THE PEW ENVIRONMENT GROUP

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RESEARCH SUMMARY

High seas fish populations are declining in spite of management efforts.

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High Seas Fisheries Management Gets Low Marks

A Summary of a New Scientific Analysis:

Cullis-Suzuki, S. and D. Pauly. 2010. Failing the high seas: A global evaluation of regional fisheries management organizations. *Marine Policy,* doi:10.1016/j.marpol.2010.03.002

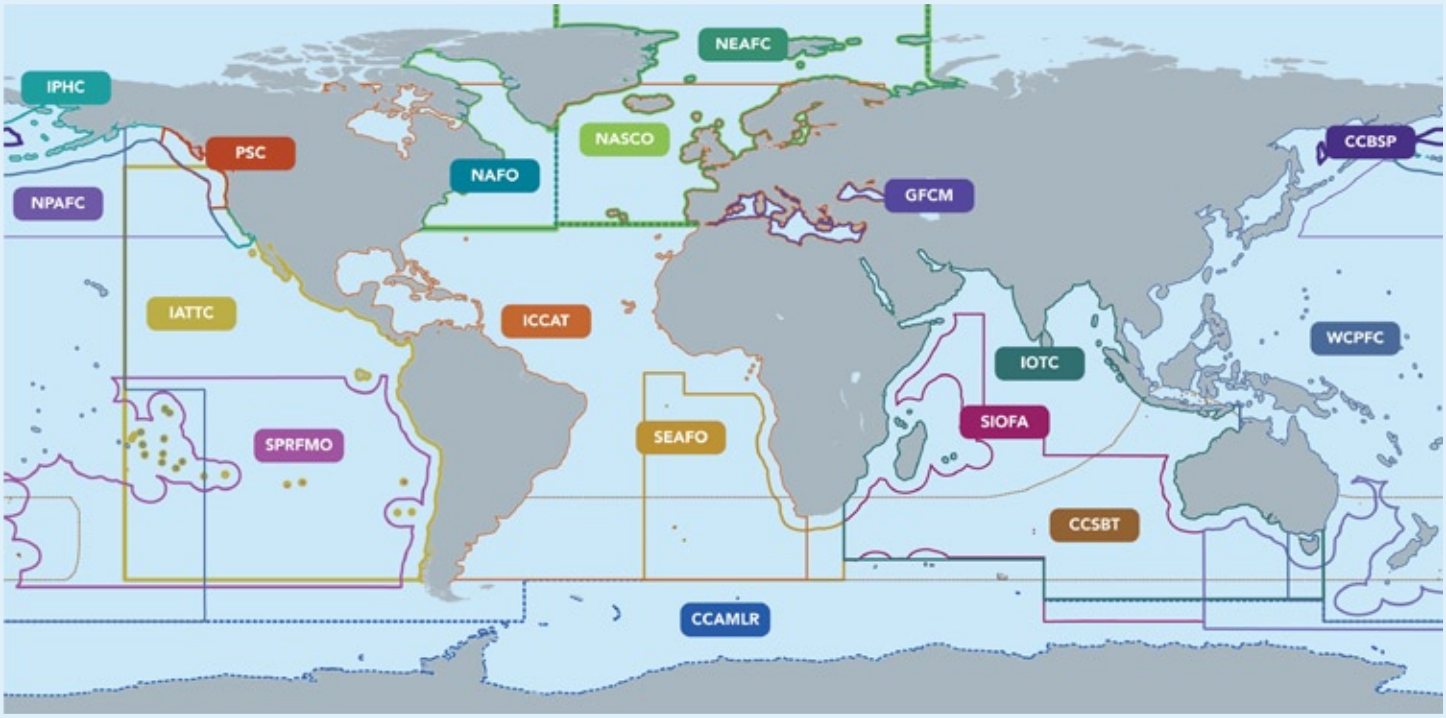
Fishing on the high seas—areas beyond the 200-nautical-mile jurisdiction of coastal states—is increasing, largely driven by advanced vessel and gear technology, which facilitates fishing far from shore. High seas fisheries are overseen by various regional fisheries management organizations (RFMOs)—intergovernmental bodies made up of nations that have agreed to cooperatively manage fish stocks beyond their national boundaries. Although RFMOs were established to manage and conserve high seas fish stocks, these populations are declining (Myers and Worm 2003). To illuminate any contradiction between stated management goals and the status of managed fish stocks, Sarika Cullis-Suzuki and Daniel Pauly, researchers at the University of British Columbia, developed a way to score the performance of RFMOs "on paper" versus "in practice." Their results show that on paper, RFMOs are not meeting best practice standards and, in practice, are failing to halt the dramatic declines of fish stocks for which they have management responsibility.

RFMO Performance on Paper

The authors evaluated the theoretical (on paper) performance of 18 RFMOs. They compared the most recent conventions and other relevant documents for each RFMO to a modified set of best practices, based on *Recommended Best Practices for Regional Fisheries Management Organizations* (Lodge *et al.* 2007), a Chatham House publication developed to help RFMOs fulfill their mandates.

