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## **Fact Check: Fish Headlines**

October 15, 2004

### **“Ninety percent of the world’s large predator fish – those at the top of the food chain chain – have disappeared over the past 50 years”**

This headline swept across many 2003 media cover stories and is still referenced in ocean articles as recent as October 9, 2004 (Washington Post p. A3). The repeated citation by media writers, however, does not bring added credibility to the headline’s claims. Leading fishery scientists who specialize in pelagic fisheries have stated that “these conclusions are fundamentally flawed.”

The research and conclusions this headline is based upon was conducted by Myers and Worm from Dalhousie University in Canada and published in *Nature* (423:280-283, 15 May 2003). In response to the Myers & Worm study, John Hampton of the Oceanic Fisheries Program from the Secretariat of the Pacific Community, John Sibert from the University of Hawaii’s Pelagic Fisheries Research Program, and Peirre Kleiber from the National Marine Fisheries Service Pacific Islands Fisheries Science Center published detailed comments in May 2003 which not only contradict the findings from the Dalhousie study, but charge that Myers and Worm have done “a disservice to the fisheries community by applying a simplistic analysis to the available data which exaggerates declines in abundance and implies unrealistic rebuilding benchmarks.”

The Myers and Worms study used population trajectories constructed from historical longline fishing records and assumed these to be proportional to the abundance of individual species without regard to the selectivity of the longline gear with respect to species, age, or size of fish. The conclusions put forth by Myers and Worm that entire populations of large pelagic fish have been reduced by ninety percent also are not consistent with catch data or measurements of population dynamics by stock assessment scientists who follow and are responsible for the management of these species. Scientists from the InterAmerican Tropical Tuna Commission report that longline catch rates alone, which were used in the study are not a good indication of the size of a population especially since only around ten percent of the large ocean stocks in the Eastern Pacific are caught by this gear.

The most recent assessments for yellowfin and skipjack tuna, which are by far the predominant species in the pelagic fisheries of the Eastern Pacific show that these stocks are being managed at sustainable levels. What the research does suggest is that the age structure of the large pelagic populations has changed. The longline fisheries examined

fished selectively for large individuals, so assessments based on these fisheries alone might well confirm a drop in the presence of older, larger fish. However, stock assessments based on all available data including data from the more prevalent purse seine fishery which fish on relatively younger age groups show more stable populations.

Whether the purported historical decline in global catch rates is related to reductions in fish abundance or just an artifact of flawed assumptions in the analysis, it should be noted that it would have taken place primarily in the middle of the last century, before management structures were put into place. That is not the case today. “It is valid to point out that fisheries are capable of depleting stocks rapidly, and this is why we need fisheries management,” stated Mike Sissenwine, Chief Scientist from NOAA Fisheries in a *National Public Radio* interview following the release of the Myers and Worm study, “I think it would be unnecessary to overreact to simply the warning that these problems exist without understanding that in fact there are lots of measures being taken, a very aggressive U.S. regulatory program as well as worldwide, to try to address them.” Ransom Myers who also participated in the interview agreed, “Mike is right that in many areas of the U.S., aggressive management has worked ...When fisheries management is used and used effectively, there is not a concern about the biomass reducing by a factor of 50 or even 60 or even probably 70 percent.”

**“At least a third of fish stocks the federal government monitors are overfished”**  
(Washington Post, October 9, 2004, p. A3)

Each year, NOAA Fisheries provides an assessment on the state of fisheries. In the most recent Report to Congress on the Status of US Fisheries issued in May 2004 ([www.nmfs.noaa.gov/sfa/reports.html](http://www.nmfs.noaa.gov/sfa/reports.html)), NOAA Fisheries announced that the general biological trend for the status of US stocks continues to be positive. Of the 894 federally managed fish stocks, 76 are classified as overfished (8.5%) down from 106 stocks in 1997, and 60 are experiencing overfishing (6.7%) also reduced from 91 stocks being overfished six years ago. By 2002, a total of 75 rebuilding plans were in place with the remaining few in development. All indications point to continued improvement as the recovery plans take effect.

