

# A shortcut to sustainable fisheries

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Up to now, methods to estimate the maximum sustainable yield (MSY) of fish stocks are very complex and, as a consequence, expensive. However, Dr. Rainer Froese, biologist with GEOMAR/Helmholtz Centre for Ocean Research Kiel and Dr. Steven Martell, biologist with the University of British Columbia, have recently presented a new, much simpler method to estimate the MSY. This method may even affect the proposed reform of the European fisheries.

The aim is straightforward: In 1982, more than 160 countries agreed to maintain the global [fish stocks](#) at levels that can produce the maximum sustainable yield (MSY) over a long term. This agreement is part of the United Nations Convention on the Law of the Sea (UNCLOS), which came into force in 1994 and which has been ratified by Germany and all other countries of the European Union. While the USA, Australia or New Zealand started to change their fishing policies on the basis of UNCLOS years ago, reforms in the EU only started in 2012.

One basic problem in fisheries reform is the specification of a reference point for [sustainable management](#) of fish stocks. "Until now one needs a long time series quantifying the total number of fish belonging to one stock", explains Dr Rainer Froese, fisheries scientist with GEOMAR | Helmholtz Centre for [Ocean Research](#) Kiel. For these stock evaluations, extensive and expensive research is necessary. Therefore, for many fish stocks, the MSY is still unknown. Now Dr Froese and Dr Steven Martell, biologist with the University of British Columbia in Vancouver (CA), have come up with a new, much simpler method to estimate MSY. They present it online in the international journal *Fish and Fisheries*.

"Instead of using the total number of fish in one stock we use catch data, which are available for most fish stocks", explains Dr. Froese. As a second type of data they use an estimate of the resilience of the species. "This is basic biological knowledge. For most species, it's available from FishBase, a [global database](#) with key information on all fish of the world", says Dr Froese. From the relationship between catch data and resilience, the two biologists calculate the MSY.

To test their new idea, Dr Froese and Dr. Martell applied it to 148 different fish stocks from all over the world, where earlier studies had already estimated MSY with conventional methods. "We found excellent agreement between our results and those achieved with the data-hungry standard methods", Froese emphasises.

The new method to estimate MSY also has an unexpected European Union dimension. On 12 June 2012 the EU agricultural ministers, who are also in charge of European fisheries, agreed to allow continued overfishing until 2020 for fish stocks where no sustainability reference points are available. This is currently the case for the majority of the European stocks. Such justification for high catch quotas may now have disappeared. As Rainer Froese puts it: "Lack of reference points can no longer be used as an excuse for lack of management."

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