

The Dungeness Crab Fishery: A Historical Perspective

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I would like to begin with the observation that many of the people on this panel began fishing on the Pacific Coast before I was born. I work with the crab fishery, as director of the commodity commission; we do marketing and promotion exclusively for the crab industry. The species we work with include cancer magister (one of 20 species of the genus *Cancer*), or Dungeness crab, which ranges from the coast of central California to the Gulf of Alaska.

Landings

The first recorded commercial crab landings in Oregon were 6,628 pounds, reported in 1889. (The fishery had already been going on for some time in California.) A gradual but fluctuating increase in landings took place from that time up to 1933, when catch exceeded 1 million pounds for the first time. Landings rose sharply from 1933 to 1948, when almost 11 million pounds were sold. (In those days crab landings were recorded by the dozen, and then converted to pounds using the ratio of 25 pounds per dozen. It wasn't until 1963 that actual weight in pounds was recorded.)

This marked increase in landings coincided with the repeal of the "variable bag limit" in 1933, which broke the fishery wide open. It caused an increase in both the number of licenses and the amount of gear used. In 1909 the daily bag limit was 50 crabs per day per person; by 1933 that had increased to 60 dozen per week. The repeal of the lower limit provided the incentive needed to improve the gear used and to employ larger boats, which naturally increased production.

From 1948 to 1969 landings fluctuated between 6 and 12 million lbs. In 1970 they jumped to 14 million lbs. followed by a 15 million lb. harvest in 1971. Since then, landings have fluctuated from a low of 3.1 million lbs. in 1972/73 to a record high of 18.2 million lbs. in the 1979/80 season. We had our second best season in 1995/96 with landings of 17.6 million lbs. and the current fishery stands at 15.3 million lbs. Our 10 year average of landings is 10.4 million pounds.

Fishing Areas

Before about 1933, crabbing was confined mainly to the major bays along the Pacific coast. The fishery at the mouth of the Columbia River accounted for 50% of the total production with Tillamook, Yaquina, Alsea and Coos Bays providing the rest.

By the late 1940's, catches from Port Orford, Coos Bay and Newport started to make up increasingly larger percentages of the total. In the last ten years Astoria has led the coast in landings in all but 3 years, losing out to Newport in the past two. Charleston and Brookings round out the top four.

The first open-ocean fishery took place off the mouth of the Columbia River around 1915 and by the mid 1950's, 95% of the crabs landed came from the ocean. Initially, the ocean fishery was confined to the inshore areas adjacent to the river mouths in depths of less than 25 fathoms. As boats got bigger and fishermen got braver, the fishery expanded up and down the coast, between ports, and in deeper water. Today, crabbers fish as deep as 80 fathoms or more.

Gear and Vessels

Long-tined rakes were used in some of the early bay fisheries to pull the crabs out of the sand in the intertidal areas. Hoops or rings were developed and used in both the bay and early ocean fisheries. By the mid 30's traps or pots had replaced rings to a large extent. The traps were originally patterned after the wooden lathe lobster traps found on the east coast and evolved into the round steel pots that are in use today.

Small skiffs were used in the early bay and near-shore fishery. As the fishery expanded out into the open ocean and pots started being employed, the boats got larger. The fleet today is comprised of everything from the 26 foot dories that fish out of Pacific City in the summer months, through the wooden salmon troller, on up to the modern steel combination vessel in the 60-80 foot class.

Up through the late 50's there were fewer than 100 boats in the crab fleet. That number increased to a peak of over 500 boats in 1980. Limited-entry legislation enacted in 1995 capped the fleet at 450 permits, with 350 actively fishing. The rings used to catch crabs were originally pulled by hand, then by mechanical devices, along with the early pots, but the advent of hydraulic power and the creation of the power block increased capacity and the modern fleet enjoys that advantage.

Up until the mid 1930's, crabs were kept on deck in boxes and delivered dry. That limited fishing to day trips, affected quality to some degree, and made the fresh whole-cooked crab the primary market form. In 1937, Newport fishermen started flooding watertight sections of their boats= holds and keeping crabs alive longer. By 1947, crab tanks with circulating seawater were used that could keep crabs alive for 3 or more days, thereby expanding the holding capacity significantly. At the same time, advances in refrigeration expanded the processing and distribution possibilities for crab as well. Today all crabs are delivered live, processed quickly, and shipped anywhere in the world in both fresh and frozen market forms.

Effort as measured in numbers of pots fished has increased significantly over the years as well. As boats got larger, so did the strings of gear the the crabbers fished. During the 1947/48 season, 67 boats fished in the neighborhood of 8,000 pots. By 1990 the number of pots had grown to 151,000. At present, some 116,000 pots are used.

Increased effort has changed the time of year when landings peak as well. For many years, the peak of the season was in May, which made sense because the weather was better in the summer and the boats were smaller. More recently, the fishery has become very competitive and the peak is now in December and January right after the season opens. 75% of the total catch is caught in the first 6 weeks of the season.

Seasons, Regulation, and Management

Prior to 1948, the crab season was open year-round and the harvest included female crabs. From 1909 to 1933 the size limit was 6.5 inches, then was reduced to 6 inches "point to point" from 1933 to 1948. In 1948 the limit changed to 6.25 inches between the points and it has stayed there since.

Beginning in 1911 it was illegal to take crabs "for the purpose of shipping or canning out of the county they were landed in" during the months of July, August and September. By 1947 all but two counties had been exempted from that rule and in 1948, the newly formed Fish Commission replaced the regulation with a closure rule based on crab quality. When soft crabs began to be caught, the season was closed. Harvest of females was also prohibited. Opening and closing dates have been adjusted a few times since then and at present, the season begins on December 1 and ends on August 14. Two years ago a "summer season" was created and a weekly trip limit of 1200 lbs. was imposed beginning the second week of June through the closure. This was designed to decrease fishing activity on post molt, "soft-shelled" crabs.

The crab fishery is one of the few on this coast that is managed by the state rather than the federal government via the fisheries management council process. The state management system uses a simple "3-S" method, standing for Size/Sex/Season. Fishermen may only harvest mature males 6.25 inches and above; all females must be returned breed, and the fishery is closed in late summer after molt has taken place to protect soft crabs.

Value

The first recorded price was for 1895 landings of 23,520 lbs at 2.7 cents/lb. By 1951, landings had increased to 6.4 m/lbs at an average 12.7 cents/lb. By 1977 the ex-vessel price was \$1.75 to \$3.00/lb (\$2.00 on average). The current catch value is in excess of \$30.7 million dollars (a record). Dungeness crab is the most valuable single species fishery in Oregon now, and could pass groundfish as the most valuable fishery if this year's numbers hold up through December. 1980 was the last time the Dungeness crab catch value exceeded that of groundfish.

Summary

Dungeness crab stocks are healthy, with naturally occurring fluctuations in abundance. The fishing method is targeted and gear is selective. Bycatch mortality is minimal to non-existent. The issues facing this industry are not biological, but socio-economic. The industry is working with the state management system to ensure a sound future for Dungeness crab fishing and processing.