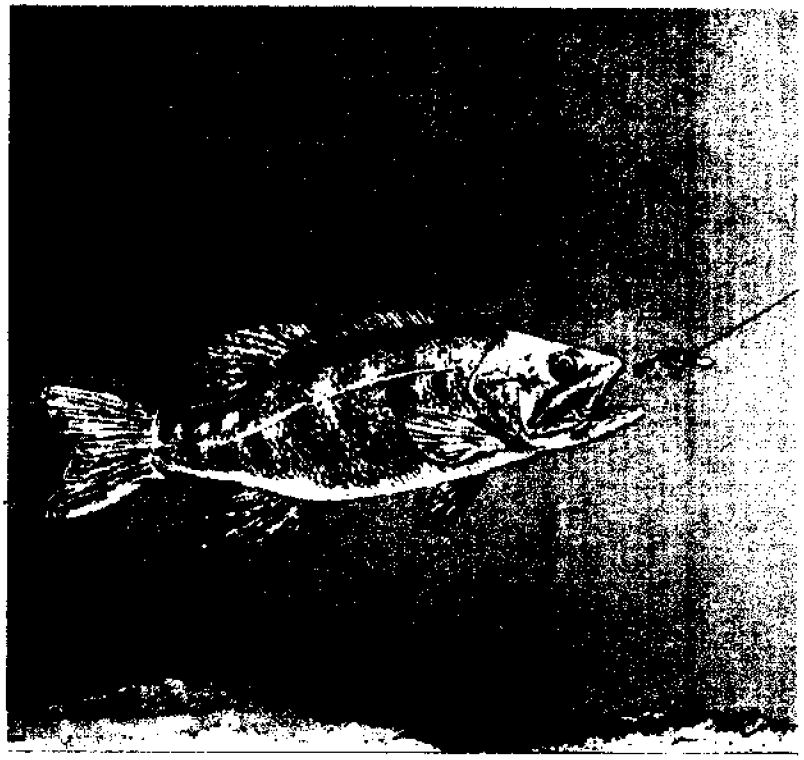
Angling for Smallmouth Bass in Lake Erie

A guide for locating and catching smallmouth bass along the shores of Chautauqua and Erie counties



Mark Malchoff, Regional Extension Specialist
New York Sea Grant Extension Program

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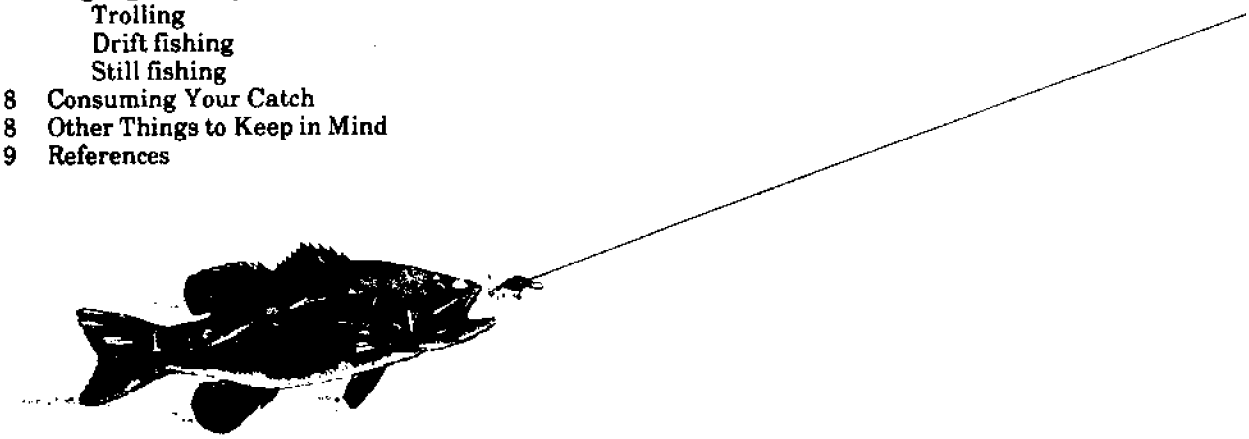


The author gratefully acknowledges the assistance of the following individuals in preparing this publication: Paul Cybart, angling expert, Dunkirk; Michael Duttweiler, Program Coordinator, New York Sea Grant Extension Program, Cornell University, Ithaca; Robert Lange, Unit Leader, Lake Erie Fisheries Unit, NYS Department of Environmental Conservation, Dunkirk; Linda Hollowell, Regional Cooperative Extension Office, Fredonia; and Mary Ann Town, Regional Cooperative Extension Office, Fredonia.

