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Study Finds Hope in Saving Saltwater Fish

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Can we have our fish and eat it too? An unusual collaboration of marine ecologists and fisheries management scientists says the answer may be yes.

In a research paper in Friday's issue of the journal *Science*, the two groups, long at odds with each other, offer a global assessment of the world's saltwater fish and their environments.

Their conclusions are at once gloomy — overfishing continues to threaten many species — and upbeat: a combination of steps can turn things around. But because antagonism between ecologists and fisheries management experts has been intense, many familiar with the study say the most important factor is that it was done at all.

They say they hope the study will inspire similar collaborations between scientists whose focus is safely exploiting specific natural resources and those interested mainly in conserving them.

“We need to merge those two communities,” said Steve Murawski, chief fisheries scientist for the National Oceanic and Atmospheric Administration. “This paper starts to bridge that gap.”

The collaboration began in 2006 when Boris Worm, a marine ecologist at Dalhousie University in Halifax, Nova Scotia, and other scientists made an alarming prediction: if current trends continue, by 2048 overfishing will have destroyed most commercially important populations of saltwater fish. Ecologists applauded the work. But among fisheries management scientists, reactions ranged from skepticism to fury over what many called an alarmist report.

Among the most prominent critics was Ray Hilborn, a professor of aquatic and fishery sciences at the University of Washington in Seattle. Yet the disagreement did not play out in typical scientific fashion with, as Dr. Hilborn put it, “researchers firing critical papers back and forth.” Instead, he and Dr. Worm found themselves debating the issue on National Public Radio.

“We started talking and found more common ground than we had expected,” Dr. Worm said. Dr. Hilborn recalled thinking that Dr. Worm “actually seemed like a reasonable person.”

The two decided to work together on the issue. They sought and received financing and began organizing workshops at the National Center for Ecological Analysis and Synthesis, an organization sponsored by the National Science Foundation and based at the University of California, Santa Barbara.

At first, Dr. Hilborn said in an interview, “the fisheries management people would go to lunch and the marine ecologists would go to lunch” — separately. But soon they were collecting and sharing data and recruiting more colleagues to analyze it.

Dr. Hilborn said he and Dr. Worm now understood why the ecologists and the management scientists disagreed so sharply in the first place. For one thing, he said, as long as a fish species was sustaining itself, management scientists were relatively untroubled if its abundance fell to only 40 or 50 percent of what it might otherwise be. Yet to ecologists, he said, such a stock would be characterized as “depleted” — “a very pejorative word.”

In the end, the scientists concluded that 63 percent of saltwater fish stocks had been depleted “below what we think of as a target range,” Dr. Worm said.

But they also agreed that fish in well-managed areas, including the United States, were recovering or doing well. They wrote that management techniques like closing some areas to fishing, restricting

the use of certain fishing gear or allocating shares of the catch to individual fishermen, communities or others could allow depleted fish stocks to rebound.

The researchers suggest that a calculation of how many fish in a given species can be caught in a given region without threatening the stock, called maximum sustainable yield, is less useful than a standard that takes into account the health of the wider marine environment. They also agreed that solutions did not lie only in management techniques but also in the political will to apply them, even if they initially caused economic disruption.

Because the new paper represents the views of both camps, its conclusions are likely to be influential, Dr. Murawski said. “Getting a strong statement from those communities that there is more to agree on than to disagree on builds confidence,” he said.

At a news conference on Wednesday, Dr. Worm said he hoped to be alive in 2048, when he would turn 79. If he is, he said, “I will be hosting a seafood party — at least I hope so.”