

# Historical Review of the Coastal Pacific Whiting, *Merluccius productus*, Fishery

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## Introduction

The Pacific whiting, *Merluccius productus*, resource found off the west coast of the United States has been exploited commercially since before 1900 by the U.S. fishing industry and since 1966 by foreign fishing fleets (Jow, 1973; Forrester et al., 1978). The U.S. domestic fishery has two components: The traditional shore-based fishery, which consists of the catching and processing of fish by U.S. fishermen and processors, and the recently developed joint-venture fishery, which consists of the delivery and sale of fish caught by U.S. vessels to foreign processing vessels on the fishing grounds. The U.S. fishery for Pacific whiting was small in comparison to the foreign fishery whose annual landings from 1966 to 1981 averaged nearly 138,000 metric tons (t) per year. The development and growth of the joint venture fishery in the last few years have greatly increased the U.S. catch of Pacific whiting. This paper provides a historical review of the U.S. and foreign Pacific whiting fishery with emphasis on the changes which have occurred in the fishery since the enactment of the Magnuson Fishery Conservation and Management Act of 1976. (Magnuson Act).

## U.S. Fishery for Pacific Whiting

Until the development in 1978 of Pacific whiting joint venture fisheries between U.S. fishermen and foreign fishing interests, the U.S. fishery for

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Pacific whiting off the Washington, Oregon, and California coasts was relatively minor in terms of effort, landings, and value. The segment of the U.S. fishery primarily composed of the delivery of catch to shore-based processing facilities is commonly referred to as the "shore-based fishery." This fishery began off California before 1900 (Jow, 1973). Most catches were made incidentally during the pursuit of more valuable species and were either discarded or, as was the case in northern California, delivered with other low-valued

species to reduction plants producing animal food. From 1959 to 1966, the average annual landing in California was about 225 t (Nelson, 1970).

In 1964, the Bureau of Commercial Fisheries (BCF) demonstrated that large whiting catches to 60,000 pounds per half-hour haul could be achieved off Washington and Oregon using newly developed depth telemetry systems on large midwater trawls (McNeeley et al., 1965). In 1966, the BCF and Economic Development Administration in cooperation with the Grays Harbor Regional

Soviet BMRT-class factory stern trawler (top photo) used in their Pacific whiting fishery. At bottom, a catch of Pacific whiting is delivered to a Soviet processing vessel from a U.S. stern trawler (background) in a joint-venture fishery.



Planning Commission supported a study to determine the economic feasibility of establishing a commercial whiting fishery in waters off Washington. In that year, a small exploratory fleet of four vessels began fishing for whiting and delivered 5,166 t to a reduction plant located in Aberdeen, Wash.

The BCF chartered 10 vessels in 1967 to begin the full-scale study of feasibility, and over 12,000 t were landed. In the absence of sustained government support and adequate prices for fish meal, landings declined by two-thirds in 1968. Processors simply were not able to pay ex-vessel prices to fishermen that were competitive with prices for traditional groundfish species. Subsequently, relatively low levels of landings (about 1,000 t per year for 1981-83) for animal food production have continued, and there have been sporadic, small, independent efforts to create markets for whiting fillets and headed and gutted products. The domestic market for Pacific whiting food products is relatively small, but growing, and is met mostly by a winter fishery pursued in Puget Sound, Wash.

One of the primary objectives of the Magnuson Act when implemented in 1977 was to create a situation which would encourage the development of U.S. fisheries for species which were underutilized by the U.S. fishing industry. The Pacific whiting resource was one of the species considered underutilized by the industry and one which offered a potential for further development. Unfortunately, the economic, marketing, and processing problems resulting from the soft texture in the flesh of Pacific whiting (Anderson, 1985; Kabata and Whitaker, 1985; and Nelson et al., 1985) which hindered development of the fishery prior to 1977 have continued to hinder development since 1977.

