

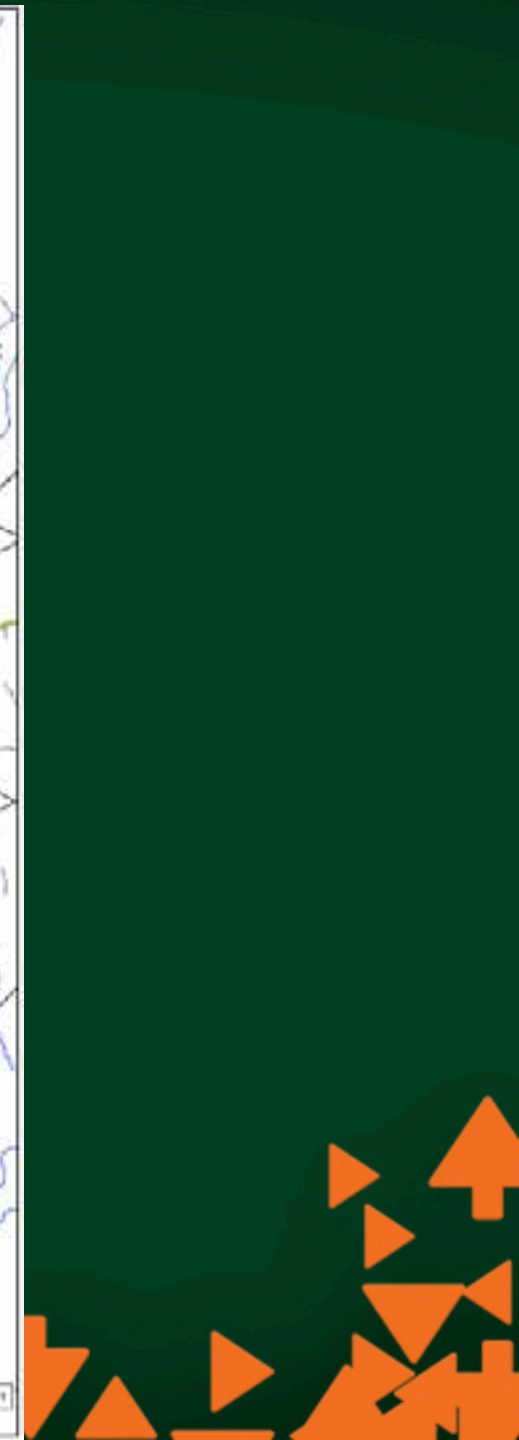
Achieving Faster, More Accurate and Equitable Division of Trust Lands

Esri Forestry GIS Conference

May 1-3, 2012







Problem

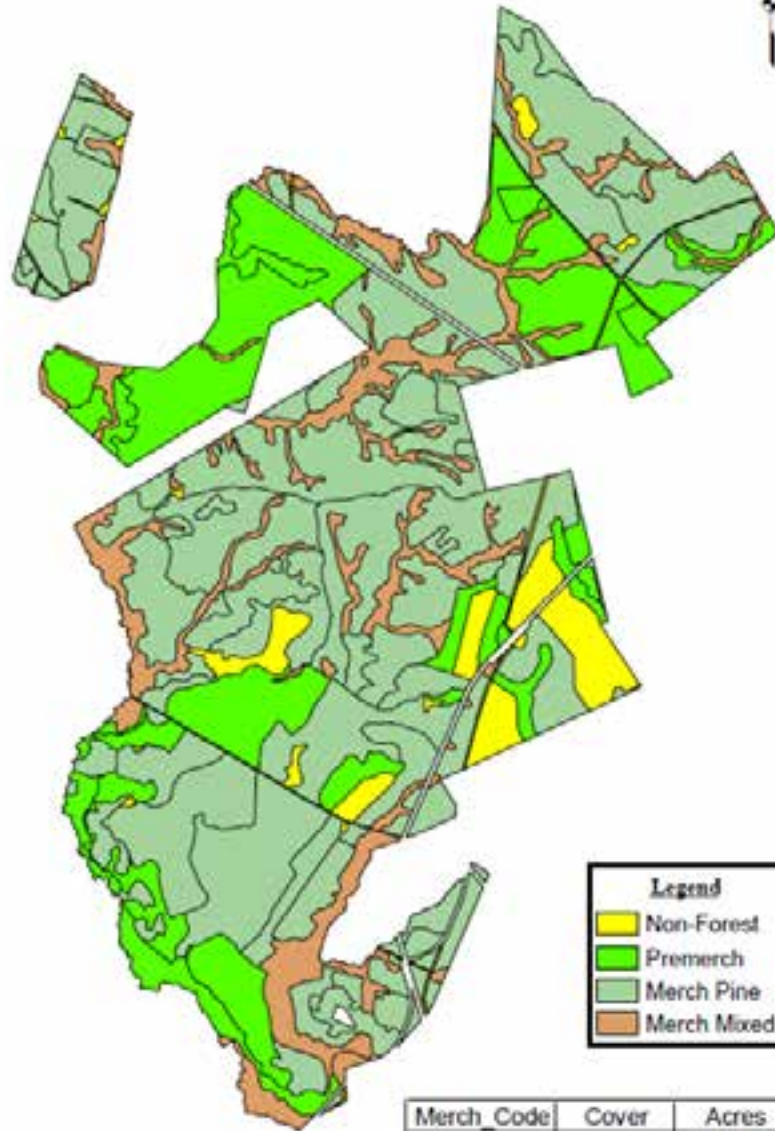
- Divide Trust property equitably among 3 beneficiaries.
- 4 Quantified value contributions
 - Land
 - Timber (merch and premerch)
 - CRP payments
 - Crop fields (annual lease)
- Beneficiary perceived values
- Survey cost
- Time restrictions (carrying cost of trust)

