CALIFORNIA'S WETFISH INDUSTRY: ITS IMPORTANCE – PAST, PRESENT & FUTURE

Executive Summary

In major measure, California's fishing industry was founded on "wetfish." So called traditionally because these fish were conveyed from ocean to can with minimal preprocessing, "wet from the sea", sardines, mackerels, squids and anchovies, as well as coastal tunas, have represented the lion's share of commercial fishery landings in the Golden State since before the turn of the 20th Century.

Today sardines, jack and Pacific mackerel, anchovy and market squid are called, for management purposes, Coastal Pelagic Species (CPS). Another link among these species: all are harvested primarily with round-haul nets (lampara and purse seine).

The complex of fisheries that comprises the wetfish industry has shaped the character of California's culture in addition to the infrastructure of California's fishing industry. The immigrant fishermen of Asian, Italian, Slavic and other nationalities introduced new fishing gear and helped to build the fishing ports of San Pedro and Monterey, as well as San Diego and San Francisco. Although changed in many ways, the wetfish industry today remains an essential, critically important part of California's fishing industry as a whole. In the year 2000, the wetfish fishery complex produced about 455.5 million pounds (227,734 short tons) of fish, 83.6 percent of total commercial fishery landings in California, valued at $38.9 million ex-vessel, or 29.3 percent of total value of all fisheries in California.

This report is subdivided into the following components:

• Executive Summary – provides abstracts of the Socio-Economic Profile and Economic Overview of the wetfish industry, followed by Highlights of each chapter, and a Glossary of technical terms

• Socio-Economic Profile of the California Wetfish Industry, by Pomeroy, Hunter, and Los Huertos

• An Economic Overview of the California Wetfish Industry Complex, by Hackett

The California wetfish industry comprises the fishermen, receivers and processors who are involved in the capture and processing of northern anchovy, jack and Pacific mackerel, Pacific sardine and California market squid, and in southern California, coastal tunas and Pacific bonito. Pomeroy, Hunter and Los Huertos, authors of the Socio-Economic Profile, and Hackett, author of the Economic Overview, conducted archival, survey and ethnographic research to develop both the socio-economic profile and an estimate of the value added by the present day California wetfish industry.

The Socio-Economic Profile (Pomeroy et al) focuses on the spatial and temporal organization of the present day industry (circa 2000-01), the socio-economic characteristics of its participants, and the environmental, social, economic and regulatory context in which they operate. The discussion is organized around the industry's three regional centers of activity: Monterey Bay, Ventura/Port Hueneme and San Pedro/Terminal Island. Each of these centers is described in terms of four sets of characteristics:

resource availability, ports and infrastructure, processor receiving and processing capabilities, and fishermen and vessels involved in the industry. The profile highlights similarities and differences within and among these centers of activity, and between the present day industry (beginning in 1996) and the historic California wetfish industry (1800s through 1995).

The Economic Overview (Hackett) of commercial fishing and processing includes economic information on market structure characteristics, product prices and quantities, value added, and other trends in wetfish production between 1981 and 2000. Relevant historical information is also provided for fishermen and receivers / processors. The overall trend in the wetfish fisheries has been one of growth in landings and inflation-adjusted value added by California fishermen from the early 1980s to 2000. Hackett's report also includes an economic overview of present day wetfish receiving and processing, including processing techniques, product types, market channels and their intermediate (e.g. secondary processing) and end uses. These include products such as frozen whole fish sold as bait or animal feed, fresh and frozen seafood products, and pet food, which account for the majority of California wetfish production. Smaller quantities of canned, smoked and other specialty wetfish products are also produced in California. Hackett's report provides a range of estimated value added by receivers / processors in California in 2000. After processing, the various wetfish products made in California move downstream into the wholesale distribution and export market channels. These export channels have become increasingly important for California wetfish products, as demonstrated by the sharp increase in inflation-adjusted revenues from wetfish exports during the 1990s into 2000.

In 2000, wetfish accounted for a significant proportion of commercial fishery landings in California (83.6 percent by weight and 29.3 percent by ex-vessel value).

Highlights – Socio-Economic Profile

1. The present day California wetfish industry has strong connections to the "traditional" industry dating back to the late 1800s.

- Most fishermen and many processors come from families with two or more generations of participation in the industry.
- Relationships in the industry are social as well as economic.
- These relationships provide important human, social and economic resources, which have enabled industry participants to withstand variable and uncertain environmental, regulatory and economic conditions.