The modified set of best practices, organized into five general categories, included a total of 26 criteria. For example, the category "conservation and management" contained criteria for evaluating how RFMOs use scientific advice; and the category "allocation" contained criteria for assessing whether the RFMO agreements included provisions for allocating catch to developing states. The researchers scored each of

FIGURE 1: Many regional fisheries management organizations (RFMOs) have been established across the globe to manage and conserve high seas fish stocks. (Note: IWC covers the global ocean.) Researchers scored the performance of these 18 RFMOs on paper versus in practice. The results show that RFMOs are not meeting best practice standards and are failing to halt the dramatic declines of their stocks.



Regional Fisheries Management Organization	Performance on paper (%)	Performance in practice (%)	Regional Fisheries Management Organization	Performance on paper (%)	Performance in practice (%)
Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)	58	100	Northwest Atlantic Fisheries Organization (NAFO)	63	53.3
Convention on the Cons. and Mgmt. of the Pollock Res. in the Central Bering Sea (CCBSP)	46	33.3	North Atlantic Salmon Conservation Organization (NASCO)	52	33.3
Commission for the Conservation of Southern Bluefin Tuna (CCSBT)	44	0	North East Atlantic Fisheries Commission (NEAFC)	63	72.2
General Fisheries Commission for the Mediterranean (GFCM)	64	33.3	North Pacific Anadromous Fish Commission (NPAFC)	55	77.8
Inter-American Tropical Tuna Commission (IATTC)	60	33.3	Pacific Salmon Commission (PSC)	43	*
International Commission for the Conservation of Atlantic Tunas (ICCAT)	57	37.5	South East Atlantic Fisheries Organization (SEAFO)	63	*
Indian Ocean Tuna Commission (IOTC)	58	77.8	South Indian Ocean Fisheries Agreement (SIOFA)	47	*
International Pacific Halibut Commission (IPHC)	52	33.3	South Pacific Regional Fisheries Management Organization (SPRFMO)	57	*
International Whaling Commission (IWC)*	63	33.3	Western and Central Pacific Fisheries Commission (WCPFC)	74	66.7

**IWC covers the global ocean*

**Adequate fish stock data not available to score*

the 26 criteria on a scale of 1 to 10. Scores were determined using a sequence of yes or no questions based on the best practice recommendations (for example, a 10 was achieved when all nine questions could be answered positively). Points were then totaled and divided by 260, the highest possible total, to arrive at a final performance score on paper for each RFMO (Table 1). The overall average on-paper score across RFMOs was 57 percent, with a range of 74 to 43 percent.

RFMOs scored consistently high on certain criteria, such as use of scientific information. However, many other criteria had relatively low scores. The "performance review" criterion, for example, had an average score of 3.8 points out of 10 (Figure 2). In addition, scores related to the prevention of illegal, unreported and unregulated (IUU) fishing were highly variable, indicating the complexity and uncertainty regarding this pervasive problem on the high seas.

RFMO Performance in Practice

To evaluate the impacts of RFMO management on fish stocks, or performance in practice, the researchers assessed the biomass, or amount of fish, of 48 RFMO-managed stocks, including bluefin, bigeye and yellowfin tuna; salmon; pollock; and plaice. These scores were calculated for each stock using data on fishing mortality and biomass, and determining whether the stock was overfished (i.e., fishing pressure is too high) or depleted (i.e., biomass is too low). Stocks that were neither overfished nor depleted achieved the highest scores. The lowest scores were given when a stock was both overfished and depleted. After each stock was rated, final RFMO scores were determined by the cumulative scores of their corresponding stocks. (The number of stocks assessed varied by RFMO.)

The results indicate that two-thirds of the stocks managed by RFMOs are either severely depleted or overfished. The average in-practice score across all RFMOs was 49 percent. The highest score, 100 percent, was achieved by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR); the lowest score—zero—went to the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) (Table 1).[1]

In addition, where data were available, the biomasses of major stocks managed by RFMOs were plotted over time to track whether the establishment of an RFMO and its subsequent management policies affected the decline of

[1] *CCAMLR and CCBST received these extreme scores (high and low, respectively) in part because, due to data constraints, only one stock was assessed for each of these two RFMOs; other RFMOs had as many as nine stocks assessed.*

FIGURE 2. Total on-paper scores were determined by first assigning a score to each of 26 criteria that were based on best practice recommendations from Lodge et al. (2007) to each RFMO. Sample criteria include use of the precautionary approach and the development of performance reviews. As a group, the RFMOs did not score highly in either category, with an average of 5.4 out of 10 points for their use of the precautionary approach, and 3.8 out of 10 points for performance reviews.