In September 1978, the Marine Resources Company<sup>1</sup> of Seattle, Wash., initiated an experimental

<sup>1</sup>Mention of trade names or commercial firms does not imply endorsement by the National Marine Fisheries Service, NOAA.

joint-venture fishery for Pacific whiting between two U.S. trawlers and two Soviet factory trawlers. This initial joint venture landed 856 t of whiting in about 1½ months of fishing. The operation proved that U.S. fishermen, when given a high-volume market for a low-valued species, could operate profitably and could produce the large catches of whiting required to make the operation successful. The operation also demonstrated that high quality products could be produced from whiting immediately processed and frozen at sea and that these products could be marketed competitively in the international market by Marine Resources Company.

The success of the 1978 joint venture fishery led to an expanded fishery in 1979 which included seven U.S. trawlers and 11 Soviet factory trawlers acting as processing vessels. (There were never more than seven Soviet factory trawlers in active participation at any one time.) The joint venture fishery landed 8,834 t of whiting in 1979 which represented about a tenfold increase over the initial 1978 fishery. Since 1979, the joint venture has continued to expand. U.S. fishermen have conducted joint venture fisheries with Poland, Bulgaria, and Greece in addition to the Marine Resources Company's Soviet joint venture. In 1983, U.S. vessels landed 72,100 t of whiting in the joint venture fishery. The annual catches of whiting and numbers of U.S. trawlers and foreign processing vessels participating in the fishery are shown in Table 1 for 1978-83.

The joint venture Pacific whiting fishery from 1978 to September 1982 was primarily managed through a preliminary management plan for groundfish prepared by the U.S. Department of Commerce and by Department of Commerce restrictions on the permits issued to foreign vessels participating in the joint venture fishery. Since September 1982 the fishery has been managed by both restrictions placed on the fishing permits of the foreign processing vessels and by the Fishery Management Plan

for groundfish prepared by the Pacific Fisheries Management Council. The primary restrictions in the joint venture fishery, in addition to a limit on the catch of Pacific whiting, have been 1) strict limitations on the allowable retention of groundfish species other than Pacific whiting; and 2) restriction from 1978 through 1980 on the operation of the foreign processing vessels in the 3-12 mile area adjacent to the U.S. 3-mile territorial limit. Since 1981, foreign processing vessels participating in joint ventures have been allowed to work within the 3-12 mile area.

### Foreign Fishery for Pacific Whiting

The development of the foreign fishery for Pacific whiting has previously been described by Hitz (1970), Pruter (1976), Forrester et al. (1978), and French et al. (1981). The foreign fishery for Pacific whiting was initiated in 1966 by the U.S.S.R. and Japan. Soviet and Japanese fisheries expanded southward from the Gulf of Alaska in search of areas with a high abundance of Pacific ocean perch, *Sebastes alutus*. During the early years of the fishery, Pacific ocean perch was a secondary target species in the Soviet fishery and a primary target species of the Japanese fishery. During the first year of operation, the Soviet fleet landed 128,000 t of whiting and Japan landed 136 t of assorted groundfish species.

The foreign fishery continued to grow for the next 9 years and peaked in 1976 with a catch of 231,000 t of whiting (Table 2). During this 9-year period the Soviet and Japanese fleets

Table 1.—The catch of Pacific whiting in the joint-venture fishery off Washington, Oregon, and California, 1978-83, and the number of U.S. and foreign processing vessels.

Year	Pacific whiting catch (t)	Number of U.S. vessels	Number of foreign processors
1978	856	2	2
1979	8,834	7	11
1980	27,537	16	11
1981	43,557	22	20
1982	67,437	21	15
1983	72,100	19	16

were joined by vessels from Poland and the German Democratic Republic (East Germany) in 1973, the Federal Republic of Germany (West Germany) in 1975, and Bulgaria in 1976. Regulation of the foreign fishery was extremely limited during this period. Bilateral agreements between the United States and the foreign countries were the primary means of control. These agreements generally included time-area closures, catch limits, and prohibitions on the retention of Pacific halibut, *Hippoglossus stenolepis*; salmon, *Oncorhynchus* spp.; and crab. The various conditions of bilateral agreements which the United States established with the U.S.S.R., Poland, and Japan and which affected the fisheries of these nations for Pacific whiting, are provided in Forrester et al. (1983).