Details

- 2 Tracts
- 4,275 acres
- 188 polygons
- 103 merchantable timber stands
- 5 crop fields
- 7 premerch stands with CRP income



Cover Type Map



Legend	
	Non-Forest
	Premerch
	Merch Pine
	Merch Mixed

Merch Code	Cover	Acres
P		1112.2
M	Pine	2311.7
M	Mixed	604.9
N		246.2
Total		4275

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Tools at Hand

- ArcGIS
- MS Access
- MS Excel
- *SilvAssist for ArcGIS*
- *TCruise (desktop and handheld)*
- *Real-Time Inventory (RTI) for Solo Forest*
- *Solo Forest (handheld)*



Real-Time Inventory

With You in the Woods

- Creates a link between your GPS/GIS application and forest inventory application in the field
 - Navigate to plot
 - When you get close to plot center, the app prompts you to collect data
 - Switched to field data collection while a spatial data link is automatically made in the field



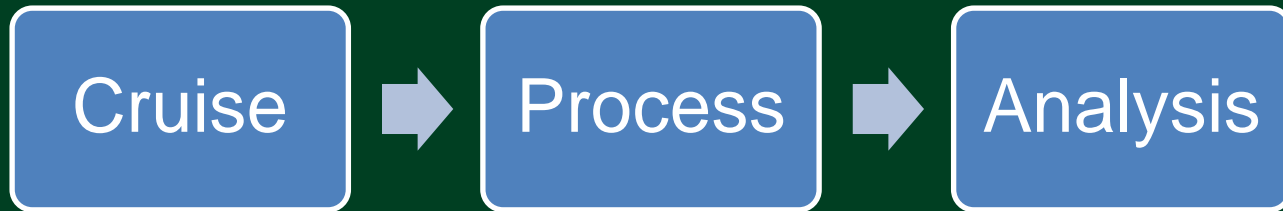
Overview of SilvAssist

Making Inventory Work for You

- Manage your inventory and spatial data in one database
- Perform stratification with any polygon dataset and attribute
- Includes the most powerful forestry statistics and plot allocation tools on the market
- Perform multiple stratification reports without reprocessing a cruise
- Soon will come standard with stand events and FVS utility



