Oregon's Ocean Commercial Fisheries

Oregon's diverse marine resources support commercial fisheries that annually contribute more than $500 million in personal income to Oregon, an important economic driver for the coast and the state. Commercial fishing has long been an integral part of the fabric of many coastal communities. This document provides general information about several of Oregon's larger fisheries, including poundage, economic value, fishery strategies and the Marine Resources Program's (MRP) management to ensure these fisheries are ecologically and economically sustainable. ODFW is authorized, by the state legislature in statute and the Oregon Fish and Wildlife Commission through administrative rule, to administer the regulation, harvest and management of commercial and sport fisheries in Oregon. Our management of commercial fisheries is done in close collaboration with the fishing industry and in accordance with regional, federal and international laws, including the Magnuson-Stevens Act (2006) and management bodies, including the Pacific Fisheries Management Council and the International Pacific Halibut Commission.

Oregon's Largest Commercial Fisheries

Fishery	Ex-vessel Value (2012)	Ex-vessel Value (2007-11 avg.)	Landings (2007-11 avg., in lbs.)	Gear	Certification	Participating Vessels (2011)
D. Crab	$42,201,000	$37,953,000	17,050,000	Pot	MSC - 2010	385
P. Shrimp	24,660,000	13,478,000	29,515,000	Trawl	MSC - 2008	62
Albacore	16,682,000	12,631,000	9,955,000	Troll	MSC - 2010	442
Groundfish*	14,545,000	17,720,000	32,093,000	Trawl	(MSC - 2013)	59
	9,801,000	9,007,000	3,105,000	Fixed Gear	--	253
P. Whiting	10,794,000	7,989,000	87,962,000	Trawl	MSC - 2009	54
P. Sardine	7,323,000	4,957,000	52,227,000	Seine	--	26
Salmon	4,082,000	1,804,000	390,000	Troll	--	~290

**Groundfish includes sablefish but not whiting or halibut; fixed gear includes nearshore-groundfish*
Data are from "Check-in on Oregon's Year 2012 Commercial Fisheries (Revision 2.3)", prepared by The Research Group, with the exception of groundfish vessel counts.

Workers unload catch from a commercial crabber.

Dungeness Crab

The Oregon Dungeness crab fishery is currently Oregon's most valuable single-species fishery. It accounts for up to forty percent of all commercial landings (ex-vessel value) of Oregon commercial fisheries each year. Active since the early 1900s, the fishery saw some of the highest annual catches on record in the past decade. The state of Oregon is currently one of the top producers of Dungeness crab worldwide and has the only Dungeness crab fishery certified through the Marine Stewardship Council (MSC) for sustainability.

The Oregon fishery is a limited-entry fishery (i.e. there are a fixed number of permits and a permit is required to fish in this fishery) with more than 400 permits for both large and small vessels. In 2006, the Oregon Fish and Wildlife Commission adopted a three-tier pot limitation program, which limits each vessel to 200, 300 or 500 pots in order to help reduce the number of pots deployed. Each year, about 75 percent of the permit holders actively participate in the fishery. Dungeness crab are caught with baited traps, also called crab pots. The baited pots rest on the ocean floor, attracting crabs to a one-way door in the pot. Each pot is also equipped with two types of escape hatches. The first is for under-sized (non-legal) crab to escape. The second is an emergency escape hatch kept closed during fishing by weaving in "rotten cotton," which will deteriorate over a few months underwater if the pot is accidentally lost at sea. This emergency escape hatch allows crab and other animals to escape derelict gear.

The management of this fishery is based on the principle of the "three Ss" – size, sex and season. As they are retrieving pots, fishermen sort their catch according to sex (they may only retain males) and size (they may only retain crabs that are 6¼ inches or wider). All under-sized crabs and all females are put overboard (alive) to return to the seafloor. The third component of the fishery's three Ss – season – limits the fishery during the summer, the peak time that crabs are molting, giving them time to allow the soft-shelled crabs to fill out undisturbed. Much of the fishery occurs close to shore, in fairly shallow water – some fishermen deploy pots just beyond the breakers – and all along the Oregon coast. The Marine Resources Program staff work closely with the Oregon Dungeness Crab Commission and the crab industry in management of this fishery.

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An ODFW biologist shows bycatch after testing a bycatch reduction device.