Angling for Smallmouth Bass in Lake Erie

Introduction

According to one survey (Talhelm 1984), anglers fishing Lake Erie spent about 2.2 million dollars in pursuit of such species as walleye, yellow perch, Pacific salmon, trout, and smallmouth bass. Walleye enthusiasts, in particular, seem to dominate the Lake Erie angling community in New York as well as in Michigan, Ohio, and Pennsylvania, and for good reason. Lake Erie has long been known as a major walleye producer; and the resurgence of the exciting western basin walleye fishery, combined with historical lakewide interest in this species, is exemplified in the many angler trips, clubs, and expenditures associated with the "yellow pike."

However, New York's Lake Erie waters are also home to the smallmouth bass, and recent studies by the New York State Department of Environmental Conservation have revealed the existence of an abundant, underutilized bass population extending the length of New York's Lake Erie shore. Data from assessment surveys and creel census studies show good reproduction, excellent growth, and a stable age structure, suggesting a low rate of exploitation.

Why has this fishery gone so unnoticed? One reason may be that anglers lack specific information concerning Lake Erie bass habitat and behavior and the angling techniques necessary for open-water fishing. The purpose of this publication is to provide anglers with information on proper techniques for locating, catching, and consuming smallmouth bass. It is hoped that this information will encourage anglers to enjoy the summer smallmouth fishery that provides relatively easily caught gamefish in nearshore waters.

Lake Erie as Smallmouth Bass Habitat

Lake Erie is a unique lake in a unique system of lakes, and its physical and chemical characteristics combine to produce ideal smallmouth bass habitat in many areas, including most of New York's Lake Erie nearshore waters. Unlike the other Great Lakes, Lake Erie is relatively shallow and has nutrients plentiful enough to produce a fish community largely dominated by warmwater species like freshwater drum, walleye, perch, smallmouth bass, and suckers. Generalizations beyond this description can be misleading, however, because Lake Erie is actually a diverse system of three lake basins with widely varying characteristics.

The western basin is usually defined as the area west of Sandusky, Ohio, and Point Pelee, Ontario. It is shallow, dotted with islands and reefs, and rich in nutrients (eutrophic). With an average depth of 24 feet, this basin experiences a thorough mixing of its nutrient-rich waters and a well-documented level of productivity. This productivity is exemplified by the current fishable population estimate of 25 million walleye (Lake Erie Fisheries Unit Staff 1983), up from approximately 2 million or less during the 1960s and early 1970s.

The central basin west of Erie, Pennsylvania, and Long Point, Ontario, is deeper, averaging 61 feet with a maximum depth of 84 feet. This basin is deep enough to stratify in summer with a thermocline appearing as early as May. This stratification effectively seals off the deepest hypolimnetic waters during the months of May-September. At the same time, decomposition of large amounts of organic matter has produced often severe oxygen depletion. As recently as 1982, 33 percent of the central basin bottom waters became devoid of oxygen during the summer (Herdendorf 1983).

The eastern basin, with a maximum depth of 211 feet and an average depth of 80 feet, gives rise to characteristics more closely resembling those of the other Great Lakes. In fact, its deep water habitat once served as host to native lake trout, whitefish, lake herring, and blue pike. Nowadays, the New York State Department of Environmental Conservation is stocking Pacific salmon and trout to exploit this habitat and its forage base of smelt and, to a much lesser extent, alewife.

From Ripley, near the New York and Pennsylvania border, to Buffalo, the shoreline has numerous bluffs, often 40 feet or more in height. Research by geologists has shown that on average these bluffs are composed of 63% bedrock, 19% glacial till, 10% lake deposit, and 7% sand and gravel (Geier and Calkin 1983). Although lake bottom areas adjacent to these bluffs are subject to deposition, SCUBA divers have verified that abundant rocky subtrate occurs along the eastern basin shore.