Steps in Process

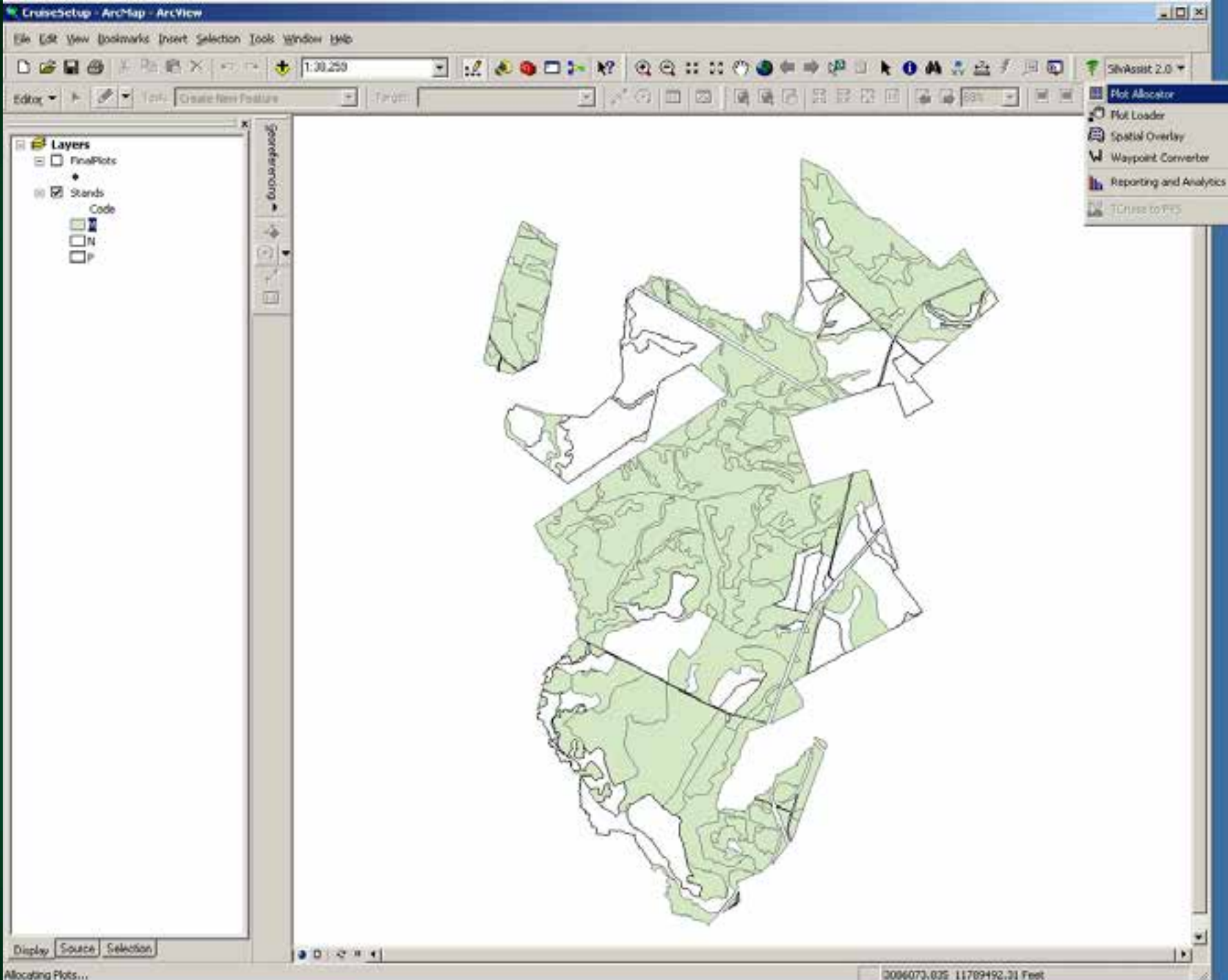


Cruise

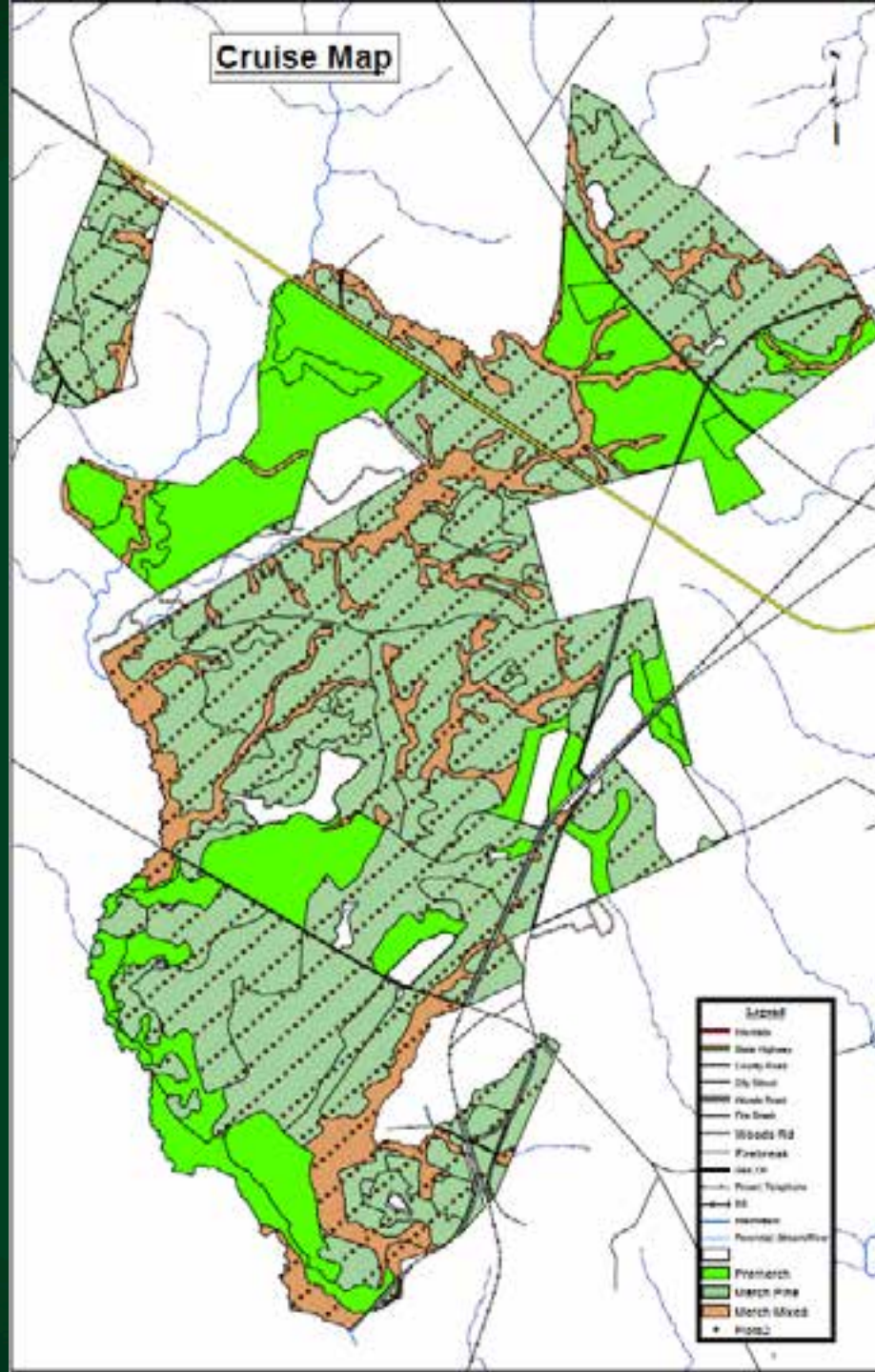
Produce cruise grids with
SilvAssist for ArcGIS

