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# Buffer Options *for the* Bay

## HOW WELL DO THEY WORK?

A buffer's effectiveness depends primarily on its characteristics—width, vegetation, slope, and underlying soils—and the surrounding landscape adjacent to the buffer and in the larger watershed. Landscape context is particularly influential on a buffer's ability to intercept nitrogen in runoff, a significant consideration for buffers near large areas of development.

Given the wide range of factors that influence a buffer's effectiveness, it's not too surprising that published science on this subject is nuanced in New Hampshire and elsewhere. While it is clear that buffers help protect many of the benefits that Great Bay and its tributaries provide, their capacity to do so is difficult to study in a controlled way.

A buffer's width, arguably the attribute of greatest importance to all stakeholders, has received considerable attention. While many studies make recommendations for buffer width, these often relate to the width necessary to maintain ecological features or functions found in entirely natural landscapes, such as an assemblage of forest-associated birds. Such relatively wide margins of land may not be practical, or even feasible, in some settings. Relatively few studies have focused on the topic of narrower buffers, which may be the only option in some cases, with the exception of research on nutrient removal.

When larger buffer widths are not feasible, it is especially important to identify opportunities to enhance the quality of the buffer through, for example, restoration.

As a result of the limited data on narrower buffers, [BOB's coastal science literature review](#) puts forward the following minimum buffer width recommendations based on what is necessary for buffers to support a particular benefit, with the caveat that we do not always fully understand how well narrower buffers may function. We also must acknowledge that variable width buffers can provide an important tool for meeting an ecosystem service target where it is infeasible to maintain or restore a fixed width buffer as a result of adjacent land use, site and stream conditions, and other factors.

<b>Buffer Function</b>	<b>Recommended Minimum Width</b>
Influence water temperature	30 feet
Remove pollutants	98 feet
Provide habitat for aquatic macroinvertebrates	98 feet
Reduce runoff & stabilize channel bank	164 feet
Provide habitat for terrestrial wildlife	330 feet
Provide habitat for aquatic macroinvertebrates	98 feet

*\*These widths are a result of a synthesis of many sources. For more specific information about how these widths were generated, please reference the [Coastal Science Literature Review](#).*