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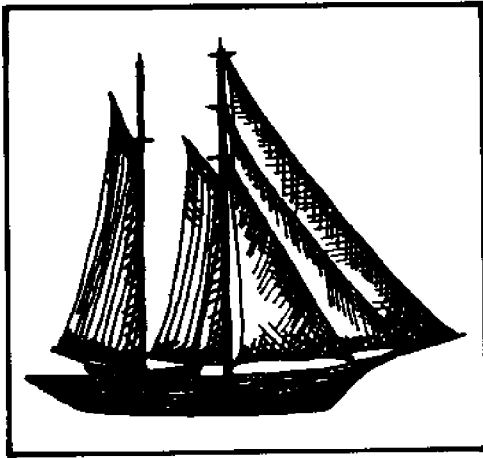
# FISH OR CUT BAIT

COURTLAND L. SMITH

OREGON STATE UNIVERSITY  
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# Reaching out



## INTRODUCTION

The history of Oregon's commercial fisheries has been dominated by two little-noted events with far-reaching impacts. The first, the innovation of canning salmon, changed salmon from subsistence fare for settlers and Indians to a commodity sold worldwide. The first cannery on the Columbia River opened at Eagle Cliff, Washington Territory, in 1866. Salmon was king until 1935, when the Oregon legislature changed regulations to allow the reduction of pilchard, a herring, into oil. This second event led to the development of the modern trawl fisheries.

These events divide the history of Oregon's commercial fisheries into three periods. Before 1866, fishing was primarily inshore to feed settlers and Native Americans. From 1866 to 1934, the salmon industry grew to worldwide importance. With the exception of trolling for salmon, fishing was still mainly inshore. In 1935, trawl fisheries reached out into the ocean to establish a major new sector of the fishing industry. Since 1935 rapid expansions

and declines have taken place in the exploitation of many different offshore species.

Coupled with the development of each fishery have been attempts to develop rules for conservation of the fish resources. These conservation attempts have had to cope with the complexities of natural variations in resource availability, competition between various types of resource users, the influx of foreign distant water fleets, modification of fish habitats and the goal of fishers and processors to harvest more fish.

Perhaps events receiving little attention during the 1970s may provide the shape of the future. One such event was experiments on Puget Sound and in Oregon with fish farming. Fish farming is a method for achieving greater control over fish resources. Perhaps the fourth era in the history of Oregon commercial fisheries will see changes in the behaviors of fish harvesters from that of hunters and gatherers to that of fish farmers and husbandmen.

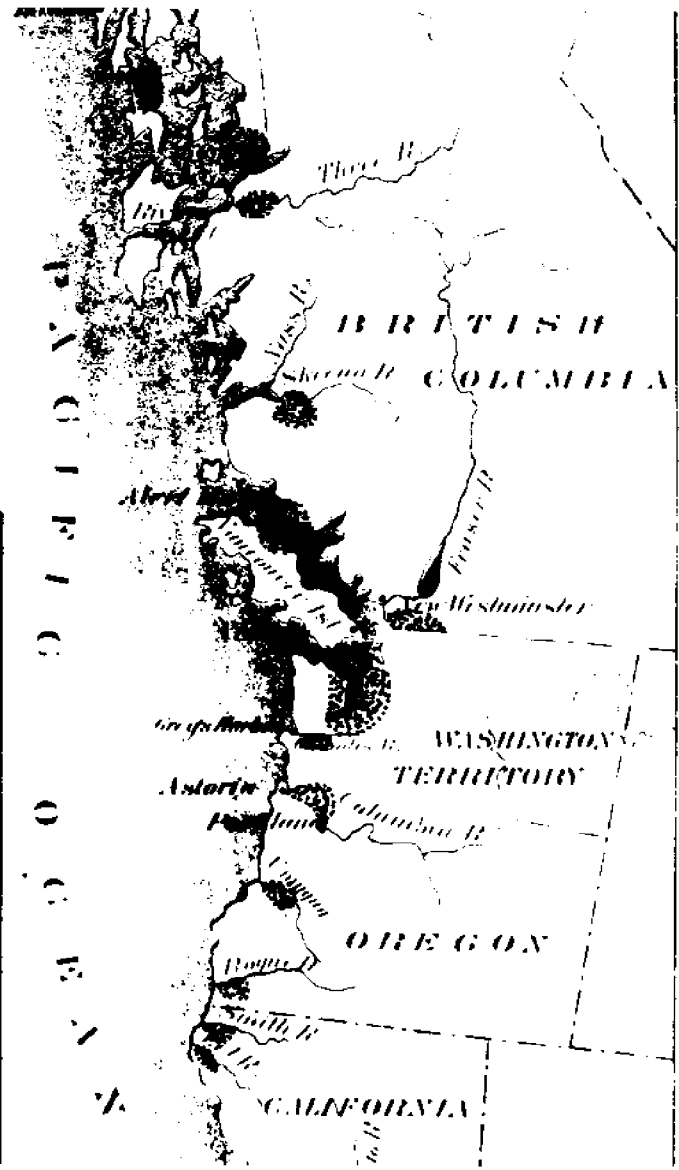
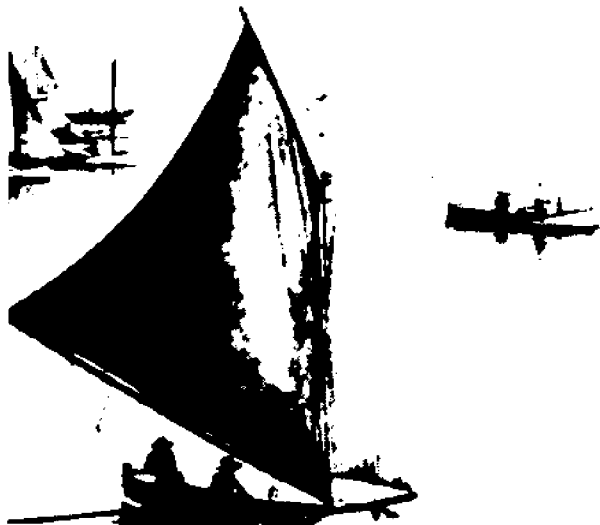
WM. T. COLEMAN & CO'S.  
GENERAL MAP

OF  
**SALMON DISTRICTS**  
ON

☼ Pacific Coast ☼



The Red Lines indicate the location of the Salmon Fisheries.



Pacific coast salmon districts, 1886



*Chief Raven Blanket, Nez Perce Indian (Curtis)*

## THE FOREIGNERS ARE TAKING OUR FISH

Harvesting such natural resources as furs, fish and timber for commercial sale was introduced to the Oregon country by Euroamerican settlers in the early 1800s. The idea of commerce, the developing of natural resources for sale elsewhere, was foreign to the Native American inhabitants of the Columbia Basin. For Euroamericans, development and trading of natural resources was one of the dominating cultural traits which stimulated their exploration and colonization of vast areas of the world.

Native Americans inhabiting the Columbia Basin did trade their fish resources with neighbors. They did not, however, seek markets solely for personal or group economic gain. Seeking a shorter trade route to the East, James W. Cook explored the Pacific Coast. Robert Gray, discoverer of the Columbia River for colonial America, did so on a fur trading mission. Gray's objective was to trade cloth, brass buttons and chisels with Native Americans for pelts which he would then trade in China for tea. Lewis and Clark's journey to the Northwest was to discover the area's wealth and ways for the new American nation to exploit it.

From the 1830s attempts were made to market the salmon resources of the Columbia River. Means for preservation and storage limited these attempts to only a few relatively minor salt salmon fisheries. Preservation in cans was the innovation which created the potential for marketing the Columbia River salmon runs.

Canning was a French innovation. Nicolas Appert published, in 1810, the results of his work on food preservation in the book entitled, *The Book for All Households, or the Art of Preserving Animal and Vegetable Substances for Many Years*. Applying knowledge of canning to salmon, William and George W. Hume, with the technical assistance of Andrew S. Hapgood, began canning Sacramento River salmon in 1864. The Humes were of Scottish heritage, born in Maine and migrating to California seeking wealth in the gold rush. Their first canning attempts on the Sacramento were frustrated by reduced salmon runs caused by hydraulic mining, overfishing and stream obstructions. In 1866 they shifted their operations to the Columbia River. On the Columbia, salmon canning rapidly took hold. Astoria was founded in 1811 as a fur trading post. By the 1880s it was the world center for the salmon industry. Through 1886 Columbia River canneries provided over 50 percent of the salmon pack. Sales prior to the turn of the century were made in North and South America, Europe, Australia, Polynesia, India, Africa and Japan.

The U.S. Census of 1880 was taken in June. It reflected the dominance of the canned salmon industry on the economy of Astoria and Clatsop County. The county's population was 7,055. Nearly one-third—2,252—were Chinese, and three-fourths of the Chinese worked in the salmon canneries. Chinese laborers had been introduced by George W. Hume in 1872 because of the unreliability of the white seasonal workers. Almost one-fifth of Clatsop County's residents in June 1880 were fishermen. Most of

the fishermen were transients. Many came to Astoria from the Sacramento to fish the four month salmon season from April through July. Of the 1,293 fishermen, over 90 percent were single, and six out of every seven lived in local boarding houses. Most of the fishermen, 84 percent, were of foreign birth. Sweden, Finland and Norway were the homelands of over half. Only 16 gave Oregon as their birthplace.

Most of the fishermen were gill-netters. Government studies made in the late 1880s described their activities.

In gill-net fishing on rivers it is necessary to work in a straight reach of water of fairly uniform depth and free from snags or sharp ledges. . . . A clear reach is selected, and this is called a "drift." In a river like the Columbia there are likely to be many drifts, and to each a special name is applied, such as "Brown's Reach," "Jones' Drift," etc. In setting the net the boat-puller rows slowly across the stream while the captain pays out the apparatus, to the first end of which a buoy and lantern have been attached. When about two thirds of the gear is out the boat is turned downstream nearly at right angles to her former course, so that the net, when set, approximates the shape of the letter L. . . . The nets are "laid out" at nearly right angles, or diagonally to the river's course, so that they will intercept the salmon that are running in. Drift-net fishermen set their apparatus only on high water slack, or what they denominate "on the turn of the tide." The gill-nets are

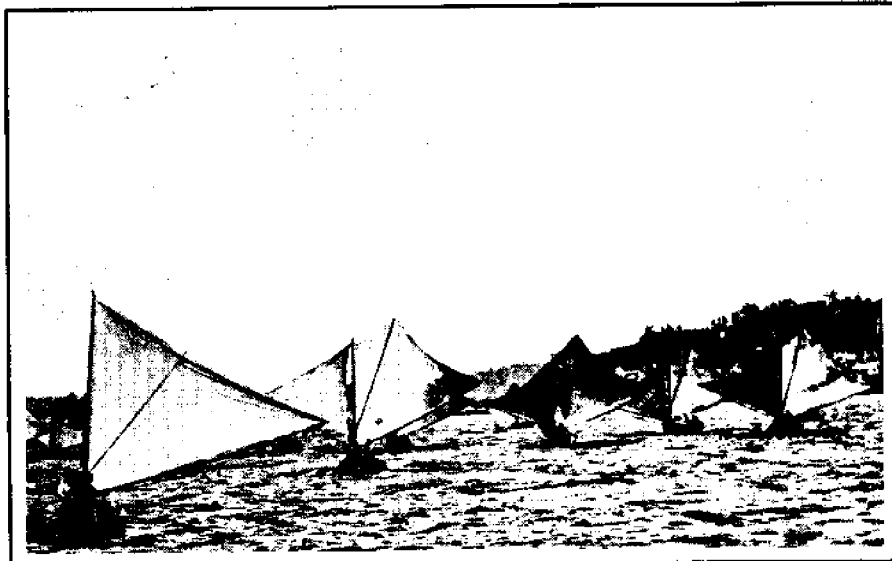
put out about an hour before high water and generally drift until an hour after.

