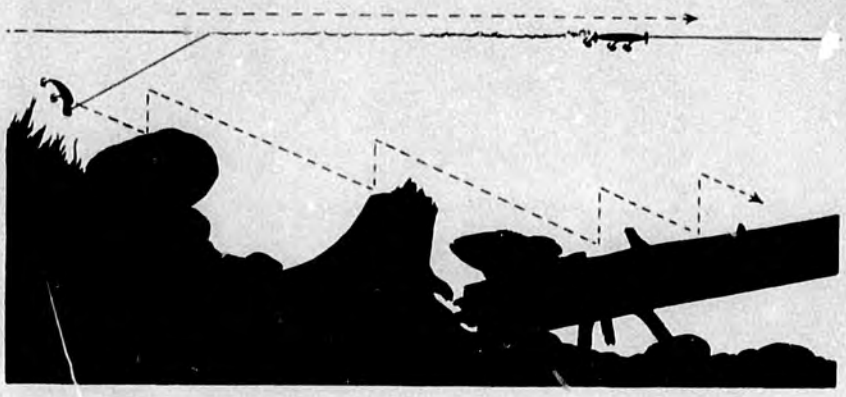
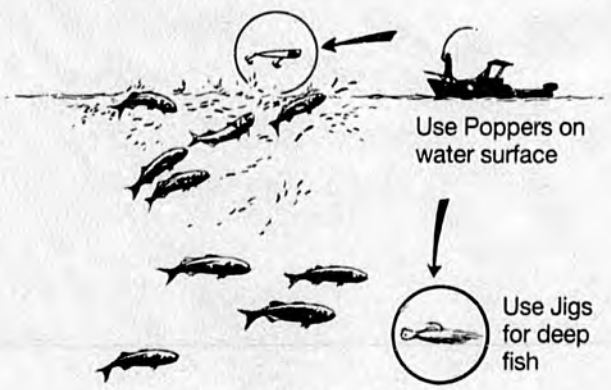
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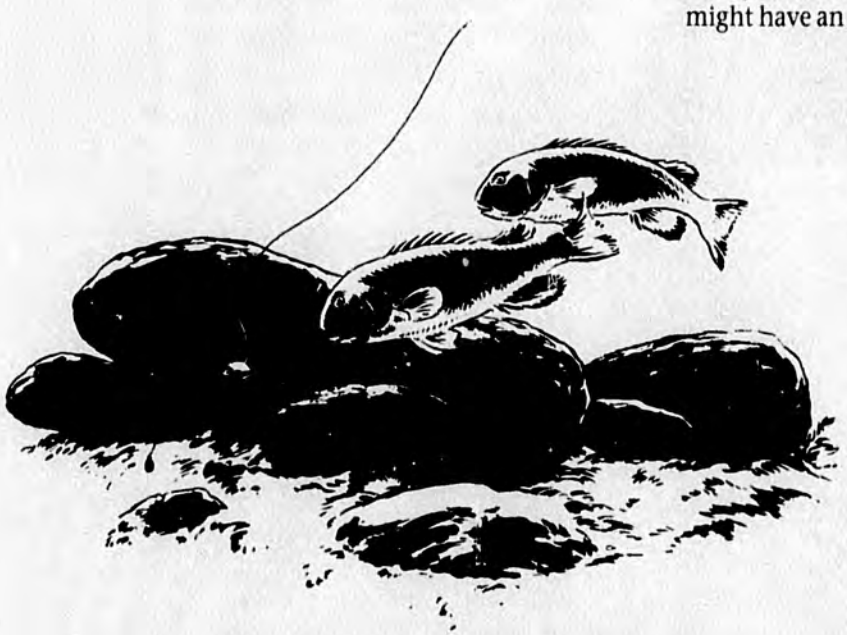
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certain that there will be bass in the lake. Look for living things such as bugs, worms, spiders, dragonflies or other insects that can provide food for fish.



Fishing For Bluefish



Fishing For Tautog (Blackfish) Using Crabs in Rocky Habitat

Water that is stagnant and/or polluted with pesticides, chemicals, and trash has few plants. It may not have enough oxygen to support a good fish population. You probably will not have much luck fishing this kind of water.

If you are fishing for predator fish that ambush their prey, you should fish close to places where the fish may be hiding. Work your bait close to tree stumps, weed lines, and open spots in weed beds. Your success will probably increase if you can make your lure appear to be injured. Remember, predators attack one victim at a time and are attracted to those that appear injured.

Through applying your understanding of the food chain you will catch more fish. Learn all that you can about the fish you want to catch! Then, select a productive area to fish, present your lure or bait skillfully, and HOLD ON TO YOUR ROD!!

ACTIVITIES

ACTIVITY 1 — MAKING A MINI-ECOSYSTEM

First you need a gallon glass jar. Your school cafeteria might have an empty one that they would let you have. Make sure that it is completely clean by rinsing thoroughly with hot water. Do not wash with soap or detergent. Fill the jar with fresh water. If you use city tap water you need to let it stand for 24 hours so that chemicals added by water-treatment plants evaporate. Add some elodea or another water plant purchased from a pet store. Finally, add a snail and seal the jar tightly with a lid. Place it in a nice sunny place. The plant (a producer) will provide the oxygen and food for the snail. The snail will provide the carbon dioxide and waste materials for the plant. How many snails do you think could be placed in your jar before it is too crowded or over its carrying capacity?

ACTIVITY 2 — MAKING A FOOD WEB

From magazines, collect pictures of a fish, wading bird, frog, minnow, man, eagle, snake, and a water insect. Starting with the frog, lay out the picture on a piece of poster board. Now place the insect picture about two inches away to the right. Very lightly draw an arrow from the insect to the frog. About two inches below the insect place the fish. Now draw an arrow from the insect to the fish, an arrow from the frog to the fish, and one from the fish to the frog. Continue adding pictures and drawing arrows, making sure the arrows point from the animal doing the eating to the one being eaten.

You have produced a food web that can tell you a lot about the relationships between animals. What would happen to the other animals if the insects were to die off? What would happen if the frog population should rise drastically?

ACTIVITY 3 — SEASONAL LURE PREFERENCES OF FISH

Pick a species of fish and find out what lures attract this species. Draw or find pictures of these lures. Make a chart to show the best seasons to use the lures you have selected. Each lure should be written in the column or columns when it is best used.

Type of Fish_____

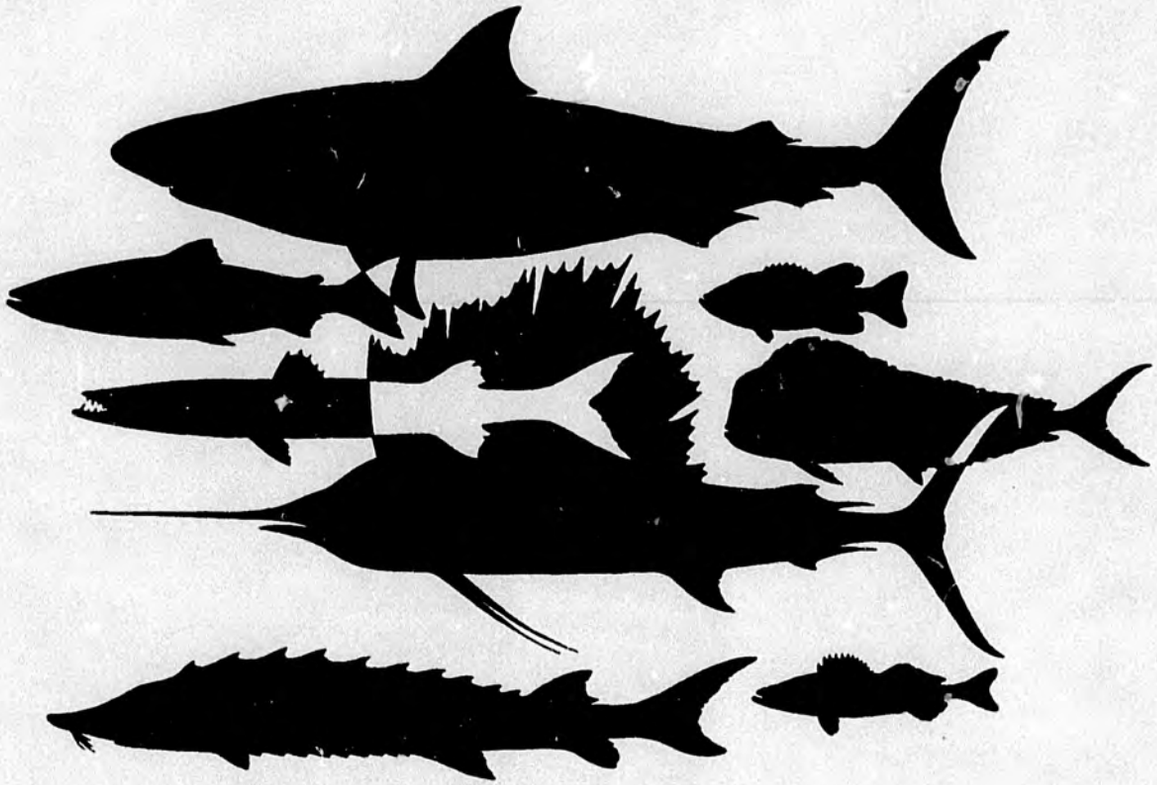
Good for: Summer Spring Fall Winter

CHAPTER

13

Why Do Fish Act The Way They Do?

Learning why fish act the way they do is both interesting and important. Once you understand their behavior, you will appreciate fish and their role in nature. You can then use this information to know where and how to fish.



THE FISH'S BODY

Shape Of The Body

The body shape of a fish controls what it does, how it moves, and what it eats. For example, the northern pike and the barracuda have long, slender bodies. They are able to lunge ahead quickly to strike at a small fish or a lure. They can't, however, turn as quickly as a bass or a bluegill to catch food or chase your lure or bait.

The shape of their body also controls the speed at which they can swim. Trout and salmon

are fast swimmers because their body muscles control wide, powerful tails. Carp, sea bass, and yellow perch are not fast swimmers, but they slowly cover productive areas in search of food. Usually, the larger the fish, the faster it can swim.

Senses

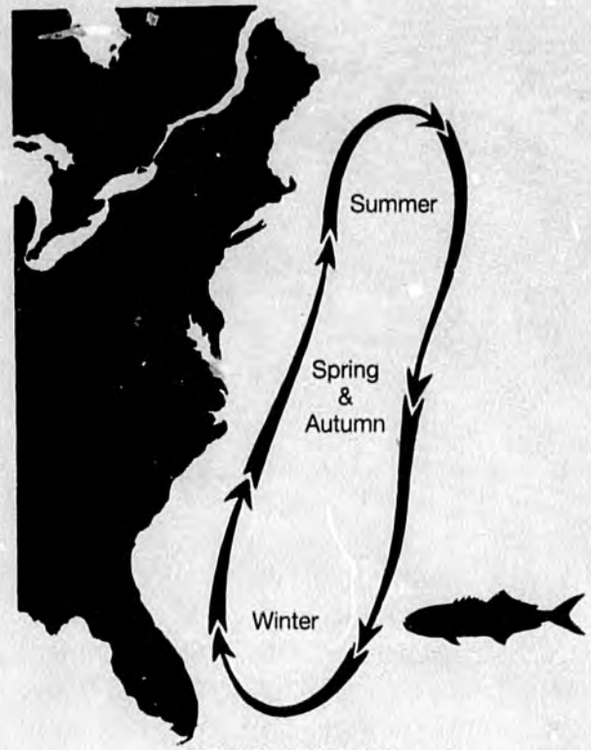
The senses of some fish are better developed than those of others. Some fish use their sense of smell to find food. Eels and salmon are well known for their ability to smell. Other fish, such as bonefish, sturgeon, and catfish, use their sense of taste to feed. Catfish have taste buds all over their bodies so that they can taste food even before taking it into their mouths. Many fish use their senses of sight and hearing to feed. These include barracuda, billfish, striped bass, and trout. Sharks use the senses of sight, sound, and smell to feed.

Shape And Location Of The Mouth

You can also tell where fish like to feed by looking at the shapes and locations of their mouths. The sharp, pointy teeth of fish like the muskellunge, walleye, sea trout, and bluefish make them ideal for catching and holding slippery baitfish. The mouth of fish like the catfish, sturgeon, bonefish, carp, and cod makes them ideal bottom-feeders. Bottom-feeders are constantly moving while other fish prefer to wait and ambush passing food.

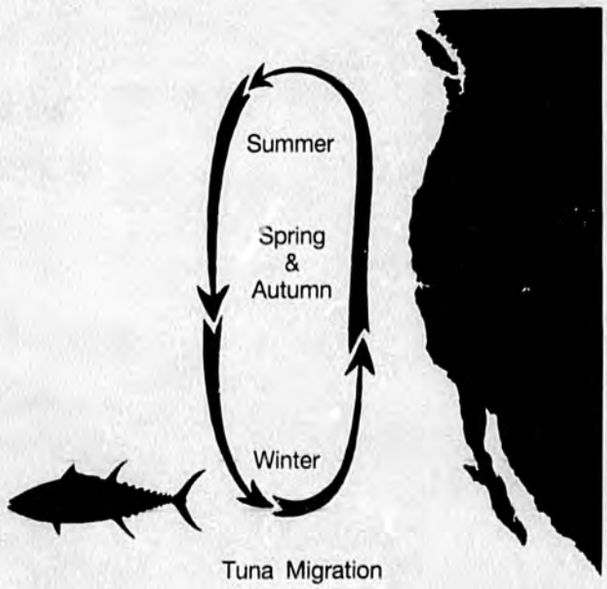
HABITAT

Different fish prefer different kinds of living areas, or habitat. Some fish like the open waters of a lake or an ocean. Fish that like open waters are sometimes called "free-swimmers." They swim from place to place searching for food and water that has the most comfortable levels of oxygen, water temperature, and other living conditions. Saltwater free-swimmers include billfish, bluefish, dolphin, and tuna. Freshwater free-swimmers include crappie and perch in lakes and ponds, and coho and chinook salmon in the Great Lakes.

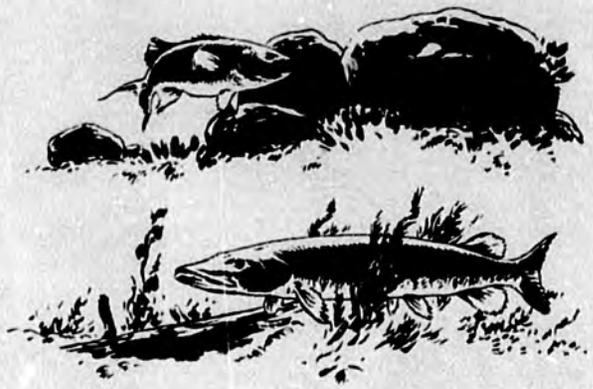


Bluefish Migration

Other fish like to spend much of their time near certain objects or structure in the water. Some saltwater fish prefer nearshore structure such as sand bars, rocky bottoms, and oyster beds. These include sea bass, sea trout, and tautog. Many freshwater fish, including largemouth bass, northern pike, muskellunge, and walleye, also like to spend much of their time near some kind of structure such as a drop-off or near a weed bed.



Tuna Migration



Fish Near Structure



Atlantic Salmon Migration

FOOD AND OXYGEN

Just like you, fish must have food on a regular basis. How and what a fish eats affects its movement and presence at different water depths.

Some fish feed by constantly searching the bottom (suckers and flounder), others actively feed from the surface, the mid-depths, and on the bottom (bluefish/trout). Some will pick up any type of dead bait (catfish) while others insist on live bait or a lure that resembles live bait (billfish and barracuda).

A fish uses a considerable amount of energy to find food and eat. To save energy, some fish hide and wait for food to come by. Other fish hunt for food constantly.

Fish also need oxygen in the water. Trout live well in swift-flowing streams with plenty of oxygen, while carp and bullheads can survive in still, shallow waters with much less oxygen.

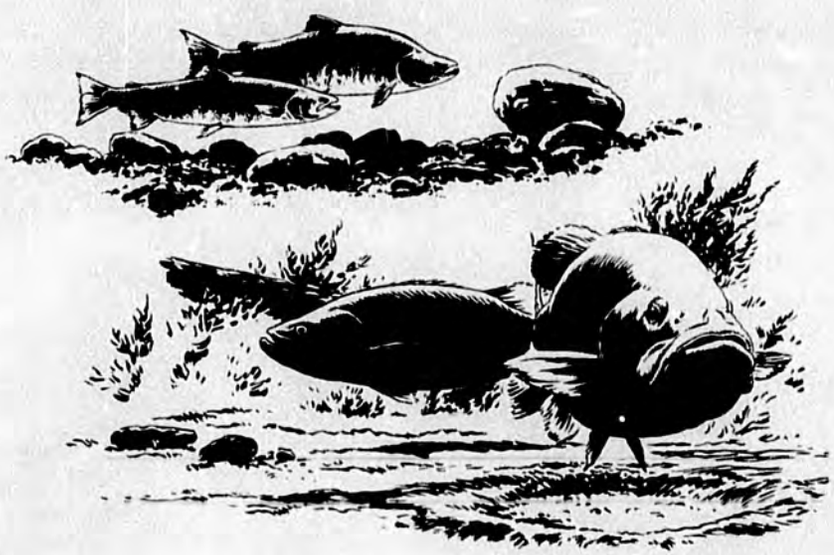
In colder water, a fish needs less oxygen and food. In warmer water, a fish breathes more quickly and feeds more often.

REPRODUCTION

Reproduction, or spawning, plays a very important role in the life and behavior of fish. In spring, largemouth bass, bluegill, crappie, and other fish come into the shallows to make beds, sometimes called nests, for laying eggs. They make these nests using their tails to "sweep" the bottom and clear a place for their eggs.

Salmon and shad make long migrations from the ocean to the headwaters of rivers to lay eggs in the same waters where they were hatched. They deposit their eggs in beds that they carve out of the stream bottom. Striped bass and yellow perch make similar, shorter spawning runs up tidal or tributary streams to spawn.

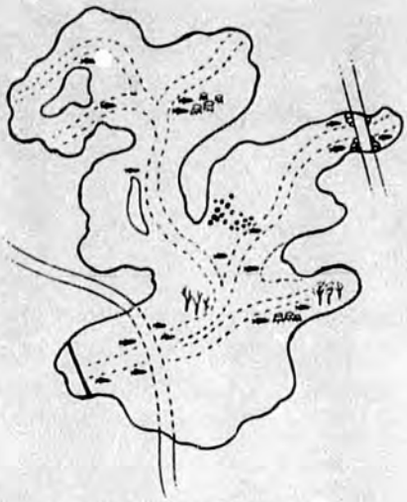
Some fish do not lay their eggs in nests but in open water.



