

STATION: 1

FISH HABITAT & HANDLING



PREPARATION

Objectives

The Fish Habitat and Handling Station helps participants become more successful, responsible anglers by educating them about where fish live and how to handle them. Fish live in a world of eat-or-be-eaten.

Consequently, they have well-developed senses that make them wary of motion and sound, a broad field of vision, slippery bodies for swift getaways and other characteristics that help them avoid predators – including humans.

This station instills young anglers' respect for fish as living creatures with which we share the watershed. Upon completion of the station, participants will understand:

1. **The definition of *habitat* and its significance**
2. **Why watersheds are important to fish and humans**
3. **How water can be polluted**
4. **Why fish are slimy**
5. **Which parts of a fish they must handle carefully**
6. **At least one method for releasing a fish**

Materials

For Presenter:

- Life jacket to wear throughout the program

For Fish Habitat:

- 1 piece of white easel paper – about 27" x 34" – for each group
- 2 spray bottles – fine mist – filled with water
- 1 or 2 colors of liquid food color

Customize by mixing colors to represent pollution sources in your area: brown = silt or animal waste, blue = fertilizers and pesticides, red = waste oil or runoff from city streets, etc.

- 4 fat-tip markers to represent landscape

For example: brown (mountains, cliffs), green (forests, stream buffers), blue (rivers, streams), black (cities, highways, industries)

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- Twigs, grass and pebbles to use as structures for the watershed model
- Healthy Habitat Poster



For Fish Handling:

- 2 rubber fish for presenter to use
- Fish picture from the online Passport Kit or other laminated image of fish

Put a light coating of vegetable oil or hand cream on the image to represent fish slime.

- Short, rigged fishing rod with a circle hook
Attach one of the rubber fish to the line using the circle hook.
Substitute the top half of a larger rod if a short one is unavailable.
- Fish Handling Poster



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- Where to purchase materials:
 - **Mark Stephens, of Project F.I.S.H.**
at Michigan State University.
Mark may be reached via phone 517-432-2700,
email steph143@msu.edu or visit www.projectfish.org
 - Visit your local retailer.

PRESENTATION OUTLINE

- I. Introduce yourself and the station

- II. Objective 1: Habitat and its significance
 - A. Explain *habitat*, beginning in broad terms and narrowing to the term's application to fish.
 1. Key features of fish habitat: water, food, hiding/resting places, protective areas for laying eggs and raising young.
 2. Locations of fish habitats: freshwater, saltwater, deep water, banks, wetlands, etc.
 - B. Use Healthy Habitat Poster as visual.

- III. Objective 2: Importance of watersheds
 - A. Define *watershed* and discuss its importance as the collective natural habitat for humans and fish.
 - B. Build model to illustrate how a watershed works.
 1. Crumple, bend, fold, etc. easel paper to represent your area's terrain, wadding it to form highlands and stretching it out for lowlands, etc.
 2. Use markers to identify landscape and man-made elements of your area.
 3. In the water areas, create the structures fish prefer with the twigs, grass and pebbles.
 - C. For a visual aid, refer to the Healthy Habitat Poster for comparison and additional details.

- IV. Objective 3: Water pollution
 - A. Review the dangers of pollution: environmental damage; food supply contamination; disease to people, animals and plants, etc.

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- B. Discuss the particular threats of water pollution (as all living things depend on water) and the particular threat humans pose as the #1 source of water pollution.
- C. Demonstrate pollutants humans leave on the land by using food colors and bits of paper to represent oil, chemicals, trash, etc. on the watershed model.
- D. Spray these land-based pollutants with water to illustrate how rain and the resulting runoff and erosion spread the pollution from land to water. Explain how to minimize erosion and runoff through the creation of natural areas like grass, trees and swales. Also explain how vegetation acts to anchor soil down and prevent erosion.
- E. Reinforce that preventing and cleaning up land pollution also improves the quality of water.

V. Objective 4: Fish slime

- A. Engage participants in discussion about who has touched a fish and what it felt like.
- B. Explain that the slipperiness or slime results from glycoprotein produced by the fish's skin cells that forms a mucus-like substance when mixed with water.
 - 1. Protects fish against parasites, infection, fungus and bacteria.
 - 2. Makes it difficult for predators to catch and hold on to fish.
 - 3. Enables fish to swim faster by reducing friction between its body surface and the water.
 - 4. Pollution can alter the production of fish slime.
- C. Pass around the oil/lotion-coated fish picture.

