

WESTPORT CHARTERBOAT ASSOCIATION

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June 19, 2000

**To: Pacific Fishery Management Council
Chairman Jim Lone**

**Fr: Westport Charterboat Association
Mark Cedergreen, Executive Director**

Re: Marine Reserves

Dear Council Members,

The Westport Charterboat Association (WCBA) offers the following comments on Marine Reserves:

First, WCBA endorses the comments of the SAS on this issue. There is no need to regulate salmon fishing beyond the annual regulations that are developed through the Salmon FMP.

Second, while WCBA is not opposed to moving the Technical Report on to public review, we are concerned that Marine Reserves may not be as necessary as originally believed with the curtailment of trawling as is presently in process. Certain trawl gear did the greatest damage to, and exploitation of species in, areas that might be proposed for marine reserve designation. If that gear is to continue to be restricted, marine reserves may have minimal additional impacts other than to severely restrict other fishing methods that were not responsible for groundfish stock declines and are already severely restricted.

Third, closing vast areas of the ocean to all fishing activity will increase exploitation rates in the areas that remain open. Overall quotas would have to be reduced to compensate for the biomass removed from the system by the reserves. Gear conflicts would begin to occur where there previously were none. There doesn't appear to be sufficient addressing of these potential issues by the MRC.

Finally, WCBA believes that a few small reserves, developed for scientific purposes, is the way to go on this issue at this time. Our Association will be willing to work with WDFW to help site these small reserves off the Washington Coast.

PACIFIC OCEAN CONSERVATION NETWORK



COMMENTS OF THE PACIFIC OCEAN CONSERVATION NETWORK CONCERNING MARINE RESERVES

June, 2000

Submitted by:

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The Pacific Ocean Conservation Network (POCN) has reviewed the Draft Marine Reserves Phase I Technical Analysis. We believe this analysis and the findings of many other studies support a decision by the Pacific Fishery Management Council to use marine reserves as a management and research tool in federal waters of the Pacific.

POCN, a coalition of the Center for Marine Conservation, Environmental Defense, National Audubon Society and the Natural Resources Defense Council, works toward sustainable fisheries and the conservation of ocean life and habitat on the west coast. We urge the Council to finalize the technical team's analysis, adopt its version of the Marine Reserve Committee's objectives, adopt Option 3a in the draft analysis as the Council's preferred alternative, and quickly move forward to designate reserves consistent with that option. The comments below support those recommendations.

Some critics question the need for marine reserves, since they believe that fishing mortality has not been responsible for the observed declines in the abundance of fish populations. Clearly, freshwater habitat loss and degradation, not fishing, have been driving the decline of salmon in recent decades. However, there is strong evidence that fishing mortality has been the principal cause of declines in groundfish species of concern (lingcod, bocaccio, Pacific Ocean Perch, cowcod, yellowtail), even as it has interacted with periods of relatively poor ocean productivity, habitat degradation, and pollution.

There are two lines of evidence to support this conclusion. First, the declines correlate well with increases in fishing pressure. Second, populations of rockfish and lingcod are thriving in marine reserves where fishing is banned, but depleted in similar nearby habitats that are open to fishing. If variations in ocean productivity or pollution or habitat degradation were the primary causes of the declines, one would expect to see similar declines everywhere. Moreover, it is principally the exploited species that show these patterns; unexploited species have similar levels of abundance inside and outside marine reserves (Yoklavich, unpublished data).

Marine reserves can address several challenges that the Council faces in managing groundfish, including rebuilding depleted stocks, protecting the ecosystems that drive fishery productivity, and providing insurance against future management errors. These challenges are likely to grow in magnitude as more rockfish species are assessed and discovered to be overfished or vulnerable to overfishing.

Reserves can serve as an effective and efficient means for rebuilding depleted populations. By reestablishing a complete age and size distribution, reserves provide for more rebuilding potential with less short-term sacrifice to the fishing industry than conventional management tools (Sladek Nowlis, in press).

Reserves have also been demonstrated to reestablish ecosystem processes, and in doing so to maintain natural ecosystem functions and productivity (Roberts, 1995; Hall, 1999). If key species are removed from an ecosystem, widespread changes can take place, which in turn can affect biodiversity and productivity (Estes 1974; McClanahan 1990).

