

# Fishers and Fishing Vessel Operators

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## Significant Points

- More than half of all workers are self-employed, among the highest proportion in the workforce.
- Many jobs require strenuous work and long hours and provide only seasonal employment.
- Employment is projected to decline, due to the depletion of fish stocks and new Federal and State laws restricting both commercial and recreational fishing.

## Nature of the Work

Fishers and fishing vessel operators catch and trap various types of marine life for human consumption, animal feed, bait, and other uses. (Aquaculture—the raising and harvesting, under controlled conditions, of fish and other aquatic life in ponds or confined bodies of water—is covered in the *Handbook* statement on farmers, ranchers, and agricultural managers.)

Fishing hundreds of miles from shore with commercial fishing vessels—large boats capable of hauling a catch of tens of thousands of pounds of fish—requires a crew that includes a captain, or skipper, a first mate and sometimes a second mate, a boatswain (called a deckboss on some smaller boats), and deckhands with specialized skills.

The *fishing boat captain* plans and oversees the fishing operation—the fish to be sought, the location of the best fishing grounds, the method of capture, the duration of the trip, and the sale of the catch.

The captain ensures that the fishing vessel is seaworthy; oversees the purchase of supplies, gear, and equipment, such as fuel, netting, and cables; obtains the required fishing permits and licenses; and hires qualified crew members and assigns their duties. The captain plots the vessel's course, often using electronic navigational equipment such as autopilots, loran systems, and satellite navigation systems. However, traditional navigational equipment (for example, compasses, sextants, and charts) is still in use. Ships also use radar to avoid obstacles and utilize depth sounders to indicate the water depth and whether there is marine life between the vessel and sea bottom. Sophisticated tracking technology allows captains to better locate and analyze schools of fish. The captain directs the fishing operation through the officers' actions and records daily activities in the ship's log. Upon returning to port, the captain arranges for the sale of the catch—directly to buyers or through a fish auction—and ensures that each crew member receives the prearranged portion of adjusted net proceeds from the sale of the catch. Some captains have begun buying and selling fish via the Internet, and as electronic commerce grows as a method of finding buyers for fresh catch, more captains may use computers.

The *first mate*—the captain's assistant, who must be familiar with navigation requirements and the operation of all electronic equipment—assumes control of the vessel when the captain is off duty. Duty shifts, called watches, usually last 6 hours. The mate's regular duty, with the help of the boatswain and under the captain's oversight, is to direct the fishing operations and sailing responsibilities of the deckhands, including the operation, maintenance, and repair of the vessel and the gathering, preservation, stowing, and unloading of the catch.

The *boatswain*, a highly experienced deckhand with supervisory responsibilities, directs the *deckhands* as they carry out the sailing and fishing operations. Before departure, the boatswain directs the deckhands to load equipment and supplies, either by hand or with hoisting equipment, and to untie lines from other boats and the dock. When necessary, boatswains repair fishing gear, equipment, nets, and accessories. They operate the fishing gear, letting out and pulling in nets and lines, and extract the catch, such as pollock, flounder, and tuna, from the nets or the lines' hooks. Deckhands use dip nets to prevent the escape of small fish and gaffs to facilitate the landing of large fish. They then wash, salt, ice, and stow away the catch. Deckhands also must ensure that decks are clear and clean at all times and that the vessel's engines and equipment are kept in good working order. Upon return to port, they secure the vessel's lines to and from the docks and other vessels. Unless "lumpers" (laborers or longshore workers) are hired, the deckhands unload the catch.

Large fishing vessels that operate in deep water generally have technologically advanced equipment, and some may have facilities on board where the fish are processed and prepared for sale. Such vessels are equipped for long stays at sea and can perform the work of several smaller boats.

Some full-time and many part-time fishers work on small boats in relatively shallow waters, often in sight of land. Navigation and communication needs are vital and constant for almost all types of boats. Crews are small—usually, only one or two people collaborate on all aspects of the fishing operation, which may include placing gill nets across the mouths of rivers or inlets, entrapment nets in bays and lakes, or pots and traps for fish or shellfish such as lobsters and crabs. Dredges and scrapes are sometimes used to gather shellfish such as oysters and scallops. A very small proportion of commercial fishing is conducted as diving operations. Depending upon the water's depth, divers—wearing regulation diving suits with an umbilical (air line) or a scuba outfit and equipment—use spears to catch fish and use nets and other equipment to gather shellfish, coral, sea urchins, abalone, and sponges. In very shallow waters, fish are caught from small boats having an outboard motor, from rowboats, or by wading or seining from shore. Fishers use a wide variety of hand-operated equipment—for example, nets, tongs, rakes, hoes, hooks, and shovels—to gather fish and shellfish; catch amphibians and reptiles such as frogs and turtles; and harvest marine vegetation such as Irish moss and kelp.



