



Outline of Roger Rufe's Remarks On Fishery Management Overfishing Scorecard

- I. Our commonly-held goals: healthy fish populations & sustainable fisheries
- II. Where we often disagree: how to best achieve those goals
- III. How, then, can we get beyond our disagreements?
- IV. First, by continuing the open and important dialogue among conservation interests, the Fishery Management Councils, and NOAA
- V. Second, by creating objective measures with which we can assess the success of fisheries management
- VI. What measures do we have that are common to all Councils and available to stakeholders from all groups—measures that will allow us to analyze, compare, and draw objective, useful conclusions?
- VII. We have chosen to focus on overfishing because:
 - a. ending overfishing is the first step in ecosystem-based management;
 - b. the 1996 Magnuson Stevens Fishery Management Act mandated that managers put an end to overfishing;
 - c. yet today, overfishing remains the greatest hurdle standing between us sustainable fisheries and also between us and success with ecosystem-based management;
 - d. we have objective data across many important fisheries that allows us to compare how they are doing with regard to overfishing.
- VIII. We use the *Status of the Stocks* as the basis for our analysis. For purposes of this scorecard, we consider *a fishery that is known not to be overfished, nor experiencing overfishing*, to be a successfully managed one. We know that's an over-simplification of a complex issue—but we believe it's important and telling, nevertheless. It's a standard that all fisheries should be able to meet.

- IX. Our scorecard is intended to:
 - a. portray a snapshot of fishery management in the United States;
 - b. provide important perspective by comparing management across regions;
 - c. highlight progress—or problems—in areas that might not be readily apparent;
 - d. bring best practices into relief.

- X. The current version is a draft—intended for discussion and refinement. We believe that the discussion that it generates can be useful and instructive—both for the scorecard, for managers, and for other stakeholders.

- XI. What are we learning?
 - a. There are some success stories, and we can understand why.
 - b. Councils employing science-based catch limits—and enforcement measures such as closures when limits were reached—have performed better.
 - c. Councils that have sought to solve the over-capacity problem are faring better, across the board.
 - d. Some Councils' scores are pulled down significantly by the performance of a single fishery.
 - e. Where regional scores are relatively low, signs of success are apparent for some fisheries or some fish stocks.

- XII. Where do we go from here?
 - a. The Ocean Conservancy will use the discussion here today to refine and improve the piece.
 - b. We intend to use the scorecard as an annual assessment to show progress—or the lack of it—successful plans and strategies, and trends among Councils and fisheries nationwide.

- XIII. Finally, let's try to agree today on three important points:
 - a. that we should hold everyone to the same standard;
 - b. that the perfect should not be the enemy of the good—rather than dismissing this scorecard or seeing only its flaws and limitations, I ask you all to start with an open mind and try to understand what this tool really offers us as a community working toward the same important goals;
 - c. that this scorecard can offer an objective measure of success, and can be a useful tool for identifying the best management practices that produce success.

Overfishing Scorecard

Roger Rufe, The Ocean Conservancy

Summary

The purpose of this scorecard is to help build on successes in U.S. federal fishery management. To accomplish this goal, the Ocean Conservancy has devised an objective two-step approach for: (1) identifying examples where management has been most successful at ending overfishing and rebuilding depleted fish stocks, and (2) evaluating what makes these examples relatively successful. The results of this scorecard provide clear recommendations on how to make management more successful where overfishing and depleted fish stocks are ongoing problems. We offer this scorecard as a draft, and we hope discussion and suggestions from others will help us revise and improve it. The current draft has already benefited from initial discussions with managers and others.

Preliminary results show that success rates vary among regions and fisheries, and that a number of best management practices promote success. These best management practices include preventing or eliminating overcapacity, and establishing and enforcing science-based catch limits that effectively constrain total mortality of target species to levels below maximum sustainable yield (MSY) fishing rates. In regions where these practices are more commonly used, such as the North Pacific, regional success rates are higher. In regions where overall success rates are lower, those fisheries that utilize more of these best management practices exhibit success rates higher than regional averages. The same trend is also apparent within individual fisheries. For example, in the New England groundfish fishery, which has a relatively low score overall, some individual stocks are faring better where one of these best practices is used: fishing below MSY fishing rates.