Precautionary Approach

5.4 out of 10

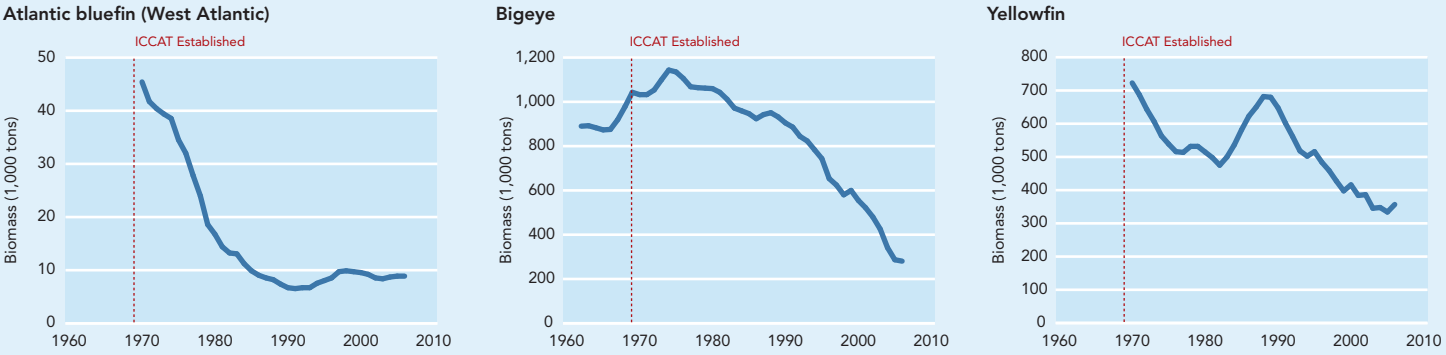
The U.N. Fish Stocks Agreement (UNFSA)—along with other international guidelines such as the U.N. Food and Agriculture Organization's *Code of Conduct for Responsible Fisheries*—requires RFMOs to adopt a precautionary approach, to avoid or minimize negative impacts of fisheries management when faced with inadequate information or uncertain data. Lodge et al. (2007) contend that ideally RFMOs would apply the precautionary approach to all management activities. For this study, the authors reviewed RFMO documents to determine whether RFMOs acknowledge the existence of uncertainty in fisheries data and, subsequently, support the use of a precautionary approach. RFMOs could receive a high score of 10 for this criterion if their precautionary approach methods could act as a model or template for other RFMOs. On average, the 18 RFMOs received a score of 5.4 points for their precautionary approach performance on paper. This low average, coupled with the low in-practice scores across RFMOs that depict the state of managed stocks, indicates that RFMOs need a stronger commitment to a precautionary approach both on paper and in practice.

Performance Reviews

3.8 out of 10

Lodge *et al.* (2007) state that periodic reviews of RFMO mandates, along with performance evaluations, are essential for good management, strategic planning and substantive improvements for RFMOs. They recommend that a thorough and transparent performance review take place at reasonable intervals, and include an independent review of how closely RFMOs follow their scientific advice and perform in relation to their objectives. For this study, the authors reviewed RFMO documents to determine whether performance reviews are mentioned and, if so, whether they were developed, executed and led to changes in RFMO practices. For this criterion, the 18 RFMOs received an average score of 3.8 out of 10 for their performance on paper. Four of the RFMOs received only one point, indicating a lack of commitment to carry out performance reviews.

FIGURE 3. Example of the biomass trends for bluefin (West Atlantic stock), yellowfin and bigeye tuna under International Commission for the Conservation of Atlantic Tunas (ICCAT) management. The vertical red line represents the year ICCAT was established (1969). ICCAT scored 57% for performance on paper and 37.5% for performance in practice.



stocks in practice. Researchers found that the trend in biomass for most stocks under RFMO management is one of decline. In many cases, severe stock declines occurred after an RFMO was established (Figure 3).

Disparity Between Intent and Action

Research suggests that global fish stock declines could be attributed to weaknesses of RFMOs, such as poor implementation and enforcement of mandates (Gjerde 2009). This study provides the first attempt to quantitatively score the performance of all current global RFMOs and does so using a two-tiered system: assessing effectiveness on paper and in practice. While both scores are low overall, a disparity exists between the RFMOs' stated intention to conserve the stocks they manage and the actual status of those stocks. For instance, on the issue of using scientific advice, the intention on paper is strong, but the continued decline of most fish stocks suggests that scientific advice is not being followed in practice. In other cases, such as penalties and enforcement, low RFMO scores on paper indicate a general lack of commitment to preventing overfishing, which could be contributing to, and hence help explain, depleted stock biomasses in practice.

The authors offer that an opportunity remains to reverse these downward biomass trends. By acting on RFMOs' existing mandates and becoming stewards of the high seas, these organizations can take productive steps toward more effective management of high seas fish populations.

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901 E Street NW, 10th Floor, Washington, DC 20004 ■ Phone: 202.552.2000
Email: oceanscience@pewtrusts.org ■ www.pewenvironment.org