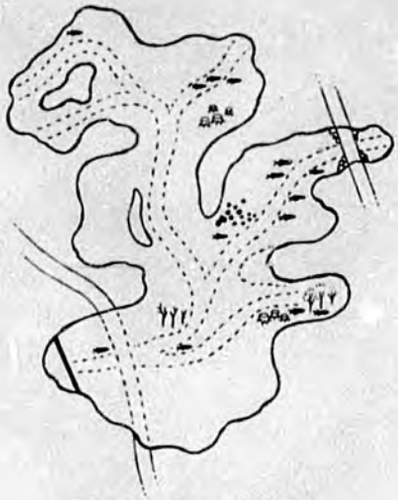
Fish Spawning

Walleye deposit their eggs over gravel bars or rocks, where water flow keeps them from getting covered with silt or dirt. Bluefish and grass carp broadcast their eggs in open water to increase hatching success.

Most fish spawn in spring, but brook and brown trout, most Pacific salmon and lake trout spawn in the fall.



Fish Locations—Summer



Fish Locations—Winter

SEASONS AND MOVEMENT

Fish react to the changing seasons. During the year, there are changes in water temperature, the amount of light, and the number of hours of daylight. In summer, there is more light and more hours of sunlight than during the winter. When light increases, fish such as flounder and bass, move out of the unprotected shallows (where they could become prey for birds or shore animals) and move to deeper waters. When water temperatures are lower during the winter months in northern areas, the activity of fish slows down. The fish also eat less food and may be found in deeper waters. When water warms in the spring, most fish return to shallower waters, begin spawning, and feed more often. Anglers call this cycle a "seasonal pattern." Species of fish can be counted on to repeat this pattern year after year.

Fishermen use this kind of information to become better anglers.

A saltwater fish's movements are based on season, tides, currents resulting from tidal flows, and movement of their prey. Bluefish found in Florida in the winter may be found in Maine during the following summer. Similarly, tuna "wintering" in Mexico, may visit Canada in the summer!

CURRENT

Fish react to current in different ways. Some fish hide or rest by a rock or other structure. Other fish will seek a current and follow it for the information (smell, taste, temperature) that it provides.

In all cases fish will head into a current. This doesn't always mean they will be facing upstream. An eddy is a current, often found below a dam, that turns back upstream. A fish in an eddie will be facing downstream but headed into the eddy current.

It is important for you to learn what affects the behavior of the species you are trying to catch. If you understand them and their life style, you will have a better chance of catching them.

ACTIVITIES

ACTIVITY 1 — VEGGIE FISH

Select several vegetables, such as a carrot, celery, onion, and potato. Assume that each of these is a fish shape. Now fill the sink with water. Move your veggie fish through the water. Watch the ripples and feel how they move through the water. Which one has the most drag or pull? Which glides easily. Which color would give the most protection in a muddy pond? Add fins cut from a cardboard container or a milk carton. Make a cut in your vegetable and insert your fins. Check you manual to make sure you have included all of the fins.

ACTIVITY 2 — CAN FISH HEAR?

Using a fish in a bowl or aquarium, try to determine if it can hear you speak. Try this.

Every day before you feed the fish, yell at it from a distance of about two feet. Yell the fish's name, call it as you would your dog or just yell any word.

After ten days of doing this, see if the fish comes to you or to the area in which you normally put the food.

Try the same experiment again, except this time, tap on the glass instead of yelling. How does the fish react after ten days?

What does this tell you about how fish learn what is going on around them.

ACTIVITY 3 — OBSERVATION OF FISH BEHAVIOR

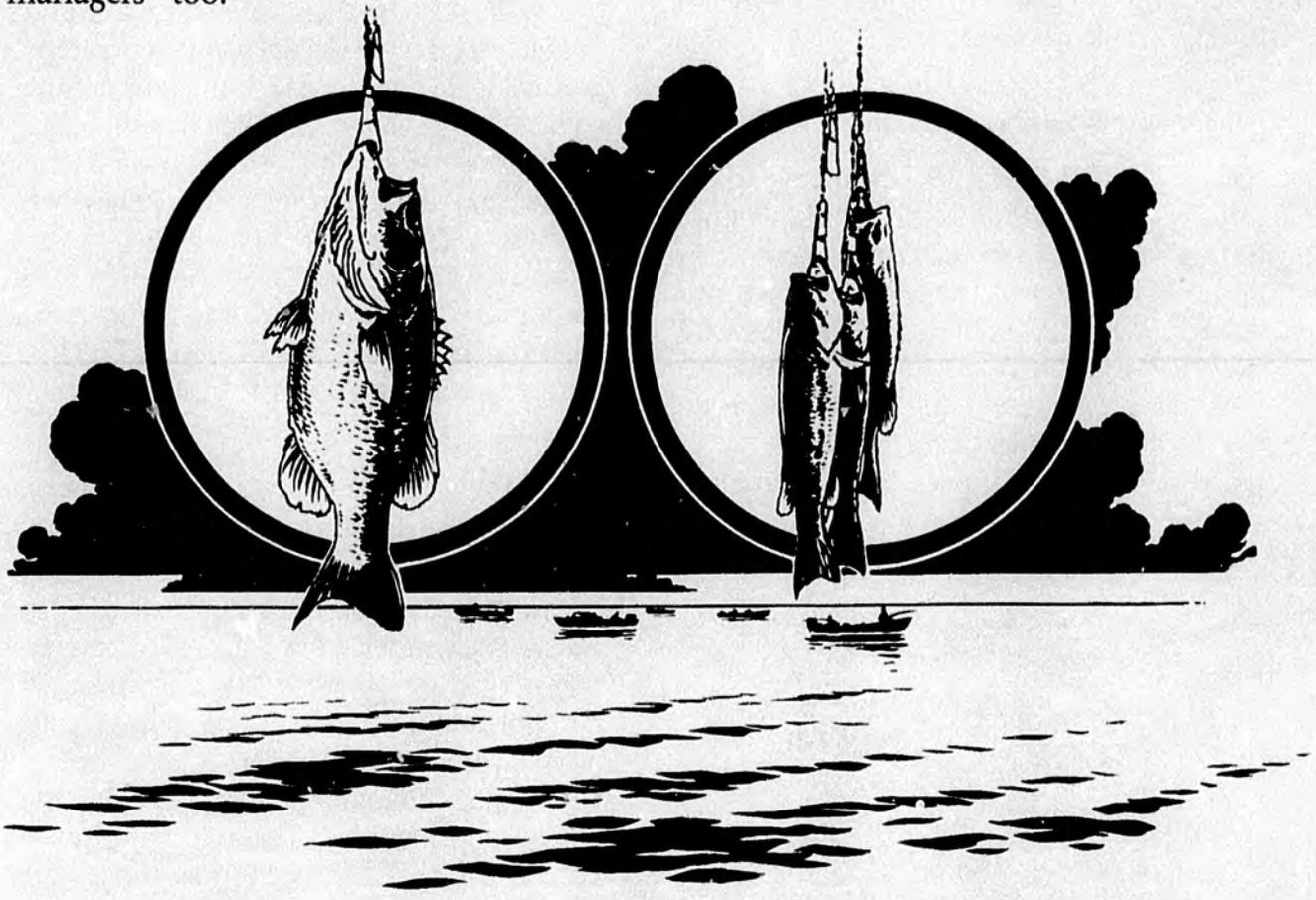
Visit an aquarium where fish can be observed. Notice: (1) how many times the fish opens and closes its mouth in one minute; (2) how many times the gills of the fish open and close in one minute; (3) how long the fish remains in the same location; (4) how many movements the fish makes in one minute; (5) where the fish remains according to water level (top, middle, and bottom); (6) what behaviors the fish shows when swimming, resting, eating or searching for food. Notice any reaction of the fish to loud noises, or slow or rapid movements of an object in the water moving toward the fish. Identify the kind of fish being observed and its habitat. Write down your observations for future reference.

CHAPTER

14

More Fish For Everyone!

It seems like everyone likes to go fishing! Boys, girls, moms, dads and even grandparents like to fish. More than 50 million Americans fish. Fisheries managers are responsible for maintaining healthy and productive fish populations. But with so many anglers, this is not an easy job. More and more fisheries managers are starting to become "people managers" too!



What is good fishing to one person, may not be good fishing to another. Some anglers don't care what they catch as long as they catch something. Other anglers are only interested in a certain species of fish. Some want to catch lots of fish while others want big fish. Still others don't care if they catch anything as long as they get to relax in the beautiful outdoors.

MANAGING FISH POPULATIONS

A fishery manager must first consider the habitat in order to manage fish. As you have learned already, fish require the right water temperature, oxygen level, food source and cover. If you stocked a trout in warm water, you would be wasting the fish because it would not survive for very long. Likewise, if you put pike in a lake without vegetation, they wouldn't do very well either.

Most fish will spawn naturally and produce their own young. In these cases, a fishery manager does not have to stock fish every year. The fish replenish the waters on their own. A manager will then manage the fishery by improving the habitat, regulating the catch, and trying to balance the populations of fish species sharing the aquatic environment.

Hatcheries And Fish Stocking

Federal and state hatcheries raise many kinds of fish for stocking. Most hatcheries raise freshwater fish, but saltwater fish such as striped bass, red drum, salmon, snook, and sea trout are now being raised successfully. Fry, the smallest fish stocked, are the least costly to raise, but many of them die after release. Adult fish survive better but cost more to raise. Many states stock a combination of large and small fish in many lakes and rivers each year. States often stock trout because they are fairly easy to raise, are good sport fish, and aren't as costly as other species.



Raising and stocking fish, however, is costly and sometimes not necessary. Why stock trout in a lake if the yellow perch fishing is great? Why risk upsetting the balance in a great bass lake by stocking northern pike? Fisheries managers realize that each lake or river has its own unique combination of fish present. This assortment of fish represents the "carrying capacity" of that aquatic system. Smart anglers know that if they sample different waters, they will discover a wide variety of fish. They also know that all of them are fun to catch and just about all of them are great to eat!

Certain fish populations, including sunfish, perch and bullheads, would benefit by more people fishing for them. Many anglers don't even know all these fish are out there waiting to be caught! Without enough angling pressure, panfish may overpopulate a lake or pond, resulting in lots of very small fish. This phenomenon, called "stunting" can be helped by anglers who take some of these panfish home to eat. More and more anglers are also discovering that these panfish can be the most delicious fish to eat! Refer to Chapter 3, Caring For Your Catch, to learn how to fillet these taste treats!

Managing Habitat

There are many ways to protect habitat for fish populations.

Aquatic plants are important for fish in most waters. They provide oxygen, attract food, and offer protection. However, too many plants are harmful and can "choke" a lake. Aquatic plants are hard to control. To manage weed growth, cutting, poisoning, uprooting excess plant growth and introducing fish that eat vegetation have all been tried. One of the best controls is limiting the plant food that enters the water in the form of sewage, fertilizers, or farm waste.

Building "artificial reefs" to attract and provide a home for both freshwater and saltwater fish is another way fisheries managers improve some fisheries. Such artificial habitat provides

cover, safety, and food for fish. Artificial reefs can be as simple as sinking a weighted Christmas tree in a lake or as complex as sinking an old ship offshore in the ocean. Reefs are important because they provide an area for the bottom of the food chain to develop. The algae and plankton that develop there are a source of food for bait fish and for game fish. Also, many fish are attracted because the reefs provide them with cover. If you haven't guessed by now, reefs are good places for you to fish! However, always check with management authorities before attempting to put something in the water to attract fish. You may need a permit to place structures in a lake or stream.



Habitat Improvement

Working to improve water quality by reducing the amount of pollution entering the water is one of the best methods of improving fish habitat. State agencies make most of the efforts to improve habitat, but fishing clubs, scout troops, businesses, and local community groups supervised by state or federal fisheries people have helped on local projects too. Building small dams to raise the level of a pool of water, placing rocks or logs on banks to reduce soil erosion, organizing a stream clean-up effort, and building small reefs are projects that can be done in your area.

FISHING REGULATIONS

Modern fishing tackle, boats, and electronic equipment make it possible for anglers to catch many fish. People are also learning about fish and fishing by watching TV programs and reading books and magazines. Also, students like you study fishing and others attend special fishing courses. Because so many people are now learning how to fish skillfully, there's a danger that anglers may catch too may fish from some bodies of water.

Fishing laws or regulations protect the resource and help all anglers enjoy more success. The fact that most anglers must have fishing licenses is a common example of a fishing law or regulation. In most states, however, very young anglers and resident anglers of retirement age are not required to purchase a license.

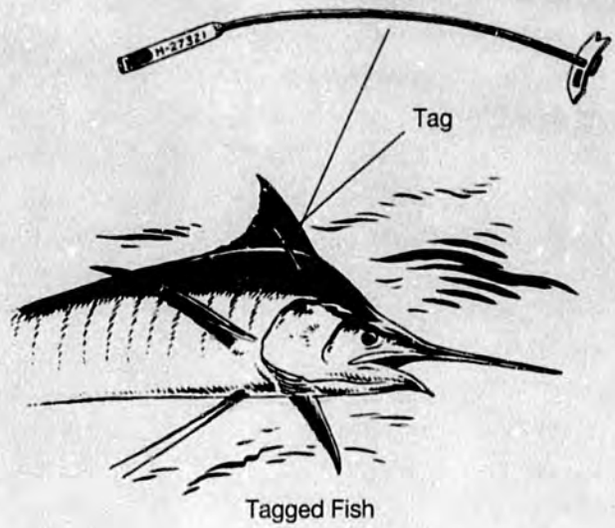
Other regulations may:

- Set a limit on how many fish of a certain species you can take in one day.
- Set a starting and ending date for a fishing season.
- Set a limit on the number of fishing lines and hooks that you are allowed to use.
- Regulate the type of tackle and fishing method used.
- Set size limits for fish.

There are good reasons for such fishing laws. All are intended to conserve and improve fish populations. Often, fisheries biologists study bodies of water to check on fish numbers and the health of fish populations. Sometimes, they suggest a new law if it will help keep the fish population healthy. For example, if there is a fishing season in your state, it may have been introduced to protect fish during spawning or as a way of limiting the number of fish caught on heavily fished waters. Size limits are also meant to protect fish of spawning size before they are caught.

Some states have fishing laws that apply throughout the state. Other states may have different laws for different bodies of water. No matter where you fish, check the fishing regulations carefully before you fish.

Daily fish limits are meant to keep people from taking too many fish at one time. This makes it possible for more people to share in a fishery. Plus, they enable conservation officers to arrest "poachers" for stealing more than their fair share of the resource. You can help conservation officers protect your fish, forests, and wildlife by obeying the laws and reporting any violations that you see. Some states have a special telephone number for reporting fish and game violations.



Tagged Fish

FISHERY RESEARCH

Fisheries biologists are the scientists who manage fish populations. To do their job, they need as much information about a fishery as possible. They try to learn the needs of anglers and the condition of fish populations.

Biologists also need to know how many fish are being caught. They sometimes do this by taking information from anglers after a day of fishing. Sometimes, biologists study fish by collecting them with nets or in other ways. Biologists also mark fish with special tags or by clipping one or more of their fins. When marked fish are collected later, the biologists can learn many things. A tag or fin clip can tell them how fast fish are growing, how many are caught, and how far they have traveled.

After studying this information, biologists try to decide the best ways to produce more and better fishing for anglers while still conserving the resource.

FINANCING OUR AQUATIC RESOURCES

Do you know who pays for most of the research and other efforts to improve sport fisheries? Anglers do! The same people who use and enjoy them. Some money comes from the sale of fishing licenses and special-use stamps. Other money comes from a special government program. It's called the **Federal Aid in Sport Fish Restoration Program.** Some people also refer to this program as "Dingell-Johnson" or "Wallop-Breaux." Here's how this government program works:

> When an angler buys fishing tackle and a boater buys fuel, they each pay a tax that goes into a fund. Other money comes from the sale of tackle and boats imported from other countries. All of this money is then shared by the states to help pay for certain projects. The project may be building a public fishing pond or a large fish hatchery. The money can also be used to pay for managing fisheries, fisheries research, or for teaching people about the environment, conservation, water safety, and fishing. Each year, the Federal Aid in Sport Fish Restoration Program provides more than $200 million for such purposes.



Your purchase of hunting and fishing equipment and motorboat fuels supports Sport Fish Restoration and boating access facilities

CORRECTION

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FISHERY RESEARCH

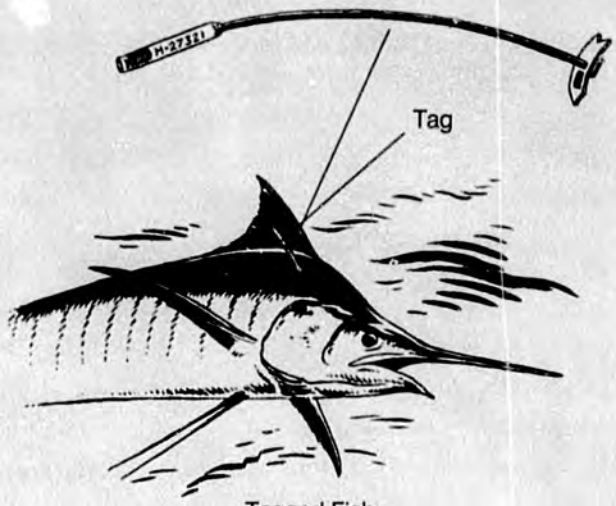
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SPORT FISH RESTORATION

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YOUR ROLE

You can help those whose job it is to protect and improve our waters and fish populations. One way is to know and obey the laws for the waters you fish. You also can:

- Practice catch-and-release if you don't plan to eat a fish.
- If you catch a tagged or fin-clipped fish, you can report it to your state's natural resources agency.
- After fishing, leave the fishing spot cleaner than you found it.
- Never litter and do your best to remove any trash left by others.
- Get involved and support good conservation laws and programs.
- Teach others about our valuable aquatic resources and how to help conserve them.
- Report poachers to your local conservation officer.

Through your efforts, we will all have good places to fish for years to come!

ACTIVITIES

ACTIVITY 1 — LEARNING FISHING REGULATIONS

Obtain a copy of your state fishing regulations. Learn who needs a license, how to obtain a fishing license, and why a license is necessary. Identify the legal season opening and closing dates for different species, areas open to fishing, the legal methods for catching fish, and the size and number of fish permitted by law for several species. Notice that different lakes may have different regulations.

ACTIVITY 2 — DEVELOPING A CHART OF FISHING REGULATIONS

Make a list of five fish that you are interested in catching, and then make a chart with these topics:

Species of fish (your five choices)
Minimum length
Daily limit

Using your book of fishing reguations, fill in the data for your table.

This chart would be a welcome addition to the inside lid of your tackle box. Secure it well with tape so you can refer to it on your fishing trips.

ACTIVITY 3 — IMPROVE YOUR ANGLING WATERS

Contact your local chapter of a national or state organization involved in conservation and restoration projects. Volunteer to help this organization in projects involving fish stocking, tagging, or litter clean up, habitat improvement, or projects for the disabled.

ACTIVITY 4 — VISITING A FISH HATCHERY

Arrange a trip to a hatchery. Observe the methods and procedures necessary in the raising and stocking of fish. Find out what they feed the fish, how they keep the fish healthy, and how big they are when they are stocked.

ACTIVITY 5 — HOW MUCH MONEY IS SPENT ON AQUATIC RESOURCES?

