

Law of the Sea - Outer Limits of the US Continental Margins

SUMMARY:

The United Nations Convention on the Law of the Sea (UNCLOS) sets forth a process by which a coastal nation (hereafter called State) may establish the outer limits of its continental shelf, i.e., that portion of the shelf that extends beyond 200 nautical miles (nm) from the baseline from which the breadth of the territorial sea is measured. Information on the limits of the continental shelf is to be submitted to the Commission on the Limits of the Continental Shelf (the Commission), which shall make recommendations about the outer limits of the shelf. The limits of the shelf established by a coastal State on the basis of these recommendations shall be final and binding. While the United States is not party to UNCLOS, accession to UNCLOS is a priority for this administration. Under UNCLOS, States have ten years from the date of entry into force of UNCLOS for that State to submit data and other information to the Commission. It is in the U.S. national interest to collect accurate and precise data on the outer limits of its continental shelf in preparation for an eventual submission to the Commission. In anticipation of the U.S. becoming a Party to UNCLOS, Congress appropriated about \$1 million to NOAA in FY2002 to begin background studies in support of determining the outer limit of the U.S. continental shelf. NOAA contracted the bulk of the funds to Larry Mayer at the University of New Hampshire to assess the state of bathymetric data holdings. NOAA also contracted a minimal amount to USGS (this project) to assess the state of relevant geologic data. Because of the short deadline for the report to Congress (due on 31 May, 2002), the USGS contribution to the assessment comprised data locations only, not geological interpretation or application of the sediment thickness formula of Article 76 (UNCLOS). The report submitted to Congress (Mayer and others, 2002) did show numerous regions of the US margins and those of its territories that the formula might be the defining criterion. Hence, USGS has a continuing role to play in assessing existing data for their relevance to making a submission. The 'Law of the Sea - Outer Limits of the U.S. Continental Margins' project will conduct geoscientific assessments of potential US entitlement of the juridical continental shelf beyond 200 nm. This work will be done taking into account the guidelines established by the Commission on the Limits of the Continental Shelf (CLCS, 1999) as provided under Article 76 of the UNCLOS. To provide these assessments, the project will review, compile, collect (if warranted and authorized) and synthesize geologic and geophysical data from offshore seabed areas beyond 200 nm. These assessments will begin in the regions where geology is the key criterion for making a submission, as identified in Mayer and others (2002). The project will collaborate with other U.S. Federal agencies and academic institutions as needed to achieve these objectives. This project also provides a mechanism for USGS to research and advise the Department of State about the geologic criteria used in submissions to UNCLOS made by other States. Generally only the executive summary of the submission is available, so this advisory role means USGS must identify and become familiar with the public literature on the particular continental margin and then apply UNCLOS Article 76 criteria to assess how reasonable the submission is.

INVESTIGATORS:

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DESCRIPTION:

The report to Congress completed by Mayer and others (2002) identified 8 general areas around the United States and its territories where the sediment thickness formula might be the deciding formula in making a submission: the northeast Atlantic, the southeast Atlantic, the Gulf of Mexico, the Gulf of Alaska, the Aleutians, the Arctic, the Mariana Islands, and Palmyra Atoll/Kingman Reef. With these regions as priorities, the objectives of this project are: (1) Evaluate the adequacy of existing data for making a submission using the sedimentary thickness formula. (2) Develop the geological, morphological, and other bases that will determine whether a feature is a natural prolongation of the land territory. (3) Generate the sediment thickness maps together with supporting documentation about data quality and quantity that can be used in making a submission. (4) Assess the potential natural resources on and within the seabed of the areas of investigation. (5) Develop a strategy for acquiring and integrating additional new data into existing data in order to satisfy the requirements for making a scientifically sound submission. This depends on the results of (1), (2), and (3). (6) Initiate and participate in the acquisition, processing, and interpretation of new geological data. (7) Utilize all data (in concert with other agencies and groups) toward developing the submission to be made to the Commission on Limits of the Continental Shelf. (8) Respond to submissions by other States, as requested by DOS.

START DATE OF PROJECT:

October 1, 2001

END DATE OF PROJECT:

September 30, 2007

TOPIC:

Develop and Maintain Databases, GIS, and Decision Support Systems

APPROACH:

