

Fish Basics

OBJECTIVES

After reading this section, you will be able to:

- Describe the composition and structure of fish.
- Identify several varieties of saltwater and freshwater fish.
- Identify common market forms of fish.
- Describe how to purchase and store fish.

OVER 30,000 species of fish live in oceans or freshwater sources. These cold-blooded animals are becoming more important to the foodservice industry. Approximately 75% of all the fish consumed in the U.S. is eaten in restaurants. Customers looking for a tasty, low-fat, healthful alternative to meat often choose fish. Knowing how to select, purchase, and store fish will allow a foodservice operation to serve fish of the highest quality.



KEY TERMS

- fillets
- drawn
- dressed
- butterflied
- freezer burn
- drip loss
- vacuum packed

✕ STRUCTURE OF FISH

Like poultry and meat, fish is made up of protein, fat, and water, as well as vitamins and minerals. Some fish, called fatty fish, have a relatively large amount of fat. Salmon is a popular type of fatty fish. Fish with little fat, such as haddock, are known as lean fish. A major difference between fish and meat is that fish has very little connective tissue. Because of this, fish:

- Are naturally tender.
- Cook rapidly, requiring low heat.

- Can be cooked using moist cooking techniques to keep its natural moistness.
- Will fall apart when cooked, if not handled carefully.

Fish have backbones, an internal skeleton of cartilage and bones, gills for breathing, and fins for swimming. Fish may be divided into three categories, based on skeletal type.

