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Abstract

Shelburne Pond, situated several miles south of Burlington, Vermont is a unique body of water, teeming with life and opportunities for research. Although previously mapped for its bathymetry, an updated, detailed bathymetric map of Shelburne Pond would provide a basis that will support further studies of its limnology. The use of GIS in bathymetric mapping has increased the complexity and sophistication of bathymetric maps, permitting researchers to replace flat, traditional vector contour maps with detailed, dimensional raster representations, which more accurately reflect the variability of depth. Employing a raster data model in bathymetry involves use of the Kriging method of interpolation, which aids in visualizing the depth of a given body of water. In utilizing the Kriging method, the depth and GPS readings acquired from Shelburne Pond provided a basis for the software to estimate the depth throughout the entire pond in the form of a color coded grid. The same GPS data was also used with a vector data model, which produced a traditional bathymetric map with contours that indicated depth throughout the pond. The two representations of bathymetry through both raster and vector data models provide options to be used in future research and references, depending on the necessary level of detail, or a need for a side-by-side comparison of the raster and vector models. In creating updated, detailed, and alternate maps of Shelburne Pond's bathymetry, future research of the area will be facilitated, permitting the pond to become a center for limnological research for the University of Vermont.