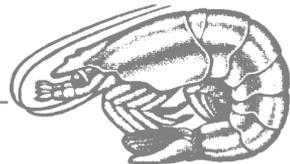


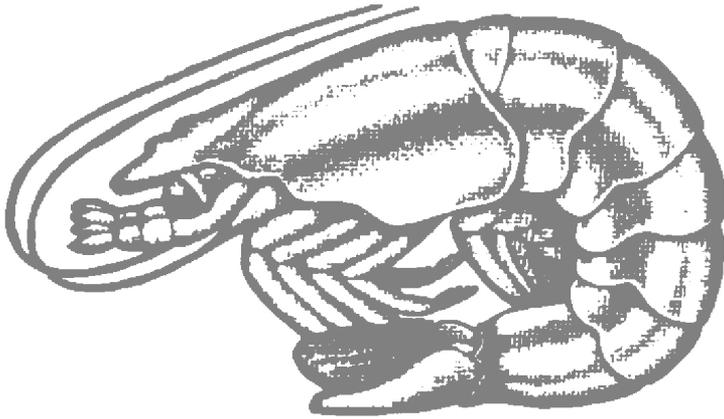
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Preparation & Preservation of Alabama Seafood

Many species of seafood are harvested, both recreationally and commercially, from the waters of the Gulf of Mexico. The four most economically valuable forms landed in Alabama are shrimp, blue crabs, oysters, and fish. Whether home consumers catch their own seafood or purchase it at the seafood market, they often want to do much of the preparation themselves. They may also wish to store some or all of their seafood for extended periods. This brochure provides recommendations for proper home handling, preparation, and preservation of Alabama seafood.





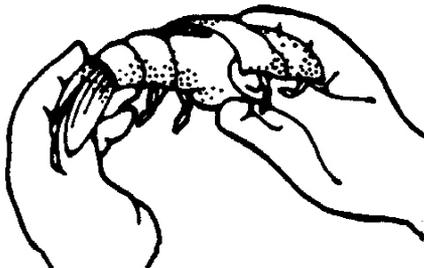
Shrimp

Preparation of Shrimp

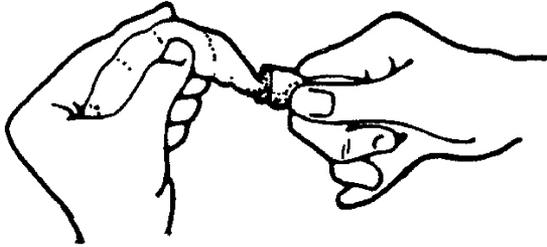
Head the shrimp promptly; simply pinch the heads off and discard them or save them for shrimp stock. Removing the heads reduces the amount of storage space you need because the head accounts for 35 to 40 percent of a shrimp's body weight. Shrimp heads also contain more than 80 percent of the spoilage bacteria found in shrimp. So, headed shrimp are less likely to spoil than those with heads left on.

After the head is removed, the final cleaning involves removing the shell, tail, and "sand vein" (if desired).

1. To peel the shrimp, hold the tail in one hand and slip the thumb of the other hand under the shell between the swimmerettes. Lift off several segments of shell. Repeat, if necessary, removing all but the tail section.

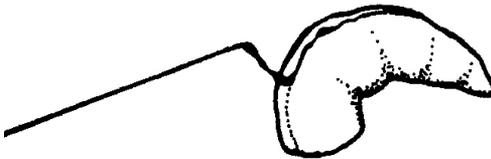


2. If the tail section is to be removed, squeeze the tail with the thumb and forefinger. Pull the shrimp meat with the other hand until it is released from the shell.



3. The sand vein (usually black) runs along the upper curve of the shrimp's body. To remove it, make a $\frac{1}{8}$ -inch-deep cut with a sharp knife along the length of the upper curve, or use a shrimp deveiner. Then rinse the vein away under cold running water.

