NEBRASKA
GAME PARKS

GOING FISHING

Times and people change. Even so, human nature compels us to do what we can to convince succeeding generations that they should experience things in life that were important to us, especially those things we enjoyed as children. To do otherwise would amount to admitting that our lives were dull and boring. We also wouldn't want to take the chance that, without our advocacy, the uninitiated might miss out on something in their lives that they find to be important and fun!

Today, most adults feel that kids spend too much time indoors playing games and communicating via electronic devices. More time spent outdoors, especially in the Great Outdoors, would surely benefit them. Given that activities like hunting, fishing, and camping were important to so many of us, there must be something about these activities that would improve the quality of life for today's kids as well.

The benefits of fishing are well documented. Cardiologists say fishing is a terrific way to relax, mental health experts say fishing makes people practice hopefulness, sociologists say fishing connects families, and dietitians say eating fish is good for your body. Most importantly, fishing is fun!

What makes fishing fun varies among anglers. Some people go fishing primarily to relax, many go to enjoy the outdoors, others go to spend time with family and friends, and still others go to catch fish to eat. For me, hooking into a special fish, seeing my fishing rod bent-over double, and hearing line screaming off my reel are the second most important things I enjoy about fishing. Creating memories while fishing and sharing them with others are what I enjoy most about fishing.

Regardless of the reasons you might want to start fishing, this booklet will provide you what you need to become a successful angler. It was developed by people who know a lot about fish and fishing and are committed to ensuring that Nebraskans continue to enjoy fishing (the best part of the Good Life) for generations to come. Now go learn how to catch that lunker and make your own memories!

DON GABELHOUSE, JR.
Fisheries Division Administrator

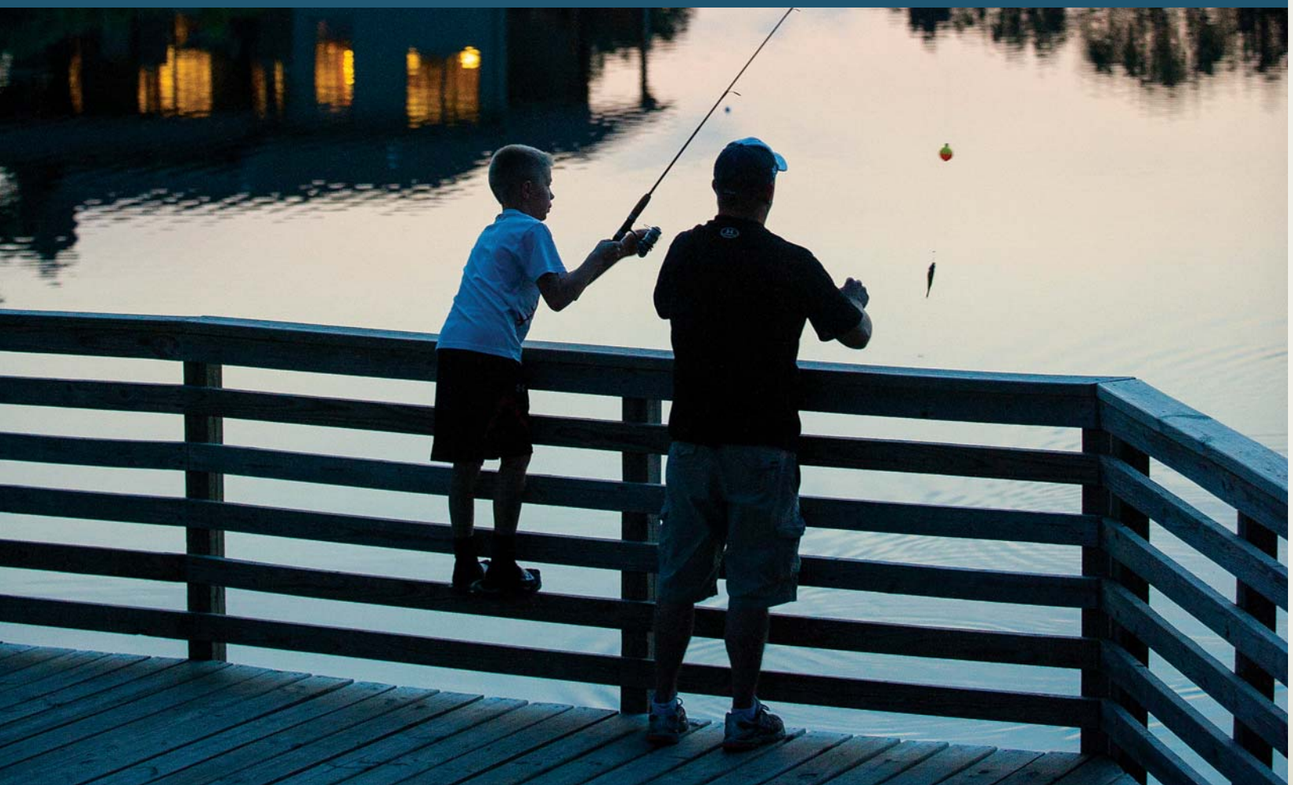

TABLE OF CONTENTS

Table of Contents 3

CHAPTER 1:
Going Fishing 4

CHAPTER 2:
Equipment 5

CHAPTER 3:
Knot Tying and Casting 16

CHAPTER 4:
Fishing Tips and Techniques 22

CHAPTER 5:
Fish Identification and Life History 25

CHAPTER 6:
Fish Anatomy 32

CHAPTER 7:
Fish Cleaning and Preparation 38

CHAPTER 8:
Regulations and Ethics 41

CHAPTER 9:
Management 43

Let's Go Fishing 46

Acknowledgments
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Review: Daryl Bauer
Design/Illustration: Tim Reigert

References:
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PHOTO OPPOSITE PAGE BY ERIC FOWLER

Fins Fishing Schools

CHAPTER 1 GOING FISHING

Fishing is fun—if you allow it to be. With the correct motivation, expectations, equipment and knowledge, a fishing trip can be a rewarding experience. Whether it is with family, friends or as a way to get away by oneself, the memories and health benefits created by time outdoors are invaluable. We encourage you to try your luck at fishing and use this guide as a resource to answer your questions on why, when, what, how and where.

PHOTOS BY DOUG CARROLL, JULIE GEISER, AND ERIC FOWLER

Author Henry David Thoreau observed that "many men go fishing all of their lives without knowing that it is not fish they are after." Consider your own motivation to fish. It can be to catch a meal, to be with friends, to compete for the most or biggest fish, to teach a child a new activity or to get away from the stresses of life and just spend time doing almost nothing. Defining why you want to fish will give you purpose to actually go fishing.

Look upon every fishing trip as an occasion for hope. There will be some days where the fish will bite on a bare hook, and these will be fantastically memorable. Be prepared for good days by having a camera to capture the memory. Be prepared for the others by having an expectation that there will be good days to come, and have an alternative plan to make the trip fun. Pack a lunch, take along a book, go for a hike, look for frogs, stop by a local restaurant for a fish dinner — use the opportunity of going fishing as a point of departure for any type of fun and you will never be disappointed.

The essentials for fishing are really quite simple. Don't get tangled up in and frustrated by the equipment. A stick and string or inexpensive rod and reel, a supply of small hooks and weights and a few bobbers are all that is needed. Even the bait can be simple by using cheap pantry items like corn, lunchmeat or bread. Keep it simple and as you gain experience, experiment with advanced techniques and equipment.

To know where, when and exactly how to catch a fish on any given day is the secret to catching fish. The best way to learn is to study and observe. The first thing you will discover is that there are no secrets. Fishermen are generally more than willing to "give up" what is working, and what works changes from day to day. The most helpful tips are the basic information that can be found in this book.

When in doubt or if you want to learn more, call the office of the Nebraska Game and Parks Commission

CHAPTER 2 EQUIPMENT

THE REEL, THE ROD AND THE LINE

At the sporting goods store, you will be presented with many options for fishing equipment. There are basic components to each rig that work together to create efficient casting— the rod, reel and line. These can be purchased separately or as pre-assembled combos.

REELS

The fishing reel was developed when early anglers looked for ways to fish deeper and farther than they could with a simple string tied to the end of a pole. The reel was initially designed as a place to store extra fishing line, but as technology developed in the 1800s, reels became casting and retrieving devices, as well. During a cast, line unwinds from a spool and is then rewound onto the spool with the turning of the reel handle. Many reels are also equipped with a drag mechanism that applies variable pressure to the line, which allows you to adjust the resistance the fish feels when it pulls against the line. The ability to adjust the resistance on the line can help an angler to land a fish without the line breaking as the fish tries to swim away. There are four major reel types: fly, bait-casting, spinning and spin-casting.

FLY REELS

Fly reels function primarily as storage for unused line and do not aid casting. These reels are used with long, slender rods designed to cast lightweight, delicate flies using the weight of special fishing line to propel the cast. Fly reels are positioned on the underside of the rod.

BAIT-CASTING REELS

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The first casting reels were developed by jewelers and watchmakers, craftsmen trained to make delicate gears with precision tools. Because of their accurate and precise casting ability, bait-casting reels remain popular, even though they require more skill than spinning and spin-casting reels. The line on a bait-caster comes straight off a spool that spins freely as the line is cast. With a classic bait-caster, the angler must use a thumb to control the speed of the spool; if it turns at a faster speed than the line as it comes off, the line backlashes and tangles. Bait-casters are positioned on the topside of the rod. Bait-casting reels are not a good choice for beginners.

SPINNING REELS

Unlike casting reels, which have a rotating spool, the spool on an open-faced spinning reel is fixed, and a bail wraps the line onto the spool as the handle turns. The concept of a fixed spool evolved from a French method of wrapping line around a wine bottle and then using a sidearm cast to allow the weight of the bait to pull the line off of the bottle. (You can make a simple caster like this with fishing line affixed to an empty soda can.) Before casting with a spinning reel, the line must be released by flipping the bail to the open position. Because this type of reel creates little friction during casts, it can typically cast farther than a bait-caster. Additionally, spinning reels can handle very light line and rarely backlash. Spinning reels, like fly reels, are positioned on the underside of the rod.

SPIN-CASTING REELS

Spin-cast or close-faced reels are the best choice for novice anglers because they operate with the push of a button and are difficult to tangle. Like spinning reels, the spool on a spin-caster remains stationary during the cast and retrieve. As the name suggests, the spool is enclosed in a cover. Instead of using a bail to pick up line, a spin-caster has a pin mechanism that works inside the cover to wrap the line around the spool. The pin is retracted to free the line for casting by pushing a button on the back of the reel. Most spin-cast reels are positioned on the topside of the rod.

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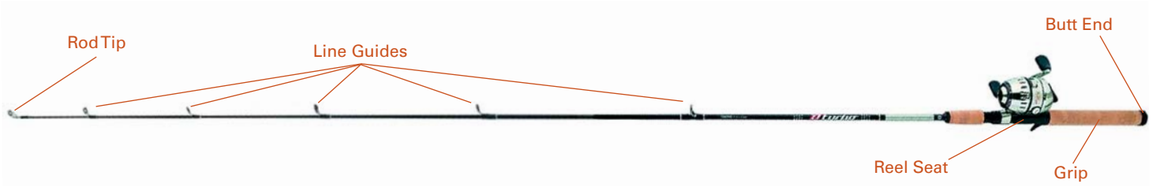
RODS



A fishing rod works as an extension of the angler's arm to propel a hook or lure into water. When the rod bends, the power of the recoil propels the weight on the end of the line (or in the case of a fly rod, the weight of the line itself).

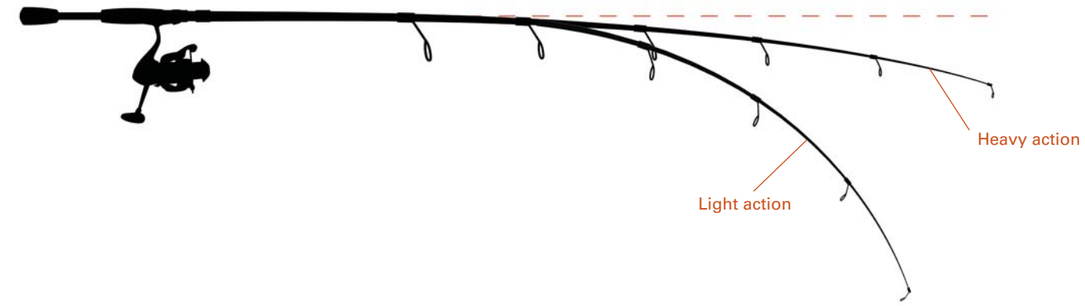
Action describes how much the rod bends when pressure is put on the tip. A fast action rod is stiffer and will bend only near the tip, whereas a slow action rod will bend all the way into the lower portion of the rod. Fast action rods provide better sensitivity to a bite and faster hook-setting capability, but medium action rods provide more casting distance because the recoil of the rod is greater as it straightens out after a casting motion. Medium action rods are a good choice for beginning anglers.

Some manufacturers will also refer to the power of a rod. This describes the strength or lifting power of the rod and is related to the weight of the line it can handle and the lure weights it can cast most effectively. For example, an ultra-light rod should be strung with a light line and can be used to cast very light lures.

The action and power of the rod is largely determined by its materials. Most rods will be made up of graphite, fiberglass or a combination of these materials.

Line guides, or eyelets, control the line during the cast and distribute the stress on the rod when pressure is applied to the line. The guides on most rods will be graduated, with larger rings near the reel and smaller near the tip. The graduated sizes help reduce the friction of the line on the guides as it uncoils during the cast. The location of the guides will depend on the reel intended for it. Spinning rods will have guides on the bottom of the rods and casting rods will have guides on the top.

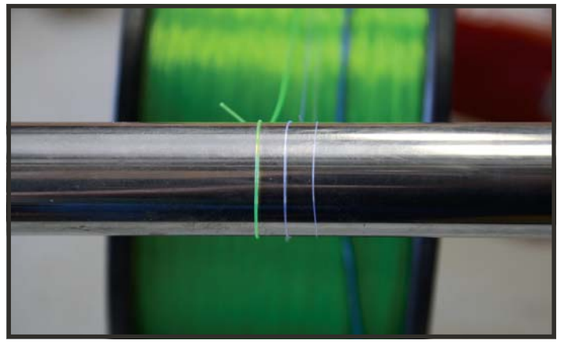
The length of a rod varies and depends largely on the angler's preference, and most rods are made of two pieces that connect together and are between 5 and 6½ feet long. Fly rods are much longer and often break apart into several pieces. Most rods will have length, action and recommended line weight imprinted near the base of the handle. **To start with, a 5½-foot rod is a good length.**



LINE

Fishing line is available in a variety of materials, colors and strengths. The breaking strength of fishing line is called test and is measured in pounds. The larger the number, the stronger the line. So, fishing line labeled as 6-pound-test has been tested and proven not to break until at least 6 pounds of pressure are on the line. The pound-test you choose will depend on the capacity of the reel you are using and the type of fish you are hoping to catch. ***A good general use line is between 6- and 10-pound-test.***

MONOFILAMENT



Monofilament line, made from Nylon, is a good line for novice anglers to start with. It can be used on most reels and is relatively inexpensive. It is available in a variety of colors to reduce visibility in different water conditions. It is also available in a wide range of strengths. Small diameter line will maximize casting distance and minimize visibility. Stronger monofilament will have a thicker diameter, so make sure your reel can handle the pound-test line you select. With monofilament, you typically get what you pay for. The economy choices tend to be lesser quality and strength.

