LET'S
GO
ICE FISHING

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Project Philosophy and Goals

Ice fishing is a popular winter recreational activity. It couples enjoyment of the outdoor with productive angling and the potential for obtaining high-quality protein. Equipment can be simple; and by the standards of open-water angling, even complex equipment is relatively inexpensive. Mastering a few basic techniques and learning some simple safety precautions permit youth and their leaders to enjoy ice fishing safely and with a high probability of success. The interest in ice fishing may lead to lifetime involvement with recreational fishing; career exploration in conservation, biology, or related fields; and increased involvement in the youth development activities available through the 4-H program.

The leader should remember that a hands-on, participative approach to teaching this activity is much superior to talking about it. Get the kids out on the ice with a local angler and let them enjoy themselves.

Objectives
To help youth and youth leaders to
• develop safety consciousness in ice fishing,
• develop skills necessary to achieve early success in ice fishing,
• appreciate and use wisely fishery resources, and
• enjoy a quality recreational experience.

Materials
The materials list should be developed to meet your specific needs. A moderately complex list is included here to stimulate your thinking.

Clothing
• felt-lined boots
• insulated underwear
• wool pants
• sweater
• insulated vest
• windbreaker
• snowmobile suit
• gloves
• mittens

Tackle
• spud
• auger
• skimmer
• jigging rod
• assorted hooks, jigs, ice flies
• tip-up or tilt
• bait bucket
• minnow dipper

Miscellaneous
• sled or toboggan
• pack basket or pail
• plastic bags
• thermos
• personal flotation device (PFD)
Introduction

During the winter many anglers develop cabin fever, tinker with tackle, and long for balmy temperatures and a chance to fish. But a look at nearby waterways frequently reveals groups of people enjoying their favorite sport of ice fishing. These anglers have found that ice fishing is both thoroughly enjoyable and very productive. With a little equipment and some background information, you can try ice fishing for yourself. Let’s take a closer look at this frosty recreation.

Throughout the area where winter weather produces safe ice, anglers enjoy pursuing a variety of fishes. Many of the fish species are found in schools, often in the deeper parts of a lake or frozen river. The deeper waters are frequently warmer because water is densest at about 4°C (39°F). The angler can move easily from place to place on the frozen surface, exploring for concentrations of fish. Once a school or a good holding area is located, the action can be, and often is, fast and furious. Before you grab your auger and run, you should be familiar with a few basic principles of safe and productive ice fishing.
Ice Fishing Safety

As with most other pursuits, ice fishing requires some safety precautions by participants. Icy cold waters and bone-chilling air are unforgiving elements. Unsafe behavior can result in a costly lesson. One of the anglers first concerns is with the thickness and quality of the ice.

Prolonged periods of freezing weather produce good, hard ice, with subzero temperatures making up to an inch of ice each day. A river or lake may not have a uniform ice layer. Warm springs (even 4°C [40°F] water can be warm in winter) or currents may produce areas of thin unsafe ice. The outside of river bends, areas along sunny cliffs, or points jutting into a lake are all potential locations for thin ice. Areas that seem dark or show evidence of crumbly or honeycombed ice should be carefully avoided. So-called rotten ice should also be avoided as winter yields to spring. Weak spots may appear unpredictably as the ice breaks down. This is particularly true of ice along the shoreline or where streams enter or leave a pond in late winter or early spring.

Under subfreezing conditions 5-7 cm (2-3 in.) of ice is about minimal for widely spaced anglers. Solid ice that is 7-11 cm (3-4 in.) thick is adequate to support small groups of people. Most people prefer to have at least 13-15 cm (5-6 in.) of good, solid ice before operating snowmobiles and similar equipment on it. These standards should be considered minimal. In some situations no amount of ice is really safe. When fishing shoreline ice or frozen bays on larger bodies of water, anglers must be acutely aware of winds. Wind and wave action can break up good ice 46-60 cm (18-24 in.) thick with alarming speed. Many unwary ice anglers have been chased ashore with open water lapping at their heels, plucked from drifting floes by the Coast Guard, or lost when they failed to respect the power of wind and waves on the ice they had trusted. (Instructors along the Great Lakes or the larger Finger Lakes should stress this point.)

