

## BIO-POLITICS OF CALIFORNIA'S ANCHOVY FISHERY

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Abstract: The anchovy population off California is conservatively estimated as between 2 and 2½ million tons. Department, University, and Federal scientists, cooperatively, have recommended a long-range program consisting of three phases initially calling for a controlled anchovy harvest of 200,000 tons a year for 3 years. The commercial fishery is interested in the program because they see it as a solution to many of their problems. Sport fishermen are opposed because they fear a "repeat of the sardine and Pacific mackerel debacle."

The bio-political problems are brought into sharp focus when the Department attempts to fulfill its responsibility by recommending management practices to appropriate state governmental bodies and runs head-on into the special, and usually conflicting, interests of the sportsmen and commercial fishermen.

The resolution to these conflicts is the bio-political problem faced by the Department, the Fish and Game Commission and the Legislature. One must remember that the best scientific information available cannot result in a sound management program unless the political climate will permit its use.

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During the past few years the northern anchovy (Engraulis mordax) has been the subject of spirited controversy among special interest groups concerned with marine fisheries. I feel it is a fine example of a case where scientific evidence shows the existence of a large resource of value to man, but other considerations have so far prevented, or at least inhibited, the development of a large fishery. The objective of this presentation is to point out some of the factors that influence the growth of a fishery and the mechanics of this growth.

In 1948, about the time the sardine (Sardinops sagax) fishery finally collapsed, the California Marine Research Committee was formed. In the beginning, studies sponsored by this committee were aimed at the sardine but later took on a broader look and included other fishes in the California Current System. This committee is now charged with the task of "financing research in the development of commercial fisheries of the Pacific Ocean and of marine products susceptible to being made available to the

people of California" (California Fish and Game Code, 1969).

Scientific input to the Marine Research Committee (MRC) came from the California Cooperative Oceanic Fisheries Investigation Committee<sup>1/</sup> (CalCOFI) established in 1957 to replace the old Technical Advisory Committee. To make a long story short, one of the spin-offs of the old sardine investigations was the discovery, based on egg and larva surveys of the U. S. Bureau of Commercial Fisheries, that the anchovy population was undergoing a dramatic change (Messersmith et al., 1969). It was increasing at a fantastic rate.

Since this is supposed to be discussion of bio-politics (or if you will, sociological problems) affecting the course of development of the fishery, I will not go into the mechanics of their findings. I will point out that the estimates are based on egg and larva surveys conducted by the U. S. Bureau of Commercial Fisheries at La Jolla (Ahlstrom, 1966). These surveys cover a large area extending from Oregon to Cape San Lucas, Baja California Mexico, but are most intensive between San Francisco and Cedros Island, Baja California. Estimates of population size are based on the spawning population that would be required to produce the number of eggs or larvae that are found by the surveys. The Department of Fish and Game is conducting adult fish surveys with sonar and midwater trawl and has arrived at independent estimates of the southern California population that coincide with those of the Bureau.

On March 6, 1964, the CalCOFI Committee presented a series of papers concerning the anchovy to the MRC. The papers included anchovy population estimates and a proposal for an ecological experiment to assist the return of the sardine by simultaneously reducing fishing pressure on the sardine and imposing pressure on the sardine's chief natural competitor, the anchovy. The proposed experiment, "Requirements for Understanding the Impact of a New Fishery in the California Current System," (Ahlstrom et al., 1967) was a long-range program consisting of three phases. Phase I called for a controlled anchovy harvest of 200,000 tons throughout the principal range of the population with approximately 35% in California and Northern Baja, California waters (North of lat. 31°N). This phase was to have an annual quota for a period of approximately three years. Phase II called for adjusting the quotas and their geographic distribution on the basis of findings of Phase I, while Phase III had the ultimate objective of restoring the pre-decline balance between sardine and anchovies and maximizing the harvest of both species consistent with all uses. It was noted that if both the sardine fishery and competition from anchovies are affecting the sardine population, and if the objective was to bring back the sardine in the shortest possible time, there should be fishing on anchovies and a complete moratorium on sardine fishing. At the time of this proposal the total spawning biomass of anchovies was estimated to be between 1.8 and 2.25 million tons based on egg and larva data available through 1958. When data through 1966 became available the population estimate was revised upward to between 4 and 5 million tons with

