ALBACORE TUNA

A quality guide for off-the-dock purchasers

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Albacore tuna is one of the premium fish in waters off the Pacific Northwest. This fish appears as "white meat" canned tuna on grocery shelves throughout the United States and is considered the best of all the types of tuna available. Canned skipjack and yellowfin tuna are sold as "light meat," but only albacore can be labeled as the premium "white meat" tuna.

In recent years, various economic factors have forced the closing of albacore canneries throughout the Pacific Northwest. The loss of these markets has been a severe blow to commercial fishermen, who have had to find other ways to sell their catch. One available opportunity is to sell albacore directly to you, the consumer.

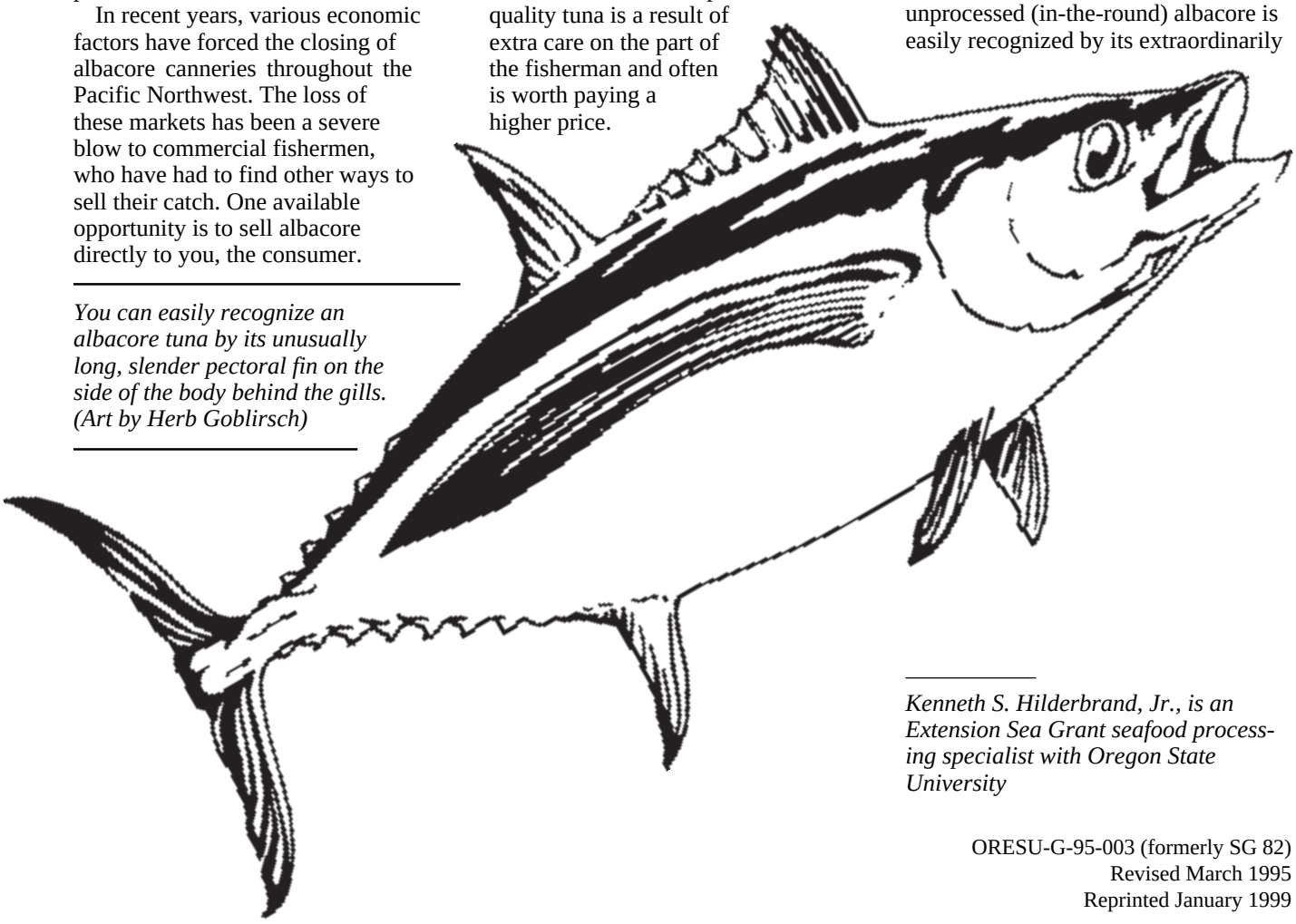
Seafood connoisseurs consider fresh and fresh frozen albacore one of the best choices for many kitchen recipes as well as for preservation by smoking and canning. The flavor of good-quality albacore is mild in comparison to that of other tuna species.