Checking ice thickness

Doubts about ice thickness can be satisfied easily by using a spud, auger, or ax to make a test hole. Even then, one should be careful. Bonfires or old ice shanty sites may have caused thin spots. Careless anglers could have bored oversized holes. Be careful. An ice water bath is a life-threatening situation.

If you should break through the ice, a step backward on the secure foot might limit the accident to your errant foot. Breaking through completely may cause panic. Heavy, relatively airtight clothing provides some flotation until it soaks through. Working quickly, but without panic, grasp the edge of the ice (if the ice breaks away, repeat the process until solid ice is reached), kick your feet for thrust, and attempt to get your torso onto the ice surface. Once you have cleared the edge, roll toward the safe ice you had previously covered.

Once you are safely on good ice, you must give immediate attention to getting warm and dry. Do not hesitate. A heated shanty, a warm car, or any warm shelter is needed immediately to prevent hypothermia.

The Coast Guard recommends that anglers wear a personal flotation device (PFD) while on the ice. Many fishing vests and jackets double as a PFD. Their
construction makes them both comfortable and warm. These devices are recommended for all ice anglers, particularly those who fish shelf or shore ice along open waters or rivers or for anglers who persist in fishing "spring ice." A PFD may prevent panic as well as aid in body heat retention in the event of an accident.

What you should know about the effects of freezing weather
Besides exercising caution about unsafe ice and the usual cautions about handling hooks and sharp objects, the ice angler needs to be aware of potential danger from the cold. Hypothermia and frostbite are constant threats to careless anglers. Both of these cold-induced problems are easier to prevent than they are to correct. All outdoor enthusiasts should be aware of both the symptoms and the first aid treatment of these injuries. The buddy system helps because the victim is frequently unaware of the problem.

Frostbite is local freezing of the flesh. It is most likely to occur on the extremities or on the nose and ears. Early in the development of frostbite, the skin may appear quite flushed. The victim may experience burning, tingling, or itching sensations, but these symptoms give way to numbness as the tissue freezes. The skin will have a waxy whitish or yellowish appearance as the ice crystals form under the skin. The crystals have the potential to cause further tissue damage, so the frozen area must not be rubbed.

Immediate warming of the affected area is the first order of treatment for frostbite. Do not rub the frozen tissue. If the victim must walk on frostbitten feet, they should be treated after the walking is finished. A hand or finger can be warmed by placing it against warm flesh. The abdomen, armpit, or groin areas are all good heat donors for this purpose. A warm hand is a good donor for the ears or nose. The heat source should be at body temperature. A warm, not hot, bath is an excellent donor if the victim has been taken to a warm shelter. A fire or stove should not be used to warm the affected part because the insensitive, frozen flesh may be burned without the victim being aware.

Circulation in the damaged area is often altered, so that the area is very susceptible to being refrozen. Care should be taken to avoid the possibility. Wet or damp clothing on the skin is an invitation to further damage. The secondary symptoms of frostbite mimic those of burns. A physician should be consulted. Severe frostbite can lead to gangrene, requiring amputation of the affected area. Frostbite can be avoided by being prepared for the weather and having sense enough to seek shelter before the freezing takes place.

Hypothermia: What you can do
Hypothermia, like frostbite, results from exposure to the cold. Often called exposure, hypothermia is a potential killer. It, too, can become a problem without the victim realizing it. Temperatures need not be severe for this problem to develop. Dampness, wind, and mild temperatures (even 4°-10°C [40°-50°F]) can result in hypothermia. The problem occurs when the body loses heat faster than it can be generated. As the body's core temperature falls, all systems lose efficiency. At first, the body reacts to slight decreases in temperatures by reducing blood flow to the extremities and by shivering. The rapid muscle contractions generate heat that can bring the temperature back to normal.
Reduction in the body's core temperature of about 1°-4°C (2°-7°F) results in a variety of symptoms. The victim may develop coordination problems, blurred vision, nausea, slurred speech, and muscular weakness. The ability to think clearly, to reason, or to remember may be impaired. Reduction of the normal temperature by 4°-7°C (7°-12°F) makes the symptoms more severe. Frequently, the victim begins to shiver violently and uncontrollably. Individuals in this condition are not able to help themselves. Assistance is essential so that the situation does not become life threatening. Further reduction in the body temperature to approximately 26°-30°C (78°-86°F) will result in collapse and/or death.