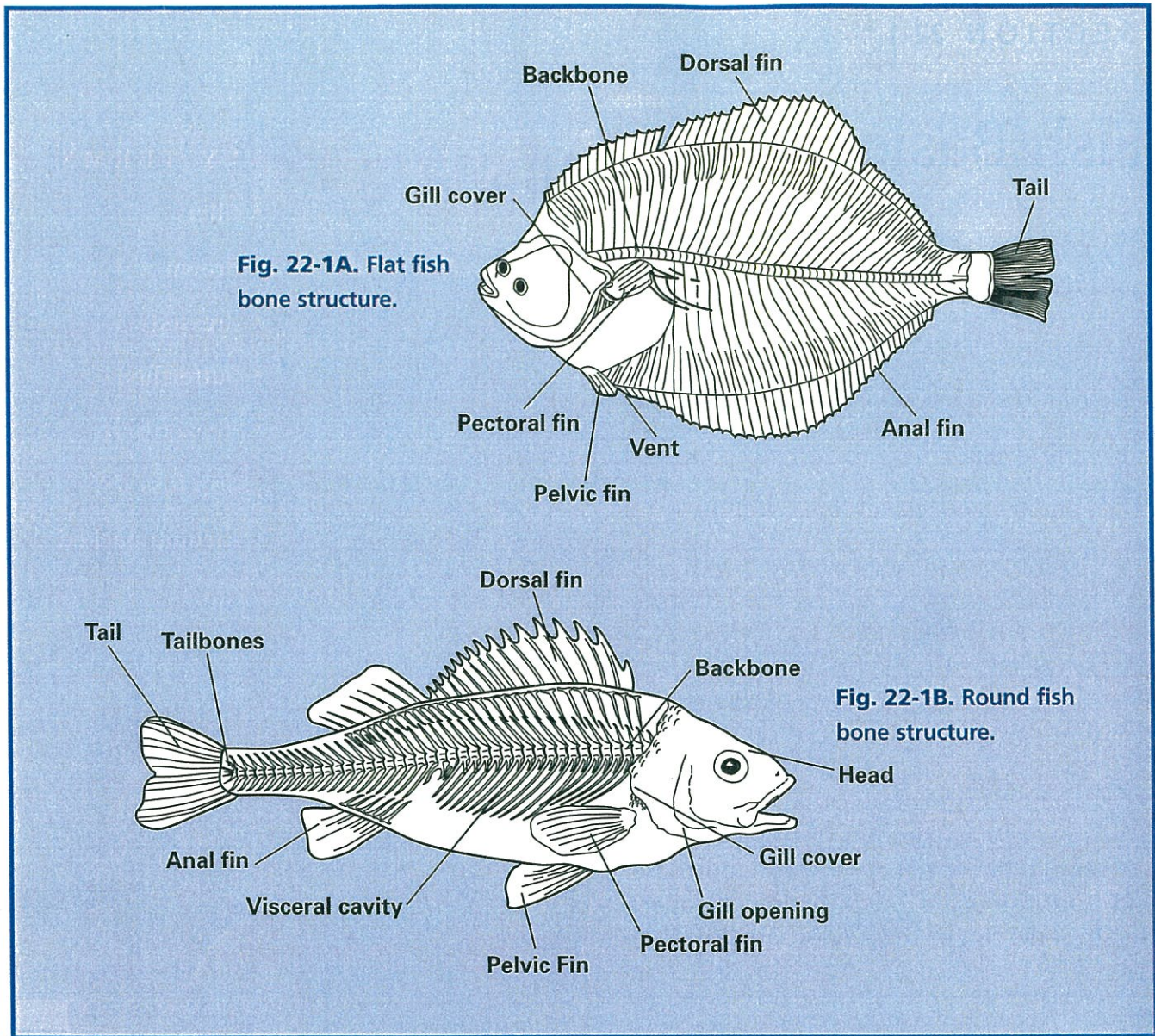


Fig. 22-1A. Flat fish bone structure.

Fig. 22-1B. Round fish bone structure.

■ **Flat fish.** Flat fish have a backbone running horizontally through the center of the fish. They swim horizontally and have both eyes on the top of their heads. Flat fish, such as flounder and halibut, have dark skin on the upper side to hide from predators. See Fig. 22-1A.

■ **Round fish.** Round fish have a backbone on the upper edge of their bodies. They have an eye on each side of their heads, and they swim vertically. Trout and cod are common types of round fish. See Fig. 22-1B.

■ **Boneless fish.** Boneless fish, such as sharks, have cartilage instead of bones. Many boneless fish also have smooth skin instead of scales. Sometimes boneless fish are classified with round fish.

VARIETIES OF FISH

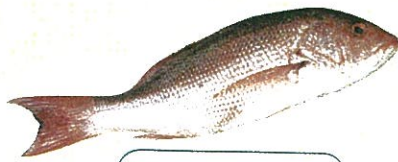
Most foodservice operations serve only a small portion of the fish varieties that exist worldwide. Fig. 22-2 shows examples of some of the most commonly used varieties of fish.

Fig. 22-2.