Fishing vessel operators must check their gear before heading out.

Although most fishers are involved in commercial fishing, some captains and deckhands use their expertise in fishing for sport or recreational purposes. For this type of fishing, a group of people charter a fishing vessel for periods ranging from several hours to a number of days and embark upon sportfishing, socializing, and relaxation, employing a captain and possibly several deckhands.

### **Working Conditions**

Fishing operations are conducted under various environmental conditions, depending on the region of the country and the kind of species sought. Storms, fog, and wind may hamper fishing vessels or cause them to suspend fishing operations and return to port. Divers are affected by murky water and unexpected shifts in underwater currents. In relatively busy fisheries, smaller boats have to take care not to be hit by larger vessels.

Fishers and fishing vessel operators work under some of the most hazardous conditions of any occupation, and often help is not readily available when injuries occur. Malfunctioning navigation or communication equipment may lead to collisions or shipwrecks. The crew must be on guard against the danger of injury from malfunctioning fishing gear, entanglement in fishing nets and gear, slippery decks resulting from fish-processing operations, ice formation in the winter, or being swept overboard—a fearsome situation. Also, treatment for any serious injuries may have to await transfer to a hospital. Divers must guard against entanglement of air lines, malfunction of scuba equipment, decompression problems, and attacks by predatory fish.

Fishers and fishing vessel operators face strenuous outdoor work and long hours. Commercial fishing trips may require a stay of several weeks or even months—hundreds of miles away from one's home port. The pace of work may vary, but even during travel between the home port and the fishing grounds, deckhands on smaller boats try to finish their cleaning duties so that there are no chores remaining to be done at port. However, lookout watches are a regular responsibility, and crew members must be prepared to stand watch at prearranged times of the day or night. Although fishing gear has improved, and operations have become more mechanized, netting and processing fish are strenuous activities. Whereas newer vessels have improved living quarters and amenities such as television and shower stalls, crews still experience the aggravations of confined quarters, continuous close personal contact, and the absence of family.

### **Employment**

Fishers and fishing vessel operators held an estimated 36,000 jobs in 2002. More than 5 out of 10 were self-employed. Most fishing takes place off the coasts, with Alaska, Louisiana, Virginia, California, and Washington bringing in the greatest volume of fish. While fishing off the New England coast has declined in recent years because of restrictions on catching certain species, it still ranks high in total value of fish caught, according to the National Marine Fisheries Society.

### **Training, Other Qualifications, and Advancement**

Fishers usually acquire their occupational skills on the job, many as members of families involved in fishing activities. No formal academic requirements exist. Operators of large commercial fishing vessels are required to complete a Coast Guard-approved training course. Students can expedite their entrance into these occupations by enrolling in 2-year vocational-technical programs offered

by secondary schools. In addition, some community colleges and universities offer fishery technology and related programs that include courses in seamanship, vessel operations, marine safety, navigation, vessel repair and maintenance, health emergencies, and fishing gear technology. Courses include hands-on experience. Secondary and postsecondary programs are normally offered in or near coastal areas.

Experienced fishers may find short-term workshops offered through various postsecondary institutions especially useful. These programs provide a good working knowledge of electronic equipment used in navigation and communication and offer the latest improvements in fishing gear.

Captains and mates on large fishing vessels of at least 200 gross tons must be licensed. Captains of sportfishing boats used for charter, regardless of the boats' size, must also be licensed. Crew members on certain fish-processing vessels may need a merchant mariner's document. The U.S. Coast Guard issues these documents and licenses to individuals who meet the stipulated health, physical, and academic requirements. (For information about merchant marine occupations, see the statement on water transportation occupations elsewhere in the *Handbook*.)

Fishers must be in good health and possess physical strength. Good coordination, mechanical aptitude, and the ability to work under difficult or dangerous conditions are necessary to operate, maintain, and repair equipment and fishing gear. Fishers need stamina to work long hours at sea, often under difficult conditions. On large vessels, they must be able to work as members of a team. Fishers must be patient, yet always alert, to overcome the boredom of long watches when they are not engaged in fishing operations. The ability to assume any deckhand's functions on short notice is important. As supervisors, mates must be able to assume all duties, including the captain's, when necessary. The captain must be highly experienced, mature, and decisive and also must possess the business skills needed to run business operations.