Getting an individual to a shelter or adding a layer of insulating clothing may be adequate treatment for mild hypothermia. Severe cases demand medical assistance and an external heat source to warm the body. First aid treatment of hypothermia involves protecting the victim from further heat loss, gradual and selective rewarming of the body, and maintaining the individual's recovered temperature.

Protection from further heat loss involves insulating the victim. A warmed sleeping bag is an excellent insulating device. In addition, the victim should be sheltered from the wind. Because wind chill is worsened by dampness, the victim should be protected from moisture. Wet clothing should be removed and replaced by dry clothing or coverings, and protection from rain, snow, or spray should be provided. Because movement of the extremities circulates blood into chilled tissue and worsens the condition of the body's core, movement should be minimized. Similarly, elevation of the legs will concentrate blood in the head and torso.

Warming can be aided in a number of ways. A warm shelter (e.g., 21°-27°C [70°-80°F]) may not be enough. If the victim is conscious, warm fluids such as tea or clear soup can carry heat to the body's core. The head and torso should receive attention first; then the extremities can be warmed. Perhaps the best warming technique is the body heat of another person. Skin to skin contact within an insulated covering, such as a sleeping bag, is the best. Placing a victim wearing old clothes in a cold sleeping bag with a well-dressed donor may be more detrimental than helpful. The victim should never be left without a heat source. Depressants, such as pain killers or alcohol, should be avoided. Do not massage the skin because that will stimulate peripheral circulation and possibly result in further heat loss. Maintain the treatment until medical assistance is available.

The use of proper clothing and common sense, coupled with a high energy diet, can prevent hypothermia. Prevention is much simpler than treatment.
Personal Equipment

Proper clothing is a prerequisite to safe and enjoyable ice fishing. Be sure to consider the effects of wind, water, and low temperatures. Wind is a heat thief; it steals the envelope of warmed air around your body and replaces it with colder air. This effect depends upon wind velocity, with the resulting apparent cold being called a wind chill factor (see table). Windproof clothing or a wind screen of some sort should be a part of the ice angler’s equipment. Garments like wind parkas, foam-insulated jackets, or Gore-Tex raingear are superior windbreakers.

Water can come from the outside as rain or snow, or from fish and tackle, but it is more often a problem when it comes from within. Perspiration robs clothing of its insulating ability and increases the impact of the wind. Clothing can be used to wick moisture away from the skin’s surface, keeping warm air trapped next to the body. Several kinds of human-made fibers, such as polypropylene, transfer moisture away from the body. Wool retains its insulating ability even when wet. These materials are preferable to cotton as a next-to-the-body layer. Changes of gloves or mittens can help prevent cold hands when lots of fish are being handled.

Cold can be reduced by using layers of warm clothing between the wind-breaking outer shell and the sweat-fighting inner layer. By using layers of clothing, the angler can adjust the insulation layer to the temperature changes and exertion level. The angler must be adequately clothed from head to toe. Much of the body’s heat is lost through the head and neck. A stocking cap

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or ski mask makes an excellent foundation for keeping the head warm. A hooded jacket can provide a second layer for extreme cold or windy conditions. The neck can be protected with a scarf, dickey, or turtleneck sweater. Many anglers use layers of wool or acrylic material or a down vest to complete their clothing needs. In severe weather, a snowmobile suit or heavy woolen hunting suit can hold back the chill. A change of clothes may be advisable if getting wet is a possibility. Extra clothing can be carried conveniently in a backpack or pack basket. Some anglers use sleds or small toboggans to transport all their equipment, including extra clothes.

Keep warm with proper boots and gloves
Good boots are a must. Many serious ice fishers swear by the so-called Mickey Mouse boots developed by the U.S. Government. These boots use a dead air space for insulation, and they are quite effective. Felt-lined pacs or felt gaiters with a rubber over-boot are also excellent. Many insulated rubber or leather boots are also available. The boots should be waterproof (not water repellent) because slush or water may be encountered on the ice. Wool socks, with liners of material that acts as a wick to carry perspiration away from the skin, are an excellent choice to wear inside your boots.