The net presents a sloping wall almost, if not quite imperceptible to the sight of the fish, and totally impassable unless Mister Salmon would do what many a good man has to do, back down and surround the obstacles he meets. But when the Almighty made the salmon he endowed it with a degree of obstinacy unparalleled in the animal kingdom. . . . When the fish meets a gill-net he may, perchance, be lucky enough to strike it sideways, and then he will go poking around for a time till he thinks he has the lay of the net, and finding that it runs in a diagonal line, he gives a flirt with his tail, crowds on all sail, and makes a vicious slantwise dive to make up for lost time. The instant he does this he is a doomed salmon. . . . His calculations were all right so far as the main body of the net was concerned, but he never stopped to calculate on the corner at the boat end, and so he dashes head foremost into the net, the fatal mesh slips over his head till it is past the gills, and each succeeding struggle only jams him tighter and tighter.

When the boat nears the end of the drift the corner end is let loose, and away they go as hard as they can pull to pick up the lamp end of the net. . . . Then the boatman (boat-puller) slowly backs up to the net, and as he does so the slack is hauled in. . . . As the net is hauled in the fish are picked out of the



*Chinese laborers in a cannery (Oregon Historical Society)*



*Butterfly fleet racing at Astoria regatta circa 1900 (OHS)*

meshes. If not already dead they are killed by a blow over the nose (with a club), for to leave fish to slowly die in the bottom of a boat spoils its flavor.

The nets set farthest down the river are often (if not generally) most successful. This leads to much competition in getting the best berths and causes the fishermen to take great risks in venturing near the bars upon which the ocean waves break heavily.<sup>1</sup>

Many who took these chances did not come back telling fish tales. Death was frequent for the early sail-powered gillnetters. Fishing too close to the bar, inaccurate tide information, overloaded boats, storms, inexperience, drunkenness and a high, fast river all contributed to the death toll. Being washed across the bar and out to sea was one of the most common hazards facing gillnetters. On the night of May 3, 1880, a sudden Southwest storm hit, compounding the hazards to fishermen. Over 20 died that night, helpless at the mercy of the elements. Mr. Acklan reported, May 6, 1889, in the *Daily Astorian*, that he saw two men on the bottom of their gillnet boat heading for the breakers. He said that he "could do nothing to save the men, and they bid him farewell by tipping their hats as they entered the jaws of death."

The Corps of Engineers made studies of the navigation hazards beginning in 1882. In an 1887 report Captain Charles F. Powell said, "The prevention of gillnet fishing near and on the bar would result in a saving of life, some twenty to sixty fishermen are drowned there each year."<sup>2</sup>

Year	Harvest <sup>a</sup> (pounds)	Gear Type <sup>b</sup> (no. units)			
		Gillnet	Pound Net	Seine	Fishwheel
1866 <sup>c</sup>	272,000	2	0	0	0
1880 <sup>d</sup>	36,040,000	900	few	several	2
1890	29,633,000	1,192	168	35	41
1904	36,864,000	2,371	393	92	49
1915	43,839,000	2,856	301	59	27
1934	27,901,937	1,219	238	57	27
1950	15,258,000	1,060	0	0	0
1970	15,515,000	682	0	0	0

<sup>a</sup> Pounds salmon and steelhead landed at Columbia River processing plants and buying stations.

<sup>b</sup> Major gear used in river. Set nets, trolling, dip nets and purse seines were also used.

<sup>c</sup> Gear and harvest refer to canned salmon only. Several salt salmon fisheries operated and their harvest is not included.

<sup>d</sup> Pound nets and fishwheels reported in 1879.

Source:

Columbia River Fishermen's Protective Union, 1890, Pamphlet, Astoria; William A. Wilcox, 1895, "Fisheries of the Pacific Coast," *Report of the Commissioner for the Year Ending 1893*, Washington, G.P.O. and 1907 *The Commercial Fisheries of the Pacific Coast States in 1904*, Bureau of Fisheries Doc. No. 612, Washington, G.P.O.; Lewis Radcliffe, 1919, *Fishing Industries of the United States*, Bureau of Fisheries Doc. No. 875, Washington, G.P.O.; and National Marine Fisheries Service, 1937, 1953, 1973, *Fisheries Industries of the United States*, Washington, G.P.O.

Table 1. Columbia River gear



*Cutting salmon (OHS)*



The hazards of fishing were played down because competition among canners for fish forced the retention of as many fishermen as possible. The *Weekly Astorian*, August 20, 1887, commented that "the only reason that 1,500 boats were on the river was that every time a cannery put on a half dozen, every canner had to follow suit." The first year salmon were canned by Hapgood, Hume and Company at Eagle Cliff, Washington Territory, two gillnet boats harvested most of the one quarter million pounds of salmon used to put up the 4,000 case pack. For the period 1889-92, 1,200 gillnet boats each averaged 12,300 pounds of salmon, or one-tenth the 1866 catch.<sup>3</sup> Over the next thirty years even more gear was introduced (Table 1).

When salmon canning commenced on the Columbia little else was going on. Oregon had only been a state for seven years and Washington was still a territory. R. D. Hume who helped his brothers George and William get established commented:

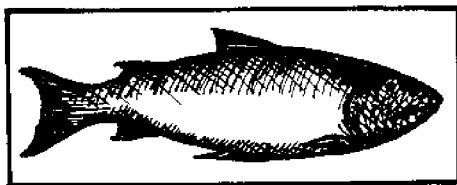
We spent the winter making cans and making nets having brought the material with us. It is a very lonely place there, the nearest neighbor being three miles off. . . . It rained forty days and forty nights without interruption.<sup>4</sup>

In 1877, R. D. Hume, after successfully operating several canneries on the Columbia, established himself on the Rogue River where he was able to gain greater control over the fishery by purchasing land along both banks of the river and restricting the access of fishers not under his employ. In

this way Hume calculated that "my property pays me ten per cent on \$1,000,000."

The population of Oregon and Washington was only 115,000 in 1870. By 1880 it had more than doubled to nearly 250,000. Given the salmon pack estimated to be 530,000 cases of 48 one pound cans, this would have provided each inhabitant of the two states with 100 pounds of canned salmon. Salmon and potatoes, however, were the staple diet of many residents. The major value of the salmon pack was as a generator of jobs and new income. This was very different from the subsistence and cultural value which the salmon resource had for the Native American populations of Oregon and Washington whose fish the settlers were taking.

# Salmon for subsistence



## USUAL AND ACCUSTOMED PLACES

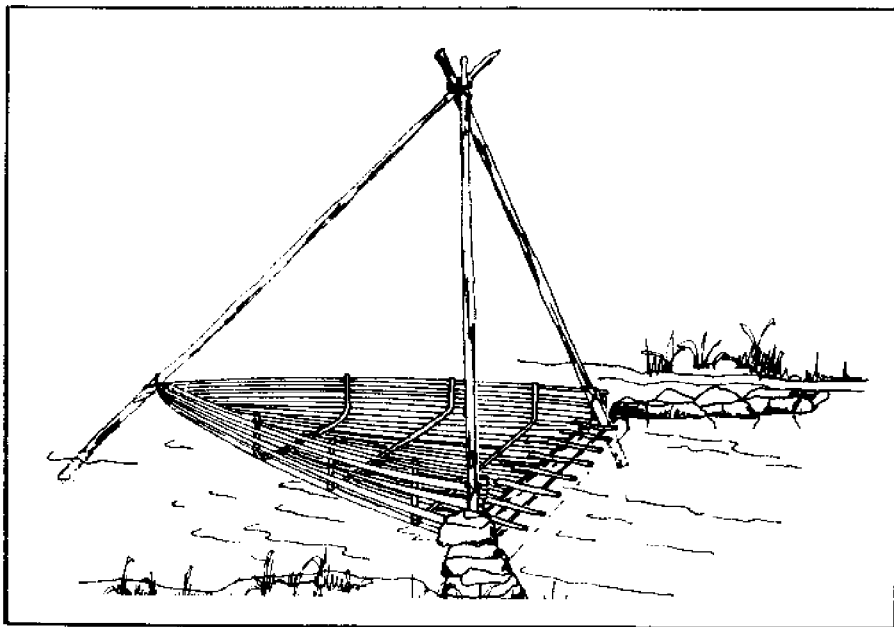
Living in the Oregon country prior to the coming of explorers, traders and settlers were 100,000 Native Americans. Of these, 50,000 lived in the Columbia River basin and harvested an estimated 18 million pounds of salmon for their subsistence needs.<sup>7</sup> The estimate is based on an average consumption of one pound of salmon per day. Many early settlers and explorers averaged much more than this.

The estimate does not correct for the difference between the dressed weight of the salmon and the weight as harvested. Only three-fourths of the harvested weight can be consumed. This correction would add another 6 million pounds to the estimated harvest weight. Salmon were also dried and used as fuel in the mid-Columbia region. This too has not been included in the estimate.

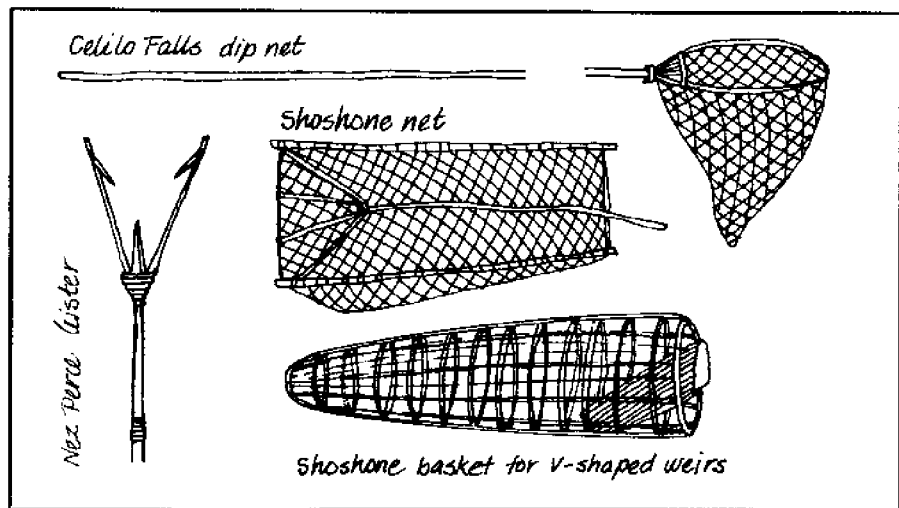
With the influx of Euroamericans, the Native American population declined, principally due to diseases. The 1851 Annual Report of the Commissioner of Indian Affairs estimated the Columbia River Indians at one-sixth of the precontact population or about 8,280. Sometime during the 1840s the Euroamerican population

and the Native American populations were of equal size. In terms of dynamics, however, Euroamericans were increasing rapidly while the reverse was true for Native Americans.