Go to the library and find out how much money your state received last year from the Federal Aid in Sport Fish Restoration Program. You may have to ask a librarian to help you find the answer. Tell the librarian to look for the Wallop-Breaux Amendments to the Federal Aid in Sport Fish Restoration Act. Another way to find the answer is to write or call the federal aid coordinator at your state's natural resources agency or your local conservation officer. Also determine what projects these funds were spent on.

ACTIVITY 6 — WHAT LOCAL LAWS PROTECT US FROM POLLUTION?

Make a list of industries in your community that are next to a stream, river, or lake. Ask your local health department if there are special laws to protect these waters from potential pollution.

APPENDIX

A

Fishing For A Career!



What do you want to be when you grow up? Many people would love to have a job that's related to fishing. There are many career opportunities for people interested in aquatic resources and the out-of-doors. Whether you're interested in teaching, biology, ecology, business, research, law enforcement, sales, writing, conservation, or various aspects of fishing, there is an option for you.

Federal, state and private agencies employ people with interests and skills in many of these job categories. Thirty-seven different federal agencies have some responsibility for managing the fish populations on their lands. Examples include the U.S. Forest Service, National Park Service, Bureau of Land Management, and the U.S. Army Corps of Engineers. Two federal agencies have federal authority for enforcing federal laws regarding the fishery. Basically, the U.S. Fish and Wildlife Service is in charge of freshwater and the National Marine Fisheries Service is in charge of saltwater.

THE U.S. FISH AND WILDLIFE SERVICE

The U.S. Fish and Wildlife Service is a federal government agency in the Department of the Interior. The Service manages a system of national wildlife refuges for migratory birds and a system of fish hatcheries and research areas in an effort to improve wildlife and fish resources.

The Fish and Wildlife Service is also responsible for enforcing several federal laws. These include the Endangered Species Act, the Marine Mammal Protection Act, and the Migratory Bird Treaty Act.

The Fish and Wildlife Service administers federal money to state governments, gives technical help to state and foreign governments, takes part in international meetings on wildlife conservation, and keeps the public informed about the condition of America's fish and wildlife resources.

THE NATIONAL MARINE FISHERIES SERVICE

The National Marine Fisheries Service is a federal government agency in the Department of Commerce. It provides management, research, and service for the protection of saltwater (marine) species. It also enforces the federal laws governing saltwater fish and mammals. This includes regulating both the taking of sport fish and commercially harvested living marine resources.

STATE NATURAL RESOURCES AGENCIES

The name of the state agency that deals with fisheries and wildlife varies from state to state. Some examples are: Department of Natural Resources; Department of Conservation; Department of Fish and Game; Game and Fish Commission; Department of Fisheries, Wildlife, and Environmental Law; and Department of Environmental Protection. You should find out what it is called in your state.

State Natural Resources Agencies protect and improve our waters and fisheries by:

1. Raising and stocking fish
2. Improving habitat for fish
3. Developing regulations to protect the resource
4. Conducting research on fish populations
5. Teaching citizens how to fish and to conserve resources
6. Using the media to keep the public informed
7. Building access sites to fishable areas

There are numerous employment opportunities in state natural resources agencies. Several of these are discussed below.

Fisheries Biologists

Each state and many federal agencies employ many fisheries biologists who help manage fish populations. Fisheries biologists must have an interest in biology, life sciences, and aquatic biology. Today, math, statistics, computer science, public speaking and writing are other areas biologists need to complete their science degree.

Fisheries biologists often work outdoors where they gather information and samples for study. This information helps them manage and conserve fish populations and protect the environment. They must have a good knowledge of fish and how they live. They also must know the interests of anglers and others who use the state's resources.

Law Enforcement Officers

State natural resources agencies enforce state laws designed to protect natural resources. The people who do this were once called fish and game wardens, but now some are called wildlife officers, conservation police, or law enforcement officers. Today, however, such officers do more than enforce laws that protect fish, forests, and wildlife. They also enforce environmental and pollution laws. In some states, they have the same authority as a state police officer.

Fish Hatchery Manager

People who raise fish in hatcheries or fish farms practice a skill called aquaculture. State hatcheries raise fish for stocking. Hatcheries raise everything from trout, bass, and catfish to striped bass and drum in both fresh and saltwater.

TEACHERS

Teachers who teach biology, ecology, and other sciences, including the study of fisheries, are needed at all educational levels. They may teach in the classroom or in the outdoors. Some may do research. Teachers need patience and a desire to work with young people.

CONSERVATION REPRESENTATIVES

Many non-profit groups are involved in the outdoors, including efforts related to fisheries. The Izaak Walton League of America, Trout Unlimited, the American Fishing Tackle Manufacturers Association, the Sport Fishing Institute, and the National Wildlife Federation, among others, are interested in our aquatic resources. These organizations have representatives who study laws and regulations, work to pass federal and state laws, represent anglers before the U.S. Congress and state governments, plan volunteer work, and publish newsletters and other materials to keep the public informed.

BUSINESS OPPORTUNITIES

If you think that you would like to go into business for yourself you have several options.

Tackle Shop Dealers

Tackle shop owners are in a field related to fishing, but their busiest times are when others are fishing. Tackle shop work involves long hours. Those selling live bait may open at 4 a.m. and close as late as 9 p.m. each day. A few may even be open 24 hours a day at certain times of the year. To be successful you must have a good business background and a knowledge of fishing and tackle.

Fishing Guides

You may know a fishing guide in your hometown. Guides provide boats, tackle, and fishing experience to paying customers. A successful guide must have the ability to locate fish, to get along with people, and a desire to take anglers to fishing areas and help them catch fish. Most guides work part-time and may have another job. For example, a teacher may guide on weekends or in the summer. Many tournament anglers began their careers as fishing guides.

Charter Boat Captains

Charter captains are much like fishing guides. They usually operate larger boats that hold six (charter boat license) or more (party boat license) paying customers. Charter boat captains must be licensed. Most operate their business along the seacoasts or on the Great Lakes. Charter boats range from about 20 to 55 feet in length. Some captains own their own boat; others operate them for their owners. Most charter captains have another job because they can't charter all year long. Some may move to another location to continue chartering year-round. For example, some Great Lakes charter captains travel south for the winter to work in warmer climates.

Commercial Fishermen

Commercial fishermen harvest fish to sell for food. They work with nets, traps, and long lines. The hours can be long and the work difficult and dangerous, especially in severe weather. When the fishing is good, the pay can be high. The work, however, is affected by many things, including government regulations, foreign imports, loss of fish stocks, pollution, breakdown of equipment, and poor economic conditions.

Fishing Tackle Manufacturer

Many people have begun tackle businesses with little money. They have started producing products in their home or garage for local sales, with some eventually building plants to produce and sell their products across the country. Today, some people start a small tackle business and succeed with good, new or unusual products.

Today, much fishing tackle is made in other countries and imported into the U.S. Some of the best jobs in the tackle industry are in areas related to the sale and marketing of tackle.

Manufacturer's Sales Representative

Tackle manufacturers depend on local or regional sales firms to sell their products to distributors and dealers. Sales representatives, often called "reps," own their own sales and marketing companies and contract with manufacturers to distribute tackle and equipment.

A sales rep is often responsible for selling in a number of states and must do a lot of traveling. A rep must enjoy meeting people, have good selling ability, and know fishing and fishing tackle. A good business education and experience in sales, promotion, or marketing are helpful.

PRINT AND BROADCAST MEDIA

Numerous career opportunities are open to you if you have an interest in journalism or radio or TV.

Outdoor Writers

Outdoor writers write about recreational activities. These include freshwater and saltwater fishing, hunting, camping, boating, hiking, canoeing, bird watching, photography, and skiing.

Many colleges have schools or offer courses in journalism. Most outdoor writers have a love of the outdoors and begin by writing and selling articles to state or regional magazines and newspapers. Some become full-time outdoor communicators with a large newspaper or national magazine. Others remain "free-lance" writers. Free-lance writers sell their written articles to a variety of newspapers or outdoor magazines or write books for publication.

Publishers

Publishers produce magazines, newspapers, newsletters, fishing annuals, regional and local guidebooks, and other publications. They are often in charge of the entire publication, including editorial and advertising workers. They also arrange the printing, distribution, and sales of the publications.

Broadcast Media

Many radio and television stations offer outdoor programs on fishing and other topics. These programs have become very popular. Some tournament and other well-known anglers have become the stars of these programs. The production of radio and television programs requires the talents of producers and directors, skilled technical people, cameramen, writers, and other specialists.

TOURNAMENT ANGLERS

A growing number of professional anglers are fishing tournaments for money. Very few of them, however, can make a sufficient full-time living from tournament winnings. Many receive endorsements from tackle manufacturers, conduct seminars at sport shows, and develop television or radio programs or video tapes on fishing. Even with these opportunities many professional anglers have other full-time jobs. Tournament angling is very competitive and demands a lot of angling skill, stamina, traveling, and sometimes luck to be successful.

OTHER CAREERS

There are many other careers related to fishing in some way. They include aquatic scientists for business, industry, and consulting firms; tour guides for local, state, and national parks and recreation areas; recreation specialists; research biologists; and environmental educators. College degrees are required for many of these jobs. There are many exciting and challenging careers waiting for you.

ACTIVITIES

ACTIVITY 1 — CAREERS EXPLORATION

Ask your teacher to invite one or more of the following people to class to discuss their job: fisheries biologist, conservation officer, representative of a non-profit conservation organization, tackle shop dealer, fishing guide or charter boat captain, outdoor writer or broadcaster, fishing tackle manufacturer, commercial fisherman, or a representative of any other job related to fishing.

ACTIVITY 2 — POSTER OF FISHING-RELATED JOBS

On the top of a piece of poster board, carefully title your poster: Jobs Related to Fishing. Show at least five jobs related to fishing that would be of interest to you. Find pictures in magazines and paste them on your poster board or draw and color them. Write the title for the jobs you have chosen under each picture.

ACTIVITY 3 — WRITING ABOUT ANGLING

Pretend that you are an outdoors writer and write a story about the outdoors that relates to angling, conservation, or some other topic of interest to you.

APPENDIX

B

Glossary Of Terms

Acid Rain. Rain, dew, sleet, or snow that has become acidic from sulfur compounds in the air. Most acid rain comes from coal-burning factories and exhausts of autos.

Adipose Fin. The fatty fin on some species of fish such as catfish and bullheads.

Algae. Simple, tiny photosynthetic plants found in water.

Anadromous. Any species of fish that lives in saltwater and spawns in freshwater. Some examples are salmon, shad, and striped bass.

Anal Fin. The fin found on the lower portion of a fish's body near the tail.

Antireverse Lever. A lever or knob that prevents a reel handle from turning backwards as a fish tries to take line.

Backing. A soft, strong fishing line, such as braided dacron, that is wound onto a fly reel before fly line is added.

Backlash. Fishing line tangled on a casting reel; caused by the line spool continuing to turn after the line has stopped coming off the reel.

Bail. A wire device that spools the line onto an open-face spinning reel.

Baitcasting. The name given to casting tackle that uses a baitcasting reel; also called a "levelwind" reel.

Barb. The spur found on the point of most fish hooks. It is designed to help keep a fish from escaping from the hook.

Barbel. A whisker-like projection from the jaws of some fish such as a carp or catfish. Barbels help a fish to taste and feel.

Bass Boat. A boat designed for bass fishing.

Bobber. Also called a fishing "float" or "cork." It is designed to float on the water's surface and keep a bait or lure at a selected depth.

Bow. The forward part of a boat.

Buzzbait. A fishing lure designed to run on the surface. It has a large blade for creating a disturbance on the water's surface.

Cane Pole. Equipment that uses a long, slender rod and no reel; sometimes called a "bank pole."

Carnivore. A flesh-eating animal.

Catadromous. Any species of fish that lives in freshwater and spawns in saltwater, such as the eel.

Catfish. A group of fish without scales named for the long barbels around their mouths that look like the whiskers of a cat.

Caudal. Related to, or being a tail; the tail fin.

Chart. A "map" of water areas; shows shorelines, water depths, reefs, rocks, shoals, wrecks, and other areas of danger.

Charter Boat. A boat that is available for charter and can take out several passengers.

Cone. A cover on spincasting reels that prevents the line from coming off the spool during the cast. It protects the spool from dirt and grit; also called a "nose cone" or "reel cover."

Conservation. The wise use of a natural resource.

Cove. A small bay or inlet in a body of water.

Crankbait. Plug designed to dive to a certain depth as it is retrieved.

Creel. A fish basket or personal fish carrier used to carry fish when fishing on or near shore.

Creel Limit. A term to indicate the number of fish, by species, that can be caught legally in one day.

Current. Any movement of water, whether caused by tides, ocean water movements, or flowing water in rivers and streams.

Depthfinder. Also called fish finder or sonar; devices that signal the bottom and record it on a flashing dial, LCD screen, or graph paper.

Dissolved Oxygen. The oxygen mixed in water and used by fish; put into water by such things as wind, current, plants, and microorganisms.

DNR. Department of Natural Resources; abbreviation for the name of the natural resources agency in many states.

Dorsal Fin. A fin located on the back or uppermost part of a fish.

Downrigger. A fishing device used on boats that allows a troller to fish a lure at a precise, constant depth; a reel of heavy line or wire cable, a heavy weight to keep the cable taut, and a release clip for a fishing line. When a fish strikes a lure at the end of the fishing line, the line is released from the clip and heavy weight so an angler can fight a fish without any weight on the line.

Drag. A system in fishing reels that prevents a fish from taking line off a reel too quickly.

Drag Knob. The knob that allows the adjustment of the reel's drag pressure.

Dry Fly. A fishing fly tied to stiff hackle material that allows it to float and imitate an adult stage of a stream insect such as a mayfly, caddis fly, or stone fly.

Ecology. A branch of biology that studies the relations between organisms and their environment.

Ecosystem. A complex ecological community or environment forming a functioning whole.

Epilimnion. The warm layer of water above the thermocline.

Erosion. A process by which the surface of the earth is constantly worn away by the action of wind, water, and glaciers.

Estuary. A place where saltwater and freshwater mix, usually at a river mouth or in lagoons.

Ethics. A set of moral principles or values dealing with what is good and bad and with moral duty and obligation.

Eutrophic. A type of body of water that has high levels of nutrients.

Eye. The part of a fish hook where line is attached or where the hook is attached to a lure.

Fillet. Removing the boneless, edible part of a fish. It involves cutting out the flesh or muscle and usually then skinning the fish; the part of the fish cut out and ready to cook.

Fillet Knife. A knife with a long, thin, flexible blade used to fillet fish.

Fingerling. A young fish, about as long as the length of your finger.

Fisheries Management. The science of managing fish populations through research, habitat manipulation, stocking, water quality control and regulations.

Flasher. One type of depthfinder that uses blips of light on a circular dial to indicate the bottom and objects in the water.

Float. See "bobber."

Float Plan. Tells some person on land the boater's plans for the day and the expected time of return.

Fly. An artificial lure designed to look like an insect or small fish; made of fur, feathers, wool, tinsel, and other artificial materials; designed to be cast with a fly fishing outfit.

Food Chain. Also called a "food web" or "food cycle": the chain of organisms in a community that produce food and consume it; the path that food (materials and energy) takes through a group of organisms.

Freshwater. Water that contains little or no salt.

Fry. A method of cooking fish in hot oil; small fish that have just hatched out of the egg; after growing to several inches long they are called "fingerlings." See "fingerling."

Gaff. A "j" shaped, barbless hook on a long handle used to hook large fish while landing them.

Gill. A breathing organ located behind the gill cover on a fish's head.

Gill Net. A net that has a mesh size designed to catch fish by their gills, preventing them from escaping. Different mesh sizes are used to catch different-sized fish.

Gorge. A primitive type of fish hook. A length of stick, bone, flint, thorns, or other material that tapers to a point on each end. Some had a groove near the middle where a line was attached. The gorge was then inserted in bait. When swallowed and the line drawn tight, it lodged in the fish's gullet or throat.

Grip. That part of the rod held by the angler. Usually made of cork or a synthetic material.

Guide. One of the circular rings made of metal or artificial material attached to the shaft of a rod for the fishing line to travel through; someone who is hired to show a customer how and where to fish on a body of water.

Habitat. The place or type of site where a plant or animal normally lives.

Herbivore. A plant-eating animal.

Hip Boots. Waterproof boots that come up to the hips and are used by wading anglers.

Hull. That portion of a boat in contact with water.

Hypothermia. The rapid and abnormal chilling of the body. It can occur even in mild and warm weather. Victims must be warmed by special means to prevent greater or long-term damage or death.

IGFA. Abbreviation for the International Game Fish Association; a group that keeps records on fish catches and supports sport fishing.

Ice Auger. A large ice drill used to cut a hole in the ice for fishing.

Ichthyology. The branch of zoology that deals with fish, their classification, structure, habits, and life history.

Impoundment. A natural or manmade body of water.

Jig. A type of lure with a weighted head molded on a special type of hook. Often, rubber, plastic, feathers, and other materials are tied onto the shank of the hook.

Jigging. Fishing a lure, often a jig, while using an up-and-down motion with the rod.

Jonboat. A small boat, usually made of aluminum, with a square-shaped bow. It designed for use on calm waters or rivers. Jonboats range in length from about 8 to 16 feet.

Lateral Line System. A system of sense organs in fish; a series of pores or canals running along a line on each side of the body and on the head; detects pressure changes, including vibrations, in the water.

LCD. Abbreviation for Liquid-Crystal Display; a type of depthfinder that records its information on an LCD screen.

Leader. Any material used between the main fishing line and the hook or lure; can be made of monofilament or wire and be heavier or lighter than the fishing line. Often, a heavy leader is used to prevent fish with sharp teeth from breaking the line.

Levelwind. The part of a baitcasting reel that makes sure the fishing line is wound evenly onto the line spool.

Livewell. A container built into a boat for storing fish and keeping them alive.

Lure. Any artificial bait used to attract and catch fish.

Map. A drawing of land features. Maps are useful to find streams and access points to rivers and lakes. See "chart."

Marl. A type of bottom under a body of water; a mixture of clay and carbonate of lime.

Migration. The movement of animals, including fish, from one area to another.

Monofilament Line. A single, strong synthetic material used for fishing line.

Natural Bait. Bait that is found in nature, such as insects and worms, and common to a fish's habitat.

Net. A device used to capture fish.

Non-point-source Pollution. Pollution that enters water through run-off from land.

Nymph. A larval phase of an aquatic insect; an artificial fly tied to imitate a nymph; used primarily for trout fishing.

Olfactory Nerves. Nerves involved in the sense of smell.

Oligotrohpic. Lake type used to describe bodies of water characterized by low amounts of nutrients in proportion to their total volume of water.

Open Face. A spinning reel that has the spool uncovered or exposed.

Organism. Any living thing.

Oxygen. A gas that is necessary for all life, including fish life. In water, oxygen is in a dissolved form and is taken in by fish through their gills.

Panfish. A name given to small fish, such as bluegill, sunfish, and crappie, because they can fit in a frying pan.

Pectoral Fin. Either of the fins of a fish that corresponds to the forelimbs of a four-legged animal.

Pelvic Fin. One of the paired fins of a fish comparable to the hindlimbs of a four-legged animal.