Mittens and gloves complete the angler’s outfit. Mittens are far warmer than gloves, but they are not as convenient to use. Several pairs of gloves are a good idea. Cheap cotton gloves may be adequate for the work of drilling holes, baiting hooks, and so forth. Heavy mittens are ideal for the slack times and for while you are walking to or from the fishing area. Keep at least one pair of gloves or mittens inside your clothing so that they will be warm. They can be a real blessing to hands chilled after baiting a hook or landing a fish.

Many anglers use handwarmers to help keep them warm. Some people like to put a handwarmer over the lower back, to cover the kidney area, and also keep one in the outside pockets to warm their hands.

Before leaving the subject of keeping warm, perhaps we should mention fuel. Eat well before going out on the ice. If you plan to be out for any length of time, take along a high-energy snack. Some anglers take a stove and prepare hot meals on the ice. (A hot meal never tasted better!) To avoid dehydration and fortify yourself against the cold, take along cocoa, sweetened tea, hot soup, or hot fruit juice. A mixture of sweetened, spiced tea and orange juice is a personal favorite. Avoid alcohol. It stimulates peripheral circulation and gives a false sense of warmth while diverting heat from the body’s core. To drink alcohol while ice fishing is to invite hypothermia. Also, because smoking tobacco tends to reduce peripheral blood flow, smokers are a high risk for frostbite.
Ice Fishing Equipment

Spud or auger
Ice fishing poses one problem not faced by the open-water angler. How do you get to the water? A few anglers use hatchets or axes to chop holes in the ice, but most use either a spud or an auger. An ice spud is simply a chisel on a pole. With it, the angler can chip a hole large enough to do some fishing. Usually spud users like to taper the hole so that it enlarges toward the bottom. A hole 15-20 cm (6-8 in.) in diameter is large enough. Anything over 20 cm (8 in.) is dangerous! Keep the holes small.

A spud works best when it is kept very sharp. As with any sharp tool, ice spuds should be used carefully, and the user should take care of the edge. Many anglers attach a wrist thong to their spud to prevent losing it if it suddenly breaks through the ice. This is particularly important if the angler uses a loose grip and tosses or drops the spud into the hole. This is one of the most effective and least tiring ways to use this type of tool.

Augers are used to drill holes through the ice. A sharp auger drills holes more quickly and efficiently than a spud does. The holes are uniform in size, but one cannot taper the hole or cut a holding pool with an auger. Power-driven augers are available, but most anglers use hand-powered ones. These tools come in two basic types: a sharply-edged half cup and an oversized wood-bit design. Both types work very well if they are properly sharpened. Read the directions carefully before attempting to sharpen an auger blade. Improper sharpening can ruin an auger in seconds.

Augers come in a variety of sizes from about 9-25 cm (3 1/2 in.-10 in.). The 10-, 15-, and 20-cm (4-, 6-, and 8-in.) sizes are most frequently used. Panfish anglers prefer the smaller sizes. They are adequate for perch, pickerel, and even crappies. Anglers trying for large pike, walleyes, or lake trout often select 20-cm (8-in.) holes in case a trophy fish is hooked.

Using either a spud or an auger, the angler is likely to leave chips of ice and slush in the hold as it is completed. That material should be removed to prevent the rapid refreezing of the hole. A skimmer, a long-handed perforated ladle, is used for this purpose. For smaller holes, a long-handed slotted serving spoon works fairly well. The hands can be used, but wet hands invite frostbite or, at the least, chapped hands.

Tackle
Ice fishing tackle can be very simple or quite elaborate. A simple drop line with a bobber to suspend the bait and attached to a stick anchored beside the hole (fig. 1) may be just as effective as traps or tip-ups. Some anglers use discarded plastic spools, such as those used in retailing monofilament lines, and attach them to an upright stick with a bolt (fig. 2). Tension can be supplied by using a coil spring on the bolt. This can prevent line overruns if the striking fish runs, then stops suddenly.

