Dees, Jerry L., 1991, Arctic offshore potential: Leading Edge, v. 10, p. 42-44.

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<http://www.gomr.boemre.gov/PDFs/2009/2009-012.pdf>

Houseknecht, D.W. and K.J. Bird, 2005, Oil and Gas Resources of the Arctic Alaska Petroleum Province: USGS Professional Paper 1732-A.

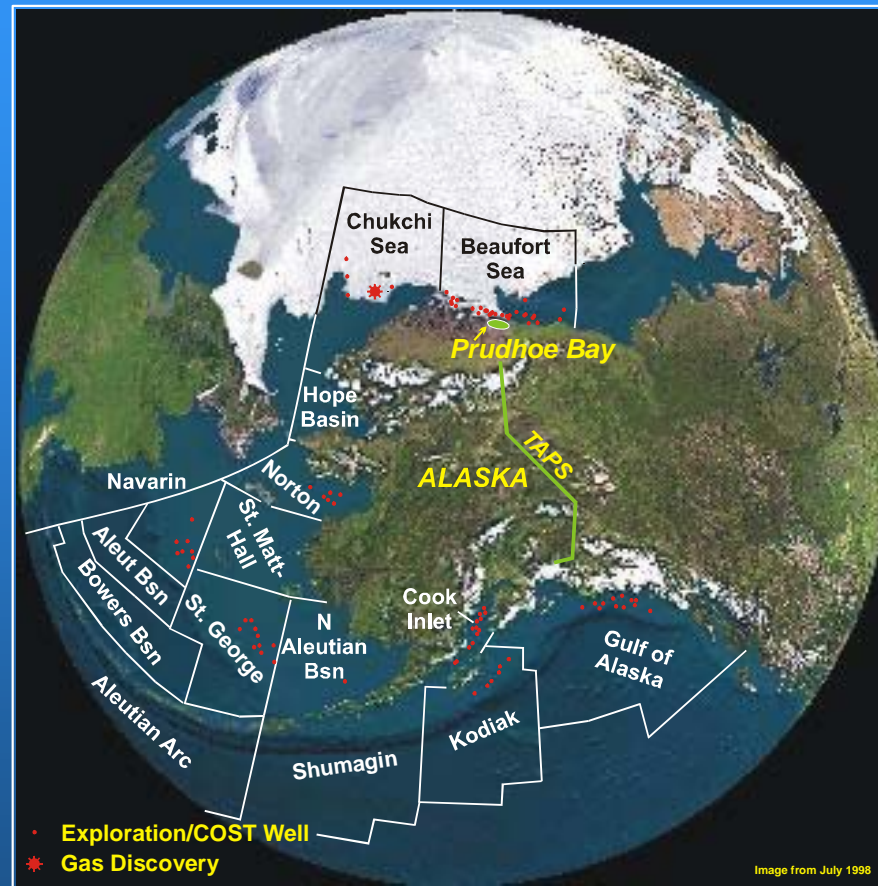
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<http://www.mms.gov/alaska/re/recentgg/RECENTGG.HTM>

Energy Information Agency (EIA), 2010, Web accessed 10 August 2010, <http://www.eia.doe.gov/>

# Alaska's Arctic Offshore Activity



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Minerals Management Service, Alaska Region

# Activity

## Up

**Seismic Activity up**

**Recent Leasing up [\$2 ¾ billion in last three sales, 2005-08]**

**Exploratory drilling in the Chukchi and Beaufort Seas**

**\*Drilling is the next step\***

**Gas Line up & down**

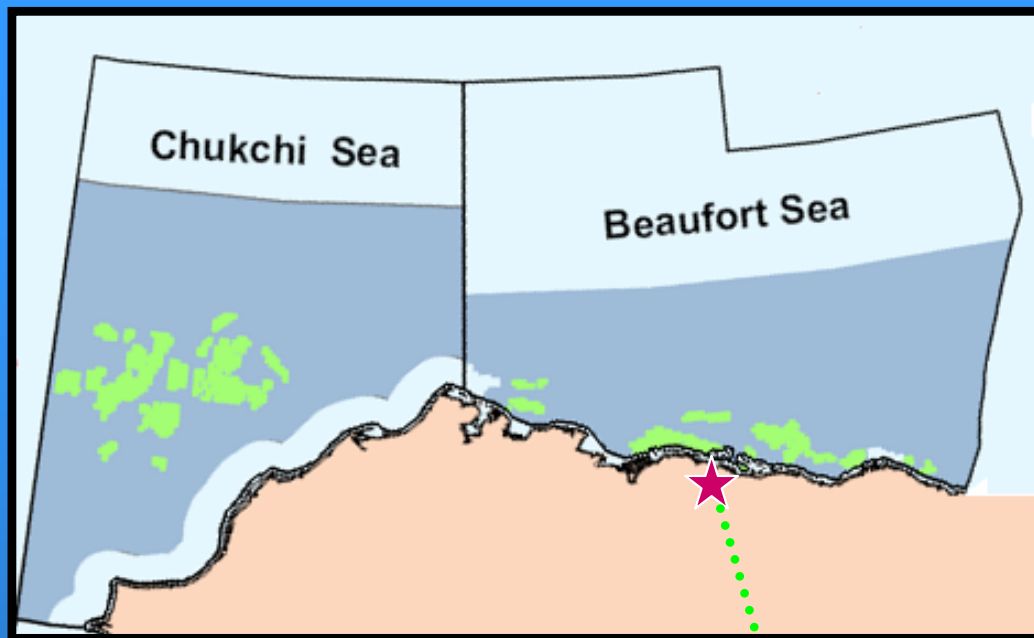
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## Down