I. BACKGROUND AND PREPARATION FOR A U.S. SUBMISSION 1. Characterize the types, locations, and quality of existing geologic and geophysical data available in the public and proprietary domains for the areas currently identified: northeast US Atlantic (NEA; Georges Bank), southeast US Atlantic (SEA; Blake Plateau), Gulf of Mexico (GOM), eastern Gulf of Alaska (EGA), Aleutian Basin/Bering Sea (ABS), Arctic/Chukchi Sea (ACS), and the islands comprising western Pacific trust territories (WPI). This approach will be met by mining USGS archives and other databases for relevant geophysical and geological information, and by working with the World Data Center to locate geological and geophysical information from other academic and federal agencies. This approach is consistent with procedures documented by Cook and Carleton (2000), and with the eight locations pertinent to the sediment thickness formula identified by Mayer and others (2002). 2. Identify areas of data deficiencies, establish new data requirements, and initiate plans for appropriate field programs. The objective of this strategy will be addressed by comparing data-coverage requirements established by the CLCS with existing useable-data locations. Where new data are needed, the project will coordinate with other agencies (e.g. NOAA, NSF, MMS, DoD) in planning field programs. 3. As needed, compile, synthesize, and interpret existing geological and geophysical data that will be required for making submissions to the CLCS. The objectives of this strategy will be met by producing the necessary maps (e.g., sediment thickness, geologic framework, crustal structure) from available seismic-reflection, refraction, and geologic evidence. Included in this strategy is thorough documentation of appropriate data quality and uncertainty. 4. Provide scientific advice as needed to other Federal agencies (particularly DOS) that are working on similar UNCLOS issues in areas of interest to the U.S. This strategy will be accomplished via meetings and discussions as opportunities and requests arise. 5. Document all results in presentations and peer-reviewed publications, as well as data reports. II. EVALUATION OF NEW SUBMISSIONS Conduct background literature searches that provide knowledge and context for understanding the continental margins of the submission. Compare this understanding with the executive summary of the submission to assess the reasonableness of the submission under CLCS guidelines. Engage other government agencies in the process. Prepare reports for DOS at an appropriate level of detail. (All of this will be done with the help of contractor Robert Rowland). III. FUTURE WORK Maintain involvement in LOS issues both nationally (DOS) and internationally (professional meetings). Respond to submissions as they are given to the U.N. (in conjunction with DOS). Approximately 5 new submissions are expected in the next 1-2 years, and a minimum of 13 in the next 3-4 years. Explore how a U.S. submission might be affected by the reasoning and boundaries used in the submissions of other nations.

IMPACT/RESULTS:

The potential impacts of the project work are: 1. Assisting the U.S. in identifying and substantiating an extended continental shelf with substantial resource implication beyond 200 nm. s in the offshore. 2. Providing geologic advice to U.S. agencies and organizations on the geologic framework and potential economic resources for continental margins in general and for those margins of U.S. National interest in particular. 3. Planning and, if appropriate conducting, new geophysical and geologic cruises to fulfill requirements in the collection of additional information, which may provide the opportunity for significant collaborative scientific research. OUTCOMES STATEMENT: Four areas show how USGS LOS studies have made an impact: * USGS comments are integral parts of DOS responses to the U.N. on Article 76 submissions by other States. USGS comments formed the bulk of material used in the DOS letter to the Secretary General on the Russian Submission in March, 2002 (http://www.un.org/Depts/los/clcs_new/submissions_files/rus01/CLCS_01_2001_LOS_USAtext.pdf) and on the Brazil submission in August, 2004 (http://www.un.org/Depts/los/clcs_new/submissions_files/bra04/clcs_02_2004_los_usatext.pdf). USGS contributed comments to DOS on the Australian submission during FY 2005 (submission made on 15 November, 2004; no comments yet submitted by DOS); USGS is preparing comments on the partial submission by Ireland (submission made on 25 May 2005). An additional 12 States have indicated that they will make submissions between 2005 and 2009. It is likely others will also make submissions, but have not yet given dates to the United Nations. * USGS data and research are acknowledged as critical to the ability of the United States to extend its juridical continental shelf under provisions of Article 76 of UNCLOS. The submerged land area that the United States might gain in a submission under UNCLOS is enormous (on the east coast, around Alaska, in the Arctic, and in some of the Trust Territories), representing a huge economic resource for the country and land management challenge for the federal government. Because one of the primary criteria for extending jurisdiction of a continental margin beyond 200 nm is sediment thickness, USGS regional marine studies form the basis for identifying potential submerged regions, their resource potential, and new data sets that will be required for the U.S., assuming that it eventually ratifies UNCLOS and makes a submission under Article 76. * This project positions USGS for a leadership role if and when the U.S. ratifies the UNCLOS treaty. By being a player in preliminary UNCLOS studies, and responding to DOS, NOAA, MMS, and Navy queries, USGS is positioning itself to be in a leadership position when the UNCLOS treaty is ratified and the US begins to assemble data and interpretation for a submission. There is likely to be significant appropriation to develop a submission over a significant period of time (States have 10 years from date of ratification to make a submission under Article 76). Hence, this leadership may come with financial award to USGS. * USGS studies in the Bering Sea and the Arctic maintain USGS leadership in this highly contentious part of the world. USGS studies in support of understanding the geology of the Bering Sea (D. Scholl and G. Barth) and of the Arctic (A. Grantz) ensure that the USGS maintains a leadership role in science in this politically charged part of the world. The Arctic is extremely complicated geologically with very few data sets. Although the U.S. has not ratified UNCLOS, USGS is generally invited to workshops, meetings, and information exchanges dealing with Arctic studies, which in turn keeps USGS at the table to ensure that geologic interpretations are reasonable and that submissions by other States under UNCLOS do not jeopardize U.S. interests.

PUBLICATIONS:

- ◆ Hutchinson, D.R., Dhilds, J.R., Hammar-Klose, E., Dadisman, S., Edgar, N.T., and Barth, G., 2004, A preliminary assessment of geologic framework and sediment thickness studies relevant to prospective US submission on extended continental shelf: U.S. Geological Survey Open-File Report 2004-1447 (abstract available on the Web at <http://pubs.usgs.gov/of/2004/1447>).