

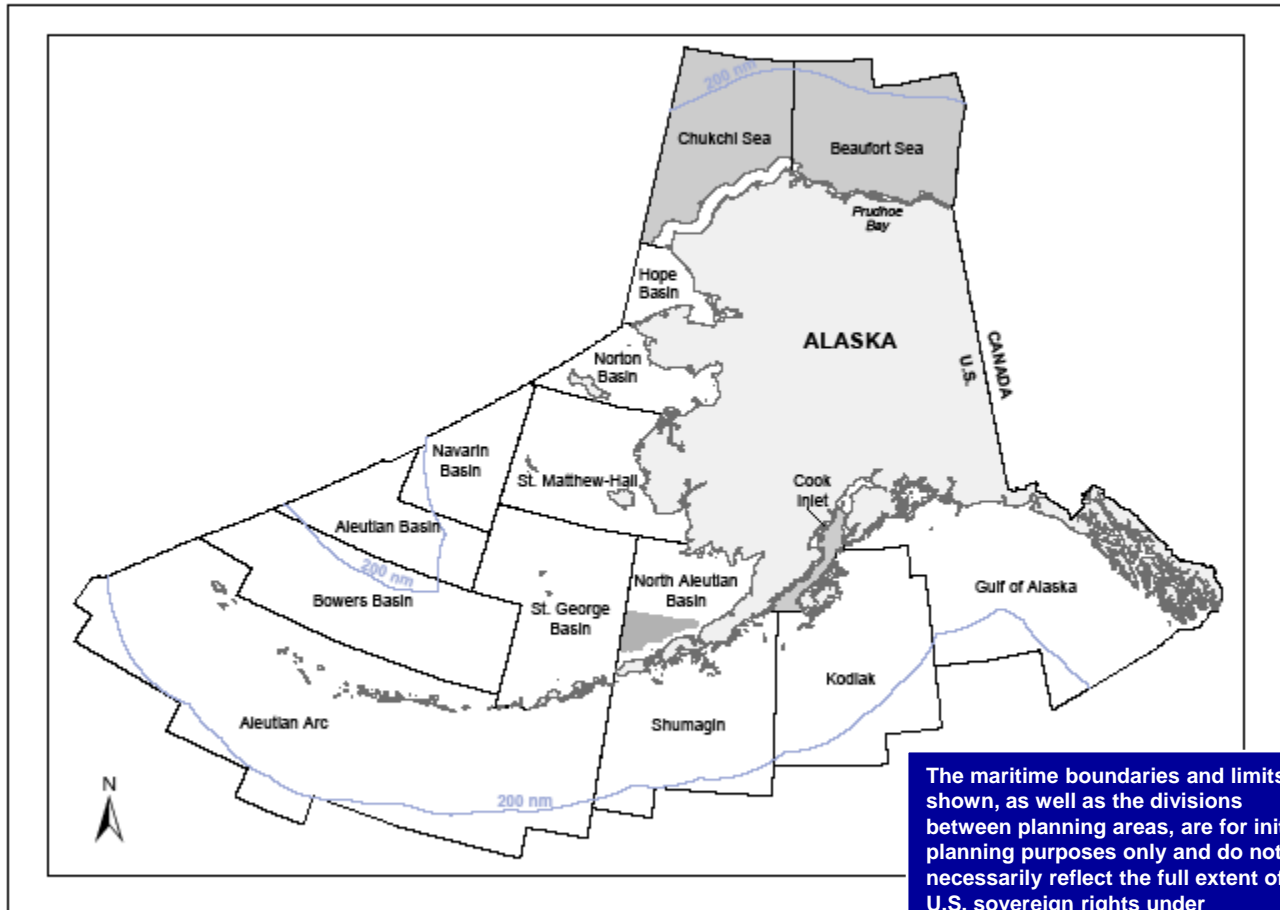


3rd Symposium on the Impacts of an
Ice-Diminishing Arctic on
Naval & Maritime Operations
UNCLOS Panel