This scorecard provides strong evidence that broader use of the identified best management practices would improve success rates for ending overfishing and rebuilding depleted stocks.

Results

Some regions and some fisheries are close to achieving the goal of ending overfishing and rebuilding depleted fish stocks, but persistent overfishing continues in many important U.S. fisheries. Using status determinations from the most recent report to Congress by the National Marine Fisheries Service (NMFS), scores for ending overfishing and rebuilding depleted stocks are as follows for the major stocks in each region. Note that management in each region is not the sole responsibility of the Management Councils. Jurisdiction is typically shared among the Councils, NMFS, states, and in some cases, international entities. Thus, scores should be interpreted as an evaluation of overall management success for federal fishery management in a region.

Council	Score	% change since 1997
North Pacific	82%	+2%
Western Pacific	77%	-8% (decline)
Pacific	75%	+24%
Mid-Atlantic	70%	+15%
New England	58%	+18%
Gulf of Mexico	58%	+7%
South Atlantic	57%	+12%
Caribbean	50%	+1%

The scores measure success at avoiding or ending overfishing and rebuilding depleted (overfished) stocks. Scores are reported for all of the “major” stocks with a single Management Council responsible for federal management. These scores are derived from Table 1, pages 7-8 of *The Status of U. S. Fisheries, 2003*, the annual report that is provided to Congress by NMFS. The “% change” column reports the change in the score since the first report on stock status in 1997. The data used to calculate these scores are presented in Table 1. The scores reported in Table 1 were calculated as described below (Methods).

Progress in ending overfishing and rebuilding depleted fish stocks has been limited by the failure of managers to end persistent overfishing in a number of important fisheries, including some that have experienced overfishing every year since reporting began in 1997. Further progress will require concerted efforts to end overfishing in these problematic fisheries where overfishing is a long-term problem. How can these problems be corrected?

One useful approach is to identify the best management practices that have produced success where it currently exists and to begin to utilize these approaches where management has been less successful. To identify the best management practices that produce success, we applied the scoring method developed for Table 1 to compare the success of individual Fishery Management Plans at ending overfishing and rebuilding depleted stocks. This comparison should allow us to identify the management practices that produce success. These results, presented in Table 2, show that some regions have generally higher scores, but success rates do vary within each region. Thus, management performance and success cannot be solely attributed to regional factors.

What is the basis for success at the fishery level? To address this question, we developed a list of candidate “best management practices” that we expected might be responsible for success where it exists. To identify which fisheries use these candidate best practices, we developed the following list of questions:

1. Are target stocks assessed?
2. Has overcapacity been prevented or eliminated?
3. In general, are catch levels constrained by quota-type limits on landings?
4. Are catch limits adequately monitored and enforced?
5. In general, are catches below targets or quotas?
6. Is bycatch monitoring routine and reliable?
7. Are fish stocks protected by bycatch caps or limits?
8. Is MSY established, or are MSY proxies established?
9. Are target fishing rates established at levels below MSY or MSY proxies?

The questions are “yes” or “no” questions, and the range of answers include “yes,” “no,” and “partial yes.” For complex situations, “yes” is reasonable even if the answer is not “100% yes.” For example, if a fishery has most target stocks assessed, then “target stocks assessed” could be answered “yes” even if a few minor stocks have not been assessed. The goal is to determine the general character of each fishery. “Yes” or “no” were used where answers were clearly yes or no, and also where some exceptions may exist, but where “yes” or “no” seemed to describe best the general approach used in a fishery. Management of some fisheries was clearly intermediate between “yes” or “no” answers for some questions, so an answer of “partial yes” was used (indicated by a “P” in Table 3). Improvement in the answers to these questions and expansion to other fisheries is an important area where we expect to improve this scorecard following review and comment of this draft.

We applied these questions to a wide range of fisheries for which we had adequate information to answer the questions (Table 3). We welcome review and comment on the answers, and help in expanding this matrix to other fisheries not yet included. The fisheries included in this analysis include examples from

most regions as well as fisheries with a wide variety of target stocks and fishing methods. Expansion to other fisheries will probably provide further insight, but we believe that the conclusions of the analysis are useful with the present list of fisheries.