BRAIDED

Braided line, made from Dacron, Kevlar or other synthetic fibers woven together, is generally more expensive than monofilament. Individual strands are woven through an intricate, time-consuming braiding process to produce thin, strong line. Braided lines work well when fishing in areas with a lot of snags or in deep water. These lines tend to be more sensitive because they don't stretch (it's easier to detect a bite on the line), but are not as versatile and require different knots.

Line used on fly rods is very different than line used on spinning or casting rods, and the weight rather than strength of the line is the most important consideration when choosing line to match the rod.

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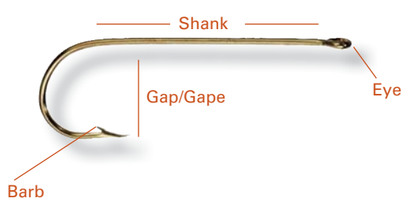
BASIC TACKLE: HOOKS, WEIGHTS, BOBBERS, AND BAITS

Tackle choices can be overwhelming. Rows and rows of flashy lures and hooks in dozens of sizes and shapes can discourage even the savviest shopper if they're not familiar with the terminology. This section will prepare you for a shopping trip to the sporting goods store.

HOOKS

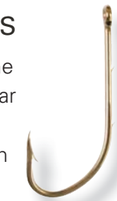
Most new anglers will start out fishing with live bait, such as earthworms, and many experienced anglers will use live bait, such as minnows, or prepared bait, such as doughballs, to target fish. A good selection of hooks that will hold a variety of baits is an important component of a tackle box. Hook size is indicated by a number (2, 4, 6, 8 …), and larger numbers indicate smaller hooks. Very large hooks are sized differently (1/0, 2/0, 3/0 …, read one aught, two aught, three aught), and with this designation, larger numbers indicate larger hooks. ***You will want to use smaller hooks (size 6-10) when fishing for small species like bluegill and crappie.*** *Larger hooks can be used to fish for larger species such as walleye and pike. Treble hooks have three points, and are often used with prepared baits such as doughballs or marshmallows. Hooks also come in different shapes. Many have straight shanks, but some are bent to help hold bait, or prevent fish from swallowing the hook.*



A note about the barb of the hook: The larger the barb, the more difficult it is for the fish (and likely yourself) to get the hook free. Many catch and release anglers pinch barbs with pliers or file them down for easy hook removal.

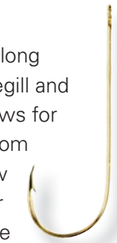
A well outfitted tackle box will include a variety of the following hook types:

BAIT HOLDERS



Baitholders are one of the most popular styles hooks. The additional barbs on the shank hold bait like night crawlers and leeches more effectively.

ABERDEENS

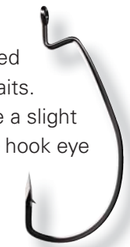


Aberdeens are a light wire, long shank hook, perfect for bluegill and crappie. The long shank allows for easy removal of the hook from panfish that tend to swallow bait, and are good hooks for teaching kids to fish. We use a No. 6 Aberdeen hook with our Youth Fishing Program equipment.

WEEDLESS HOOKS

Weedless hooks feature plastic or wire guards that stand out in front of the hook point. They help prevent the hook from snagging.
The name is misleading as they are not foolproof against getting hung up in aquatic vegetation, but are better than a bare hook for fishing in areas with woody snags.

WORM HOOKS

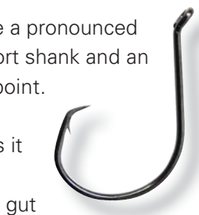


Worm hooks are used to fish soft-plastic baits. Worm hooks feature a slight bend just below the hook eye and a wide gap; these features help hold the bait secure and help set the hook. The unique shape of worm hooks allow the soft-plastic bait to be rigged so that the hook will be less likely to snag in aquatic vegetation.

TREBLE

Treble hooks are a single eye with three hooks fused together. Treble hooks are often used on lures and are also good for holding prepared baits.

CIRCLE HOOKS



Circle hooks have a pronounced circular bend, short shank and an inward bending point. The shape of the hook discourages it from becoming hooked in a fish's gut when the bait is swallowed. When an angler detects a bite, a slow steady pull of the line is all that's needed to rotate the hook into the fish's mouth to prevent gut-hooking.

WEIGHTS

Often the weight of the hook and bait alone is not heavy enough to cast the line or hold the bait underwater. Sinkers are pieces of metal that provide extra weight. It is good to have a variety of sinker types and sizes in your tackle box.

SPLIT SHOT

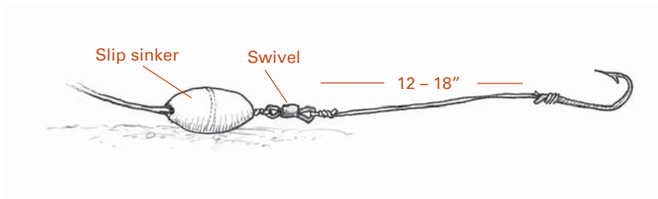
Split shot are small, round sinkers with an opening in the center and usually with wings on the back. They can be crimped on your line with pliers and removed from your line using pliers to pinch the wings together.

BELL SINKERS

Bell sinkers are molded around a shaft with an eye, and fishing line can be threaded through or tied directly to the eye. These sinkers cast well in the wind and are good for shore fishing. The rounded shape of the sinkers also reduces the chance of snagging.

SLIP SINKERS

Slip sinkers are threaded onto the line and can slide up and down on the line. They can be round, bullet shaped or egg shaped. Slip sinkers allow the line to slide through the sinker when a fish takes the bait, so it does not feel unnatural pressure from the sinker. This makes it more likely for the fish to keep and swim off with the bait, allowing anglers time to set the hook. Slip sinkers are often held on the line at a distance from the hook using a split shot or barrel swivel.



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BOBBERS

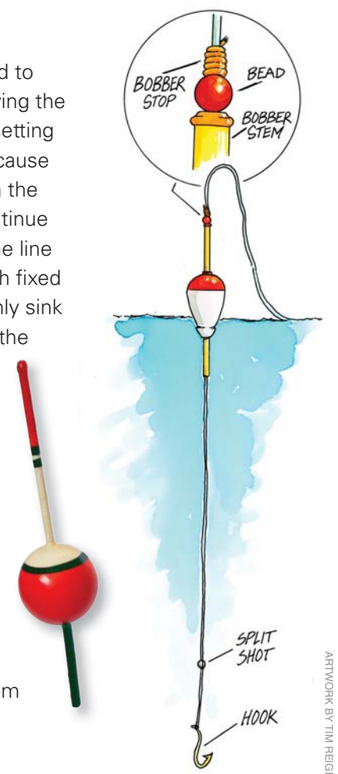
Bobbers help keep bait suspended off the bottom and also provide an indication of when a fish takes your bait. The position of the float on the line can be adjusted to put your bait at a specific depth below the surface.

CLIP-ON BOBBERS

Clip-on bobbers are usually round and have a button on one side that extends a hook to the opposite side where the line can be attached. The button can also be depressed exposing a second hook to secure the line to. Clip on bobbers are attached to line in a fixed position and the hook and weight dangle freely below the bobber. **Clip on bobbers need be no larger than 1 inch in diameter and are a good choice for new anglers.**

SLIP BOBBERS

Slip bobbers are designed to slide along the line, allowing the angler more options for setting the depth of the bait. Because the line can slide through the bobber, the hook will continue to sink when cast until the line hits the bobber stop. With fixed bobbers, the hook can only sink as deep as the length of the line between it and the bobber. Slip bobbers should be used with a bobber stop (a round bead that goes above the float and a stop knot which is positioned above the bead) to limit the movement up the line and a split shot (at a distance above the hook) to prevent the bobber from sliding all the way to the hook.



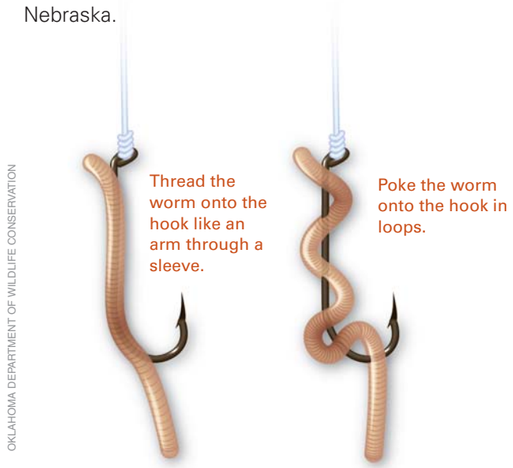
ARTWORK BY TIM REIGERT

BAITS

The purpose of the bait is to attract the fish to your hook using movement, vibration, color and/or scent.

LIVE BAITS

An option for many sport fish species is live bait. This category can include earthworms, minnows, crayfish, tadpoles, grasshoppers, etc. **Earthworms are an excellent choice for new anglers and will attract a wide variety of fish, including bluegill, catfish, crappie and largemouth bass.** Some water bodies have regulations against using live fish as bait. If using minnows, make sure that the regulations where you are fishing allow for their use. Never transfer fish that you caught in one water body to another to use as bait. Transporting live fish to another water body is illegal in Nebraska.



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ARTIFICIAL BAITS (LURES)

Lures are designed to resemble and move like prey, and will often mimic fish or aquatic animals. Even if they don't look like fish or critters to our eyes, their color patterns, reflections and movements in the water are designed to mimic living things. Lures in natural colors that resemble prey, like silver and white, are useful for clear-water conditions. In murky water, brightly-colored lures can be a good choice. Some baits are designed to attract fish with scents and tastes and are effective when targeting fish that don't feed by sight. The rigging and design of different lures determine how they move in the water, and at what depths. Movement and depth of the lures can also be manipulated by the angler. Modern fishing lures were first manufactured commercially in the United States in the early 1900s by the firm of Heddon & Pflueger in Michigan. These were designed from lures handcrafted from old kitchen spoons or whittled from pieces of wood.

SPINNERS

Spinners are a great beginner lure because they are easy to use and will attract many sport fish. Small spinners can be used for crappie and bluegill. They are essentially a metal shaft with spinning blade. Often the shaft is decorated. The hook can be bare or dressed with hairs or feathers. Dragging a spinner through water causes the blade to spin and the spinning motion of the blade creates sounds and vibrations that attract fish. This makes spinners an excellent choice for murky water.

How to fish with spinners: Fishing with a spinner is simple; just cast and retrieve, testing different speeds while retrieving to find the action that gets a bite. When rigging a spinner, always use a ball bearing swivel to prevent the line from twisting.

SPOONS

Spoons are among the most widely used of all fishing lures and will attract many species. They are effective, versatile lures and easy to use. The spoon shape of the lure causes it to rock back and forth like an injured fish as it is retrieved.

Casting spoons (e.g., Daredevle) are oval-shaped and have cupped bodies. Their thickness and weight dictate where and how they should be used. Thin, light spoons sink slowly, so they are better for fishing in shallow water, over the top of submerged weeds or

brushpiles or in cold water. Thick, heavy spoons sink faster and are better in deeper water or swift current. Casting spoons should be attached with a swivel to allow freedom of movement and keep line twist to a minimum.

Topwater spoons, also called "weedless spoons" (e.g., Johnson's Silver Minnow), are for casting and retrieving in aquatic vegetation. When reeled rapidly, these lures rise to the surface and skim over vegetation without snagging. Most feature a single hook welded to the body so it retrieves with the point turned up and away from snags; the hook is also shielded by a weed guard.

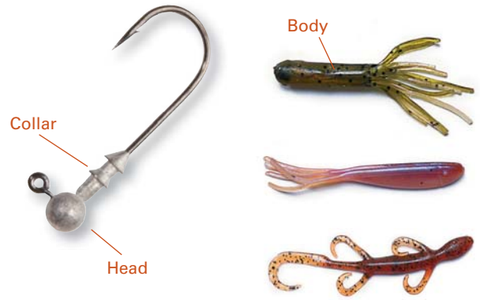
Jigging spoons (e.g., Fergie Special) are designed to fish deep areas for bottom-dwelling fish. They are thick, flat and heavy.

How to fish with spoons: Cast and retrieve. At the right speed, a spoon will twist onto one side and then twist the opposite direction. If it rolls completely over and spins through the water, the retrieve is too fast. Jigging spoons are typically dropped over the side of a boat and jigged vertically below.

JIGS

Jigs are excellent lures many sport fish species. Small jigs can be used for bluegill and crappie, and larger jigs can be used for bass fishing.

A jig is composed of two parts: a weighted hook and a jig body. Jig hooks are made using a mold, which shapes metal to form the jig's head and collar. Most jig heads are made from lead, which gives the lure its weight. Round heads are one of the most popular jig styles, but heads can also be fish head shaped, coned shaped, or oval. A symmetrical head allows it to cut through the water quickly and sink fast. The jig head will usually have a collar with a small point to keep the jig bodies from sliding down the hook.



There is a wide array of bodies for jigs. The most common are made out of rubber or silicone, but are also often made with marabou feathers, bucktail hairs, threads, yarns – you name it. These come in many shapes and can resemble a grub, frog, fish, lizard or insects. The colors of these can range widely.

A common jig and body combination is a ball head jig with a **twister-tail grub**. This jig can be used to lure just about any sport fish. The curled tail undulates and emits vibrations when the jig is retrieved off the bottom and resembles a baitfish.

Tube jigs, soft-plastic hollow bodies with tentacles at the hook-end, are also widely used. On a slack line these baits slowly spiral in a tight circle. When stationary, the tentacles will wave in the water current and when twitched they will pulsate.

Flipping jigs (or bass jigs) work well for catching bass. The body is a skirt of rubber strands or bucktail that quiver as the jig descends and pulsate when the lure is jigged. These often come with thick plastic bristles called weed guards that help to prevent the hook from getting tangled in underwater vegetation. These jigs will sometimes have rattles in them.

How to fish with jigs: Unlike many other lures, all the "action" (how a lure moves in the water) comes from the angler. If you don't do anything, the jig just sinks. A classic method, often referred to as jigging, is to cast out, let the jig sink, then pump the rod by lifting and lowering the tip while retrieving the line. Varying the speed and size of the pumping action will affect how the lure moves. As the jig jumps up, it looks like fleeing prey to a predatory fish, and as it falls, the bait looks like it is weak or resting. Most of the time, the strike will occur as the jig falls.

Tip: If the line becomes too slack while jigging, it will be difficult to feel a strike. Jigs can also be fished by using a slow, steady retrieve. The jig will flow smoothly through the water like a swimming baitfish.

PLUGS OR CRANKBAITS

A plug (also called a crankbait) is basically a lure designed to resemble a fish. It can have between one and three hooks attached to the body (typically treble hooks). Depending on its design, a plug usually wobbles and sometimes also rattles in the water. Plugs come in all sizes, and many of them have a plastic lip that makes them dive as they are pulled through water. The bigger the lip, the deeper the lure will dive. Some crankbaits are made to float when not being retrieved, others will sink. Crankbaits are available in a variety of body styles, each representing a different type of baitfish.

