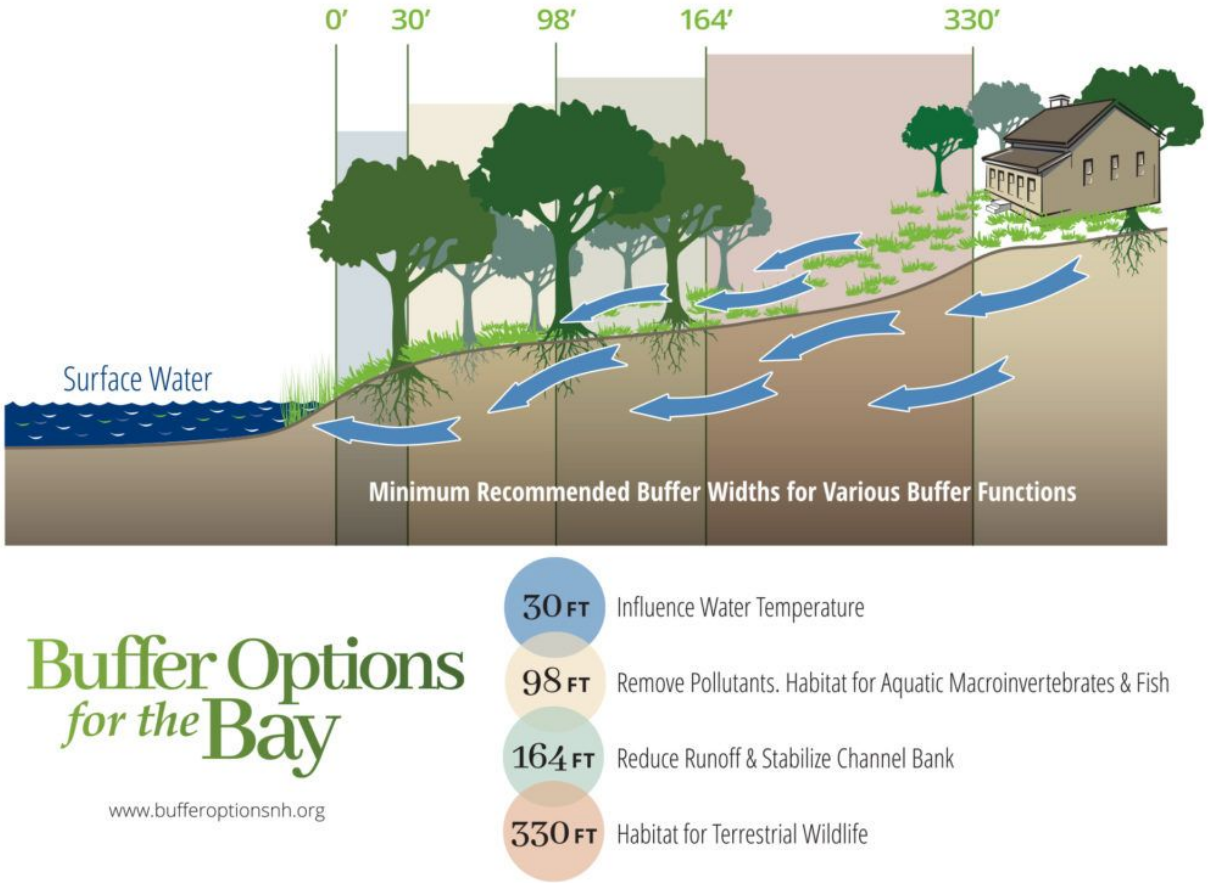
Buffer Options for the Bay

NAVIGATING REGULATIONS: SHOULD ALL BUFFERS BE THE SAME SIZE?

Buffers provide different ecosystem services depending upon their width and other characteristics. According to the coastal science literature review conducted by the BOB team, the overarching message regarding the relationship between buffer width and provision of ecosystem services is a simple one: in general, wider and more forested buffers provide greater benefits to water quality and biodiversity.



To download this PDF CLICK HERE.

From a regulatory standpoint, perhaps the simplest approach is to recommend a single buffer width based that will maintain a majority of ecosystem services under most circumstances. For this purpose, scientists tend to agree that a 100-foot wide buffer is a good target.

However, buffer width can be varied, based on a variety of criteria, by a regulatory agency with jurisdiction over a given area. These criteria can include type or quality of the wetland from which the buffer extends—as the BOB team did with its prioritization maps— or even the slope or grade of the area leading toward the wetland or shoreland, the type or intensity of land use in the area in question, pollutant loading or the type of habitat present.

For example, the zoning ordinance of Island County in Washington State, for example, employs several matrices to calculate the appropriate buffer width for wetland areas. They employ a seven-step process for calculating these buffer widths and the County's Planning Director determines land use intensity on a 3 grade scale. Once land use intensity is determined, the ordinance outlines appropriate buffers for especially sensitive wetlands (such as bogs, coastal lagoons and estuarine wetlands), with wider buffers for more intensive land uses. CLICK HERE for more details on this Washington State Case Study.

Another model for approaching regulating buffers comes from Rhode Island. Rhode Island offers an example of how a state with decentralized wetland policies can reclaim decision- making authority in a way that protects the interest of local communities and ecosystems and explore the use of variable width buffers based on surrounding land use. After an extensive review of the effectiveness of its former policies, Rhode Island underwent significant changes in its buffer regulations in 2017. To read more about Rhode Island's efforts, CLICK HERE for the Case Study.

In New Hampshire, we currently lack the detailed spatial data and mathematical models needed to derive buffer recommendations tailored to the site-specific context. As such, even were this approach deemed to be the most desirable one, it is not currently practical.

Buffer Function	Benefit	Recommended Buffer Width
Water Quality	Reducing inputs of excess nutrients and contaminants	98 feet
	Mediating sediment	98 feet
	Influencing water temperature	30 feet
	Providing organic inputs into aquatic systems	50 feet
Hydrologic Effects	Providing flood storage capacity	66 feet
	Reducing run-off and stabilizing the channel bank	164 feet
	Infiltrating surface water	None found
Habitat for Biodiversity	Aquatic macroinvertebrates and fish	98 feet
	Amphibians	256 feet
	Reptiles	417 feet
	Birds	328 feet
	Mammals	245 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.