Tip-ups, tilts, or traps are more elaborate forms of set lines. Tilts usually are
set so the reel is above water (fig. 3). The pressure of a striking fish pulls one arm of the tilt downward, exposing the signal flag on the other arm. Careful adjustment can make a tilt sensitive to even the lightest strikes. Their major disadvantages are sensitivity to "wind" strikes and the potential for ice buildup on the exposed reel. Tip-ups (fig. 4) are usually set with the reel below the surface of the water. The strike of a fish trips a spring-loaded signal flag. Tip-ups may freeze at the water's surface, and many anglers consider them less sensitive to light strikes than tilts. Either type of device may be called a trap.

Besides the set baited line, ice anglers frequently use jiggling rods (fig. 5). These devices are used with baits, lures, or combinations of the two. A jiggling outfit can be a simple stick with a bit of line attached. Sometimes jiggling sticks are built so that the length of line can be easily adjusted. A somewhat more sensitive outfit uses a short glass rod, usually solid fiberglass, rather than a stick. Many anglers attach an inexpensive reel, particularly when fishing in deeper water. A strike indicator (fig. 6) made of either spring-steel wire or light spring-steel strapping can increase the angler's efficiency in detecting strikes. Some anglers use a tiny bobber as a strike indicator. Jigging rods often can be made from broken rod tips. They need to be relatively short to permit the angler to stand close to the hole. The flexibility of the rod should match the fish, the strength of the line, and the weight of the lures used. A very flexible (soft or light) rod is suitable for small lures and light lines. If the angler uses large jiggling spoons for lake trout or pike, a fairly
stiff rod is needed to permit proper setting of the hook.

Both monofilament and braided lines are useful to the ice angler. Braided, waterproof lines are usually used on tip-ups or in jigging for large fish, such as pike or lake trout. Either nylon or dacron lines are acceptable, but most anglers prefer the dacron lines because they have less stretch. Most anglers want the line on the tip-ups to be fairly heavy. This is not so much for strength as it is for ease in handling the line with cold fingers.
Monofilament is most often used by anglers seeking panfish or smaller gamefish. Lines as light as monofilament sewing thread (about 1 lb test) are used for perch and bluegills. Two- to 4-pound test lines are light enough to be used on the smallest of panfishes, and a careful angler can land fairly large fish with them. The key is to use as light a line as you can handle without losing large numbers of fish. That will eliminate most problems with tightly curled or coiled monofilament and will make your equipment more sensitive to strikes. You can also get better lure action with light lines. Line strength, like rod action, must be matched to the fish and to your technique.

A well-prepared winter angler may carry an array of miscellaneous equipment. A sounding lead, often a heavy sinker on an alligator clip, is handy for finding the depth of the water. Remember, often you are trying to fish near the bottom. A supply of snaps, split rings, or quick clips can be very useful. You may want a sharpening stone for your auger. A hemostat or a pair of needle-nosed pliers has a wide assortment of uses, from hook disgorger to extensions for cold fingers. Don’t forget your tape measure if you are after fish with a legal minimum size. An identification key such as given in the Guide to Freshwater Fishes of New York (Miscellaneous Bulletin 108) and a regulations syllabus are useful if you are fishing for species with specific size, bag, or season restrictions. A plastic pail or garbage bag makes an excellent container for bringing home your catch.
Bait
Ice fishing baits are varied. Minnows and an assortment of insect larvae are the most commonly used baits. Anglers using minnows should use foam or fiber bait buckets because they resist freezing better than the metal bait pails. A minnow dipper is a handy item because it keeps the angler's hands out of the bait bucket. Minnows can be of various species, but their size should be appropriate for the fish being caught. Bait dealers often refer to "perch," "pickerel," or "pike" minnows. There is some overlap in size preferences, but generally panfish prefer bait fish less than 5-6 cm (2-2½ in.) long. Pickerel, walleyes, bass, and some larger panfishes, such as big perch or crappies, prefer minnows in the 6-9-cm (2½-3½-in.) range. Big pike or bass like large bait. If you are expecting a mixed bag, concentrate on the smaller-bait fish, but bring along a few 9-12-cm (3½-5-in.) baits to tempt a lunker.

Dead fish, particularly smelt, or pieces of fish are also used effectively as bait. Smelt are often threaded on special hooks, introduced as Swedish hooks (fig. 7), for use on lake trout or pike. Small triangles of fish are used to dress panfish jigs or as bait for smelt. Larger strips can be used on lake trout jigs. Perch eyes (first kill the fish by striking it on the head, please) are very popular either alone or on a jig for panfish. Some anglers use strips of perch belly or fins as bait, particularly for pickerel.