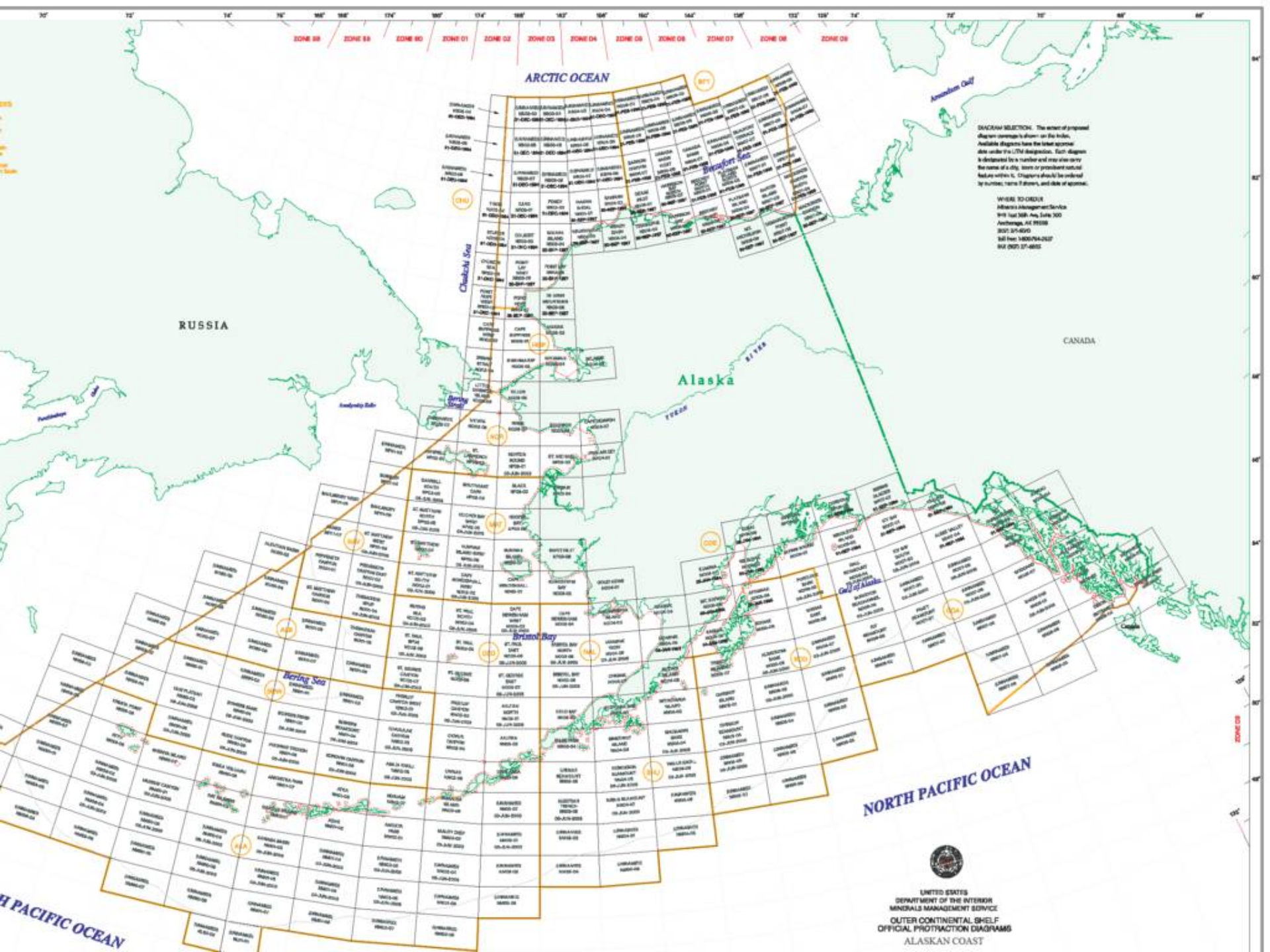
Annapolis, MD

June 11, 2009

George Dellagiarino
MMS Resource Evaluation



The maritime boundaries and limits shown, as well as the divisions between planning areas, are for initial planning purposes only and do not necessarily reflect the full extent of U.S. sovereign rights under international and domestic law.



ARCTIC OCEAN

DIAGRAM SELECTION: The series of proposed diagram numbers is shown on this index. Available diagrams have the latest approval date under the LTM designation. Each diagram is designated by a number and may also carry the name of a city, town or prominent natural feature within it. Diagrams should be ordered by number, name if shown, and date of approval.

