Maritime Space and the Arctic Ocean Chapel Hill, North Carolina March 28, 2012



Brian Van Pay Office of Ocean and Polar Affairs U.S. Department of State

LANDGRAB

WAR?

THE NEW

U.S., Canada, Russ Denmark Rush to Stake Arctic Claims





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Where is the Arctic?

- □ All land, submerged lands, and water north of Arctic Circle (66°33' N)
- U.S. Arctic Research Commission statute includes Bering Sea and Aleutian Islands
- Canadian Arctic Waters Pollution Prevention Act includes all Canadian land and waters north of 60° N
- Denmark considers all of Greenland and the Faroe Islands as Arctic
- Bioregions (tree line, where permafrost begins, etc)

Where is the Arctic Ocean?

Definition adopted by IHO in 1953.

Neither has a definitive and obvious extent. The United States has an interest in not subscribing to one particular definition for all purposes. Rather each definition serves its own purpose.



Maritime Zones

Maritime Zones



Maritime Zones The Continental Shelf



How is the extent of an ECS determined? Formula Lines (Two Options)

- One based entirely on morphology of sea floor
- Another based on morphology of sea floor and thickness of sediments
- □ Can use either one in any combination



How is the extent of an ECS determined? Constraint Lines (Two Options)

- □ One is 350 nautical miles (nm) from coast (baselines)
- Another is based on finding the 2,500 meter contour and adding 100 nm
- Can use either one in any combination



Why does it matter?

Sovereign rights over the natural resources likely worth many billions:

Immineral resources (manganese nodules, ferromanganese crusts, and polymetallic sulfides, etc)

petroleum (oil, gas, and gas hydrates)
 "sedentary" species (clams, crabs, scallops, sponges, corals, mollusks, etc)

Defining those rights in concrete geographical terms provides the specificity and certainty necessary to protect, manage, and/or use those resources.

The U.S., like other countries, has an inherent interest in knowing, and declaring to others, the exact extent of our sovereign rights.







What types of data do we need?

Bathymetric Data

Used to determine foot of the slope

Seismic Data

Used to determine sediment thickness









Areas of Possible United States' ECS













The ECS Task Force was established in April 2007 by the Interagency Committee on Ocean Science and Resource Management Integration. The Task Force is chaired by Department of State, with covice chairs from Department of the Interior and National Oceanic and Atmospheric Administration.



The Task Force now reports to the National Ocean Council (NOC) Steering Committee. A revised ECS charter was adopted by the NOC on September 24, 2010.



















What has been done so far?

Bathymetric Data Collection

- Arctic Ocean (2003, 2004, 2007, 2008, 2009, 2010, 2011, 2012)
- □ Atlantic Ocean (2004, 2005, 2008, 2012)
- □ Bering Sea (2003)
- □ Gulf of Alaska (2005)
- □ Gulf of Mexico (2007)
- Northern Marina Islands & Guam (2006, 2007, 2010)

Seismic Data Collection

- Arctic Ocean (2008, 2009, 2010, 2011)
- Gulf of Alaska (2011)
- Bering Sea (2011)

Data Management

 Developing metadata standards for bathymetric and seismic data (2008present)



Northern Mariana Islands





Arctic Data Collection Missions

Accomplishments

8 cruises (4 with Canada)

<u>Bathymetric Data</u> Area mapped: ~320,000 km² (size of Montana)

Seismic Data Seismic tracklines: ~15,000 km (LA to NYC x 3.5)

Seismic data collection completed in 2011; joint cruises have concluded

One more 30-day bathymetric cruise left (just *Healy*).





Why Cooperate?





- Mutual interest to delineate continental shelf in the Arctic
- □ Saves millions for both countries
- It's Canada and the U.S.—we're friends.
 And we also have a long history of scientific collaboration.
- Utilize collective, rare expertise, especially given the challenges of the Arctic.
- Collect data only once over the same area
- Provide data the other needs
 - Canada has a proven multi-channel seismic system that works in ice-covered conditions
 - The Healy has a multibeam bathymetric system and can clear a path

Why Cooperate?





Seismic data collection with no ice

Seismic data collection in ice

Courtesy of Jacob Verhoef

Scenes from Final Joint Cruise (2011)

Rendezvous August 23

Air drop from C-130 September 12

AUV launch from *Louis S. St. Laurent*



Maximizing the Effort (Science)





Guyots off Northern Mariana Islands, one less than 7 meters from surface







Press and Outreach





Online videos and photos

U.S. - Canada Arctic Expedition

Surveying The Extended

Continental Shelf

Host-Jessica Robertson (USC5)

ECS Website Teachers at Sea and Blogs www.continentalshelf.gov



Press conferences and press releases



Interviews

What work is left?

Planning

- Determine priorities
- Execute remaining work

Data Collection

- Additional bathymetric data required (Arctic, Gulf of Alaska, Pacific Islands)
- Additional seismic data required (Atlantic and Gulf of Alaska)

Analysis and Compilation

- Construct a Geographic Information System
- Apply formula and constraint lines
- Document legal and scientific approaches



Data Collection

Analysis and Compilation



Commission on the Limits of the Continental Shelf (CLCS)

- Commission on Limits of Continental Shelf (CLCS)
 A coastal State submits its coordinates, data, and analyses to CLCS. 21 members, all scientists.
 - CLCS makes recommendations back to State. Cannot address boundaries.
 - □ Purpose? International recognition.
 - □ If the coastal State establishes its ECS limits "on the basis of" CLCS recommendations, those limits are "final and binding."
 - ❑ Why the interest now? 10 year clock. (not a race or due to climate change)
- Submissions and Recommendations
 79 countries likely have an ECS, including all 5 Arctic States.
 55 submissions, 11 recommendations from CLCS, an additional 45 preliminary information documents.

ECS Areas Already Submitted (in orange)



It's a Two-Step Process

Step 1: Delineate the ECS

Step 2:

Negotiate maritime boundary where ECS overlaps





The U.S. and Maritime Boundaries

- Half of all maritime boundaries have yet to be determined across the globe.
- The U.S. has 30 potential maritime boundaries with 16 different countries.
 - 12 boundaries based on treaty and 1 based on decision from chamber of ICJ.
 - □ 17 undelimited boundaries.
 - The U.S. only has one delimited maritime boundary with Canada; the other three are unresolved.

U.S. – Russia Maritime Boundary

- Agreement between US & USSR
 - •Signed: June 1990
 - •Advice and consent from Senate: Sept 1991
 - •Provisionally applied: June 1990
- Russia's ECS delineation follows boundary.



U.S. – Canada Boundary The EEZ

- A maritime boundary is required within and beyond 200 nm.
- The U.S. has declared a maritime boundary based on equidistance out to 200 nautical miles.



U.S. – Canada Boundary Beyond 200 nautical miles

This map does not show the areas where the U.S. and Canada will delineate ECS, but it does show the approximate size of two areas where it appears each may delineate an ECS and the other cannot based on applying both constraint lines.

> Due to the constraint lines, it appears only the U.S. may delineate this area as ECS

> > UNITED

Due to the constraint lines, it appears only Canada may delineate this area as ECS.

CANADA

Questions?

U.S. ECS Task Force Website www.continentalshelf.gov

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