PFD. Abbreviation for Personal Flotation Device; commonly called a "life vest."

pH. The hydrogen ion content, or the acidity or alkalinity of any substance. In water, most fish find neutral pH most comfortable. On a scale of 0 to 14, neutral is in the middle. A low pH means acidic water; high pH is caustic or alkaline. Either condition, in the extreme, can harm fish.

Photosynthesis. A chemical process that takes place inside cells. Light energy is used to make carbohydrates from carbon dioxide and water. A waste product is oxygen. The process is done by plants, including aquatic plants.

Population Density. The number of individuals of a given population occupying a unit of space. For example, the number of bass per acre.

Practice Plug. A weighted plug without hooks designed for use while practice casting with a fishing rod.

Predator. An animal, like a fish, that feeds on other organisms, including other fish.

Predator-prey. The relationship between a predator and that which it feeds on.

Pumping. A method of fighting fish that involves raising the rod to pull the fish closer, and then gaining line by reeling as the rod is lowered.

Push Button. A lever or knob on a spincast reel. Pressing the push button holds the line in place until pressure is released, at which time the line and lure can be cast.

Quarry. Prey; anything hunted.

Reading Water. The ability to look at a body of water and select the spots most likely to hold fish.

Redd. A nest dug on the bottom of a body of water by spawning fish.

Reel Body. The part of the reel that holds the gears and other controls.

Reel Foot. Reel part used to hold the reel on the rod. It is held by the reel seat.

Reel Seat. That part of a rod designed to grip a reel by the reel foot.

Reservoir. See "impoundment."

Retrieve. The act of rewinding fishing line onto a reel spool and retrieving a bait or lure.

Rigging. The process of setting up a fishing rod and attaching a bait or lure.

Rod Butt. The end of the rod handle.

Saltwater. Water with salt in it such as the ocean or the sea.

Sand Spike. A pointed hollow tube, usually of aluminum or plastic, designed to stick upright in sand to hold a surf rod.

Scale. One of the small covering plates on the body of many fish; removing scales from a fish's body before cooking; a device used to weigh fish.

School (of fish). A number of fish of the same species that are grouped together.

Scoring. A method of preparing fish by making narrow cuts almost all the way through, which allows hot oil to cook up the small bones.

Season. The period of time during the year that a particular fish can be harvested by an angler.

Sediment. The matter that settles to the bottom of a liquid such as water.

Sedimentation. The accumulation of sediment.

Setting the Hook. The act of embedding a hook in a fish's mouth.

Shank. The part of the hook between the eye and the bend, usually the longest part of a hook.

Sinker. A weight used to get or keep a bait or lure down in the water.

Skirted Spool. A type of spool found on open face spinning reels where a flange extends from the rear of the spool to cover the cup and spool housing.

Slough. A swampy place; marshy inlet.

Snag. An underwater structure that tends to cause a lure or bait to become hung up.

Snap Swivel. A small snap to connect lures or rigs to a fishing line that has a swivel to help prevent the line from twisting.

Snelled Hook. A hook that has a short length of leader tied to it.

Sonar. Another name for a depthfinder.

Spawn. The act of releasing eggs into the water by female fish for fertilization by male fish.

Spawning Run. The movement of fish to an area for the purpose of spawning.

Species. A biological classification of plants and animals.

Spinner. A standard lure that consists of a rotating blade on a shaft that holds a body or beads and ends with a hook.

Spinnerbait. A type of lure that has a jig-like head and hook molded onto a right-angle wire holding one or more spinner blades. There are single- and double-blade styles.

Spool. Device to store fishing line on any reel.

Spoon. A type of lure made of metal that is designed to look like a small fish.

Sport Fishing. Fishing for recreation, not for profit or commercial reasons.

Star Drag. A drag system consisting of several layers of soft and hard washers in a reel and controlled by a star-shaped wheel.

Steak. A chunk of fish that is made by cutting fish into steaks by transverse cuts through the body. Used for larger fish.

Stern. The rear end of a boat.

Stickbait. An artificial lure that floats and has no built-in action, but must be worked by the angler.

Still Fishing. Fishing in one spot and waiting for a fish to take the bait.

Streamer. A type of fly tied to a long shank hook,using feathers for the "wing" and designed to imitate a stream minnow.

Strike. The point at which a fish takes a bait or lure. Also known as "to strike" a fish; to set the hook.

Structure. A term anglers use for anything in the water that may attract fish. It includes rocks, weedbeds, stumps, piers, docks, and points of land. Structure can also mean any change, including type of bottom and water temperature.

Suspended Fish. Fish that hover considerably above the bottom in open water.

Swivel. A small fastener consisting of two eyes with a central barrel or swiveling portion. Designed for fastening lines and line/leader combinations to help prevent line twist through lure action.

Tack. A slanting or zig-zag course against the wind or waves.

Tackle. Fishing gear or equipment.

Tackle Balance. Term used to describe how a rod, reel, line, and bait or lure should be matched.

Tackle Box. A portable storage container for fishing tackle.

Tapered Leader. A leader used in fly fishing. Thick at one end it tapers to a thinner end, or tippet, the end where the fly is tied.

Taxidermy. Any of several methods of preserving fish for mounting as a trophy.

Terminal Tackle. The hooks, weights, snap swivels, and other tackle attached on or near the end of a fishing line.

Test. Line strength as stated on the label.

Thermocline. The layer of water where temperature rapidly changes from warmer water to colder water.

Transom. The rear of the boat; the portion onto which the motor is mounted.

Treble. A hook with three points used on many lures and for bait fishing.

Trolling. A method of fishing where lures or bait are trailed on the end of fishing line behind or to the side of a moving boat. This makes it possible to fish a large area rapidly.

Turbid. Not clear; muddy; cloudy.

Turnover. A very brief period when a lake is in turmoil. A mixing or "turning over" of the water takes place as cold water on the surface settles and water from below rises. This turnover homogenizes lakes that have stratified (layered according to water temperature) in summer and reoxygenates the water.

Ultralight. The name given to lightweight fishing tackle for casting small, lightweight lures.

Waders. A waterproof garment that covers an angler from the feet to the chest for wading in deeper water.

Watershed. The region drained by one river system.

Water Pollution. The contamination of water.

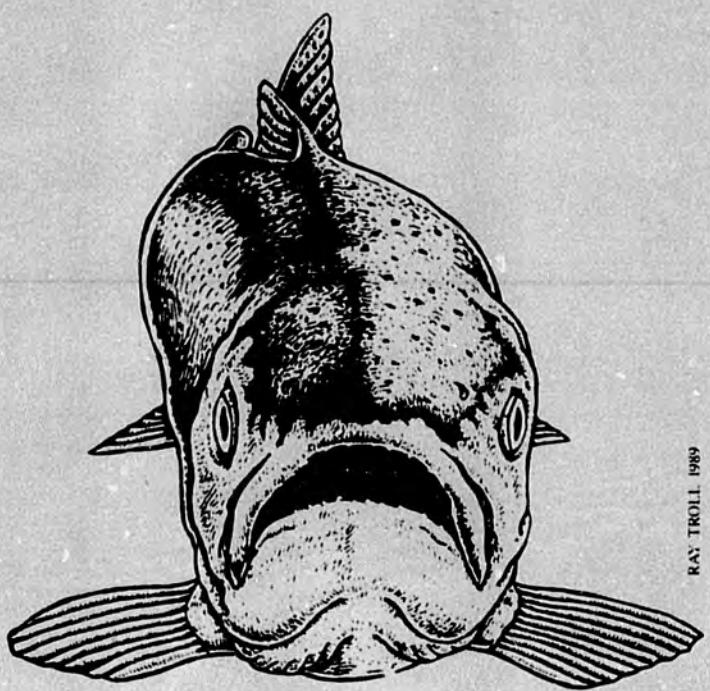
Weedless. A hook or lure that is designed to pass through aquatic vegetation without getting snagged.

Weight Forward Taper. A fly line with the heavy thick "belly" portion towards the front, with a front taper leading to the end to attach the leader, and a rear taper leading to a long line that is thin and takes little room on the reel.

Wet Fly. A fly that imitates an aquatic or land insect and sinks in the water; made of soft water absorbent materials.

Alaska's Trophy Angler Catch and Release Program

There's a good deal more to catch and release fishing than occassionally letting a fish go. Catch and Release takes planning on what tackle to use and how you will fight, handle, and release fish, and it involves a commitment to maintaining Alaska's wild fish resources. To encourage anglers to release some of the fish they catch, the Alaska Department of Fish and Game, Division of Sport Fish has created the **Alaska Trophy Angler Catch and Release Program.** Information on this program can be found in the Alaska Sport Fishing Regulations Summary.



To Release A Fish

- Land the fish quickly
- Keep the fish in the water
- Keep hands away from the gills
- Handle the fish gently
- Back the hook out
- Cut your line if the fish is deeply hooked
- Support the fish facing into the current until it swims away

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PATHWAY TO FISHING

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USER MANUAL

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An Invitation to Enjoy Fishing and Fishery Resources

The opportunity to enjoy recreational fishing is a right available to all Americans. Fishing is a healthy and wholesome activity with no participation boundaries. When used and managed carefully, fishery resources are a perpetual gift from past generations that we can enjoy today and preserve for our children to enjoy tomorrow. However, maintaining and enhancing the quality of our Nation's fishery resources requires the conscientious efforts of resource managers and anglers.

Pathway to Fishing is a program that teaches aquatic ecology and basic fishing techniques. The program is designed primarily for youth and demonstrates how knowledge of fish biology and aquatic habitats can be used to become a successful angler and catch a variety of fish in a diversity of aquatic systems. *Pathway to Fishing* emphasizes angler ethics and safety to further ensure enjoyable fishing experiences and provides information about local fishing opportunities.

Pathway to Fishing was created through the generous efforts of Berkley and In-Fisherman in cooperation with the U.S. Fish and Wildlife Service, National Park Service, Bureau of Land Management, Bureau of Reclamation, and USDA Forest Service. This partnership has resulted in a program that fills a very important need — encouraging stewardship and ethical enjoyment of aquatic resources. We are grateful for the opportunity to participate in the partnership that produced this exciting program.

John F. Turner, Director
U.S. Fish and Wildlife Service

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PATHWAY TO FISHING

Developed as a Cooperative Effort

by

U.S. Fish and Wildlife Service
National Park Service
Bureau of Land Management
Bureau of Reclamation
USDA Forest Service
Berkley
and
The In-Fisherman

USER MANUAL

PATHWAY TO FISHING
USER MANUAL

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Pathway to Fishing

Summary

Pathway to Fishing is a 12-station, 1-hour, walk-through program that teaches fishing basics, aquatic ecology, and angler ethics. It also provides information about local fishing opportunities. *Pathway to Fishing* is fun for the participants and the instructors. This program was developed as a cooperative effort of the U.S. Fish and Wildlife Service, National Park Service, Bureau of Land Management, Bureau of Reclamation, USDA Forest Service, Berkley, and In-Fisherman.

Pathway to Fishing is geared toward youth who have little or no fishing experience, but the program can be beneficial to people of all ages. Parents or guardians are encouraged to accompany the children through the program and learn with them. *Pathway to Fishing* can be taught at the water's edge or miles from a fishing spot, indoors or outdoors, and in any season. It can be presented as a stand-alone program or as an activity that is part of a larger event such as an outdoor show or a National Fishing Week event.

Pathway to Fishing is best conducted with 16 or more instructors; however, the program can be conducted with just one instructor. *Pathway to Fishing* contains all the information needed for anyone interested in teaching people about fishing, the aquatic environment, conservation, and angler ethics. Organizations conducting *Pathway to Fishing* are encouraged to obtain the assistance of experienced anglers, local fishing tackle dealers, biologists, and Federal, State, or local fishery management agency personnel.

The *Pathway to Fishing* packet contains a User Manual, posters, Certificates to be awarded for completing *Pathway to Fishing, Ethical Angler* Decals, Knot Cards, Evaluation Forms, and an instructional video cassette.

Event organizers must provide a variety of readily available or easily made instructional props (e.g., life jackets, fishing tackle) and up to 15 spincast fishing rods and reels.



Part 1. Operation Guide

Part 1.
Operation Guide

This *Pathway to Fishing* package* contains an Instructor Guide (Part 2), posters, printed materials for distribution to participants (and Masters), and a video cassette. A comprehensive list of materials for the entire event is provided at the beginning of the Instructor Guide. This part explains how to conduct a *Pathway to Fishing* event and use the Instructor Guide.

OVERVIEW OF AN EVENT

Pathway to Fishing can be presented by one or several instructors to a small group of participants in about one hour. However, the program is designed to accommodate a large group of participants. With a large number of participants, small groups (10-15) enter the *Pathway to Fishing* one group at a time. When the first group has completed Learning Station 1, that group moves on to Learning Station 2 and another group can start the *Pathway*. When using this schedule, up to 180 participants per hour can complete *Pathway to Fishing*. Each Learning Station takes 5 minutes to present. **It is essential that the instructor(s) at each station remain on schedule so the program moves smoothly.**

The physical configuration of *Pathway to Fishing* depends on the facility where the event is conducted. A sample physical configuration for *Pathway to Fishing* is shown in Figure 1. Attention should be given to separation of Learning Stations so that the presentation at one Learning Station does not interfere with the presentation at the other Learning Stations. Where space is limited, it may be necessary to use portable dividers to separate Learning Stations; or you may separate the stations with time — wait for the first group of participants to complete Learning Stations 1 and 2 and move to Learning Station 3 before starting the next group at Learning Station 1. For safety and ease of instruction, the area for practice casting (Learning Station 8) should be spacious (see Figure 1 for dimensions) and away from obstructions (like tree branches or power lines if the event is held outdoors). Casting should be directed away from the other Learning Stations.

* *The content of "Pathway to Fishing" was developed using In-Fisherman copyrighted information and more specifically, the In-Fisherman F(Fish) + L(Location) + P(Presentation) = S(Success)™ educational service. Use of this teaching format or the concepts contained herein in a setting other than this educational program is strictly prohibited without written consent of In-Fisherman. ©September 1991 by In-Fisherman® Inc. All Rights Reserved.*

STAFF

The people conducting a *Pathway to Fishing* event are one key to a successful event — an event that has a positive impact on the participants. There is no "typical" instructor for *Pathway to Fishing*. People with a wide diversity of interests and backgrounds make excellent instructors. The narrative is designed to accommodate this diversity. Most organizations presenting *Pathway to Fishing* will find that a successful program will involve anglers to present those Learning Stations that teach fishing techniques, fish biology, aquatic ecology, safety, angler ethics, and cast-

ground information provided to increase, as necessary, the instructors knowledge of the material presented. Instructors may elect to use different examples and props to achieve a more effective presentation. **Instructors should carefully plan and rehearse their presentation so that important points are covered in the five minute time period.**

Hints are suggestions, options, or alternatives to increase the effectiveness of the presentation. Hints will be shown in boxes in the Instructor Guide.

VIDEO CASSETTE

The video cassette contains a promotion for *Pathway to Fishing*, the set-up and operation of a typical *Pathway to Fishing* program, and presentations for Learning Stations 1, 2, 3, and 4. This video cassette is included to give first-time users a visual concept of *Pathway to Fishing*. You may also find the video cassette useful in promoting *Pathway to Fishing* or encouraging a co-sponsor to assist you in conducting a *Pathway to Fishing* event.

POSTERS

This *Pathway to Fishing* package contains a set of 13 posters. The poster with the blue *Pathway to Fishing* logo can be used to advertise the event and should be displayed at the entrance to the event or the registration table. The other posters are used at the *Pathway to Fishing* Learning Stations. The Instructor Guide provides instructions about cues for posters to use at different Learning Stations.

For some presentation situations, it may be desirable to mount the posters on heavy cardboard or foamcore poster board. This will make the posters more durable and easy to display.

PROPS

The Instructor Guide lists the props suggested to successfully present the program. Most of these props can be easily obtained. Several of the props are fishing lures or fishing outfits. **For safety, take the hooks off all lures and fishing outfits that the participants will handle.**

Learning Station 10 demonstrates fish handling. This is an important Learning Station because many beginning anglers (and even some experienced anglers) are uncomfortable handling fish. It is not possible to use live fish to demonstrate fish handling. A poster is included to show safe and convenient methods for holding a variety of sport fish. However, actually handling facsimiles of fish would help make the participants more comfortable and confident about holding the different fish they may catch. There are a variety of alternatives for fish facsimiles. Fiberglass replicas of fish are useful but expensive. Fish facsimiles can be carved from soft wood or polyfoam (the kind used for furniture padding). The intent, regardless of the material used, is to create a facsimile that allows you to demonstrate how to hold a fish without injury to yourself or the fish. In creating the facsimile, the emphasis should be on key features important to proper handling of the fish and removing hooks.

CORRECTION

THE FOLLOWING DOCUMENT(S)
HAVE BEEN REFILMED TO
ASSURE LEGIBILITY OR PAGINATION

Central Microfilm Services
Department of Education
State of Alaska

Rev. 6/98

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ing (Learning Stations 1-9). Instructors with a biological background can be very helpful for Learning Stations 1 and 2. Solicit the assistance of fishery biologists or conservation officers for presentation of local fishing opportunities and fishing regulations (Learning Station 11).

One person can present *Pathway to Fishing* to a group of 5-10 participants. This single instructor would, in sequence, present all the Learning Stations. This approach can be effective and may be desirable in some applications. However, the single instructor must learn and deliver much material and be very creative and energetic to maintain the attention of the participants for the entire program.

Most presentations of *Pathway to Fishing* will involve 16 or more instructors (see Figure 1) — one to handle registration, four for Learning Station 8, and one for each of the other Learning Stations. If possible, two or three people should handle registration and program evaluations and at least three people should assist the instructor at Learning Station 6 (knot tying). Two instructors at the other stations can help each other and make the presentations more lively and interesting.

Depending on the layout of the Learning Stations, it may be necessary to help each group of participants move to the next Learning Station in sequence. This can be done by each instructor pointing to the next Learning Station at the completion of their presentation, by having staff to guide each group to the next Learning Station, or by confining the movement of participants with clearly marked paths.

USE OF THE INSTRUCTOR GUIDE

Pathway to Fishing was developed to teach people how to catch fish, to be safe and ethical anglers, and about aquatic and fishery resources. The *Pathway to Fishing* Instructor Guide (Part 2) is provided to ensure relative uniformity in the information presented and is written for broad application. Some components such as the diversity of fishes, fish anatomy, safety, and angler ethics, are universal in application. These components should be presented "as is" wherever *Pathway to Fishing* is presented. Other aspects, such as how to catch fish, types of waters, and aquatic ecology, should be locally relevant. Your teaching efforts will be more effective if you focus your presentation on familiar situations. Instructional flexibility and creativity are encouraged, however, mere recounting of personal fishing experiences is discouraged.

Remember that you are teaching basic fishing techniques, not sophisticated methods used by specialized anglers. Keep your presentation simple. The majority of your audience will be youth. For example, in Learning Station 6 (knot tying) teach only the improved clinch knot; do not try to teach 2 or 3 knots. You only have 5 minutes.