Shad body plugs have a large, rounded head and belly that tapers to the tail. baits are generally shorter than minnow baits and have a tight wobble. Most have two treble hooks hanging from the belly the tail. Black bass (largemouth and smallmouth) are good targets for a shad body bait.

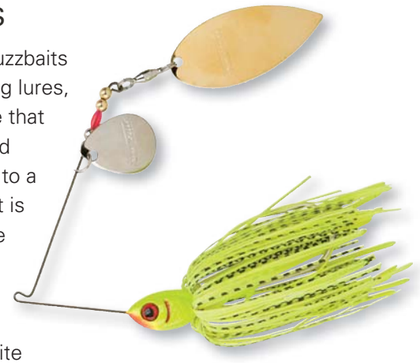
Minnow bodies are long and thin (sometimes called stickbaits), and have a wider wobble than the shad body. Walleye, smallmouth bass, pike and muskie can be caught with stickbaits.

Lipless rattle-baits are thin and weighted to sink instead of using a lip to dive. The tip and tail come to a point and they rattle when retrieved. Many species will be attracted to rattle bait.

How to fish with crankbaits: As their name suggests, crankbaits should be "cranked" or reeled through the water to create action. Similar to spinners and spoons, cast and reel in with a steady retrieval. Pausing during the retrieve will give the lure more action. They can also be retrieved rapidly and allowed to bump and bounce off of underwater structure to create an unpredictable zig-zag action that mimics a bait fish trying to escape a predator (warning: this method can result in losing lures to snags). Rattling plugs can be effective in murky water when other lures are not.

SPINNERBAITS

Spinnerbaits and buzzbaits are awkward looking lures, consisting of a wire that looks like an opened safety pin attached to a lead head body that is essentially a jig. The jig body usually is camouflaged with a rubber or fur skirt and the opposite wire has one or two blades like those seen on spinners. The line is tied on at the bend in the wire. Spinner baits are popular with bass fishers.



How to fish with spinnerbaits: The most common way to fish a spinnerbait is to simply cast it out and retrieve it at a moderate speed, keeping the lure at a depth between the surface and 5 feet.

SOFT PLASTIC BAITS

Plastics include a wide variety of different lures, and can be used to target many sport fish. Plastics are popular with anglers because they feel more natural in a fish's mouth than a hard plastic lure like a crankbait. Hard plastics require that the fish is hooked quickly before it drops the lure, but soft plastics can allow for more time to set the hook. The classic soft plastic bait is the worm. These baits are created by pouring liquid plastic into a mold and adding dyes, metallic flakes, or even scent. They can resemble worms, crayfish, lizards or frogs. The legs, tails, etc. undulate as they move through the water. The soft plastic bodies of these lures encourage fish to hold on to them a little longer before they spit them out, giving the angler a better chance to set the hook.

How to fish with plastics: For the worm, a popular technique is the Texas Rig. Use a bullet weight above the hook, and insert the hook through the top of the worm's head, then bury the point into the body of the worm to make it "weedless" (so it will not get hung up on underwater vegetation.) Cast and let it fall to the bottom. Twitch the rod tip a few times and retrieve in short twitchy hops. A fish bite is detected when a fish picks up the bait and swims away and is noticeable through line movement or a gentle pull. Allow the fish a few seconds before firmly setting the hook.

PREPARED BAITS

Doughbaits are often used to attract catfish. Many catfish anglers have closely guarded secret recipes for doughbaits that combine a variety of tastes and scents. Livers, hot dogs, frozen shrimp, cut pieces of fish, and other food items that will disperse a scent in the water are all good catfish attractants. Canned corn can be a very effective bluegill bait. Treble hooks are often used to hold prepared baits.

THE TACKLE BOX

OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION

Hard-sided tackle boxes are not as common as they once were. Most tackle "box" choices are now more like bags that hold a variety of boxes designed to carry all types of lures and equipment. These small component boxes are a great choice for new anglers to start and build a collection. As you develop more specific fishing interests, you can expand to larger, more complex containers and bigger tackle bags. Your boxes should have enough trays to organize your lures so they can be stored separately and won't tangle together. Plan to buy a tackle bag that is slightly larger than what you need right now. A little extra space allows you to carry non-tackle items (like your cell phone and sunscreen) and gives you room to expand your collection.

FILLING YOUR TACKLE BOX

In addition to a variety of hooks, weights, bobbers and baits, consider the following for your tackle box.

Fishing Guide: Your current Nebraska Fishing Guide will help you decide where to fish in public waters of Nebraska, list the species available to catch, and what the regulations are for keeping fish. Length limits, bag limits and possession limits are imposed to help manage the fisheries in Nebraska's waters.

Common Fishes of Nebraska book: Be able to identify the fish you catch so you won't accidentally break a law by putting a "catch and release" species on your stringer.

Fishing permit: At 16 years old, you are required to purchase a fishing permit if you are going to fish in Nebraska. Revenue from fishing permit sales allows the Nebraska Game and Parks Commission to maintain quality fisheries for Nebraska's residents and visitors to enjoy. If you are required to carry a permit, it must be on your person when you fish. It's handy to keep your permit in your tackle box, safe inside a waterproof sleeve.

Knot tying card: Until you've tied on many hooks, it may be difficult to remember the steps to a good fishing knot. A reminder card will help you tie a secure knot so you don't lose your fish.

Swivels: Some lures, like spoons and spinners, can cause the line to twist when they are retrieved. Attaching a swivel to the line and the lure to the swivel will prevent line twisting. Swivels can also be used as a stop for slip sinkers or bobbers. Some swivels are equipped with snaps to make it easy to change lures.

Needle-nose pliers: This is a useful tool in attaching and removing split shot and also in removing a hook from a fish's mouth.

Nail clippers: These are handy for cutting excess fishing line after tying a knot.

First aid: Disinfectant, a few Band-Aids and antibiotic ointment in a zip-lock bag are good to have on hand when dealing with sharp objects (hooks and fish's spines).

Tape measure: Keep a tape measure so you can measure your catch. Not only can will you be able to brag about the size of your catch, it is also important to determine whether a fish you intend to keep meets length-specific regulations.

Whistle: A whistle can be heard from greater distances than a person's cry for help. A repetition of three short blasts followed by a pause is the international signal for distress.

Sunscreen and insect repellent: Pick up travel sized bottles to stash in the bottom of your tackle box.

Stringer: A stringer is useful if you want to keep the fish you've caught while you continue fishing. The stringer can be threaded through the fish's mouth and secured on the shore, allowing the fish to stay alive in the water until you are done fishing.

Landing net: Although a landing net probably won't fit in your tackle box, it is a useful item to add to your gear collection. Choose a net with a long handle for shore fishing. A net with a collapsible handle will store easily. Rubber mesh nets are durable and hooks or spines will not get tangled in rubber mesh like they will in nylon mesh.

CHAPTER 3 KNOT TYING AND CASTING

THE ART OF CASTING AND KNOT TYING

The prime objective of going fishing is to catch fish, and the tool we use is a fishing rod and reel with a string attached to connect us to those fish. Casting accurately to put the bait where the fish are, and rigging with a solid knot to ensure you can retrieve fish once they take the bait are important skills that connect 'going fishing' with 'catching fish'. The nice thing about fishing is that you get to practice these skills while doing it.

KNOTS

Tying a good knot is arguably the most important skill the angler can learn. The knot is the weakest part of the line and if poorly tied, could result in a lost lure or fish. A bad knot will either pull loose when pressure is put on it or cinch down tight and sever the line. There are many knots that an angler could use, but only a couple that you should definitely know how to tie.

THE IMPROVED CLINCH KNOT

This is the most commonly taught fishing knot and can be used on monofilament line to attach a lure or swivel. The knot is simple to remember and the line retains nearly all of its strength.

1. Thread the loose end of the line through the eye of the hook, pulling through plenty of line to make your knot.

2. Wrap the line around itself, creating 5 to 7 twists. Too few twists in the line will result in a knot that pulls out. Too many twists in the line will weaken the line. Holding the loose end secure against the line and turning the hook with the other hand is an easy way to create twists in the line.

3. Holding on to the twisted line, thread the loose end of the line through the loop near the eye of the hook.

4. Notice the new loop that was created by threading the line. Run the loose end of the line through the new loop.

5. Hold the loose end against the hook with one hand and with the other hand, gently pull the line away from the hook to tighten the knot against the eye of the hook. Wetting the line with your mouth before tightening it will help the line cinch down and will reduce friction that could weaken the line.

6. Neaten the knot so that the coils are stacked up tightly behind the eye of the hook.

7. Trim any excess line from the loose end to about one-quarter inch.

ARTWORK BY TIM REIGERT.

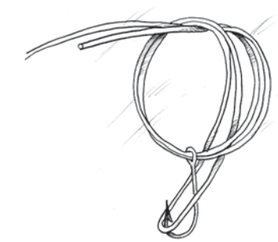
THE PALOMAR KNOT

This is another simple and versatile knot that retains nearly all of the line strength after it is tied. The Palomar should be used when fishing with braided line. An improved clinch knot will pull loose on braided line.

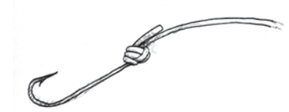
1. Thread the loose end of the line through the eye of the hook, pulling through plenty of line.

2. Thread the loose end back through the eye of the hook, creating a large loop that passes through the eye of the hook.

3. Holding the loose end against the line with a thumb and forefinger, use the other hand to tie a simple overhand knot with the loop. Do not tighten the line



4. Place the hook or lure through the loop.



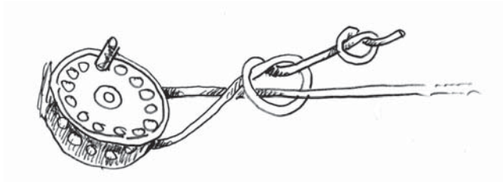
5. Pull the link gently to tighten the knot down against the eye of the hook.

ARTWORK BY TIM REIGERT.

A note about line and knots: There are debates about what is the strongest fishing knot. There are hundreds to choose from. But the important considerations are: what is the best and simplest knot for the situation? And, is the knot tied correctly? A few suggestions: Learn the basic knots presented here and practice tying them. Test the knot (pull on it) before using the rig. Use a little moisture (saliva works well) to lubricate the knot as it's pulled tight. Occasionally check and retie the knots.

THE ARBOR KNOT

Use this knot to attach fishing line to a reel.

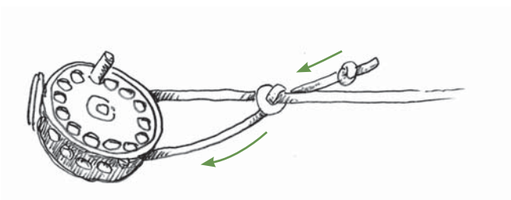


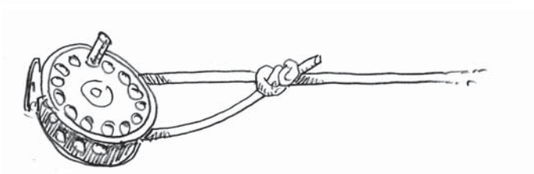
1. Tie an overhand knot near the end of the line.

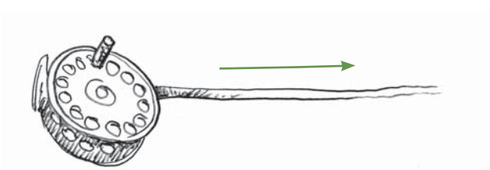
2. Tighten the knot and trim off excess.

3. Run the line around the spool.

4. With the loose end of the line, tie a second overhand knot around the line attached to the spool.





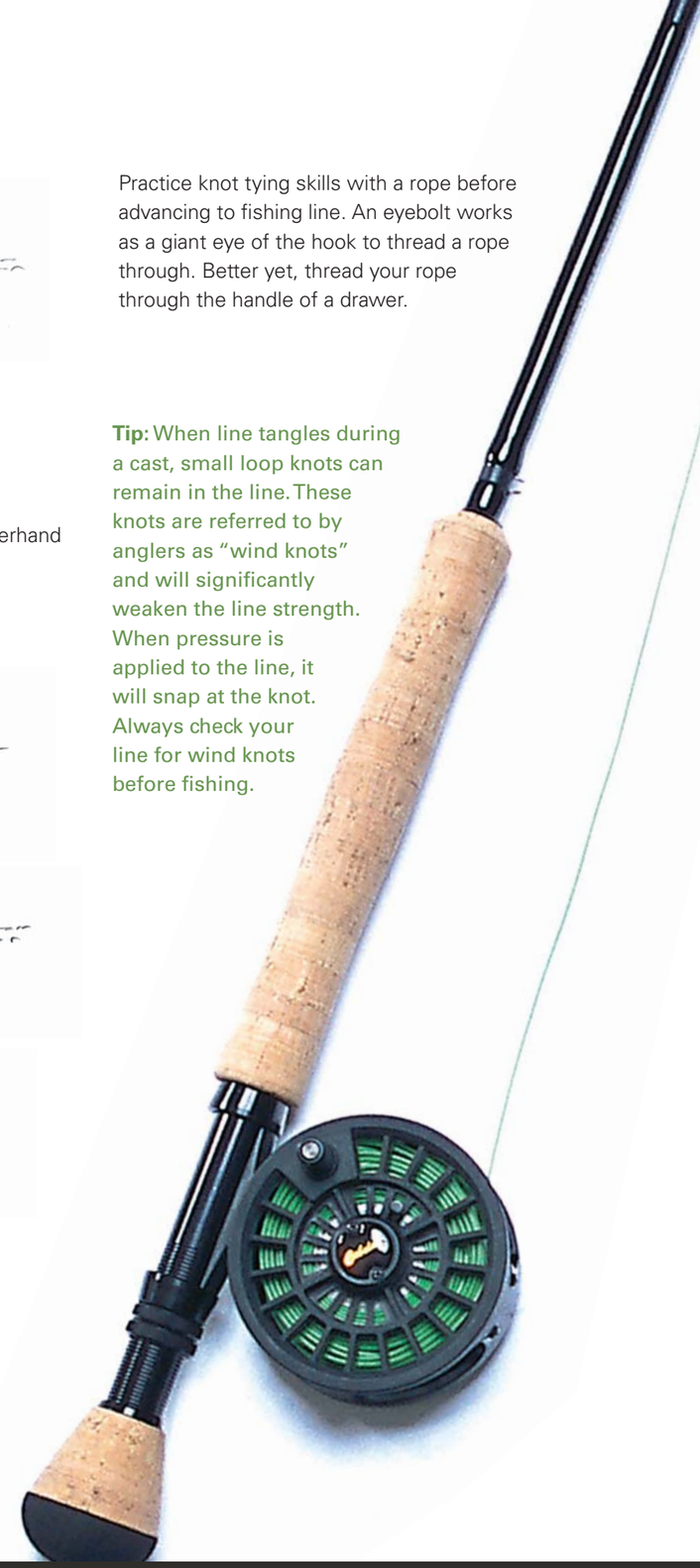


5. Pull the knot tight while working the first knot close to it.

ARTWORK BY TIM REIGERT

Practice knot tying skills with a rope before advancing to fishing line. An eyebolt works as a giant eye of the hook to thread a rope through. Better yet, thread your rope through the handle of a drawer.