<sup>1/</sup> The CalCOFI Committee is composed of four members; three are the scientific leaders of the MRC-associated programs of the major cooperating agencies and one represents the MRC. The major cooperating agencies are: Calif. Dept. of Fish and Game, U. S. Bureau of Comm. Fish., and Univ. of Calif. at Scripps Inst. Oceanog.

approximately 50% in California waters.

To better understand the situation the reader should know that as early as 1942, and each year since 1961, central California reduction plant owners had requested the California Fish and Game Commission to issue anchovy reduction permits. The reader should also know that on January 28, 1949, the Commission had adopted a policy opposing the "Issuance of Reduction Permits for Whole Herring or Anchovies." Since then industry has made numerous attempts to have the policy changed, either by the California Legislature or through the Commission.

During April 1965, Assembly Bill 2756 was introduced in the California Assembly. This bill would have allowed the landing and reduction of 115,000 tons per year of anchovy by specified vessels during a 28½ month period beginning January 1, 1966. The bill was passed by both houses of the Legislature, but was pocket vetoed by the Governor on two grounds: (i) the purposes of the bill could be legally accomplished by administrative action, and thus the bill was not needed; and (ii) the limited entry features of the bill were of questionable constitutionality and might involve the State Government in costly litigation (Chapman, 1967). Opposition to AB 2756 by organized sportsmen's groups was so intense that the Governor's office received over 35,000 letters in opposition, more than for any other measure considered during the 1965 Legislative Session. The Governor then requested the Commission to reconsider allotting permits for reduction fishing.

Before going further, I think it is important to recognize that in the State of California there is no single management authority for California's marine resources. With respect to anchovy, sardine, and mackerel commercial fishing quotas, the function of the Department of Fish and Game is to make management recommendations to the Fish and Game Commission or the State Legislature depending on the subject under consideration. In general, if the subject is related to human consumption, the Legislature has jurisdiction; and if reduction, the Commission has jurisdiction.

The bio-political problems is brought into sharp focus when the Department, through the respective state governmental bodies, attempts to fulfill its responsibilities by recommending management practices and runs head-on into the special and usually conflicting, interests of the sportsmen and commercial fishermen.

As a result, if a hypothetical fishery is in the process of being over-harvested, and has important uses both for human consumption and for reduction purposes, the Department of Fish and Game must make a recommendation to both areas of government; and unless both areas of government act on the Department's recommendation, the fishery is subject to collapse. In any event, the recommendation that a 200,000 ton experimental fishery be initiated on anchovies created fear in the sport fishing community. This fear was well expressed by the President of the Associated Sport Fishermen of California. I'd like to quote from a paper he presented at the 1967 CalGOFI Conference (Izor, 1969), and although I have edited his full statement somewhat, I hope the portions quoted have not lost any of the original flavor.

"The undercurrent of fear that prevailed among the professionals in the recreational fishery was founded on the past performance of the commercial industry. The local industry simply does not

understand the word conservation, and never has...the local fisherman in the San Pedro, California, area will poach and destroy and catch every last scale if he can get away with it. He doesn't care about tomorrow and he never has...

