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Basking Sharks Face Low Genetic Diversity Worldwide
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Scientists studying mitochondrial DNA of basking sharks, found in various oceans worldwide, have found very little difference in their genetic makeup, according to a paper published in the current online edition of Biology Letters.

Measuring up to 33 feet long, the basking shark (Cetorhinus maximus) is the second largest fish species in the world, second only to the whale shark in size. Though its size may conjure other images, the basking shark often swims slowly from side to side near the surface of the world's oceans, filtering and eating small fish and plankton through its large mouth. This surface swimming behavior makes them highly susceptible to harpoon fisheries. The species matures slowly, has long gestation periods, and gives birth to few offspring, which at more than five feet long are the largest shark pups. They have been exploited in some fisheries for meat, fins, liver oil, and cartilage.

Analyzing samples from basking sharks found in the eastern and western North Atlantic, Mediterranean Sea, Indian Ocean, and western Pacific, a team of scientists from the United Kingdom, United States, and New Zealand found surprisingly low genetic diversity (? = 0.0013) across the globe and no significant genetic differentiation between ocean basins.

"Such low genetic diversity suggests the species has gone through some type of population bottleneck event, and may indicate reduced evolutionary potential to respond to environmental changes. It is important that conservation and management efforts take into account this low genetic diversity and prevent its further erosion," says Mahmood Shivji, Ph.D., co-author of the paper and director of the Guy Harvey Research Institute at Nova Southeastern University in Florida, whose work is partially funded by the Pew Institute for Ocean Science.

Shivji and his colleagues conclude that while some other shark species have low genetic diversity, none are as low as the basking shark, whose effective genetic population size is estimated to be roughly around 8,200 - surprisingly low for a globally distributed species.

"This study confirms the vulnerability of the little-studied but very important basking shark," says Ellen Pikitch, Ph.D., executive director of the University of Miami's Pew Institute for Ocean Science. "Maintaining the genetic diversity of sharks is important to sustaining healthy ocean ecosystems."

The Guy Harvey Research Institute (GHRI) is a scientific research

organization based in Ft. Lauderdale, Florida, at the Oceanographic Center of Nova Southeastern University. GHRI was established in 1999 as a collaboration between the renowned marine artist Dr. Guy Harvey and NSU's Oceanographic Center to provide scientific information necessary to understand and save the world's fish resources and biodiversity from

drastic, ongoing declines. For more information, visit www.nova.edu/ocean/ghri.

The mission of the Pew Institute for Ocean Science is to advance ocean conservation through science. Established in by a generous multi-year grant from the Pew Charitable Trusts; the Pew Institute for Ocean Science is a major program of the University of Miami's Rosenstiel School of Marine and Atmospheric Science For more information, visit www.pewoceanscience.org.

Press release as a Word Doc.

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