Tip: When line tangles during a cast, small loop knots can remain in the line. These knots are referred to by anglers as "wind knots" and will significantly weaken the line strength. When pressure is applied to the line, it will snap at the knot. Always check your line for wind knots before fishing.



CASTING

When fishing from shore, you will likely fish in water with aquatic vegetation, rocks and structures like flooded trees or boat docks that provide cover. The areas that provide cover are where you will find fish. The ability to target where the fish are and cast your bait to that spot without getting hung up is a skill that will greatly increase your fishing success.

Many people when first practicing a cast will confuse distance with accuracy. The goal of a good cast is not simply to toss the bait as far into the water as you can, but to judge the distance of your target and then cast that exact distance. In fact, casting long distance is not a skill you should need when fishing from shore. Most fish will be near shore taking advantage of the cover and food available in shallow water.

As with any skill, practice will make you proficient in your casting abilities. A good way to practice casting is to tie on a practice plug and find an open space in your yard or at a park. Set out some targets – a hula hoop or a bucket makes a good target. Start close to your target, and as you master your casting at close range, increase the distance between you and your target.

CASTING SAFTEY

Knowing how to cast accurately is essential to casting safely. You want to be in control of where your hook will land! Always aim your cast into the water and never towards another person. Remember that a sharp hook can be dangerous to yourself and others if it is out of your control. Before you cast, always take in your surroundings. Make sure no one is on the water in the vicinity of your target. Look to your sides; look behind you and above before you make a cast. If you get hung up in a tree above head or in a snag on the water, alert anyone near you so they can move away before you pull your snag free. To pull your snag free, hold your rod away from your body and pull on the handle instead of the line. Be prepared to protect yourself from a freed lure or hook flying towards you.

OVERHEAD CAST AND RETRIEVE with a spin-casting (closed face) reel

Described for a right-handed angler. For left-handed casting, simply replace the word "right" with "left" in the following instructions.

CASTING PHOTOS BY LARRY PAPE

1. Stand with your feet shoulder width apart and your right foot slightly forward and aligned with the target.

2. Hold the grip of the rod in your right hand with reel and line guides facing up. Place your thumb on the button of the reel. If the reel and line are held underneath, the line will hit the rod when casting and reduce the accuracy and distance of our cast.

3. Point the tip of your rod at your target.

5. Move your wrist to bring the rod tip forward in line with the target and lift your thumb from the button allowing the line to release from the spool. The timing of the release is important. If the line is released too soon, your casting plug will fly vertically resulting in a high, arcing cast that doesn't cover much distance and can be caught by the wind and moved off course. If the line is released too late, the plug will hit the ground near your feet. If the line is released at the right time, it will sail straight towards your target.

Tip: Before making your forward cast, look at your lure or hook to make sure it isn't wrapped around the line. Before you cast forward, return your focus to your target. If you are not looking at your target, your cast is likely to go astray.

CASTING PHOTOS BY LARRY PAPE

4. Depress the button and move your wrist to bring the rod tip up. Keep your elbow near your side.

6. Once the cast is complete, turn the reel handle once in the direction of the rod tip to engage the line so it won't continue to unwind from the spool. You should hear a click as the pin pops back into place.

7. As you retrieve the line, turn the handle steadily and keep the rod tip pointed up. It can be helpful to gently pinch line in front of the reel as you retrieve to prevent debris from getting into the reel and to keep an even pressure on the line as it spools. Keeping the line clean and evenly spooled will ensure smooth casts.

THINK OF A CLOCK

Most of your movement should be in the wrist and forearm. Think of yourself standing in front of a giant clock, facing the number 10 with the 12 directly overhead. Start with your rod tip at the 10 o'clock position. When you back cast, bring your forearm to 12 o'clock and then tilt the wrist to bring the rod tip to 1 o'clock. Cast forward by returning your rod to 10 o'clock. Avoid bending the wrist so that the rod falls out of the plane of the cast.

The physics of the rod's movement make this an effective cast. As you bring the rod tip up, the rod will bend back. As you bring the rod tip forward to complete the cast, the rod will straighten out and then bend forward. The action in the rod as it bends and straightens propels your plug forward. It is not necessary to throw your cast like you would a baseball; in fact, putting a lot of muscle into your cast will often send it astray.

CASTING PHOTOS BY LARRY PAPE

CHAPTER 4 FISHING TIPS AND TECHNIQUES

LOCATE, ATTRACT, AND CATCH

Fish need water, so a lake or stream is an obvious choice to find them. The Nebraska Fishing Guide – Public Fishing Areas is a great place to start finding a location and information on the fish present. Then it's time to explore and experiment. Find a fishing spot that is comfortable for you and seems "fishy". Try different baits and techniques. If it's not working out, move. When in doubt, observe or ask other anglers about what is working. Most anglers will oblige.

LOCATING FISH

Think food, oxygen and shelter. Where are these basic needs met for the fish species you target? During mornings and evenings, many fish move out of their daytime shelter and into near-shore areas in search of food. This is often a prime time to have a hook in the water. Fish with high oxygen requirements probably won't be found in a shallow, muddy pond. Instead, look for clean, fresh or flowing water habitat with plenty of oxygen. Shelter provides shade, a place to hide from predators or to lie in wait for prey. Look for weed beds, submerged trees, rocky areas, boat docks, overhanging trees or outcroppings, or even simply deeper pools of water. On bright sunny days, avoid shallow, open water and fish in areas that provide shade.

ATTRACTING FISH

Sight

Fish can see color. When fishing in clear water, use lures that mimic natural colors (like silver and whites). When fishing in murky or deep waters where light doesn't penetrate as well, bright reflective colors (like red, green or chartreuse) are often more effective.

Smells

Fish found in murky or dark water will rely on senses other than sight to find food. Many soft plastics are injected with scents and, of course, live baits will provide an olfactory attraction when fishing murky waters. Catfishers will often use stinky baits like rotten cheese to attract fish. While the fish may bite on the smelly stuff, they'll also bite on a chunk of hot dog. There are even commercial products available to spray onto lures as a fish attractant. (Many old-timers swear that WD-40 lubricating oil is an excellent fish attractant because it contains fish oil. According to the manufacturers, the product does NOT contain fish oil and they do not recommend using it as a fish attractant for environmental reasons.)

Sound

Fish hear differently than humans. Hearing is more like feeling to a fish because they pick up the vibrations of sound in the water with sensory organs like the lateral line. Unnatural sounds will spook fish, so think "quiet" while fishing. When casting and retrieving, let your lure rest for about 10 seconds before beginning your retrieve, to allow fish to recover from the startle of your lure hitting the water. Lures that make noise are popular for deep water fishing or when fishing in the dark, situations where fish rely on senses other than sight to find food.

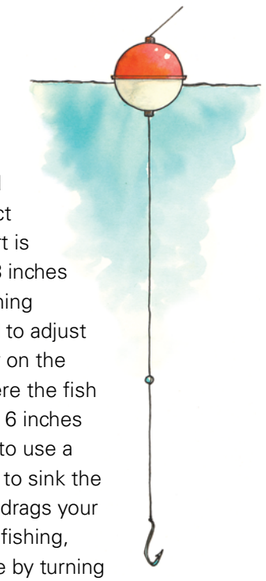
Pay attention to what your fish are biting on and when. Keep a journal and record the type and color of your lure, the time of year and the weather conditions. Your records will likely begin to show patterns that you can refer back to when choosing baits in the future. For example, you may notice that certain species at a specific lake prefer a specific colored jig at a specific time of year. These preferences likely correlate to something that repeats itself in the environment, like an annual hatch of baitfish that resembles the lure you use.

TECHNIQUES

You can use two primary techniques when fishing from shore – still fishing and retrieving.

STILL FISHING

This technique involves casting the bait and waiting for the fish to bite.

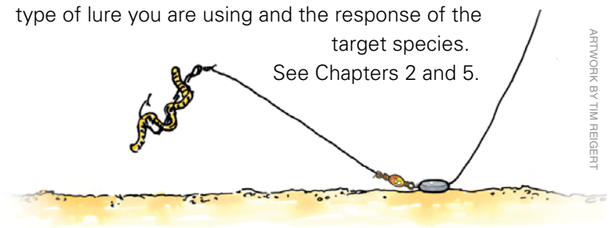


Bobber fishing: Attach a bobber that isn't so big the fish you target can't pull it under the water. Attach the bobber on the line so that the bait will hang suspended at a depth where you suspect fish are. A good place to start is to place the bobber about 18 inches from the hook. If you are fishing deeper water, you may need to adjust the placement of the bobber on the line to allow it to sink to where the fish are. Attach a split shot about 6 inches from the hook, making sure to use a weight that is heavy enough to sink the bait, but not so heavy that it drags your bobber down. When bobber fishing, remember to engage the line by turning the reel handle after you cast.

Bottom fishing: When fishing the bottom, remove your bobber. Before tying on a hook, pass your line through a sliding sinker and then attach a split shot about 12–16 inches from the hook to keep the sliding sinker away from the hook. When bottom fishing, allow the line to stay slack while waiting for a fish to bite. After completing your cast, you should not turn the reel handle to engage the line. This allows a fish to pull the line without feeling the resistance of the sliding sinker. To detect a bite, make sure there is not a lot of slack in your line, and keep a finger on the line against the rod to feel the vibration of the fish hitting your bait. Another option for bottom fishing is to add a bait like a marshmallow or Powerbait to your hook that will float the hook while the weight remains on the bottom.

RETRIEVING

This technique involves casting out the bait and then retrieving the line after the cast, pulling the bait through the water either near the surface, across the bottom or up and down in the water column. There are many variations on the retrieve that depend largely on the type of lure you are using and the response of the target species. See Chapters 2 and 5.



ARTWORK BY TIM REIGERT

SKILLS TO PRACTICE

Setting the hook

This action ensures that the fish is secured to your hook. To set the hook when you feel a bite, you need to have the rod and line prepared. The rod tip should be pointed on the same trajectory of the fishing line and there should not be any slack on the line. Set the hook by sharply pulling the rod up so the tip is pointed away from the water. The action should be sharp and fast, but not so extreme that you send the fish flying out of the water over your head.

Playing the fish

Once the fish is on your hook, you need to get it to shore. You may want to loosen the drag on the line so that a strong, fast movement by the fish won't break your line. Keep the rod tip up and keep the line tight. Reel in slowly to avoid breaking the line, and keep the fish from heading towards rocks or logs that could tangle your line. The key is to take your time bringing the fish to shore and keep the slack out of the line, so the hook stays secured in the fish's mouth.

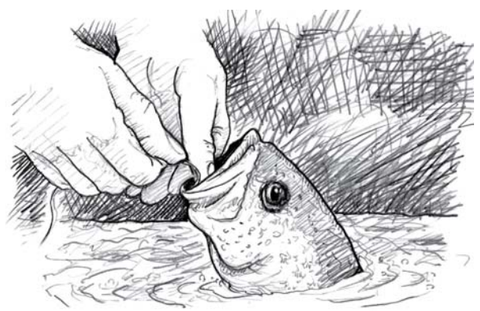
Landing a fish

This stage in the process is often where the fish breaks free. Make sure you are prepared to bring the fish to shore. A landing net can make this task easy. Avoid lifting your rod to bring the fish out of the water and onto the bank. This can damage the rod and increase the likelihood that your fish will escape the hook. Instead, reel the fish

in near to the shore and then approach your fish with your net or grasp the fish with wet or gloved hands and lift it from the water. Make sure the fish is secured in your hands as you disengage the hook by backing it out in the direction it went in to the fish's flesh.

Releasing fish

The best way to release a fish without causing damage to it is to release it in the water. Try to handle the fish minimally. The more a fish is handled, the more its protective slime coat is compromised. Without that slime, fish are exposed to disease and parasites that may eventually kill them.



ARTWORK BY TIM REGERT

If a hook has been swallowed by a fish, it is usually best to cut the line, leaving the hook lodged in the fish's gills or gut. Sometimes a deep hook can be dislodged using needle-nosed pliers, but if it does not come free without tugging, this method should be abandoned. Tugging on the hook to free it will only tear up the fish's internal organs. Remarkably, many fish can extrude foreign objects like hooks from their bodies given sufficient recovery time, so a fish is much more likely to survive if the hook is simply freed from your line and left inside the fish.

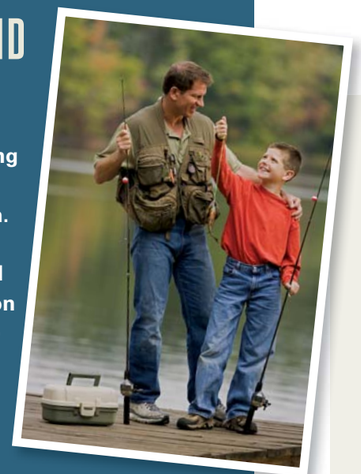
If you would like to photograph your fish prior to releasing it, keep the fish in the water until just before you shoot the picture and then return the fish to the water. Remember that fish will suffocate without water flow past their gills.

Be careful not to play your fish so long during the retrieve that you have completely exhausted it by the time it is set free. It may be unable to swim away.

Avoid making any contact with a fish's gills if you plan to release it. They are very vital but delicate organs and easily damaged.

PHOTOGRAPHS AND MEMORIES

The memory of a day fishing and fish caught will be reinforced by a photograph. A framed photograph of a first fish, trip with a special friend or a beautiful location will be a cherished lifetime memento. The following are a few suggestions on taking a quality fish photograph.



MISSOURI DEPARTMENT OF CONSERVATION

- **Use a quality camera (thanks to current technology, most smartphones take excellent photos!) and make sure the lens is clean.**
- **Position the subjects with light coming from the front or side, but not behind.**
- **Use the lake or an attractive shoreline as the background.**
- **Use the background or props (fishing pole, boat, etc.) to help tell the story.**
- **Include others involved in the fishing event.**
- **Take the photograph at, or below the subject's eye level.**
- **Hold a fish in front of the angler but not blocking the angler's face.**
- **Help squeamish children hold the fish by keeping it on the line or having another person hold it with their help.**
- **Take several photographs and pick the best.**
- **Print, frame and present the photograph before you forget!**

CHAPTER 5 IDENTIFICATION AND LIFE HISTORY

KNOW YOUR FISH

Nebraska is home to more than 100 fish species. Many of these species will never be encountered on a fishing hook because their size, habits or habitats make them unavailable or undesirable to anglers. Most fish that can be caught by hook-and-line are designated as sport fish species. Nebraska offers excellent fishing opportunities for nearly 40 sport fish ranging from bluegill to walleye. This section covers a variety of species that are commonly caught when fishing from shore and are good targets for new anglers.