Early explorers noted fisheries all along the Columbia and its tributaries, as well as all along the coast. The gears used to harvest salmon were traps, weirs, baskets, spears, hook and line, and seine, set and dip nets. The method which attracted the most attention was the dip net. This device was fished in rapid water. The net was hung on a 4 foot diameter hoop attached to a 30 foot pole. The dip net was usually fished blind, meaning that the fisherman could not see the fish. Dipping platforms were built over eddies, which caused the bag of the dip net to flare. When a salmon entered, the net was made to slide on the hoop and close together around the fish. The fisherman lifted the net with fish from the water. Accounts report several fish occasionally being caught in one dip at the height of a run. Twenty fish were sometimes caught per hour. Men were dip net fishers, women were the fish processors, preparing the salmon for consumption fresh or preparing them for storage.



*Nez Perce fall trap (adapted from Walker, 1967)*



*Northwest Indian salmon gear (adapted from Hewes, 1947)*



*Wishram dipnetter on the Columbia (Curtis)*

Dipnetting was observed at Wilamette Falls, Kettle Falls on the Columbia near the Canadian border, Salmon Falls on the Snake River and Spokane Falls. But the most important site was Celilo Falls near The Dalles. Celilo Falls was the fishing grounds for tribes from throughout the Northwest. The annual harvest at Celilo Falls was probably on the order of 4-5 million pounds. Due to population decline and competition from fishwheels and other gear of Euro-american commercial fishermen, the Celilo commercial and subsistence harvest by Indians was less than 1 million pounds per year from the 1880s to 1934. Indian fishers sold most of their catch to local processors, although they did retain some for subsistence and ceremonial purposes. In 1934 the citizens of Washington passed Initiative 77 which excluded fishwheels, fish traps and seines which competed with the dipnetters. Passage of Initiative 77, along with earlier exclusion of fishwheels by Oregon voters in 1926, caused the average annual dipnet harvest to more than double.<sup>6</sup> By 1947-54, the last years before the Celilo dipnet fishery was inundated in 1957 by The Dalles Dam, Indians were harvesting an average of 2.5 million pounds of salmon and steelhead per year.<sup>7</sup> Seventy-five percent were sold to commercial fish processors.

Native Americans had become commercial fishermen in the 1830s when they sold some of their salmon catch to the salt salmon operations started by traders. In fact, according to Bancroft, the failure of Andrew Wyeth's Columbia River Fishing and Trading



*Indian women preparing salmon (OHS)*

Company on Sauvies Island was due to Hudson's Bay Company chief factor, John McLoughlin.

From the very first, McLoughlin was satisfied that the Columbia River Fishing and Trading Company would prove a failure; nay, he was determined it should be so. Besides discouraging the natives of the Lower Columbia from trading . . . and assisting in catching salmon for the Americans, the Hudson's Bay Company planted a rival establishment in that vicinity.<sup>8</sup>

Salmon did not bring a very high price. On Tillamook Bay, Captain Means attempted to start a salt salmon fishery. He erected a fish trap in the fall of 1852, but only caught one fish. He then resorted to purchasing salmon from the Indians whom he paid one pint of diluted whiskey for ten salmon.<sup>9</sup>

The 1850s were the low point of the Native American fishery. Since that time, they have waged a steady fight in the courts and elsewhere to regain their lost fishing grounds. In 1855, treaties were agreed to between the United States and the various tribes in the Northwest. Each of these treaties granted Native Americans "the right of taking fish at all usual and accustomed places, in common with citizens of the Territory." As commercial fisheries have reached out into the ocean for their catch, and as inshore fisheries have become more and more dominated by sports anglers, the Indian fishermen have felt that fisheries managers used conservation rules to discriminate against them. A group

of Columbia River Indians brought suit. In his decision in *So Happy v. Smith*, Judge Belloni ruled that

Indian treaties, like international treaties, entered into by the United States are part of supreme law of the land which the states and their officials are bound to observe.

At least three limitations on state's power to regulate exercise of Indians' federal treaty right to fish are: (1) the regulation must be necessary for conservation of the fish; (2) The state restrictions on Indian treaty fishing must not discriminate against Indians; and (3) they must meet appropriate standards.<sup>10</sup>

Another major decision, written by Judge Boldt, February 12, 1974, for a case brought by Indian fishermen on Puget Sound, interpreted "in common" to mean the opportunity for harvesting equal shares. Judge Belloni applied the equal shares concept to Columbia River spring chinook in

May 1974 and to fall chinook in August 1975.

Native American fishers on the Columbia River are disadvantaged by their geographical position in the harvest system. Nearly all the fish they harvest are taken with set nets above Bonneville Dam. They averaged 1.6 million pounds per year, 1969-74. Before the salmon reach the Indian set net fishery, they are fished on by Alaska, British Columbia, Washington, Oregon and California trollers and sports anglers. In addition, gillnetters fish the salmon runs in the Lower Columbia. The harvest of these non-Indian fishers exceeds 25 million pounds per year.

The equal shares concept created a great deal of strife when implemented for Puget Sound salmon runs. Planning and the fact that hydroelectric power dams were perceived as the reason for inadequate salmon supplies resulted in less strife and in expanded efforts to enhance Columbia River salmon productivity.

# When salmon was king



Until 1935 salmon was the most important Oregon commercial fishery. Commercial halibut, crab, crawfish and oyster fisheries were of minor importance. Captain James J. Winant and his brother Mark shipped Yaquina Bay oysters to San Francisco in the early 1860s. The oyster trade flourished for a time and included Alsea, Netarts and Tillamook Bays. By the 1890s Eastern oyster seed was being used to replace the overfished Pacific oyster stocks on an experimental basis. Professor Washburn of the University of Oregon with the help of Professor Covell, a mechanical engineer at Oregon State Agricultural College, worked to transplant Eastern oysters in Yaquina Bay. Some success was reported for such transplants in San Francisco Bay; unfortunately the same successes were not achieved in Yaquina Bay.

The Winants provided one of the first industry consolidation schemes.<sup>11</sup> Their proposal, developed in 1874, was to consolidate oyster processing interests to reduce the fierce competition. The Winants, who also fished Shoalwater Bay (Willapa Bay, Washington), suggested that all oystermen be consolidated into one company. The company would, Winant argued, be able to "afford to pay the producer

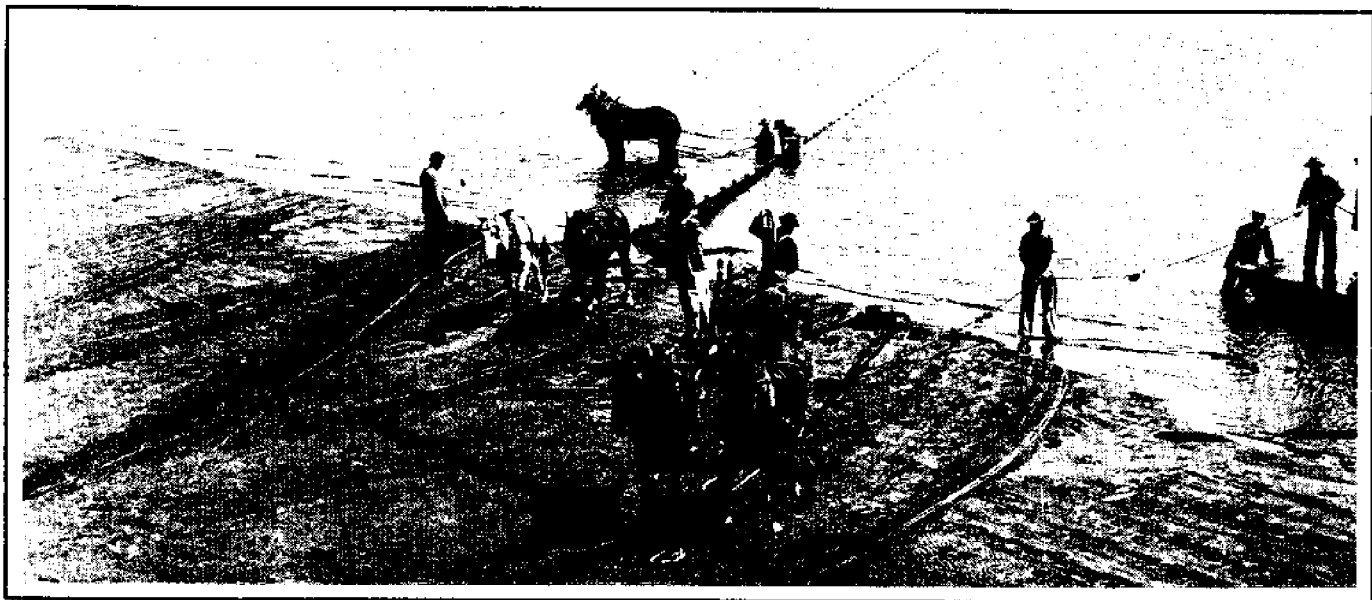
a price that would be a fair compensation for his labor, and . . . would enable them to furnish the retailer at a lower price than heretofore."

The same problem faced the canned salmon industry. Joseph W. Collins of the U.S. Fish Commission in 1892 said that "during the golden years fish could be bought cheaply and sold at high prices. But competition soon stepped in, and with increased output new markets had to be sought."<sup>12</sup> The price paid Columbia River gillnetters increased from 15 cents per fish in 1866 to \$1.00 by 1887. At the same time the market value of canned salmon decreased from \$16 per case to \$5. The number of canneries increased from 1 to 39. The positive effects of this competition between processors was the attraction low prices had to more consumers and the pressure for innovations in salmon processing.

