

MAPPING VARIABLE WIDTH RIPARIAN BUFFERS

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Riparian buffers are dynamic, transitional ecosystems between aquatic and terrestrial ecosystems with well-defined vegetation and soil characteristics. Previous approaches to riparian buffer delineation have primarily utilized fixed-width buffers. However, these methodologies only take the watercourse into consideration and ignore critical geomorphology, associated vegetation and soil characteristics. Utilizing spatial data readily available from government agencies and geospatial clearinghouses, such as digital elevation models (DEM) and the National Hydrography Dataset, the Riparian Buffer Delineation Model (RBDM) offers advantages by harnessing the geospatial modeling capabilities of ArcMap GIS, incorporating a statistically valid sampling technique along the watercourse to accurately map the critical 50-year plain, and delineating a variable width riparian buffer. Options within the model allow incorporation of National Wetlands Inventory (NWI), Soil Survey Data (SSURGO), National Land Cover Data (NLCD) and/or Cropland Data Layer (CDL) to improve the accuracy and utility of the riparian buffers. This approach recognizes the dynamic and transitional natures of riparian buffers by accounting for hydrologic, geomorphic and vegetation data as inputs into the delineation process. By allowing the incorporation of land cover data, decision makers acquire a useful tool to assist in managing riparian buffers. The model is formatted as an ArcMap toolbox for easy installation and does require a Spatial Analyst license.

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