The Instructor Guide contains two categories of information — text and hints. The text provides the information to be presented and is written in the "second person" (i.e. as spoken to an audience). The text also contains cues (in shaded boxes) to display or use a poster or a prop. Instructors are encouraged to present all information in the text. One of the most difficult tasks of each instructor will be to complete their presentation within the five-minute time period. Some of the text is back-

ground information provided to increase, as necessary, the instructors knowledge of the material presented. Instructors may elect to use different examples and props to achieve a more effective presentation. **Instructors should carefully plan and rehearse their presentation so that important points are covered in the five minute time period.**

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PATHWAY TO FISHING LOGO

A *Pathway to Fishing* Logo Master (PTF.1) is included in the package. Use this logo whenever posters, flyers, or other *Pathway to Fishing* promotional materials (e.g., T-shirts, caps) are produced. T-shirts and caps are popular items and a low-cost way to promote your event. Consider adding your organization's name as a sponsor.

MATERIALS FOR DISTRIBUTION

Each *Pathway to Fishing* participant should receive an *Ethical Angler* Decal, a Knot Card, and a *Pathway to Fishing* Certificate as they complete the program. One hundred *Ethical Angler* Decals and 100 Knot Cards are enclosed in the *Pathway to Fishing* package. Masters of the Ethical Angler (PTF.2), Knot Cards (PTF.3a, PTF 3b), and the *Pathway to Fishing* Certificate (PTF.4) are included for duplication.

On the *Pathway to Fishing* Certificate, a blank line is provided for the date and space is available at the bottom to add your organization's name or a signature line. You may want to make a high-quality copy from the Certificate Master, add the date and organization name or signature line, and then make copies for the event.

REGISTRATION FORM

Have each participant or their parent/guardian complete this form prior to starting Learning Station 1. The Registration Form has two purposes. First, it allows you to obtain each participant's name. As soon as a group enters *Pathway to Fishing*, the name from the Registration Form can be neatly lettered onto the *Pathway to Fishing* Certificate to be presented at Learning Station 12. A second purpose of the Registration Form is to obtain information about participants and their parents that can be used to evaluate *Pathway to Fishing* and improve educational efforts. Please return the Registration Forms, along with the Evaluation Forms and the Event Form, to the U.S. Fish & Wildlife Service (see Event Form).

A Master Registration Form (PTF.5) is enclosed in the folder on the outside back cover of this User Manual. This Master Registration Form should be used to photocopy additional Registration Forms as needed.

EVALUATION FORMS

Two types of evaluation forms are included: (1) Participant and Parent/Guardian Evaluation and (2) Cooperator Evaluation. Using these evaluations will help you to be more successful in future presentations of *Pathway to Fishing*. The Participant and Parent/Guardian Evaluation can be distributed and collected at the Registration table or you may find it more convenient to use a separate table and staff for the evaluation. The instructor at Learning Station 12 should ask the participants and parents/guardians to complete an evaluation form and direct them to the Registration Table or other table as appropriate.

The organizations that developed *Pathway to Fishing* are interested in ways to improve the effectiveness of this program. Please send completed Evaluation Forms, along with completed Registration Forms and the Event Form, to the U.S. Fish and

Wildlife Service (see Event Form).

A Master for each Evaluation Form (PTF.6, PTF.7) is included in your *Pathway to Fishing* package. These Master Evaluation Forms can be photocopied as necessary for additional events. The Masters for the participant and Parent/Guardian Evaluation and the Cooperator Evaluation are designed to be printed in a 5- inch by 8- inch format. We suggest you have these forms copied onto card stock so they can be easily used.

EVENT FORM

It is important to the organizations that developed *Pathway to Fishing* to know when, where, and by whom *Pathway to Fishing* events were conducted. Your assistance will allow us to evaluate and further improve *Pathway to Fishing*. A Master Event Form (PTF.8) is enclosed and should be completed after your *Pathway to Fishing* event. This completed form, along with completed Registration Forms and Evaluation Forms, should be mailed to:

U.S. Fish and Wildlife Service
1849 C Street, N.W.
Pathway to Fishing
ARLSQ - 820
Washington, D.C. 20240

PLANNING, PARTNERS, AND PROMOTION

Enlisting enthusiastic and creative instructors is one key to the success of a *Pathway to Fishing* event. But a second key to a successful event is proper planning and promotion before the event.

Different applications of *Pathway to Fishing* will require different types and amounts of planning and promotion. Table 1 provides a generalized planning schedule for a *Pathway to Fishing* event. Additional planning will be necessary if *Pathway to Fishing* is presented as part of a larger event or if a fishing event will follow *Pathway to Fishing*.

The initial stages of planning will affect the course of action. If *Pathway to Fishing* will be conducted as part of a large annual event (e.g., a State Fair, an outdoor show), schedule the event with the planning committee for that event at least one year in advance.

Involve other organizations and cooperators — they will simplify your planning and ensure a more successful event. For example, the Chamber of Commerce in many towns and cities publishes a calendar of events, and a local park and recreation department has staff that can assist you with all phases of planning and conducting your event. Table 2 lists some potential sources for assistance with your program. There can be costs (e.g., materials, fishing tackle, publicity) involved in presenting *Pathway to Fishing*; co-sponsors may donate equipment or provide funding.

The best way to promote a *Pathway to Fishing* event is to work with an organiza-

tion or a co-sponsor that has public relations specialists and follow their guidance. You have several ways to announce (promote) your *Pathway to Fishing* event. First, get *Pathway to Fishing* on your community's event calendar; this calendar gets wide distribution. Second, work with the media (newspaper, radio, television). Because your event is free and presented as a public service, the media generally will provide you with announcement time or space. Sample Public Service Announcements for the printed media (PTF.9) and for radio and television (PTF.10) are included. Simply fill in the required information and submit it to the appropriate outlet.

If large attendance at a *Pathway to Fishing* event is part of your plan, you will need the advertising power that the media can provide. However, be aware that the media survives financially by selling advertising. Your choice of a co-sponsor and how the co-sponsor is given credit for the event can affect the cooperation you receive from the media. Co-sponsors deserve credit for their participation, but ensure that the public service aspect of your event is evident. An organization that previously has not conducted a public event should involve the media in early planning stages.

Posters and flyers are an important part of a good publicity campaign. Although posters and flyers do not reach as large an audience as the printed and electronic media, they do provide a "hard copy" of the event. Posters and flyers can be especially effective when displayed or distributed in schools or at large public events (e.g., a fair, an outdoors show) at which *Pathway to Fishing* is a component.

FIGURE 1. PATHWAY TO FISHING FLOOR PLAN FOR A *PATHWAY TO FISHING* EVENT.

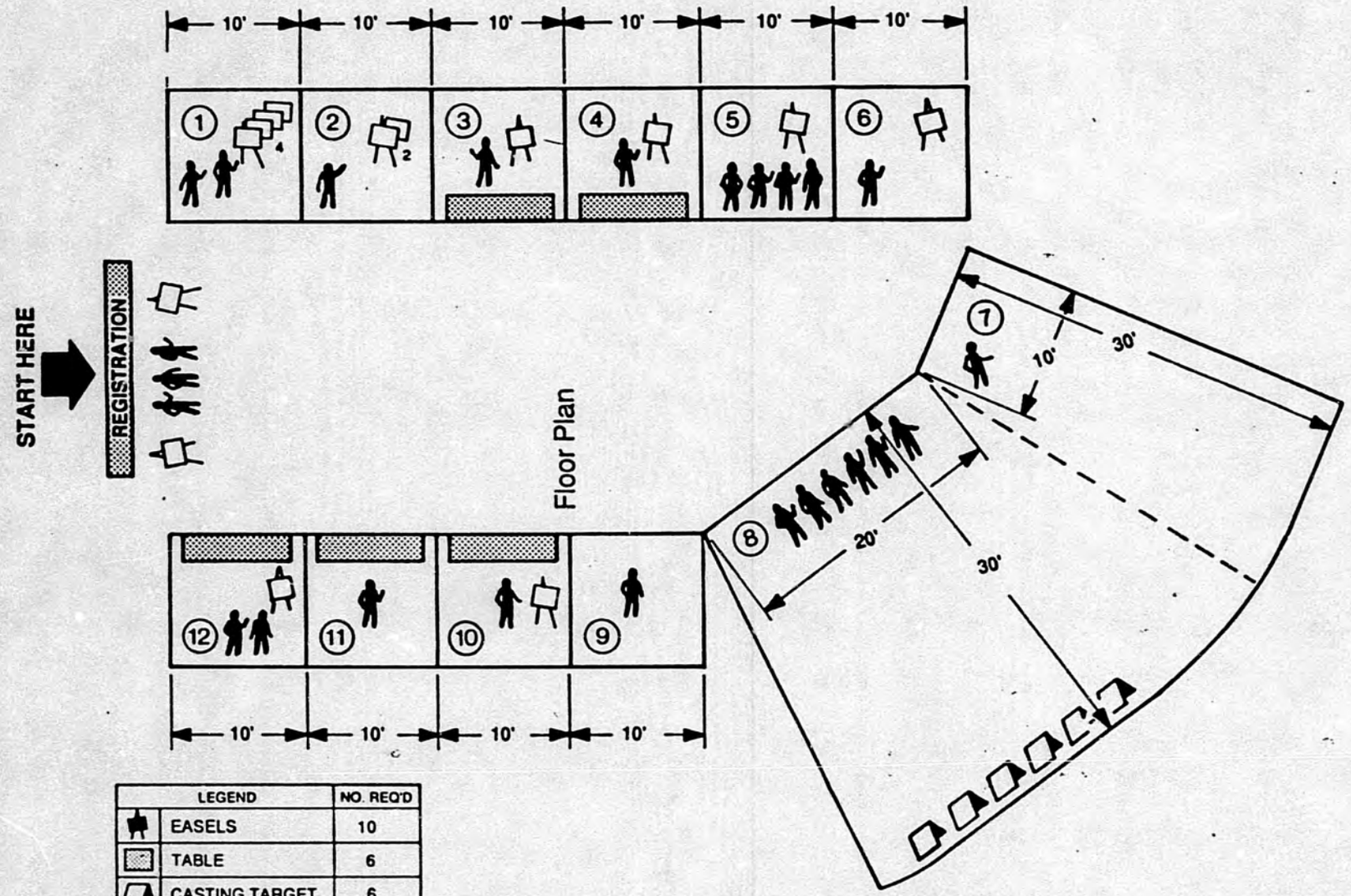


TABLE 1. A GENERAL PLANNING SCHEDULE FOR A *PATHWAY TO FISHING* EVENT.

Six months prior to the event

- Select a coordinator or coordination committee to:
  - Determine the size of the event
  - Set the date
  - Find cooperators and co-sponsors (including suppliers of spincast rod and reel outfits for casting.)
  - Identify presenters, including fishery biologists and conservation officers
  - Select the site
  - Integrate with other concurrent events
  - Determine promotion/advertising program
  - Send invitations to dignitaries (as soon as a date, cooperators, and site are confirmed)

Twelve weeks prior to the event

- Design and print posters, flyers
- Make arrangements for appropriate physical facilities (e.g., portable restrooms, tables and chairs, signs, parking, trash cans, etc.)
- Make arrangements for optional materials (e.g., T-shirts, caps, participation prizes, etc.)

Eight weeks prior to the event

- Make arrangements for flyer distribution
- Print copies of materials for *Pathway to Fishing* (e.g., Registration Forms, *Pathway to Fishing* Certificates, *Ethical Angler* decals, Evaluation Forms, Knot Cards)

Four weeks prior to the event

- Confirm all previous arrangements
- Copy and distribute *Pathway to Fishing* Instructor Guides
- Make arrangements for all props
- Put up posters
- Send Public Service Announcements to the media (newspaper, radio, television; ask that they be run two weeks before the event)
- Invite media to attend and cover the event

Two weeks prior to the event

- Confirm all previous arrangements
- Distribute flyers
- Pick up any contributed materials (rods and reels, participation prizes, etc.)

TABLE 2. POTENTIAL COOPERATORS AND SITES FOR A *PATHWAY TO FISHING* EVENT.

Cooperators and co-sponsors

- Schools
- Local fishing clubs
- Youth organizations (e.g., Boy Scouts, Girl Scouts, 4-H, YMCA, YWCA, etc.)
- Civic and fraternal clubs
- Fishing tackle wholesalers, retailers, and factory representatives
- Businesses
- Chamber of Commerce
- Local park and recreation department
- County Extension Service
- State fish, wildlife, and natural resource agencies
- Federal agencies (e.g., U.S. Fish and Wildlife Service, National Park Service, Bureau of Land Management, Bureau of Reclamation, USDA Forest Service, Soil Conservation Service, Bureau of Indian Affairs, National Marine Fisheries Service, U.S. Army Corps of Engineers)
- Media (radio and TV Stations, newspapers)

Sites

- Schools (indoors or outdoors)
- National, state, county, and municipal parks
- State, county, or municipal fairs
- Public buildings or outdoor properties
- Private business buildings or parking areas
- National Wildlife refuges
- National, state, or private fish hatcheries
- National, state, and county forests
- Visitor centers
- Shopping malls
- Consumer sport shows



Part 2. Instructor Guide

Table 3-LIST OF MATERIALS

Learning Stations	Provided in Pathway to Fishing Package	To be Provided By Organizers Instructors, or Sponsors
Registration	*Pathway to Fishing* Logo Poster Registration form	Tables Chairs Organization banner Pencils
1 - Fish Biology	F+L+P=S™ poster Fishes poster Aquatic Ecosystem poster Fish Anatomy poster	Easel for posters (optional) Trophy fish mount or replica
2 - Location (Where Fish Live)	F+L+P=S™ poster Lake Map poster	Easel for posters (optional) Remarkable board, chalkboard, or flip chart on stand Marker or chalk Depthfinder Rod and reel with rubber-legged jig (hook removed)
3 - Presentation (Livebait and Lures)	F+L+P=S™ poster	Easel for posters (optional) Large hook Ultralight spinning rod and reel with matching float, shot, small hook Tackle box full of tackle, including: rubber frog lure, minnow lure, plastic worm, spinnerbait, spoon, rattling bait, large muskie-type lure, crappie jig, surface lure (all hooks removed) Jar of prepared bait
4 - Presentation (Rods and Reels)	F+L+P=S™ poster	Easel for posters (optional) Spincast rod and reel Cane pole Baitcasting rod and reel Spinning rod and reel Fly rod and reel
5 - Tying Knots	Knot poster	Easel for posters (optional) Spool of monofilament line Spool of braided line Spool of fly line 1/4" soft docking rope Bell anchor 16" pieces of braided or monofilament line Fingernail clipper Casting plugs
6 - Safety and Angler Ethics	*Ethical Angler* poster	Easel for poster (optional) Kids life vest Adult life vest Sunglasses Hat Ball of tangled line

Learning Stations	Provided in Pathway to Fishing Package	To be Provided By Organizers Instructors, or Sponsors
7 - Casting Demonstration		**Baseball, bat, glove** **Spincast rod and reel with casting plug** **Casting target (washtub, Hula Hoop, rope circle, boxes...)**
8. Hands-on Casting		15 spincast rod and reel combinations with casting plugs attached to end of line. 6 casting targets (Hula Hoops, boxes, rope circles, washtubs, etc.)
9. Detecting bites, hooking, and fighting fish		**Rod and reel with balanced line, bobber, bait (hooks removed)** **Forked stick** **Catfish outfit (rod and reel, line, sinker)** **Spinning rod and reel with plastic worm (hooks removed)** **Spincast rod and reel with casting plug**
10. Handling and releasing fish	Fish Handling poster	Easel for poster (optional) Fish facsimiles Cotton work glove Pliers Hookout or hemostat (surgical forceps) Fingernail (line) clipper Large fish hook on a piece of line (size 2/0) Small fish hook on a piece of line (size 8)
11. Local fishing opportunities and regulations		**Easel for poster (optional)** **Regional maps** **Regulations booklets**
12. Success/Close	F+L+P=S™ poster *Ethical Angler* decals (100) Knot Cards (100) Certificates Masters for duplication (in folder): *Pathway to Fishing* Logo (PTF.1) *Ethical Angler* (PTF.2) Knot Card (PTF.3a, PTF.3b) Certificate (PTF.4) Registration Form (PTF.5) Participant and Parent/Guardian Evaluation Form (PTF.6) Cooperator Evaluation (PTF.7) Master Event Form (PTF.8) Print Public Service Announcement (PTF.9) Radio/Television Public Service Announcement (PTF.10)	Trophy fish mount or replica

LEARNING STATION 1 - FISH BIOLOGY

Posters/Props: F+L+P=S™ poster
Trophy fish
Fishes poster
Aquatic Ecosystem poster
Fish Anatomy poster
Easel (optional)

Welcome to *Pathway to Fishing*!

Traveling through the learning stations today, you will be learning about a formula called F + L + P = S™. This formula will help you catch fish like this one. *(Hold up trophy fish.)*

F+L+P=S™ poster

The "F" factor stands for FISH. Knowing some things about the fish you are fishing for will help you catch them. The "L" factor stands for LOCATION—where you look for fish in a pond, lake, river, or reservoir. "P" stands for PRESENTATION—choosing the right equipment (like rods and reels, lures or live bait) and how to use it. When you practice the formula, you get SUCCESS, and that means lots of fun and fish too!

Fishes poster

We will start with the "F" (FISH) factor. There are over 20,000 different kinds of fish ranging in size from tiny minnows to gigantic sturgeon and sharks.

Some fish live only in freshwater, such as *(instructor points to fish on the poster while participants or instructor names)* largemouth bass, yellow perch, bluegill, crappie, catfish, walleye, pike, muskie, and rainbow trout. Others live in the ocean, such as sharks, red drum, and bluefish. And some fish, such as striped bass and salmon, live in the ocean and in freshwater.

Hint: Point out diversity of fish, but emphasize the fish that are common and popular in your area.

Fish anatomy poster

Let's identify the parts of a fish: (*Point out each:*)

Fins are used for swimming and positioning.

Of course, fish use their _____ *(Instructor points to **eyes**)* to _____? (SEE things.)

Fish have a very good sense of smell. The sense of smell is concentrated in the **nares**. Fish do not use nares to breathe.

Fish get oxygen from the water through their **gills**. The gills are very delicate so you should be careful not to damage the gills when handling a fish.

Some fish have **scales** and all fish have a covering of **mucus**. Scales and mucus help to protect the fish.

All fish have a _____ *(Instructor points to the **mouth**)*. What is the mouth for? (FEEDING.)

Let's take a closer look at a few fish. *(Instructor points to sunfish on the Fishes poster.)* A sunfish has a small mouth like a Cheerio. *(Instructor makes shape of Cheerio using hand)* Sunfish eat tiny animals. Notice its body shape. Sunfish and other small fish hide in tiny places so they can race away from bigger fish, like a pike!

The pike has a huge mouth with hundreds of teeth. Fish like the pike or muskie are called **predators**. They eat other fish including the sunfish.

Hint: Use fish-eating sport fishes that are familiar to your audience for examples.