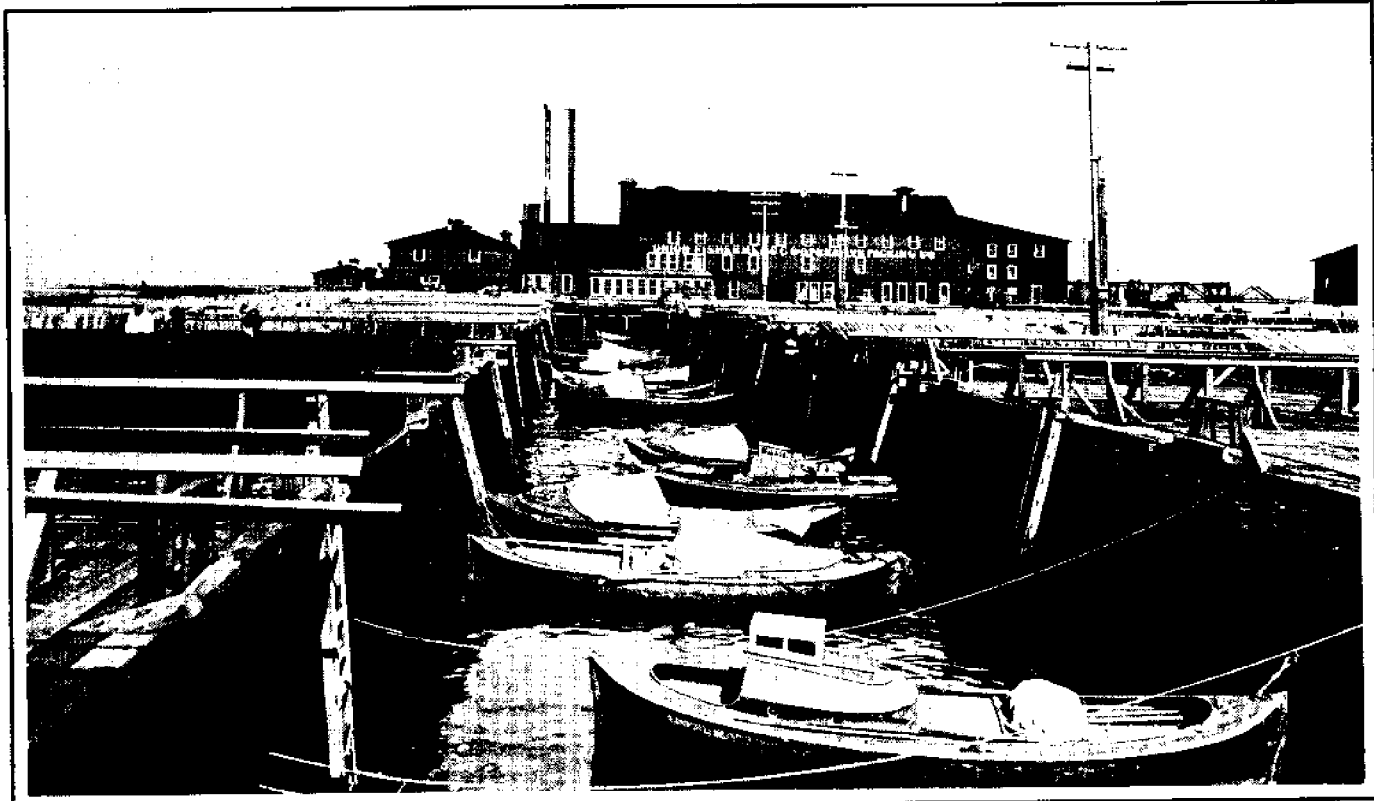
To increase productivity, George W. Hume introduced Chinese labor. R. D. Hume introduced horse seining, the double bowed steam launch, soldering machines and automatic canning machines. Numerous other innovations improved the productivity of Columbia River canneries as they adapted to the cost-price squeeze. The



*Oyster Derby (Lincoln County Historical Society)*



*Horse seining, Sand Island, Columbia River (OHS)*



*Union Fishermen's Cooperative Packing Company (OHS)*

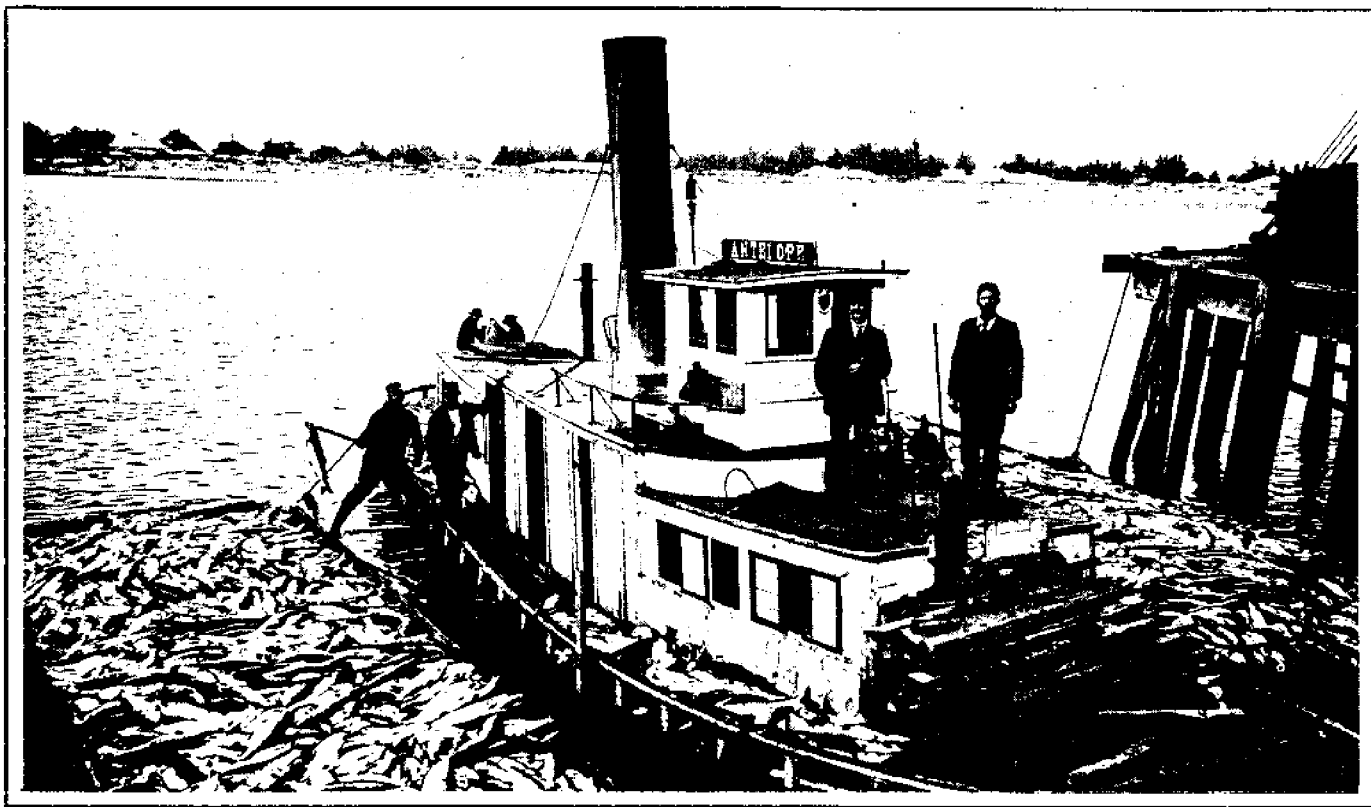
squeeze persisted, however. The solution then became to reduce competition between canners. Organizations of canners much like that suggested by Winant were started. The Alaska Packers Association was begun in 1892. The Columbia River Packers Association was incorporated in 1899. The British Columbia Packers Association modeled after the Alaska Packers Association was incorporated in 1902. In 1904, W. H. Barker, a

Columbia River packer, became its manager. In 1913 his brother Fred became manager of the Columbia River Packers Association. These organizations were able to reduce the proliferation of canneries operating, blunt the wage demands of fishers and have greater force in setting and holding market prices.

The Columbia River Packers Association reduced the number of canneries operating by 25 per cent be-

tween 1898 and 1899. Prices paid fishermen did not increase above 4 to 6 cents per pound until 1917 when World War I demand for salmon pushed prices to 10 cents per pound. The market price established for first grade canned salmon nearly doubled by 1916. New forms of organization, then, helped solve the economic problem of increased competition and reduced profit.





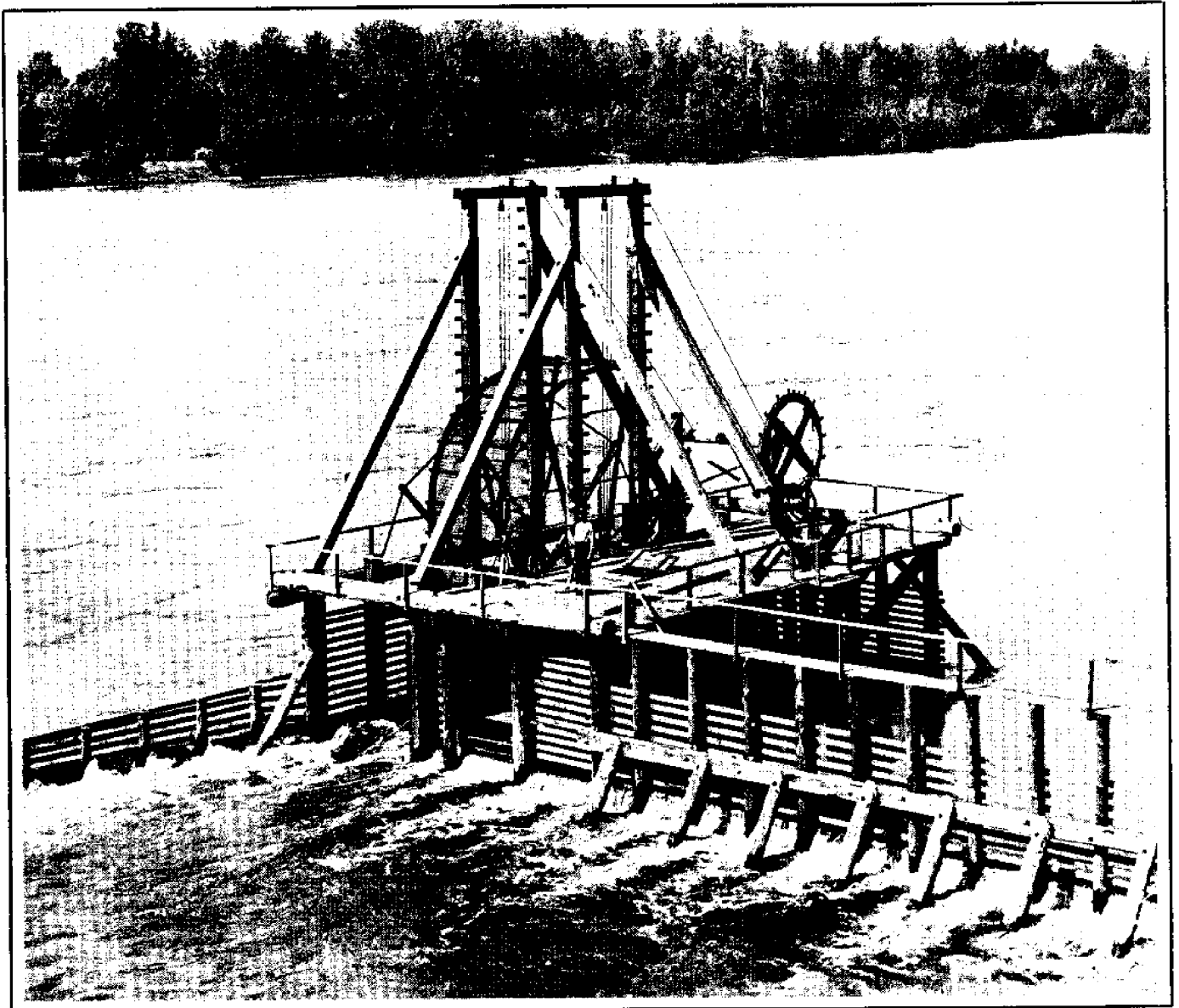
*One night's catch by 30 boats on the Coquille River, circa 1900 (Douglas County Historical Society)*