"We have grown up with this fear, so it is not surprising that when the 200,000 ton anchovy fishery experiment was proposed we began to hear rumors that the big fishing companies had plans on the drawing board for one-million ton reduction plants and the fishing nets were on the way. Rumor? Yes, but nevertheless it threw fear of a repeat of the sardine and Pacific Mackerel debacle into us. So we waged a major, emotionally charged, factless campaign against a dedicated guy whose presentation before the California Fish and Game Commission, the day the Commission authorized the 1966-67 reduction fishery, was truly enthralling. If I had been on the Commission, I would have bought it lock, stock, and barrel, in spite of the fact that I was there as part of the loyal opposition. It was thorough investigative procedure, the best the scientific community could produce. Yet, unfortunately, because you neglected one little facet, an ironclad lock that the fisheries should progress slowly, we had to battle you down to the wire. We had to prepare elaborate Letter to the Governor and Letter to the Commissioners campaigns. I had to hire a public relations firm to get our name, Associated Sport Fishermen of California, in every paper in California; and we saw to it that the local metropolitan newspapers in Los Angeles carried editorials supporting our position. Actually, it was a shame because the 200,000 ton request was just a dent in what I know to be the anchovy population. Knowledge not based on egg and larval surveys, but on my day to day running of the sportfishing boat between the local channel islands. There are lots of anchovies."

Acting on the Governor's request, the Commission listened to testimony from all interested parties, including the California Department of Fish and Game's recommendation for approval. On August 27, 1965, the Fish and Game Commission adopted the following new policy concerning the reduction of anchovies:

"It is the policy of the Fish and Game Commission that:

1. The anchovy resource will be managed on a scientific basis with regulations sufficiently flexible to allow corrective actions to be taken at any time the Commission deems necessary;
2. The existing uses of anchovies shall be protected; and
3. The Commission shall give consideration to the issuance of anchovy reduction permits when the scientific evidence indicates that the resource will not be in danger."

After the Commission adopted this policy, the Department proposed regulations

authorizing a 100,000 ton harvest south of Point Conception and 15,000 tons north of Point Conception. The proposal included seasons, the mandatory use of log books, and prohibited reduction fishing within three miles of the mainland shore south of Point Conception (a measure to protect the live bait fishery). The Department also proposed a tagging and monitoring project to be initiated in the event a reduction fishery was authorized.

Before acting on these proposals the Fish and Game Commission expressed the opinion that effective scientific management of the sardine and anchovy resources required that full regulatory authority over both species be delegated to one body. The Commission therefore adopted a resolution requesting the California Legislature to recognize these problems and to assist it by providing immediate legislation declaring a moratorium on the taking of sardines so that the Commission could proceed with the proper scientific studies in a systematic manner, and to delegate management responsibility for both sardines and anchovies to the Commission. Responsibility was to include the control of the take and/or regulation for all purposes. When the Legislature failed to act on the resolution the Commission decided to proceed with the matter of an anchovy reduction fishery at its November 12, 1965 meeting.

At this meeting the Commission listened to considerable testimony by all interested parties before adopting regulations governing an experimental fishery to take and use 75,000 tons of anchovies by a reduction process. When the regulations were adopted the Commission made it clear that the experimental fishery for reduction purposes may be terminated at any time that the Commission finds that the existing uses of anchovy are jeopardized or that that the resource is endangered.

Landings during the first four seasons, 1965-66 through 1968-69, were 16,800 tons, 37,600 tons, 6,500 tons, and 28,000 tons, respectively. Since the beginning of the reduction fishery the industry has felt that the 75,000 ton annual quota was too small to warrant tooling up for a major operation. The Commission, on the other hand, apparently wanted the fishery to develop slowly and with controls. They did not want it to expand rapidly with a "gold fever" approach, or without the constant realization that the Commission could and would curtail quotas or stop the fishery whenever they felt necessary.

Before the 1969-70 season the Commission stated that if "during the season the maximum quota set by the Commission for the northern or southern area should be approached, the Commission will consider an increase in the quota for the area approaching its quota." On the 9th of this month (January 1970), the Commission did consider a request by the industry to increase the quota for the southern permit area by 75,000 tons. After due deliberation the Commission authorized an increase in the southern permit area of 65,000 tons to a total of 130,000. This action was distressing to sportsmen because they are convinced that this is letting the camel get its head under the tent, and it will take over the whole tent. Therefore, and in my opinion, many sportsmen believe it is better to defeat, by any means, establishment of a reduction fishery of anchovies than it is to run the risk of allowing this fishery to become large and therefore possibly immune to management restrictions.