If you buy albacore directly off the dock, you should know how to judge its quality. The quality can vary for a number of reasons. Top-quality tuna is a result of extra care on the part of the fisherman and often is worth paying a higher price.

This publication offers tips to "off-the-dock" buyers: How do you spot good-quality whole albacore? How does quality relate to the way you intend to use the fish?

Identifying albacore tuna

How do you know that the tuna you are buying is albacore? Whole, unprocessed (in-the-round) albacore is easily recognized by its extraordinarily



You can easily recognize an albacore tuna by its unusually long, slender pectoral fin on the side of the body behind the gills. (Art by Herb Goblirsch)

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long pectoral fin. This long, narrow fin (one on each side of the fish) stretches back over three-fourths the length of the fish to a point behind the dorsal or top fin.

Other fish may have the characteristic metallic blue-black back with silver underbelly, or the torpedo shape and thin tailfin attachment—but no other tuna, mackerel, bonito, or tuna-like species has a pectoral fin this long.

Harvesting tuna

Tuna are caught by hooks or with nets. In the Northwest, albacore usually are landed by "troll boats," which rapidly pull (or troll) 10 to 20 lines through the water.

Albacore trollers preserve the fish with either ice or mechanical refrigeration because albacore most often are found 50 or more miles from shore—a distance that forces the boats to stay out several days at a time.

It would be unusual for albacore to be caught so close to shore that a quality fish could be brought back to the dock without being chilled.

Trolling for tuna typically provides time for proper handling. Top-quality fish will be alive when landed and will be bled immediately. Bleeding produces a lighter-colored, milder-flavored flesh. After bleeding, the fish will be packed in ice or refrigerated as soon as possible.

Chilling the fish immediately is sometimes not possible because of fishing conditions, but quality fish will be iced or refrigerated within an hour of capture. At this point, the albacore are either chilled or frozen.

Chilling means the fish are kept at near 32°F, but the flesh is not allowed to freeze. *Frozen* means the fish are kept at subfreezing temperatures until they are sold at the dock.

Once the chilling or freezing process begins, the real battle to maintain fish quality is underway. Quality loss while the fish are in the refrigeration system depends on the type of refrigeration used—and quality loss often can't be determined by inspecting the outer appearance of the fish.

The very best fish may also be the most expensive fish, so read on. The following information will help you recognize the difference.

Albacore quality—fresh versus frozen

The very best-quality albacore will be well iced or refrigerated and not more than a few days old at the time of sale. *Fresh* is a term usually applied to fish that has never been frozen, but it is not always true that fresh is best.

Fresh fish that is more than 5 or 6 days old at the time of sale may begin to show serious quality loss. Properly frozen tuna can be almost as good as the best unfrozen fish.

In fact, you may be better off buying frozen tuna if you don't plan to use it the same day you buy it. However, if the best is what you want, learn to recognize it and to appreciate the extra care it took to preserve it for you.