FISH SPECIES ARTWORK BY JOSEPH TOMELLERI

To locate places to fish for these species, refer to the Fishing Guide and look for water bodies designated as "Family Friendly Lakes." For a more complete representation of Nebraska fish species, request a copy of the Common Fishes of Nebraska pocket guide or visit the interactive fish identification tool at http://outdoornebraska.ne.gov/Fishing/guides/identification/default.asp.

BLUEGILL

Scientific name: *Lepomis macrochirus*
From the Greek, *lepomis* means "scaled gill cover" and *macrochirus* means "large hand," in reference to its body shape and size.

See **Chapter 6 – Fish Anatomy** for definitions of body parts.

Average size: 6-9 inches, but rarely more than 8 inches in most Nebraska reservoirs. A 10-inch (or 1 pound) bluegill is considered a "master angler" catch in Nebraska. The state record bluegill weighed 2 pounds, 13 ounces. (The United States record is 4 pounds, 12 ounces. This record came from the southern United States, where year-round warm water conditions allow fish more opportunity to grow.)

Habitat: Warm-water species.
Prefers clear water. A bluegill's primary diet is aquatic insects that are often found in submerged vegetation. Therefore, clear water that can support plant life is important to this species. Submerged vegetation also provides cover for bluegills to hide from predators.

Diet: Aquatic insects and aquatic nymphs of terrestrial insects (example: caddisfly, dragonfly, mayfly, damselfly); also will prey on small fish, crayfish, snails.

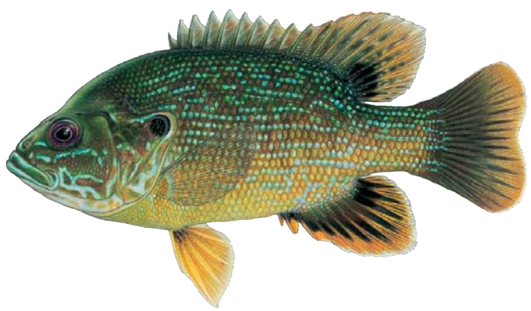
Activity: During daylight, sunfish are fairly sedentary and spend much of their time hovering quietly near submerged cover or in the shade of a tree or structure. In mid-day found in deeper water or in shade of overhanging trees or under docks.

Identifying characteristics:
- Deep bodied (body depth is less than three times the length of the body).
- Small mouth (mouth does not extend back to the eye).
- Dark spot near the base of the soft dorsal fin. Dark spot

on the ear flap of the operculum.
- Typically has vertical bars on sides of body.
- Olive-green with emerald and brassy reflections.
- Breast and belly yellow or reddish orange, especially in breeding males.
- Spiny and soft dorsal fins are broadly connected and can appear to be one fin.

Interesting facts:
- One of the most important prey fish (food for other fish) species in Nebraska's flood control reservoirs.
- Can spawn (reproduce) multiple times during the summer months.
- Can lay 10,000-60,000 eggs per spawn.
- Males create nests in groups. They sweep out circular depressions in the substrate of shallow water (1-4 feet), and care for and protect the eggs until they hatch.
- Growth is very dependent on water temperature and subsequent food availability (for example, bluegill in Florida can grow 4 inches in the first year, while bluegill in Wisconsin may only reach 1.5 inches in same time).
- When food is abundant, a bluegill can consume one-third of its body weight every week.

Fishing tips: Still-fish with a worm or kernels of canned corn under a bobber or use a slow retrieve with small jigs or spinners.



GREEN SUNFISH

Scientific name: *Lepomis cyanellus*
From the Greek, *lepomis* means "scaled gill cover" and *cyanellus* means "blue" in reference to the blue streaks on the gill cover of this species.

Average size: 6-8 inches. The Nebraska state record is 1 pound, 8 ounces. A master angler is 1 pound or 10 inches.

Habitat:
- Found throughout the state in streams, rivers, ponds, and reservoirs.
- Can tolerate turbidity (murky water), low oxygen levels, and high temperatures.

Diet: Eats small fish and crayfish as well as aquatic insects.

Activity: daylight, similar to bluegill.

Identifying characteristics:
- Thick bodied and not as slab sided as bluegill (longer than round).
- Blue streaks on the sides of the head.
- Ear flap has orange/yellow tip.
- Mouth is larger than a bluegill's (the edge of the mouth reaches the front of the eye).
- Fins are tipped in yellow.

Interesting facts:
- Hybridization between bluegill and green sunfish is common.

Fishing tips: Similar to bluegill, often found in large rocks near shore.

PHOTO BY JULIE GEISER, NEBRASKALAND MAGAZINE

CRAPPIE

Scientific name: Black – ***Poxomis nigromaculatus,***
White – ***Poxomis annularis***
From the Greek, *Poxomis* means "sharp opercle", *nigromaculatus* in Latin means "black spotted" and annularis in Latin means "having rings" in reference the grouping of spots on white crappie.

Average size: 9-10 inches, but master angler fish measuring 15 inches (or weighing 2 pounds) are regularly caught in some Nebraska reservoirs and ponds. The Nebraska state record is 4 pounds, 8 ounces. (black).

Habitat:
- Prefer water with aquatic vegetation and underwater structure such as logs, rock or dead trees.
- Can be found in shaded water under overhanging trees.
- In the heat of summer, will move to deeper water.
- Black crappie prefer clearer, quieter water.
- White crappie are more tolerant of turbidity.

Diet: Adult crappie eat small fish, aquatic insects, crayfish and tadpoles. White crappie are more piscivorous (fish eaters) than black.

Activity: Aggregate in loose schools; will eat during the day and night, but are most active feeding during the evening.

Identifying characteristics:
- Deep bodied, but more elongate than bluegill.
- Larger mouth than bluegill.
- Dorsal, anal and caudal fins covered in black spots.
- Black crappie have mottled black spots covering their backs and sides and have 7-8 spines on the dorsal fin.
- White crappie have black spots that are arranged into stripes on their sides and have only 5-6 spines on the dorsal fin.
- White crappie tend to have greater length, but are less robust than black.

Interesting facts:
- Crappie spawn in spring when water reaches 60 degrees F.
- Like other sunfish, crappie are nest builders.
- Crappie have high reproductive potential, which often leads to overpopulation and a smaller-sized fish.
- Males aggressively defend nests.
- Crappie can grow 3-5 inches in first year, but growth rates are very irregular.

Fishing tips: Still fish with a worm or minnow under a bobber or use deep, slow retrieve of small minnows, plugs, spoons, jigs or spinners. Fishing from shore is best in the spring.

LARGEMOUTH BASS

Scientific name: ***Micropterus salmoides***
This name doesn't make as much sense as others. The Greek word, *micropterus* means "small fin." The specimen referred to in naming this genus of fish had damage to the soft dorsal fin, so that it appeared to have an additional small fin. *Salmoides* is derived from the Latin word salmo, or trout, because the species was historically called a trout in southern states.

Average size: 12-17 inches. Adult bass can grow larger than other sunfish (the Family Centrarchidae includes, among other species, largemouth bass, bluegill and crappie). A master angler is 20 inches or 5 pounds. The state record largemouth weighed in at 10 pounds, 11 ounces.

Habitat:
- Prefers warm, quiet water.
- Often found near structure (like flooded timber and

FISH SPECIES ARTWORK BY JOSEPH TOMELLERI

LARGEMOUTH BASS *(continued)*

brushpiles) and vegetation or at the edge of underwater ledges and drop-offs into deeper water.
- Largemouth bass are sight feeders and are most successful at finding prey in clear water.
- Seldom found deeper than light penetrates.

Diet:
- Primarily feeds on other fish (piscivorous).
- Begins to consume fish when only 2 inches long.
- Also feeds on crayfish, large insects, frogs, anything that falls in the water or swims and fits into its mouth.

Activity: Most active at dawn and dusk; spends the day in deeper water or lurking about logs, drift piles and other cover, but moves into the shallows in morning and evening to feed. Will feed during the day in deeper water.

Identifying characteristics:
- Slender bodied (body depth is three times or more the length of body), streamlined.
- Very large mouth (when closed, mouth extends well past the back of the eye).
- Dorsal fin almost completely separated into two parts: spiny dorsal and soft dorsal (soft dorsal has only cartilaginous rays and no spines).
- Dark horizontal stripe on the mid-side of the body.
- Dorsal markings are green, lower sides and belly are white.

Interesting facts:
- Top predator in Nebraska's flood control reservoirs and farm ponds, the primary water body types in Eastern Nebraska.
- Mature females will be larger than males.
- Can grow to 2 pounds in first year with abundant food.
- Males are territorial and fiercely guard nests.
- Fry (newly hatched fish) will school, and males will provide protection of schools.
- In northern states, bass will live longer but not grow as large.
- Most targeted fish in Nebraska.

Fishing tips: Small bass can often be caught by still-fishing with a worm under a bobber in urban water bodies. For larger bass, slow-retrieve a plastic worm or frog, minnow, plug, spinner or spoon.

CHANNEL CATFISH

Scientific name: Ictalurus punctatus
From the Greek, ictalurus meaning "fish cat" and punctatus is Latin for "spotted" in reference to characteristic dark spots on the body.

Average size: Size of adult fish is highly variable, but can approach 3 feet in length. Commonly caught at 12-20 inches. A master angler is 30 inches or 12 pounds. The Nebraska state record is 41 pounds, 8 ounces.

Habitat:
- Abundant in streams, rivers, reservoirs and ponds.
- Occupies a variety of habitats, but can be located underneath structure (fallen trees, cavities in rock piles).
- Relies on taste rather than sight for feeding, so is tolerant of turbid water

Diet: Diet is varied depending on what is available, includes fish, insects, crayfish, mollusks, and plants. Most food is taken from the bottom. Will feed on decomposing organic matter (dead fish, dead plants, etc.).

Activity: Most movement and feeding occurs after sunset and before sunrise. During daylight hours, will hide in natural cavities or remain sedentary in deeper pools and will move to shallows or near cover to feed.

Identifying characteristics:
- Elongate, slender bodied.
- Smooth, scaleless skin.
- Sensory barbels (whiskers) around the mouth.
- Small, fatty tissue adipose fin near the tail, doesn't help with locomotion like other fins.
- Deeply forked tail fin.
- Olive-brown to slate-blue coloration with white bellies.
- Smaller fish have black spots on sides; larger fish lack spots and are often confused with blue catfish.
- Spines on dorsal and pectoral fins are sharp and serrated, and protect them from predators when young.
- Eyes are comparatively small; channel catfish are not typically sight feeders.

Interesting facts:
- Channel catfish will spawn in hollow logs and holes under rocks.
- Summer spawner.
- Males tend and defend the nests.
- Highly variable growth rates depending on habitat.
- After largemouth bass, the most targeted fish in Nebraska.

Fishing tips: Fish worms, doughbaits, frozen shrimp or even hot dogs with a slack line off the bottom.

BLACK BULLHEAD

Scientific name: *Ameiurus melas*
From the Greek, *ameiurus* means "unforked fin" and *melas* means "black."

Average size: Adult size is much smaller than the channel catfish. A master angler is 15 inches long or 2 pounds. The Nebraska state record is 3 pounds, 15 ounces.

Habitat: Commonly found in still, shallow and turbid waters with little or no aquatic vegetation. Can handle low oxygen environments.

Diet: Like channel catfish, bullhead are bottom feeders and opportunistic eaters and will consume just about anything, including dead and decaying matter.

Activity: Adults feed primarily at night, but can be caught anytime on hook and line.

Identifying characteristics:
- Elongate, slender bodied.
- Smooth, scaleless skin.
- Black barbels around the mouth
- Small, fatty tissue adipose fin near the tail.
- Dark greenish brown/black in color with a yellow belly.
- Tail fin is rounded instead of forked.

Interesting facts:
- Spawn in late spring, early summer.
- Males or females will select and guard nest sites beneath logs or in weedy cover.

Fishing tips: Fish a worm on the bottom or close to the bottom using a bobber.

RAINBOW TROUT

Scientific name: *Oncorhynchus mykiss*
From the Greek, *oncorhynchus* means "hooked nose" and *mykiss* is the common name of this species in Asia, where it was first identified hundreds of years ago.

Average size: Average adult size is 8-15 inches, but can grow quite large in good habitat. A master angler is 23 inches or 5 pounds. The Nebraska state record is 14 pounds, 2 ounces.

Habitat: Requires cold, well-oxygenated water; can't survive extended periods in water temperatures more than 70 degrees. Can survive year-round in the coolwater streams of western and north-central Nebraska.

Diet: Eats mostly insects, snails, crayfish and sometimes small fish.

Activity: Active throughout the day, but most active at dawn and dusk.

FISH SPECIES ARTWORK BY JOSEPH TOMELLERI

RAINBOW TROUT *(continued)*

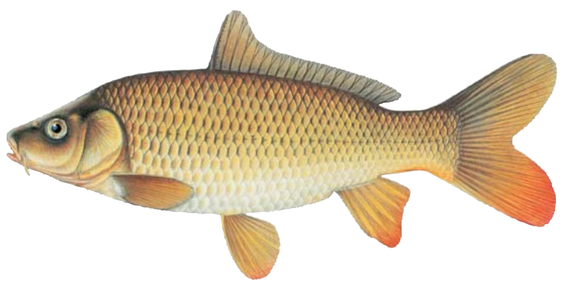
Identifying characteristics:

- Streamlined body.
- No spines on fins.
- Very small scales.
- Similar to catfish, trout have an adipose fin on their backs.
- Olive colored on back with small black spots, white belly with pinkish stripe along sides.

Interesting facts:

- Native to the Pacific coast of the United States and inland to the western slope of the Rocky Mountains.
- Stocked seasonally in warm water ponds by Game and Parks for fishing opportunities.
- Require silt free stream bed for successful spawning.
- Females dig shallow pits to lay their eggs and then cover the eggs with gravel.
- No parental care.

Fishing tips: Still fish with a worm under a bobber or slow retrieve of small plugs, spoons, jigs or spinners.



COMMON CARP

(nuisance species in some waters) DO NOT TRANSPORT TO OTHER WATER BODIES

Scientific name: *Cyprinus carpio*
From the Greek, *cyprinus* and Latin, *carpio* – both meaning "carp."

Average size: 12-24 inches, but can get quite large. A master angler is 32 inches or 15 pounds. The Nebraska state record is 50 pounds, 5 ounces.

Habitat: present in most aquatic habitats where they have been introduced, most abundant in shallow areas of reservoirs.

Diet: Feeds primarily from the bottom on invertebrates (insects, worms, crustaceans), plant materials and other organic matter.

Activity: Active throughout the day, but most active in evening and morning hours.

Identifying characteristics:

- Large bodied.
- Large scales, sometimes in an irregular pattern.
- Thick, saw-toothed spine at front of dorsal and anal fins.
- Small mouth with fleshy lips and a small barbel on either side of mouth.
- Golden/bronze color.

Interesting facts:

- In the minnow family.
- Native to Asia, introduced in Europe and the United States as a game fish.
- The Nebraska Game and Parks Commission was originally instituted as a fish hatchery to raise and stock common carp as a food resource.
- Highly adaptable species that is widespread and abundant throughout the United States. Are often found in loose aggregations, but do not school.
- In warm, productive (high-nutrient) waters, carp grow quickly.
- Aggressive feeders that uproot aquatic vegetation and stir up sediment. Feeding habits can increase turbidity of the water and destroy vegetation to a degree that habitat becomes unsuitable for sight feeding fish like largemouth bass and for invertebrate seeking fish like bluegill.
- Can become a nuisance species in small impoundments by destroying habitat for other fish.
- Spawn in late-spring, early-summer.
- Do not nest or provide parental care; eggs are broadcast at random in shallow water.
- Mirror carp are the same species with a genetic mutation that causes scales to grow irregularly.