Pink Shrimp

The Oregon pink shrimp fishery is important to Oregon in terms of both the economic value to the fishermen and the large landings (pounds). In recent years, both the landings and the price per pound have increased dramatically. Pink shrimp are short-lived, fast-reproducing species, subject to large population swings associated with year-to-year changes in ocean productivity. Several boom-bust cycles have been noted over several decades of fishery monitoring. The fleet size is currently more than 60 vessels, which is an increasing trend. Both the good price and availability of catch are attributed to this increase, as well as a possible effort shift from the groundfish trawl fishery to shrimp.

The MRP actively works with the pink shrimp industry to improve the fishery's gear, which at

the most basic level is a net (or often a pair of nets) towed behind the vessel. MRP research led to improvements to the design of the net and the addition of devices that allow anything other than pink shrimp to escape from capture. "Bycatch" (non-target species) reduction methods include increasing the mesh size of the net and adding metal grates – also known as bycatch reduction devices (BRDs) – to the throat of the net. These improvements have been collaboratively modified over the years to reduce bycatch of finfish in the fishery, including halibut, rockfish and eulachon smelt. The effectiveness of BRDs, other modifications to the design of shrimp trawl nets and close management by ODFW, helped the Oregon pink shrimp fishery become the first shrimp fishery in the world to be MSC-certified as a sustainable fishery in 2008. It was recertified in the fall of 2012. With the 2010 listing of eulachon smelt as threatened under the U.S. Endangered Species Act, the MRP will continue to work with industry to maintain or reduce eulachon bycatch while still maintaining shrimp catch rates.

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Albacore tuna appear off the Oregon coast from July to October.

Albacore Tuna

Each summer, a finger of warm water makes its way north to the waters off Oregon, bringing with it schools of albacore tuna. The troll (hook and line) fishery lasts from about June until October – ending when the albacore leave Oregon waters. The season has extended into November in some rare years. It is one of the few open-access commercial fisheries (i.e. no permit required) left in Oregon. It is managed through the Inter-American Tropical Tuna Commission and the Western Central Pacific Fisheries Commission. They manage the albacore stock and fisheries within their respective areas of jurisdiction and the US-Canada Albacore Treaty addresses reciprocal fishing effort off the west coast.

Albacore is also an MSC-certified sustainable fishery. The young tuna that are caught off of Oregon are just starting their cross-Pacific journey. These younger fish—three to five years old, ranging from 10 to 30 pounds—are higher in desirable omega-3 fish oils than the large, lean, older albacore caught mostly by foreign longline fishermen in the central Pacific. Also, because of their young age, the fish caught off of Oregon have a reduced mercury accumulation in their meat, compared to those caught in many other areas, according to the Oregon Albacore Commission (Oregon Department of Agriculture).

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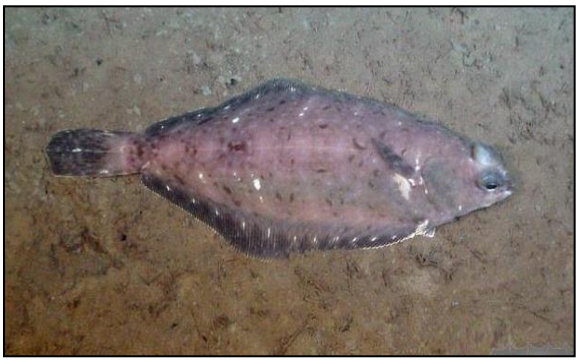

Dover sole is a commonly-caught trawl species.

Groundfish – Trawl

The limited-entry west coast groundfish trawl fishery may operate from depths as shallow as 10 fathoms (60 feet) to 700 fathoms (4,200 feet) deep. This fishery is federally managed and consists of vessels that range from the Canadian border to the Mexican border. Alaska groundfish are managed separately.

Non-whiting groundfish trawl vessels tow nets over or near the ocean bottom while targeting demersal (bottom) or semi-demersal groundfish. Species caught by this fishery include various flatfishes – such as Dover sole, petrale sole, sand sole, and sanddabs – rockfishes, sablefish (or black cod), and others. The Pacific whiting fishery operates differently and is described separately, below. Most trawling occurs over soft, low-relief bottom (sand or mud).