On fishing vessels, most fishers begin as deckhands. Deckhands who acquire experience and whose interests are in ship engineering—the maintenance and repair of ship engines and equipment—can eventually become licensed chief engineers on large commercial vessels after meeting the Coast Guard's experience, physical, and academic requirements. Experienced, reliable deckhands who display supervisory qualities may become boatswains, who, in turn, may become second mates, first mates, and, finally, captains. Almost all captains become self-employed, and the overwhelming majority eventually own, or have an interest in, one or more fishing ships. Some may choose to run a sport or recreational fishing operation. When their seagoing days are over, experienced individuals may work in or, with the necessary capital, own stores selling fishing and marine equipment and supplies. Some captains may assume advisory or administrative positions in industry trade associations or government offices, such as harbor development commissions, or in teaching positions in industry-sponsored workshops or educational institutions. Divers in fishing operations can enter a commercial diving activity—for example, repairing ships or maintaining piers and marinas—usually after the completion of a certified training program sponsored by an educational institution or industry association.

### **Job Outlook**

Employment of fishers and fishing vessel operators is expected to decline through the year 2012. These workers depend on the natu-

ral ability of fish stocks to replenish themselves through growth and reproduction, as well as on governmental regulation of fisheries. Many operations are currently at or beyond the maximum sustainable yield, partially because of habitat destruction, and the number of workers who can earn an adequate income from fishing is expected to decline. Many fishers and fishing vessel operators leave the occupation because of the strenuous and hazardous nature of the job and the lack of steady, year-round income. Some job openings will nevertheless arise from the need to replace workers who leave the occupation or retire.

The use of sophisticated electronic equipment for navigation, for communication, and for locating fish has raised the efficiency of finding fish stocks. Also, improvements in fishing gear and the use of highly automated floating processors, where the catch is processed aboard the vessel, have greatly increased fish hauls. In many areas, particularly the North Atlantic and Pacific Northwest, damage to spawning grounds and excess fishing capacity have adversely affected the stock of fish and, consequently, the employment opportunities for fishers. Some States have issued various types of restrictions on harvesting, to allow stocks of fish and shellfish to replenish themselves, thereby idling many fishers. In addition, low prices for some species and rising seafood imports are adversely affecting fishing income. Sportfishing boats, however, will continue to provide some job opportunities.

Governmental efforts to replenish stocks are having positive results, which should increase the stock of fish at some point in the future. Furthermore, efforts by private fishers' associations on the West Coast to increase government monitoring of the fisheries may help significantly to prevent the type of decline in fish stocks found in waters off the East Coast. Nevertheless, fewer fishers and fishing vessel operators are expected to make their living from the Nation's waters in the years ahead.

### **Earnings**

Based on limited information, the majority of full-time wage and salary fishers earn between \$300 and \$700 per week. Earnings of fishers and fishing vessel operators normally are highest in the summer and fall—when demand for services peaks and environmental conditions are favorable—and lowest during the winter. Many full-time and most part-time workers supplement their income by working in other activities during the off-season. For example, fishers may work in seafood-processing plants, in establishments selling fishing and marine equipment, in construction, or in a number of unrelated seasonal occupations.

Earnings of fishers vary widely, depending upon their position, their ownership percentage of the vessel, the size of their ship, and the amount and value of the catch. The costs of the fishing operation—the physical aspects of operating the ship, such as the fuel costs, repair and maintenance of gear and equipment, and the crew's supplies—are deducted from the sale of the catch. Net proceeds are distributed among the crew members in accordance with a pre-arranged percentage. Generally, the ship's owner—usually its captain—receives half of the net proceeds. From this amount, the owner pays for depreciation, maintenance and repair, and replacement and insurance costs of the ship and its equipment; the money that remains is the owner's profit.

### **Related Occupations**

Other occupations that involve outdoor work with fish and watercraft include water transportation occupations and fish and game wardens.

### **Sources of Additional Information**

Names of postsecondary schools offering fishing and related marine educational programs are available from

► Marine Technology Society, 5565 Sterrett Place, Suite 108, Columbia, MD 21044. Internet: <http://www.mtsociety.org>

Information on licensing of fishing vessel captains and mates and on requirements for merchant mariner documentation is available from the U.S. Coast Guard Marine Inspection Office or Marine Safety Office in your State. Or contact either of the following agencies:

► Office of Compliance, Commandant (G-MOC-3) 2100 Second St. SW., Washington, DC 20593. Internet:

[http://www.access.gpo.gov/nara/cfr/waisidx\\_01/46cfr28\\_01.html](http://www.access.gpo.gov/nara/cfr/waisidx_01/46cfr28_01.html)

► Licensing and Evaluation Branch, National Maritime Center, 4200 Wilson Blvd., Suite 630, Arlington, VA 22203-1804.