Fishing tips: Fish canned corn kernels or doughbait on the bottom with a slack line.

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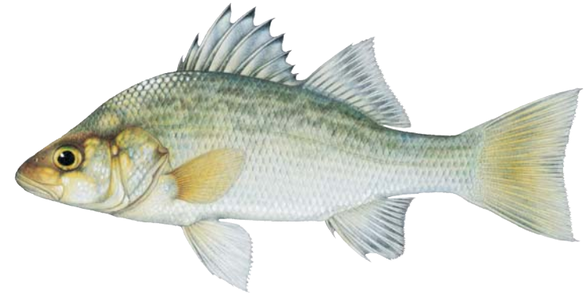


WHITE PERCH

(invasive nuisance species) DO NOT TRANSPORT TO OTHER WATER BODIES

Scientific name: *Morone americana*

Average size: 7-10 inches in water bodies where the population is not stunted.

Habitat: open water, near the surface.

Diet: feeds on small fish, eggs of other species and aquatic invertebrates.

Activity: move in large schools, generally in deeper water during the day and moving near shore at night.

Identifying characteristics:

- Deep bodied, humpbacked.
- Silvery green-gray on top and silvery-white underside.
- No horizontal stripes, distinguishing the species from native white bass.
- Spiny and soft dorsal fins are slightly connected (white bass has completely separate dorsal fins).
- Small, pointed teeth.

Interesting facts:

- Native along the Atlantic coast in brackish (slightly salty) water of estuaries.
- Invasive to freshwater, introduced to the Great Lakes through the Erie Canal and range has expanded westward through rivers and streams.
- Inadvertently introduced in Nebraska when stocking fish at Wagon Train Reservoir, south of Lincoln.
- Highly reproductive species, often leads to overpopulation and stunting.
- Can take over the fish community in water bodies where they are introduced.
- Popular bait fish, often spread by dumping left-over bait into water.
- It is illegal to transport or possess live white perch away from the water body from which they were caught.
- It is illegal to release bait fish or any fish caught from a different body of water into public waters.

Fishing tips: still-fish with a worm below a bobber, or slow retrieve small plugs, spinners or jigs.

PHOTO BY ERIC FOWLER

CHAPTER 6 FISH ANATOMY

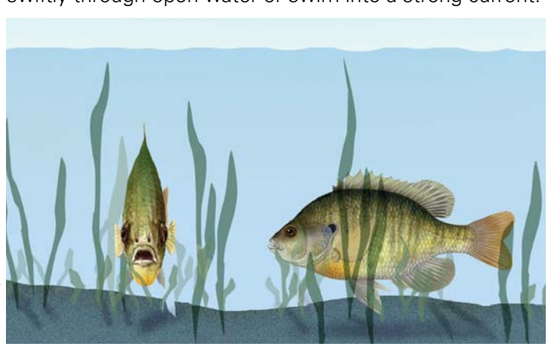
WHAT IS A FISH?

This can be a difficult question to answer. There is great diversity amongst the animals that we call 'fish', and there are nearly 30,000 known species of fish worldwide. Some fish live in salt water; others in fresh water. Some are vividly colored, others drab. Some are tiny, smaller than a fingernail, while others are gigantic, bigger than a school bus. Some look like what we expect of a fish, lots of fins and shiny scales. Others look like snakes or even blobs of flesh. So, what makes a fish a fish?

FISH LIVE IN WATER

Fish are aquatic animals, and their bodies are adapted for ease of movement in water. For example, a fish's body isn't made up of a distinct head, trunk and tail like land animals. Instead, all parts are connected to form smooth contours, and the front is generally pointed to minimize resistance as it moves through the water.

In fact, the shape of a fish's body can be a good indicator of the type of habitat a fish prefers. Bluegill, for example, have bodies that are laterally compressed, meaning that that are flattened on the sides, and tall and narrow when you look at them head on. This shape allows them to maneuver easily through vegetation, rocks or submerged trees. Fish like walleye or rainbow trout have fusiform, or torpedo-shaped bodies. This shape allows them to move swiftly through open water or swim into a strong current.



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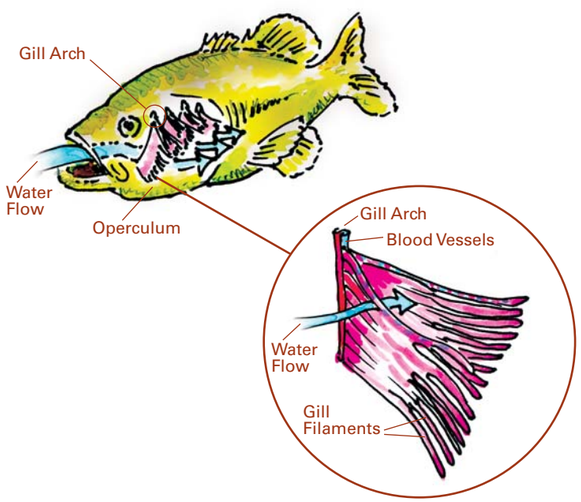
FISH HAVE GILLS

Gills are another adaptation to living in water. Fish gills have the same function as lungs. Our lungs take oxygen from the air, and fish's gills take oxygen from the water. Gills are feathery looking organs located on both sides of the head and are covered and protected by a bony plate called an operculum. Healthy gills are red, full of blood vessels that take oxygen from the water and deliver it to the fish's blood. A fish 'breathes' by opening its mouth and sucking in water. As water moves through the gills, oxygen transfer takes place over the gill filaments before the water travels out of the body through the opercula.



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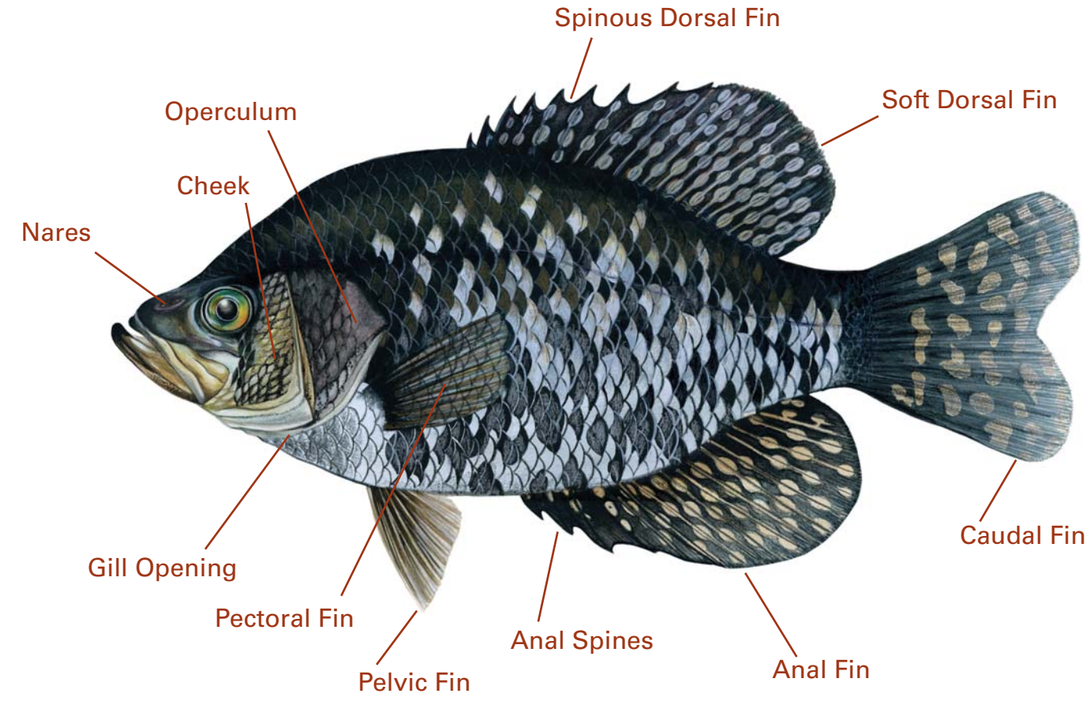
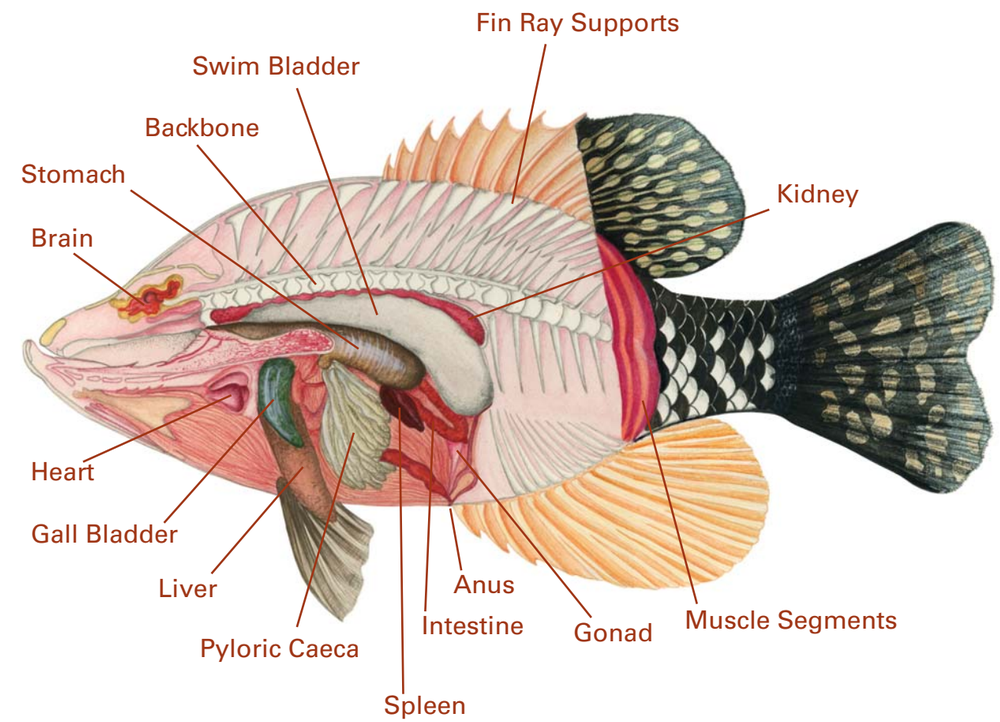




FISH ANATOMY ARTWORK BY JACK CURRAN

FISH HAVE SCALES

Most fish have scales that cover their bodies and overlap each other like shingles on a roof. Just like a roof protects a house, scales protect a fish. Scales are typically composed of calcium carbonate and collagen and are strong, yet flexible. They can increase in size as a fish grows, but they don't increase in number; however, damaged and missing scales can be regrown. Some fish, like trout, have very small scales; others, like common carp, have large, thumbnail-sized scales. Fisheries managers can often determine the age of a fish by looking at its scales. As scales grow, rings are created similar to rings of a tree. In temperate climates, the spacing between the rings becomes constricted during the winter when growth is minimal. The number of years a fish has lived can be counted by the number of constrictions in the growth rings.

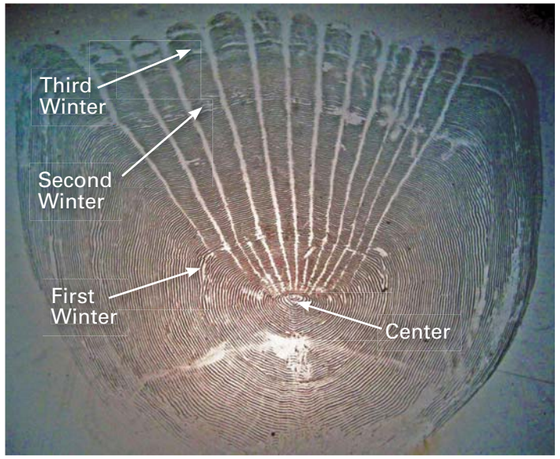
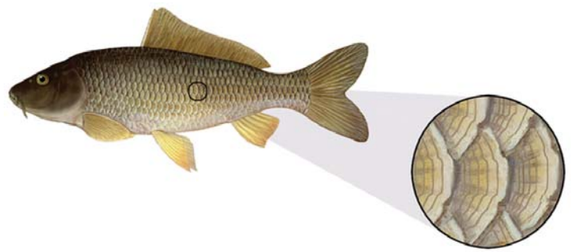


PHOTO BY LINSEY CHIZINSKI



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PADDLEFISH – A UNIQUE FISH IN NEBRASKA

The American paddlefish (Polyodon spathula) is referred to as a "primitive fish" with few changes in the fossil record to the Late Cretaceous period, seventy five million years ago. It is one of only two species in the paddlefish family and exists only in the Missouri and Mississippi River systems; the other exists as critically endangered in the Yangtze River of China. Many of the paddlefish's characteristics are unique from other Nebraska fish species. Particularly different is its cartilaginous skeleton and tail shape, similar to sharks.

The paddlefish is most notable for its paddle-shaped rostrum, which is covered with sensory pores and believed to be used for detection of its food source of zooplankton. It collects zooplankton by filter feeding as it swims with its mouth wide-open. The passing water is sieved by specially adapted gills that collect and moved the trapped organisms to the intestinal tract.

Since paddlefish do not actively feed on lures or baits, they are caught by a snagging and archery methods during special seasons on the Missouri River. See the current Fishing Guide for details. The Nebraska state record paddlefish is 107 pounds, 12 ounces.

PHOTO BY JULIE GEISER

ETHICAL FISH HANDLING

The process of catching a fish with a hook will obviously impart a certain amount of stress on a fish, but ethically we must strive to minimize the stress or damage to the least level possible. The following are guidelines to follow while you develop your own sense of ethical fish handling.

- **Deeply engorged or difficult to remove hooks should be left in place with little or no string attached. The hook will disgorge or dissolve on its own while being no more than a temporary piercing. Hooks are cheap.**
- **Barbless hooks are less damaging to unhook. The barb on a regular barbed-hook can be smashed or partially smashed down with pliers. Fishing fighting skills improve when you learn to use barbless hooks (hint: keep the line tight).**
- **Released fish should be released immediately. Fish need water for oxygen, so hold your breath and when you feel the need to breath, put the fish in the water. Take pictures quickly.**
- **Kept fish should be treated and dispatched with respect. A cooler with ice water will reduce the fish's metabolism and senses, and will preserve the fish for a better quality meal. Keep no more than you can really enjoy.**

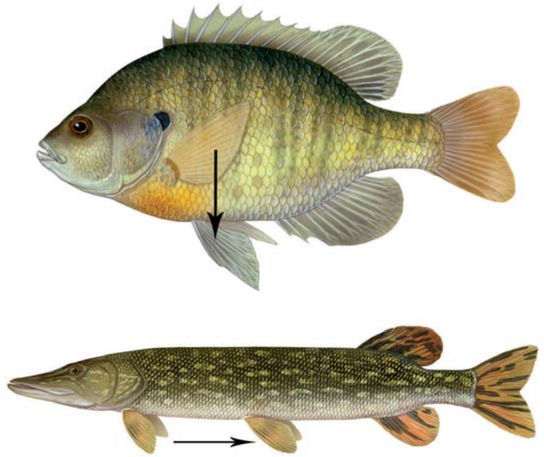
FISH HAVE FINS

Fins are put into action by muscles attached to the base of the fin's spines and rays. Spines are made of bone and are stiff and sharp, while rays are made of cartilage and are soft and flexible. Pectoral and pelvic fins are paired (one on each side of the body). Dorsal, anal and caudal (tail) fins are not paired. Some fish have two dorsal fins or a two-part dorsal fin, a spiny part and a soft rayed part.

