

Lakeshore Fish Habitat Improvement

Converting Eroded Shorelines into Fishing Hot Spots

by Ben Page

Pennsylvania Fish & Boat Commission

Lake Habitat Section Chief



photos-PFBC archives

Where did you catch your first fish? For most anglers, their first fish was caught while they were sitting on the bank of a local lake or pond. Easy access and lake shorelines typically get fished the hardest, because they are a convenient distance from a parking lot. At most lakes, heavily fished shorelines may not have good fish habitat due to shoreline erosion and lack of physical structure. These areas can sometimes be muddy and steep with few trees and rocks in the water.

What if we could create a shoreline area that was perfect for fishing access and fish habitat? We can.

The Pennsylvania Fish & Boat Commission (PFBC) Lake Habitat Section has been implementing shoreline projects for the last six years. When fish habitat managers evaluate shorelines, they look for ways to decrease erosion, improve water quality and increase fish habitat. This can result in healthier lakes and great fishing.

Lakeshore habitat helps improve water quality

When shorelines erode, topsoil is exposed and can be washed into the lake by rain and wave action. This creates plumes of muddy water that degrade water quality by introducing phosphorus, nitrogen and silt to the system. By planning and placing habitat improvement devices, shorelines can be stabilized and erosion can be stopped. With less sediment flushing into the lake, water quality is improved.

Commission habitat managers also work with lake owners to implement riparian buffer plantings along the stabilized bank. Trees, shrubs and tall grasses within a riparian buffer help enhance the water quality by filtering storm water before it reaches the lake. The root systems of the plants also fight erosion by keeping the soil in place.

Better shoreline habitat attracts more fish

Most fish do not prefer shallow muddy water as their favorite spot in the lake. Eroded shorelines typically recede over time leaving a few inches of silted water where the shoreline used to be. This provides poor habitat with no fish cover. The silt that comes off of the eroded shoreline later settles on the bottom of the lake and can smother fish eggs and other aquatic life.

In an effort to restore the shoreline to its original depth, habitat managers place rock and wood devices to stabilize and protect the shoreline from future wave action. The rock and wood is placed along the shoreline in a fashion that will maximize cover for fish of all sizes. Not only does the added rock and wood provide habitat for fish, it also provides habitat for the aquatic insects that fish feed on such as mayfly larvae and crayfish.

Fisheries monitoring has shown that multiple species of panfish prefer to inhabit areas with fish habitat structure compared to areas with no structure. Electrofishing data



Before

This is the eroding shoreline at Watts Bay, Lake Arthur, Butler County, before the habitat improvement project.



After

Anglers use the stabilized shoreline at Watts Bay, Lake Arthur, Butler County, after completion of the habitat improvement project.

from Watts Bay shoreline, Lake Arthur, Butler County, is a prime example of how habitat improvement devices are utilized by Bluegill, Pumpkinseed and Largemouth Bass (Figure 1).

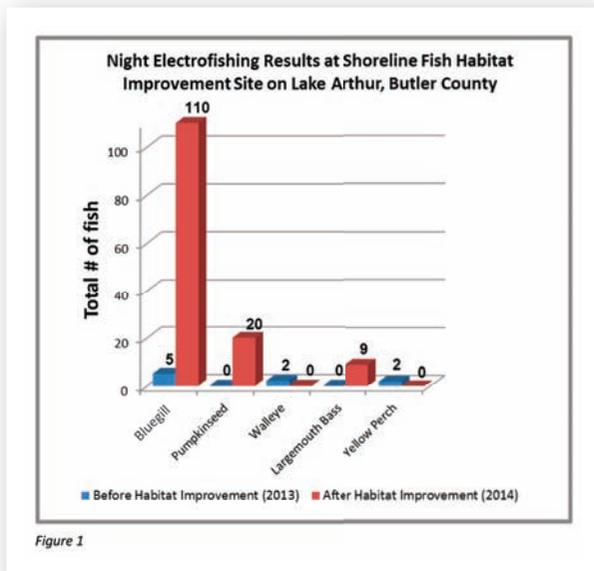


Figure 1

Better angler access and improved fishing opportunities

In some cases, an eroded lake shoreline can be a 5- to 10-foot vertical cliff that doesn't offer safe angler access. When PFBC implements a shoreline habitat project, the bank is graded back to a gentle slope (3:1). The gradual slope matched with the flat top of the habitat devices provides perfect fishing areas for anglers to set up folding chairs and cast lines. The best part of the enhanced shoreline is that there are more fish close to the shore because of added rock and wood habitat. More fish close to shore means more fish at the end of your line.