Preservation of Shrimp



Wash and sanitize your hands, the kitchen sink, counter top, and any other surfaces that will come in contact with the shrimp. **Dissolve 1 tablespoonful of liquid laundry (chlorine) bleach in 1 gallon of tap water for a simple, effective sanitizing solution.**

Wash the shrimp thoroughly, using plenty of cool tap water. Shrimp can be frozen cooked or raw, in or out of the shell. For best quality and maximum storage life, freeze shrimp raw while leaving the shells on the tail meat because the shells help reduce drying out (freezer burn) during frozen storage.

If you want to eat the shrimp fresh, mix them with ice and store them in the refrigerator. Uncooked shrimp should not be kept in the refrigerator for more than 3 to 4 days.

To freeze cooked and uncooked shrimp, follow these steps:

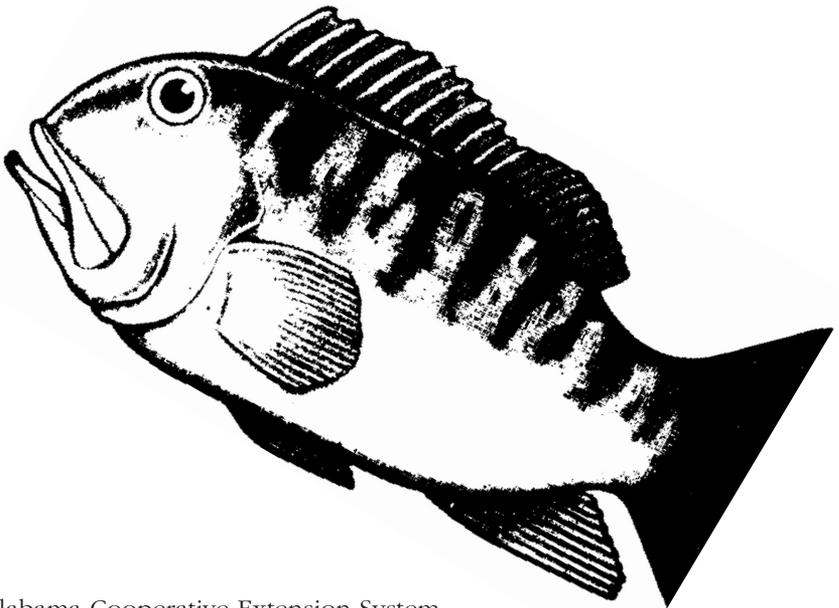
1. Quickly chill cooked shrimp before freezing.
2. Package in freezer containers or zip-top freezer bags.
3. Leave $\frac{1}{4}$ -inch headspace, zip the bag shut, and freeze.

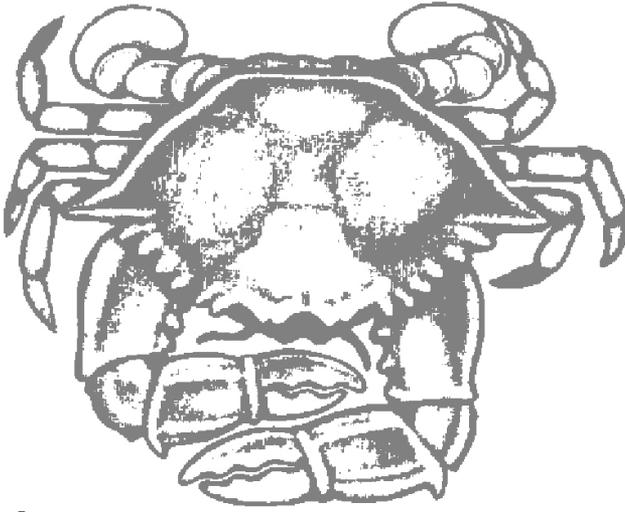
To freeze cooked and uncooked shrimp in milk cartons, follow these steps:

1. Thoroughly wash and sanitize milk cartons using the solution described above.
2. Place 2 pounds of shrimp in a half-gallon waxed milk carton.
3. Fill the carton with cool tap water to within 1 inch of the top.
4. Fold the top over and freeze.
5. After the contents have frozen, open the carton and add more water to cover any exposed shrimp. Then, fold the top over again, tape it closed, and freeze.