Prior to 2011, this fishery operated under cumulative landing limits, meaning each vessel could land no more than a fixed quantity of each species or species group per trip, week, or month. Beginning in 2011, this fishery became an individual fishing quota (IFQ) fishery (also called the Catch Shares Program, or within the trawl industry as Trawl Individual Quota, Individual Trawl Quota or Trawl Rationalization). Each permit holder now owns quota for a portion of the annual total allowable catch (as determined by the Pacific Fisheries Management Council) and must hold quota for each species or species group. This new management allows fishermen to decide when to catch and deliver their quota, whereas under past management frameworks, the timing of fishing was restricted to certain time periods.

In addition, participants in this IFQ fishery have flexibility in the type of gear they use; they can switch gear as desired between trawl nets and fixed gear (i.e., pots or longline gear), which are often used to target sablefish. The IFQ program is intended to increase net economic benefits, create individual economic stability, provide full use of the trawl sector allocation, and build in accountability for environmental impacts through full tracking of both catch and bycatch.

In 2011, Oregon' trawl fleet accounted for approximately 63 percent of groundfish landings in the west coast fishery.

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Black cod or sablefish is the primary species targeted by the fixed gear fishery.

Groundfish – Fixed Gear (non-nearshore)
The groundfish fixed gear fishery operates at depths from approximately 100 fathoms (600 feet) to waters as deep as 700 fathoms (4,200 feet). This fishery is federally managed and consists of vessels participating in limited-entry and open-access sectors, primarily fishing with longline and pot gear. Although sablefish is the primary species targeted by these fisheries, other groundfish, including lingcod, rockfish, and skates, are also caught and landed.

Oregon's fixed gear fleet consists of approximately one-third limited-entry vessels and two thirds open-access vessels. Limited-entry permitted vessels make the majority of the landings (about 90 percent).

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Lingcod is a favorite catch for the nearshore fishery.

Groundfish – Nearshore
The commercial nearshore groundfish fishery targets a number of different species found in Oregon's coastal waters. Two types of permits are issued in this state-managed, limited-entry-permit

fishery: black and blue rockfish permits with a nearshore endorsement, and black and blue rockfish permits without the endorsement. There are 125 permitted vessels in total, 70 of which have the nearshore endorsement. The nearshore endorsement allows permitted vessels to land 21 nearshore species, including a number of nearshore rockfish, greenling, cabezon, buffalo sculpin, and Irish lords, in addition to black and blue rockfish. Fishery participants use a variety of hook and line gear types to target these species, including jigging with rod and reel, bottom longline, and cable gear.

Permitted vessels may fish from any Oregon port, but the majority of fish are landed on the south coast at Port Orford and Gold Beach, which is where most permit holders are based. There are two primary markets for this fishery: one for live fish and one for fresh (dead) fish. Some species fetch as much as $6 or $7 per pound if landed live – far more value to the fisherman than the same species is if it is landed dead. Nearshore fish sold to the fresh fish market rarely exceed $1.60 per pound. The total ex-vessel value of this fishery is approximately $1.1 million per year.

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A good catch of Pacific whiting hits the deck.

Pacific Whiting

The Pacific whiting (or Pacific hake) fishery is the largest fishery in terms of pounds landed on the west coast of both the United States and Canada. The U.S. whiting fishery earned MSC certification in 2009 for being sustainable and well-managed. Vessels use mid-water trawls (with little ocean floor contact) that produce a fairly pure single-species catch because Pacific whiting generally swim off the bottom in dense schools. In some areas and during certain seasons, salmon or rockfishes may also be caught by whiting nets as bycatch.

The whiting fishery may deliver catch to either shoreside processors or at-sea processing facilities. The at-sea processing facilities (also known as motherships or catcher/processors) operate within a co-op structure, and typically offload their frozen product in Washington. Trawl vessels, many of which are from Oregon, catch the whiting and transfer the catch to the mothership while it is at sea. Catcher/processors, as the name implies, catch whiting and process it all on one ship.

Beginning in 2011, the shoreside whiting sector (those vessels that deliver catch to shoreside processors) was combined with the non-whiting trawl fishery and is now managed with catch shares (the IFQ program described in Groundfish Trawl, above). The IFQ program is a limited-access privilege program under the Magnuson-Stevens Act with 100 percent monitoring of the catch through at-sea observers and dockside catch monitors.

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Fishers prepare to suck sardines from a seine net into the hold.