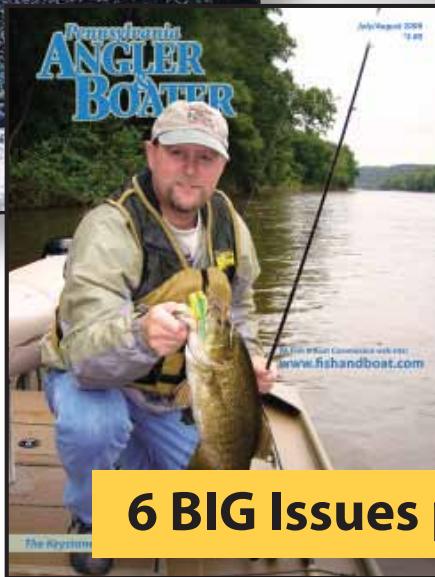
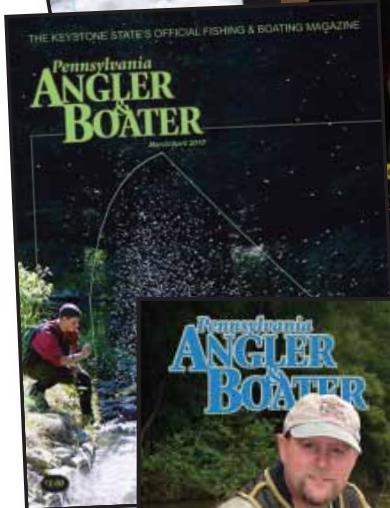
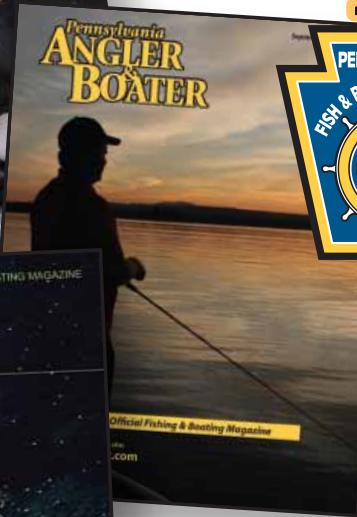
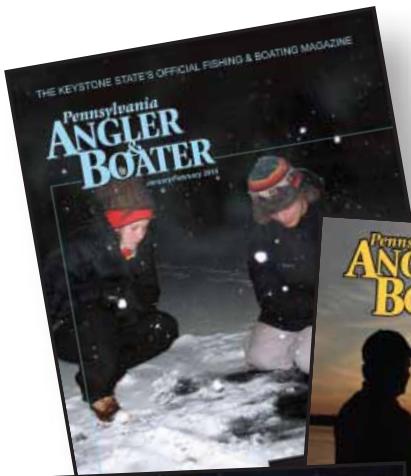
Cooperative Habitat Improvement Program

The PFBC's Division of Habitat Management coordinates fish habitat work on lakes and streams statewide through the Cooperative Habitat Improvement Program (CHIP). Within the CHIP program, a local habitat partner or "cooperator" can team up with PFBC to plan, permit and complete habitat projects. The Lake Habitat Section works with PFBC's Division of Fisheries Management to determine which waters have the greatest need for fish habitat improvement. The highest priority waters are targeted first by the Habitat Management staff.

Since 2008, the Lake Habitat Section and its partners have stabilized 11,690 feet of eroded lake shoreline on 18 different reservoirs throughout Pennsylvania. The shoreline habitat projects are in addition to the 1,000 in-lake habitat structures that PFBC places annually using boats and heavy machinery at over 35 different reservoirs statewide. All structures are mapped with GPS coordinates. Maps can be found on PFBC's website at www.fishandboat.com/lakeplans.htm.



Shown here is shoreline habitat construction at Glendale Lake, Cambria County.



Pennsylvania ANGLER & BOATER



Get the complete story and read what you've been missing!

Do you like what you're reading? Do you find *Pennsylvania Angler & Boater* online articles a valuable resource? If so, why not become a regular subscriber to *Pennsylvania Angler & Boater* and receive the entire magazine delivered to your doorstep. With each printed issue, we place only a small portion of our feature articles on our website. If you fish or boat in Pennsylvania, you shouldn't miss a single issue, or even a single article! It's been the Pennsylvania Fish & Boat Commission's (PFBC) premier, award-winning magazine since 1931.

Print out this page and mail the form below with your payment to begin your subscription. Or you can subscribe online through

PFBC's Outdoor Shop. **CLICK HERE!**

6 BIG Issues per year!

Subscribe with this form today or online at www.fishandboat.com.

SUBSCRIBE TO *Pennsylvania Angler & Boater*

Name _____

Address _____

City/State/Zip _____

Phone _____

E-mail (optional) _____

SAVE UP TO 44% OFF THE COVER PRICE!

Payment must accompany orders. Use your credit card, check or money order made payable to the Pennsylvania Fish & Boat Commission. Return this form with payment to: **PA&B Circulation, Pennsylvania Fish & Boat Commission, P.O. Box 67000, Harrisburg, PA 17106-7000.** Allow 45 days to receive the first issue.

One year (6 issues) **\$12** Three years (18 issues) **\$30**

TOTAL ENCLOSED

\$ _____

Credit Card Purchase: VISA Mastercard Discover AmerEx

Credit Card # _____ Exp. Date _____

Signature _____

Phone _____ E-mail (optional) _____

Since 1931, Pennsylvania's official fishing and boating magazine.

PAA&B-SUB-9-10