Many insect larvae make excellent ice fishing bait. As with the baits already mentioned, they can be used alone or as a dressing on the tail hooks of a jig. Some of the more-favored larvae can be purchased from bait shops. Others must be gathered and stored or raised by the angler.

Figure 7. Rigged smelt on Swedish bait hook

Goldenrod galls contain small maggots, the larvae of peacock flies. Most panfish find these "grubs" attractive. Centipedes and pill bugs or sow bugs can be gathered from under hay bales or similar shelter and used as bait. Some anglers like to use wasp or yellow jacket larvae. (Be sure to wait for cold weather, though). Crane fly larvae (oak leaf bugs), dragon fly naiads, rat-tailed maggots (mouse grubs), and mealworms are all effective bait. If they are available, earthworms, the old standby, also make fine bait for fishing through the ice. With any of these baits, the angler must use some caution to keep them from freezing.

Ice fishing lures are less varied than their summer counterparts. They are designed to be fished vertically, and most lure "action" is imparted by the angler. A variety of spoons and jigs are used. They are usually swept up, then allowed to settle in a yo-yoing or jigging motion. Ice lures are often very brightly colored, designed to attract the fish's attention even under low light intensities. A few minnow imitations are designed for vertical fishing. These lures are usually lead bodies with a lip designed to make them "swim" in a circle. The best advice on ice lures is to consult local anglers or bait shops to see what kinds, sizes, and colors are good producers in the waters you want to fish. An adequate supply can be carried in a small plastic box.
Ice Fishing Tactics

Perhaps one of the reasons that anglers have so much success at ice fishing is that it is simple. You merely suspend the right bait at the right depth and wait for a customer, or you work a lure vertically until a fish bites. To determine the right place and the right time, the angler must consider the fish’s winter habitat.

Anglers spend most of their time pursuing a limited number of species through the ice. Members of the salmon, pike, perch, and sunfish families make up the majority of the catch. These fishes have different habits that can help the angler in locating them.

Lake trout tend to hang near the bottom structures. Rocky ledges, sharp drop-offs, sunken stream channels, deep rubble piles, or gravel bars are good places to locate lakers. Other salmonids and closely related fish, such as smelt and ciscoes, are more pelagic. They can be found directly under the ice as well as at the bottom, and they move throughout the body of water in search of food. Drop-offs or channels are excellent places to try to fish for them, but baits should be set at various depths until they are located. These fish may feed in schools, so there may be bursts of activity between long lulls. Try using small shiners or bright spoons for the smaller trout. Lakers will hit spoons, fish-fillet-dressed jigs, or smelt.

Esocids, members of the pike family, can be found in their weed bed haunts. Channels or deep holes within or beside weeds are excellent places to fish for these predatory fish. Pike and pickerel are traditionally the mainstays of shallow lake and pond ice fishing. In winter they feed as well as or better than they do in summer. Spoons and dressed jigs are good lures, and minnows of appropriate size are excellent bait. Bait should be suspended just over the weeds, so cruising fish can see it readily. Many a panfish angler has had pike or pickerel grab their offerings. They can be taken on very light lines if their sharp teeth do not cut the monofilament. Because there is a good chance of having these fish hit, many panfish anglers carry a small gaff to assist in landing them on light lines. A fish gaffed through the lower jaw (i.e., lip gaffed) can be released unharmed, if you desire.

Perch and walleyes are highly prized by winter anglers. Either species makes outstanding table fare. One could say that these fish are ubiquitous, that is, they are found in almost all types of habitat with some locations more productive than others. Both these species are usually found on or near the bottom. Bottom structure, like gravel bars, rubble piles, holes, springs, or wrecks, are attractive to perch and walleyes. Smaller perch are often taken in shallow water, usually in weeds. Larger perch and walleyes are more frequently taken at greater depths. In very deep lakes, both species will tend to move toward shallower waters as the winter progresses.