Cruise forest inventory
data with T-Cruise and RTI

Import data from handheld
for processing



Cruise Map



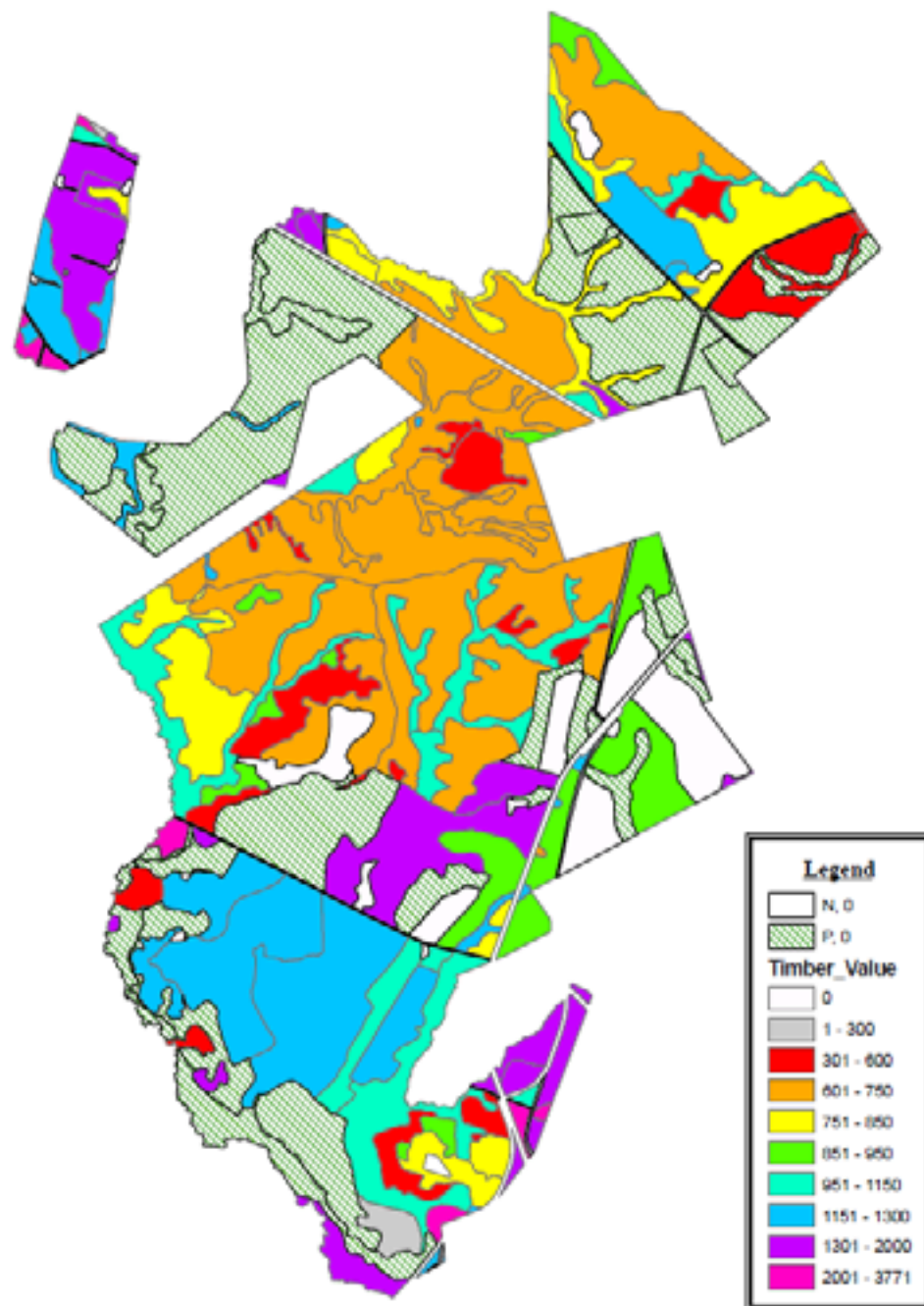
Process

Make stand changes to polygons

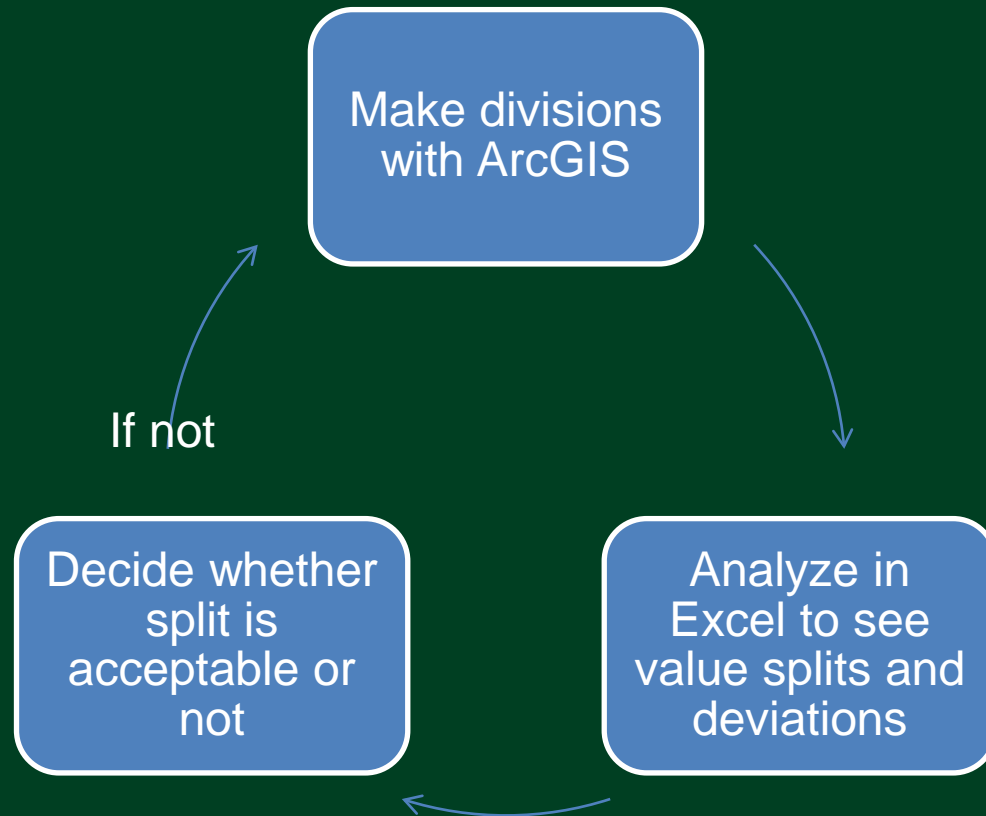
Process data in Tcruise, export to Access table

