Overfishing and evolution

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Using snorkelers and SCUBA divers is not the best way to monitor fish populations, if we want to know the evolutionary effects of overfishing.

The fish population in coral reef areas is often assessed by snorkelers or SCUBA divers, but new research shows that these methods may misrepresent the number of fish.

A study from the University of Victoria shows that fish avoid the divers and snorkelers who try to count them. Not all types of fish are equally frightened by the divers, and Faculty of 1000 member Helen Yap, who recommended the study, explains that therefore "such methods may not provide an accurate picture of the actual diversity and abundance of fish communities."

Counting coral reef fish informs researchers about local ecological changes. However, accurate monitoring of fish populations in other parts of the ocean is also necessary. This is because overfishing has long-term, 'evolutionary' effects on fish population and breeding rates.

This was addressed by John Pandolfi in a recent article in Faculty of 1000 Reports. Accurate assessment of changes to fish populations depends on being able to count them. Pandolfi emphasized that fish populations must be monitored over several generations, saying "While the field is exciting and changing almost daily, we still have very little information of how species are affected by fisheries-induced evolution, and the extent to which various traits are vulnerable."

The full text of the article "Evolutionary impacts of fishing: overfishing's 'Darwinian debt'" is available at dx.doi.org/10.3410/B1-43 .

Source: Faculty of 1000: Biology and Medicine