**TAPS down**

**Slowed down by Legal Challenges**

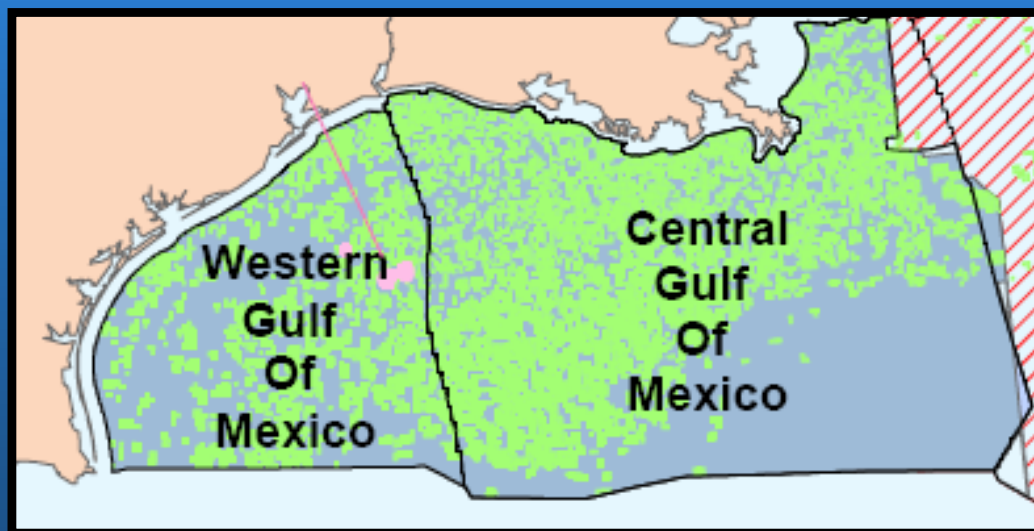
**2007-2012 Plan >>remaining sales cancelled**