The presence of bedrock or boulder-strewn material on the bottom of Lake Erie's nearshore waters may be the single most-important aspect of the suitability of Lake Erie as smallmouth bass

habitat. Indeed, the affinity of this species for deep rocky lakes has long been known to both biologists and anglers. One often-quoted research report from the late 1930s characterized the best smallmouth bass lakes as over 100 acres, more than 30 feet deep, with thermal stratification, clear water, scanty vegetation, and large shoals of rock and gravel (Hubbs and Bailey 1938). Not surprisingly, eastern Lake Erie meets all these criteria and produces an abundant bass fishery along the entire New York shoreline.

Lake Erie basins (not to scale) and typical midsummer temperature profile

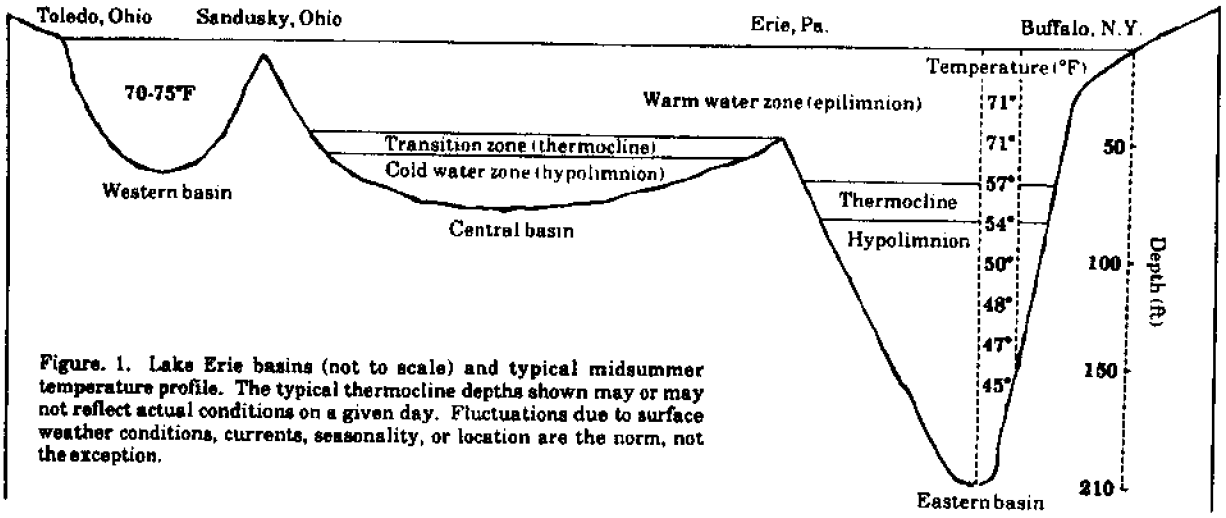


Figure. 1. Lake Erie basins (not to scale) and typical midsummer temperature profile. The typical thermocline depths shown may or may not reflect actual conditions on a given day. Fluctuations due to surface weather conditions, currents, seasonality, or location are the norm, not the exception.

Life History and Growth of Smallmouth Bass

The smallmouth bass *(Micropterus dolemieui)* is a well-respected gamefish found throughout New York's Great Lakes and St. Lawrence River waters. A flashy fighter, the smallmouth is noted for its tenacious strength, strong runs, and numerous fine leaps.

Figure 2. Smallmouth bass *(Micropterus dolomieui)*.

The bulk of the eastern Lake Erie smallmouth bass fishery is made up of fish less than 4 years of age. Three-year-old bass, most of which equal the current minimum legal size of 12 inches, average 1 to 1-¼ pounds in weight. Older fish, exceeding 2 pounds, regularly occur in Department of Environmental Conservation gill-net samplings.

Smallmouth bass spawning behavior occurs during a 6- to 10-day period in late spring as water temperatures rise to 55° to 60° F. The nest, prepared by the male, appears as a circular depression, 1 to 4 feet in diameter, formed on sandy, gravel, or rock bottom, into which are deposited several thousand eggs. After 4 to 10 days, nearly transparent newly hatched fry, "little more than two eyes and a wiggle," emerge. They darken as they begin feeding and gradually become black. The black

coloration is gradually replaced by the green or bronze of the adult as the fry surpass the length of about 1/3 inch.

If the fry can avoid sudden changes in water temperature, fungal infections, and predation by rock bass, perch, and sunfish, they may live to enter the legal sportfishery during their third summer. The common defense against fry predation is the adult spawning male. His nest-defending behavior is well known and may continue for a period of 1 month after egg deposition.