Fin spines can be very sharp and even serrated; they help defend a fish against predators. The dorsal fin helps the fish to stay upright. Spines on the dorsal fin can be raised to make the fish appear larger and less likely to be attacked by a predator. The anal fin helps the fish to stay balanced and can also help it maneuver in tight places. Fish that are deep bodied, like bluegill, require greater stability and have long dorsal and anal fins. The caudal fin provides the power that propels the fish forward, and also acts as a rudder to steer the fish's direction. The shape of the caudal fin determines how fast the fish can swim and maneuver. Fish that require speed or continuous movement usually have forked tail fins. Forked tail fins have less drag than a rounded or square fin. The pelvic fins, located on the bottom of the fish, provide stability and balance, and help the fish hold a position. The pectoral fins are located behind the gills and work like the pelvic fins, and also help the fish steer, control depth, change speed and remain in one place.

Sunfish, bass, perch, crappie and walleye have pelvic fins that are located almost in alignment directly beneath the pectoral fins. In this body type, both fin pairs are located near the fish's center of gravity and provide greater maneuverability. Additionally, the pectoral fins are attached vertically rather than horizontally, and can also allow greater maneuverability through a variety of habitats. Lie-in-wait predators like northern pike have dorsal and anal fins located towards the back of their long bodies, close to the caudal fin. These fins work together to propel the fish forward with a burst of power when ambushing unsuspecting prey.

Fish have other unique characteristics that aren't as easily observed as scales and fins.



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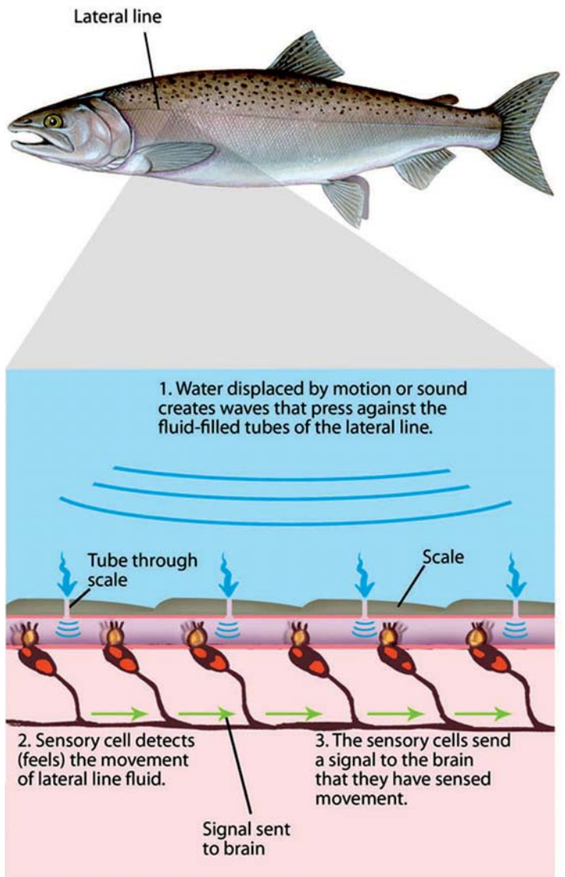
Fish have other unique characteristics that aren't as easy to notice as scales and fins.

FISH HAVE A LATERAL LINE

This line that runs along each side of the fish is actually a series of holes. The holes connect to nerves inside the fish that are sensitive to vibrations and water movements. This makes fish highly aware of its surroundings.



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FISH PRODUCE MUCOUS

They wear a coat of slime that covers their bodies. This reduces friction in the water, allowing fish to move easily in water without expending much energy. Another important function of the slime coat is to protect the fish from disease and parasites.

FISH HAVE A SWIM BLADDER

The swim bladder helps a fish to stay suspended in the water. It is a gas filled chamber, and fish can adjust the amount of gas in the bladder until their density equals the density of the water. The swim bladder allows a fish to be neutrally buoyant. This also functions to help the fish reserve energy for other important activities like foraging for food or reproduction.

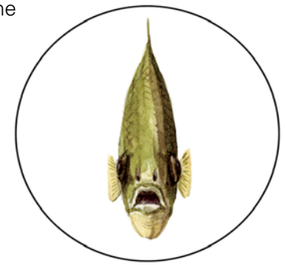
FISH ARE COLD BLOODED

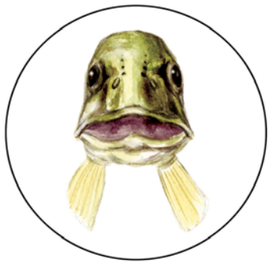
A fish can't control its body temperature. Instead, internal temperature is determined by the temperature of the water a fish lives in. Some fish like the rainbow trout can only live in cool or cold water; others like the channel catfish, largemouth bass or bluegill are considered warmwater fish.

ADDITIONAL ANATOMY FEATURES:

Eyes

A fish's eyes are placed on the sides of the head, allowing it see in almost all directions except directly behind or underneath, although predator fish often have eyes that are located further forward on their heads. This provides them with better depth perception to pursue and catch their prey.





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Large eyes can help fish see well in the dark or in murky water. Light doesn't travel very far underwater, so even fish in clear water can't see great distances. (Because sound travels much faster and further in water, fish have adaptations that make them very sensitive to sound.) Like humans, fish can see colors and brightness, but many fish don't see a full range of color. Unlike humans, fish don't have eyelids and their pupils are fixed; they are always the same size regardless of the amount of light there is. Often, fish will spend bright sunny days in deep water or in the shade..

Fishing tip: Light bends when it passes from air to water. The greater the angle at which light enters the water, the more it bends. Because of this, a fish sees objects straight overhead in their true locations, but the images of objects near the horizon are shifted. Light from an object that is on the horizon doesn't penetrate the water, so sitting while fishing at the water's edge can help you avoid being spotted by your target.

Ears

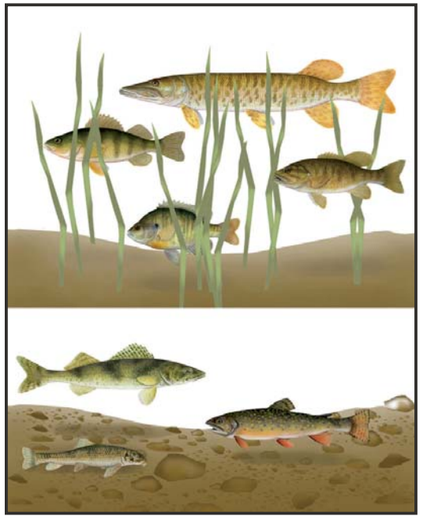
Fish have internal ears. They don't need an external opening because sound travels so well through water, however the structure of a fish's inner ear is similar to a human's. Bony structures called otoliths make up part of the structure of the inner ear and help a fish to maintain its orientation and balance in the water. Like scales, otoliths can be used to determine a fish's age.

Nares

Instead of a nose, fish have nares on their heads. Water constantly moves through the nares, and fish can detect odors with them. Unlike the function of a nose, fish do not breathe through nares.

Coloration

Marine fish are known for having bright colors and bizarre patterns, but even freshwater fish have many colors and patterns. Fish that have vertical stripes often spend much of their time in aquatic vegetation, and the striped pattern on their bodies helps to camouflage them, either to hide from predators or to lie in wait for prey. Fish with spots or blotches can blend in to a rocky or gravelly substrate. Light-colored, silvery fish are camouflaged in clear, open water. Countershading, dark colors on top and light on bottom, helps fish to blend into their surroundings. The light bellies of many fish make them difficult to see from below because they blend in with the light coming from the sky. Likewise, the dark backs of many fish make them difficult to see from above because they blend in with the depths of the water where light doesn't penetrate.



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SO, WHAT IS A FISH?

What are some exceptions to this list of things that make fish unique?

- **Channel catfish don't have scales.**
- **Not all fish have swim bladders. Sharks don't, and neither do paddlefish, a fish found in the Missouri River.**
- **All fish live in water, but some fish can actually stay alive out of water for a period of time. The lungfish, which lives in parts of the world where there are dry seasons, can burrow into the mud when the water disappears. The fish remains inactive until the water comes back.**
- **All fish have fins, but some fish have fins that are adapted to very specific environments and they don't even look like fins. The lungfish is a good example of this. Its fins look like legs.**
- **Fish use gills to get oxygen from the water, but some fish, like gar, can use their swim bladders to get oxygen from the air. These fish can be observed snapping at the surface of the water to gulp air into their swim bladders.**

So, not all fish have all of these characteristics, and some things that aren't fish have some of these characteristics. Snakes have scales, whales are aquatic, salamanders have gills, frogs are cold blooded.

Sometimes the definition can get a little sticky! But a good general guideline is that fish are cold-blooded, aquatic, they use gills to obtain oxygen, they have fins and scales, a slime coat and a lateral line. Fish are fish because they are adapted to living in a world of water.

CHAPTER 7 FISH CLEANING AND PREPARATION

THE BENEFITS OF EATING FISH YOU CAUGHT

A banquet-plate of fried crappie fillets is an environmentally low-impact renewable resource. A freshly-caught catfish dinner is a high-protein, "good fat" (omega-3 fatty acid) delicacy. A shore lunch of grilled-on-a-stick white bass is a gustatory-memory within a fishing trip. Cleaning a stringer of trout with the help of a bunch of kids is an edible biology lesson. Catch and keep some; it's good for you.

PRESERVING THE CATCH

Fish are a very perishable food product and the quality of the meal is only as good as the handling of the fish after the catch. If possible, fish should be kept alive until just prior to cleaning. A bucket of water or a fish stringer will work for holding fish for a short time. If you know you are going to be keeping fish, take along a cooler with ice and place them in it immediately after catching. Cleaned fish can be frozen for later consumption, but are very susceptible to "freezer burn." Vacuum packaging or freezing in water will help lengthen frozen fish storage-life.

TOOLS

Fish can be cleaned in a variety of ways and a knife is the one tool that will be necessary for any method. While any long and thin knife will work, a fillet knife has a thin, pointed and flexible blade suited for delicate cutting. Also consider a small knife sharpener which is often supplied with fillet knife packages. A pair of mechanics pliers will be necessary for skinning catfish, but a preferred tool is a fish skinning pliers that grip the skin more securely.

Quality fillet knives and fish skinning pliers are not expensive and can be purchased at sporting goods and department stores. Fish can be cleaned on any surface, but a small cutting board allows for portable cleaning options and easier clean-up.

LAWS

Where length and bag limits apply, fish may not be filleted until fishing is completed for the day and anglers are off the water. Fish subject to bag and possession limits but not length limits may be processed before transport if the fillets are kept in one piece until cooked, so the bag and possession limit can be determined.

Fish species subject to a length limit may not be possessed with more than the gills, viscera and scales removed while on the water, wading or engaged in fishing. Any fish in possession while actively fishing or on the water will be subject to length and bag limits that apply to the water being fished. Once off the water, the fish may be filleted for transportation and storage.

FILLETING

The word fillet (or filet) comes from the French, meaning a slice of boneless meat or fish. To fillet a fish is to remove the flesh from the carcass and skin with as little of the bones left as possible. A fish fillet is perfect for frying, baking or sautéing and can be consumed with little bother from bones. Any species of fish can be filleted, but some fish species allow for better fillets due to their bone structure. Bass, bluegill (and other sunfish), walleye, yellow perch, white bass and catfish make good fillets. Carp, suckers and northern pike have numerous and large interstitial bones located in the muscle (Y-bones) that are bothersome and dangerous when the fish are filleted. There are other filleting or special cleaning methods that are better suited for these fish.

Through experience you will learn the worthwhile size of the fish you catch and keep. Generally, an eight inch panfish (e.g. the size of the bluegill above), twelve inch channel catfish, and fifteen inch walleye or bass (inland-water minimum legal size) will yield an acceptable sized filet.

1. To start a fillet, cut diagonally from the top of the back to the belly, behind the pectoral and pelvic fins; do not cut the backbone.

2. Next, cut along the backbone on one side of the dorsal fin. Slice at an angle without cutting the rib cage to a point just behind the anal opening.

3. Then slice along the edge of the anal fin with the blade flat against the backbone. Continue to slice to the tail.

4. Now lay the free meat back carefully and cut it away from the rib cage. Cut through the skin to free the fillet. Turn the fish over and repeat.

5. Lay the fillet skin down on a flat surface. Hold the tail and cut through the meat down to, but not through, the skin. Rotate the knife blade so it is at an angle away from the tail. Pull on the skin and use the knife in a cutting motion. Don't try to slice the meat off, rather scrape it off with the blade and the pulling motion.

FILLETING PHOTOS BY LARRY PAPE

SKINNING

Skinning a fish serves the purpose of removing the skin and scales while leaving the carcass whole. Whole fish carcasses are best suited for baking or frying. This is often done on catfish, which do not have scales, but can be accomplished on any fish. Scales do not need to be removed before skinning.

To skin and clean a catfish, start by making cuts just through the skin; along the back from head to tail and on both sides of the dorsal fin, around the body behind the head and pectoral fins, and both sides of the anal fin.

SKINNING PHOTOS BY LARRY PAPE

With the fish on its belly, firmly grasp the head with one hand and with pliers, pull on the loose corner of skin on the top near the head. The skin may need to be separated along this fresh cut before pulling to make the skin come free without pulling away the meat.

The skin on each side of the fish should pull off on each side of the carcass.

SCALING

Removing the scales of a fish is easy, but can be a bit of a mess. Expect scales to fly everywhere so accomplish this task outdoors or in an easily cleanable area. Scaled fish such as sunfish, crappie and white bass are perfect for grilling or baking. The skin serves to prevent excessive moisture loss and damage to the meat while cooking. The skin is generally peeled off prior to eating.

To scale a fish, place it on a firm surface and with a dull knife or scaling tool, scrape off the scales from tail to head. Small strokes and working out from a small area works best. When completely scaled, remove the head, entrails and fins as described above in the skinning section.