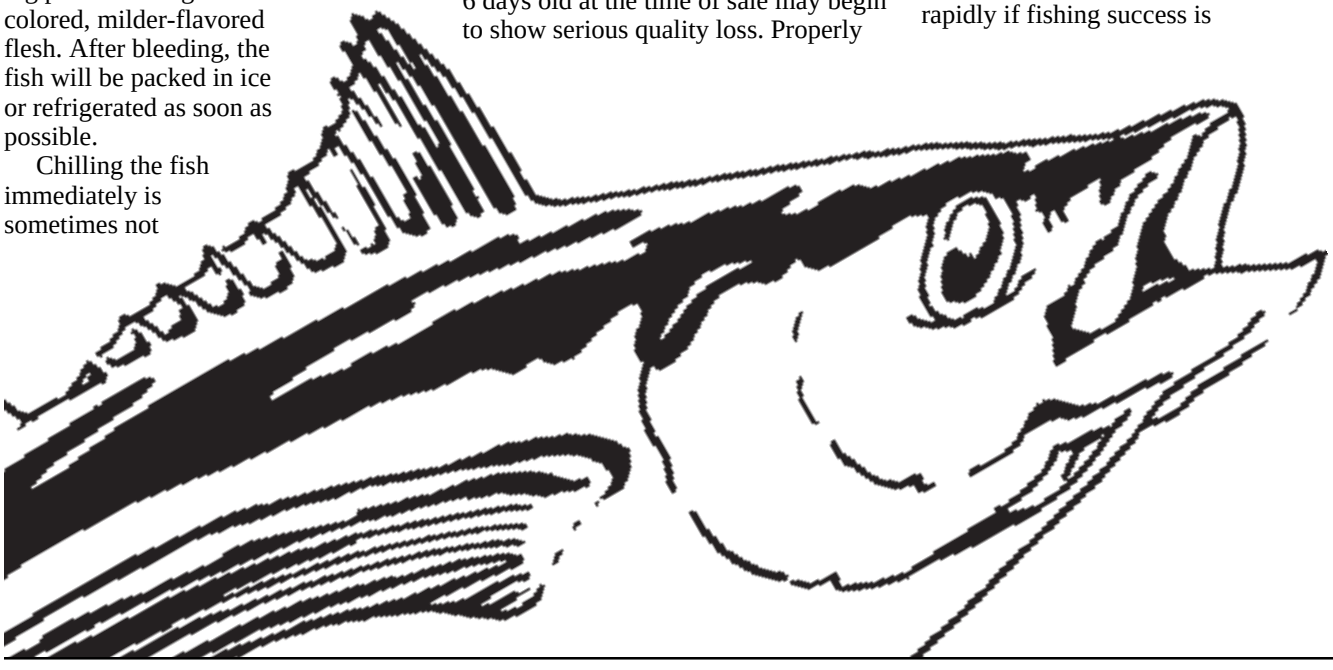
Chilled "fresh" albacore

Ice is unsurpassed by any other chilling system because it has almost unlimited chilling capacity as long as it lasts. Although ice is expensive and difficult to handle, it can and does produce the best "fresh" albacore on the dock.

Mechanical refrigeration can involve the use of coils, seawater spray, salt brine, and other devices. Any of these systems can be adequate and can chill fish to temperatures colder than ice. They can produce an excellent quality albacore if they're operated properly.

The major drawback to these systems is their limited capacity. An overloaded mechanical chilling system not only damages the extra fish placed in it, but it also lowers the quality of previously chilled fish.

Mechanical chilling systems are easily overloaded when fishing is good. Many systems are designed to handle only an average daily fish production and can become overloaded rapidly if fishing success is



above average. The result of overloading is excessive fish temperature, accelerated quality loss, and even spoilage.

Frozen albacore

Air blast, spray brine, brine immersion, coil, and shelf freezers are commonly used systems to freeze top-quality albacore. Each has good and bad points from the standpoint of people working in the fishing industry, but all can and do produce good fish. As a dockside buyer, you'll find it easier to judge the quality of frozen albacore if you know the basics of each type of system.

Freezing systems using salt brine (spray and immersion) rely on the fact that a strong salt brine will not freeze unless its temperature is below 0°F. Tuna properly exposed to this cold brine will freeze so fast that little salt is absorbed into the meat. However, if the temperature of the brine is not cold enough, the tuna will absorb salt from the brine and have a salty taste.

Overloading the system usually is the cause of this problem, just as it is with mechanical chilling. Tuna held for weeks or months at temperatures above 15°F (but still frozen) can develop severe quality problems.

Air blast, coil, and shelf freezer systems can produce excellent fish, but these have the same limitations as other mechanical systems. Overloading still is a problem. These systems do, however, produce a fish with a cold, dry surface—undesirable thawing is easy to spot. Fish frozen by these methods absorb no salt but may have a water glaze added to the outside to protect against freezer burn.

In poorly designed freezer systems, the fish may not freeze properly (below 10°F) for several weeks. The outward signs of such abuse will be dented or partly frozen fish. Unfortunately, the worst quality defects in frozen fish usually are *inside*—and may not show up until you thaw and use the fish.

Characteristics of good-quality tuna

Chilled "fresh" tuna

High-quality "fresh" tuna will have a characteristic odor that's fishy but not strongly so. The eyes will be clear, and the skin will not be overly slimy. The gills will have a deep red color rather than a brownish pink. The sides of the fish should be silvery rather than dull gray. There should be plenty of ice left on the fish and in the hold of the boat.

The temperature inside the fish should be 32°F or less from boats using either ice or chilled seawater. Bled fish may have an inconspicuous cut behind the chin. In no case should the fish be more than 5 or 6 days out of the water for top quality.

The flesh of top-quality, bled fish will not have external dents or internal bruise marks and blood spots. The flesh will remain characteristically white and have a pleasant odor when cooked.

Please note that even good-quality tuna cooked with the "skin on" usually will have a characteristically unpleasant "tuna fish" odor.