Perch and walleyes take an assortment of bait, but small to medium-sized shiners are preferred. Spoons, jigs, and lead minnow imitations are good lures. Even large perch and walleyes can be very gentle in their striking on some days. Tiny bobbers or spring-tip strike indicators are useful to the angler at those times. These fish travel in schools. Once they are located, you may have very fast action. You can move about in likely areas until you locate them. Do not neglect to try to fish the deep edges of drop-offs or channels.
Sunfish also provide considerable sport during the winter. They are usually in fairly shallow (less than 4.5 m [15 ft]) water. Weed beds, sunken logs, pilings, and similar structures are attractive to them. Crappies, bluegills, pumpkinseeds, and bass are commonly caught through the ice. Because of their small size, pumpkinseeds are not as actively sought as are the others. Bass are taken in designated waters, but closed seasons limit their importance to ice fishing. Bluegills and both black crappies (calico bass) and white crappies are heavily fished through the ice.

Bluegills are very light strikers during the winter. Even a tiny bobber or a delicate strike indicator may show only the slightest touch. Small bait like goldenrod grubs, mousies, or perch eyes on tiny jigs is favored for these tasty fish. As with perch, the angler should move until a school is located and then fish persistently. Bluegills are usually just above the bottom.

Crappies are minnow eaters. They travel in schools, often suspending and hovering in middle depths over submerged cover. They often feed at night, as well as during the day. These fish can be voracious and hard hitting, but they may take a bait or lure very gently. They often merely inhale a bait, and they are adept at stripping minnows from tip-ups without springing the flag. Any strange movement of a bobber, including apparent slack in the line, could spell strike when crappies are in the area. Anglers should not make the mistake of fishing under suspended crappies. Fish your bait or lure from anywhere directly under the ice to the bottom and then note the depth at which the fish are feeding. You could be in for furious action once the fish are located.

As we said at the beginning, ice-fishing tactics are really quite simple. The angler must choose depth, structure (nature of underwater habitat), and bait or lure for the particular kind of fish. Some means of marking depth is very desirable. Care should be taken with pelagic or suspending species that all depths are fished. Close attention to detail in detecting strikes is important. Locally useful lures and appropriate-sized bait on lines that are light, but adequate, should produce results. Keep a log book that tells when (date and time of day), where (perhaps a couple of compass bearings or a distance and direction from some landmark), and what you caught. Include information on the weather conditions, the baits or lures that worked, and how you could have increased your success. This information will help you become a successful ice angler.
Care of the Catch

Fish taken through the ice can be the highest quality fish you will catch. They are usually flash frozen with a glaze of ice that prevents drying. Once thawed, they can be handled in any way you normally care for fish. For further information on pan dressings, field dressing, or filleting fish, refer to *Let's Go Fishing* (4-H Leaders' Guide L-5-6).

Often ice anglers catch lots of smaller perch or other panfish. These fish can be filleted and cooked in tempura batter. They are outstanding! Don’t let yourself fall into the panfry rut. Try out the recipes in any book on fish cookery or contact your local Sea Grant or Cooperative Extension office for recipes. You may find dozens of ways in which you can enjoy eating the fish you take through the ice. That gives you an excuse to catch more! For further information on fish for food, refer to Sea Grant Youth Series Publication 8, *Fish in Your Diet*.

Good luck and good, safe ice fishing.
How to Organize and Run an Ice Fishing Derby

An ice fishing derby can be an excellent recruitment device (I'm tempted to say "ice-breaker") for both youth and adults interested in natural resources. It can be a complicated and time-consuming problem as well. Which of these potentials is realized depends upon the clarity of your objectives and the planning that precedes the event. The ease of operation in succeeding years depends upon the smoothness and quality of the follow-up to participants and sponsors and the involvement of a group of interested and active volunteers. Wayne County, New York, has been running a successful derby for several years. Much of the advice contained here is derived from the experiences of Ernest S. Shimp, 4-H agent in Wayne County.

Seven steps to a successful ice fishing derby

1. **Determine your objective.**
   Several objectives can be developed. Sets of objectives for the organization may differ from those for sponsors, potential leaders, or youth. Clearly, fun and an active, experiential introduction to 4-H natural resources program content and opportunities are critical.