Another problem which faced the early canners was resource depletion. This problem persisted through all development phases of the salmon fishery, and still has not been solved. Two approaches to the problem were tried. One was restrictions on the gear and fishing seasons. The other was to augment the supply. In 1876, largely at the request and with the financing of salmon canners, Livingston Stone of the U.S. Fish Commission opened a

hatchery on the Clackamas River. Although this early hatchery effort had no apparent impact, it did show concern for the condition of the resource. The Oregon legislature passed salmon conservation rules as early as 1878. These, too, were of little effect due to lack of enforcement. Master Fish Warden, H. G. VanDusen, after a 1903 inspection said, "I found that fishing was being carried on in all directions and no pretense whatever

being made to respect the law."<sup>13</sup> This was a common finding, and when fishers were apprehended, local judges levied no or only minimal sentences.

The adjustment to resource decline was to substitute other similar species or seek out salmon in other areas. Prior to 1888 very little packing was done of fall chinook, blueback, steelhead or coho salmon. Spring and summer chinook were the most desirable fish for canning. As markets



*Columbia River fishwheel (OHS)*

increased and the abundance of these runs decreased, Astoria based packers either put up the less desirable species, moved or opened up branch establishments elsewhere.

Coastal streams were opened for salmon canning by 1877. R. D. Hume started that year on the Rogue River. The *Weekly Astorian* of April 14, 1877, mentions that a cannery was also built on the Umpqua. Canneries were started on the Siuslaw River and Tillamook Bay in 1878. In 1883 a salmon cannery was opened at Parkersburg on the Coquille. Canning began in 1886-87 on the Alsea, Necanicum, Nehalem and Nestucca Rivers and Yaquina Bay. In 1896 one opened on the Siletz. The Oregon coastal pack reached nearly 200,000 cases in 1906, 50 per cent of the Columbia River pack of that year. The pack was just over 150,000 cases in 1911, but declined after that. By 1953, except for small amounts canned for commercial sale and custom canning for sports anglers, coastal processors had shifted to preparing salmon fresh and frozen for tourist and retail sales.

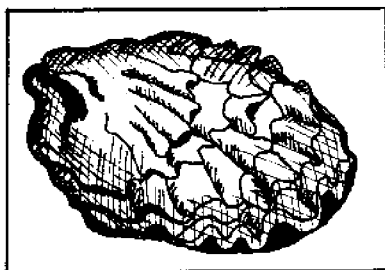
Oregon coastal streams provided additional canned salmon resources only during the early 1900s. Most Columbia River salmon packers looked to other Pacific coast salmon areas. Many were affiliated with operations in Alaska, British Columbia or Puget Sound. The quality of the Columbia River spring and summer chinook, however, was most highly prized and brought the highest market price. Prior to the depression of the 1930s Columbia River fall chinook were regarded as a low grade of fish,<sup>14</sup> and the fall fish price was one third to one half the spring

season price. (In 1975, fishing on both spring and summer chinook runs was curtailed due to small run sizes.)

As canners looked to new areas, so did fishermen. Trolling for chinook and coho was known to the Indians. Ocean trolling began as a commercial enterprise off Monterey, California, in the 1890s. By the early 1900s and with the development of gasoline engines trolling was taken up by Oregon fishers. Trolling became a way to avoid the closed period from August 25 to September 10. Trolling—like fishing the Columbia River bar, diver nets, fishwheels, etc.—was an innovation of fishers to catch more fish.

The pressure to catch more fish by inventing new gear types, new fishing methods, opening up new areas and fishing other species worked in opposition to the conservation rules which attempted to limit the effectiveness of fishers. Since management rules can only react to fishing innovations, conservation seems to have lagged behind, always trying to catch up.

# Diversification



Prior to the late 1930s, other fisheries besides salmon were tried. The oyster fishery failed in the late 1800s because of resource depletion. A commercial shad fishery was begun on the Umpqua in 1918. After 1928 it produced one-third to one-half the Oregon shad harvest. A 1914 coastal survey of the fishing grounds found that in Newport "the *Sea Dog*, a 20-foot boat using three hand lines, caught about 500 pounds of halibut in a 10 hour day; and the *Wanderer*, a 60 footer, reported making a catch of about 1,000 pounds." The report said, "The local fishermen did not avail themselves of all the opportunities presented, nor was any great energy displayed in prosecuting the little fishery that was carried on."<sup>15</sup> The problem was more lack of markets than lack of will. Few people lived in Newport and express rates to other areas were very high. An unfavorable bar, fog and bad weather further complicated the fishing. Newport fishermen, in the early 1900s, also engaged in small crab and salmon fisheries.

The story of lack of markets, poor transportation and difficult fishing conditions was repeated up and down

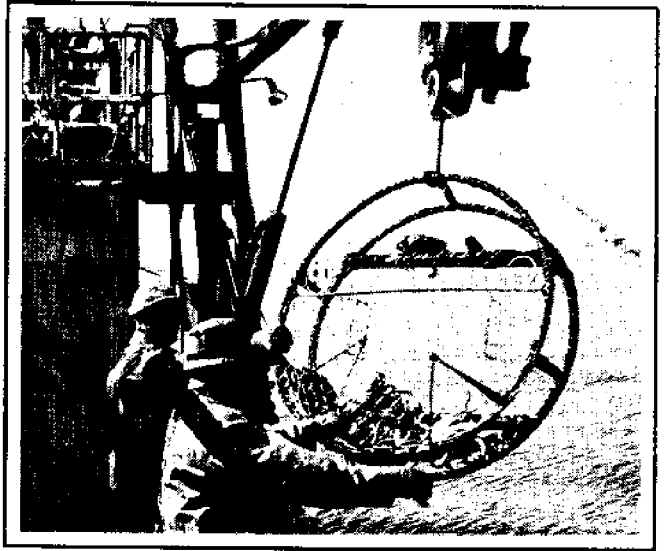
the Oregon coast. Until the mid-1930s, the Columbia River salmon industry continued as the premier fishery.

The year 1935 began a new era in Oregon's commercial fisheries (Table 2). The world canned salmon pack reached its peak in 1936. The salmon news after that was pretty much decline due to changes in stream habitat, dams and other obstructions, encroachment of foreign fisheries, especially off the Alaskan coast, and increased demands of sports anglers. In 1935 the Oregon legislature revised the commercial fishing codes to make possible the reduction of pilchards or sardines. As a result of the legislative change several reduction plants were established on Coos Bay and at Astoria. Over 50 million pounds of pilchards were landed in 1935. Pilchards had been fished and canned in California as early as 1892. In September 1903, pilchards were packed in Astoria.

Labeling was one of the marketing problems. First, they were called "mackerel," but Federal authorities required that they be called "pilchards." Later they changed their minds and required "sardine." This led canner



*Albacore*



*Dungeness crab*



*Petrale sole*

Year <sup>a</sup>	Total Harvest Pounds	Fishery				
		Salmon & Steelhead <sup>b</sup>	Percent		Albacore & Tuna	Shrimp
			Trawl <sup>c</sup>	Crab		
1904	27,535,000	97	•	1	0	0
1915	34,708,000	95	•	1	0	0
1934	26,458,000	82	2	8	0	0
1935	85,392,000	33	62	3	•	0
1944	79,026,000	23	32	11	28	0
1954	43,485,000	23	47	23	1	0
1968	94,498,000	11	24	12	40	11
1973	91,538,000	19	23	2	27	27

<sup>a</sup> Less than 1 percent.

<sup>a</sup> Selected to emphasize significant changes.

<sup>b</sup> Steelhead prohibited from commercial sale in 1975.

<sup>c</sup> Includes cod, flounder, grayfish, hake, lingcod, mink food, perch, rockfish, sablefish, skate and sole.

Source:

W. A. Wilcox, 1907, *The Commercial Fisheries of the Pacific Coast States in 1904*, Bureau of Fisheries Doc. No. 612, Washington, G.P.O.; Lewis Radcliffe, 1919, *Fishing Industries of the United States*, Bureau of Fisheries Doc. No. 875, Washington, G.P.O.; National Marine Fisheries Service, *Fishery Statistics of the United States*, Washington, G.P.O.; and Fish Commission of Oregon, 1974, *Biennial Report*, Portland.

Table 2. Relative commercial fishing importance

Frank Booth to comment, "While the scientists may war over the proper name and classification of our fish, all we ask is that we may be allowed to pack them and market them, and give the public a chance to eat them, in peace."<sup>16</sup> The naming of fish products is one of the critical phases in marketability. Naming can keep a product within the bounds of acceptable food preferences, or it can make the fish product unmarketable if the name is associated with a class of "trash" fish.

Starting in 1935, pilchards were reduced for their oil which was used in paints, varnishes and toilet articles. Each ton produced about 40 pounds of oil. Fishing was best in mid-July and August, and continued through November. The vessels and capital for the fishery came from California. In fact, vessel shortages were reported to have restricted the early catches. Fishing was done at night during the dark of the moon when the phosphorescent glow that accompanied the activity of the school was easiest to see. The fishery did not last long. By 1942 California vessels were harvesting all the pilchards before they began their migration north, and the Oregon pilchard fishery became insignificant.