Shrimp frozen by these methods will keep for 4 to 6 months. Keep them solidly frozen. Do not thaw and refreeze them. Repeated freezing and thawing reduces the quality of the shrimp and provides a potential for spoilage. Thaw the shrimp carefully, either overnight in the refrigerator or under cold, running tap water immediately before use.

Another option for short-term preservation of shrimp (up to two weeks) is pickling the shrimp. Freshly boiled shrimp can be stored in airtight glass jars and covered with cider vinegar and lemon juice (to keep taste and maintain quality). Onion, garlic, and seasonings can be added to the shrimp for additional flavor. The jar should be sealed tightly and kept cold in the refrigerator.





Blue Crabs

Preparation of Hard-Shell Blue Crabs

Hard-shell blue crabs are sold either live or as cooked meat. When buying live crabs, make sure they show movement. Store the live crabs in a cool, moist area with plenty of air. Do not store them in airtight containers or containers filled with water because they will die.

Crabs are normally very active, but if they are kept out of the water for long periods, they will slow their movements. Some will even die. To check crabs that are not moving, gently tap on the top shell with a stick or other utensil. Live crabs will respond by quickly raising their claws. Crabs that don't respond are dead and should be discarded immediately.

Wash crabs thoroughly with plenty of cool tap water. This is best done with a kitchen sink sprayer or garden hose. Continue spraying the crabs until water that drains from the holding container is clear and trash free.

To prepare whole live crabs, boil them in seasoned water. Bring the seasoned water to a boil in a large pot or kettle. Add washed live crabs and cover tightly. After the water resumes boiling, cook the crabs at a full, rolling boil for at least 15 minutes. Remove the crabs from the heat, drain, and allow them to cool. If you want to freeze the crabs, they will keep better if they are cooked first.

You can also clean the crabs before you cook them. This way, you can cook only the claws and the inner skeleton (core), which contains the white meat. In this case, the cooking time should be only 8 to 10 minutes.

To clean hard-shell crabs, follow these steps:

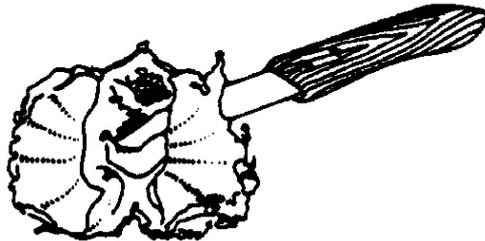
1. With the crab upside down, firmly grasp the legs on one side with one hand, and with the other hand, lift the flap (apron) and pull back and down to remove the top shell.
2. Turn the crab right side up and remove the gills. Wash out the intestines and spongy material.

To remove the meat, follow these steps:

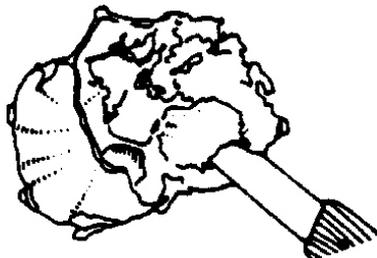
1. With a twisting motion, pull the legs loose from the body. Remove any meat that clings to the legs. Break off the claws.



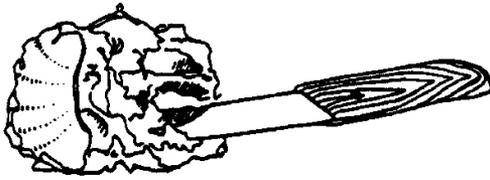
2. Slice off the top of the inner skeleton and remove all the exposed meat on this slice.



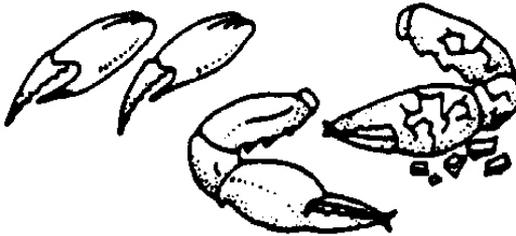
3. At the back of the crab, on each side, lies a large lump of meat. With very careful U-shaped motions of the knife, remove these back fin lumps.



