Using GPS and GIS for Agroforestry and Orchards

Surveying a property with GPS (Global Positioning Systems) and mapping its resources with GIS (Geographic Information Systems) provides a valuable tool for land management.

Since surveying my parents’ pecan orchard and mapping their trees, I have marketed the service to other orchards, timber growers, farmers, arboretums, and woodland owners. (I use Leica GS50 GPS units which are generally accurate within a meter. ArcView 3 from ESRI is the mapping software.)

Property owners are generally interested in mapping property lines, roads, gates, structures, irrigation lines, water resources, and fence lines. Additionally tree growers need tree position, size, health, and type for all of their valuable trees.

Completing a GPS survey and mapping a property yields many benefits:

- **Inventory of Resources:**
  - Trees, Roads, Water, Structures, Soils, Fields

- **Extensive Data:**
  - Tree Cultivars, Sizes, Health, Growth
  - Field Sizes, Property Lines, Distances

- **Work Plans based on Accurate and Data-Rich Map:**
  - Tree Harvesting, Grafting, Hired Work

- **Property Value Increased:**
  - Documented Resources to show Buyers

- **Monitor Progress of Growth**

- **Record Production**

- **Government Disaster Documentation:**
  - Proof of Loss
  - Production Estimate

The design of the maps needs to make sure that the data is readable, labels are clear, and as much information about the property and its resources are summarized on the map itself. The maps included with this overview provide examples of different map layouts, each getting the most important information about a property’s resources documented on the map.