

Use of K-nearest Neighbor Imputation for Modeling Forest Inventory Data

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Abstract: The USDA Forest Service's Forest Inventory and Analysis Unit (FIA) produces periodic reports on the status of and trends in the Nation's forests. Maps that display the distribution and levels of inventory variables are produced as part of these reports. FIA has used a variety of spatial modeling approaches to make these maps in the past, with varying degrees of success. Here we describe the methodology used to produce maps of FIA attributes using KNN for the state of Pennsylvania, with an emphasis on data reduction methods and quality assurance protocols.