4. Remove the white flake meat from the other pockets with the point of the knife.



5. Crack the claw shell by striking the base of the first joint with a heavy, dull knife blade.



Remove the shell from around the movable pincer. This will expose the claw meat. If the meat is left attached to the movable pincer, it will make a delicious crab finger hors d'oeuvre. The dark meat can also be removed and used in soups, salads, or casseroles.

Picking crab meat under black light can help you see the small bits of shell which can sometimes get lost. The shell will shine a brighter white under the black light, making it easy to identify and remove.

In Alabama, more than 1.6 million pounds of hard blue crabs and an additional 585,000 pounds of soft blue crabs were landed during 2011. To legally catch hard or soft blue crabs recreationally in Alabama you must possess a valid recreational salt water fishing license (www.outdooralabama.com/licenses or 1-888-848-6887). Gear limitations include no more than



five traps per licensed individual, minimum size of 5 inches from point to point, and not more than 5 gallons per boat.

Traps can be baited with chicken or turkey necks and backs or fresh fish. Other hard-shell crabbing methods involve using a string and a

dip net. Simply tie the bait to one end of a string (you may need to weigh it down with a fishing weight) and hold or tie the opposite end to the boat or pier. When the string goes tight, slowly pull the string in. When you can see the bait, ease the dip net into the water and gently scoop it and your crab up. It takes a little practice, but can be a fun way to enjoy your time on the water. There are other methods, including string baskets that lie flat on the bottom. These have the bait tied to the center, and periodically are quickly pulled up, raising the sides of the basket around your crab and brought to the surface. Have tongs handy for safe handling of hard-shell blue crabs, which have powerful claws.

To find soft blue crabs, you will need to access quiet areas along the shore where the crabs go to shed their shells. Usually at night, they can be found close to grass or pilings which they use for shelter. A strong flashlight will help see through the shallow water. Use a pole to gently tap them to make sure they are soft. A small net can be used to scoop them up and put them on ice. If you are also catching hard crabs, store them separately to prevent damage to the soft crabs.

Preservation of Hard-Shell Crabs

Wash and sanitize your hands, all work areas, and storage containers with the bleach solution. Remove the claws and either set them aside for storage or crack them open and remove the meat.

Remove the spongy, yellowish-orange structures (digestive and reproductive organs) from the body cavity and discard. Also remove and discard the grayish-white, feathery structures (gills) found on either side of the body cavity. What remains is the body pod (made of cartilage), which contains the edible white meat.

If you plan to eat the crab meat fresh, pick it from the claws and body pod and place it in a cleaned and sanitized plastic storage container. Or place the claws and body pods themselves in plastic storage bags. The packaged pods or picked meat may be stored on ice in the refrigerator for 2 to 3 days.

If the crab meat is to be frozen, it is better to leave it in the claws and body pods. Picked crab meat is more easily damaged by the formation of ice crystals and freezer burn. Place the claws and body pods in half-gallon waxed milk cartons that have been cleaned and sanitized. Add cool tap water to within 1 inch of the top. Fold the top over, tape it closed, and freeze.

Cooked hard-shell blue crab meat does not hold up very well in the freezer. Crabs frozen by this method will keep for only about 1 month. Do not thaw and refreeze them. Thaw the crabs overnight in the refrigerator **only**. Thawing under running tap water washes away the flavor.

Preparation of Soft-Shell Crabs

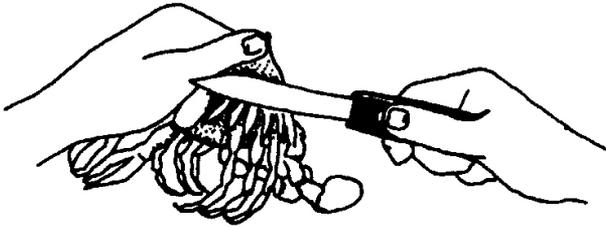
Crabs periodically shed their shells so they can grow. A new, soft shell forms beneath the old, hard one. The crab backs out of the old shell as it loosens and splits. The crab then absorbs water to expand to its new, larger size.

Soft-shell blue crabs are available live, fresh, or frozen and either whole or cleaned. When buying live soft-shell blue crabs, make sure they show movement.