Aquatic food chain poster

All living things are part of an **ecosystem**. The plants and animals in a lake or a stream ecosystem are part of a **food chain**. Food chains can be relatively simple. For example, trout eat insects. Food chains also can be long and complicated. For example, a yellow perch eats small insects and **plankton** (small plants and animals suspended in the water), a walleye eats the yellow perch, and finally a walleye becomes dinner for a pike or muskie.

Knowing what a fish eats helps you find where it lives. For example, a bluegill may be found in a weedbed where aquatic insects live. A bass may be found cruising along the outside of a weedbed looking for bluegills to eat.

Hint: Remember to use fish and habitat examples that are familiar to your audience.

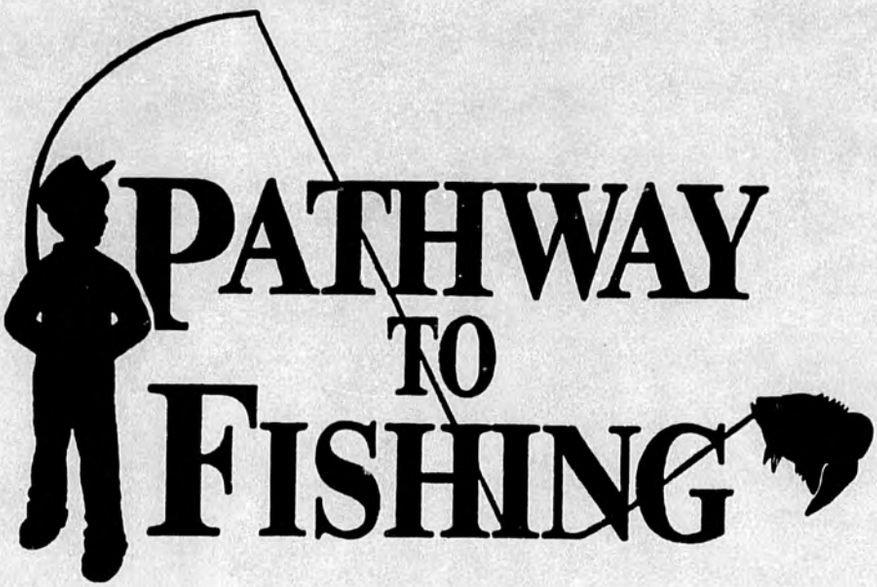
The senses of fish determine how they respond to their environment. Just like you, fish can see, taste, hear, smell, and feel. The sight of a crayfish to a smallmouth bass provokes feeding. The sense of taste is also important. If a fish doesn't like the taste of its **prey** (animals hunted for food), it will spit it out.

There are other factors about fish biology important to catching fish. Where a fish lives is determined by what it feeds on, but also by its need to survive. Some fish, like sunfish and yellow perch that are eaten by larger fish, live where they can hide from predators.

Fish also live in their **comfort zone**. The comfort zone is where a fish finds the right water temperature, oxygen, light, and current. Different types of fish have different comfort zones. Another factor that affects where a fish lives is spawning. Different types of fish spawn at different times and in different locations.

So, what does the "F" factor stand for? (FISH) Remember, the more you know about the fish you are fishing for, the more likely you are to catch them.

At the next station, you will learn more about the meaning of the "L" factor in our fishing formula for success.



F (FISH)
+ L (LOCATION)
+ P (PRESENTATION)
= S (SUCCESS)™

Poster showing various sportfishes from
fresh and saltwater
(to be included in published User Manual)

Poster of fish anatomy
(to be included in published User Manual)

Poster of aquatic ecosystem and food chain
(to be included in published User Manual)

LEARNING STATION 2 - LOCATION (WHERE FISH LIVE)

Posters/Props: F+L+P=S™ poster
Remarkable board, chalkboard, or flip-chart
Erasable marker or chalk
Lake map
Depthfinder
Rod and reel with rubber-legged jig (hook removed)
Easel (optional)

What does "F" stand for? (FISH) Right. And understanding things about fish can help you catch them.

F+L+P=S™ poster

Now that you understand the "F" factor, let's learn about LOCATION—where fish live and why they live there.

Fish live in lakes, ponds, rivers, streams, reservoirs, and oceans.

Fishing starts before you wet your line. You should first study the water and learn about the features of a fish's environment that affect where they live.

Lake map poster

You learned that fish are found in their comfort zone and where they find food or can hide.

When hunting for birds or deer, we can see where they are or where they have been. But fish are hidden by the water. We have to know what the underwater world looks like. Lake maps help us locate underwater structure, such as a bar, where we expect to find fish. Lake maps are available at most tackle shops.

Good anglers know that fish feed and hide near **structure** and **cover.** Structure is the type of bottom, such as rock or mud, and changes in depth. **Points, bars,** and **dropoffs** are good structures to find fish. *(Point to these areas on the lake map as you define them.)* Points are areas where shallow water extends from shore into deep water. Bars (also called shoals or reefs) are shallow areas surrounded by deep water. Dropoffs are areas where depth quickly changes from shallow water to deep water. Cover is places where fish can hide – rocks, stumps, logs, weedbeds, docks, brushpiles, etc.

Sometimes we can see cover such as docks, stumps, or weedbeds. We can also learn about what is on the bottom by feeling it with the lures we use. Imagine this area is the lake bottom. *(Instructor motions around learning station using rod and reel with rubber legged jig - bounced across the ground and over a kid's leg - give analogy of a log.)* We can also tell how deep the water is.

And, we can use electronic **depthfinders.** They send out signals and a picture shows us what is below the surface. *(Hold up a depthfinder.)*

Remarkable board, chalkboard, or flip-chart

Let's draw a picture of a pond. *(Draw side view of pond with nothing in it.)* A pond without structure and cover is like a room without furniture. There is no place for fish to hide.

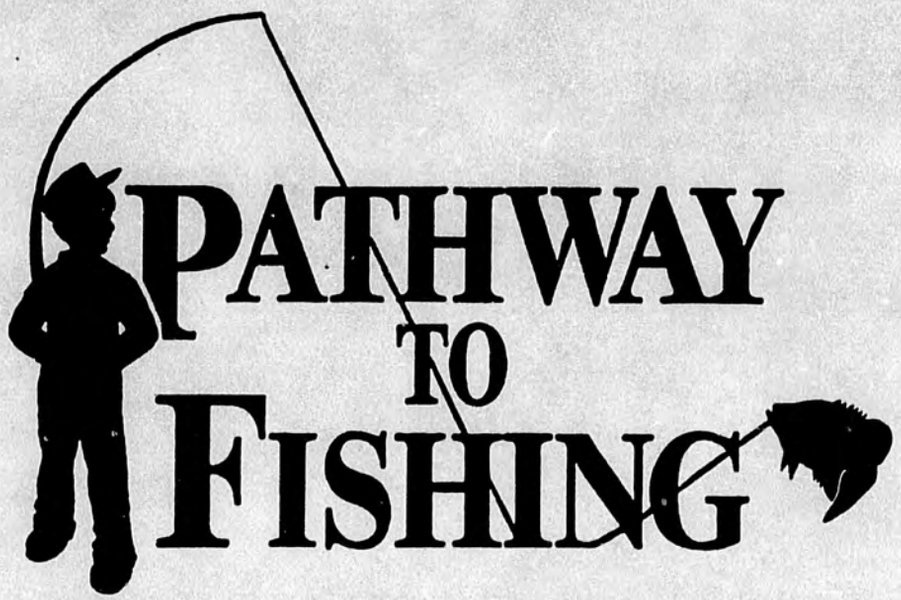
Fish do not just scatter throughout a body of water. Instead, they are attracted to structure. *(Add a point to pond side view.)* That is structure - any change in a flat clean bottom.

Fish use structure and cover to feed, rest, and hide. Cover includes things like stumps. *(Instructor draws in a stump and a couple of fish nearby.)* See? Now fish have somewhere to hide. Cover could also be lily pads, a fallen tree, bulrushes, or rocks. *(Instructor draws in each element and fish nearby.)*

So, what does the "L" factor mean? LOCATION.

And fish are attracted to what? STRUCTURE AND COVER.

Great! Now that we know more about fish and where to find them, we need to know what type of bait to use. You will learn all about the "P" (PRESENTATION) factor in the next learning station.



F (FISH)
+ L (LOCATION)
+ P (PRESENTATION)
= S (SUCCESS)™

Poster of lake map indicating various structural elements
(to be included in published User Manual)

LEARNING STATION 3 - PRESENTATION (LURES AND LIVEBAIT)

Posters/props: F+L+P=S™ poster
Large hook
Ultralight spinning rod and reel with matching float, shot, and small hook
Tackle box full of tackle: rubber frog, minnow lure, plastic worm, spinnerbait, spoon, rattling bait, large muskie-type lure, crappie jigs, surface lure (hooks removed on all lures that will be handled by kids)
Jar of catfish bait
Easel (optional)

F+L+P=S™ Poster

You have learned about fish and what they eat *(Instructor points to "F" on poster)*, and you have learned that fish live in their comfort zone around structure and cover *(instructor points to "L" on poster)*. This station is about presentation *(instructor points to "P" on poster)* —how to get fish to bite.

You have to use the right bait to get fish to bite. Presentation is using the right bait, in the right way, at the right time.

One of the best ways to fool fish is with something they eat all the time — live bait. Can you name some live baits? (NIGHTCRAWLERS, CRICKETS, GRASSHOPPERS, LEECHES, CRAYFISH, FROGS...)

To use live bait you have to match the hook size to the size of the bait. *(Hold up a large hook.)* You wouldn't use this to fish for panfish like crappie, would you?

(Hold up ultralight rod with float, shot, small hook.) This is a good all-purpose panfish rig. What kind and size of baits should you use?

Prop: Tackle box full of tackle

One of the most fun ways to catch fish is to fool them with lures. Some lures perfectly mimic prey. *(Pick up various lures from tackle box and ask what they mimic — these should be lures that obviously look like a frog, minnow, and worm.)* The trick is in the action you add.

The lure does not always mimic live bait. *(Hold up spinnerbait and a spoon.)* The important thing is to add the right movement at the right time.

Not only are fish attracted to movement, but also to size, color, vibration, sound, and scent. How about this bait? *(Hold up a rattling bait.)* What attracts a bass to this lure? SHAPE, because it looks like a fish. *(Now shake it.)* What else might attract a bass to this lure? (SOUND.)

Knowing what a fish eats helps you select the right bait or lure. We learned what fish eat when we talked about the FISH factor. And we learned how to LOCATE fish. But now we have to figure out the right bait and how to get the bait right where the fish is.

Fish like catfish and carp eat plants and animals that live on the bottom. Use minnows, worms, corn, or prepared bait. *(Hold up jar of prepared catfish bait.)* Let the bait sit still on the bottom.

Fish like bluegill, trout, and crappie eat tiny animals, minnows and insects that can be found just about anywhere — on the bottom, on the surface, or in between. Use live minnows, small worms, or tiny lures like leadhead jigs. *(Hold up a leadhead jig and other small jigs from tackle box.)* Be sure to try fishing at different depths until you find fish. Once you do, suspend the bait below a float to keep it hanging at the level of the fish.

Fish like bass and walleye eat baitfish that roam at any depth as well as animals like crayfish that live on the bottom. Use live baits or lures that look like the live animals that they eat. *(Hold up plastic worm, crankbait.)* Try these baits near the bottom, but be willing to try other depths. Bass often take baits from the surface. *(Hold up surface bait.)* Make the baits act like the food they imitate. Do you think your lure would attract a bass or a pike if the lure acted like a wounded fish?

Fish like pike and striped bass eat big baitfish that may roam at any depth. Use big live baits or lures that look like the things they eat. Fish them at different depths and make them act like the prey they imitate. *(Hold up pike / muskie lure.)*

Hint: Use a diversity of examples, but use examples of fish and how to catch them that are locally relevant.

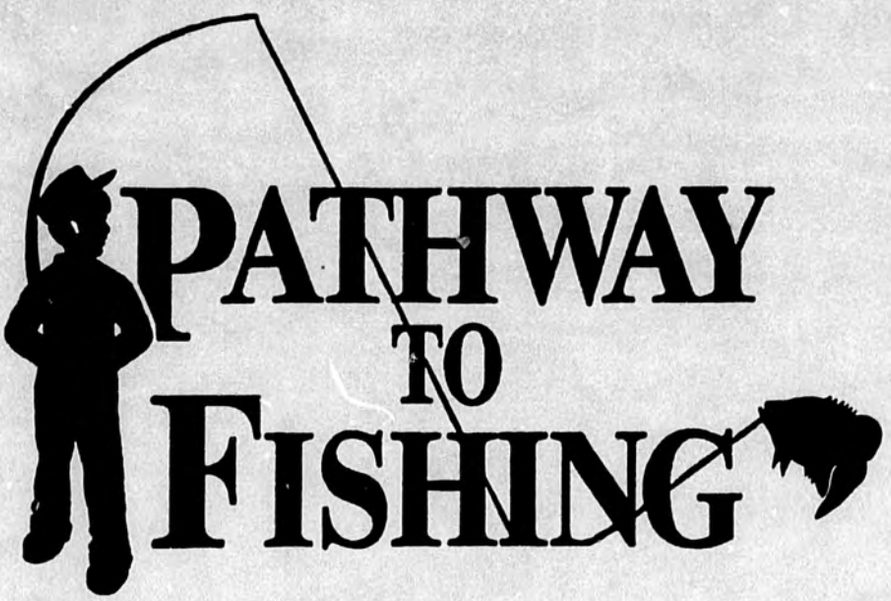
A quick review:

What does "F" stand for? FISH. Learning more about fish will help us catch them.

And "L"? LOCATION or where fish live.

And how about "P"? PRESENTATION or the type of lure or live bait to use and how to use it.

Now you are ready to learn about another important piece of equipment, a rod and reel.



F (FISH)
+ L (LOCATION)
+ P (PRESENTATION)
= S (SUCCESS)™

LEARNING STATION 4 - PRESENTATION (RODS AND REELS)

Posters/Props: F+L+P=S™ poster
Cane pole
Spincast rod and reel
Baitcasting rod and reel
Spinning rod and reel
Fly rod and reel
Easel (optional)

F+L+P=S™ poster

The PRESENTATION factor *(instructor points to "P" on poster)* also means choosing the right rod and reel as well as the right bait or lure. For small fish and small bait or lures, you need to use a light rod. For big fish and heavy baits or lures, you need a strong rod. You have to use the right rod and reel to fish effectively.

You can catch fish with a cane pole and no reel or even just a hand line. You might have more fun though with a good rod and reel outfit. You can get a good all-around rod and reel combo for about $25 to $30.

There are four basic types of reels: spincast, spinning, baitcasting, and fly reels.

Spincast reels are the easiest to use and are a good choice for a "first" outfit. *(Instructor holds up spincast rod and reel.)* The reel is mounted on top of the rod handle and has a fixed spool so it will not backlash. To cast, you simply push the thumb button in and release it when you are ready to release your bait. The line goes out through a small hole in the front of the reel. Spincast reels are also called pushbutton reels.

Spinning reels mount under the rod. *(Instructor holds up a spinning rod and reel.)* You use your index finger to control the line when casting. With spinning reels, you can use lighter line, cast smaller lures, and cast farther. Spinning reels are a little harder to use than spincast reels, but are easily mastered by 10 year olds who have experience with a spincast reel.

Baitcasting reels operate like a powerful little winch. *(Instructor holds up a baitcasting rod and reel.)* The reel seems misnamed because it is used a lot when fishing with artificial lures. It has lots of power to fish in heavy weeds. They can backlash, called a birdnest, if not used properly. Baitcast reels require more practice to use and are best for medium-weight and heavy lures.

Fly reels are used specifically for fly-fishing.

We recommend that you start to fish with a spincast reel. Once you are experienced with a spincast rod and reel, try the other types. You will learn more about spincast reels and get to practice using them in other learning stations.

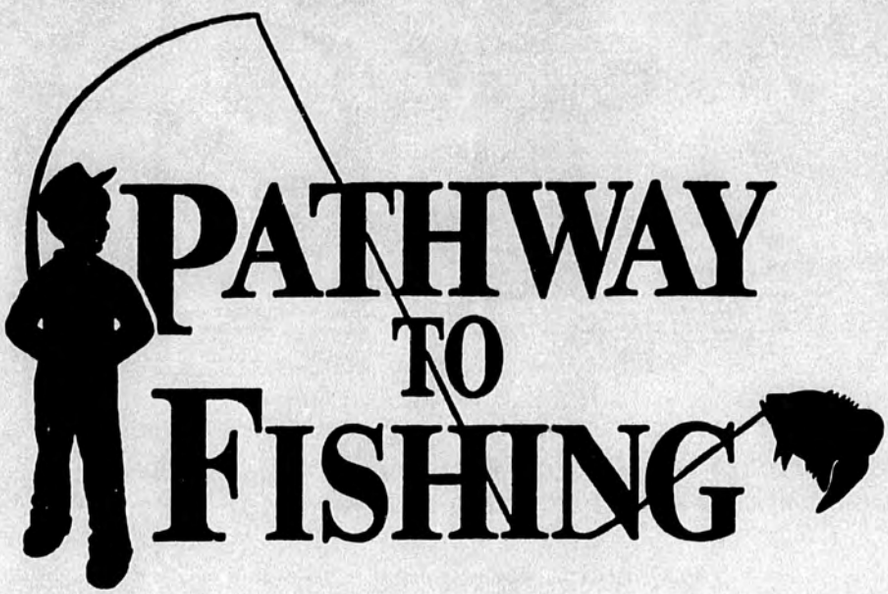
Rods are designed to be matched with the type of reel that is mounted on them. Casting rods are meant to be used with baitcast or spincast reels. The handle on these rods has a trigger and the guides are smaller. Spinning rods are meant to be used with spinning reels. They have larger guides and the handle does not have a trigger. Most rods are 5 to 7 feet long. Longer rods can cast further, but they are difficult to use for the beginning angler.

For beginning anglers, a 5- to 6-foot rod rated for 6- to 10-pound test line will work great. Most rods list information on them about the line test and lure weight that work best. This makes rod selection pretty easy.

Packaged combos are available that are balanced outfits including rod, reel, and line. All you add is a hook, bait, and water!

Just remember, your rod, reel, line, and lure should all be balanced. When starting out, keep your fishing tackle simple.

You are ready to move on to the next *Pathway to Fishing* learning station—tying knots.



F (FISH)
+ L (LOCATION)
+ P (PRESENTATION)
= S (SUCCESS)™

LEARNING STATION 5 - TYING KNOTS

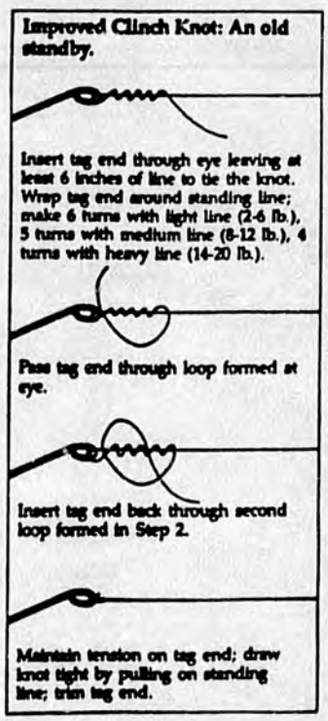
Posters/Props: Improved clinch knot poster
Spool of monofilament line
Spool of braided line
Spool of fly line
1/4" soft docking rope for instructor
Bell anchor
16" pieces of braided or monofilament line
Fingernail clipper
Casting plugs
Easel (optional)

Hint: At least one assistant per 5 participants is helpful at this station.