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 Anchorage, AK 99508
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Alaska

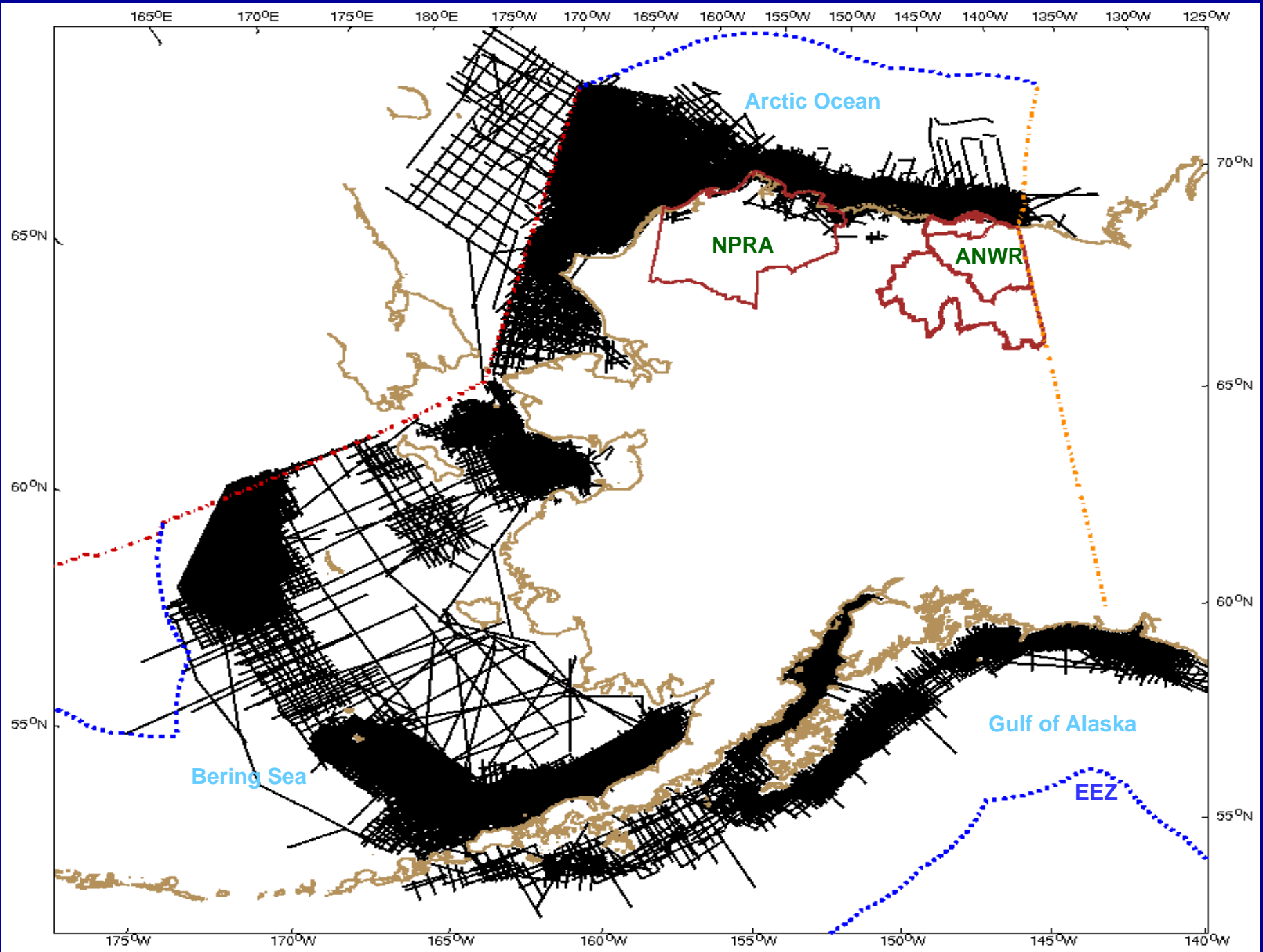
CANADA

NORTH PACIFIC OCEAN

NORTH PACIFIC OCEAN



UNITED STATES
 DEPARTMENT OF THE INTERIOR
 MINERALS MANAGEMENT SERVICE
 OUTER CONTINENTAL SHELF
 OFFICIAL PHOTOFRACTION DIAGRAMS
 ALASKAN COAST



