Americans would pay more to support biodiversit

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A pair of scuba divers explore the reef ecosystem in Flower Garden Banks National Marine Sanctuary in the northern Gulf of Mexico near the Texas-Louisiana border. Credit: NOAA

Most Americans are willing to pay more taxes to support biodiversity conservation in the Gulf of Mexico, according to a national survey

conducted by researchers at Duke University and the University of Virginia.

The survey polled respondents in more than 1,500 households about their willingness to help pay for a proposed expansion of the Flower Garden Banks National Marine Sanctuary in the northern gulf near the Texas-Louisiana border.

"Most households are willing to pay more annually, even with the understanding that only hook-and-line fishing would be allowed within the expanded sanctuary and oil and gas activity would be restricted there," said Stephanie F. Stefanski, a PhD student at Duke's Nicholas School of the Environment, who led the survey.

The remote sanctuary, situated more than 70 miles off the coast, protects a string of reefs that sit atop underwater mountains called salt domes. The reefs are home to hundreds of marine species, including sea turtles, manta rays, whale sharks and threatened species of corals.

Three banks, or reefs, are currently located within the sanctuary's boundaries. The National Oceanic and Atmospheric Administration (NOAA), which administers the site, has proposed expanding all three reefs' boundaries as well as extending the sanctuary to include nine additional banks nearby.

To quantify the extent to which most taxpayers would be willing to underwrite future costs of the expansion, the researchers conducted a national online study in 2012 that asked respondents to respond yes or no to a dollar value—ranging from $4 to $80 a year—that they would be willing to pay to support management of the expanded sanctuary.

Then, by adding a sliding scale question, the survey determined the range that people were willing to pay is $35 to $107 more.

"If we take the average willingness-to-pay amount and multiply it by all the households in America, you have a value equaling billions of dollars over a five-year period," Stefanski said. "Even if this is not precisely correct, it far exceeds NOAA's estimates of needing $15 million in direct costs to manage the expanded sanctuary. This suggests there is strong public support for this type of biodiversity conservation in the gulf."

Stefanski said the survey findings can help inform the environmental impact statement NOAA is preparing as part of its public review process for the proposed sanctuary expansion. The findings also could help inform the ongoing public debate about the economic impacts of man-made environmental disasters such as the Deepwater Horizon oil spill, and how much polluters should have to pay in reparation.

The survey was conducted two years after the Deepwater Horizon disaster occurred in nearby waters in the northern gulf, she noted, but the spill was not referenced in any survey questions and likely played only a tangential role in survey results.

Younger respondents, those with strong environmental beliefs, and those from households with annual incomes of more than $20,000 were willing to pay more to protect biodiversity in the gulf by expanding the marine sanctuary. Race and gender played little role in shaping responses.

"What was surprising was that geographic location didn't matter," Stefanski said. "Usually, people living near a resource are willing to pay more to protect it than people who live farther away. We did not find that to be true in this case. The values placed on preserving biodiversity at Flower Garden Banks were strongly consistent from region to region nationwide.

"People indicated they wanted to preserve this site because they valued

biodiversity, not because they wanted to go diving or fishing there or use it in some other way," she said. "They placed a value on preserving it for future generations. This speaks to the growing national awareness of the ecological value of the Gulf of Mexico and to all the issues going on down there."

More information: Stephanie F. Stefanski et al. Valuing Marine Biodiversity in the Gulf of Mexico: Evidence from the Proposed Boundary Expansion of the Flower Garden Banks National Marine Sanctuary, *Marine Resource Economics* (2016). DOI: 10.1086/685109

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