The quality of eastern basin smallmouth bass habitat is reflected in the growth rates of these fish as compared with those of other populations. For example, smallmouths from New York's Lake Erie waters average 3/4 inch to 1-1/4 inches longer (Cornellius 1982) than smallmouth bass from twelve of New York's inland lakes for ages 2 to 8 years (Green, Schonhoff, and Youngs 1984). The average inland smallmouth bass lengths, incidentally, exceeded average North American smallmouth bass lengths for ages 1 to 9 years. As a further comparison, eastern Lake Erie smallmouths also surpassed the growth rates of the well-known St. Lawrence River and Lake Ontario smallmouth bass populations.

Diet

Diet information specific to eastern Lake Erie bass is not readily available; but based on volumes of research data from other waters, it seems likely that fry make use of tiny free-swimming animals such as copepods and cladocerans. These and other small invertebrates (collectively known as zooplankton) form the bulk of the diet until the young fish reach about 3/4 inch in length.

As bass continue to grow, aquatic insects such as midges and mayflies become increasingly important in the diet. Fish can become a major part of the diet of bass as small as 3/5 inch in some populations.

Various minnows and small fish become increasingly important as do crayfish in the diets of adult and subadult smallmouths. The list of fish appearing in smallmouth bass stomachs is long. Various studies, for example, have revealed the use of yellow perch, log perch, white sucker, bluntnose minnow, emerald shiner, spottail shiner, cyprinids (minnow family and carp), walleye, white bass, freshwater drum (sheepshead), trout-perch, sunfishes, rock bass, and other smallmouths as prey species for smallmouths.

Researchers and experienced anglers also acknowledge the importance of crayfish in smallmouth bass diets. A study of western Lake Erie smallmouth bass detected decreases in the importance of crayfish as bass increased in size. Crayfish were found to represent 32 percent of the diet (by volume) of 6- to 9-inch bass, but to make up only 13 percent of the diet (by volume) of 12- to 15-inch bass (Doan 1940). This decrease was offset by the corresponding increase in the importance of minnows as bass lengths increased.

Studies from other waters show crayfish to be the dominant diet component for adult bass, and at least one author states that in most habitats crayfish form approximately 60 to 90 percent of the food volume.

Finding Smallmouth Bass in Lake Erie

As with many other fish species, smallmouth bass movements are mainly determined by water temperature. In the late spring as lake temperatures begin to rise to around 50° F., large numbers of smallmouth will begin to move into the shallows along the shore and into connecting tributaries. They stay in these areas through the spawning season. As lake temperatures close to shore increase with the onset of summer, the smallmouth, seeking cooler water, move to the deeper shoals and reefs. These shoals range in depth from approximately 10 to 45 feet (see centerfold map). The migration from the shallows to the shoals begins in early summer with the heaviest concentration of fish occurring on the shoals from late July through September. In the fall, as lake temperatures begin to cool, the groups of smallmouth will begin to break up, probably because of the fish's reduced urge to feed. Although some fish will remain near their summer shoal habitat through October, most migrate to deeper bottom areas where they remain in a semidormant state until the following spring.

Lake Erie smallmouth generally prefer cooler, clear water with gravel or rock bottoms. Areas such as gravel and bedrock shoals are especially attractive to smallmouth. Open-lake smallmouths can be found in water ranging from 60° F. in the early spring to 75° F. in midsummer. Yet, when possible, smallmouth tend to seek out their preferred water temperatures of 68° to 70° F.

Of course, the smallmouth's habitat preference is strongly influenced by its diet. Around rock lake bottoms and shoals, schools of small minnows and crayfish are found in abundance. As discussed earlier, these two food sources make up the major portion of the smallmouth's diet.

Smallmouth Bass Fishing Areas

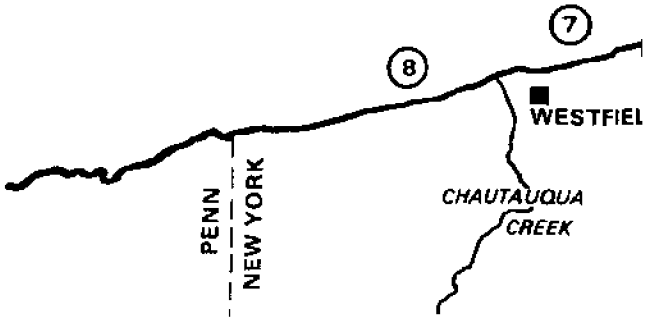
Because the smallmouth bass is so abundant in eastern Lake Erie, the limiting factor for anglers often is access. Fortunately, proven stocks of smallmouth bass occur near all the major boat-launch sites on eastern Lake Erie.