**80% the GOMR area**

**694 recent leases**

- ~ 42 Billion BOE resources
- 0 OCS Developments
- 35 Wells
- One proposed rig



**• 3900 recent leases**

**• ~ 79 Billion BOE resources**

**• 1,288 OCS Fields**

**• Cumulative production 12/31/2006**

**• 15.08 billion barrels of oil**

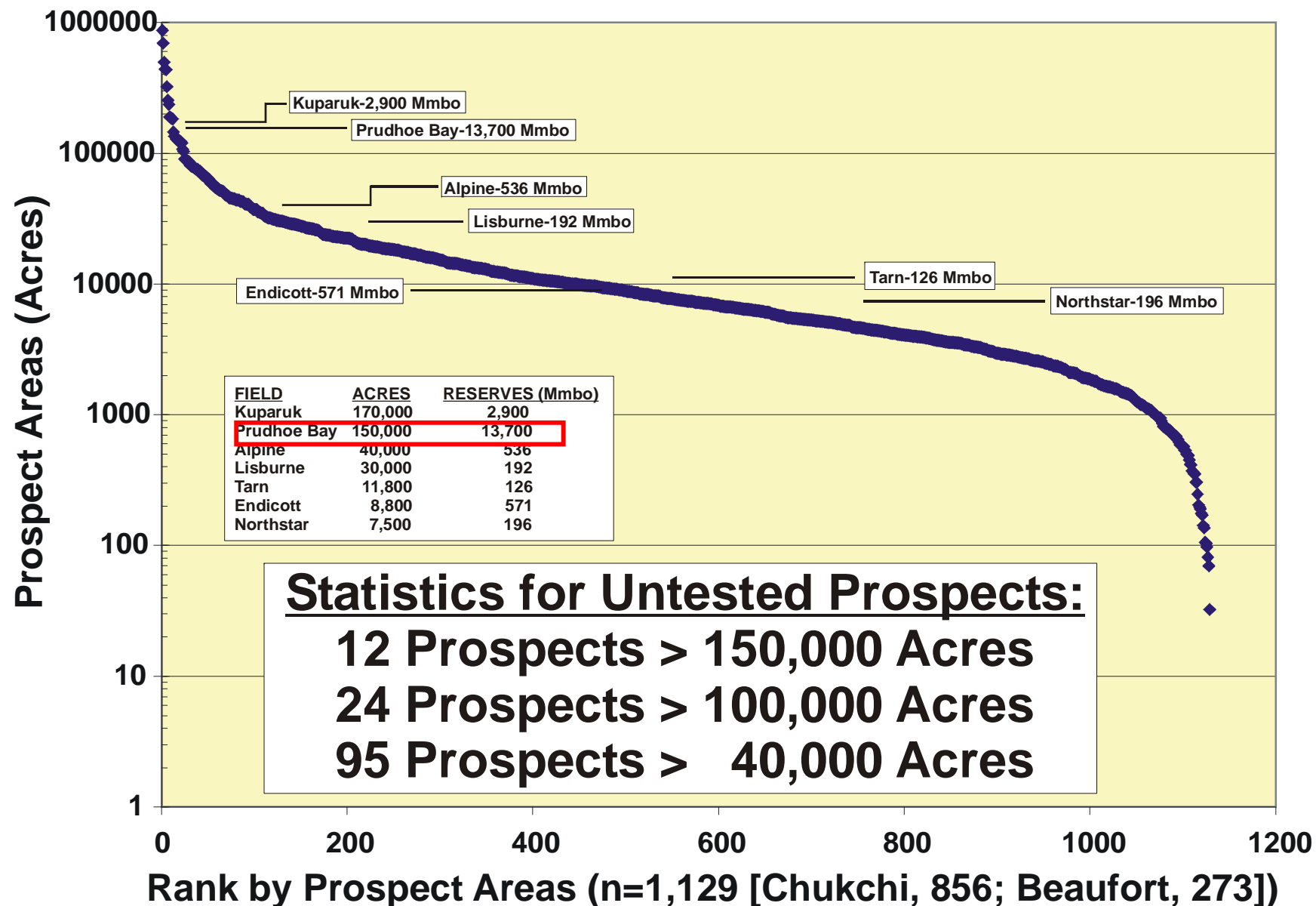
**• 166.8 trillion cubic feet of gas.**

**• 68 active commercial rigs**

**The same amount of oil has come through TAPS as from the Gulf of Mexico**

# ARCTIC OFFSHORE PROSPECTS

*Prospect Areas Compared to Pool Areas for Selected North Slope Fields*



Sherwood...\Beaufort & Chukchi-Ranked Prospect Areas.cdr



## *How have some in Industry viewed Arctic Activity*

“The United States oil industry is not running out of ideas. However, to find something significant, it is driven to search in the arctic offshore. The Minerals Management Service (MMS) is under pressure to cut back on Outer Continental Shelf acreage in upcoming lease sales. Exploration is prohibited in whole sections of the country. Today, through much of the OCS is relatively unexplored, it appears that the US is running out of new places to search. ”

and

“ In Alaska and in the US Congress, environmental groups are trying to block access to the arctic offshore—one of the last areas in North America to offer potential for significant discovery. Can the country afford not to explore it?”



**Jerry L. Dees, ARCO Alaska presented at the OTC  
in Houston Texas May 8<sup>th</sup> 1991**

**[printed in the Leading Edge September 1991]**





# Anchorage Daily News

Thursday, October 1, 2009

BREAKING NEWS AT ADN.COM

Alaska's Newspaper

## City primes for winter gas cutbacks

**CONSERVATION:** Campaign is launched to encourage residents to curb fuel use at peak times.

By JAMES HALPIN  
jhalpin@adn.com

Cold showers, chilly living rooms and microwaved cuisine could be in store for Southcentral residents this winter as local utilities and government leaders search for ways to conserve natural gas.

City and utility executives embraced the conditional use of those tactics and more in announcing a campaign Wednesday aimed at trying to get residents to use less power during

winter's peak demand periods, when the mercury plunges deepest.

Under the new scheme, city officials, working with the utilities, created a three-tiered alert system advising consumers how they should help conserve fuel to cut back demand in cases where the system faces an overload.

"I do not want, under my watch, for half the population of the state to not have heat and not have lights," Mayor Dan Sullivan said. "Two of the last three winters we were in situations for several weeks on end where we were at 10 degrees below zero."

"We wanted to be prepared in case there's a problem moving that gas from producers to customers in the extreme situations."

### INSIDE

**HOW TO HELP:**  
See what you can do in a natural gas emergency.

**Back Page**

The written plan revealed Wednesday notes that gas supplies are believed to be sufficient to meet Southcentral needs this winter and delivery problems are not anticipated. The plan, however, contends it is "prudent to plan for contingencies."

Last winter, the gas distribution system on several occasions nearly reached its limit. Utility leaders say the problem isn't a lack of gas, it's keeping the lines pressurized during the periods when demand is at its highest.