Select MMS Seismic Permit Data

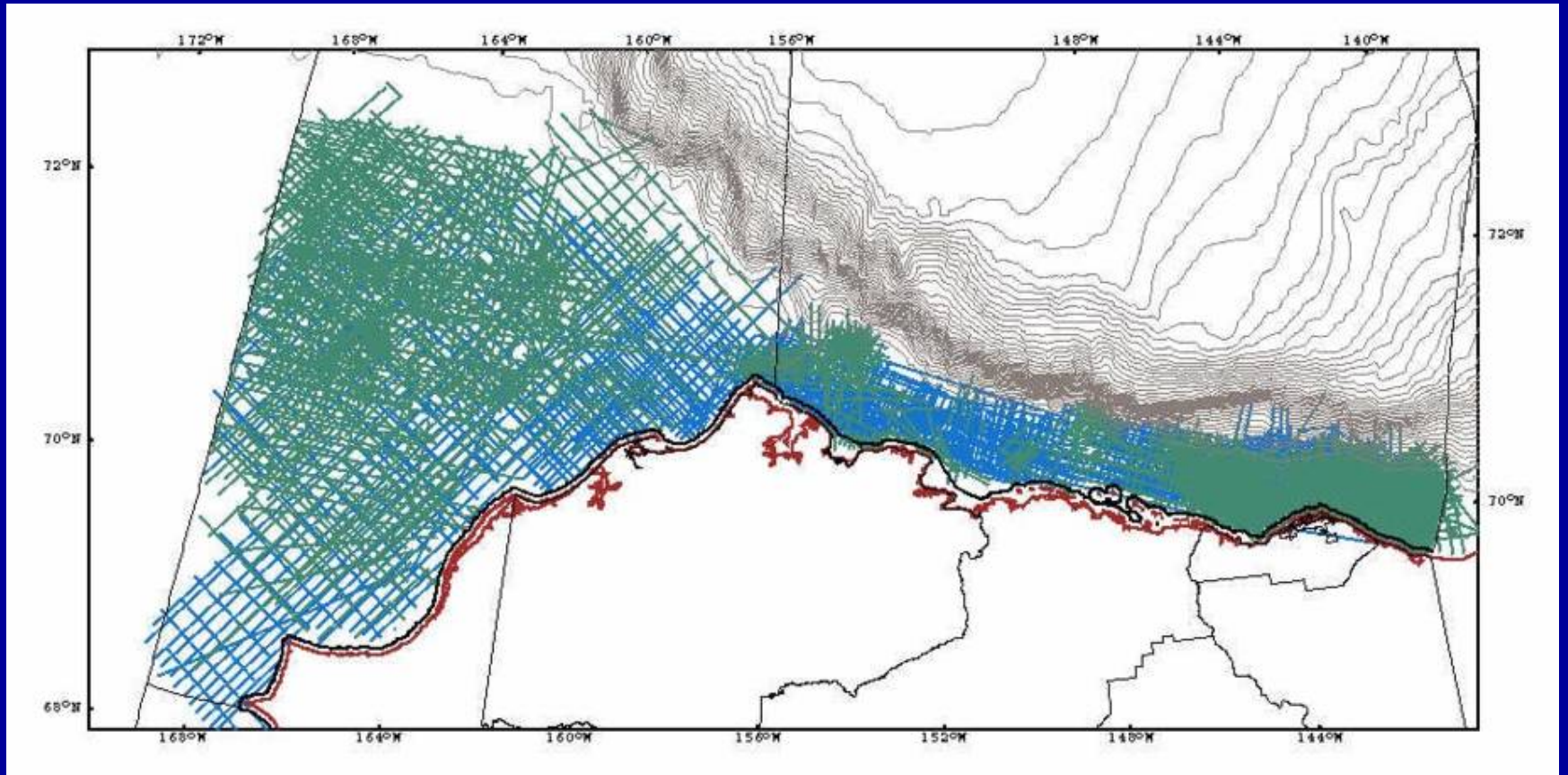


Table 1. Undiscovered Technically and Economically Recoverable Resources of OCS Planning Areas.

Resource values are in billion barrels of oil (Bbo), and trillion cubic of gas (Tcf). 95% indicates a 95 percent chance of at least the amount listed, 5% indicates a 5 percent chance of at least the amount listed. Only mean values are additive. Some total mean values may not equal the sum of the component values due to independent rounding. Prices are in dollars per barrel(\$/Bbl) for oil, and dollars per thousand cubic feet (\$/Mcf) for gas.