Types of Fish



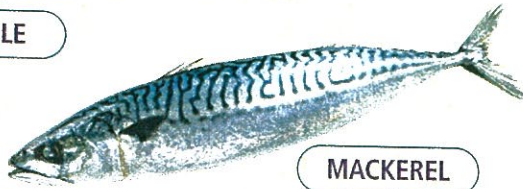
SOLE



RED SNAPPER



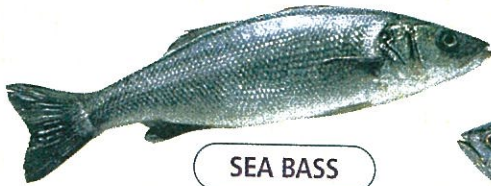
FLOUNDER



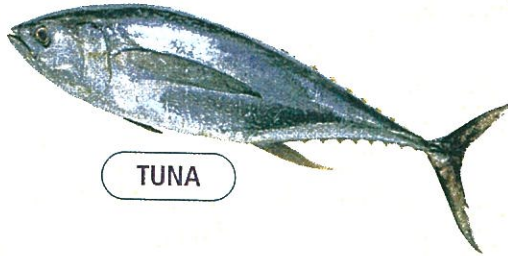
MACKEREL



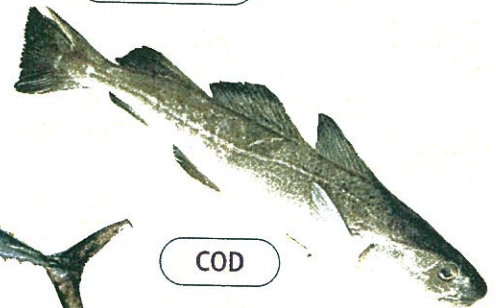
HALIBUT



SEA BASS



TUNA



COD



MAHI-MAHI



GROUPER



SALMON



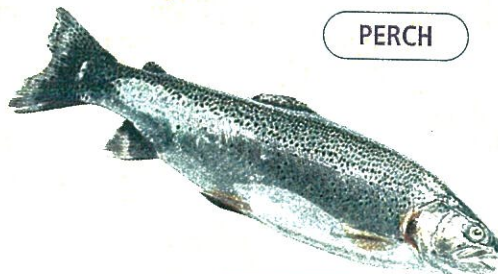
CATFISH



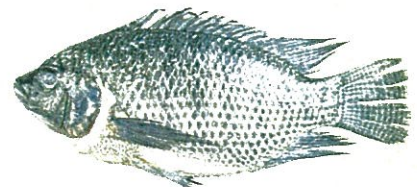
PERCH



POMPANO



RAINBOW TROUT



TILAPIA

MARKET FORMS OF FISH

As the demand for fish has increased and the supply has decreased, fish have become more expensive. Once available only to those living along the coasts or near freshwater sources, fish can now be preserved and shipped to any location quickly and safely. However, the names used for different fish may vary from one region of the country to another.

Fish may be purchased whole or in the form in which it will be cooked and served. Generally, restaurant owners find it less expensive to buy fish already processed.

Inspection and grading of fish is not required like it is for meat and poultry. See Section 2 for more information on inspection and grading of fish.

Fresh Fish

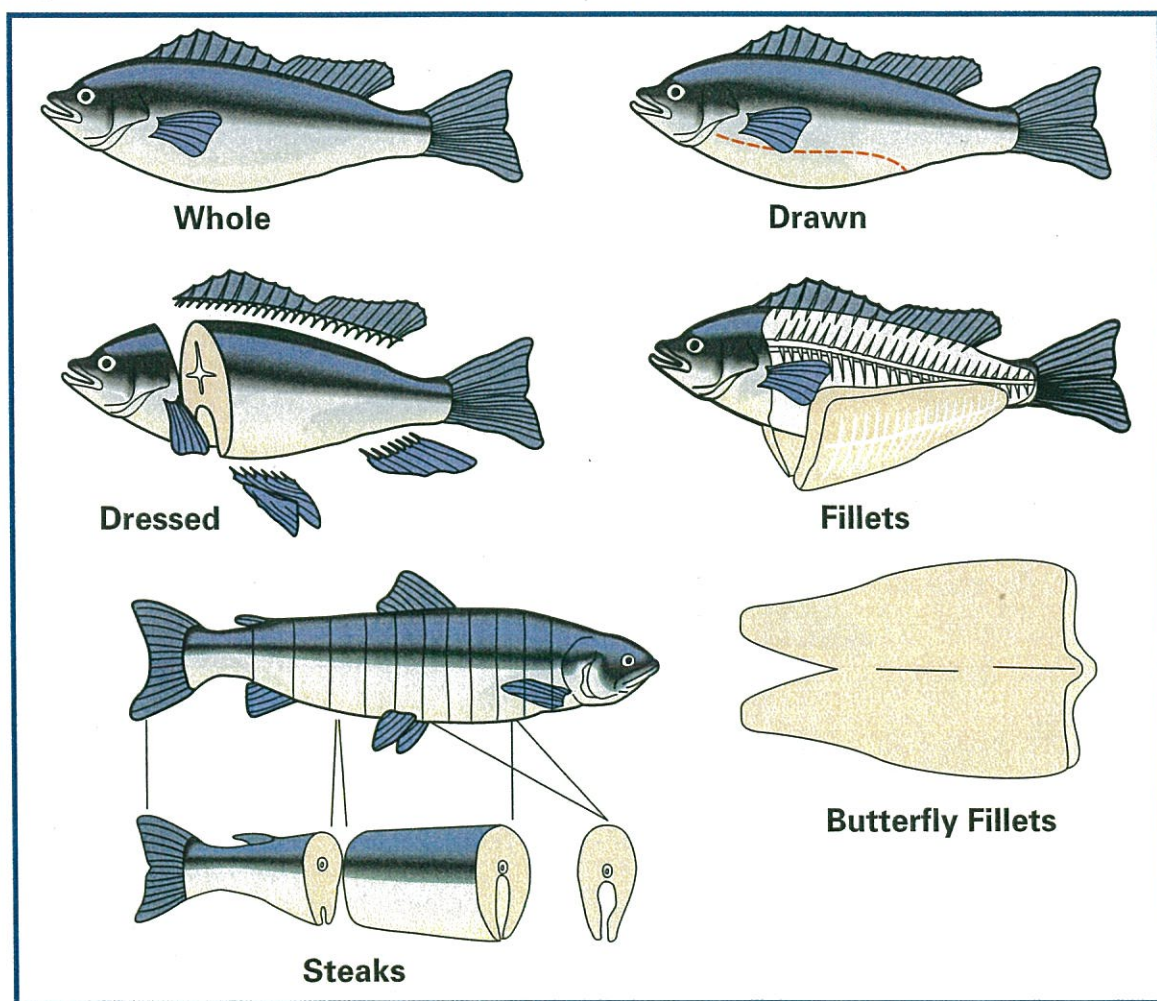
Before most fresh fish is made available for purchase, it is usually processed in some way. The undesirable parts of the fish, such as heads and fins, are often removed. There are eight forms of fish that can be purchased. Fig. 22-3 shows six of them.