Here's the new system's color-coded advi-

sory setup, which asks more and more of consumers as conditions worsen:

- Green: Normal operation. Residents are asked to "use energy wisely"
- Yellow: Residents are urged to set living-area thermostats at 65 degrees; 40 degrees in garages. They are asked to lower water heater settings to "warm."
- Red: Thermostats should be set to 60 degrees in living areas and water heater gas valves set to "pilot." Household activities should be consolidated into as few rooms as possible and people should use the microwave for cooking.

*See Back Page, NATURAL GAS*

Resources will not keep the lights on



# 60 Years in the Arctic

GAS PIPELINE AGENCIES	YEAR	OIL PIPELINE TAPS & KEY DATES	LEASING [# of leases]	ARCTIC OCS DRILLING
ANGTS	1968-69	PRUDHOE BAY DISCOVERED		
	1970-71	GRADUATED HIGH SCHOOL		
	1972-73			
	1974-75			
	1976-77	TAPS COMPLETE		
TAGS	1978-79		24	
	1980-81		121	4
	1982-83		227	7
	1984-85			7
	1986-87			3
	1988-89	TAPS @ 2,000,000 bo/d	552	7
	1990-91		85	4
	1992-93			2
	1994-95			
	1996-97		29	
AGPA	1998-99		28	
ANGDA	2000-01		34	1
	2002-03		117	
ANGPA	2004-05		90	
AGS & AGIA	2006-07		487	
DENALI	2008-09			
OPEN SEASON	2010-11	SAINTS WIN SUPERBOWL	2 Beaufort, Chukchi	2?
	2012-13		Chukchi	
	2014-15			
	2016-17	TAPS @ 600,000 bo/d		
GAS PIPELINE COMPLETED?	2018-19			
	2020-21			
	2022-23			
	2024-25			
	2026-27	OCS OIL?		
	2028-29			

