Part II

SYMPOSIUM OF THE CALCOFI CONFERENCE

Lake Arrowhead, California

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CAN MARINE FISHERIES BE ENHANCED? POINT/COUNTERPOINT

Fisheries managers have only a few choices. We can limit the area fished, the season, the size of the fishery, or the size or age of the fish taken. But finally, traditional fisheries management distills down to one concept: controlling the impact on the stock, which translates into a "Thou shalt not" approach to regulation. It is my view that such methods have often proven to be ineffective at best. This is particularly true for many nearshore marine species.

Pelagic fishery managers can point to their successes. In California, the anchovy and, more recently, the sardine, Pacific herring, and Pacific mackerel are offered as shining grails of hope and enlightened management regimes. But as a jaundiced observer, admittedly unschooled in the arcane nuances of pelagic fish, I would offer that anchovy fishery management in California might have been successful, but only coincidentally with greatly reduced demand. The sardine fishery was never really managed until after its collapse. After almost two decades of moratorium, and four years of quota management, we are still unsure about the recent optimism concerning the recovery of this resource. Some fishery. . . . Some management. And yet the Pacific herring and Pacific mackerel fisheries, managed by quota based upon annual assessments, which vary in their scientific sophistication, have produced sustained yields that rival those of years gone by. These species/fisheries have at least two things in common, other than being pelagic: a long history of exploitation and, more important, research.

For most nearshore species this is not true. We have consistently been asked to manage their populations, knowing nothing much more than that they do indeed swim, and presumably reproduce (given appropriately low levels of DDT, PCB, and other pollutants). This form of management has been likened to a cattleman attempting to manage his herd with no knowledge of its numbers, the number of cows in calf, the size or carrying capacity of his range, or indeed the extent to which his herd stays on his range and doesn't wander off to be harvested elsewhere.

It appears that this is probably going to continue for some time, unless we can begin to understand the dynamics and early life requirements of nearshore species as well as, or better than, those of pelagic species. This assumes that our politico-economic system will suddenly allow us the money to do what is necessary. I, for one, would be interested in my own behavior, if suddenly asked to "put up or shut up"—if actually offered the funds to do the job.

Without these funds we are, and have been, left with the choices of forging ahead, hopefully making incremental gains, by regulating gear, area, and size. This is all in the face of almost geometrically increasing pressures on these nearshore resources from burgeoning population and increasingly impacted or degraded habitats. We can continue on this course, or we can change direction and experiment with something new.

This year's CalCOFI symposium is an attempt to generate discussion among resource managers—discussion of nontraditional methods for improving stocks, in particlar those of nearshore species. I believe in the potential of some of these concepts, but—as you must also—I see potential pitfalls. Therefore, when asked to put together this panel, I attempted to structure it in a point-counterpoint format. I was successful in getting speakers on both sides of each issue except for marine harvest refugia. Even though I could find no one to present any argument against the concept, few seem to want to

give it a try. Perhaps Gary Davis of the National Park Service, who presents that paper, is correct when he quotes Machiavelli. But that would be giving it away. When you have read his paper you may agree, not just with his hypothesis, but with the assessment of the risks involved in any unusual, and therefore uncomfortable, solutions.

My own professional interest, man-made reefs, is well debated by Ray Buckley from the Washington State Department of Fisheries and Jeff Polovina, NMFS-Hawaii. Marine fish hatcheries are discussed by Bill Rutledge of Texas Parks and Wildlife, who tells us they can work, and by Alec MacCall, NMFS, who insists they cannot. I hope you find these papers as stimulating as I have found working with the authors.

John Grant