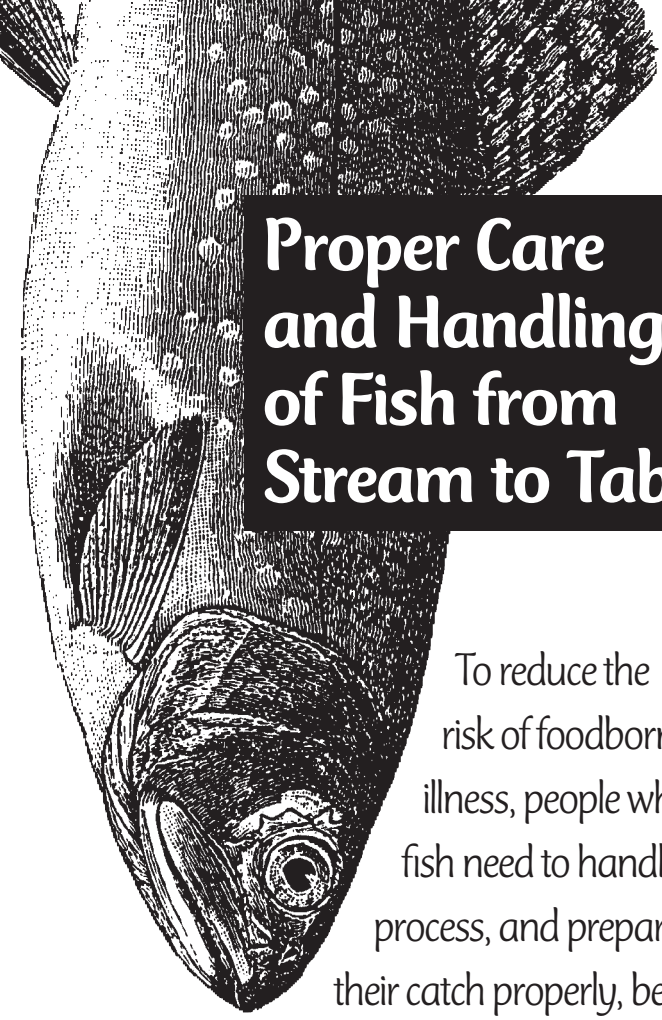

Proper Care and Handling of Fish from Stream to Table

To reduce the risk of foodborne illness, people who fish need to handle, process, and prepare their catch properly, being careful to prevent contamination from the stream to the table. This publication contains guidelines and helpful hints to help you make sure that the food you're providing is safe.

PennState Extension

Bring These Items When You Fish

A sharp fillet knife
A whetstone or steel for sharpening
Clean cloths or paper towels
Sealable storage bags
Disposable plastic gloves
A cooler full of ice or snow
Clean drinking water
A bucket, basket, stringer, or live box to keep fish alive

Before the Catch

- Fish in safe waters. Contact your local health department, the Pennsylvania Fish and Boat Commission, or visit **www.fishandboat.com** to determine the safety of fishing waters.
- To reduce the risk of exposure to disease, wear disposable plastic gloves while handling fish.
- Check fish you catch for signs of disease or parasites. Healthy fish have bright, clear eyes and red gills. Diseased fish may have sunken eyes, discolored skin, loose scales, and white, bloody, or slimy gills.
- Decide what you will do with a fish immediately after catching it. Releasing fish immediately instead of waiting until the end of the day will improve their chances for survival.
- Clean fish promptly. Digestive enzymes will spoil the fish rapidly and off-flavors may develop.

After the Catch

- Using a clean fillet knife, bleed the fish by cutting the throat, then remove the gills and entrails.
- Use clean water, premoistened wipes, or alcohol swabs to clean your knife frequently or between cuts to keep from dragging bacteria into the flesh.
- Wipe the fish surface clean with cloth or paper towels; keep the fish moist, but not wet, by wrapping it in clear plastic wrap; put the fish in a sealable storage bag and place it on ice or snow.
- If making fillets, rinse the fish in cold, clean water to remove blood, bacteria, and digestive enzymes.
- Pesticides or other substances may concentrate in fatty parts of the fish, so remove skin and fat deposits when cleaning fish.
- To prevent bacterial growth, quickly cool fish to 35–40°F (2–4°C).

Transporting and Processing Fish

- During processing, frequently clean your knife between cuts to avoid contaminating the fish. Wash your knife, hands, and cutting boards often with warm, soapy water.
- Live fish can be kept on stringers or in live wells as long as they have enough water and mobility to breathe.
- Keep fish flesh out of sunlight. Cover the cooler with a blanket.
- Remove scales by scraping the fish gently from tail to head with the dull edge of a knife or spoon.
- Remove the head by cutting above the collarbone. Break the backbone over the edge of a cutting board or table.
- Remove the dorsal, or large back fin, by cutting the flesh along each side and pulling the fin out. Do not trim fins with shears or a knife, as it will leave bones at the base of the fin.

Kitchen Processing

- Store any unfrozen fish in a covered container in the refrigerator and use within two days.
- Keep raw fish separated from ready-to-eat foods in the refrigerator to prevent cross-contamination.
- Marinate all fish in the refrigerator.
- If thawing fish packaged in vacuum bags, remove the fish prior to thawing it in the refrigerator; remove it from the bag immediately after thawing it under cold, running water; or remove it from the bag, microwave, and cook immediately.
- Cook all fish until it is flaky and reaches 145°F (63°C) to reduce the risk of foodborne illness. Use a calibrated food thermometer to ensure proper cooking.
- Fish must be canned in a pressure canner to ensure a safe product. Follow guidelines from the *USDA Complete Guide to Home Canning* (2015 revision).
- Glasslike crystals of magnesium ammonium phosphate sometimes form in canned salmon. While there is no way to prevent crystals from forming, they usually dissolve during heating and are safe to eat.
- Fat fish include mullet, mackerel, trout, tuna, and salmon. Dip fat fish for 20 seconds in ascorbic acid (2 Tbsp to 1 quart water) to control rancidity and flavor change.
- Lean fish include flounder, cod, whiting, reddish, croaker, snapper, grouper, sheepshead, and most freshwater fish. Dip lean fish for 20 seconds in brine (¼ cup salt to 1 quart cold water) to firm fish and decrease drip loss on thawing.

Freezing and Smoking Tips

- Use only fresh fish for freezing.
- Cut and package fish into meal-size portions.
- Use heavily waxed paper, freezer wrap, heavy-duty aluminum foil, or plastic freezer storage bags for fish storage.
- Wrap fish tightly. Remove all air from the bag before sealing.
- Fish can be placed in a shallow metal plan, covered with water, frozen, and rewrapped in foil, paper, or plastic.
- Label packages with contents and dates.
- Space packages in freezer to allow proper air circulation for cooling and freezing.
- Once packages are solidly frozen (within 24 hours), you can restack them within the freezer.
- Properly wrapped lean fish will store for six months, and fat fish for two to three months, in the freezer.
- To avoid quality deterioration, do not refreeze thawed products.
- For smoking, salt the fish (1 cup salt to 7 cups water) for 1 hour. Smoke the fish until it reaches and holds an internal temperature of 160°F (71°C) for at least 30 minutes during the smoking cycle.
- Smoked fish can be stored in the refrigerator. Use within a week. Freeze any unused smoked fish (see above).

For more information about food safety, contact Penn State's Department of Food Science at 814-865-5444 or visit the Penn State Extension food safety website at **extension.psu.edu/food-safety-and-quality**.

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