# 30 years of OCS activity

Expect 12-24 years to 1<sup>st</sup> production

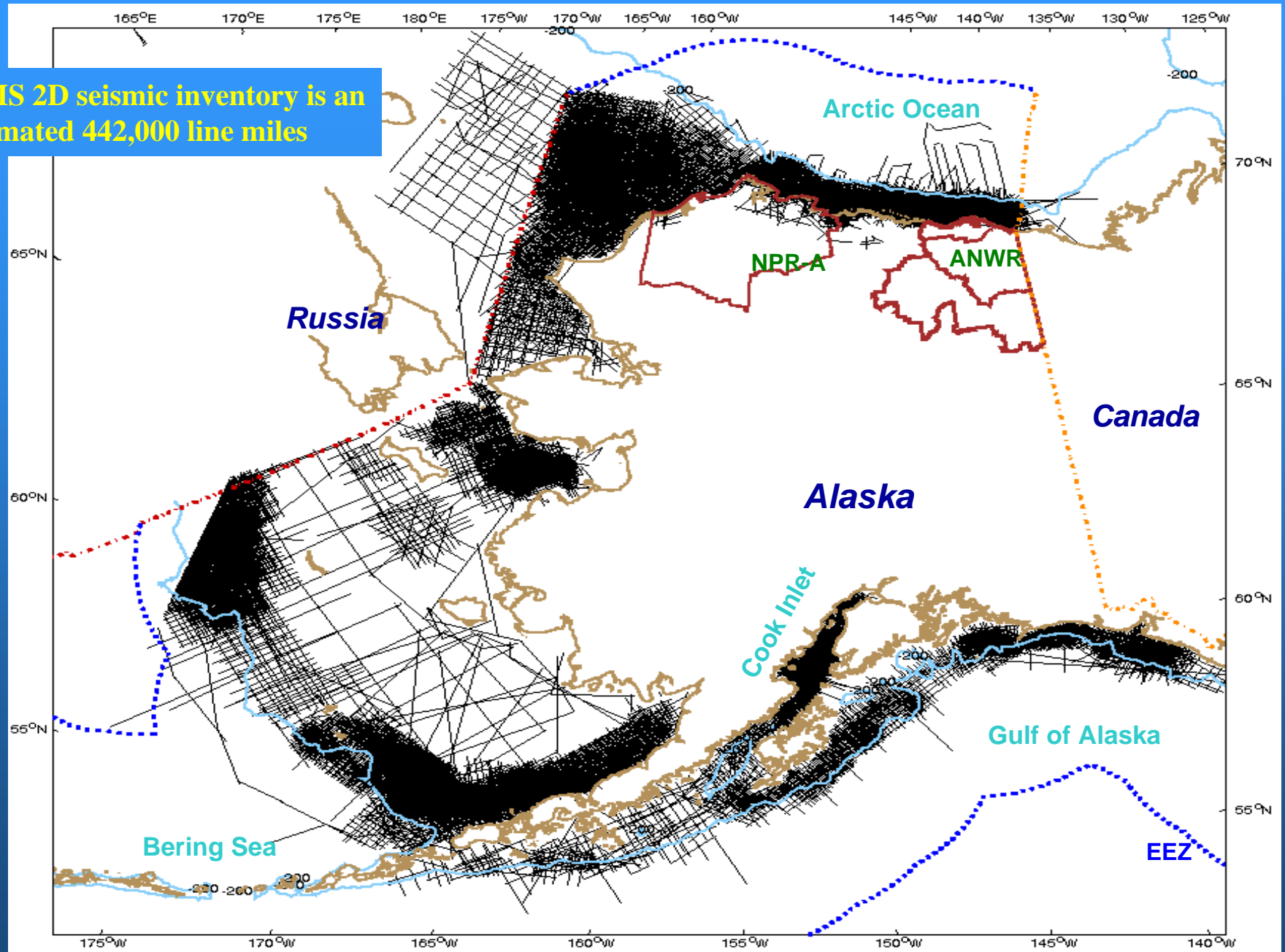


# Activities

- Seismic
- Leasing
- Wells
- Production

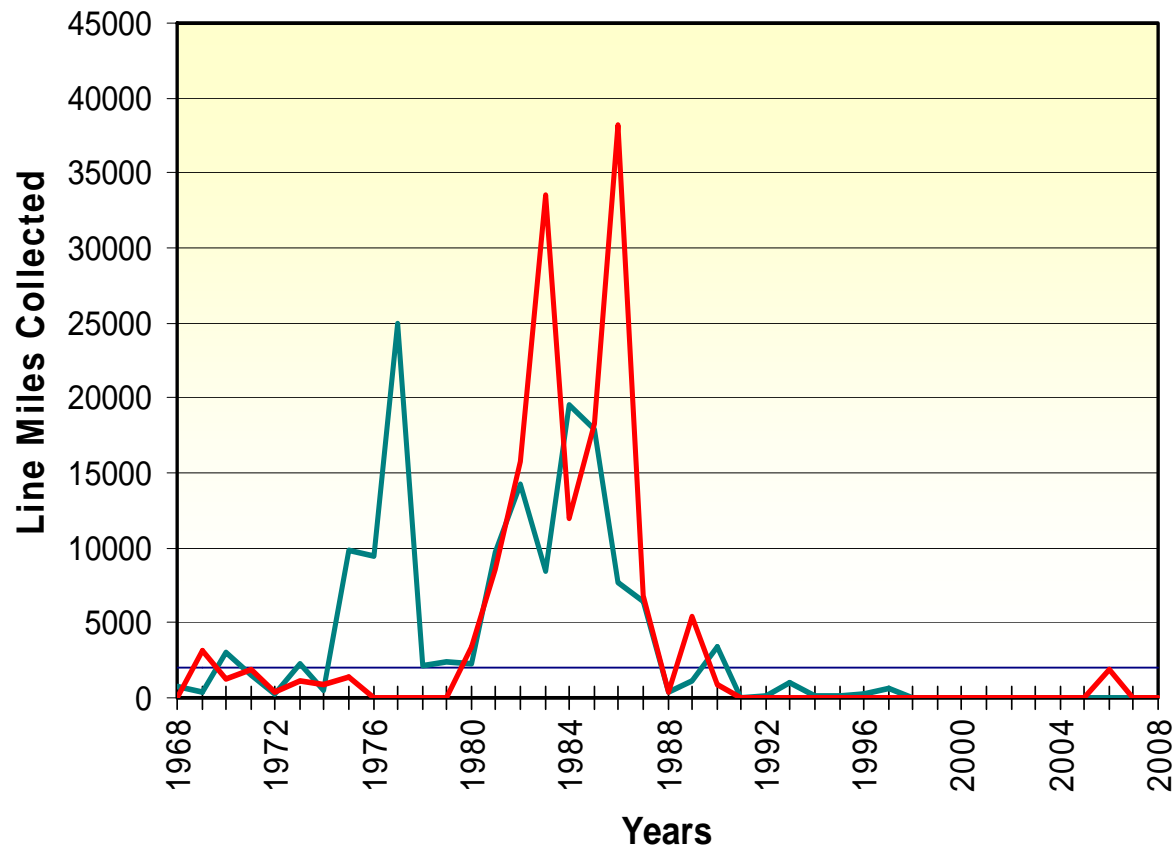
# Alaska OCS 2D Seismic Coverage

MMS 2D seismic inventory is an estimated 442,000 line miles

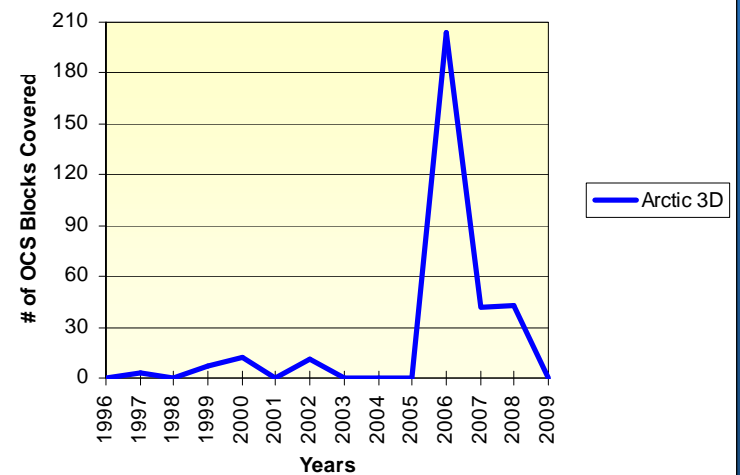