Region	Undiscovered Technically Recoverable Oil and Gas Resources (UTRR)									Undiscovered Economically Recoverable Oil and Gas Resources (UERR)						
	Oil (Bbo)			Gas (Tcfg)			BOE (Bbo)			\$46/Bbl \$6.96/Mcf		\$60/Bbl \$9.07/Mcf		\$80/Bbl \$12.10/Mcf		
	Planning Area	95%	Mean	5%	95%	Mean	5%	95%	Mean	5%	Oil	Gas	Oil	Gas	Oil	Gas
											(Bbo)	(Tcfg)	(Bbo)	(Tcfg)	(Bbo)	(Tcfg)
										Mean		Mean		Mean		
Alaska OCS*	8.66	26.61	55.14	48.28	132.06	279.62	17.25	50.11	104.89	8.35	26.86	16.62	64.91	21.50	93.99	
Chukchi Sea	2.32	15.38	40.08	10.32	76.77	209.53	4.15	29.04	77.36	2.37	7.91	8.38	34.43	12.00	54.44	
Beaufort Sea	0.41	8.22	23.24	0.65	27.64	72.18	0.53	13.14	36.08	4.12	8.79	5.97	15.94	6.92	19.97	
Hope Basin	0.00	0.15	0.60	0.00	3.77	14.98	0.00	0.82	3.27	0.02	0.04	0.04	0.34	0.09	1.53	
Navarin Basin	0.00	0.13	0.62	0.00	1.22	5.80	0.00	0.35	1.65	0.01	0.04	0.03	0.16	0.06	0.37	
North Aleutian Basin	0.02	0.75	2.50	0.40	8.62	23.28	0.09	2.29	6.65	0.63	5.85	0.71	7.65	0.74	8.40	
St. George Basin	0.00	0.21	0.79	0.00	2.80	11.15	0.00	0.71	2.77	0.04	0.06	0.08	0.37	0.13	1.05	
Norton Basin	0.00	0.06	0.24	0.00	3.06	13.27	0.00	0.60	2.61	0.00	0.04	0.01	0.64	0.04	1.97	
Cook Inlet	0.06	1.01	2.85	0.03	1.20	3.48	0.06	1.23	3.47	0.82	1.02	0.92	1.11	0.97	1.16	
Gulf of Alaska	0.00	0.63	2.04	0.00	4.65	16.00	0.00	1.45	4.89	0.31	1.88	0.43	2.66	0.52	3.21	
Shumagin	0.00	0.01	0.05	0.00	0.49	2.04	0.00	0.10	0.42	0.00	0.04	0.00	0.13	0.01	0.25	
Kodiak	0.00	0.05	0.20	0.00	1.84	7.62	0.00	0.38	1.55	0.03	1.19	0.04	1.48	0.04	1.65	
*The Aleutian Arc, Aleutian Basin, Bowers Basin, and St. Matthew-Hall Planning Areas in the Alaska OCS Region were not evaluated in this study as their petroleum potential is negligible.																
Atlantic OCS	1.12	3.82	7.57	14.30	36.99	66.46	3.67	10.40	19.39	2.23	13.70	2.57	17.28	2.84	20.75	
North Atlantic	0.57	1.91	3.80	7.18	17.99	32.17	1.85	5.12	9.52	1.15	6.91	1.32	8.65	1.45	10.32	
Mid-Atlantic	0.43	1.50	2.96	5.44	15.13	27.53	1.39	4.19	7.85	0.81	5.12	0.94	6.80	1.06	8.05	
South Atlantic	0.13	0.41	0.81	1.67	3.86	6.76	0.43	1.10	2.01	0.27	1.67	0.30	2.04	0.33	2.38	
Gulf of Mexico OCS	41.21	44.92	49.11	218.83	232.54	249.08	80.15	86.30	93.43	35.79	162.83	38.20	184.79	40.21	201.55	
Western Gulf of Mexico	9.80	10.70	11.80	62.65	66.25	70.17	20.95	22.49	24.28	8.69	51.86	9.25	56.47	9.71	59.87	
Central Gulf of Mexico	28.41	30.32	32.77	134.49	144.77	156.56	52.33	56.08	60.62	24.23	101.00	25.82	114.98	27.16	125.67	
Eastern Gulf of Mexico	2.76	3.88	5.51	18.06	21.51	25.98	5.97	7.71	10.13	2.85	9.96	3.11	13.32	3.33	16.00	
Straits of Florida	0.01	0.02	0.03	0.01	0.02	0.02	0.01	0.02	0.04	0.01	0.01	0.01	0.01	0.01	0.01	
Pacific OCS	7.55	10.53	13.94	13.28	18.29	24.12	9.91	13.79	18.24	7.52	11.70	8.22	13.02	8.85	14.25	
Washington/Oregon	0.00	0.40	0.94	0.03	2.28	4.89	0.01	0.81	1.81	0.19	0.79	0.23	0.95	0.26	1.12	
Northern California	1.08	2.08	3.55	2.30	3.58	5.17	1.49	2.71	4.47	1.53	2.01	1.65	2.27	1.77	2.54	
Central California	1.17	2.31	3.76	1.10	2.41	4.06	1.37	2.74	4.48	1.90	2.01	2.04	2.14	2.13	2.24	
Southern California	3.51	5.74	8.53	6.41	10.03	14.69	4.65	7.52	11.14	3.90	6.89	4.30	7.65	4.69	8.35	
Total U.S. OCS	66.60	85.88	115.13	326.40	419.88	565.87	124.68	160.60	215.82	53.89	215.09	65.61	280.00	73.40	330.54	