Pacific Sardine

The modern commercial sardine fishery has been important in terms of landings and economic value over the last 12 years, particularly for the northern end of the state. Management of this fishery is through an annual quota as determined by the Pacific Fisheries Management Council, which may be caught in three discrete time periods, starting Jan. 1, July 1, and Sept. 15. Each year these time periods vary in length, depending on overall quota and catch rates.

Fishermen with limited-entry permits compete for the quota during the open fishing periods. Nearly all Oregon catches are taken between July and October, when sardine are most available off the northwest coast and sardines are most nutritious (desirably rich in oil). Fishermen use seine nets to fish during the daytime, often with the aid of spotter planes to locate large schools. The ages of sardines in Oregon's landings usually range from two to nine years, with the majority being four to seven years old during recent years. Assessment of the west coast stock is done each year through aerial surveys, hydroacoustic surveys, and trawl surveys for adults and eggs.

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Commercial salmon fishers unload a chinook salmon at the docks.

Ocean Salmon

Oregon's commercial ocean salmon fishery is a hook-and-line troll fishery. The fishery largely targets chinook (king) salmon, with minor coho (silver) salmon seasons in some years. This is a limited-entry fishery (i.e. permit required), with approximately 1,000 permits, however, only about half of those permit holders actively participate in the fishery each year. At the request of the commercial salmon industry in 2012, the Oregon State Legislature removed the lottery system for latent (unused) permits. This effectively will result in a decline in the total available permits over time, and new entrants to the fishery will be required to transfer an active permit from another commercial vessel to their own.

Salmon caught off the Oregon coast are of mixed stock primarily originating in southern Oregon and northern California. Northwest chinook salmon leave their native streams and turn north. After three or four years they head back to their native streams, primarily in the Sacramento and Klamath river systems. As they approach the coast they come within range of Oregon salmon fishers.

Fishery harvest plummeted in recent years to one-tenth its average harvest during previous decades due to sharp declines in regional stocks and subsequent harvest restriction through management measures. Harvest was significantly restricted in an attempt to ensure adequate returns of spawning chinook to the Klamath and Sacramento river systems. Forecasts for the Sacramento and Klamath chinook salmon in the

coming years are much improved, with some indications that stocks will return to high levels. Although the reasons for the recent collapse of these salmon stocks continue to be debated and include factors such as spawning habitat loss, water quantity and quality issues, prey abundance, and fishing pressure, it appears that poor ocean productivity during smolt migration played a significant role in the decline (report to PFMC, 2009). Because some of Oregon's salmon stocks are healthy and productive, the ODFW management strategy mandates "bubble fisheries" around several of Oregon's river mouths to provide harvest opportunity where stocks are strong. The bubble fisheries divert effort from areas where stocks are more constrained.

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Sea urchins in a tote ready for shipping.

Sea Urchins

Ranked as the third largest (in both landing and dollars) shellfish fishery in Oregon (following Dungeness crab and pink shrimp), the red sea urchin fishery is pursued by a small number of commercial divers, who harvest red sea urchins by hand from rock reefs in the nearshore waters of Oregon. These divers make single-day trips aboard small vessels and deliver urchins live. From the dock, these urchins go to processing plants in Washington or California where the fishery product "uni" (urchin gonad) is packed into trays and sold domestically or shipped to Japan for auction to the sushi industry. The value of the urchins is dictated by attributes of the product (gonad weight and quality) as well as market demand and the dollar/yen exchange rate.

The fishery occurs primarily on two south-coast reefs (Orford and Rogue), where kelp beds and urchins are most abundant, but also on central-coast reefs. Though habitats are limited, the fishery has been impressively productive since its beginnings in 1986. Harvest of urchins peaked in 1990 when divers landed 9.3 million pounds. The harvest is down markedly in recent years but persists as a valuable fishery for a small number of divers.

Commercial urchin divers currently harvest primarily larger and older urchins. Over the past several years, poor recruitment of juvenile sea urchins poses a concern for management of the fishery. ODFW and urchin divers are working together to address the problem.

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Most hagfish are exported to Korea.

Hagfish

There is increasing interest in fishing for hagfish – also known as slime eels, due to the copious amount of protective slime they exude when perturbed. Hagfish are often exported to Korea (live or dead), where they are a delicacy. The fishery began in the early 1990s as an eel skin fishery but it has been more successful in recent years for the human consumption market. Because of the higher value fetched for live hagfish, fishers are increasingly experimenting to try to land a higher proportion of their catch live.

