Extended Continental Shelf - What is it and why should we care?
Under international law, every coastal nation is entitled to delineate the outer limit of its continental shelf beyond 200 nautical miles from shore. Within this extended continental shelf, the coastal state has sovereign rights over the natural resources on and beneath the seabed.

The field work necessary to determine the shelf outer limits includes multibeam swath sonar, seismic reflection/refraction, bottom sampling, and geophysical data. Although this work is funded primarily to fulfill delineation requirements under international law, the investments are producing new legacy data sets in frontier areas of Earth that will be of value in understanding, exploring, and managing the world's seafloor and sub-seafloor for decades to come.

What is OER's involvement?
When the U.S. Extended Continental Shelf (ECS) Project was added to the President's budget in 2008, NOAA's Office of Ocean Exploration and Research (OER) assumed the agency's annual funding and project coordination responsibilities.

The U.S. ECS Project
The mission of the U.S. ECS Project is to establish the fullest extent of our continental shelf, consistent with the United Nations Convention on the Law of the Sea (UNCLOS) Article 76. The continental shelf is an extremely important maritime zone, one that holds many resources and vital habitats for marine life. And, although the United States is not a signatory to UNCLOS, this and the previous Presidential Administration, as well as Congress, have recognized the value of mapping these areas to enhance our overall understanding of the seafloor, ocean processes and living/non-living marine resources that exist there. `

Establishing these shelf outer limits in concrete geographical terms will enable the United States to exercise its continental shelf rights with significantly greater certainty in the future. Key to this, ultimately, is demonstrating the approach and reasoning behind our ECS determinations. In addition to data collection and archive, this involves the analysis and documentation of data that describe the depth, shape, and geophysical characteristics of the seabed and sub-seafloor, as well as the thickness of the underlying sediments. The National Geophysical Data Center (NGDC) is the designated Data Management lead for the U.S. ECS Project and archival location for all data related to this project. http://www.ngdc.noaa.gov/mgg/ecs/ecs.html

Members of the U.S. Extended Continental Shelf Project Task Force are the U.S. Department of State, National Oceanic and Atmospheric Administration, Department of the Interior, Executive Office of the President, U.S. Geological Survey, U.S. Coast Guard, National Science Foundation, Joint Chiefs of Staff, U.S. Navy, Department of Energy, Environmental Protection Agency, Minerals Management Service, and the Arctic Research Commission

Highlights:
In conjunction with NOAA's Office of Coast Survey and the University of New Hampshire, OER conducted the first U.S. Arctic ECS-related mapping expedition in 2003.

Since 2007, NOAA and the 12 other U.S. agencies, that make up the Task Force, have been gathering and analyzing survey data (i.e., bathymetry, seismic profiles, magnetic, gravity), legal data and seafloor

samples to determine the outer limits of the U.S. ECS. These shelf extension determinations, ultimately, will provide a rich baseline for setting future exploration, research and resource management priorities and for understanding the diversity of this maritime zone.

OER supported four international ECS Arctic mapping expeditions between 2008 and 2011, involving the icebreakers U.S. Coast Guard Cutter Healy and the Canadian Coast Guard Ship Louis S. St-Laurent. The joint missions made it possible for the U.S. Coast Guard Cutter Healy and the Canadian Coast Guard Ship Louis S. St-Laurent to operate together to obtain a variety of data useful to both countries in defining the full extent of their Arctic continental shelves.

The EC S Project conducted two bathymetric cruises in 2012. From July 2 to July 17, scientists on the NOAA Ship *Ronald H. Brown* collected nearly 65,000 square kilometers of bathymetric data in the southeast Atlantic to characterize the "foot of the slope" and downslope movement, both key parameters in delimiting our EC S. From August 25 to September 28, scientists aboard the U.S. Coast Guard Cutter (USCGC) *Healy* in the Arctic Ocean collected 69,000 square kilometers of bathymetric data (equivalent to an area the size of the states of Maryland, Massachusetts, Delaware, and Rhode Island combined). These and past EC S surveys enabled new partnerships and fascinating scientific discoveries, such as previously unknown occurrences of critical minerals and never before seen seamounts and submarine canyons. Physical oceanographic, ocean acidification, meteorological, and marine mammal observations are often simultaneously acquired.

This project represents the largest and potentially most significant interagency marine survey ever undertaken by the U.S. The effort is likely to yield more than two million square kilometers of bathymetrically mapped ocean shelf, equivalent to an area twice the size of California, with seabed energy, mineral and living marine resources worth many billions, if not trillions, of dollars. It has the potential to rival the addition of the U.S. Exclusive Economic Zone (EEZ) in terms of its importance to governance and sovereign land rights. All told, more than 2,000,000 sqkm of bathymetric data and more than 20,000 linear km of seismic data have been collected, so far.

The ECS Project is also a valuable venture for the field of science. ECS findings have provided and will continue to provide a framework for targeting future deep sea exploration and research and will be a foundation upon which ecosystems will be discovered, defined and understood. Already, ECS data from the Bering Sea are contributing to our understanding of gas hydrates. Bathymetric data from the Atlantic margin are yielding new insights into submarine landslides and tsunami risks for the U.S. East Coast. Gulf of Alaska mapping data are being used to determine site surveys for future energy exploration. Marianas ECS data are being repurposed for Marianas Trench Marine National Monument management. Data tools developed for the ECS Project are now used across federal agencies to better manage scientific data.

See www.continentalshelf.gov for additional information.