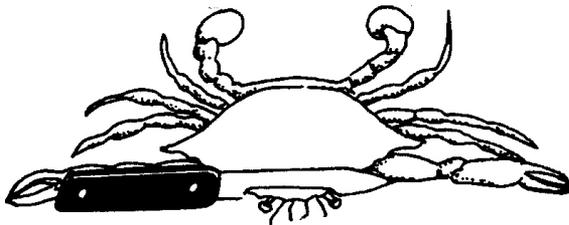
Store live crabs in a cool, moist area with plenty of air, **not** in airtight containers or small containers filled with water. For maximum quality, use them within 24 hours.

Clean live soft-shell blue crabs or whole (round) fresh or frozen crabs before cooking. Follow these easy steps:

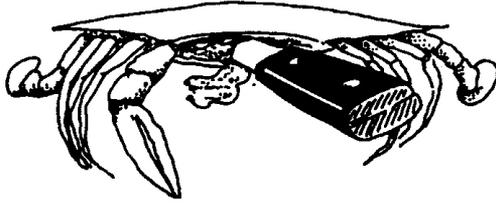
1. Lift the large top shell spines (points) and scrape out the gills (grayish-white feathery structures).



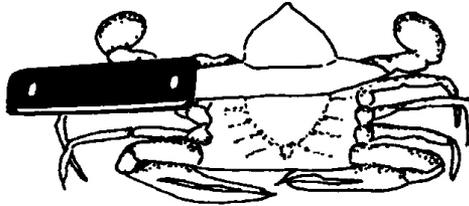
2. Remove the eyes and mouth parts by cutting across the front of the crab just behind the eyes with a knife or a pair of scissors.



3. Press the top shell over the legs to remove the bile sacs. Scrape out the internal organs through the cut made to remove the eyes and mouth parts. Rinse the body cavity with cold water. Or the entire top shell can be lifted to expose the internal organs. Remove the internal organs and rinse the body cavity with cold water.



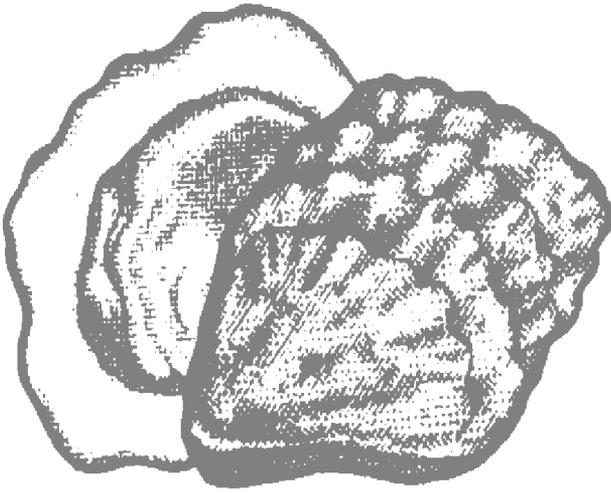
4. Turn the crab over and lift, and remove the apron at its base.



Preservation of Soft-Shell Crabs

Fresh soft-shell crabs will maintain their quality better when wrapped in plastic and packed in ice in the refrigerator. For maximum quality, use them within 48 hours.

To freeze soft-shell blue crabs, wrap them in several layers of moisture-proof plastic wrap and place them in the freezer. Properly wrapped and hard frozen soft-shell blue crabs will maintain good quality for up to 6 months. Do not thaw and refreeze them. Thaw the crabs overnight in the refrigerator **only**. Thawing under running tap water washes away the flavor.



Oysters

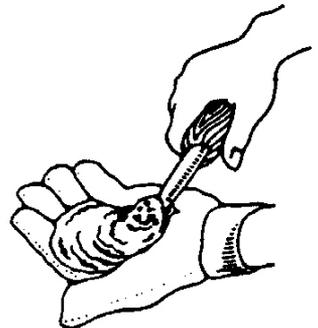
Preparation of Oysters

Thoroughly wash and scrub all mud and debris from the shells. This is best done with a garden hose and scrub brush. Make sure that the oysters are alive. Live oysters hold their shells tightly closed. Tap any oysters with slightly opened or gaped shells. Live oysters will respond by closing their shells tightly. Unresponsive oysters are dead and should be discarded. Oysters should be kept cold both before and after shucking.