In general, the most successful fisheries tend to have catch limits on total mortality that are established below MSY and enforced, and the most successful fisheries also tend to have avoided or solved problems with excess fishing capacity (column 2). This is shown by the grouping of “yes,” “partial yes,” and “no” answers to questions 2 (overcapacity prevented), 5 (catches below limits), and 9 (target fishing rates below MSY). None of the questions shows perfect trends, but success rates tend to be higher for fisheries that do a better job of implementing these three best management practices.

These best management practices can also be validated by trends within a single fishery. For example, the New England groundfish fishery shows better success for individual stocks that utilize one of the best management practices, mortality constrained below MSY fishing rates (see Figure 1).

Criteria for Success

The annual *Status of the Stocks* report to Congress contains the information that was used in evaluating success in ending overfishing and preventing and reversing the depletion of fish populations. Status determination criteria for “overfishing” and “overfished” have been established by the Councils, based on guidelines prepared by NMFS.¹ This evaluation scores each Council for how many major stocks² managed by that Council are above and below thresholds for overfishing and overfished (depleted), and how many major stocks lack sufficient information for status determinations.

Methods

Overfishing is defined as a rate of fishing that exceeds a maximum fishing mortality rate (MFMR), and overfished is defined as stock abundance that falls below the stock’s minimum stock size threshold (MSST). To avoid confusion between the terms “overfishing” and “overfished,” the term “depleted” will sometimes be used to refer to stocks defined as overfished.

Scores for success at ending overfishing and rebuilding depleted stocks were obtained as follows. First, data were obtained from NMFS’ annual report to Congress on the status of U. S. fisheries. For each fish stock, a score of 1 was assigned for stocks with overfishing not occurring, a score of 0 was assigned for stocks with identified overfishing, and a score of 0.5 was assigned for stocks “at risk” because of insufficient information for status determination or no status determination criteria. This “at risk” category is necessary because substantial risk of overfishing and depletion exists when major fisheries exist on stocks of unknown status. Similarly, each stock received a score of 1 for not overfished, 0 for overfished, and 0.5 for unknown or undefined status for overfished.

Each stock was scored separately for overfishing status and overfished status and the results averaged. Thus, a single stock would score an average of 1 for no overfishing (score=1) and not overfished (score=1), 0.5 for overfishing (score=0) and not overfished (score=1), 0.5 for no overfishing (score=1) and overfished (score=0), 0 for overfishing (score=0) and overfished (score=0), and 0.75 for no overfishing (score=1) and overfished status unknown (score=0.5). Scores for more than one fish stock were combined by averaging the scores obtained for each stock. All scores were converted to % by

¹ Status as reported in NOAA’s annual report to Congress. Status determinations do not necessarily conform to the most recent technical guidance produced by NOAA.

² Major stocks = stocks with landings in excess of 200,000 pounds per year, according to criteria from SOS 2003. Stocks with jurisdiction shared between two Councils are not included.

multiplying by 100 to yield a scale of 0-100%. This scoring method can be used for any number of stocks, and it will produce a range of 0-100% success, with 100% indicating all stocks with no overfishing and not overfished status, 0% indicating all stocks with overfishing and overfished status.

Table 1: Regional scores for success at ending overfishing and rebuilding depleted fish stocks.

Region	overfishing					overfished					
	overall score	Yes	No	Unk/ND	# stocks	overfishing score	Yes	No	Unk/ND	# stocks	overfished score
North Pacific	82%	0	49	10	59	92%	1	28	30	59	73%
Western Pacific	77%	1	7	5	13	73%	0	8	5	13	81%
Pacific	75%	2	34	17	53	80%	7	27	19	53	69%
Mid Atlantic	70%	3	8	0	11	73%	3	7	1	11	68%
New England	58%	8	12	7	27	57%	10	15	2	27	59%
Gulf Mexico	58%	4	8	11	23	59%	4	7	12	23	57%
South Atlantic	57%	8	10	6	24	54%	6	11	7	24	60%
Caribbean	50%	1	1	2	4	50%	1	1	2	4	50%

Table 2: Success scores for selected Fishery Management Plans. FMPs were included if enough information was available for The Ocean Conservancy to answer the questions in table 3.