Assessment of Undiscovered Technically Recoverable Oil and Gas Resources of the Nation's Outer Continental Shelf, 2006



MMS Securing Ocean Energy & Economic Value For America

Undiscovered Technically Recoverable
Oil and Gas Resources (UTRR)
Mean* Estimates for Planning Areas

Regional Totals:

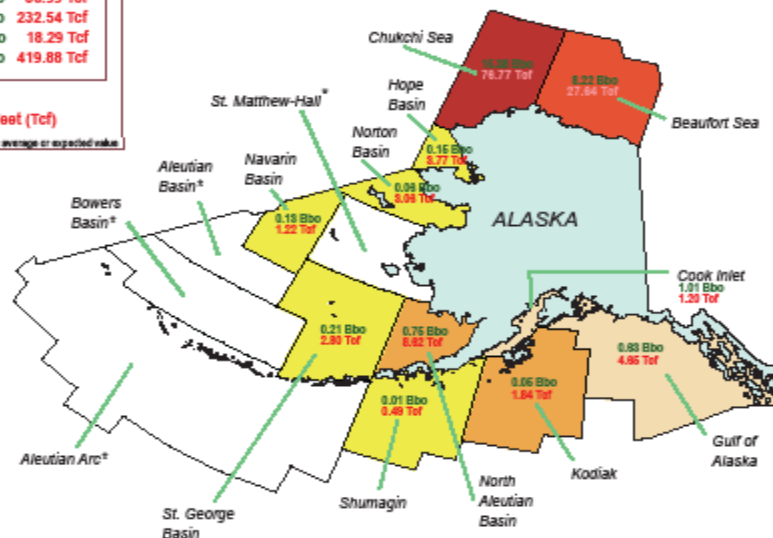
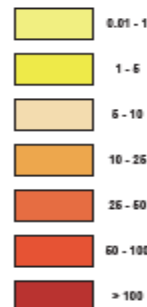
Alaska OCS	26.61 Bbo	132.06 Tcf
Atlantic OCS	3.82 Bbo	36.99 Tcf
Gulf of Mexico OCS	44.92 Bbo	232.54 Tcf
Pacific OCS	10.53 Bbo	18.29 Tcf
Total U.S. OCS	85.88 Bbo	419.88 Tcf

Oil in Billions of Barrels (Bbo)

Natural Gas in Trillions of Cubic Feet (Tcf)

