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Benefits of Shore Buffers for Otis Reservoir



This project was made possible by a grant to the Town of Otis Lake Watershed Demonstration Restoration Grant Program administered by the Massachusetts Department of Conservation and Recreation. Information in this brochure is largely gathered from Berkshire Regional Planning Commission's *Massachusetts Buffer Manual: Using Vegetated Buffers to Protect our Lakes and Rivers* (Draft form, August 2003).

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What is a vegetative buffer?

Vegetative buffers are constructed living filters that act as a protective barrier between a water body and human development.

In developed areas with a high percentage of impervious surfaces less water from rain penetrates into the ground and more runs off directly into surface water bodies. This 'runoff' does not get filtered like the water that penetrates into the ground. **Vegetative buffers** serve to filter runoff before it enters a water body, like Otis Reservoir.

Why use vegetative buffers?

Storm water runoff is the single largest contributor to water quality degradation in the Commonwealth of Massachusetts. The pollutants carried by runoff that cause the most concern in lakes and streams are sediment, nutrients, and pathogens, all three of which can be largely captured in vegetated buffers.

Benefits of Vegetative Buffers

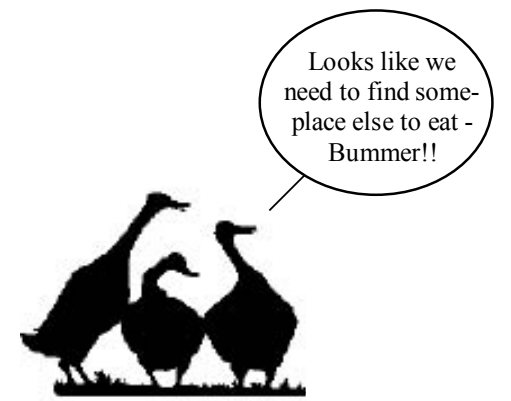
- Filter pollutants in surface runoff;
- Absorb water;
- Stabilize eroding banks;
- Contribute to the natural aquatic food chain;
- Provide wildlife habitat and travel corridors;
- Provide shade and cover for fish;
- Deter geese;
- Provide privacy for landowners.

Those pesky geese...

One common problem among lake shore landowners is an uninvited guest—the Canada goose. Vegetative buffers can be used to make your property appear less hospitable to the goose and its family.

Canada geese love to eat grass, have a view of the water and be safe from predators. Young goslings can't fly during the majority of their time in Berkshire County, therefore they will look for areas of low, predator free grass that are right next to the water that they can access without flying.

In order to make your property un-hospitable you simply need to create a visual barrier—if the geese can not see your lawn from the water they will avoid it. A 2 1/2 to 3 ft tall vegetative barrier will suffice. This can be accomplished with native, non-invasive tall grasses or shrubs. It also helps to avoid using bird feeders in areas visible to geese!



What vegetation should I use?

There is a great variety of native, non-invasive trees, shrubs and ground cover to choose from for your buffer. A very brief list of some recommended options include: Silver Maple, Black Walnut, Raspberry, Lowbush Blueberry, native ferns, Meadow Beauty, and Rose Mallow.

Learn More: BRPC has written a guidance manual on vegetated buffers. The manual describes in more detail how buffers filter pollution and provide wildlife habitat. The manual will be available over the internet at www.berkshireplanning.org this fall/winter. An extensive native plant list is currently available from the Connecticut River Joint Commission (website: www.crjc.org). The list is specific to VT and NH, however the vegetation listed for 'hardiness zones' 4 and 5 are appropriate for Berkshire County in MA. If you do not have access to the internet, contact the Farmington River Watershed Association at 860/658-4442 and they can mail you a list.

Vegetation to avoid:

It is almost more important to decide what plants NOT to use than what plants to use. An exotic invasive species is a species that is not native to Massachusetts and has the potential to establish and spread rapidly, threatening native plants and biodiversity. Planting exotic invasives should be avoided at all costs. **DO NOT PLANT** these exotic invasive species (some can still be found at local nurseries—BEWARE!):

- Japanese barberry
- Burning bush
- Norway maples
- Multiflora rose
- Hardy kiwi vine
- Porcelain berry
- Oriental bittersweet

- For a complete list of MA invasive plants, reference the list put together by the Massachusetts Invasive Plant Group (www.newfs.org/conserve/invlist.htm).

Designing and Planting Your Buffer

People live along the waterfront for a variety of reasons: a view of the water, access to outdoor recreation, privacy, or the soothing sounds of waves lapping against the shore. Whatever the reason, a vegetated buffer can be designed to meet the needs of the landowners and improve the use and appearance of the property.

- **Maintain a Lawn Area-** You can still maintain the lawn around your house for picnicking, lounging and family events. Maintain grass heights at a lush 2-3 inches; this will encourage a deeper and denser root growth and help the grass resist drought and weeds.
- **Maintain Your View-** Low-growing vegetation such as shrubs, grasses, wildflowers, ferns and ground cover add root depth without adding height. A few trees can be situated to frame the view of the water from vantage points on the property. Careful pruning will maintain these views as the trees mature.
- **Maintain Your Lake Access-** A mowed pathway through the buffer can provide access to the water. A pathway that is curved or meandering, especially on steep slopes, will help prevent the trail from becoming eroded and becoming a direct channel for stormwater runoff. A curved or meandering path or a gate will also deter geese from using the path that was created for human use.
- **Add Privacy-** Pines and spruces provide year-round screens for privacy. Deciduous trees provide nice seasonal changes: leaves provide shade in the summer, foliage in the autumn, and bare branches allow solar rays to light and warm the house in the winter. A dense thicket of shrubs, especially a prickly species, will discourage trespassers.

Case Study: Small lot lakeshore property in Western MA

This demonstration project was funded in part by EPA, MA DEP, and MA DCR. The buffer was designed for a small lot as part of the Berkshire Regional Planning Commission's (BRPC) 'Benefits of Buffers' project. This buffer is approximately 60 feet long and 6-8 feet wide. Characteristics of this property are similar to those around Otis Reservoir due to its small lot size and 30 foot setback from the water.

Priorities of the Landowner

- Maintain aesthetics. As the waterfront yard is a relatively small area, the buffer would be a very prominent landscape feature on the property.
- Maintain an unobstructed view of the lake.
- Maintain access.
- Deter geese. Increasing numbers of geese are invading the lawn, making it unpleasant and possibly unhealthy for children to play and swim in the area.
- Feature low-maintenance plants.
- Maintain approximately 20 feet of lawn between the house and the buffer for family events.



Benefits

- Provides new landscape feature.
- Canada geese have been deterred!
- The plants chosen for this buffer will provide a beautiful array of color all year long: New England aster, Winterberry, Blue flag iris, Lowbush blueberry, Bearberry and Sweet pepperbush.
- This buffer includes plants that also provide fruit for wildlife.
- By using low growing plants the view has been maintained.
- A swing gate allows access to the water while still successfully deterring geese.