To shuck whole oysters, use heavy cotton gloves and an oyster knife, which has a heavy, wedge-shaped blade and handle, often made in one piece. It is designed to withstand the pressure required to open oysters. Never use a sharp knife. Shucking is dangerous and great care should be taken.

The cleanest way to open oysters is to grasp the oyster securely by the thin end or “bill,” leaving the hinge (thicker portion) exposed toward the other hand.

1. Insert the oyster knife in the crevice between the shells at the hinge; twist the knife while pushing it firmly into the opening to pop the hinge, creating a gap between the shells. Wiggling the tip of the oyster knife in between the shells is much safer than trying to stab the tip between the shells. Once the knife tip is in, a firm twist should force the hinge apart.



2. Before pulling the shell apart, slide the knife along the inside of the top (flat) shell to cut the adductor muscle loose from the shell.



3. Remove the top shell and slip the knife under the body of the oyster, being careful not to mutilate it. Cut the muscle away from the bottom shell. Remove any remaining shell particles that may be attached to the oyster. Most oysters, except the very largest, can be opened by this method. Immediately discard any oysters with off-odors or ones that appear to be dried out.



Oysters in the shell can also be prepared by grilling or baking them in the shell. The oysters will open at the bill, and can be readily opened with an oyster knife at that point, though care should be taken as the shells get very hot.

Preservation of Oysters

Store oysters to be eaten fresh in the refrigerator. Unshucked oysters can be stored without ice in the refrigerator and should remain alive for 7 to 10 days.

Shucked oyster meats may be placed in **sanitized** 1-cup or 1-pint containers or plastic bags, packed in ice, and placed in the refrigerator. Oysters stored by this method will keep for 7 to 10 days.

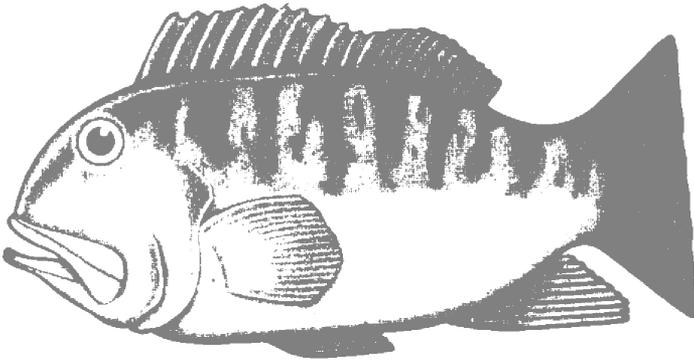
Frozen oysters will be of lesser quality than fresh oysters. The simplest method is to freeze oysters in the shell. Place the oysters in a plastic bag and press out excess air. Seal the bag and freeze. The shell and juices provide an excellent, natural container for the oyster meat.

Shucked oyster meats can be frozen also. They will maintain a better flavor if frozen in their own natural juices (liquor). Place shucked oyster meats in **sanitized** plastic containers or bags. Press the bags flat. Leave $\frac{1}{2}$ inch of headspace in the containers. Freeze as quickly as possible.

Oysters frozen by either of these methods will keep for 2 to 3 months. Do not thaw and refreeze the oysters. Thaw overnight in refrigerator **only**. Thawing under running water washes away the flavor.

Oysters may also be preserved by canning. Oysters should be kept alive on ice until ready to can. Wash oysters and heat for 5 to 7 minutes in a preheated oven at 400 degrees F. Cool quickly in ice water. Drain, crack open shell, and remove the meat. Wash meat in a salt solution containing ½ cup salt to 1 gallon of water. Drain. Next, add ½ teaspoon salt to each pint (optional). Fill hot half-pint jars with drained oysters and cover with fresh boiling water. Leave 1-inch headspace. Remove air bubbles. Use a clean, dampened paper towel to wipe rims of jars. Adjust lids and process.

Process for 75 minutes using either a dial gauge canner at 11 pounds of pressure or weighted gauge canner at 10 pounds of pressure.