2. The wetfish industry is organized around three regional centers of activity (from north to south): the Monterey Bay area in central California, and Ventura/Port Hueneme and San Pedro/Terminal Island in southern California.

- Monterey and San Pedro are the "anchors" of the industry, given their historic role in establishing the sardine industry.
- The Ventura/Port Hueneme area's importance has grown in recent years as new technologies and markets have increased the cost effectiveness of fishing the Channel Islands.
- These conditions have spurred the development of local receiving capabilities, and have attracted purse seiners from Washington State to the Ventura/Port Hueneme area, primarily to fish for squid.

3. The industry's three centers of activity are connected by strong and complex linkages.

- These linkages have been enhanced by fishermen's increased mobility, processors' development of receiving and processing capabilities within and among regions, and the social and economic ties between processors and fishermen.
- Although Monterey and San Pedro as well as resident Ventura area fishermen have long fished the Ventura/Port Hueneme area, this activity has increased markedly since the 1990s following changes that increased the feasibility of fishing the Channel Islands.
- All of the major Monterey processors and most of the major San Pedro processors have developed receiving capabilities in the Ventura/Port Hueneme area.

4. Two harbors within each region play a critical role in the wetfish industry.

- Most of the catch is delivered to one harbor in each region: Moss Landing, Port Hueneme and San Pedro.
- Most of the boats tie up in Monterey, Ventura and San Pedro.
- Harbor infrastructure critical to the industry -- docking and unloading space, fuel and ice facilities, boatyards, marine supply stores and other providers of essential goods and services -- varies markedly within and across the three regions.
- These providers of goods and services, in turn, depend on the wetfish industry.

5. The wetfish industry and the businesses (including harbors) that provide essential goods and services are dependent upon one another.

- Most of the harbors that support the industry depend upon it for direct revenues, commercial fishing activities to help qualify for federal dredging funds, and in some areas, to serve as a cultural backdrop to tourism.
- This is not the case for Port Hueneme and San Pedro/Terminal Island, where cargo and oil industry activities overshadow the wetfish industry.

6. The wetfish industry is interconnected with, and complements, local agriculture in its shared use of transport services, ice plants, packing materials, cold storage facilities, and seasonal labor, especially in the Monterey and Ventura/Port Hueneme areas.

7. Large swings in resource availability strongly influence fishermen's and processors' strategies.

- Most fishermen rely on CPS finfish (sardines, jack and Pacific mackerel, anchovy), squid and one other fishery as part of an "annual round" of fishing.
- Most can shift their effort among wetfish species locally, or move to another regional center of activity in response to resource availability (provided sufficient demand).
- The viability of these strategies is contingent on fishermen's mobility, processors' ability to receive wetfish and squid at alternative locations, and demand for product, which varies in response to a larger suite of global conditions.

8. Whereas sardine, mackerel and anchovy have been the "bread and butter" of the industry, the recent growth of the squid fishery has afforded a substantial infusion of resources and energy into the industry.

- However, sharp fluctuations in the availability of squid and associated demand, especially since the 1997-98 El Niño, and the rebirth of the sardine industry and new markets have prompted many fishermen and processors to re-direct their efforts to sardine.
- Whereas the industry has traditionally focused on quantity for canning and reduction, global demand has led to a shift toward table quality frozen whole products for human consumption and high-end aquaculture feed.

9. In 2000, commercial landings of wetfish, including squid and coastal tunas, totaled 455.6 million pounds (227,734 short tons) worth $38.9 million ex-vessel, and accounted for 83.6 percent by weight and 29.3 percent by value of all commercial fish landings in California.

Highlights – Economic Overview

• Estimated value added by commercial fishermen and receiver / processors:
Real value added (inflation adjusted) by fishermen in the wetfish industry complex fluctuates due to both market and environmental conditions, and ranged from a low of $10.5 million in 1992 to a high of $35.8 million in 2000. Two-thirds of real harvester value added was generated from the market squid fishery. Real (inflation adjusted) value added by wetfish fishermen in 2000 represented 29 percent of the total for all landed fish in California.

Real value added by receiver / processors (many of whom also perform their own distribution and export functions) in 2000 is estimated to range between $37.5 and $90.2 million, with a median estimate of $62.5 million. Based on our median estimate, real processor value added is about twice that added by commercial fishing, a relationship consistent with a recent analysis of the West Coast fishing industry complex by the Pacific States Marine Fisheries Commission. It is not unusual for processing and distribution to add a higher proportion of value than primary production or harvest in commodity-based industries.