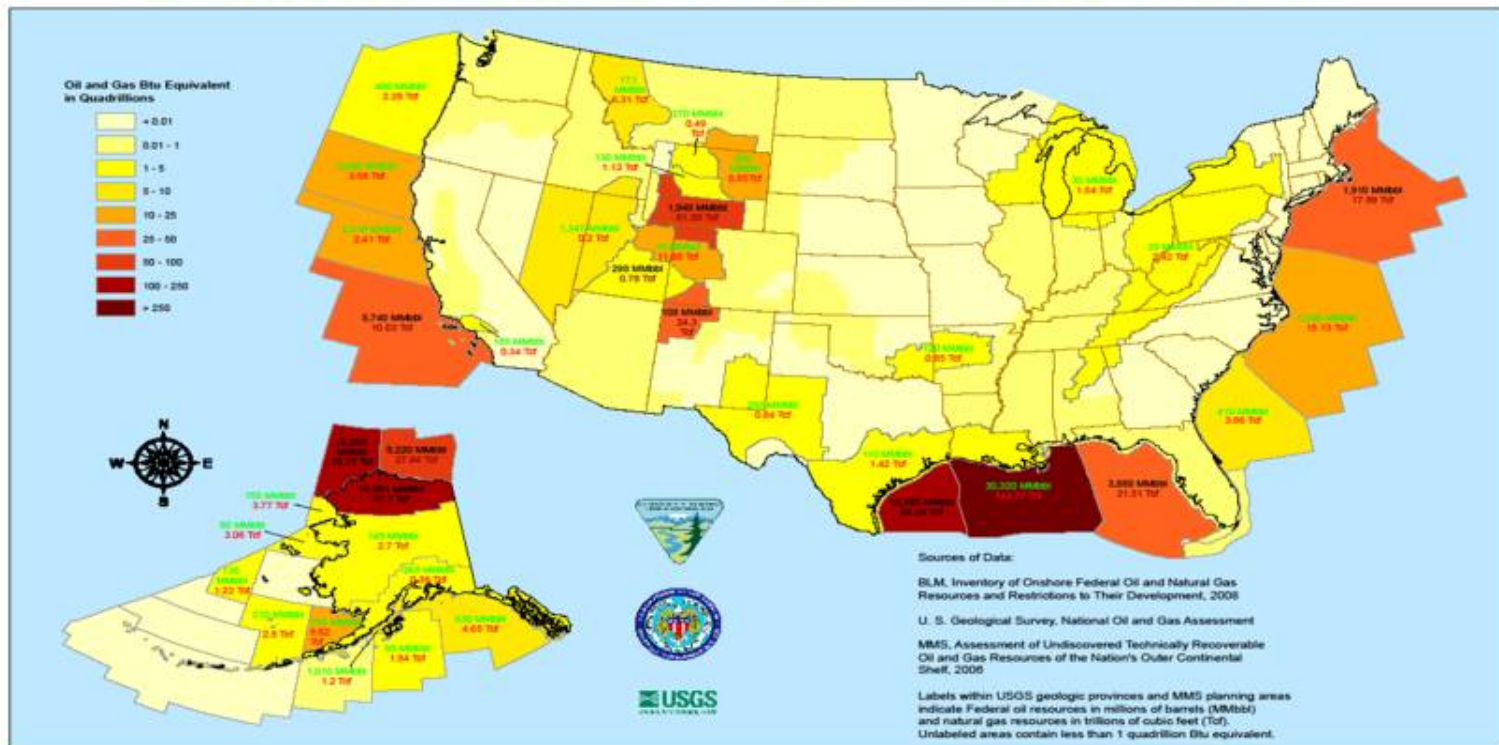
* Arithmetic average or expected value

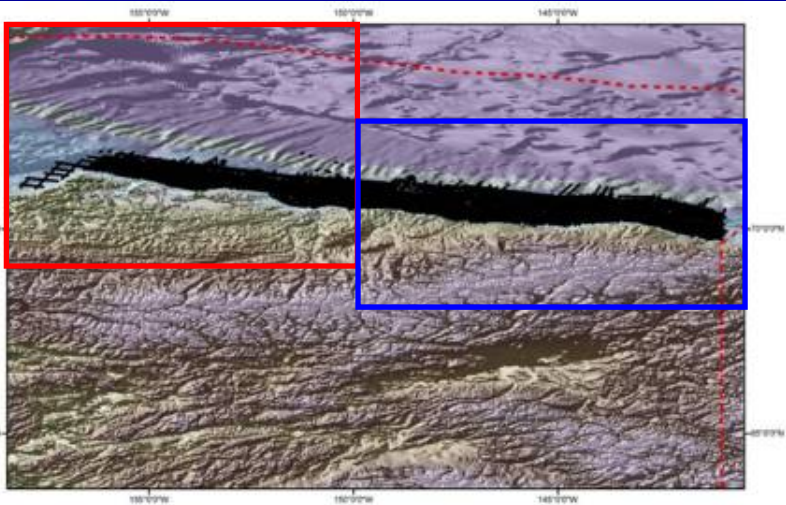
Oil and Gas BTU Equivalent
in Quadrillions (1*10¹⁵)