# Past OCS Seismic Activity

## OCS 2D Seismic Activity Levels in the Arctic



## OCS Arctic 3D Seismic Activity



## **Pending G&G Permit Applications**

**Beaufort Sea -- ION Geophysical 2D Seismic**

**-- Proposed dates 9/15/10-12/15/10**

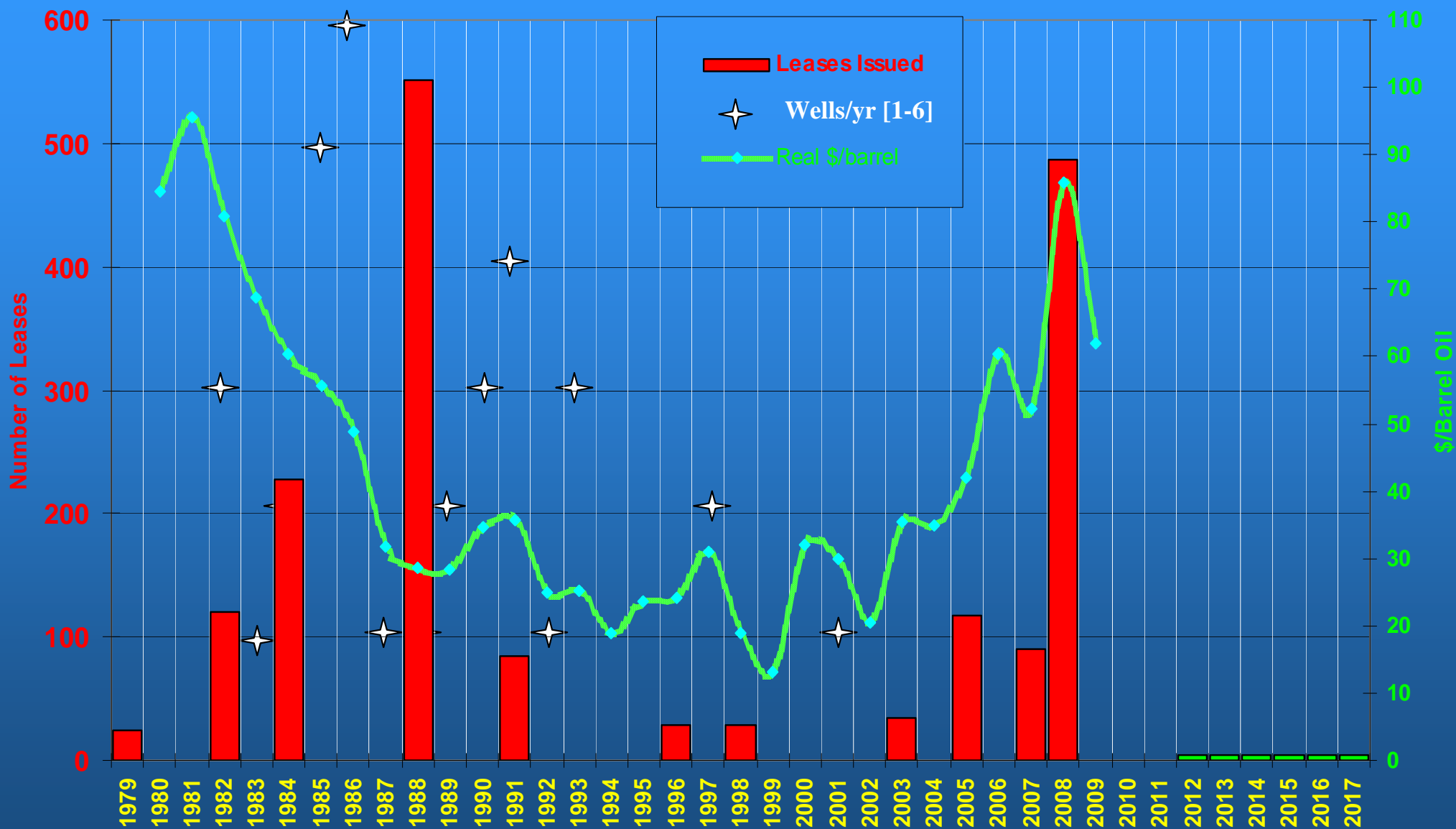
**Chukchi Sea -- Statoil USA E&P 3D Seismic**