The quest for pilchards started the modern commercial trawl fisheries. Attempts to start trawl fisheries on groundfish were made in the 1880s. A beam trawler, the schooner *Carrie B. Lake*, was fishing off the Columbia River between 1884 and January 3, 1886 when three members of her crew were lost. The Yaquina Deep-Sea Fishing Company started operation in 1888, but lack of markets made this enterprise unsuccessful. The lack of sufficient markets plagued most early

attempts at a trawl fishery. For example, a 1915 attempt out of Bay City, Oregon met with economic failure when the fish price dropped. On the first drag, the *George R. Vosberg*, a steam tug outfitted with an otter trawl, got 800 pounds, which was sold at 10 cents per pound. "When a load of 8 tons was made, the price dropped to 2 cents a pound."<sup>17</sup>

A successful trawl fishery for food fish was started off the Columbia River in 1937. Two San Francisco-owned trawlers took nearly 300,000 pounds of petrale sole which were dressed headless and shipped to San Francisco. Three otter trawlers operated in 1938 when Newport and the Yaquina Bay Fish Company were the center of the otter trawl fishery for food fish. In 1940 Astoria became important with 20 trawlers landing two million pounds. World War II stimulated demand, and in 1945, 73 vessels delivered about 26 million pounds of groundfish. After the war markets collapsed. Synthetic preparation of vitamin A and foreign imports of fish livers in 1949 also ruined the dog fish and shark fisheries.

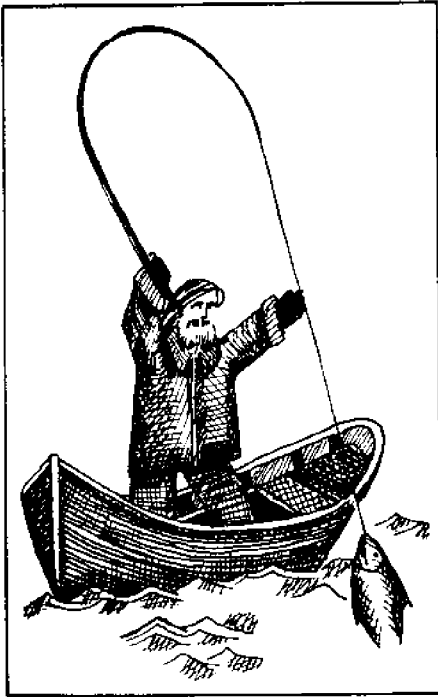
Trawlers were sustained in the 1950s by mink food markets. Mink had been fed horse meat and other less desired meat products prior to World War II. When these supplies became unavailable during the war, mink producers switched to using the carcasses of filleted fish. After the war the fillet market declined, and whole fish were taken for mink feed.

The expansion of Oregon commercial fisheries after 1935 resulted in a number of rapidly fluctuating growth and decline cycles (Table 2). As one fishery was started and declined, the

stimulus was to start another. The pilchard fishermen encountered albacore in 1936 while scouting for pilchard. One vessel landed more than a ton of albacore using jigs. This find stimulated salmon trollers and halibut vessels to turn to albacore. The albacore catch increased to 22 million pounds in 1944, declined to less than 500,000 pounds in 1954 and then resurged to 37 million pounds in 1968. Small amounts of groundfish for mink food were harvested in the early 1940s. By 1952 this was an established fishery. It reached its peak in 1956 at over 11 million pounds, after which it declined to less than 2 million pounds and by 1969 was under 1 million pounds. The Fish Commission identified shrimp populations in commercially adequate quantities, and this fishery began in 1955-56.<sup>18</sup> It reached 25 million pounds in 1973.

Numerous environmental and social factors caused the ocean fisheries to go through relatively rapid growth and decline cycles. Albacore disappeared off California in 1925 and reached peak catches off Oregon in 1944 and 1968. The location of the Japanese Current's warm waters was identified as one possible cause of the albacore appearance. Evidence suggested that dungeness crab availability was related to upwelling cycles. Market declines hurt the mink food and shark fisheries. Overexploitation caused declines in the pilchard and sole fisheries. The decline of the ocean perch fishery was blamed on Soviet distant water fleets.

# Fish or cut bait



As a group, fishers adapt quickly to changes in resource availability, market conditions and the intrusion of outsiders. They adapt by developing new gear and fishing patterns, by formulating organizations to gain greater sway in the marketplace and by obtaining legislative decisions favorable to their interests.

The early commercial fishermen on the Columbia River used hand operated beach seines and gillnets. In 1879 fishwheels and traps were introduced. In the early 1900s, sail power was replaced by marine gasoline engines. The late 1930s saw introduction of the otter trawl to harvest groundfish. Fathometers were added to trawlers in the early 1940s. This enabled fishermen to stay on the desired depth. By the late 1940s, most of the trawl fleet had radios. Automatic pilots were another postwar innovation, along with radar and sonar. Loran, a locational device, was first used in 1949. Stabilizers to control the roll of the boat were installed in the early 1950s. The late 1950s brought echosounders which were used to locate fish concentrations.

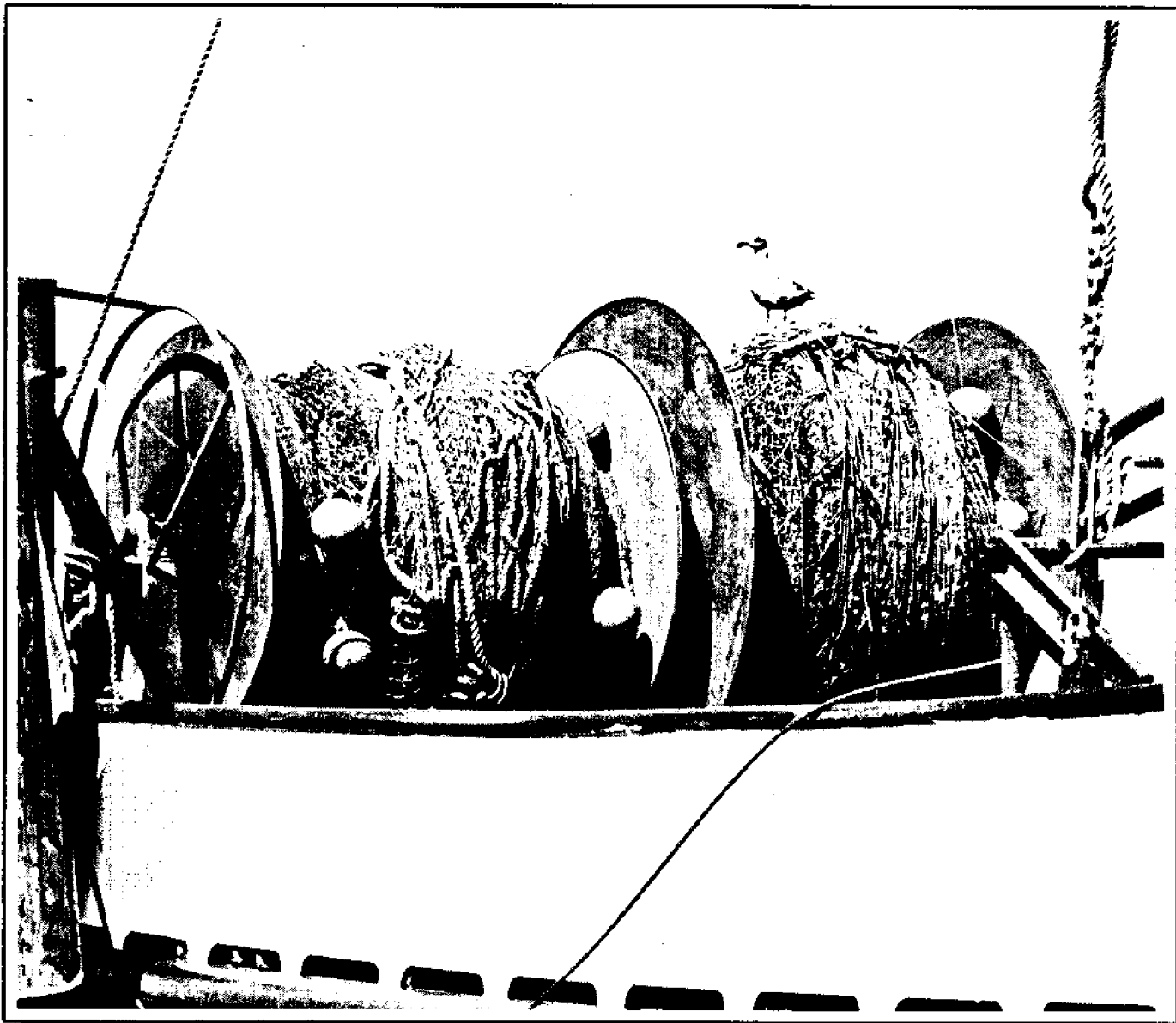
Trawling in the early years was done at 20 to 50 fathoms (120 to 300 feet). Trawling depths increased to 100 fathoms in the late 1940s, and

deep trawling, up to 500 fathoms, opened up the Pacific perch fishery. In addition, Oregon fishermen have developed special boat launching techniques to take advantage of fishing grounds off Port Orford and Pacific City.

The postwar period was also a time of rapid boat building (Figure 1). The war had prevented construction of new boats. The oldest vessel still registered in 1972 was the trawler, *Jeannie F. Decker*. She was a converted halibut schooner built in 1901. While many of the boats constructed were larger vessels for trawling, the Oregon fishing fleet during the postwar period was a small boat fleet (Figure 2). In 1972, nearly three-fourths were under 5 net tons. This reflected the characteristics of the commercial fishermen.

Relatively few of Oregon's licensed commercial fishermen fished full-time. They were limited by the availability of fish. Salmon occurred offshore and in streams at specific times and peak runs lasted only a few days or weeks. Albacore appeared along the coast for only a brief period in the late summer. Crabs molted during the summer and were unsuitable for harvest.





*Trawling gear*

Based on Coast Guard registry data as of February, 1972. N = 828. Date unknown = 13. Built 1971-72 = 46.