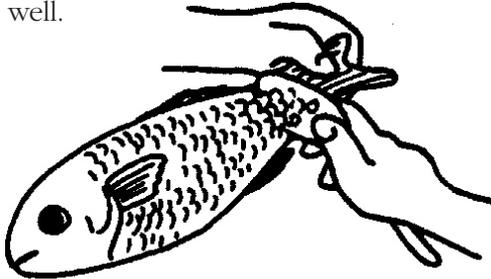
Fish

Preparation of Fish

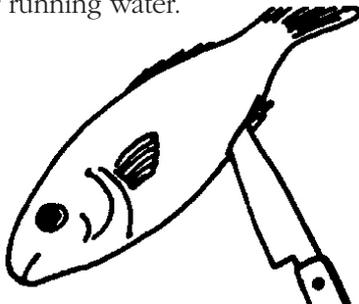
Wash and **sanitize** your hands, all work areas, and storage containers. Before cooking or storing your fish, dress it to the form that best suits your needs.

To prepare a whole (round) fish for cooking or storage, follow these simple steps:

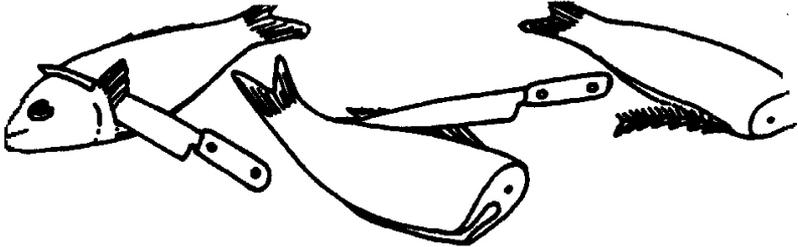
1. **Scale.** Lay the fish on a board and hold the tail. Working from the tail to the head, scrape the scales off using a scaler, stiff knife, or large spoon. Rinse well.



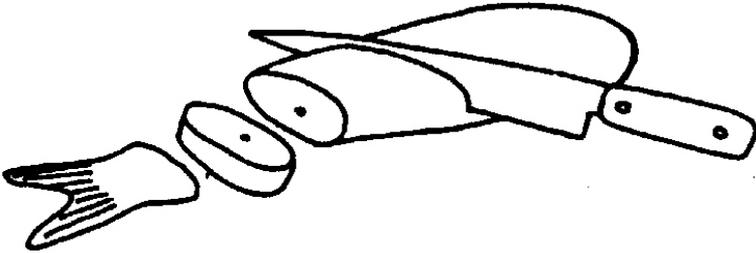
2. **Eviscerate.** Make a cut along the entire length of the belly of the fish. Remove the entrails and pelvic fins. Clean the belly cavity thoroughly under running water.



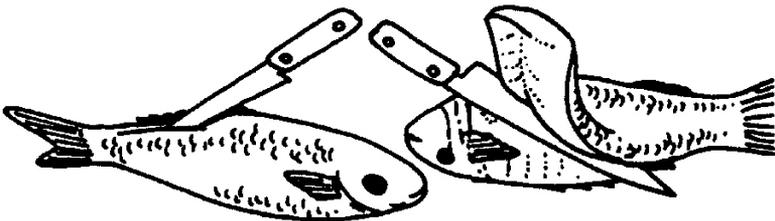
3. **Dress.** Remove the head and pectoral fins by making a cut just behind them with a sharp knife. If the backbone is large, cut down to it on both sides and snap the head off. Remove the dorsal fin by cutting along each side with a sharp knife. Grasp the end near the tail and give a quick pull toward the head.



4. **Steak.** A large dressed fish can be cut into steaks by cutting across the backbone at 1- to 1¼-inch intervals.



5. **Fillet.** For filleting, it is not necessary to completely dress the fish. Scale the fish, unless the fillet is to be skinned. Use a sharp, flexible, thin-blade knife. Cut through the flesh along the backbone from the tail to just behind the head. Cut down to the collar bone. Turn the knife flat and slide it along the ribs to the tail, cutting the flesh away from the backbone. Repeat on the other side.