■ **Whole.** Whole fish refers to the entire fish as it comes out of the water. Because the internal organs are not removed, this form has the shortest shelf life.

■ **Drawn.** Fish that have had their gills and entrails removed are called **drawn** fish. This form has the longest shelf life. Whole fish are often purchased drawn.

■ **Dressed.** Drawn fish that have had their fins, scales, and sometimes their head removed are called **dressed** fish.

Fig. 22-3. Market Forms of Fish.



■ **Fillets.** The sides of fish, **fillets**, are the most common cut offered in restaurants. Fillets can be cut with or without bones and skin. Round fish produce two fillets, one from each side. Flat fish produce four fillets. Two large fillets are cut from the top and two are cut from the bottom of the fish.

■ **Butterflied.** A **butterflied** fish resembles an open book. The fish is dressed, then cut so the two sides lay open, yet are attached by skin.

■ **Steaks.** Cross-section cuts of dressed fish are called steaks. The backbone and skin may still be attached. When the cuts are from a large fish, such as swordfish, they are boneless.

■ **Cubes.** Leftover pieces from large fish are called cubes. They are often used in stir-fries, stews, or kebabs.

■ **Sticks.** Small, leftover pieces of fish that are pressed together form fish sticks. They are breaded or battered and sold frozen.

Frozen Fish

Some people believe that frozen fish is not as good as fresh fish. However, modern processing methods often mean that frozen fish is less likely to be contaminated. More frozen fish is served in restaurants than fresh fish.

■ **Quality characteristics.** Use the following quality checks when purchasing and receiving frozen fish.

- Frozen fish should not be thawed.
- Fish should not have **freezer burn**, the discoloration and dehydration caused by moisture loss as a food freezes. Fish also should be kept well-wrapped.
- Fish should have a thin layer of ice as a glaze. This glaze should not have evaporated or melted.
- Fish should not have a “fishy” smell. A fishy smell results from improper handling.
- **Thawing and handling frozen fish.** Frozen fish products are usually raw or battered and breaded. Follow these guidelines for safe handling:
 - Never thaw fish at room temperature. Always thaw fish in the refrigerator. Allow 18–36

hours for frozen fish to thaw in the refrigerator. If you are in a hurry, keep fish in its packaging, and run it under cold water.

- You can cook small pieces of fish while they are frozen. This makes for easier handling and less drip loss. **Drip loss** is the loss of moisture that occurs as the fish thaws.
- Fish may be partially thawed, then prepped and cooked. Partially thawed fish will handle more easily than completely thawed fish.
- If frozen fish is already breaded or prepared in some way, be sure to follow the package directions for cooking.
- Do not refreeze fish.

Because fish spoils quickly, it is important to store and use it carefully. If a fish tastes strong, it has already begun to decompose. Always check for quality before preparing fish.