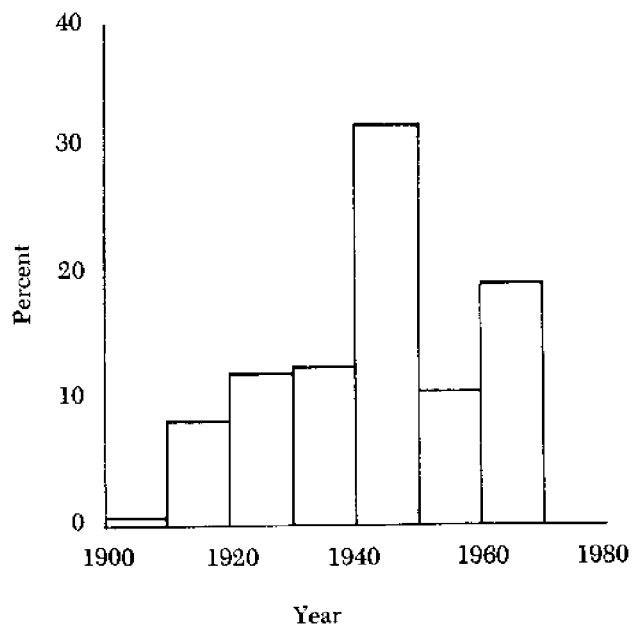


Fig. 1. Year built Oregon documented fishing vessels

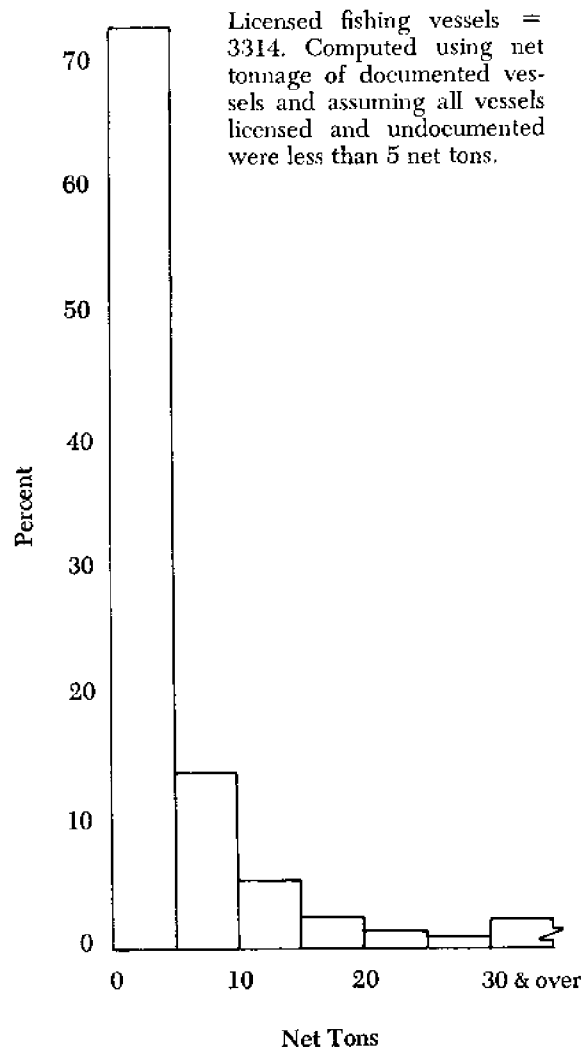


Fig. 2. Net tons licensed fishing vessels, 1972

Pattern	Gross Returns	Returns Less Fixed & Variable Costs	Returns Less Costs, Labor and Management
<b>SALMON</b>			
Troller, Average .....	2,215	-59	-944
36 Ft. Charleston Troller (MEDS-26) .....	8,820	3,029	-499
42 Ft. Charleston Troller (MEDS-27) .....	13,440	2,433	-2,943
28 Ft. Astoria Gillnetter (MEDS-3) .....	10,175	2,327	-1,744
30 Ft. Astoria Gillnetter (MEDS-41) .....	22,450	12,919	-551
<b>CRAB</b>			
Average .....	25,721	8,643	-1,646
	73,808	28,569	-955
<b>COMBINATION</b>			
Salmon-Tuna, Average .....	11,369	3,415	-1,133
Salmon-Tuna-Crab, Average .....	36,807	15,838	1,115
40 Ft. Brookings Troller-Crabber (MEDS-2) .....	52,816	21,911	784
32 Ft. Port Orford Troller-Crabber (MEDS-1) .....	23,200	8,537	-47
50 Ft. Coos Bay Shrimper-Crabber (MEDS-5) .....	119,100	61,333	16,075

Source:

(Average) David S. Liao and Joe B. Stevens, 1975, *Oregon's Commercial Fishermen: Characteristics, Profits, and Incomes in 1972*, p. 13.

(MEDS) Fred Smith, 1973, *Marine Economics Data Sheets*, Oregon State University Marine Advisory Program.

Table 3. Fishing patterns and income, 1972-73

To adapt to the varied patterns of fish, the patterns of fishermen were varied. There were three general types of commercial fishers. To fishermen who fished full-time, commercial fishing was a profession. Usually they owned the larger boats and alternated between the salmon, albacore, crab and trawl fisheries. The successful professional fisherman was an expert in matching resource availability with market potential. Many fishermen holding Oregon licenses were part-timers. These were people who would like to fish full-time, but used other jobs to supplement their family income. Many part-timers were experts in a particular fishery. The third group were sport-commercial fishers. Typically this group had smaller boats. They fished mainly on weekends and vacations, and they fished predominantly for salmon.

A study of salmon fishers' incomes in 1917, made in support of the price regulation policies instituted during World War I, showed the part-time nature of salmon fishing. The study showed that a gillnetter and his puller could each average \$125 per month fishing the entire four month spring season. Those who fished only the two peak months averaged \$150 per month.<sup>19</sup>

In addition to inventing gear types, fishers invented occupational complexes such as logger and fisher, long-shoreman and fisher, teacher and fisher, wife and fisher. Many used fishing to supplement their retirement. Fishers also worked as mill workers, fire fighters, police, students, undertakers, jailers, doctors, dentists, lawyers and a variety of occupations to sustain their family income. A 1951 study of

Oregon commercial fishermen showed that less than one third earned all their family income fishing. Nearly half earned only one-quarter of their income fishing.<sup>20</sup> A 1971 study reached similar conclusions.<sup>21</sup> Fishers adapted by having other non-fishing occupations and by combining the fisheries in which they engaged (Table 3).

Even though for many fishing was a part-time activity, it was an enterprise where success was measured by the quantity caught. For each fisher the goal was to catch the most fish. The one landing the most was called a "highliner." Each day along the docks and net racks, in the coffee shops, cafes and taverns fish receipts and landings were discussed and the highliners identified.

The highliner was the innovative individual. When proven successful, the highliner's ideas spread. Other problems facing commercial fishers required groups of fishermen to work together. The oldest organized group of fishermen was the Columbia River Fishermen's Protective Union. It was formed in 1886 out of fishermen's organizations dating back to the 1870s.<sup>22</sup> The purpose of the union was to get better fish prices from canners and to stop and preferably eliminate the competition from fish traps, fish-wheels and haul seines. At each legislative session the union introduced bills to restrict competing gear, and they tried to obtain favorable administrative rulings from agencies like the Corps of Engineers, who could declare fish traps hazards to navigation. Sometimes during the late 1800s the gillnetters took things into their own hands. The union "discouraged" Chinese cannery workers from engaging



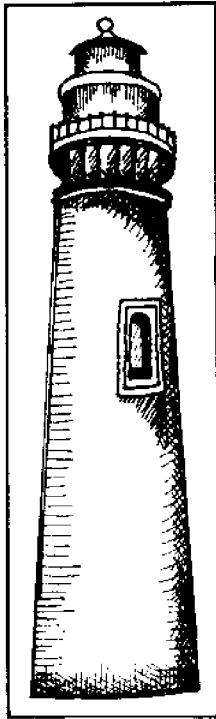
in gillnetting, and they were known to remove fish traps which they thought were illegally placed.

Fishermen also needed legislative and public support in pursuing their interests. An example was numerous fish fights. In one fish fight on the Rogue River, sports anglers sponsored a ballot measure election in 1910 and won closure of the river to commercial fishing. In 1913 commercial fishing interests had the legislature reopen the river over the veto of Governor Oswald West. Sports anglers went to a ballot measure again in 1918, but failed to win closure. In 1919 sports anglers were able to get the legislature to close the Rogue, but Governor James Withycombe vetoed the bill after the legislative session ended. A compromise between commercial fishing interests and sports anglers passed the 1921 legislature. A 1930 ballot measure for closure failed, but the legislature closed the river to commercial fishing in 1931. Commercial interests went to the public in 1932 and by referendum had the closure repealed. Finally, the 1935 legislature closed the Rogue to commercial fishing, and this decision was not reversed. Sports anglers secured closure of all coastal streams to commercial fishing with passage of a 1956 ballot measure. In 1975 they successfully sponsored a ballot measure which prohibited the commercial sale of steelhead.

Commercial fishermen organized in 1965 to meet a new challenge. Soviet trawlers appeared off the Oregon coast in that year. Rapid action by fishermen succeeded in obtaining a 12 mile fisheries zone. By 1974 the "foreigners taking our fish" included Soviet, Japanese, North Korean, East German and

Polish trawlers. A new invasion had taken place in Pacific Coast fisheries almost exactly 100 years after the innovation of canned salmon. The new fishers introduced the concept of factory-ship fleet fishing. A few trawls of these large ships could equal an entire season's catch by a local trawler. The tables had turned, and there was an outcry for new treaties to preserve the fish resources and the right of fishing for the local residents.

# In search of stability



The activities of fishers in inventing gear, finding fishing locations, developing new fisheries, getting organized and participating in the politics of conservation were directed at maintaining a place. They were trying to continue their position in the fish harvest system. This was not necessarily because fishermen do not like to change, but it was because those of us who are consumers tend to fall into buying patterns. Our buying habits are upset by price fluctuations, deficiency of supply and variation in quality. We are skeptical of new items, and we have many food prejudices. To maintain their place fishermen need consumers. The search, then, was for markets and stabilizing management policies which would enable fishermen to satisfy the needs of consumers.

After World War II fisheries management was compounded by the expansion of recreational fisheries on salmon, crab, clams, some groundfish and albacore. The thought was

. . . if we take the approach of maintaining the resources at maximum productivity and administering for their conservation in an impartial and scientific manner, there

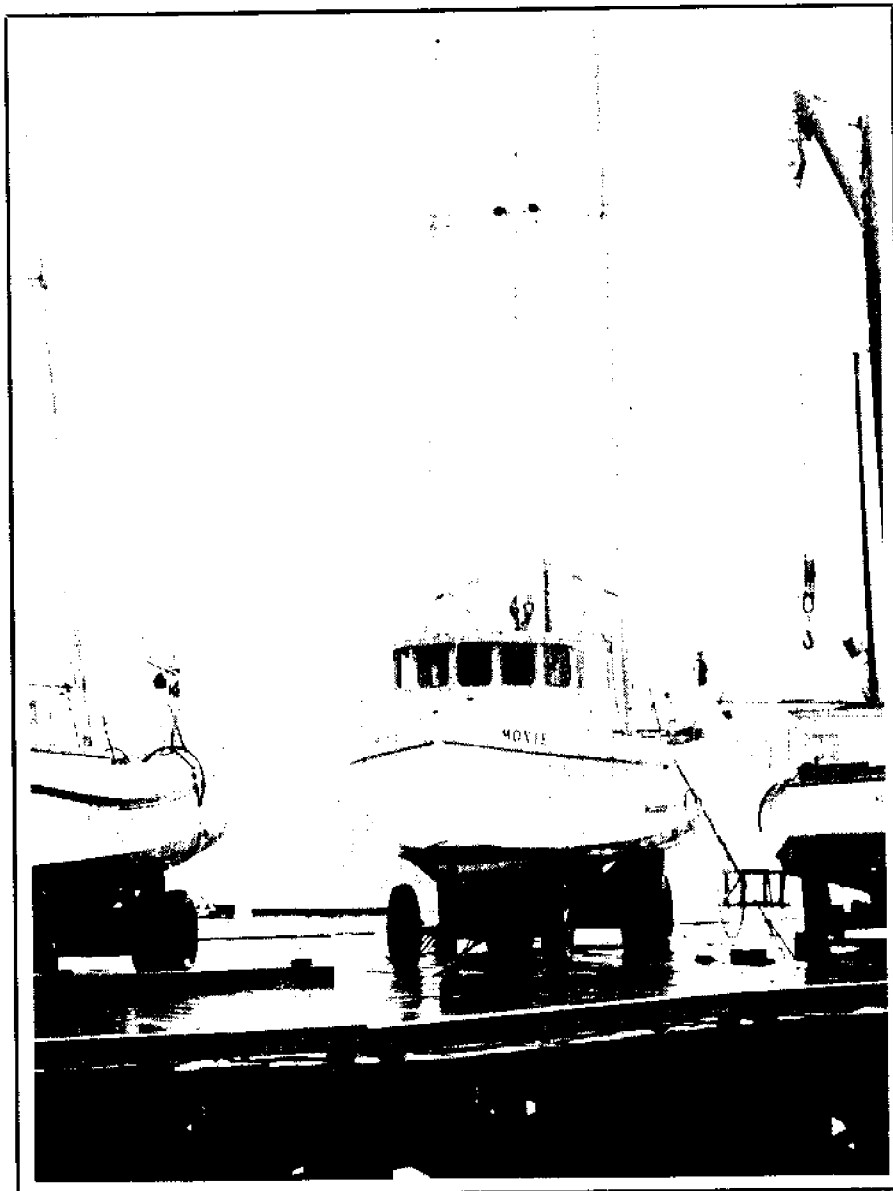
will be little need for concern as to who will harvest the fish, recreation-seekers or commercial fishermen.<sup>23</sup>