Import points to ArcGIS, use SilvAssist and run overlay to assign polygon number to each point

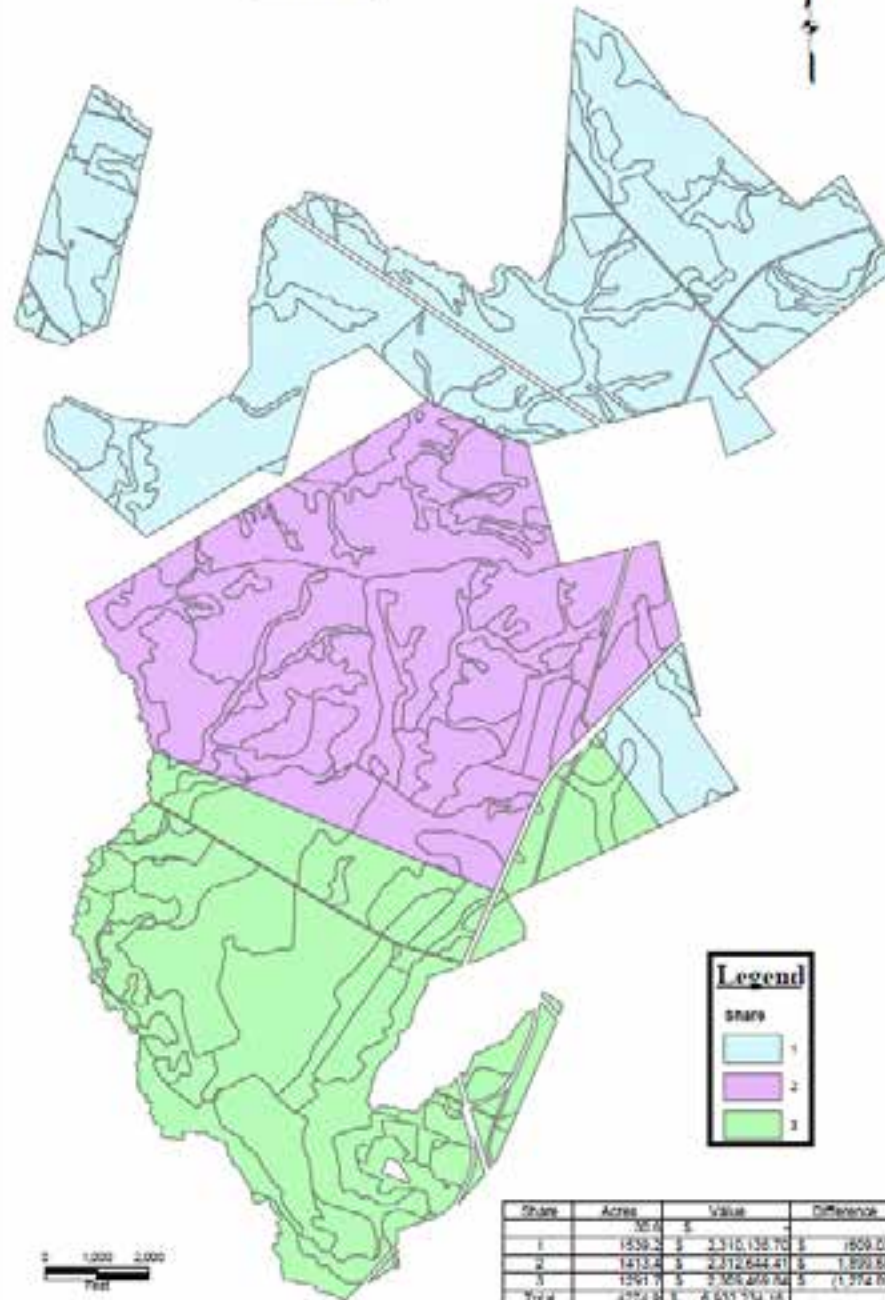
Process in Access to sum per acre timber values by point and average per acre point values by polygon