Site 1 - Seneca Shoal
Near Buffalo, a good place to start is Seneca Shoal located about 4 mi southwest of Buffalo Harbor. Access is readily available from the Niagara Frontier Transportation Authority ramps at the inner harbor. The shoal, which is only 12 ft deep, is surrounded by waters up to 30 ft in depth. Sampling at this site by the NYS DEC has produced abundant 1- to 4-lb smallmouth bass, especially in the deeper waters (30 ft) between Athol Springs and Seneca Shoal. Bedrock bottom seems to be the rule rather than the exception for much of this extreme eastern Lake Erie area.

Site 2 - Sturgeon Point - East
Walleye anglers using access facilities at Sturgeon Point often catch large numbers of smallmouth bass by accident. Again, bedrock substrate is the norm.

Site 3 - Sturgeon Point - West
Reef areas can be found 1.5 and 3 mi southwest of the breakwall. Depths range quickly from 12 to 30 ft here.

Site 4 - Cattaraugus Creek
Little obvious structure occurs near the mouth of this major Lake Erie tributary, but smallmouth bass are nevertheless numerous. The armor stone breakwalls designed by the Army Corps of Engineers provide some structure available even to land-based anglers, and bedrock bottom off nearby Silver Creek has



in Lake Erie

proved productive for the author on several occasions.

The sandy bottom areas immediately adjacent to the harbor should be avoided. This material is prized by beach users, but provides little habitat for most fish including smallmouth bass.

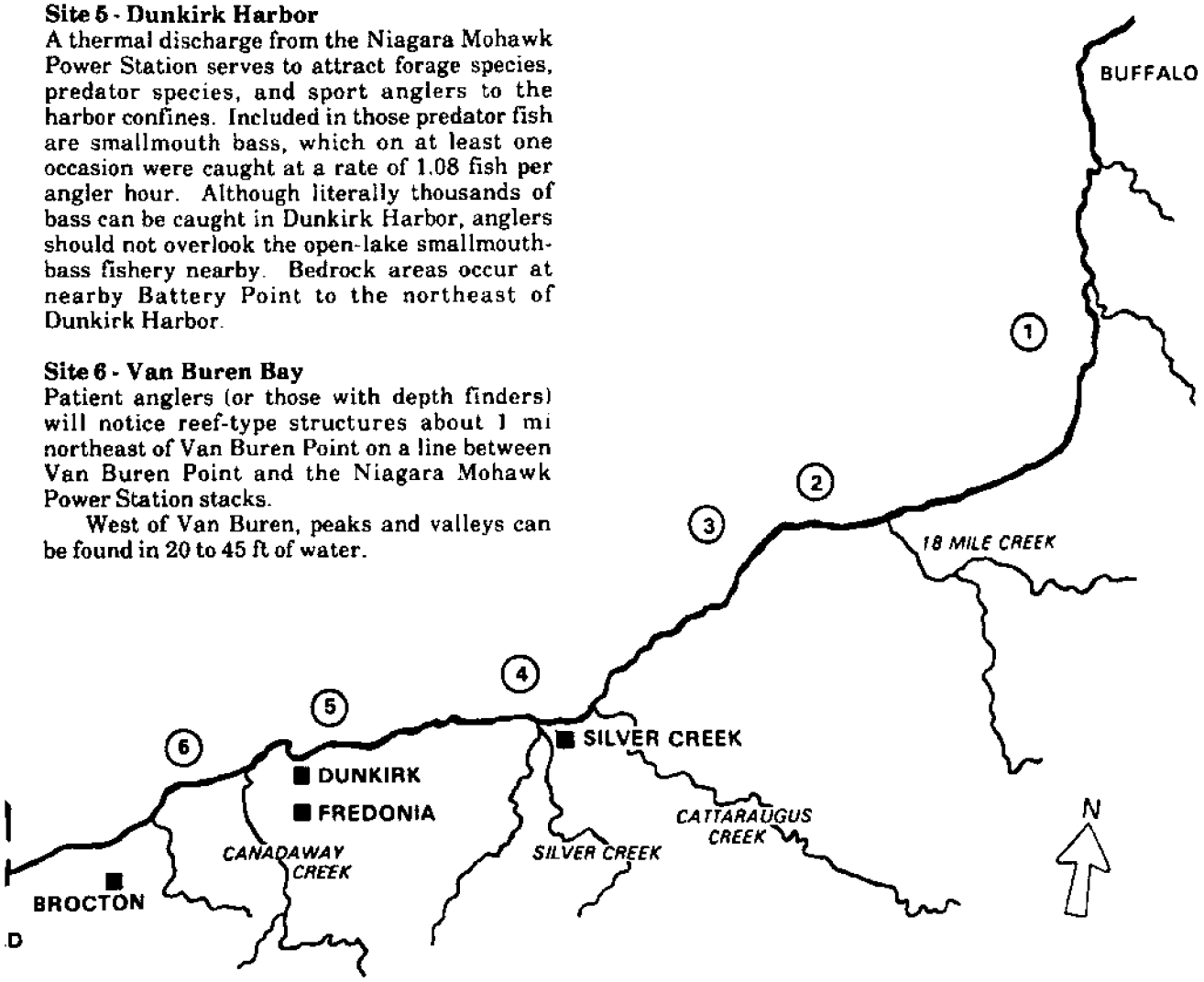
Site 5 - Dunkirk Harbor
A thermal discharge from the Niagara Mohawk Power Station serves to attract forage species, predator species, and sport anglers to the harbor confines. Included in those predator fish are smallmouth bass, which on at least one occasion were caught at a rate of 1.08 fish per angler hour. Although literally thousands of bass can be caught in Dunkirk Harbor, anglers should not overlook the open-lake smallmouth-bass fishery nearby. Bedrock areas occur at nearby Battery Point to the northeast of Dunkirk Harbor.