A boat may have fish that vary in the time they have been out of the water, so be sure to examine the fish and ask questions. Don't be afraid to reject the fish if you question its quality.

Do not buy tuna that is over 40°F. Fishermen selling quality tuna will have a thermometer and will not mind showing you that the fish is at 40°F or less. Fish held for extended periods at temperatures higher than 40°F can become a safety risk; histamine, which is a toxin, forms from naturally occurring amino acids in tuna and tuna-like species. Histamine can cause mild to severe allergic reactions in susceptible people.

Frozen tuna

High-quality frozen tuna will be brick hard (less than 10°F) with no external dents. If it has been in a dry-type freezing system, it will be bone dry but may collect frost on exposure to air. Brine-frozen fish may look wet, but they'll still be brick hard and lower than 10°F. Upon thawing, frozen albacore may appear soft, but their odor will be characteristically fresh and not strong.

Unfortunately, many defects in frozen albacore show up only when you cook it or eat it. Good-quality tuna will cook with a light color and without a salty flavor. A fisherman who is willing to cook samples of his fish for you probably is confident that the tuna is top quality.

Getting your fish home from the dock

Pack chilled albacore thoroughly in ice, in an insulated container. The shelf life of properly iced fish depends on its age and quality when it was purchased. Don't wait more than a few days to use the fish.

Pack whole, frozen albacore in insulated chests with dry ice if you want more than a few hours of frozen transport and storage. Allowing frozen fish to thaw during the trip home is okay if you plan to use them immediately after thawing and if their temperature doesn't rise above 35°F.

Preserving quality albacore

Albacore tuna are excellent in many home recipes and for canning and smoking. However, use some caution when you plan to use whole tuna purchased directly from the boat.

Freezing

Although chilled fish has never been frozen, freezing a whole tuna at home is not a good idea because of the long freezing time required by home freezers. If you want to store a whole tuna, you should buy frozen fish at the dock.

On the other hand, cleaning and cutting a chilled, dressed, fresh albacore into steaks or loins to be frozen is fine. Be sure to properly wrap them for freezing. See EC 1363, *Home Freezing of Seafood*, for tips on wrapping fish for the freezer.

You can glaze frozen whole fish by dipping them momentarily in fresh water before placing them in extended frozen storage. Refreezing loins dressed from whole and thawed frozen fish will not produce good quality. Only top-quality albacore will keep more than a few months in the freezer without tasting and smelling rancid (like linseed oil).

Thawing

Thaw frozen whole albacore in a large tub filled with running, cold fresh water, or in a cool room. Several hours to a day may be required, depending on the water and air temperature and the size of the fish. Tuna that's partly frozen yet soft enough to cut is easier to handle than completely thawed fish. But fish to be canned must not have ice crystals remaining in it when you begin the cooking process. Follow canning directions exactly.

Canning

Raw pack tuna will soon taste rancid if it was not prepared from high-quality fish that is "fresh" or "fresh frozen." Commercial canners precook albacore to remove natural oil and replace it with vegetable oil or water for just this reason.

Only a few small commercial "custom canners" pack albacore in its natural oil, and they are very careful to pack only the best quality. Be sure to fully thaw the tuna before you time the cooking cycle.

Smoking

Smoking tuna—or any fish, for that matter—will not improve its quality. Smoke may cover up some quality defects, but the quality will not improve. Use good-quality albacore to produce good-quality smoked tuna. See PNW 238, *Smoking Fish at Home—Safely*.

In summary

Obtaining the best quality and flavor means searching for the best albacore available from dockside sellers. Be sure to look carefully at the fish being sold. Ask questions about when it was caught and how it has been handled. Use this guide for a better understanding of how quality is produced and how to recognize it. Do not buy tuna that is warmer than 40°F.

For more information

Home Freezing of Seafood, EC 1363, by Kenneth S. Hilderbrand, Jr. (Oregon State University, Corvallis, 1993). 50¢

Smoking Fish at Home—Safely, PNW 238, by Kenneth S. Hilderbrand, Jr. (Oregon State University, Corvallis, 1993). 50¢

Canning Seafood, PNW 194, by Carolyn Raab (Oregon State University, Corvallis, 1993). 50¢

Home Canning Smoked Fish, PNW 450, by Carolyn Raab and Kenneth S. Hilderbrand, Jr. (Oregon State University, Corvallis, 1993). 50¢

Ordering instructions

If you would like additional copies of ORESU-G-95-003, *Albacore tuna: A quality guide for off-the-dock purchasers*, send 75¢ per copy to:

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