Where maximum productivity is less than the requirements of recreation and commercial fishers, decisions have to be made as to what proportion of the fishing goes to each group.

One of the mechanisms for allocation has been 22 ballot measure elections which have had the effect of having citizens make important management decisions regarding allocation of fish resources. In 1926 the public decided to outlaw Columbia River fishwheels in Oregon. In 1934 the citizens of Washington outlawed fishwheels, traps and seines. These ballot measures resulted in increased salmon catches by Columbia River gillnetters and Indian dipnetters. The closure of all Oregon coastal streams to commercial salmon fishing in a 1956 ballot measure election led, in part, to considerable improvement in the sport salmon catch. The 1958 Fish Commission *Biennial Report* stated that harvest trends "in 1957 indicate an increase of 1.5 to 3.7 times that of any season in the preceding ten years." The doubling of the allowable annual



*Planting salmon fingerlings in Jackson Creek, 1950 (OHS)*



*Protecting fishing boats from heavy seas, docking on wheels, Port Orford*

sport salmon harvest from 20 to 40 in 1970 undoubtedly increased their proportion of the ocean salmon harvest over commercial trollers.

In addition, there were the distant water fleets and fishers over which fisheries managers had little control. Columbia River bound salmon were harvested by sports anglers and commercial trollers off the coasts of Washington, British Columbia and southeast Alaska. Hake and ocean perch were harvested by Soviet trawlers. This brought demands for extension of fisheries jurisdiction.

The problem of distant water fleets and the suggestion for extending fisheries jurisdiction was recognized by the Fish Commission in 1938. Master Fish Warden M. T. Hoy said,

Jurisdiction of the United States should be extended well beyond the continental shelf. Whether the limit of such jurisdiction should be fixed 100 miles at sea or be set as to include the biological range of our principal offshore fishes, is something to be determined later. . . . This department has already drafted resolutions for extensions of jurisdiction.<sup>24</sup>

In 1972 the Oregon Legislature extended its jurisdiction to 50 miles. The state, however, lacked the ability to enforce this extended jurisdiction and the law raised serious constitutional and legal questions.

Federal action on the problem of distant water fleets came in 1976. The Fishery Management and Conservation Act of 1976 extended the fishery conservation zone from 12 to 200 miles. Foreign fleets, after March 1,

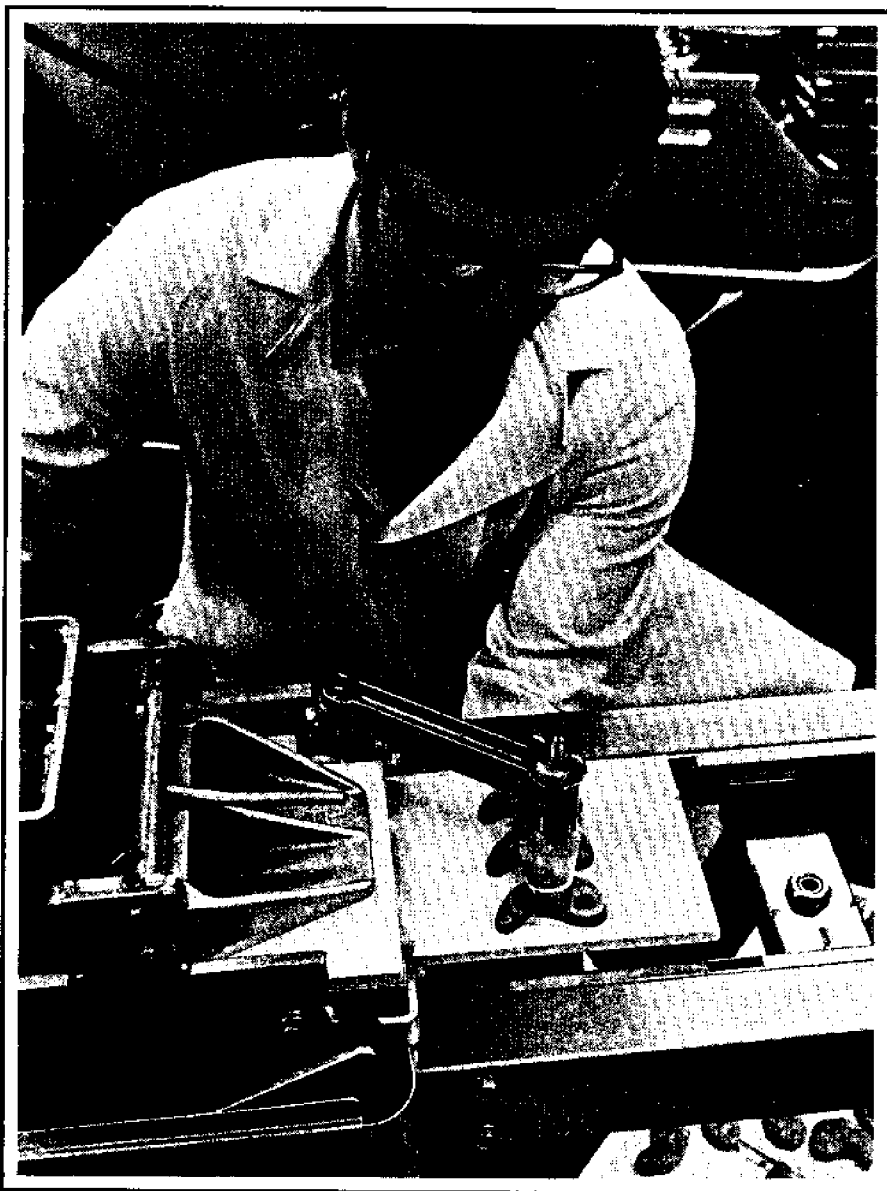


1977, are required to have permits. As fish stocks are rebuilt, increased domestic catches are expected.

As important as the extension of fisheries jurisdiction was the development of a new management agency. Eight regional councils were designated to prepare fisheries management plans. The regional councils (Oregon belongs to the Pacific and North Pacific Councils) are a major management innovation. Their authority and impacts are wide-ranging.

The activities of commercial fishermen, then, are dependent on the behaviors of citizens in ballot measure elections, the rules passed by legislators, the actions of administrative agencies and decisions reached in the courts. The forces driving all these actions are citizens acting on their concerns regarding the economy, ecology and the attributes of a good society.

Oregon's commercial fisheries face a complex set of environmental, economic and social factors which affect harvests and the importance of fisheries to society. The environmental factors have been subject to considerable scientific study. Study of the Columbia River salmon fishery was conducted by Livingston Stone in 1875-76. David Starr Jordan and Charles H. Gilbert were reported in Astoria in 1880 working on a U.S. Fish Commission study.<sup>25</sup> The hatchery research done by the Oregon Fish Commission pioneered innovations in hatchery operation and feeding of salmon. Because of his expertise developed in Oregon hatchery work in 1921, R. E. Clanton was invited to study and make recommendations on hatchery development in British Co-



*OSU Seafoods Laboratory in Astoria*

lumbia. The Fish Commission expanded its studies to the pilchard, groundfish, shark and albacore fisheries in the late 1930s and 1940s. The Seafoods Laboratory at Astoria was dedicated April 19, 1940. During the 1947-48 biennium a shellfish laboratory was established at Newport to study razor clams, bay and ocean crabs and oysters.

The concept was advanced for management of Pacific fisheries that scientific study should precede management regulation. Principal architect of this concept was Miller Freeman, editor of the *Pacific Fisherman*. He was successful in implementing the concept in the 1923 treaty establishing the International Fisheries Commission, later known as the International Pacific Halibut Commission. Freeman attributed 30 years of failure to gain a sockeye salmon treaty between the United States and Canada to the attempt to write regulations in advance of scientific study. In 1914 Freeman suggested to President Suzzallo of the University of Washington that scientific study and training would be enhanced by a school of fisheries. One was established in 1919.

Freeman's *Pacific Fisherman* advocated fish experiment stations modeled after agricultural experiment stations. The December, 1917, *Pacific Fisherman* carried an article by Dr. Barton W. Evermann, President of the Pacific Fisheries Society and Director of the California Academy of Sciences Museum, entitled, "Government Should Establish Fishing Experiment Stations." It was not until 1963 that world renowned oceanographer Athelstan Spilhaus conceived the idea of Sea Grant colleges modeled on the Land

Grant concept.<sup>26</sup> The Sea Grant Program was legislated in 1966, and by 1975 over 60 universities across the nation were participating. Oregon State University and the University of Washington, along with the University of Rhode Island, and Texas A & M University were the first to be awarded Sea Grant College status in 1971.

None of these efforts, however, by fisheries managers, universities or international commissions has provided long-term stable fish production. Fish harvests have fluctuated widely due to natural variations, over-fishing, market conditions and the intrusion of outsiders on the "homegrounds." Ballot measure, legislative and legal decisions have excluded some fishermen while increasing the harvests for others. Given the ecological, economic and social complexity of fisheries management, can Oregon's fish resources be allocated fairly among recreational and commercial fishers, and among local, interstate and international fishing fleets operating in and near Oregon waters? How will the action of voters, consumers and citizens shape the future of Oregon commercial fisheries? Who will be allowed to fish and who will cut bait?

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# Author

COURTLAND L. SMITH is Associate Professor of Anthropology at Oregon State University

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