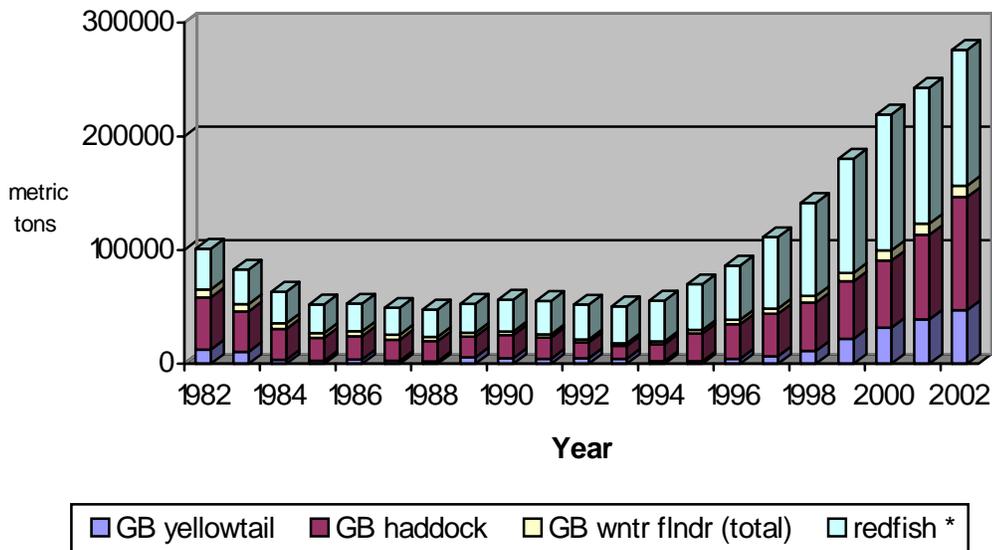
fishery	overall			overall	overfishing			overfishing	overfished			overfished
	yes	no	unk/und	score	yes	no	unk/und	score	yes	no	unk/und	score
NE multispecies	18	21	3	54%	8	10	3	55%	10	11	0	52%
Pacific groundfish	9	27	26	65%	2	16	13	73%	7	11	13	56%
Pacific coastal pelagics	0	6	6	75%	0	4	2	83%	0	2	4	67%
Gulf of AK groundfish	0	33	15	84%	0	24	0	100%	0	9	15	69%
W. Pacific pelagics	1	15	10	77%	1	7	5	73%	0	8	5	81%
Gulf of Mexico reef fish	6	6	16	50%	3	3	8	50%	3	3	8	50%
Coastal pelagic Gulf & SA	1	9	4	79%	0	5	2	86%	1	4	2	71%
S Atlantic snapper grouper	11	13	8	53%	6	6	4	50%	5	7	4	56%
Mid Atl s fl, scup, b s bass	3	3	0	50%	2	1	0	33%	1	2	0	67%
Mid Atl mack, squid, bfish	2	7	1	75%	1	4	0	80%	1	3	1	70%
Bering, Aleutians gndfish	0	29	19	80%	0	17	7	85%	0	12	12	75%
Bering, Aleutians crab	1	5	6	67%	0	3	3	75%	1	2	3	58%
Atl. surf clam, quohog	0	4	0	100%	0	2	0	100%	0	2	0	100%
Mid Atl golden tilefish	2	0	0	0%	1	0	0	0%	1	0	0	0%
Atlantic sea scallop	0	2	0	100%	0	1	0	100%	0	1	0	100%
Atlantic herring	0	2	0	100%	0	1	0	100%	0	1	0	100%
Western Pacific pelagics	1	15	10	77%	1	7	5	73%	0	8	5	81%

Table 3: Success scores and use of candidate best management practices in Fishery Management Plans