**-- Proposed dates 7/15/10-11/30/10**

<http://www.mms.gov/alaska/re/recentgg/RECENTGG.HTM>



# Arctic Lease Activity and Oil Price



One Arctic well since 1997



# Anchorage Daily News

Thursday, April 1, 2010

BREAKING NEWS AT ADN.COM

Alaska's Newspaper

DEAL MAKES FOR A BALANCING ACT IN ALASKA

## Obama OKs offshore drilling

*President gives green light to existing Arctic leases, but Bristol Bay is off-limits*

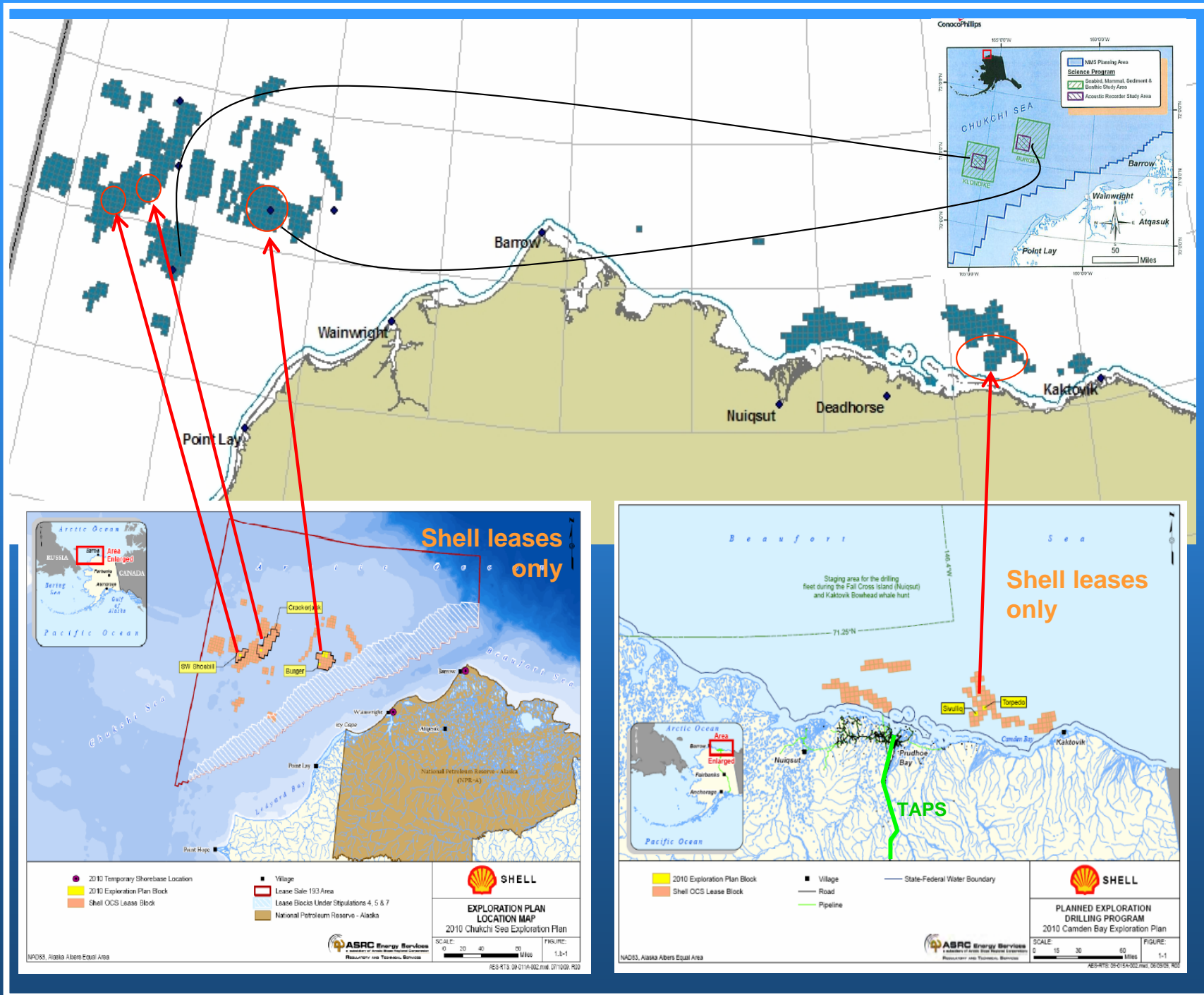




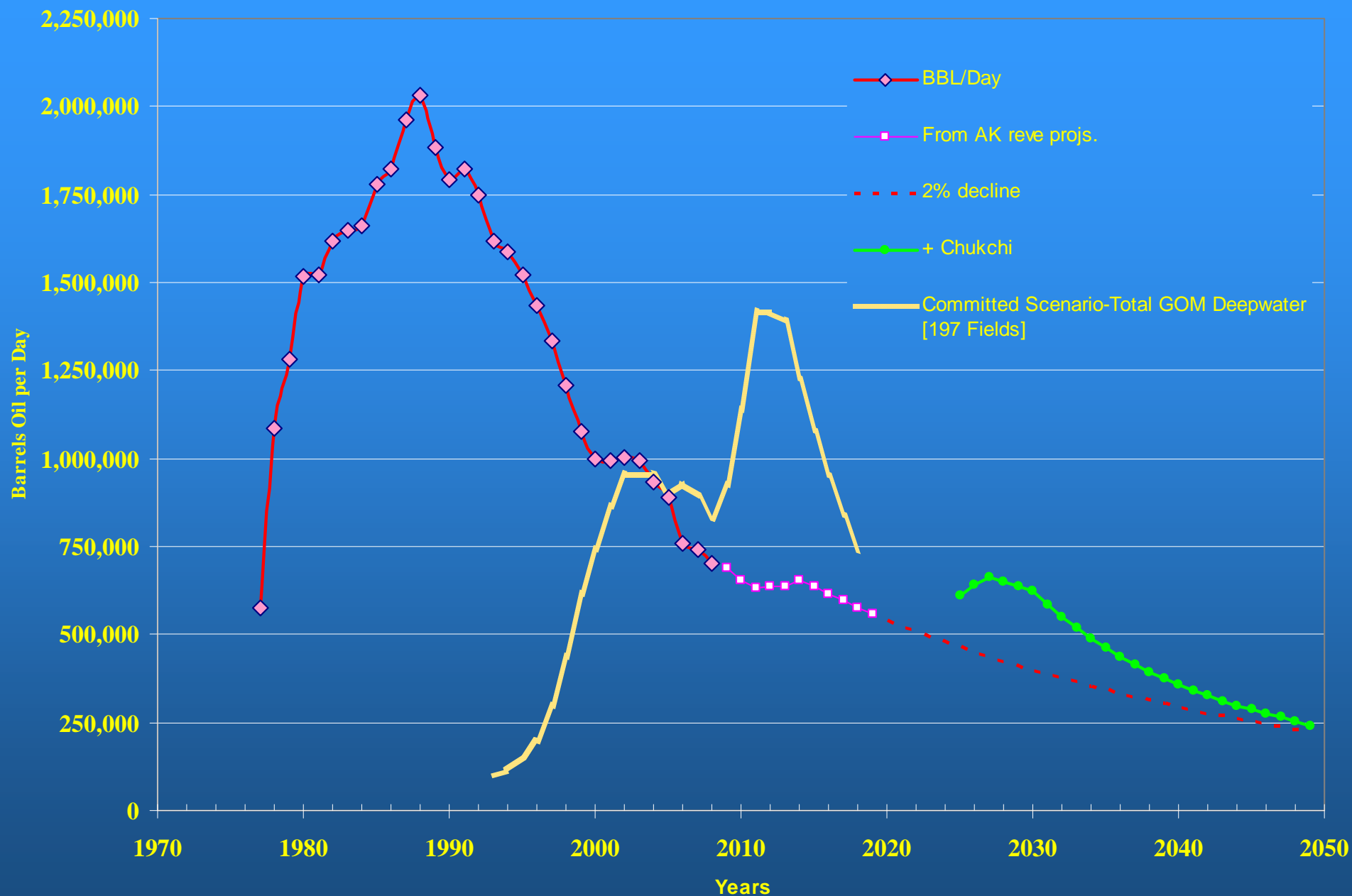
**“The Administration strategy supports exploratory drilling in the Chukchi and Beaufort Seas in the Arctic Ocean, which could begin as early as this summer, to develop critical information.”**

**Secretary Salazar Announces Comprehensive Strategy for Offshore Oil and Gas Development and Exploration 3/31/2010**





<http://www.mms.gov/alaska/cproject/cproject.htm>



# Successful drilling increases resources

*1995-2005*

- **Drilling is necessary to upgrade resources to reserves**
- **Unsuccessful drilling in the Navarin Basin (9 wells) caused a decrease (to 20%) in the post-drilling resource estimate.**
- **Successful drilling not only upgrades resources to reserves but will likely increase updated resource estimates.**
- **Successes in the frontier deepwater Gulf of Mexico resulted in a 10 fold increase in oil resource estimates compared to the National Assessment from 10 years earlier.**

# Summary

- Seismic and Leasing have increased
- Drilling is the next necessary step to move resources to reserves
- The Arctic has seen over 40 years of safe seismic and drilling activity but prior activity peaks did not lead to production
- Expect 12-24 years before 1<sup>st</sup> production