Using Geographic Information Systems in a Nursery[1]

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Geographic Information Systems (GIS) are computer based systems which combine maps (spatial data) with information that describes features found on those maps (tabular or attribute data). After the maps are converted to a computer format (usually by digitizing) and the attribute data is entered into a database management system the GIS software can be used to perform analyses and generate map products utilizing both types of data.

Examples of possible applications of GIS technology to the nursery setting include:

1. Tracking and mapping of species distributions across several years. Querying the system for the location(s) of a specific species, seedsource, or age group. For example a query such as "find the 2-0 shortleaf pine from source 'Jumbo'" could be conducted and the results mapped.

2. Mapping the results of soil surveys and nutrient testing and then using that information to graphically examine the impact of soil characteristics on seedling growth and yield (derived from history plot and seedling inventory data).

3. Tracking and mapping the results of insect and disease monitoring efforts. Patterns across years are more readily apparent using a GIS.

4. Tracking and mapping cultural activities such as fertilization, herbicide and pesticide application (where, when, rate), mulch application, etc.

5. Using the spatial component of the GIS to help match bed space to available seed stocks.

The potential uses of GIS in a nursery setting are limited only by the needs and imagination of the people using the system, and the data available for incorporation into the system.

The Missouri Department of Conservation is currently developing a GIS for the George O. White State Forest Nursery in Licking, MO.