6. **Rinse.** Thoroughly wash the dressed fish, steaks, or fillets under plenty of cool, running tap water.

Many large fish can have tapeworms, which are usually found in the tail quarter of the fish. To remove them, fillet the fish in the usual

fashion. The affected area will have a reddish tinge, unlike the whitish, unaffected areas. The tapeworms themselves are white. Although there should be no danger from eating this portion of the fish, most people will probably want to remove and discard the affected section.

Preservation of Fish

If you plan to eat your fish fresh, wrap it in clear plastic or place it in zip-top storage bags. Pack the fish in ice and place it in the refrigerator. Fresh fish stored in this manner will keep for 5 to 7 days.

To freeze fish, follow the directions for freezing shrimp.

To glaze fish, follow these steps:

4. Dip each fish portion or fillet in ice water. Lay them on a cookie sheet (not touching) and place in freezer.
5. After the fish are solidly frozen, dip them in ice water again, place them back on the cookie sheet, and return to freezer.
6. Repeat Step 2 several times until an ice glaze completely covers the fish portions.
7. Wrap the glazed fish in two layers of plastic wrap or seal them in plastic bags.
8. Place fish in freezer.

Most fish frozen by these methods will keep for 4 to 6 months.

However, fish with high fat content, such as mackerel, mullet, or bluefish, maintain their quality while frozen for only about 3 months.

Keep the fish solidly frozen. Do not thaw and refreeze them. Repeated thawing and refreezing reduces the quality of the fish and provides a potential for spoilage. Thaw fish carefully, either overnight in the refrigerator or under cold, running tap water immediately before use.

To can fish (except tuna), follow these steps:

Remove internal organs from fish immediately within 2 hours after they are caught and store on ice.

1. Remove heads, tails, fins, and scales.
2. Wash fish and remove all blood.
3. Split fish lengthwise, if desired.
4. Cut cleaned fish into 3 ½ inch lengths.

Fish may also be raw packed. Fill hot, sterilized jars with raw fish, skin side facing the glass. Leave a 1-inch headspace. Add 1 teaspoon canning salt to each pint jar for taste (optional). Do not add liquid. Wipe jar rims and adjust lids. Process pint jars for 100 minutes using either a weighted gauge canner at 10 pounds of pressure or a dial gauge canner at 11 pounds of pressure.

Glass-like crystals of magnesium ammonium phosphate sometimes form in canned salmon. For the home canner, there is no way to prevent these from forming, but they usually dissolve when heated and are safe to eat.

Fish is known to be a nutritionally excellent choice. A number of popular fish caught in and around Alabama shores and their basic nutritional qualities can be found here:

Species	Serving 1 filet (Pounds)	Calories	Protein (g)	Fat (g)
Snappers	0.48	218	44.71	2.92
Flounder	0.36	114	20.23	3.15
Groupers	0.57	92	19.38	1.02
Cobia	0.43	168	36.65	1.24
Spanish mackerel	0.41	260	36.07	11.78
Seatrouts	0.52	248	39.84	8.59
Sheepshead	0.52	257	48.1	5.74
Whiting	0.2	83	16.85	1.21

*Source: USDA Agricultural Research Service National Agricultural Library

If you are buying your fish at one of the many local fresh seafood markets, remember to look for the following characteristics to help ensure freshness:

- Clear eyes, not cloudy or milky
- Bright red or pink gills
- Shiny-looking flesh (freezing can reduce shiny appearance with minimal impact on quality)
- No discoloration (yellowing or brown along filet edge)
- No drying of filet or steaks
- Flesh should be firm
- No fishy odor—fish should smell clean

References

This pamphlet was compiled using information condensed from the following publications. Consult them for additional information about seafood nutrition, storage, preparation, and preservation.

Perkins, B. E. 1987. Saving your catch. Alabama Cooperative Extension Service CRD-0040. MASGP-87-001.

Perkins, B. E. 1993. Alabama seafood facts. Alabama Cooperative Extension Service ANR-0833. MASGP-93-014.

Perkins, B. E. 1991. Seafood Safety. Alabama Cooperative Extension Service ANR-0578. MASGP-91-003.



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For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

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