2. **Select a date and a site.**
   The date should be set in the middle of the ice fishing season to assure safe ice conditions. An early date is ideal, and the date should be set early to avoid conflicts with other events. Local anglers, tackle shop owners, and other fishery management personnel can provide valuable suggestions on both the date and location.

3. **Promote the event and recruit assistance.**
   Announcements through local radio stations, newspapers, and 4-H channels can be complemented with posters displayed at sporting goods stores, bait shops, and other locations. These businesses and individuals may be willing to provide some instructional support. Fisheries personnel may want to obtain creel census data and be willing to provide some technical support in return. Announcements and posters about the ice fishing derby should be prominently displayed at key locations where participants can enter, categories of fish, prizes, costs, and how to register.

4. ** Solicit sponsorship.**
   This activity is properly the task of a committee. Contacts with local clubs and businesses should provide an adequate base of sponsorship to supply prizes, certificates, and refreshments.

5. **Determine the mechanics of the derby.**
   Establish the rules for participation, cancellation policies and mechanisms, the location of event headquarters, and weigh-in procedures. Consideration should be given to sanitary facilities, warm-up areas, and shelter, as well as adequate parking for participants.

6. **Conduct the derby.**
   Try to keep the process as simple as possible. Avoid preregistration by having people sign in either as they go out to fish or as they record a catch. Set check-in time from mid- to late afternoon. Have individuals bring in only the largest fish of each species. Have all participants enjoy some refreshments, regardless of whether they are weighing in a fish or not.

   Weigh-in should be on a scale measuring to hundredths of a pound. One volunteer can weigh the fish while a second one records the individual's name, address, telephone number, and age, and the species and weight of fish. A card containing that information can be stapled to the tail of the fish. Larger fish should be kept in an open trough set low enough so that young children can see them. The top few fish should be retained. All others should be returned to the angler's vehicle.

   Rules should be conspicuously posted, and a designated person should decide any questions of interpretation.

   Conduct an immediate survey (Appendix 2) of all participants. Catch data has some value, but the audience identified by the names and addresses is a prime contact for future 4-H natural resources programming. Presigned certificates should be presented to each participant.

   Demonstrations (equipment, techniques, fish cleaning and cookery, etc.) refreshments can be set up in the weigh-in area. A separate room is preferable so that congestion around the weigh-in table can be minimized.

7. **Conclude the event with a timely follow-up.**
   Summarize the survey results for an immediate news release to the media. Write letters of thanks to sponsors and media. The donation of the sponsors should be acknowledged and a copy of the news release enclosed. Letters to non-4-H participants should go out within a few weeks, inviting them to take part in 4-H.

   An immediate debriefing with the committee is valuable in improving the operation of any event. Record and file all comments. The final summary of the event could include date, purpose, organization with lists of sponsors, mechanics, results of survey sheets filled out by participants, weather data, and overall assessment.
Appendix 2
4-H Fishing Survey Sheet
Please complete (even if you didn’t catch anything) and leave it on the counter. Thank you.

Name ___________________________ Age ___________________________
Mailing Address __________________________________________________
Total Hours Fished ___________________________ Approximate Water Depth
Area Fished _______________________________________________________

Fish Caught: (write number next to each)
List locally significant species.

_________________________________________  __________
_________________________________________  __________
_________________________________________  __________
_________________________________________  __________
_________________________________________  __________
_________________________________________  __________
_________________________________________  __________
_________________________________________  __________
_________________________________________  __________
Other: (name)

_________________________________________  __________
_________________________________________  __________
_________________________________________  __________
_________________________________________  __________

Thanks again. We truly hope you had an enjoyable day!
Ice-Fishing Jargon

spring, springy, or rotten ice — ice that has begun
to soften and break down, very
untrustworthy

mousie — rat-tailed maggot, a durable and
effective panfish bait

oak leaf bug — larva of a crane fly, excellent
panfish bait

spud — a long-handled chisel used to open a
fishing hole

auger — any device using a rotation blade to make
a fishing hole in the ice

tilt — a type of fishing device that upsets when a
fish hits, more sensitive than a tip-up

tip-up — a fishing device with a spring-loaded arm
that is released when a fish takes line from
the spool

trap — a tilt or tip-up

skimmer — a slotted dipper for removing ice chips
from the hole

PFD — personal flotation device