Combined real value added by commercial fishing and receiving / processing in the wetfish industry complex in 2000 is estimated to range between $73.3 million and $126.1 million, with a median estimate of $98.3 million.

• Trends and impacts associated with export markets:
Export markets are playing an increasingly important role in this industry. The real value of California exports of anchovy, mackerel, sardines, squid and coastal tunas increased by 317 percent between 1989 and 2000, rising to almost $90 million in constant 1982 dollars in 2000. In contrast, real harvester revenues increased by 88.4 percent in the same time period.

In the period between 1989 and 2000, market squid generally represented between two-thirds and three-fourths of the value of total California exports in this industry (with the exception of El Niño years such as 1998).

In 1990 Pacific sardines represented approximately five percent of California exports by weight and by value. Between 1990 and 2000 the sardine fishery experienced a remarkable period of growth. By 2000 sardines represented almost one-third of California exports by weight, and almost one-fourth of California exports by value.

• Trends in product types:

At its peak the California tuna fishery employed 2,000 fishermen and an additional 6,000 workers at canneries, boat building and repair facilities. Between 1982 and 1984 many of the major California tuna canneries relocated outside of the continental U.S. to Asia, American Samoa, Central and South America, and Puerto Rico. The remaining major California tuna canneries at Terminal Island have undergone many changes in ownership in recent years and currently are closed down (although some minor quantities of niche market tuna canning still occurs in California). In August 2001 Thai-Union, owner of Chicken of the Sea, announced that their tuna cannery in California would be shut down and the equipment moved to their facility in American Samoa. Landings of all coastal tunas in California declined from 22.3 million pounds in 1981 to 5.2 million pounds in 2000.

The reduction fishery has been in a long-term decline since the mid-1970s. The decline in anchovy landings since 1982 can be attributed in part to declines in fish meal and oil prices, which reduced prices offered by reduction processors in the anchovy reduction fishery. The California Department of Fish and Game reports that no anchovy were reduced from 1992 to 1995, and only 7.8 million pounds of anchovy were reduced from 1996 to 1998. Reduction processors reported in 1999 that reduction is at best a break-even exercise, and as a result few orders are placed and few vessels participate in the anchovy reduction fishery.
These product forms have been replaced in large part by frozen fish (whole or cleaned), much of which is exported.

• Important trends in landings:

Landings in the resurgent California sardine fishery increased steadily during the 1980s and 1990s, rising from 31 thousand pounds in 1981 to 118.3 million pounds in 2000. The remarkable recovery in this historically important fishery is due to rapid growth in spawning biomass and subsequent increases in harvest quotas. The share of total real California wetfish export value contributed by Pacific sardines rose from approximately five percent in 1990 to almost 25 percent in 2000. According to the National Marine Fishery Service, sardines have been one of the top three commercial species landed in California based on weight between 1992-2000.

The harvest and processing of sardines in California contributed an estimated 20 percent of total real value added in the wetfish industry complex in 2000. Although market squid landings in California fluctuate due to El Niño conditions, landings increased from 51.8 million pounds in 1981 to 260 million pounds in 2000. Squid was the top commercial marine species landed in California in 1997, 1999 and 2000 based on ex-vessel revenue, and was second in 1995 and 1996. Moreover, squid was the top commercial species in California based on weight in 1993-2000 (with the exception of 1998).

• Important trends in landings (continued):

The harvest and processing of market squid in California contributed an estimated 60 or more percent of total real value added in the wetfish industry complex in 2000.

Taken together, squid and sardines represented 90 percent of overall landings and 91 percent of real ex-vessel value added in 1999 and 2000.

• Trends in the market structure of commercial fishing and receiving / processing operations:

In most of the wetfish fisheries, commercial fishing is a moderately concentrated to unconcentrated industry structure, meaning that landings are distributed among a relatively large number of fishermen. California's tuna fisheries are the most concentrated in this industry complex, meaning that landings are distributed among a relatively small number of fishermen.
In most of the wetfish fisheries in which receiver / processors serve as buyers, their industry structure is moderately concentrated to concentrated, meaning that most wetfish are sold to a relatively small number of firms.
The international markets in which California wetfish exports compete are competitive, and are occasionally prone to trade barriers, such as the 45 percent tariff on imported squid imposed by China in 2000.