Site 6 - Van Buren Bay
Patient anglers (or those with depth finders) will notice reef-type structures about 1 mi northeast of Van Buren Point on a line between Van Buren Point and the Niagara Mohawk Power Station stacks.

West of Van Buren, peaks and valleys can be found in 20 to 45 ft of water.

Site 7 - Barcelona - East
Little obvious structure occurs here, but smallmouth bass can readily be found on rock bottom areas at the preferred depths.

Site 8 - Barcelona - West
Again, little obvious structure, but ample rocky areas that provide suitable habitat.



Angling Techniques

During the spring, many anglers catch smallmouth in shallow-water casting from shore. However, once the fish migrate to deeper shoals, they become accessible only by use of a boat.

Whether fishing for smallmouth from shore or from a boat, five basic rules should be kept in mind:

1. *Fish on the bottom.* Smallmouth bass rarely feed on the surface. Natural and artificial bait should be fished as close to the bottom as possible for effective results.
2. *Find preferred habitat.* Smallmouth prefer cool, clear water with rocky or gravel bottoms. Rock walls, submerged boulder fields, off-shore shoals and reefs are all typical smallmouth habitat.
3. *Fish no deeper than 45 feet.* Smallmouth are a relatively shallow water fish. In the spring, fish can be caught in less than 3 feet of water. During late summer and fall, smallmouth will range between approximately 10 to 45 feet of water. Only occasionally will fish be found in a depth over 45 feet.
4. *Use light or ultralight tackle.* To catch smallmouth consistently, light tackle should be used. Smallmouth are very wary; anything unnatural will scare them away. A 5- to 6-foot light or ultralight rod with an open- faced spinning reel filled with 4- or 6-pound test line makes an ideal open- lake smallmouth outfit. When weighting the line, use only as much weight as is necessary to get bait to the bottom.
5. *Use natural or natural-like bait.* The smallmouth diet is almost exclusively made up of minnows and crayfish. Consequently, these along with the nightcrawler are good choices for natural baits. If artificial baits are used, close imitations of minnows, crayfish, or nightcrawlers are most productive.

There are no guarantees that any one fishing technique will produce fish consistently. Like most fish, smallmouth bass have feeding patterns closely related to their environment. Water temperature, abundance and type of food, sunlight, and weather all play a role in how actively smallmouth will be feeding any given day. However, experienced Lake Erie smallmouth bass anglers have noted that certain techiques seem to improve chances for catching fish. Three techniques that have proved successful are described. All three are based on the five basic rules discussed, and each technique has been developed to catch smallmouth in different circumstances.