The passage of the Magnuson Act by the United States in 1976, and its implementation in March 1977, gave the United States exclusive management authority over the fishery resources occurring within 200 miles of its coast. The Magnuson Act authorized the establishment of fees and permits for the licensing of foreign fishing vessels; catch allocations for foreign fisheries and pound-

age fees for fish caught; the enforcement of time, area, and gear restrictions; requirements for submission of detailed catch and effort data; and the placement of fisheries observers on foreign fishing vessels. For 1977, the total allowable level of foreign fishing (TALFF) for Pacific whiting was set at 123,000 t. Only the U.S.S.R. and Poland were permitted to fish for Pacific whiting that year. Additionally, strict by-catch limits were placed on the incidental catches of other groundfish species taken in the Pacific whiting fishery, and the fishing season was limited from 1 June through 31 October. The catch restrictions imposed by the United States in 1977 reduced the foreign catch of Pacific whiting to 127,000 t, compared with the peak historic catch of 231,000 t in 1976 (Table 2).

Since 1977, the foreign catch of Pacific whiting has continued to decline. The U.S.S.R., Poland, and Mexico received allocations for Pacific whiting in 1978 and 1979 (Mexico, however, did not use its allocation). In 1980, Soviet fishing privileges within the U.S. 200-mile zone were rescinded as one of the economic sanctions imposed by the United States in response to the Soviet

invasion of Afghanistan, thus ending their 14-year direct participation in this fishery. Poland's 9-year participation in the Pacific whiting fishery was ended in 1982, as a result of the termination of its fishing privileges by the U.S. in response to the implementation of martial law in Poland. Bulgaria was permitted to fish in 1981 and 1982. Bulgaria's catch of 7,100 t of Pacific whiting in 1982 represented the smallest annual foreign fishery for whiting since the U.S.S.R. initiated the fishery in 1966. There was no directed foreign fishery for whiting conducted in 1983.

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Table 2.—Annual catches of Pacific whiting taken off the coasts of Washington, Oregon, and California by foreign nations, 1966-83<sup>1</sup>

Nation	Bulgaria	E. Germany	W. Germany	Japan	Poland	U.S.S.R.	Total	TALFF <sup>5</sup>
Year								
1966				4		128,000	128,000	
1967				4		195,092	195,092	
1968				4		67,896	67,896	
1969				98		109,225	109,323	
1970				1,400		200,754	202,154	
1971				799		146,726	147,525	
1972				307		111,269	111,576	
1973		2		3,782	2,200	139,060	145,042	
1974		2		8,259	44,354	156,708	209,321	
1975		2,000	3	3,214	41,542	155,405	202,161	
1976	24,200	26,000		3,334	23,668	154,129	231,331	
Magnuson Act Implementation								
1977					16,805	110,208	127,013	123,200
1978					26,721	70,106	96,287	120,000
1979					18,073	96,837	114,910	161,400
1980					44,023		44,023	120,000
1981	7,023				63,342		70,365	95,000
1982	7,089						7,089	35,000
1983							0	35,500

<sup>1</sup>Catch data for 1966-76 from Murai et al. (1981). Catch data for 1977-82 from unpublished data from the Northwest and Alaska Fisheries Center, NMFS, NOAA, 2725 Montlake Blvd. E, Seattle, WA 98112.

<sup>2</sup>East Germany conducted a fishery in 1973 and 1974 but catch statistics are not available.

<sup>3</sup>West Germany conducted a fishery in 1975 but catch statistics are not available.

<sup>4</sup>Groundfish fishery conducted by Japan but no record of the Pacific whiting catch in that fishery.

<sup>5</sup>TALFF denotes "Total Allowable Level of Foreign Fishing" under the Magnuson Act.