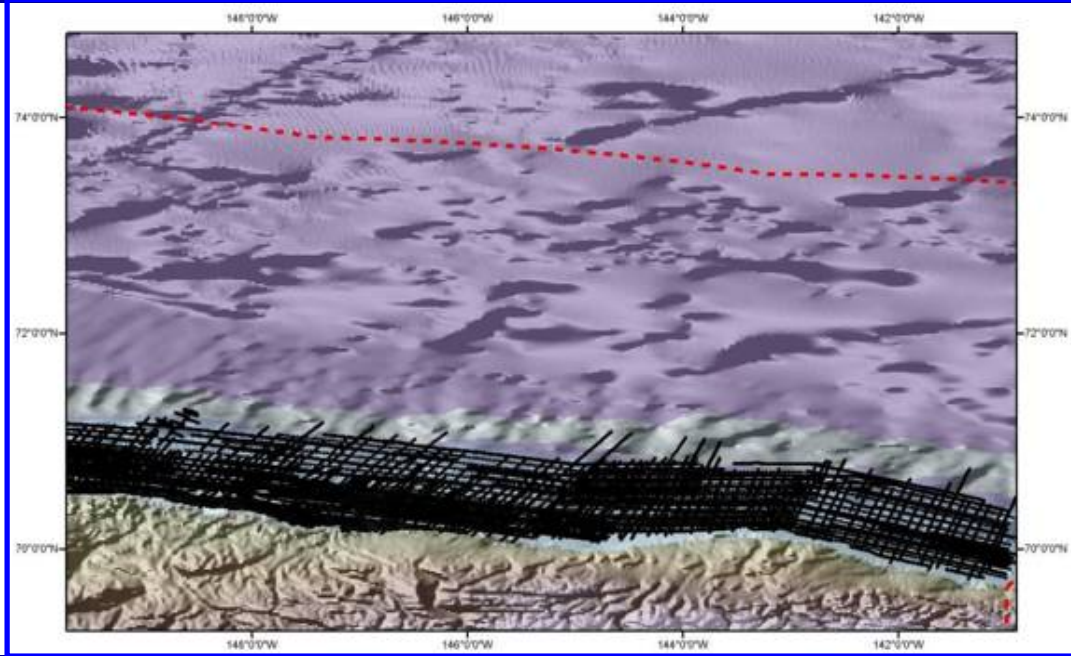
* Not evaluated in this study - petroleum potential is negligible.

Undiscovered Technically Recoverable Oil and Gas Resources on Federal Lands

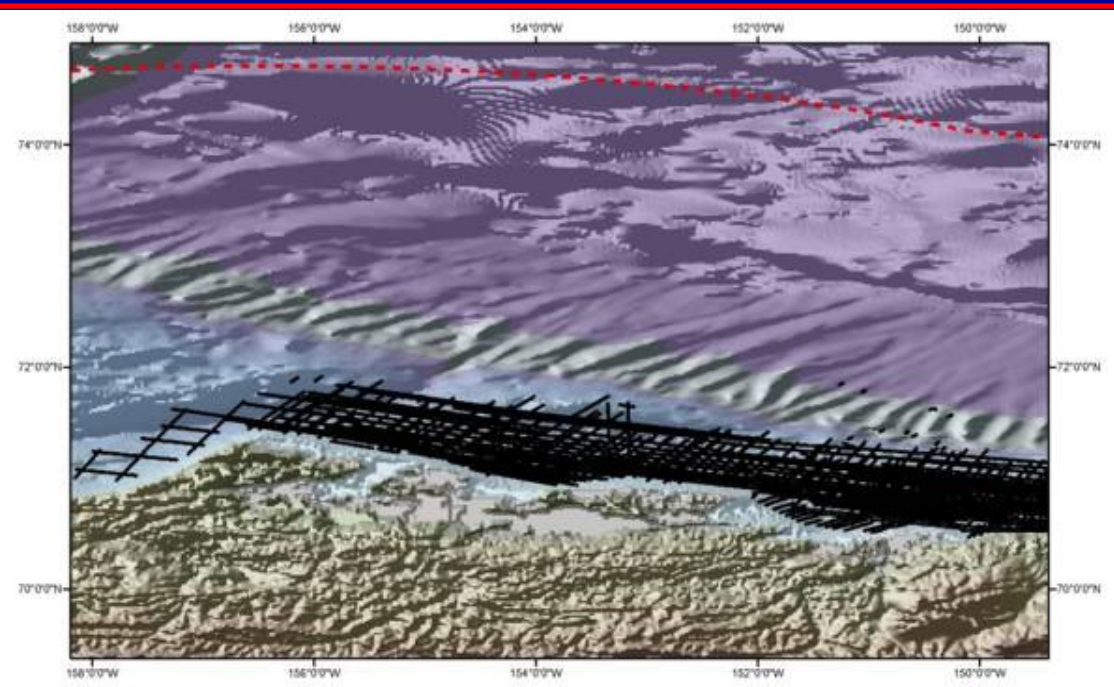




Western area zoom



Eastern area zoom



Location of 10 Beaufort Sea Surveys

Red hatched line represents EEZ