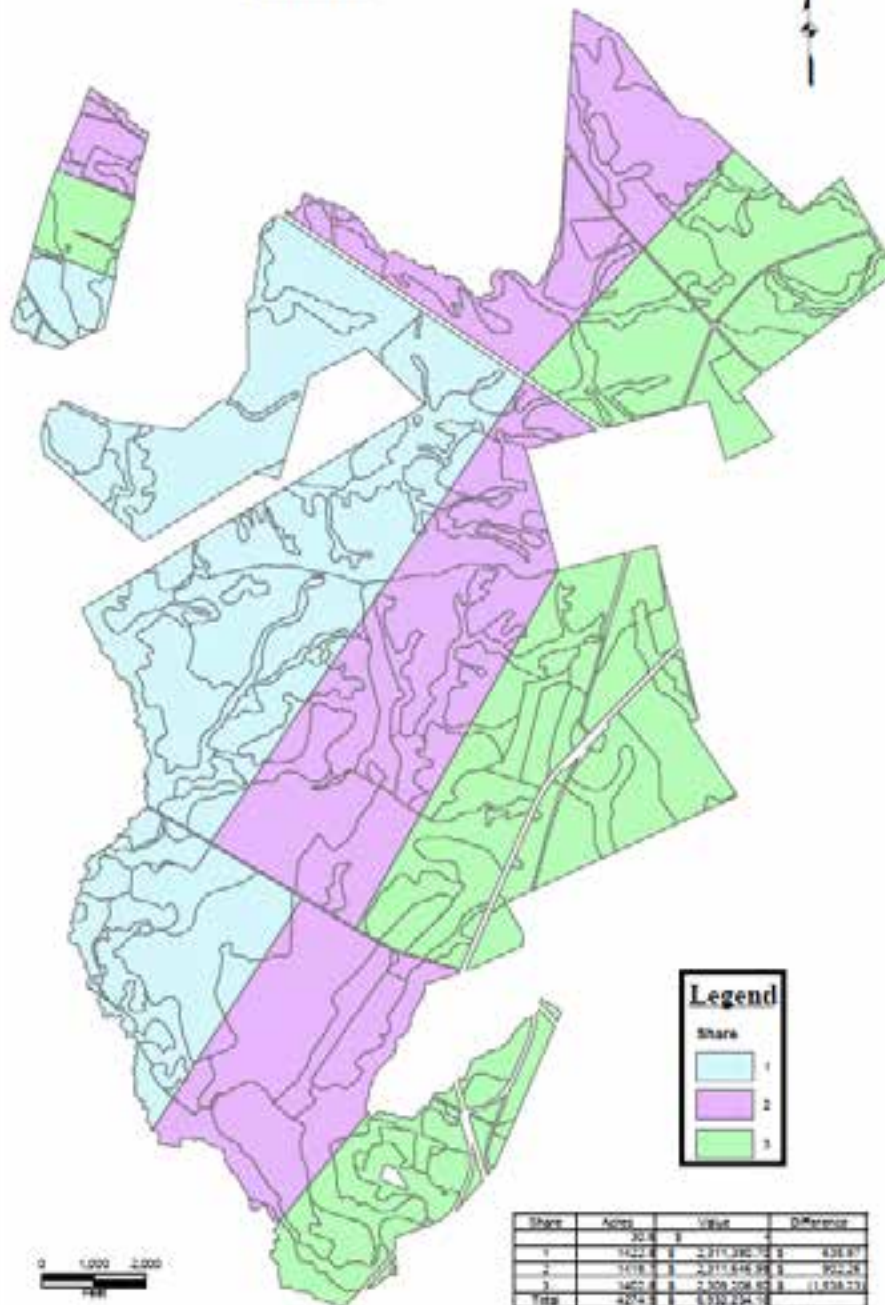
Analysis



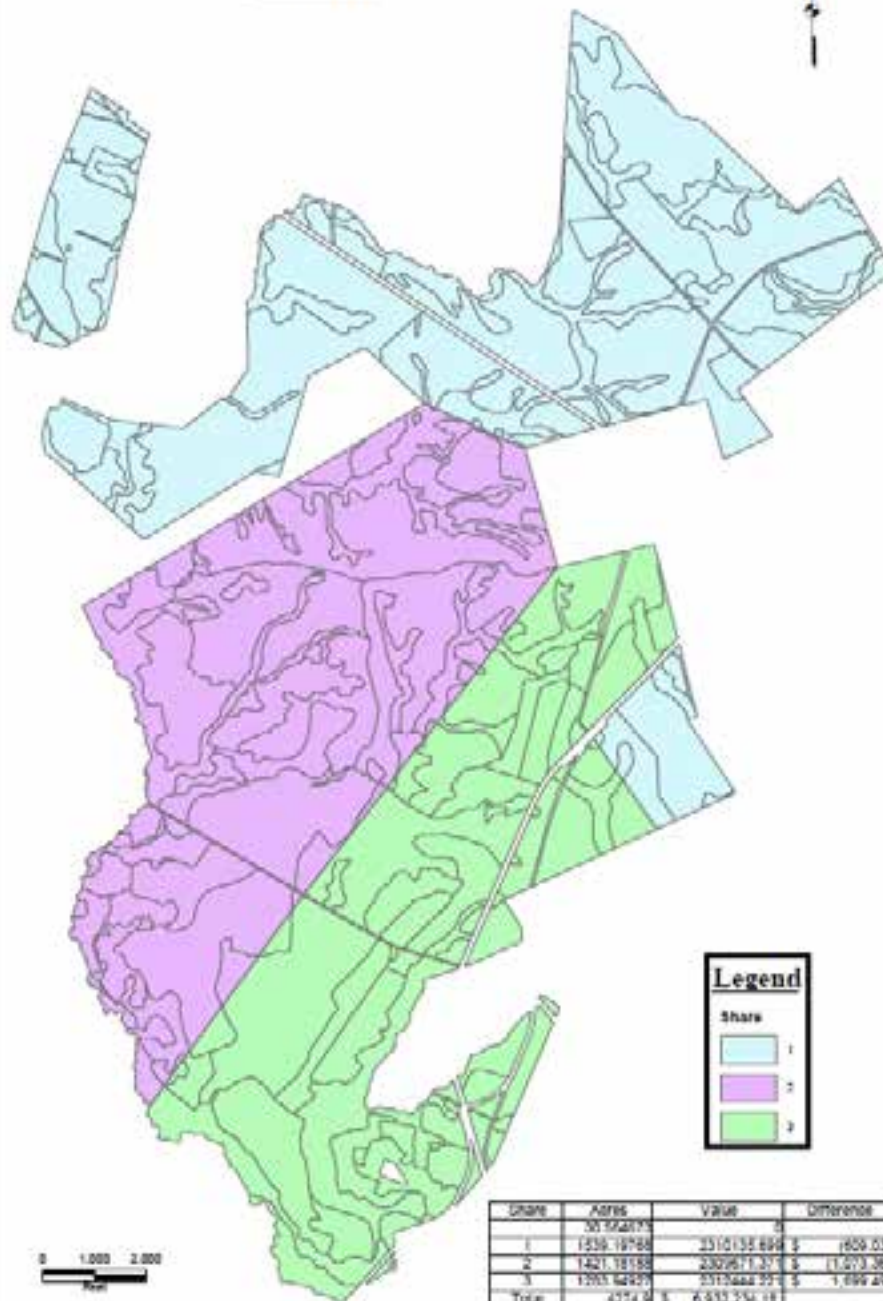
Partition 1



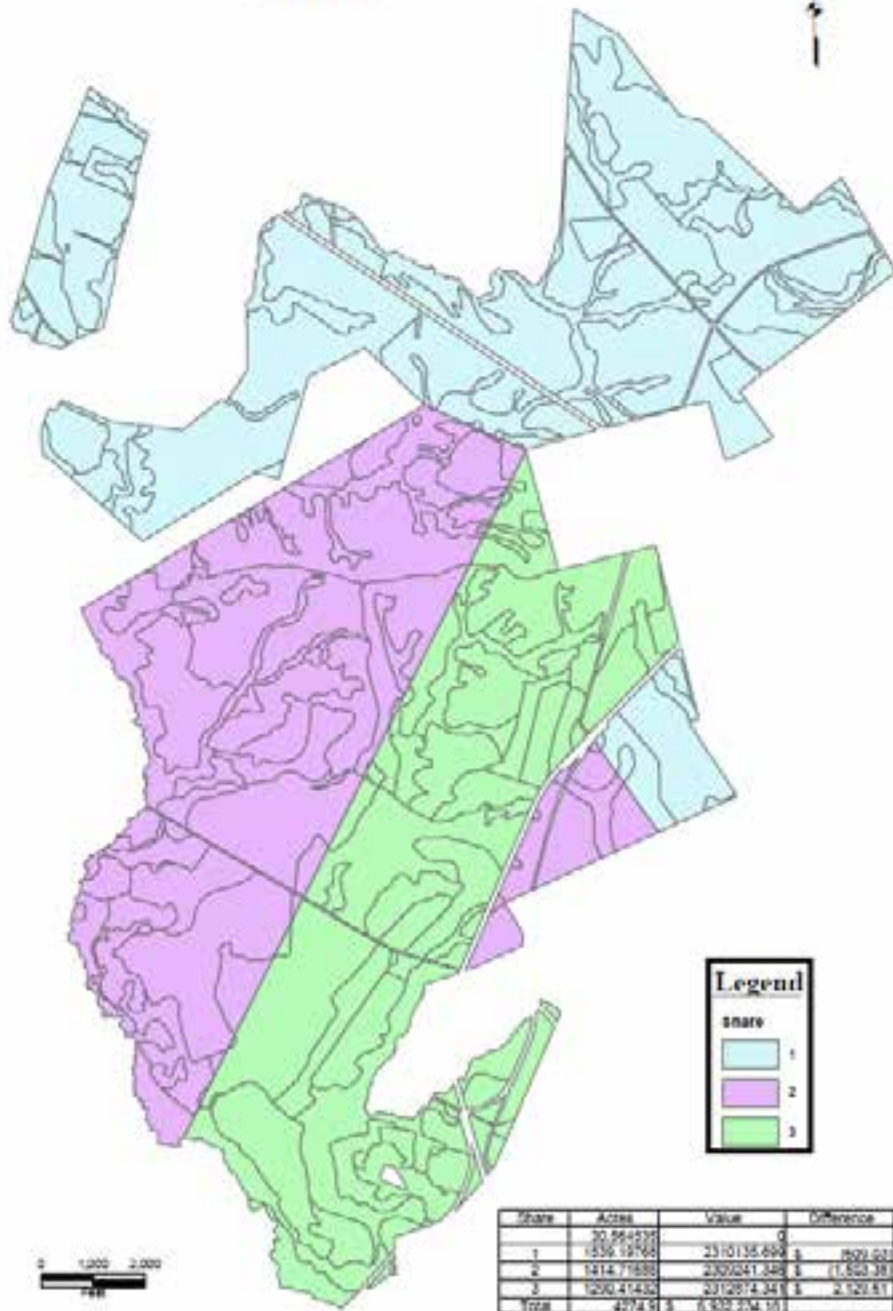
Partition 2

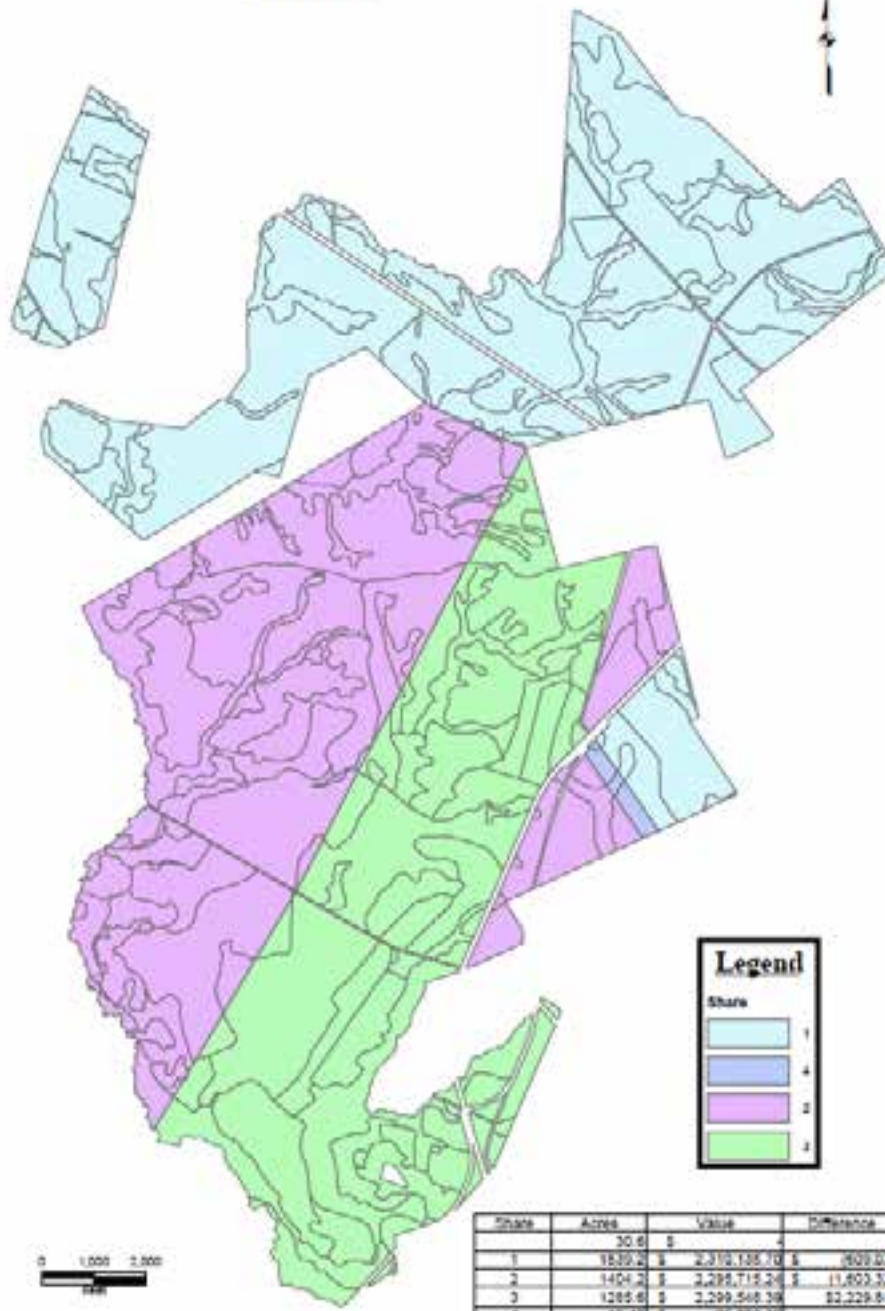


Partition 3



Partition 4





Final Values

Share	Acres	Value	Difference	Adjusted Difference	Comments
Roads	30.6	\$ -			
1	1539.2	\$ 2,310,135.70	\$ (609.03)	\$ (609.03)	Least Desirable
2	1404.2	\$ 2,295,715.24	\$ (15,035.32)	\$ (1,603.32)	
3	1285.6	\$ 2,299,548.39	\$ (11,202.17)	\$ 2,229.84	
4	15.4	\$ 26,852.36			
	4275	\$ 6,932,251.69			

Results

- Normally would have taken two weeks and results would have been approximately equal, at best.
- Using ArcGIS, RTI and SilvAssist yielded five division options with sub-acre value differences in less than one day.



**F4
TECH**

foresters leading innovation

