


# Ray Hilborn on the Global Fishing Index 2021 report

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This Monday, the Minderoo Foundation released their 2021 Global Fishing Index report intending to give a global picture of fisheries status.

I have collaborated with the Minderoo Foundation in the past, but this report is highly flawed and should be viewed skeptically. The report claims that over 50% of stocks are overfished and no country gets an A or B for its management efforts—only six manage to be graded C. Countries that have essentially eliminated overfishing and are clearly delivering near maximum benefits for their people are only graded C. Why?

The report fails to acknowledge that in much of the world fisheries management is working. In many countries overfishing has been greatly reduced and stocks are healthy or recovering producing near-maximum benefits. The message that we need to bring good fisheries management, including data collection, assessment, regulation, and enforcement to the rest of the world is not news—agency scientists, academics and NGOs have been working towards this reality for decades, and yet this report cavalierly dismisses the long-standing efforts of thousands of people.

## Bad sustainability methodology

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A critical flaw in the report's methodology is its definition of overfished. The authors call any stock whose abundance is below a level thought to produce maximum long-term yield (called the biomass that produces maximum sustainable yield,  $B_{MSY}$ ) as overfished, and estimate that roughly 50% of stocks are below  $B_{MSY}$ , and thus overfished.

However, when fishing effort is perfectly managed to assure maximum long-term harvest (the typical objective), stocks will fluctuate around  $B_{MSY}$  because there are natural fluctuations beyond management control. Well-managed stocks will be above  $B_{MSY}$  half the time and below  $B_{MSY}$  half the time. Thus, a country that perfectly manages its fish stocks to generate food and employment for its people will, by this definition, end up with half of its stocks classified as overfished.

In other words, if the report estimates that half of fish stocks are overfished by their definition, are all the world's fisheries well-managed?

The report claims to have assessments of the status of 1,465 individual stocks, yet many of those assessments used catch-based estimates that are a totally unreliable method of stock assessment. A major scientific journal won't even review papers that use them.

The absurdity of the report's methods and definitions is illustrated by its estimate of the proportion of a country's assessed stocks that are above the accepted target. Bangladesh, Indonesia, India, Myanmar, Malaysia, Nigeria and Thailand are listed as top-ranked major fishing countries. This simply fails any test of veracity. These are largely countries with limited fisheries management systems and generally recognized to suffer from significant overfishing.

## **Bad management methodology**

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The governance index comes to equally bizarre conclusions. Norway, Iceland and the U.S. score 8, but so does Indonesia and the Philippines. Chile scores even higher with a 9.

The report is full of contradictions and cherry-picking to create the overfishing narrative. For instance, the introduction reads that "there have been pockets of success where strong interventions have improved stock health." But also, "globally the state of fish stocks is not improving."

The first statement is backed by citations showing that across countries that represent half of the world's fish catch (called mere pockets), stocks are increasing. The second statement quotes an FAO report showing that the number of overfished stocks is growing slightly. What the report misses is that fisheries management is working in half of the world, but largely unknown and likely poor in the other half.

Overfishing is not a global problem as the report argues, but rather a problem confined to parts of the world where fisheries management is weak. Certainly, even in the best managed places some stocks are below target levels, but many of those stocks still well managed—they are either not fished at all or very slightly fished. Often, their poor status is due to environmental factors like climate change,

The 6 countries to receive Minderoo's top score of C were Chile, Iceland, Ireland, Latvia, Norway, and the United States. Iceland, Norway and the United States have strong management systems, little overfishing, and are meeting national and international goals for fisheries management and ocean protections, so what's with the C?

I don't know how Chile, Ireland and Latvia made this exclusive list. I know the Chilean system well, have visited Chile several times in recent years and had exchanges with their scientists in my laboratory. While Chile has definitely improved its fisheries management system in recent years, it has a long way to go before its management system and performance compare to the U.S., Iceland and Norway.

The Minderoo report went astray in several ways:

1. Overfishing should be measured by fishing pressure, not stock abundance. Managers can only influence the fraction harvested, yet stocks may fall below any specific abundance threshold due to environmental changes. In the U.S., we find far more stocks at low abundance than subject to excess fishing pressure.
2. Governance should be measured as the ability to regulate fishing pressure as stocks fluctuate in abundance. The Minderoo governance index includes a wide range of factors that have little impact on the management of national fisheries, such as whether specific treaties have been signed. Our group constructed a fisheries management index that reflects a country's capacity to manage its fish stock and published this in the Proceedings of the National Academy of Sciences in 2017. We found essentially no correlation between our index and the Minderoo Governance Index. Whatever the Minderoo Governance Index measures, it is not the effectiveness of a country's fisheries management system.
3. The report should have calculated what fraction of a country's catch comes from stocks that are well regulated. The government of New Zealand, a country awarded a D, does calculate this and estimates that 91% of its catch comes from stocks that have no sustainability risk. Since sustainably exploiting fish stocks is the primary aim of fisheries management, a D for 91% is an undeserved slap in the face.
4. Comparing every country in the world is a dead end. Many countries have little data to use and the results for those countries have to be regarded with great skepticism. Almost all of the world's fish catch comes from a few dozen countries. Let's concentrate our efforts on understanding them.

The bottom line is that overfishing is neither threatening the global oceans nor reducing the benefits of food to all countries, but rather it is concentrated in countries without effective fisheries management.

The Minderoo report obfuscates all the necessary nuance required to understand fisheries' role in the global food system and improve outcomes. It furthers misinformation and misunderstanding, and, if used as the basis for environmental campaigns or policy, the authors will do more harm than good.