Trolling

Trolling is a successful technique for catching smallmouth in open water, for the trolling angler is able to fish a large area. This is extremely important on two occasions. The first occasion is in early summer when smallmouth begin to move from the shallows to the shoals. Then the fish are scattered over a wide area on the shoals, and trolling increases the angler's chance of finding and catching the dispersed fish. The second occasion is for anglers fishing unfamiliar waters. They do not know the best spots where fish tend to congregate. Trolling allows them to quickly locate productive fishing spots. Some anglers find trolling to be the most successful fishing method and troll throughout the season.

When trolling, you can locate where fish may be concentrated by marking the spot where a fish hits the lure. A simple marking device can be made by tying a 45-foot weighted string to the handle of an empty plastic bleach or milk container. Coil the string around the container. When a fish hits, toss the container off the boat toward the spot where the fish struck. The weight will automatically uncoil the string and sink to the bottom, leaving the empty container floating and anchored to the bottom. A spot under which several fish may be located is then marked.

Because of the pressure put on equipment for trolling, tackle slightly heavier than normal is suggested. Light-to-medium rods and reels with 6- to 8-pound test line make a good combination. For trolling, artificial baits that imitate small

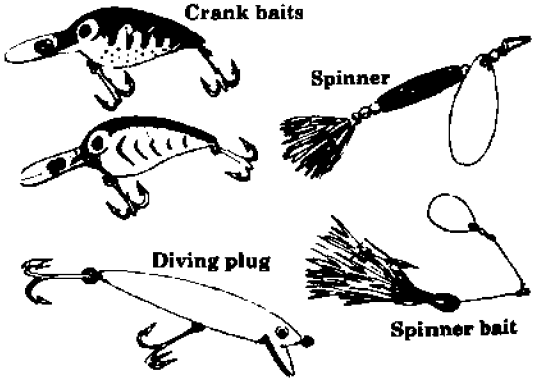


Figure 3. Lures used for trolling and casting.

perch, minnows, or crayfish work best. Full-bodied sinking or deep-diving "crank bait-type" lures and large spinners all work well. Success hinges on getting the lure as close to the bottom as possible without the lure becoming hung up on weeds or the bottom. One way to ensure that the lure is deep enough is to start trolling, slowly letting line out. When the lure hits bottom, the tip of the pole will start bouncing. Crank the reel a few times until the jerking action of the tip stops. The lure should then be riding right above bottom obstructions.

Starting in June, many bottom areas of Lake Erie are covered with a green aquatic algae known as *Cladophora*. At that time of year, anglers should try to keep lures riding just above the algae growth and should check their lures frequently for snagged plant debris. *Cladophora* usually dies off by mid-August.

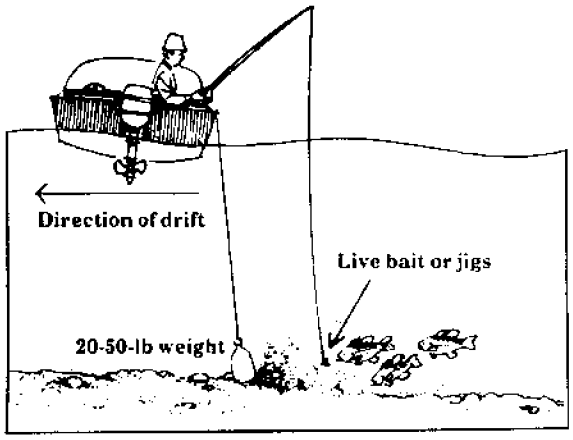
Drift fishing

Drift fishing has proved to be an exceptionally successful technique for catching smallmouth. This method is most productive from late July through September when smallmouth are heavily concentrated on shoals. Drift fishing depends upon the wind or lake waves to push the boat along slowly. Once the boat is adrift, light to ultralight tackle with 4- to 6-pound test line is used. Natural foods, including crayfish (preferably soft-shelled), nightcrawlers, and minnows, are rigged on a small (#4 or #6) single hook with just enough weight attached for the bait to reach bottom. Artificial jigs (brown, black, or chartreuse) can also be used. As the bait or jig is dragged along bottom, bass are attracted to it.

