Bearing Sea Canyons—Home to Important Fish Habitat

Have you heard about the Bering Sea canyons? The Bering Sea, located between Alaska and Russia, has some of the largest submarine canyons in the world, namely the Bering, Pribilof, Zhemchug, Pervenets and Navarin canyons, which are on the eastern Bering Sea continental shelf break. Some have dubbed these the "Grand Canyons of the Bering Sea."

Figure 1: Screen capture from NASA WorldWind software of the margin of the Bering Sea with the larger canyons highlighted. Credit: Mike Norton

The Bering Sea is also known worldwide for its enormously productive and valuable fisheries—some of the most sustainable and profitable fisheries on the planet, which contribute an estimated $6.7 billion to the U.S. economy and support thousands of jobs. The fishing industry is the largest private employer in the State of Alaska.

Fisheries managers want to know how the canyons might factor into the productivity of marine life, especially commercially valuable fish species. Members of the North Pacific Fishery Management Council recently addressed the question of whether two of these canyons—Pribilof and Zhemchug--should be protected for coral, sponge and other habitat for fish and crab species.

The NPFMC is one of eight regional fishery management councils set up through the Magnuson-Stevens Act—our country's roadmap to sustainable fisheries. The Council called upon NOAA scientists from the Alaska Fisheries Science Center—an independent source of scientific information for the Council—before making any management decisions that might have economic impacts for fishing families and coastal communities.

The Council asked NOAA scientists to review existing and new scientific information on the canyons, their habitat, and fish associations in those areas and present a report on whether or not the two canyons were biologically unique.

To learn more, **read the full AFSC report on Bering Sea canyons**.

To learn more about the Council's enacted habitat protections, visit the **North Pacific Fishery Management Council website**.

NOAA scientists provided that report to the Council in June 2013, which indicated the canyons are not biologically unique. Scientific analysis found that the physical differences in the Zhemchug and Pribilof Canyons are more tied to latitude than characteristics unique to those two canyons and cannot be distinguished based on biological characteristics because coral and sponge presence and fish and crab densities are similar in other canyons and on the adjacent slope. The Council also received a companion report from Council staff on fishing activities in canyons, protection measures and process for future action.

Based on the report, Council members passed a motion to proactively pursue further research on the Bering Sea canyons. The motion contained three steps forward to identify and validate where necessary areas of coral concentrations for possible management measures for the conservation and management of deep sea corals in Pribilof and Zhemchug canyons. Those steps include further analysis of existing data, collaboration with stakeholders to develop a suite of management measures to be considered for conserving areas of coral concentrations and associated fish activity, and requesting further research through NOAA's Deep Sea Coral Research and Technology Program.

"Thanks to those who provided public input and testimony. Your comments have been heard," said Council member John Henderschedt, who introduced the motion.

The Council decided not to pursue any additional protections for the Bering Sea canyons at this time, based on the best available science.

"Desired management outputs need to be determined before we specify any measures the Council might take in the future," Henderschedt added. "We need to take care to consider closures as management tools, not as objectives."

Council members indicated they intend to pursue further consideration of Bering Sea ecosystem options at future meetings. Henderschedt introduced a second motion to initiate discussion of the development of a Bering Sea Fishery Ecosystem Plan.

"The Council is recognized as a leader in ecosystem-based management, and this action continues that effort," he said.

NOAA has proactively researched deep-sea coral and sponge habitats in the North Pacific and the contribution of those habitats to fisheries production for commercially important fish species. Beginning in 2012, NOAA Fisheries implemented a three-year, $2.4 million field research program in Alaska as part of NOAA's Deep Sea Coral Research and Technology Program. Additionally, NOAA's Ocean Acidification Program is currently analyzing the carbonate mineralogy of Alaskan corals.