Canned Fish

The main varieties of canned fish are tuna and salmon. Tuna is packed in oil or water in solid form, chunk style, or flaked.

Do not purchase cans that are dented or damaged. As with other canned goods, store canned fish on shelves in a cool, dry place. When opened, transfer any unused fish to a covered container. Label the container and refrigerate. The fish will keep for two to three days.

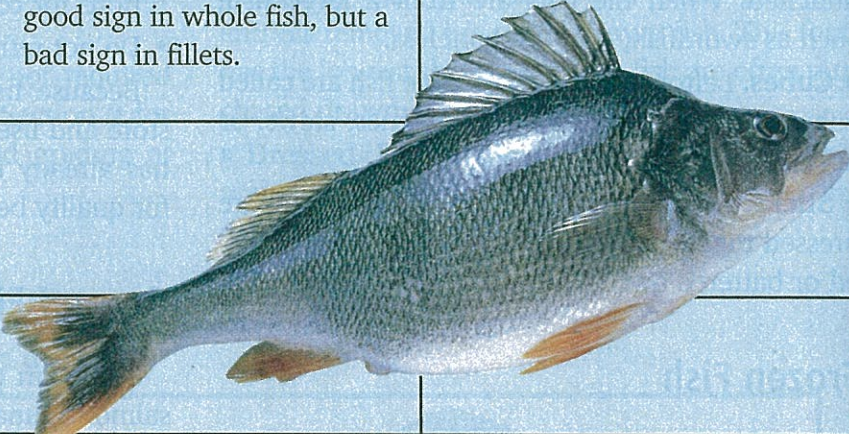
PURCHASING & STORING FRESH FISH

Since fresh fish is not usually graded, the person receiving a shipment of fish must check for freshness. This quality check should be done using the three tests described in Fig. 22-4.

Fresh fish spoils more quickly than fresh poultry or meat. Whole fish should be stored on ice, while fillets should be kept on ice in watertight containers. From the time fish is caught, to the time it is cooked and served, maintaining proper storage temperatures is critical to the quality and safety of fish. The shelf life of fish decreases one day for every day it is stored above 32°F.

Fig. 22-4.

Quality Tests for Fresh Fish

LOOK	FEEL	SMELL
<ul style="list-style-type: none"> Does the meat separate when the fillet is bent? This is a sign of deteriorated connective tissue between the muscles. 	<ul style="list-style-type: none"> When the fish is pressed, is there a fingerprint left? Fish should be firm. If a dent is visible after the fish is pressed, the fish has begun to decay. 	<ul style="list-style-type: none"> Does the fish smell bad? Fresh fish should smell like seaweed or the ocean. If the fish smells like ammonia, it has gone bad and should not be used.
<ul style="list-style-type: none"> Are there blood spots in the flesh? Is the fish dry? Fish should be moist and free of blood. 	<ul style="list-style-type: none"> Is the fish slimy? This can be a good sign in whole fish, but a bad sign in fillets. 	
<ul style="list-style-type: none"> If the gills are still attached, are they pink or grayish brown? Fresh fish will have red gills. 		
<ul style="list-style-type: none"> Are the eyes sunken or cloudy? Fresh fish generally have round, clear eyes. 		

PURCHASING & STORING FROZEN FISH

When buying frozen fish, look for ice inside the fish. This shows that the fish was partially thawed and then refrozen. Be sure that there are no white spots or dry spots, which are signs of freezer burn.

Frozen fish can be kept safely frozen for up to six months, if stored at 0°F. To prevent freezer burn, keep fish vacuum packed or wrapped tightly in plastic. **Vacuum packed** fish have been placed in airtight containers from which the air has been removed to prevent the growth of bacteria.

SECTION 22-1

Knowledge Check

1. Name two varieties of freshwater fish and two varieties of saltwater fish.
2. Describe four market forms of fresh fish.
3. What three general tests can be done when checking the quality of fresh fish?

MINI LAB

Choose three of the fish shown on page 489. Use print or Internet resources to find out how it is commonly cooked. Obtain a recipe for preparing one of these fish. Share your recipe with the class.