To support these arguments sportsmen's organizations content that we do not know enough about the anchovy and its relationship to its environment; that we do not

know the impact of the harvest of anchovy on this environment; no do we know the place of the anchovy in the food chain. They also contend that anchovies are the last remaining bait and forage fish in California waters and that we mismanaged the sardine and are trying to do the same to anchovies.

The Department, beginning as early as 1920, did all that it could to prevent the collapse of the sardine fishery. A paper on this subject, "Sardine Oil and Our Troubled Waters" by Scofield (1938) makes very interesting reading. I know that the Department of Fish and Game is monitoring the anchovy resource and fishery closely, and I am confident that if either the anchovy resource, live bait fishery or sport fishery is threatened by the reduction fishery, the Department will be on top of it and will recommend fishing be stopped. The Commission has the authority to stop reduction fishing on 48-hour notice anytime it determines that the anchovy resource is endangered, or existing uses jeopardized.

By increasing the quota the Commission demonstrated that it was not opposed to the development of a commercial fishery. In addition, and since the fishery began, the Commission had maintained a position of consistency and of strongest control. By insisting that the fishery be conservative in its development, the Commission also demonstrated that it had no intention of letting the fishery develop without restraint, at the expense of other uses or to the detriment of the resource.

Can the Department recommend sound management practices for the anchovy and can they be implemented? I am confident that the answer is "yes" on both accounts. I think the Department's ability is proven and that the Fish and Game Commission has complete control over the harvest for reduction purposes. We also have the precedent of the sardine collapse to strengthen our wills, and the political climate appears to be with us.

The resolution of these conflicts is the bio-political problem faced by the Department, the Fish and Game Commission and the Legislature.

A partial solution to some of these bio-political problems is to get the sportsmen and commercial fishermen to work together in solution of the management problem while, as Director Arnett and Dr. Leopold suggested in their paper, the Department provides the biological input to guide them in their decisions.

In conclusion, I feel that this audience of biologists should realize that the best scientific information available cannot result in a sound management program unless the political climate will permit its use.

#### LITERATURE CITED

- Ahlstrom, E. H. 1966. Distribution and abundance of sardine and anchovy larvae in the California current Region off California, 1951-1964: A Summary. U. S. Fish and Wild. Serv., Spec. Sci. Rept. - Fish., (534):1-71.
- Ahlstrom, E. H., J. L. Baxter, J. D. Isaacs, and P. M. Roedel. 1967. Report of the CalCOFI Committee. Calif. Mar. Res. Comm., Calif. Coop. Ocean. Fish. Invest. Rept., 11:5-9.

Chapman, W. M. 1967. Statement of W. M. Chapman before the California Fish and Game Commission respecting the anchovy fishery, anchovy population size, biological research, impact of fishery on environment and sport fishery, and its regulation for maximum use and conservation of the resource. San Francisco, California - August 26, 1966. In Calif. Mar. Res. Comm., Minutes 8 Aug. 1967. Appendix 2:1-14.

Izor, R. A. 1969. The point of view of the partyboat and live bait industries. Calif. Mar. Res. Comm., Calif. Coop. Ocean. Fish. Invest. Rept., 13:113-116.

Messersmith, J. C., J. L. Baxter, and P. M. Roedel. 1969. The anchovy resources of the California Current Region of California and Baja California. Calif. Mar. Res. Comm., Calif. Coop. Ocean. Fish. Invest. Rept., 13:32-38.

Scotfield, W. L. 1938. Sardine oil on our troubled waters. Calif. Fish and Game. 24(3):210-223.