COOKING FISH

There are many methods of cooking fish. The following are a few basic methods upon which can be expanded with spices and sauces of preference. Fillets, skinned or scaled fish can be fried in a shallow frying pan with a little butter or oil at medium/high temperature (300 degrees). Lightly flour and spice (salt and pepper, seasoned salt of choice, etc.) each fillet and place in hot oil. Turn from the first side when fish is lightly brown and remove when the second side is lightly brown. Skinned and scaled fish can be spiced (garlic, onion, rosemary, bay, etc.), wrapped in foil with a little butter or oil and baked or grilled at a medium heat. The fish is ready when hot throughout and the flesh looks white and opaque. Scaled fish can be grilled directly on a grate or in a fish basket. Oil the skin to keep it moist and add lemon-grass, sage or other spices in the body cavity to impart flavor. Introduce leftover or fresh fish pieces to an already hot soup to create fish chowder.

CHAPTER 8 REGULATIONS AND ETHICS

THE LAW AND THE MORAL CODE

"The true test of a man's character is what he does when no one is watching"

– John Wooden, American basketball Hall of Fame player and coaching legend that led UCLA to a record 10 national championships.

REGULATIONS

Game and Parks is responsible for managing, conserving and regulating the state's resources. That includes fish and aquatic resources. Those resources are managed largely by creating and enforcing regulations on how the resources are used. Fishing regulations are laws about fishing that are designed to maintain healthy fish populations. These laws are determined in response to economic, social and cultural demands on the state's fisheries.

In Nebraska, anglers older than 15 years are required to carry a valid fishing permit. Money from the permits helps fund Game and Parks' efforts to manage and conserve fishing resources. Additional funding for conservation efforts comes from taxes paid on fishing tackle and equipment.

Regulations are recommended by fisheries professionals who make assessments about a fishery by sampling fish and making estimates of the abundance and health of fish populations. Recommendations are reviewed by the board of commissioners that governs the agency, and approved recommendations are published in a Fishing Guide, which is available anywhere fishing permits are sold, and at OutdoorNebraska.org.

All anglers are required to follow regulations, which include:

Daily bag limits: A bag limit establishes the number of a particular species or group of species that you can keep in any one day.

Possession limits: A possession limit establishes total number of a species or combination of species that you may possess (not just in your cooler at the lake, but also in your freezer back at home).

Length limits: A length limit establishes a maximum or minimum length at which a fish can be harvested.

Invasive species regulations: These regulations may prohibit:
- the transport of fish from one body of water to another.
- the transport of water from one body of water to another.
- the use of live bait fish.

Catch-and-release: This regulation prohibits any harvest of a species.

Harvesting of fish that does not comply with regulations is called "poaching" and is a violation of the law, punishable by fines or imprisonment.

Regulations shouldn't be viewed as a restriction, a hassle or something that gets in the way of fishing. Regulations protect the state's fisheries resources and the angler's ability to go fishing.

WHY WE HAVE FISHING REGULATIONS

To protect resources

Example: A statewide bag limit of 15 panfish prevents populations from being overfished and depleted.

Example: A no-live-baitfish regulation protects a water body from the accidental introduction of a nuisance species like carp. If carp are present, they can degrade water quality and habitat and compete with sport fish for resources.

Example: Water and aquatic vegetation cannot be transported from one water body to another. Boats and equipment must be cleaned after leaving a water body. This regulation prevents the spread of invasive species like zebra mussels that can consume important food resources necessary for the survival of juvenile fish.

Example: It is illegal to possess a threatened or endangered species.

To distribute the catch

Example: A possession limit of 20 channel catfish prevents an angler from keeping more than his/her share and protects populations so that there is fishing opportunity for all anglers.

To maximize reproduction

Example: A slot limit prevents an angler from keeping a walleye between 20 and 28 inches in length at Sherman Reservoir. This regulation ensures that reproductive female walleye will remain in the population so the walleye fishery at the reservoir is sustainable. This also allows walleye eggs to be collected by fisheries biologists from female walleye at Sherman and then hatched at a state fish hatchery and stocked in water bodies throughout the state.

Angler safety

Example: Equipment requirements such as life jackets, oars, and bailing buckets when fishing from a boat protect anglers in the event of a mishap.

ETHICS

What is the difference between regulations and ethics? Regulations are the laws. Ethics are the moral code that all anglers should follow.

An Angler's Code of Ethics:

- Always practice safe fishing.
- Cast carefully.
- Handle hooks mindfully.
- Wear a life jacket when on a boat or in the water.
- Always be courteous and respectful of other people.
- Respect property.
- Clean up any litter you bring with you.
- Give other anglers their personal space while fishing.
- Make sure you have permission to fish on private property.
- Obey fishing laws.
- Have a permit when required.
- Know the regulations where you fish.
- Respect the outdoors.
- Observe but do not disturb wildlife.
- Release fish right away if not planning to eat them.
- Pick up trash, even if you did not leave it.
- Recycle used fishing line and bait containers.
- Invite friends to fish with you and help them learn.

PHOTO BY JEFF KURUS

CHAPTER 9 MANAGEMENT

THE NORTH AMERICAN MODEL OF WILDLIFE CONSERVATION

The motivation for the North American Model of Wildlife Conservation had its origins in the 19th century with sportsman's concerns over the extinction and near extinction of several species. This model rests on two basic principles; Fish and Wildlife belong to all U.S. Citizens, and Fish and Wildlife should be managed so their populations are present forever.

Who owns and takes care of the wild fish swimming in the Platte River, Lake McConaughy or any pond or stream in Nebraska?

We do! The citizens of Nebraska are the owners and keepers of all the fish, frogs, crayfish and other aquatic wildlife that live in our waters. The responsibility to ensure equitable, sustainable and responsible use of wildlife resources also belongs to Nebraska citizens. The Nebraska Game and Parks Commission is tasked by the citizens of Nebraska to manage their wildlife.

Who pays for the management of the aquatic wildlife swimming in Nebraska?

We do! More specifically, the anglers that purchase fishing permits pay for the fisheries management practices used to ensure healthy and abundant aquatic wildlife. Anglers pay for the management of the parks and natural places in which our aquatic wildlife exists. Anglers are the citizens that make quality fisheries possible for all Nebraskans.

The citizen-ownership-of-wildlife concept was established early in our nation's development. During the late 1920s and early 1930s, it was recognized that many of the United States' animal species were under threat of extinction. To aid in the protection of animals, the Pitman-Robertson Act of 1937 placed an excise tax on firearms and ammunition that is solely used for the protection and restoration of animals and their habitats. Due to its popularity and success, in 1950 the Dingell-Johnson Act (also called Federal Aid in Sport Fish Restoration) placed an excise tax on sport fishing equipment (rods, reels, fishing line, lures, etc.). Sport Fish Restoration funds are returned directly to the states based upon a formula that includes the number of fishing permits sold. The reimbursement returned to Nebraska per permit is approximately equal to the value of each permit sold. This publication was paid for by Sport Fish Restoration funds specifically dedicated to Aquatic Education.

Fisheries management is a very simple term for broad responsibilities. Game and Parks Fisheries Division management team is active in the study of Nebraska's aquatic habitats and organisms, water resources, human interactions and education.

Typical annual duties of a Game and Parks fisheries management biologist:

Collecting fish to check on fish health, size, abundance and variety is an enjoyable duty of any fisheries biologist. This is

accomplished with a variety of gear, including gill nets, trap nets and electrofishing boats that temporarily stun fish. Biologists measure fish length, weight, abundance and age to understand the structure of aquatic fish communities. This then helps determine if Game and Parks needs to stock fish or make regulations to control the amount of fish harvested to ensure a healthy and fishable population for all anglers.

Biologists also investigate other aquatic community organisms such as frogs, crayfish, mussels, snails, clams, insects and zooplankton to determine their influence on fish populations.

Aquatic habitats on lakes and in streams are monitored to ensure aquatic wildlife have the required living conditions to spawn, feed and take cover. Important components of habitat include vegetation and other structures that provide cover for fish, the depth of lakes or streams and the substrate (what the bottom and shorelines consist of (mud, sand, rock, etc.). The Fisheries Division will often empty an aging reservoir in order to make habitat changes that promote better sport fish communities and improve angler access. In 1997, an Aquatic Habitat Program was initiated to improve the condition of Nebraska lakes and streams. This program is funded by an Aquatic Habitat Stamp that is purchased by anglers whenever a Nebraska fishing permit is purchased.

Biologists monitor water quality to assess the appropriate amount of water for a lake or stream, the chemistry of the water to determine if the elements are appropriately positive (oxygen, pH) or detrimental (pollutants such as pesticides), and the amount of sedimentation from eroding shorelines and runoff. This work is often accomplished with the help and cooperation of the Nebraska Department of Environmental Quality and Natural Resource Districts.

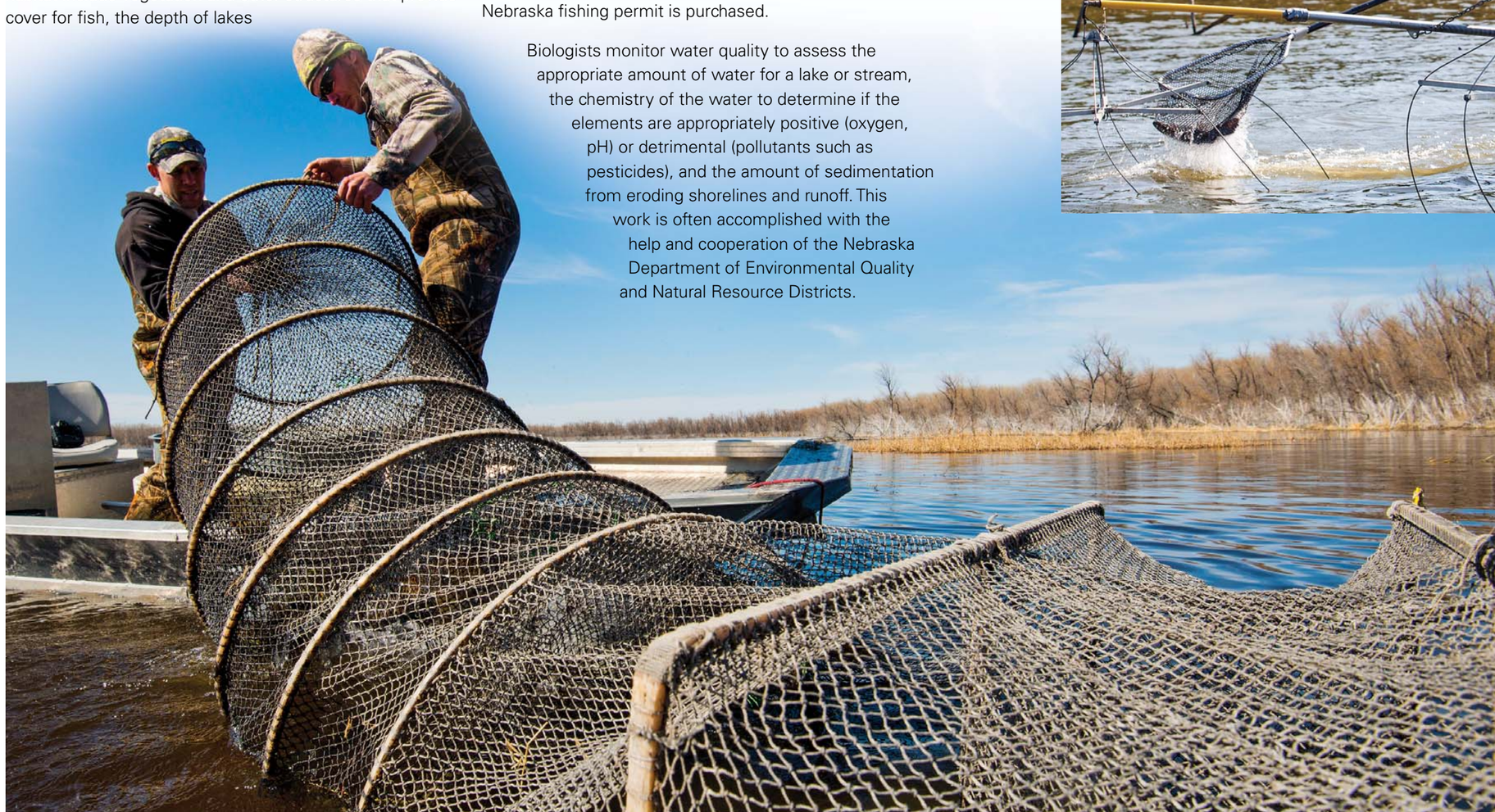

PHOTO BY JUSTIN HAAG

PHOTO BY JEFF KURRUS

Fisheries management must consider angler expectations and human impacts on aquatic resources. Rules and regulations are used to create a balance between what the biological research tells us about a fish population and the desires of anglers to utilize the fish. The rules are guided by Game and Parks' mission of stewardship of the state's fish, wildlife, park and outdoor recreation resources in the best long-term interest of people and those resources. Fisheries staff often host public meetings to inform and gather opinions and ideas prior to major projects. They also advise Game and Parks commissioners and directors about current research, allowing them to make informed decisions. Public input is always welcome at public and Game and Parks board meetings.

LET'S GO FISHING

You can worry about work, school, chores, laundry, grass mowing or anything else later! The memory you will have of today's fishing trip will last the rest of your life. You will forget that you folded laundry by the end of the week.

It's simple! Here's what you do. Find a friend (child, wife, husband, parent) and tell them you will pick them up in 15 minutes. Go to the refrigerator and pack a soda, sandwich and snack for each of you and perhaps some canned corn or hot dogs for bait. Before leaving the house, grab a camera, sunscreen, a book and a Frisbee. From the garage, get lawn chairs, fishing poles and your tackle box. Pick up your friend and use the most current Nebraska Fishing Guide to locate a fishing hole. Make it comfortable by picking a location designated as a Family Friendly Lake. The Fishing Guide will also give you a clue about what species of fish you will find in each lake, and from this manual, you will know about where and how to start fishing for them. If in doubt, stop by a local bait shop and ask "what's biting?" When you get to the lake, find a likely good fishing spot that is also comfortable. Spread out, relax, eat a sandwich and start fishing. Use the Frisbee as a sandwich plate, bait holder and to give your friend some exercise. Use the camera to capture memories of anything that happens, including catching a fish. If you catch enough fish to make a meal, by all means take them home and clean and cook them. It's worth it! But if not or you don't want to bother, stop by the local diner and order a fish dinner to celebrate a wonderful day of fishing. Mmmm, everything you did today is now memorable.

This guide was written by those of us in the Fisheries Division who love fishing and want to share what we know. It was written for the benefit of those who might be interested in learning how to fish. We hope it has helped you and would really like to know if it has. If you have suggestions for improvement, a fishing story to tell or a photo to show us, please share with us through email, social media or a phone call. If you want more information, please contact us. We host programs for all types of outdoor activities. And, always remember to thank a fisherman, because those who buy fishing permits make the opportunity possible.

Below are additional resources that can help.

Family Fishing Nebraska Facebook Page: This includes dates an information on Game and Parks-sponsored fishing events. https://www.facebook.com/familyfishingnebraska

Nebraska Game and Parks Commission Website: For information, permits, regulations and locations to fish. http://outdoornebraska.gov/

Nebraska Mobile Permits – Purchase and display your Fishing Permit on your mobile device. http://outdoornebraska.gov/mobile_apps/mobile-permits.asp

PHOTO BY: JON FARRAR

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visit us online at
OutdoorNebraska.org