



**INLAND WETLANDS/
WATERCOURSES
AGENCY**

Lake Shoreline Treatments – Preferred Alternatives

In an effort to preserve the integrity of Lake Pocotopaug, the IWWA has determined that there may be good alternatives to the hardened seawalls and structures that have developed around the lake over time. Engineered hardened structures such as seawalls can have a negative impact on the lake in several ways:

- Unlike a natural shoreline, these structures do not absorb wave energy, they reflect it. The energy is reflected back into the lake and downward causing erosion to the lake bed. This will eventually lead to scouring at the base of the wall compromising the integrity of the wall.
- Wave intensity can be transferred laterally, causing erosion on the neighboring properties where there may not be erosion protections.
- Wave scouring causes suspended sediments increasing the turbidity in the water.
- Wave scouring stirs up sediments which may contain phosphorous and nitrogen, increasing algae growth.
- Seawalls are a barrier to wildlife such as frogs and turtles, which cannot scale the wall to get out of the water or into the water.
- Seawalls reduce the likeliness of mature trees establishing root systems, simply because homeowners do not want roots threatening the wall. They encourage wide open grass to the water's edge, which increases storm water runoff and non-point source pollution.

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In an effort to reduce the harmful impacts of engineered hardened shoreline treatments on Lake Pocotopaug, the IWWA has gathered the following alternatives as best practices for shoreline treatments for property owners to consider when upgrading their property.

The IWWA understands that each property is unique and there are situations where an engineered structure is the best alternative. However, seawalls should only be considered in locations where the eroding shoreline is steep, with high banks, and high wave energy.

Effective alternatives to hardened structures that the IWWA encourages all property owners to consider include the following:

Natural Vegetative Buffer



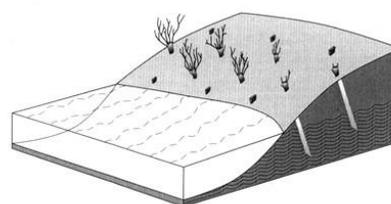
Use native plants to prevent erosion along lakes edge. Roots will naturally prevent erosion by binding soils together. Branches and vegetation protect against erosion by softening the impact from wind and rain. Low woody plants such as blueberries and mountain laurel help to keep views of the water open while protecting the surface. A buffer of wood chips and other low lying vegetative cover will help prevent storm water runoff from entering directly into the lake. A gentle slope to the water's edge will help to prevent runoff from creating erosion and absorb wave action energy. Native plantings can often be the most cost effective and

attractive way to reduce erosion. This brings the lake shoreline back to its natural state, one that has been perfected over thousands of years.

Live Staking

A low cost approach to natural vegetation is live staking. By taking live cuttings of woody native woody plants such as willow and dogwood and staking them into the soil along the lakes edge, roots will grow and revegetate the shoreline. This works best in early spring or late winter. Stakes should be buried so that about 70% lies under ground. Laying geotextile fabric over the area prior to staking will help to prevent further erosion.

Live Stakes



Live, woody cuttings which are tamped into the soil to root, grow and create a living root mat that stabilizes the soil by reinforcing and binding soil particles together, and by extracting excess soil moisture.

Bioengineering



There are several types of bioengineering that can be employed by homeowners to protect against erosion. This can include the planting of vegetation on slopes stabilized with blankets made of biodegradable fabric; transplanting trees into stone or rip-rap to help stabilize the location, or installing interlocking blocks with gaps designed to promote plant growth.

Stone Rip Rap

In locations where natural vegetative buffers may not be possible due to a steeper slope, stone rip-rap may be a good option. This includes the placement of natural stone along the slope in order to absorb wave action, hold the soils in place, and retain storm water runoff by infiltrating it into the soil before running to the lake.



Firstlight Power Resources, with the help of Milone & MacBroom, Inc., has created a Shoreline Management Manual for the Housatonic River Valley containing a wealth of information. The manual can be found online at <http://www.h2opower.com/wp-content/uploads/FirstLight/Shoreline%20Management%20Manual.pdf>