TUNA BAITFISH WORKSHOP

Date: June 4-6, 1974

Place: Honolulu Laboratory
National Marine Fisheries Service

Sponsors: NMFS - Southwest Fisheries Center, Honolulu Laboratory
Sea Grant - University of Hawaii

BACKGROUND

The two principal methods of fishing commercially for tunas in tropical waters are by purse seining and pole-and-line fishing; the latter is commonly referred to as live-bait fishing.

One of the shortcomings of the live-bait fishing method is that it encompasses an added non-tuna fishing activity of requiring an adequate supply of baitfish. In many areas of the Pacific the stocks of naturally occurring baitfish are lacking or are only available in limited quantities; thus, the availability of baitfish has been a major limiting factor in the establishment of skipjack fisheries in many areas, or in areas where fisheries already exist, in the expansion of these fisheries.

An obvious solution to commercial fishing for skipjack tuna in the central and western tropical Pacific would be to turn to the purse seine method; however, based on field trials conducted to date, this method has not been sufficiently successful for commercial application. The general consensus is that the clear water and deep thermocline in the tropics make it possible for the skipjack tuna to dive beneath the nets before pursing has been completed; thus the rate of successful sets has been low. Further, the general erratic behavior of the skipjack schools in the tropics has also contributed to the low success rate achieved thus far with the purse seine gear. In view of the increasing demand for tuna and the potential high yields that the purse seine method represents, purse seine efforts in the tropics are continuing.

Even if purse seining were to meet with a measure of success in the tropics, the live-bait method of fishing will still have a role in local fisheries. Presently the island countries and territories of the Pacific are short on capital and technology, elements which are essential for the operation of a purse seine fishery. The purse seine method requires considerable capital outlay for vessels and gear; e.g., the cost of a modern purse seiner exceeds several million dollars and the cost of a net exceeds $100.0 thousand. Also, the technology needed to operate a purse seine fishery appears to be of a level that participation by the island peoples would be limited under present-day conditions. Development of suitable technology would require time. Meanwhile the island governments are striving to find means of increasing employment opportunities for their citizens and of expanding their economic base today, and live-bait fishing for skipjack appears to meet these needs. In many areas, however, the implementation of live-bait fishing is dependent upon finding a reliable supply of baitfish.

The virtual lack of baitfish in the Line Islands area, American Samoa, Western Samoa, and the many atolls and high islands of the Pacific has retarded the development of skipjack fisheries in these areas, although skipjack are known to occur in these waters. In Hawaii and the Western Carolines (the Palau skipjack fishery) the supply of baitfish has been only sufficient for the operation of small fleets of tuna vessels; the annual landings of these fisheries average about 5.0 thousand tons. The Japanese southern fishery for skipjack tuna in the western Pacific is solely dependent upon the transport of baitfish from the home islands.

The several methods of meeting the baitfish needs of a tuna fishery are (1) natural stocks of baitfish, (2) culture of baitfish, (3) transshipment of natural or cultured baitfish from areas of abundance to areas of need, and (4) baitfish substitutes, e.g., inanimate material.

As the world demand for tuna increases and governments in the Pacific and elsewhere seek to develop or expand their fisheries for skipjack tuna, effort to resolve their baitfish problems assumes priority consideration.

PROBLEM

In areas where baitfish species are available, the question arises as to the size of a fishery that the baitfish resource will support. In areas where naturally occurring baitfish are in short supply or lacking, the question arises as to which of the several alternative plans should be implemented. In the field of cultured species, there is a need for a reassessment of this activity based on a thorough evaluation of past studies. Past field experiments with cultured species have been unsuccessful or have met with only limited success. Were these trials adequate? Is there a future in cultured species as a tuna baitfish? If so, where should future activities be focused? Finally, in areas where several options are available, there is a need to examine the economics of each option.

PROPOSAL

An in-depth study of the entire baitfish problem, especially as it relates to skipjack tuna fishing activities in the Pacific, should be undertaken to provide insight on the optimal strategy to follow. The presently conceived workshop should meet this need.

The objectives of the workshop are to (1) determine if suitable criteria of a good tuna baitfish can be identified, (2) review in depth the several alternative methods of meeting the baitfish needs of the various areas in the Pacific, (3) examine the economics of each of the alternatives, and (4) provide recommendations on the direction of future research activities, including the identification of priorities.

The tentative schedule is:

Tuesday (4 June 1974)

AM Opening sessions.
Establish criteria of good baitfish species.

PM Session meetings (natural stocks, cultured species, baitfish transport - baitfish substitutes, and economics)

Wednesday (5 June 1974)

AM Session meetings.
PM Session meetings.

Thursday (6 June 1974)

AM General meeting--review and discussion of session results.
PM Wrap-up.

The prepared papers and results of the workshop will be published.

3/22/74

SUMMARY
TUNA BAITFISH WORKSHOP

OBJECTIVES

1. Establish criteria of good tuna baitfish species.
2. Examine alternative plans of meeting baitfish needs:
   a. Natural stocks
   b. Cultured baitfish
   c. Baitfish transport
   d. Baitfish substitutes
3. Examine economics of alternative baitfish plans.

POTENTIAL PARTICIPANTS FOR WORKSHOP SESSIONS

1. Natural stocks

   Kearney, Muller, Takata, Tester, Wetherall, P. Wilson, Yoshida

2. Cultured baitfish

   Baldwin, Bardach, Fujimura, Gopalkrishnan, Hida, Iversen, K. Kato, Puffinburger, Shomura, Swerdloff, (a specialist in freshwater fish culture)

3. Baitfish transport - baitfish substitutes

   Evringham, Gooding, Goto, Green, Hester, Otsu, Uchida, Yuen

4. Economics

   Comitini, Kerns, Rothschild, Shang

5. Others

   J. Ball, J. Davidson, Brian Mar (or equivalent talent), E. Oswald