Additionally, reserves are a useful mechanism for managing poorly-understood species and for providing insurance, more generally, in the face of risks imposed by management and environmental uncertainty. Studies have shown that reserves can reduce catch variability (Lauck, *et al.*, 1998; Sladek Nowlis and Yoklavich, 1998; Sladek Nowlis and Roberts, 1999). Additionally, scientific work has demonstrated that protecting a subset of a population from fishing mortality can result in more stable and higher average catches.

We believe that the phase I analysis of marine reserves conducted by PFMC and NMFS staff is objective, balanced, and fairly comprehensive. The analysis is based on marine reserve objectives developed by the PFMC's Marine Reserve Committee, made up of fishing industry, environmental, tribal, agency, and scientific interests. The analysts solicited and incorporated comments from the Marine Reserve Committee. All meetings of the Marine Reserve Committee were open to the public.

This analysis, the bulk of the scientific literature on marine reserve performance, and logic all support the use of marine reserves as a fishery management tool. It is abundantly clear that biomass and reproductive capacity builds up, sometimes quite rapidly, within marine reserves. A recent scholarly survey of the marine reserve scientific literature revealed that: (1) 90% of the reserves studied had higher fish biomass (weight) than did fished areas; (2) fish density was higher in 63% of the reserves; (3) 83% of the reserves had larger carnivorous fish and invertebrates; and (4) 59% of the reserves had higher biodiversity than did fished areas (Halpern, in press). This survey showed that the average size of fish and shellfish within reserves are between 20 and 30% higher relative to fished areas; densities are roughly double in reserves; and biomass levels are nearly triple in reserves.

It is also clear from the available evidence that west coast habitats and fish populations behave similarly. Fish populations of concern (lingcod and rockfish) have increased in abundance (by factors of 2 to 13) and size in marine reserves in which fishing is banned in waters off California, Washington, and British Columbia (Canada) (summarized in Fujita *et al.*, 1998).

Preliminary evidence indicates that rockfish are more abundant and larger in the new Big Creek marine reserve after only 5 years of protection (Yoklavich, unpublished data).

Average fish size has also increased within most of these west coast reserves, resulting in a disproportionate increase in reproductive capacity due to the fact that egg production increases exponentially with fish size/age for most of the species of concern. For example, one blue rockfish (*Sebastes mystinus*) that is 25 cm long produces 50,000 eggs, while one blue rockfish that is 32.5 cm long produces 300,000 eggs (6 times more). The exponential increase in fecundity with larger size is particularly striking for Pacific ocean perch (*Sebastes alutus*). One female that is 23 cm long generates 10,000 eggs, while one that is 45 cm long generates 300,000 eggs (30 times more) (Casillas, *et al.*, 1998). Because fish size and age increase in marine reserves, reproductive capacity often increases dramatically (by factors of 20 to 55) as well (Fujita *et al.*, 1998). This disproportionate boost in reproductive capacity is a major advantage over protecting the same number of fish through conventional means; each fish protected within a reserve may be capable of producing many times more eggs than a fish protected through overall reductions in fishing mortality.

While few studies have been conducted on the ability of marine reserves to export eggs, larvae, or new recruits to fisheries, most of the studies that have been done indicate that they can in fact do so. It is reasonable to expect that larvae, juveniles, and adults would move out of marine reserves to enhance yields in fishing grounds, on the basis of evidence that young rockfish are generally more mobile than adults and because many species of concern have long pelagic life history phases. Of the 10 field studies reviewed by Kripke and Fujita (1999), catches increased significantly near marine reserves in 7 of them. Compliance with reserve regulations was relatively poor in one marine reserve that did not enhance catches; another had degraded habitat. The third reserve that did not enhance catches did increase catch-per-unit effort outside the reserve after 2 years of protection; total catch may increase over baseline levels with time. Total catches are now higher than before the study, an impressive feat considering that over 60% of the fishing grounds were closed (T. McClanahan, personal communication 1999).

Option 3a (medium sized marine reserves, allowable biological catches based only on biomass outside reserve borders) best meets the objectives set forth by the Marine Reserves Committee and the technical team, and would help carry out the President's new Executive Order on Marine Protected Areas. The team's revisions to the objectives make them clearer and more coherent, without changing their basic intent, and have been approved by the Marine Reserves Committee.

We urge the Council to vote in favor of marine reserve implementation and Option 3a in particular, using the revised objectives and a broad-based and inclusive process for siting reserves in a way that maximizes benefits while minimizing economic harm.

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