One very successful drift technique is the anchor-drag method (see fig. 4). From late July through September, the smallmouth's major food is crayfish (crabs), which are often present in large numbers on rocky lake bottoms. A drift or drag anchor is lowered to the bottom, not for stopping the boat's drift, but rather for turning over stones on the bottom to expose the crayfish hidden beneath. This stirring up of the bottom by the anchor apparently attracts large numbers of smallmouth into the area to feed. Anglers fishing with live softshell crayfish or artificial jigs in the roiled waters behind the dray anchor usually experience faster action. Simple drag anchors can be made out of a cinder block, stones tied in nylon mesh bags, or a cement-filled plastic milk or bleach bottle.

Drag anchors are also useful for helping to determine the type of bottom one is drifting over. Drag anchor contact with rocky or gravel substrate areas will produce a discernable vibration in the rope that can be felt by hand. If the drag anchor is passing over mud or silt bottoms, little or no such vibration will be felt.

Figure 4. Anchor-drag method.



The angler should also be alert to catches of sheepshead (freshwater drum). If these fish are being caught in numbers, it is likely that the angler is either fishing over silt or mud bottom areas or fishing too shallow. Often moving the boat a short distance will solve the problem.

Still fishing

Still fishing is generally used when a concentration of fish has been located or when fishing over specific bottom structures (rocks, boulders, holes, downed trees, etc.). Basic tackle used for still fishing is the same as that used for drift fishing. The boat is anchored so that it will remain stationary. Either live bait or artificial lures can prove successful. Still fishing is most effective when used in conjunction with the other two techniques. When a concentration of fish is located through trolling or drifting, the boat can be anchored in that area and the area fished. Anglers can continue still fishing until the fish leave the area and then revert to trolling or drifting until the next heavy concentration of fish is located.

Consuming Your Catch

Despite serious water quality problems as recently as 1970, Lake Erie has yet to produce the fish-flesh contaminant problems that have plagued Lakes Ontario and Michigan. Currently, all sport and commercial species' contaminant levels are within federal health standards for such contaminants as PCBs and mirex.

However, the New York State Department of Health currently advises anglers and consumers to limit their consumption to no more than one meal (1/2 lb) per week of fish from any water in New York State. (Stricter advisories are posted for Lake Ontario, Hudson River, etc.)

For those anglers and consumers who wish to reduce Lake Erie smallmouth bass flesh contaminants below the already low levels, the following steps should be taken:

1. Make a shallow cut through the skin (on either side of the dorsal fin) from the base of the head to the tail.
2. Make a cut behind the entire length of the gill cover, cutting through the skin and flesh to the bone.
3. Make a cut along the belly from the base of the pectoral fin to the tail. This cut is made on both sides of the anus and the fin directly behind (anal fin).
4. Grasp the skin at the base of the head (preferably with pliers) and pull toward the tail, removing both the skin and belly meat. If belly meat does not come off with skin, trim it off. Discard this trimmed material along with the skin.
5. Remove the fillet and repeat steps 2 through 5 for the other side.
6. Trim the two fillets as follows:
   A. Remove 1/2" strip from the top of the fillet.
   B. Remove 1/2" strip (1/4" from each side) of the lateral line along the entire length of the fillet.
7. If fillets are not to be used immediately, refrigerate.
8. Cook trimmed fillets by deep frying in corn oil.
9. Discard the corn oil in which the fillets were cooked.

These fillet procedures, developed by the New York State Department of Environmental Conservation, can significantly reduce fat soluable contaminant levels in smallmouth bass and other species as well.

Other Things to Keep in Mind

Regulations may change from one year to the next. Check with the nearest Department of Environmental Conservation office or county clerk's office for specific regulations. In New York, the smallmouth bass season traditionally opens on the third Saturday in June and runs through the end of November. Smallmouth bass taken from Lake Erie's waters must be 12 inches or longer to be legally kept, and there is a five fish per day possession limit. (The current minimum legal size for upper Niagara River smallmouth bass is 10 inches.)

Boaters on Lake Erie waters should always check weather reports before starting out on the lake. Even if the latest report forecasts calm weather, sudden and severe storms frequently occur. On Lake Erie, wind velocity in summer averages 12 miles per hour and has been clocked as high as 70 miles per hour. During the months of May through October, small craft warnings are flown on an average 15 days per month. Lake Erie boaters should carry all required Coast Guard equipment, check it frequently, and be familiar with how to use it. A VHF- FM, CB, or weather-band radio is an important equipment addition to any boat venturing out onto Lake Erie waters.

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11/84 MS 1M 9310