

## **Looking at the Big Picture to Plan Land Treatments**

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Land and water resources are essential to humans as they provide the foundation for supplying products upon which we are dependent. We can divide resources into commodities such as timber, food, fuel, and fiber, and into ecosystem services such as photosynthesis, natural decomposition, wetland water filtration, and pollination that contribute to long-term sustainability. Increased demands for resources by multiple stakeholders coupled with limited supplies are the causes of resource conflicts throughout the world. Land use planning and planning of land treatments can enhance productivity, ecosystem services and land sustainability to meet human needs while safeguarding Earth's resources. Spatial technology such as geographic information systems (GIS), global positioning systems (GPS), and remote sensing are tools that can help natural resource managers effectively plan land treatments. Although maps of soils, fire perimeters, potential and current vegetation, wildlife habitat, and treatment areas have existed for several decades, GIS provides an effective avenue for overlaying and filtering these informational maps to find new statistical relationships and selecting treatment sites. Large land areas can be analyzed to place management questions into a landscape context. This presentation provides examples for how geospatial technology can be effective in selecting areas for restoration (post-fire and other), research sites, and mechanical or chemical treatments in rangelands. GPS accuracy and mapping scale will be discussed in an analysis context. Maps created by GIS data overlay are powerful communication tools that aid in better informed natural resource decision making.