VI. Objective 5: Careful handling

- A. Discuss the importance of wetting hands before handling any fish to protect its slime.
- B. Use the rubber fish and Fish Handling poster to identify and explain other parts of a fish they must handle with particular care and awareness. If possible, try to use examples of local fish.
 - 1. Parts that can hurt the handler: gill cover, fins, teeth, spines, etc.
 - 2. Parts the handler can hurt: slime, gills, eyes, etc.

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- C. Review other precautions to protect fish and those who handle them, such as:
1. Grip that is firm enough to secure a slippery, flopping fish but gentle enough to prevent injury.
 2. Removal from water for briefest possible time.
 3. Holding the fish horizontally rather than vertically to prevent unnecessary strain on its internal organs.
 4. Causing no unnecessary damage and treating fish respectfully – even if they are to be killed and eaten.
- D. Explain that fishing rules vary – so what may be legal in one state may not be in another. Anglers must handle fish in a manner that complies with the regulations where they're fishing.

VII. Objective 6: Release methods

- A. Discuss factors that influence an angler's decision about keeping a fish or releasing it back to the water. Mention that states have different rules about fish size, the season and how many may be caught at any one time.
- B. Use rubber fish and short rod to demonstrate release methods.
1. No Touch: Follow line to eye of hook, turn hook upside-down and hook will often slide out, leaving fish – especially smaller ones – free to swim away. This method would only work on very small fish. Encourage the use of a dehooker on any fish bigger than your hand.
 2. Touch: Wet hands, grip fish while still in water with one hand and use other to extract hook. Remove fish from water only if necessary and keep it out no longer than a person can hold his or her breath.
 3. Swallowed Hook: Cut the line leaving the hook embedded in the fish; explain that the hook will usually rust out fairly soon and leaving the hook in place is better for the fish's survival than ripping it loose.
- C. Encourage use of de-hookers as a way to both minimize the need for handling the fish and to protect the angler.
- D. Promote awareness of fish fatigue and explain the need for reviving the fish.

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1. Pulling fish through water by its bottom lip forces oxygenated water over the gills. If a fish has teeth, you can revive it by holding it at the base of the tail and moving it back and forth. Either method should involve a very gentle grip on the fish so it can swim away as soon as it's ready.
2. Releasing it when it springs back to live – will often pull away on its own.

VIII. Review of station's major points

- A. A healthy habitat is an important to fish as it is to humans.
- B. The watershed is the entire geographic area drained by a river and its tributaries and includes both fish and human natural habitats.
- C. Because the watershed is 99% land and 1% water, preventing land pollution is critical to maintaining a healthy fish habitat.
- D. Slime is one of a fish's most important protection mechanisms.
- E. Responsible anglers know how to handle fish properly – taking special care with parts of the fish that are vulnerable and parts that can hurt the handler.
- F. When releasing fish, anglers should first try to do so without touching the fish.
- G. Always be sure to carry out all trash including monofilament and bait cups.

TIPS and OPTIONS

- Practice the hands-on elements beforehand – especially building the watershed. Even if you intend to have your participants create the watershed themselves, you'll be better able to guide them if you've built a practice model or two.
- Another simple way to demonstrate the interaction between water and land: Cut the top off a clear, plastic bottle. Fill the bottle halfway with dirt or sand. Then fill the remaining space with water to show how the water percolates through the ground. Younger children may grasp this approach more quickly than the watershed demonstration.
- Look for opportunities to customize the content with specifics about your geographic area.

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- Make sure you have all materials and teaching tools. Organize them by their use in the two sections for this station: Fish Habitat and Fish Handling.
- Display the two posters so everyone can see them easily. You'll likely refer to these posters repeatedly throughout your presentation.
- Engage your participants by asking them questions about their own experiences and opinions at the beginning of a section and confirm their comprehension by asking content questions at the end.
- Control time through a mix of interactive activity and demonstrations. Involving the entire group in activities consumes more time than using one or two participants to demonstrate or demonstrating yourself.
- Stay closely engaged with participants when they are handling the hooked rubber fish. Remember to file down the hook's points beforehand.

ADDITIONAL INFORMATION

For further background information applicable to the Fish Habitat & Fish Handling Station:

- Take Me Fishing®: www.takemefishing.org/fishing/overview
- U.S. Fish & Wildlife Service: www.fws.gov/educators/educators.html
- State, territorial and tribal fish and wildlife management offices: www.fws.gov/offices/statelinks.html
- National Geographic: <http://animals.nationalgeographic.com/animals/fish.html>
- National Fish Habitat Action Plan: www.fishhabitat.org

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