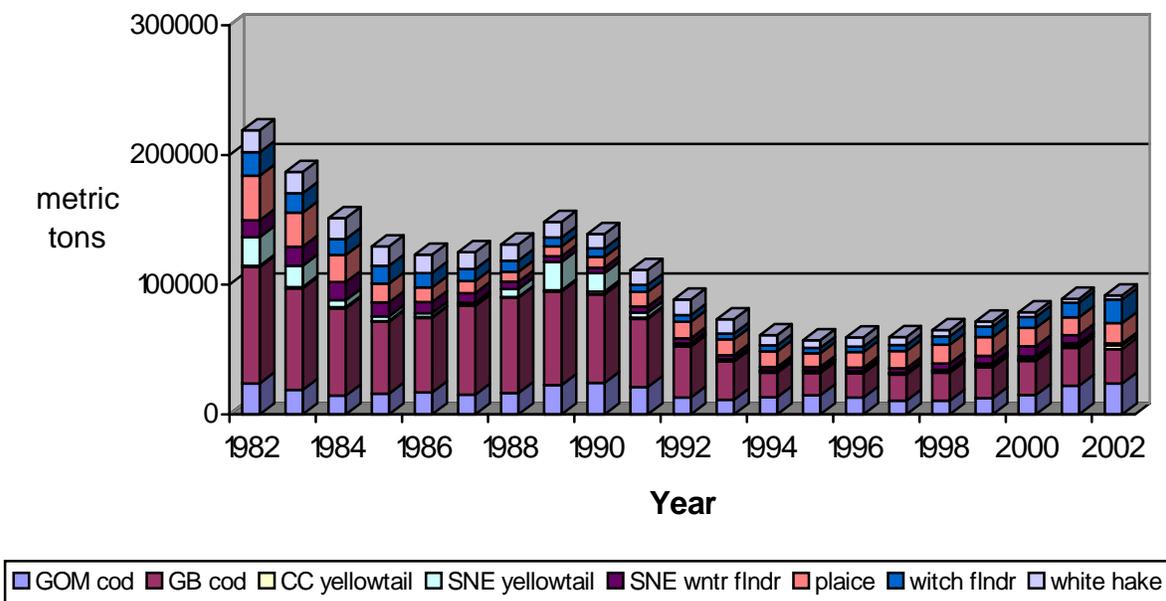
Fishery	success, %	1-stocks assessed	2-overcapacity prevented	3-quotas exist	4-limits enforced	5-catches below targets/quotas	6-bycatch monitoring	7-bycatch limits	8-MSY or proxy	9-targets/quotas < MSY
Atlantic surf clam, quohog	100%	Y	Y	Y	Y	Y	N	N	Y	Y
Atlantic sea herring (NEFMC)	100%	Y	Y	Y	Y	Y	P	N	Y	Y
NE sea scallops (NEFMC)	100%	Y	N	P	P	Y	P	P	Y	Y
Gulf of AK groundfish	84%	Y	P	Y	Y	Y	Y	Y	Y	Y
Bering, Aleutians groundfish	80%	Y	P	Y	Y	Y	Y	Y	Y	Y
Coastal pelagics, GM & SA	79%	P	Y	P	P	Y	N	N	P	Y
Western Pacific pelagics	77%	P	Y	N	N	Y	Y	N	N	N
Pacific coastal pelagics	75%	P	Y	P	P	P	P	N	Y	Y
Mid Atl mack, squid, butterfish	75%	Y	P	Y	Y	P	Y	P	Y	N
Bering, Aleutians crab	67%	Y	N	Y	Y	Y	Y	Y	Y	Y
Pacific groundfish	65%	Y	N	Y	Y	P	Y	P	Y	Y
New England multispecies	54%	Y	N	N	N	P	N	N	Y	N
S Atlantic snapper grouper	53%	Y	N	Y	Y	P	N	N	Y	Y
Gulf of Mexico reef fish	50%	P	N	P	P	P	P	N	P	Y
Mid Atl s fl, scup, b s bass	50%	Y	P	Y	Y	P	Y	N	Y	N
Mid Atl golden tilefish	0%	Y	N	Y	Y	Y	Y	N	Y	Y

Figure 1

SSB of Four Groundfish Stocks Overfishing Ended



SSB of Eight Groundfish Stocks Overfishing Continues



*Sources: 1982-2001 GARM Report (NEFSC, 2002). SSB estimates for redfish and white hake from SAW 33 (2001). SSB estimates for 2002 based on projections presented to NEFMC by Steve Murawski (2003).