There are many stocks for which NOAA has no status information. NOAA reports it does not assess the status of many stocks because they are not targeted in fisheries and have a low probability of becoming overfished. If comparisons of overfished stocks and stocks subject to overfishing are made to the total number of stocks for which NOAA has status information then the headlines stating that “at least a third of fish stocks the federal government monitors are overfished” are true. The percentage of stocks of known status to be overfished has varied between 28.4% to 36.3% over the past six years. Changes in the percentage are related to changes in the stock status, the definition of overfished stocks, and to the number of stocks being compared.

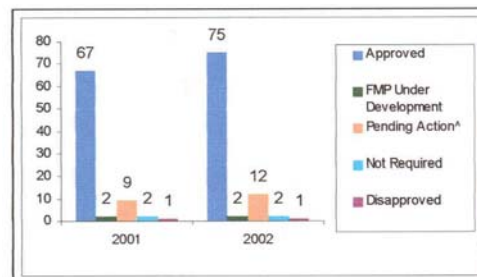
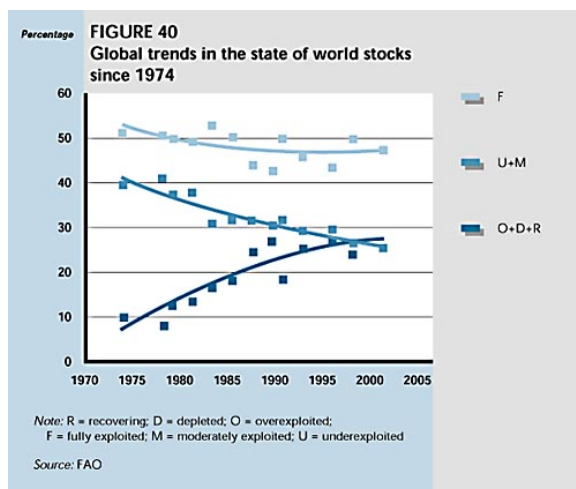


Figure 5. Status of rebuilding plans for overfished stocks, 2001-2002.  
<sup>a</sup> Under development or not yet submitted.

**“75% of the world’s commercially-fished species have been fished to or beyond the brink at which their populations can easily sustain themselves”**

While dramatic regional management problems have occurred in specific fisheries, changes in the overall global status of fisheries are leveling off and becoming more stable. During a decade of “oceans in crisis” news headlines, the UN Food & Agriculture Organization stated that the state of exploitation of the main fish stocks has remained more or less unchanged since the early 1990s (FAO 1999). Several prominent fishery scientists have noted that fisheries management has entered a new era of precautionary management with biological reference points set below the MSY (maximum sustainable yield) to produce sustained productivity within the boundaries of natural stock variations and responses to ocean climate events (Alverson 2000, Mace 2000, Rothschild 2000).



In terms of fishing effort, 47% are fully fished at maximum sustainable yield (F) levels; 21% are moderately fished (M) and 4% under fished (U). Overfished stocks (O) make up 18%, which includes both growth and recruitment overfishing, and 9% are classified as depleted (D) meaning that recruitment has dropped below sustainable levels and that there has been a loss in production. It does not mean that these stocks are depleted (i.e., gone). Shifts in stock classifications between these categories has slowed in the past ten years with fully fished stocks relatively

stable, moderate stocks declining slightly and overfished stocks increasing slightly.

These fishery classifications are often reported in various groupings to present negative statements like “75% of the world’s commercially-fished species have been fished to or beyond the brink at which their populations can easily sustain themselves.” In these statements, stocks fished sustainably at MSY (47%) are mixed with overfished (18%), depleted (9%) and recovering (1%) stock classifications. Phrases like “beyond the brink” are used to dramatize statements. Stocks “fish to” levels that can be sustained are fished at their maximum sustainable yield (MSY). The same data can present a positive report by grouping fully fished (47%), and underfished (4%) and moderately fished stocks (21%) to report that 72% of stocks fished at or below sustainable levels.

Overfishing classifications often mix recruitment and growth overfishing. Recruitment overfishing occurs when fishing effort is thought to reduce the number of new recruits below levels needed to sustain stocks on a long-term basis. Growth overfishing refers to the size of fish harvested before they grow to the maximum size after which any further increase in growth is offset by natural mortality. Stocks may be healthy and abundant, but the yield per fish is not maximized. Growth overfishing may indicate an increase in fishing pressure or simply may be an artifact of the gear used or market size preference.