Currently the fishery is open-access (i.e. no permit required), with fewer than 20 boats participating. Each boat is limited to 200 traps, and each trap is required to have an emergency escape mechanism, in the event the gear is lost at sea. The fishery is re-evaluated in any year during which landings exceed the state harvest guideline of 1.6 million pounds, to prevent over-harvest.

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A biologist measures a commercially-caught halibut.

Commercial Halibut

Oregon's commercial halibut fishery is short but intense. Most years the directed fishery is only 24 hours long. In 2012, 75 vessels participated in the directed fishery. They landed 164,642 pounds of Pacific halibut with a value of $930,668 – about one percent of Oregon's commercial fishing value.

Oregon is part of the Pacific halibut's southern range, which extends into northern California. Halibut can migrate long distances and tend to be larger in Alaska (the northern-most part of their range) and smaller in the south. The big halibut common in Alaska and the Aleutian Islands – some as big as 650 pounds – do not occur in Oregon. A big fish in Oregon is around 150 pounds. Oregon commercial fishers must release any halibut smaller than 32 inches (about 14 pounds).

The International Pacific Halibut Commission manages halibut catch in the North Pacific. In most years, Oregon's allocation of Pacific halibut is split evenly between sport and commercial. Usually 85 percent of the commercial allocation goes to the one-day directed fishery and the other 15 percent is allocated to incidental halibut catch in the salmon troll fishery. To legally retain halibut, salmon trollers must hold a Pacific halibut license, and there are strict limits on how many halibut they can retain.

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Heart cockles are an important part of Oregon's bay clam fishery.

Bay Clams

The Oregon bay clam fishery produced more than 233,000 pounds of clams with a value of $120,000 in 2012. There are 15 limited-entry permits in the dive bay clam fishery and the intertidal fishery is open-access. Approximately 50 individuals participate in this fishery.

The heart cockle dominates the landing totals. More than 180,000 pounds were harvested in 2011, with the majority coming from Tillamook Bay. Two other species, butter clams and gaper clams, made up the remainder with landings of 13,000 and 36,000 pounds, respectively. Significant, but much smaller, numbers of bay clams are also harvested from other bays such as Coos, Yaquina, Alsea and Netarts. The human consumption market is not currently pursued for this product, so bay clams are harvested for use as bait, particularly for the Dungeness crab fishery, and for animal feed in public aquariums.

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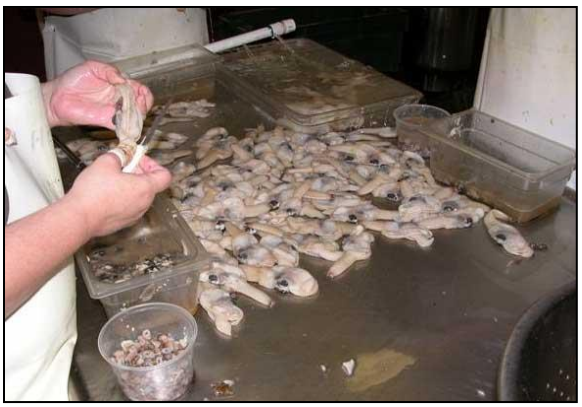
A worker cleans a commercial catch of razor clams.

Razor Clams

In 1935 ODFW began monitoring the commercial harvest of razor clams and in 1947, started to record the number of licensed diggers and their catch. Nearly all of the commercial harvest is from the 18-mile stretch of beach between the Columbia River's south jetty and Tillamook Head. The commercial razor clam fishery is an open-access fishery, with the number of participants roughly corresponding with the razor clam population abundance. Prior to the late 1950s, the commercial harvest was the primary component of razor clam total harvest, with a peak of 335,000 pounds in 1950. Since then, the landings have steadily declined so now the recent five-year average is 38,000 pounds per year. In 2012, the average price to the fishermen was $2.85 per pound.

The commercial fishery, on average accounts for only 15 percent of the total harvest (both sport and commercial), of which 80 percent is sold for human consumption. The recent commercial landings in this fishery have been variable – landings range from 4,000 clams harvested to 450,000 clams harvested per year.

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For more information about Oregon's commercial fisheries, species, regulations, and more, please see our regulations book and our website:
http://www.dfw.state.or.us/MRP/