Who can tie their shoes? Well, tying a fishing knot is just as easy. When you hook a big fish, you will need a strong knot that will not slip or break.

Fishing line comes in many pound tests. Anglers fishing for small panfish use light line (like 4- to 6- pound test). Those pursuing medium size fish, like walleyes, bass, and catfish, use 8- to 14- pound test line. And anglers fishing for big fish (pike, stripers, muskie), use heavier line like 17- to 30- pound test. The three types of line are monofilament, braided, and fiy line. *(Hold up spools of line.)* Use good quality line and keep it in good condition for the best success.

Most fishermen use monofilament line. We are going to learn how to tie a simple knot that is really strong, called the improved clinch knot. *(Teacher ties knot to anchor using rope, then kids practice with pieces of line and casting plugs.)*



Tips to remember about line and tying knots:

- Keep twists and spirals uniform so your knots are neat and small.
- Wet the line by the knot before snugging the knot; moisture reduces line-weakening friction.
- Tighten knots with steady pressure. Watch for slippage and retie if necessary.
- Trim the extra line with a fingernail clipper. Leave about 1/8 inch of line when you trim the end. This lets the knot slip a little without coming undone.
- Check your line each time you catch a fish. If it is nicked or scraped, strip off a few feet of line and retie.

Fishing line is the only connection between you and your fish. At the last Learning Station, you will receive a card with instructions on tying a few other knots. Take it home and practice.

Poster of Improved Clinch knot
(to be included in published User Manual)

LEARNING STATION 6 - SAFETY AND ANGLER ETHICS

Posters/Props: *Ethical Angler* poster
Kids life vest
Adult life vest
Sunglasses
Baseball hat
Ball of tangled line
Easel (optional)

You have learned about fish, where they live and why, and how to catch them. So, you are ready to go fishing, right? WRONG.

Before going fishing, we must first learn about being a safe angler. That way fishing will be more fun. Being a safe angler is easy, because it just takes common sense.

The most important thing you can do is to wear a **personal flotation device (life vest)**. Whether you are fishing from a boat, dock, or shore (especially near a dam) always wear your life vest — even if you are a good swimmer.

This life vest would not do me much good, would it? *(Instructor slips on a life vest that is way too small—just fits over his or her arm.)* It is important that your life vest fit properly, like this one. *(Instructor puts on an appropriate-size vest and zips it up.)*

Besides wearing a life vest, wear a hat and polarized sunglasses to protect you from flying hooks and the sun's glare. *(Instructor puts on hat and sunglasses.)*

We are still not quite ready to go fishing. First we should check the weather report. When you are fishing, you will come in contact with many types of weather such as high winds, fog, and the most dangerous, lightning.

Each year lightning claims more lives than all other weather-related accidents combined. Lightning strikes tall objects. An angler in a boat is tall compared to everything around. So is someone on shore. In either case, never hold a fishing rod during a lightning storm. If you get caught in a storm, seek immediate shelter in a house or vehicle. If you are outside, get in the lowest spot you can find, like a ditch. Do not stand under trees or poles.

When you are fishing, keep your eye on the sky! Leave when you see a storm coming. Otherwise, it might be too late.

All anglers should be good swimmers and know first aid. If you get hooked and the hook has penetrated beyond the barb, do not attempt to remove the hook. Go to a doctor or a first-aid station.

Hint: Preach prevention and casting safety. Do not instruct people how to remove a hook.

Now we are ready to go out fishing. We know we will have fun because we will be fishing safely.

It is important to be safe. It is also important to behave in such a way that everybody can enjoy fishing. These good behaviors are called **ethics**. Fishing is a gift. We should be thankful for the opportunity to enjoy it and do our part to preserve it.

Ethical Angler poster

All good anglers live by an angler's code.

An ethical angler:

1. **Supports conservation efforts** — without good resource management, there will be no place to fish and no fish to catch.
2. **Practices catch and release** — it is okay to keep a few fish to eat, but release the rest so they can be caught again. Be sure to take your camera when you go fishing so you can take pictures and show your friends. Pictures also make good reminders of how much fun you had.
3. **Does not pollute; properly recycles and disposes of trash**—pollution kills fish. Proper recycling and trash disposal prevents pollution and keeps our environment enjoyable. Never leave trash on the shore or throw it out of the boat. Never sink cans, or leave bait containers. And never throw fishing line in the water. This kills fish, birds, and other wildlife. Keep it in your pocket until you get home. And then, take it to a recycling drop-off center.
4. **Practices safe angling and boating** — you will have more fun if you are a better angler and a safer boater.
5. **Obeys fishing and boating regulations** — these regulations are for your safety and to ensure the quality of your resources.
6. **Respects other anglers' rights** — everybody will have more fun fishing.
7. **Respects property owners' rights** — many areas will be closed to fishing if you are not respectful of private property.
8. **Shares fishing knowledge and skills** — help others become better anglers so they will have more fun.
9. **Does not release live bait into waters** — the bait you are using may not occur naturally where you are fishing and may have bad effects on the fish community if released.
10. **Promotes ethical sport fishing** — encourage other people to go fishing, experience the fun, and be an ethical angler like you.

If we all take care of the environment now, everyone can enjoy fishing and the great outdoors in the future.



The Ethical Angler:

1. Supports conservation efforts.
2. Practices catch and release.
3. Does not pollute; properly recycles and disposes of trash.
4. Practices safe angling and boating.
5. Obeys fishing and boating regulations.
6. Respects other anglers' rights.
7. Respects property owners' rights.
8. Shares fishing knowledge and skills.
9. Does not release live bait into waters.
10. Promotes ethical sport fishing.

LEARNING STATION 7 - CASTING DEMONSTRATION

Posters/Props: Baseball, bat and glove
Spincast rod and reel with casting plug
Casting target (box, Hula Hoop, rope circle, washtub, etc.)

Every sport has tools needed to play the game. In baseball we use a bat, ball, and glove. In fishing, our tools are a rod, reel, line, and lure or bait. Casting is an important part of fishing. An accurate cast puts the bait right where the fish are, not in the trees. At this Learning Station, we will show you some casting basics. At the next Learning Station, each of you will practice casting at targets.

How many of you have used a spincast rod and reel before? The rod has a pistol grip handle. *(Instructor demonstrates.)* Wrap your index finger around the trigger. Use two hands to hold the rod if you need to. The reel has a push button. When you hold the button down, the line stays in. As soon as you let your thumb off the button, the line comes out. *(Instructor demonstrates casting.)*

Here are a few things that will help you become a better caster:

- Reel in your plug so it hangs no more than 4 inches from the rod tip.
- Treat the plug as if it were a hook. Be sure no one is standing behind you when you cast.
- Stand with your feet shoulder distance apart.
- Keep your feet planted on the ground when you cast. Do not step into the cast like you are throwing a baseball.
- Face the casting target. Aim your rod tip toward the target.
- Keep your elbow and upper arm close to, but not against, your body. Let your wrist do the casting.
- Imagine that your arm is the hand on a clock with noon being here. *(Point directly above you.)* Smoothly lift the rod tip by bending your elbow and wrist. Stop the rod tip behind you at the 10 o'clock position.
- Move your forearm and snap your wrist as you release the plug. Lift your thumb from the push button to release the plug when the rod tip is at 2 o'clock. If you release too early, your plug will fly up in the air. If you release too late (after 2 o'clock) your plug will slam to the ground.
- Follow through so the rod tip points at your target.
- Cast nice and easy; you do not have to whip the plug at 100 miles per hour.

(Instructor demonstrates proper casting while aiming at target. Remind kids not to cast sidearm.)

In the next Learning Station you will be practicing what you have just learned. Have fun!

LEARNING STATION 8 - HANDS-ON CASTING

Posters/Props: 15 spincast rod and reel combinations with casting plugs attached to end of line
6 casting targets (boxes, Hula Hoops, rope circles, washtubs, etc.)

> Hint: 1 instructor for every 3 to 4 participants is helpful to assist with snags, twists, problems. Have the kids line up facing the targets and give each a spincast outfit.

At this Learning Station, you will get to practice what you just learned.

Remember these things when you are casting:

- Reel in your plug so it hangs no more than 4 inches from the rod tip.
- Treat the plug as if it were a hook. Be sure no one is standing behind you when you cast.
- Stand with your feet shoulder distance apart.
- Keep your feet planted on the ground when you cast. Do not step into the cast like you are throwing a baseball.
- Face the casting target. Aim your rod tip toward the target.
- Keep your elbow and upper arm close to, but not against, your body. Let your wrist do the casting.
- Imagine your arm is the hand on a clock with noon being here. *(Point directly above you.)*. Smoothly lift the rod tip by bending your elbow and wrist. Stop the rod tip behind you at the 10 o'clock position.
- Move your forearm and snap your wrist as you release the plug. Lift your thumb from the pushbutton to release the plug when the rod tip is at 2 o'clock. If you release too early, your plug will fly up in the air. If you release to late (after 2 o'clock) your plug will slam to the ground.
- Follow through by tracing the path of the lure with the rod tip.
- Cast nice and easy; you do not have to whip the plug at 100 miles per hour.

> Hint: Be sure to acknowledge the participants if they hit the target!

At the next Learning Station, you will learn about setting hooks and fighting fish.

LEARNING STATION 9 - DETECTING BITES, HOOKING, & FIGHTING FISH

Posters/Props: Rod and reel with balanced line, bobber, bait
Forked stick
Catfish outfit (rod and reel, line, sinker)
Spinning rod and reel with plastic worm
Spincast rod and reel with casting plug

Because you learned about the F+L+P=S™ formula, you are in the right place and using the right equipment for SUCCESS — catching a fish. Before you can catch a fish, you have to know when you have a bite. Then you have to set the hook and fight the fish so you can bring it close enough to grab or net it.

The first step in catching a fish is knowing when you get a bite. Sometimes detecting bites is easy. If you are using a bobber, the bobber goes down when a fish takes the bait. *(Hold up a balanced rig with a bobber.)* But you want to be sure to have the right size bobber for the bait you are using. Remember what you learned about matching your equipment to the fish you are fishing for and the bait you are using.

Catfish anglers often rest their rod in a forked stick *(prop a rod on the forked stick with line out, held in place by sinker).* When a fish takes the bait the line twitches — the fish is mouthing the bait — and then moves off. If you are holding the rod *(pick up rod from forked stick)*, pinch the line between your fingers to feel the strike.

When you are casting and retrieving a lure, a fish will grab it and you will know right away that you have a fish. But when you are retrieving a leadhead jig or a plastic worm, sometimes you need to watch for your line to twitch, or you can use your finger *(show holding finger on line)* to detect the strike.

Once the fish has taken the bait, you need to set the hook. This is easy. Set the hook by quickly lifting (sweeping) the rod tip up and back at an angle. *(Instructor demonstrates by having a kid hold a casting plug.)* The line tightens, the rod bends, and the power of the sweep and the rod moves the hook into the jaw of the fish. In most cases, one sharp snap is all it takes. It always helps to keep your hooks sharp!

When you pull on the line, you are pulling the fish. The fight occurs as you try to get the fish to come to you and the fish tries to escape. The fish may jump, swim away from you, or swim into cover.

Keep the rod bent and the tip high to keep the line tight. Let the rod work as a shock absorber. The rod will help you fight the fish by pulling the fish to you. If the line becomes slack, the hook might come out of the fish's mouth and the fish could get away.

Most reels have a drag that acts like a brake to let the line out under resistance and keep the line from breaking. (With 8- to 10- pound test line, set the drag so a 10-year old can just barely pull the line out. For very powerful fish, the drag must be set lighter.)

Do not reel when the fish is taking line or when the line is so tight that you cannot gain line. Use the power of the rod to pull the fish toward you — lift the rod tip from about 3 o'clock to 1 o'clock. Then, keeping the line tight, reel back down to about 3 o'clock.

Demonstrate entire process—playing fish, setting drag, pumping fish using assistant or volunteer as the fish.

Once you have a fish at the boat or shore, you need to land it. You will learn all about landing, handling, and releasing fish at the next Learning Station.

LEARNING STATION 10 - HANDLING AND RELEASING FISH

Posters/Props: Fish handling poster
Cotton work glove
Pliers
Hookout or hemostat
Fingernail (line) clipper
Large fish hook (size 2/0)
Small fish hook (size 8)
Easel (optional)

Hint: The instructor(s) for this station should be experienced anglers or a fishery biologist. These people will be familiar with the techniques for handling different fish.

At this station, participants learn how to handle fish to avoid injury to the fish and to themselves. This station should emphasize handling fish that they are likely to catch locally. It also is a good opportunity to emphasize catch-and-release or catch-photograph-and-release.

Use of fish facsimiles is suggested in this station. The facsimiles should look like the fish the participants will catch but do not have to be art. The emphasis should be on realistically simulating those parts of the fish that should be handled delicately (e.g., gills, esophagus) or parts not to handle at all (e.g., eyes) to prevent injury to the fish and those parts (e.g., fin spines, teeth, abrasive gill arches, opercular spines) that can injure the person handling the fish. Information about creating facsimiles of fish is provided in the Operation Guide (Part 1).

Sometimes landing fish can be scary, especially when the fish is big and has a mouth filled with sharp teeth, like a pike. Since fish are caught on hooks, special care must be taken so you do not get hooked. Gill arches can cut, too. By learning how to handle fish, you can prevent accidents.

One common mistake anglers make is trying to land a fish before it is tired. This does not mean you must wear the fish out. Just be sure the fish is not still fighting when you pick it up.

The best way for a beginning angler to land fish is with a net; however, with practice many fish can be lifted from the water without a net.

Fish Handling poster

Hint: The instructors should show the participants how to hold different fish. Point to the poster or demonstrate with fish facsimiles. When using fish facsimiles, pass them around and help each participant hold the fish as instructed. A live fish will often wiggle and flop when you hold it. Grasping the fish firmly, but not so hard that you will injure it, will keep the fish from wiggling and getting free.

Bass and crappie are probably the easiest fish to land because they have a built-in handle — their lower jaw. Grab the lower jaw using your thumb (inside the mouth) and index finger (outside the mouth) and lift with your index finger. This immobilizes the fish, making hook removal easy. They have very small teeth like sandpaper that will not hurt you.

Small species of fish like yellow perch and sunfish can be landed by grabbing them across the body with your hand. Grab them slightly behind the head and then slide your hand back along the body to push down the sharp dorsal spines.

Most anglers handle toothy critters like walleye, pike, and muskies by grabbing them behind the head and squeezing tightly so they cannot wiggle loose. Walleyes have sharp gill plates that can cut your fingers if you grasp too close to the head.

Catfish have sharp spines in the dorsal and pectoral fins that can cause puncture wounds and infections. A good way to hold catfish is to slide your hand (from the head of the fish toward the tail) over their head so the notch of your hand between the thumb and index finger is against the front of the dorsal spine. Then put your thumb behind the pectoral fin on one side of the fish and your fingers behind the pectoral fin on the other side of the fish. Catfish are quite hardy, so grasp them firmly.

Contrary to popular rumors, no freshwater sport fishes and few marine sport fishes have venom glands associated with spines. It hurts to get stuck with a spine just like it hurts to get stuck with a needle.

If you have ever tried to hold wet noodles in your hand, you have some idea of how to handle a trout. Trout do not have hard spines like bass and catfish, but many do have a mouth full of sharp teeth — so you do not want to grab them by the jaw. It is best to try to keep the trout in the water and gently cup one hand under its soft, slick belly while you remove the hook with the other hand. If you need to lift the trout out of the water, be sure that your hand is wet so you do not remove the tiny scales that protect the fish.

A wet cotton work glove can be a very useful tool for handling fish. There is nothing wrong with using a glove until beginning anglers become more comfortable handling fish. In fact, a wet cotton glove can inflict less damage to a fish than one handled with a dry hand, especially if using the glove allows you to more quickly and surely handle the fish.

When you have firmly grasped the fish, remove the hook. The best release method is to keep the fish in the water and use a pliers, hookout, or hemostat (surgical pliers) to remove the hook or lure. When used properly, hooks removed using these devices cause less damage to the fish and you have less of a chance of getting hooked yourself.

Release the fish back into the water as gently as possible. Never throw it. If the fish is overly tired, hold it in an upright position until it is ready to swim away. Do not slide the fish back and forth in the water; gills only work when water flows from front to back and this will do more harm than good. Never hold a fish by the eyes or gills.

If a fish is hooked deeply in the throat and the hook cannot be removed easily, cut the line and release the fish. The fish's enzymes will usually cause the hook to dissolve without harming the fish.

Decide whether to keep or release a fish as soon as you catch it. It is important to practice catch and release. Watching the fish swim away is a great feeling, and you know that others will have to opportunity to catch the fish and have fun as you did. A fish's chance of survival is greatest if you release it immediately. Fish kept on stringers have a very low chance of surviving if you decide to release them later.

Learning to handle fish properly is one of the most important skills you need in fishing. It is a skill you want to practice and master.

Fish Handling poster
(to be included in published User Manual)

LEARNING STATION 11- LOCAL FISHING OPPORTUNITIES AND REGULATIONS

Posters/Props: Regional maps
Regulations booklet
Other handouts

Arrange for local conservation personnel to discuss local fishing opportunities, regulations (length, possession limits, seasons), and explain the role of aquatic resource management agencies in preserving fishery resources.

Hand out regional maps, regulations, safety brochures, etc.

LEARNING STATION 12 - SUCCESS

Posters/Props: F+L+P=S™ poster
Trophy fish mount or replica

F+L+P=S™ poster

What does the "F" factor stand for? FISH
What does the "L" factor stand for? LOCATION
What does the "P" factor stand for? PRESENTATION

The final letter in our formula is the "S". "S" stands for SUCCESS, which is what each of you will have when you practice the formula.

Knowing some things about the fish you are fishing for, where fish can be found, and what equipment to use means you will catch fish and have fun! Do not forget to be a safe and ethical angler Someday you might even be lucky enough to catch one like this! *(Instructor holds up trophy fish mount or replica.)*

Remember, the opportunity to go fishing is a gift. This gift was passed on to you; it is your responsibility to share this gift and pass it to others. A good angler always obeys the *Angler's Code of Ethics. (Hand out Ethical Angler decals and read the Angler's Code.)*

Congratulations! Since each one of you has traveled through all the *Pathway to Fishing* Learning Stations, you receive a Certificate of completion along with some other things for you to take home.

Thank you all for coming today. We would like you to complete an evaluation of this *Pathway to Fishing* program. *(Tell the participants and parents where to obtain and complete the forms.)* Good luck fishing!

Hand out Pathway to Fishing Certificates, Knot Cards, and other miscellaneous donated items or goodie bags.



