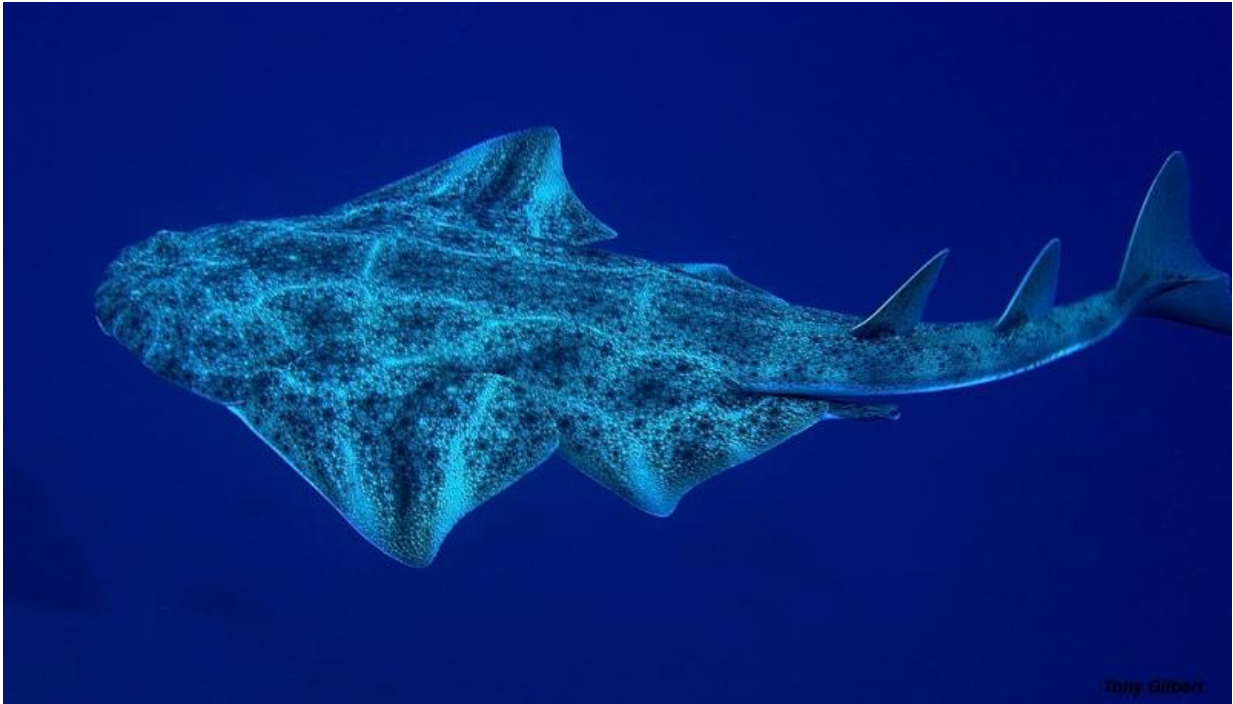


# Big fish in big trouble in Europe

May 29 2017, by Laura Graham

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The Angelshark (*Squatina squatina*) typifies the fish most at risk of extinction: it grows to a large size and is cartilaginous, so it has characteristics which make it less resilient. Once common throughout Europe, it is now only found in the Canary Islands. Credit: Tony Gilbert

An international team of scientists led by the University of Aberdeen have discovered that large fish, which include many of the sharks, rays and skates of Europe, are the most at threat from extinction.

Marine [fish](#) are a diverse group of animals that play important roles in marine ecosystems, but are also a major food source for marine and terrestrial mammals, most notably humans.

A new study, published today (Friday, May 26) in *Nature Ecology & Evolution*, has shown that the bigger the fish, the more likely it is to be threatened with extinction. This is because they are more susceptible to threats such as overfishing due to growing slower, taking longer to mature and having fewer offspring, as well as being more sought after for food consumption or sport.

The team, which was made up of 44 researchers from all around the world, received funding from the European Commission (DG Environment) and the Marine Alliance for Science and Technology for Scotland (MASTS) to carry out the study.

The study was part of a major effort to assess the extinction risk of fish carried out by International Union for Conservation of Nature (IUCN) to produce the European Red List of Marine Fishes and saw the team assess over 1000 different species and the status of commercial fish 'stocks'. Further to this, the team aimed to find out if their data agreed with advice received from other government fisheries agencies.

Fishery agencies assess whether fish stocks are overfished or not, and provide advice on how much fish can then be taken from a stock to ensure that the stock is sustainable. This is when fishing quotas or catch limits are implemented.

The scientists studied the status of commercial fish stocks all around Europe and found a remarkable geographic contrast.

Dr Paul Fernandes from the University of Aberdeen's School of Biological Sciences, explains: "In the northeast Atlantic in 2014, almost

twice as many stocks were sustainably fished as overfished, 8 stocks were recovering (the fishing rate is not high, but their populations are small); and 19 were declining (their populations are healthy, but the fishing rate is now too high).

"However, in the Mediterranean Sea, almost all stocks examined in our study were overfished (36 of 39) and not one was sustainable. This comes down to how the areas are managed and the unique nature of the fishing communities in the two areas.

"In the northeast Atlantic, there is a complex - and expensive - fishery monitoring and enforcement system, which sets quotas and other regulations to keep fish stocks healthy.

"In the Mediterranean, however, such monitoring and enforcement would be even more expensive, because there are many more fishermen scattered in many small fishing ports. Hence there are largely no quotas in the Mediterranean, only some protected areas and some limits on the amount of fishing time; the area also has more pressing economic and food security concerns.

"Through this study, we have highlighted two major issues for Europe's fish: the threats to large fish, and the overfishing problem in the Mediterranean. Europe is proceeding with a Blue Growth agenda, aiming to expand its use of marine space in aquaculture, mining, renewable energy, tourism and biotechnology, but as it does so it needs to take care of the large fish, the so-called 'megafauna', and improve fishery management in the Mediterranean."

**More information:** Paul G. Fernandes et al. Coherent assessments of Europe's marine fishes show regional divergence and megafauna loss, *Nature Ecology & Evolution* (2017). [DOI: 10.1038/s41559-017-0170](https://doi.org/10.1038/s41559-017-0170)

Provided by University of Aberdeen

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