Developed as a Cooperative Effort
by
U.S. Fish and Wildlife Service • National Park Service • Bureau of Land Management
Bureau of Reclamation • USDA Forest Service • Berkley • and The In-Fisherman

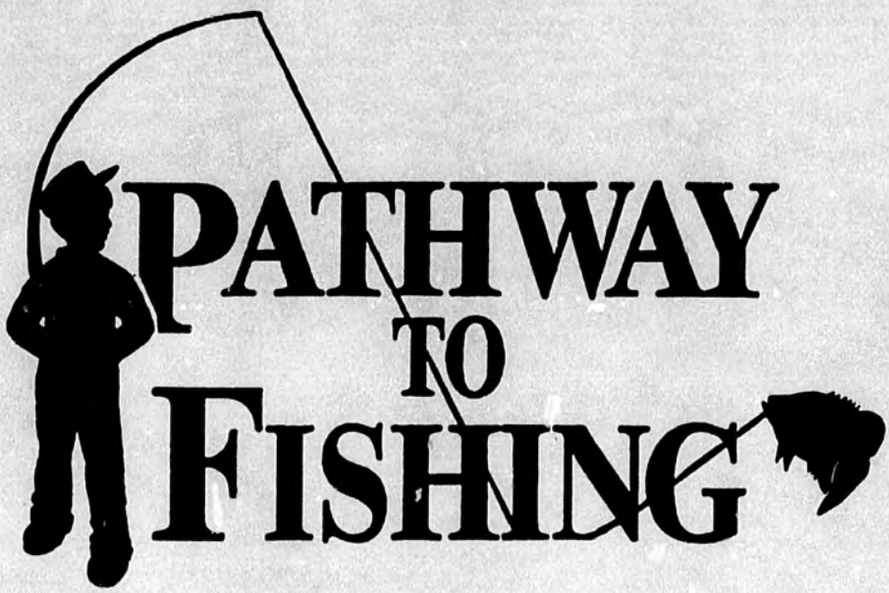


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U.S. Fish and Wildlife Service • National Park Service • Bureau of Land Management
Bureau of Reclamation • USDA Forest Service • Berkley • and The In-Fisherman

(PTF.1)



F (FISH)
+ L (LOCATION)
+ P (PRESENTATION)
= S (SUCCESS)™

PATHWAY TO FISHING

Developed as a Cooperative Effort
by
U.S. Fish and Wildlife Service • National Park Service • Bureau of Land Management
Bureau of Reclamation • USDA Forest Service • Berkley • and The In-Fisherman

This is to certify that

_____

has participated in the **Pathway to Fishing** instructional seminar.

The individual named above has the knowledge to fish safely and successfully while demonstrating a concern for nature, our environment, and the rights of other anglers.

Awarded this day in the interest of better fishing tomorrow.

_____

_____

Berkley

the In-Fisherman

(PTF.4)

PATHWAY TO FISHING
REGISTRATION FORM

MASTER

1. Participant name: _____
2. Address: _____
3. City _____ County _____ State ____ Zip _____
4. Phone number: (____) _____
5. Age: _____
6. Gender: Male _____ Female _____

Answer for the participant:

7. Have you fished before? Yes ____ No ____ How many times in the past year: _____
8. Have you participated in any other beginning fishing, conservation, or outdoor ethics program? Yes ____ No ____
9. If Yes, name of program: _____
   when: _____

Answer for the male parent/guardian:

10. Do you fish? Yes ____ No ____ How many times in the past year: _____

Answer for the female parent/guardian:

11. Do you fish? Yes ____ No ____ How many times in the past year: _____

Answer for the family:

12. Do you own a boat? Yes ____ No ____
13. Approximate value of fishing tackle (do not include value of boat): $ _____
14. Where do you fish? (check all that apply)
    - ( ) within 5 miles of home
    - ( ) 5-10 miles from home
    - ( ) 10-50 miles from home
    - ( ) 50-100 miles from home
    - ( ) more than 100 miles from home
    - ( ) I presently do not fish
15. Where do public fishing opportunities exist? (check all that apply)
    - ( ) within 5 miles of home
    - ( ) 5-10 miles from home
    - ( ) 10-50 miles from home
    - ( ) 50-100 miles from home
    - ( ) Don't know
16. Population of town/city where you live (check)
    - ( ) rural, do not live in town or city
    - ( ) less than 10,000 people
    - ( ) 10,000-49,999 people
    - ( ) 50,000-249,999 people
    - ( ) 250,000-999,999 people
    - ( ) 1 million or more people

MASTER

PATHWAY TO FISHING
PARTICIPANT AND PARENT/GUARDIAN EVALUATION

1. Youth's age: _____ years.

2. Youth's gender: Male ____ Female ____

Answer for the youth participant

3. What part of *Pathway to Fishing* did you like best? _____
4. What part(s) did you not understand? _____
5. Did this program make you want to go fishing? Yes ____ No ____
6. Did this program make you more aware of safety? Yes ____ No ____
7. Did this program make you more aware of the importance of angler ethics? Yes ____ No ____
8. Did you learn something new about fish and where fish live? Yes ____ No ____
9. Do you want to learn more about fish and where fish live? Yes ____ No ____

Answer for the parent/guardian

10. What part of *Pathway to Fishing* did you like best? _____
11. What part(s) did you not understand? _____
12. Did this program make you want to go fishing? Yes ____ No ____
13. Did this program make you want to take your child fishing? Yes ____ No ____
14. Will you purchase fishing tackle for your child? Yes ____ No ____
15. Did this program make you more aware of safety? Yes ____ No ____
16. Did this program make you more aware of the importance of angler ethics? Yes ____ No ____
17. Did you learn something new about fish and where fish live? Yes ____ No ____
18. Do you want to learn more about fish and where fish live? Yes ____ No ____
19. Additional comments: _____

_____

(PTF.6) *—Thank You!*

MASTER

PATHWAY TO FISHING
PARTICIPANT AND PARENT/GUARDIAN EVALUATION

1. Youth's age: _____ years.

2. Youth's gender: Male ____ Female ____

Answer for the youth participant

3. What part of *Pathway to Fishing* did you like best? _____
4. What part(s) did you not understand? _____
5. Did this program make you want to go fishing? Yes ____ No ____
6. Did this program make you more aware of safety? Yes ____ No ____
7. Did this program make you more aware of the importance of angler ethics? Yes ____ No ____
8. Did you learn something new about fish and where fish live? Yes ____ No ____
9. Do you want to learn more about fish and where fish live? Yes ____ No ____

Answer for the parent/guardian

10. What part of *Pathway to Fishing* did you like best? _____
11. What part(s) did you not understand? _____
12. Did this program make you want to go fishing? Yes ____ No ____
13. Did this program make you want to take your child fishing? Yes ____ No ____
14. Will you purchase fishing tackle for your child? Yes ____ No ____
15. Did this program make you more aware of safety? Yes ____ No ____
16. Did this program make you more aware of the importance of angler ethics? Yes ____ No ____
17. Did you learn something new about fish and where fish live? Yes ____ No ____
18. Do you want to learn more about fish and where fish live? Yes ____ No ____
19. Additional comments: _____

_____

(PTF.6) *—Thank You!*

MASTER

PATHWAY TO FISHING
COOPERATOR SELF-EVALUATION

1. What was your role in this event?
   Instructor ___ Sponsor ___ Organizer ___ Other _____
2. Did you enjoy this event? Yes ___ No ___
3. Do you think the youth learned from this event? Yes ___ No ___
4. Do you think the adult participants learned from this event? Yes ___ No ___
5. Did this program make you more aware of safety? Yes ___ No ___
6. Did this program make you more aware of the importance of angler ethics? Yes ___ No ___
7. Did you learn something new about fish and where fish live? Yes ___ No ___
8. Do you want to learn more about fish and where fish live? Yes ___ No ___
9. Did you stay on time? Yes ___ No ___
10. Were all parts of the manual easily understood? Yes ___ No ___

11. What could be improved (please be specific)? _____

_____

_____

12. What did you do differently from the Operation or Instructor Guide that was effective?

_____

_____

_____

13. Would you participate in another *Pathway to Fishing* event? Yes ___ No ___

(PTF.7) *—Thank You!*

MASTER

PATHWAY TO FISHING
COOPERATOR SELF-EVALUATION

1. What was your role in this event?
   Instructor ___ Sponsor ___ Organizer ___ Other _____
2. Did you enjoy this event? Yes ___ No ___
3. Do you think the youth learned from this event? Yes ___ No ___
4. Do you think the adult participants learned from this event? Yes ___ No ___
5. Did this program make you more aware of safety? Yes ___ No ___
6. Did this program make you more aware of the importance of angler ethics? Yes ___ No ___
7. Did you learn something new about fish and where fish live? Yes ___ No ___
8. Do you want to learn more about fish and where fish live? Yes ___ No ___
9. Did you stay on time? Yes ___ No ___
10. Were all parts of the manual easily understood? Yes ___ No ___

11. What could be improved (please be specific)? _____

_____

_____

12. What did you do differently from the Operation or Instructor Guide that was effective?

_____

_____

_____

13. Would you participate in another *Pathway to Fishing* event? Yes ___ No ___

(PTF.7) *—Thank You!*

MASTER

PATHWAY TO FISHING
EVENT FORM

Event chairperson(s) _____

Name of organization _____

Mailing address _____

City _____ State _____ Zip _____

Daytime Phone (____) _____

Name(s) of co-sponsor(s) _____

Date of event _____ Time of event _____

Location of event _____

Number of people conducting *Pathway to Fishing* event _____

Did you attempt to have a State or Federal fishery manager or conservation officer participate in the event? Yes ____ No ____
Did they participate? Yes ____ No ____

Was this event part of another event? Yes ____ No ____
If Yes, name or type of event: _____

Number of children that participated: under age 5 _____
age 6 - 10 _____
age 11 - 16 _____

Percentage of youth with at least one parent/guardian _____%

What type(s) of publicity did the event receive? (circle all that apply)
None Poster Flyer Radio Television Newspaper Other _____

How would you rate the success of your *Pathway to Fishing* event? (Circle one)
Highly successful Moderately successful Not successful

Will your organization conduct another *Pathway to Fishing* event?
Yes ____ No ____ If yes, when? _____

Please provide any additional comments on the back of this form or on a separate page. Thank you for your cooperation. Return this form and completed Registration Forms and Evaluation Forms to:

U.S. Fish and Wildlife Service
1849 C Street, N.W.
Pathway to Fishing
ARLSQ - 820
Washington, D.C. 20240

Thank You.

(PTF.8)



RADIO AND TELEVISION PUBLIC SERVICE ANNOUNCEMENT

For release _____ (insert date 2 weeks before event)
through_____ (date of event)

Pathway to Fishing

There's really nothing to match the excitement of that first fish tugging on your line! You have to feel it for yourself!

If you want to learn about fish, where they live, how to catch them, and how to cast, take a walk through *Pathway to Fishing*. You will get personal attention because experienced anglers and biologists teach you in small groups. In 60 minutes, you will learn how to catch your first fish.

Ask Mom, Dad, or a friend to bring you to _____ (location) on _____ (date) between _____ (begin time) and _____ (end time). New classes begin every 5 minutes. You will ALL learn about fish and how to catch them. The event is FREE and it's FUN.

Tag:
Pathway to Fishing was developed by Federal Land Management Agencies, Berkley, and the In-Fisherman.
This event is sponsored by _____(name of local sponsors) of _____ (name of city).

(PTF.10)

REPRESENTATIVE
PETER KELLY
Mailing Address:
119 N. Cushman, Suite 203
Fairbanks, Alaska 99701
(907) 456-8161

Alaska State Legislature

House Of Representatives

While in Juneau
State Capitol
Juneau, Alaska
99801-1182
(907) 465-2327

House District 31

Sponsor Statement

House Bill 256

House Bill 256 is a promotional venture to attract Alaskan's and visitors to buy fishing licenses and join in the fun of fishing in Alaska. Although the bill is primarily oriented towards sport fishing, getting individuals into the act of fishing is another way of helping them learn the importance of Alaska's fishery resources.

Fishing is Fun Week is a National event with it's own promotional energy. HB 256 would bring Alaska into the fun event.

It is the intent of the sponsor of this legislation to increase the participation of Alaskan's as well as visitors to Alaska in the appreciation of Alaska's bountiful fishing opportunities. HB 256 will get new anglers hooked on fishing, and seeks to reel back in those who have gotten away from the activity.

FISCAL NOTE

STATE OF ALASKA
1995 LEGISLATIVE SESSION

BILL NO. HB256 |

Revision Date:
Title: An Act authorizing the Commissioner of Fish and Game to establish a free sport fishing
Sponsor: Representative Kelly
Requester: House Special Committee on Fisheries

Dept. Affected: Fish and Game
BRU: Division of Sport Fish
Component: Sport Fisheries

COMPONENT SERIAL NO. 464

Expenditures/Revenues (Thousands of Dollars)

OPERATING EXPENDITURES	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
CAPITAL EXPENDITURES						
CHANGE IN REVENUES ( )						

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1006 GF/MHTIA						
Other						
TOTAL	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Estimate of any current year (FY95) cost: $

POSITIONS

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)

Assumptions: Any initial loss of license sale revenue will be compensated by new anglers that result from these activities.

Prepared by: John Burke Mark Ebner for John Burke
Phone: 465-6187
Division: Sport Fish
Date: 2/16/95

Approved by Commissioner: Frank Rue
Date: 3.24.95
Agency: Fish and Game

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DEPARTMENT OF FISH AND GAME

POSITION PAPER

Bill Number: HB256

Sponsor: Representative Kelly

Bill Title: An Act authorizing the commissioner of fish and game to establish free sport fishing days.

Department Position: Support.

This legislation would give the commissioner of fish and game the authority to designate not more than two days each year on which a person, resident or nonresident, may sport fish without a fishing license or king salmon tag. A number of states have free fishing days associated with National Fishing Week Activities and other recreational fishing educational activities. Free fishing days allow people who would like to try fishing an opportunity to do so without the necessity of purchasing a license. The legislative intent is that recreational anglers in Alaska have this same opportunity.

Free fishing days offer people who do not ordinarily fish the opportunity to experience fishing without the associated expense of a license. A free fishing day in conjunction with National Fishing Week activities or winter fishing carnivals can serve to introduce or reacquaint people with recreational fishing; people who might otherwise not participate because of the expense of a license. Free fishing days are an effective centerpiece for department sponsored or assisted aquatic education programs. These programs primarily focus on the conservation concepts and angler ethics required to promote a sustained yield from recreational fishing resources.

It is important that the commissioner have the flexibility to designate the days in question. Traditionally National Fishing Week occurs in early June during the peak of most king salmon fisheries. Many of these fisheries are intensely fished and fully utilized. It is possible that a free fishing day would create a derby-like situation in these already crowded fisheries. This may not be a positive effect as a disproportionate number of fish might be harvested in such a situation. This could significantly complicate management and perhaps even the intended allocation of harvest. It is also possible that the department could lose significant revenue from the loss of king salmon tag sales. Though this scenario is possible, we do not think it is likely. In any event if such a situation developed, the commissioner could chose

to designate the free fishing day after the peak king salmon fishery.

Initial license and king salmon tag sale opportunities that are lost due to a free fishing day should be compensated by the new anglers that result from these activities.

We feel that free fishing days would not only result in more recreational anglers, but could also indirectly result in a more informed public relative to ethical angling practices and the conservation concepts necessary to promote a sustained yield from the recreational fishing resource.

Commissioner's Signature: Frank Rue

Date: 3-24-95



National Fishing Week Steering Committee

Field Office: 2944 Patrick Henry Drive, Suite 15
Falls Church, VA 22044-2926 • 703/532-7730 • Fax 703/241-9717

The following states have provided the dates for their 1994 Free Fishing Day(s). In general, this allows the public to fish without a license. *Individual states may place some restrictions and other regulations may apply.* Check with your State Fish and Game Agency or the National Fishing Week Steering Committee for specific state information.



NATIONAL FISHING WEEK JUNE 6-12, 1994
FREE FISHING DAYS



Alabama:	**June 11**
Arizona:	**June 11**
Arkansas:	**June 10 - 12**
California:	**June 11 & Sept 24**
Colorado:	**June 4 - 5**
Connecticut:	**June 11**
Delaware:	**TBA**
Florida:	**June 11 - 12**
Georgia:	**June 11 - 12 & Sept 24**
Idaho:	**June 11**
Illinois:	**June 10 - 13**
Indiana:	**June 11 - 12**
Iowa:	**June 10 - 12**
Kansas:	**June 11 - 12**
Kentucky:	**June 4 - 5**
Louisiana:	**June 11 - 12**
Maine:	**June 19 & Feb 20**
Maryland:	**June 4 & 11, July 4**
Massachusetts:	**June 18 - 19**
Michigan:	**June 11 - 12**
Minnesota:	**June 11 - 12**
Missouri:	**June 11 - 12**



Nevada:	**June 11**
New Hampshire:	**June 4**
New Jersey:	**June 11 - 12**
New Mexico:	**June 4 & Sept 24**
New York:	**June 25 - 26**
North Dakota:	**June 11 - 12**
Ohio:	**June 4 - 5**
Oklahoma:	**June 11 - 12**
Oregon:	**June 11**
Pennsylvania:	**June 4 - 5**
Rhode Island:	**June 4 - 5**
South Carolina:	**June 11 - 12**
South Dakota:	**May 21 - 22**
Tennessee:	**June 11**
Texas:	**June 4**
Utah:	**June 11**
Vermont:	**June 11**
Virginia:	**June 4 - 5**
Washington:	**June 11 - 12**
Washington, D.C.:	**June 6 - 12**
West Virginia:	**June 11 - 12**
Wisconsin:	**June 5**



THE NATIONAL FISHING WEEK STEERING COMMITTEE
2944 PATRICK HENRY DRIVE
SUITE 15
FALLS CHURCH, VA 22044-2926
(703) 532-7730

Not all states planning to sponsor Free Fishing Day(s) have approved dates and are listed as "TBA."

Post-it™ brand fax transmittal memo 7671	# of pages ▸ 1
To M. KRAMER	From RON JOHNSON
Co.	Co.
Dept.	Phone #
Fax # 452-5428	Fax #

Midnight Sun Flycasters
P.O. Box 81031
Fairbanks, Alaska 99708

March 13, 1995

Dear Sirs,

The **Midnight Sun Flycasters** would like you to consider introducing legislation that would offer individuals an opportunity to fish in Alaska without a fishing license for at least two days out of the year. It appears that many of the lower 48 states have such provisions for people in their states.

Free fishing days are an important promotional tool across the country. The purpose of free fishing days is to encourage new people to get acquainted with the great sport of fishing. Alaska could promote the excellent fishing opportunities that we enjoy. This event could also promote tourism and economic benefits for our state.

The Midnight Sun Flycasters of Fairbanks Alaska is a nonprofit Flyfishing club in the interior of Alaska. Our purpose and desire is to promote and work for the betterment of sport fishing, to encourage and advocate conservation of resources in our lands, streams and lakes and to promote the education of the public in regards to our wonderful heritage of sport fishing.

We would like to see these days take place during National Fishing Week. Thankyou for considering our desire.

Sincerely,

Ronald J. Johnson

President MSFC

(907) 451-6139

Letter of Support for HB 256