

# Enterprise GIS Solutions for Forest Management



2006 ESRI User Conference  
August 8, 2006

# Agenda

- Introductions
- Background
- Forecon TMS
- TIGERWeb™ Demo
- What the Future holds
- Questions?





## Introductions

**Mike Darr, Director for GIS & Database  
Management Services, FORECON, Inc.**

**[mdarr@foreconinc.com](mailto:mdarr@foreconinc.com)**

**Steve Ellis, Director of Commercial Solutions,  
GeoDecisions**

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# FORECON, Inc

## Founded in 1954

- A Multi-Disciplinary Forestry and Natural Resources Consulting Firm
- Provide Services to a Variety of Landowners; Small Private, Industrial, Institutional, Municipal, State and Federal





## FORECON, Inc

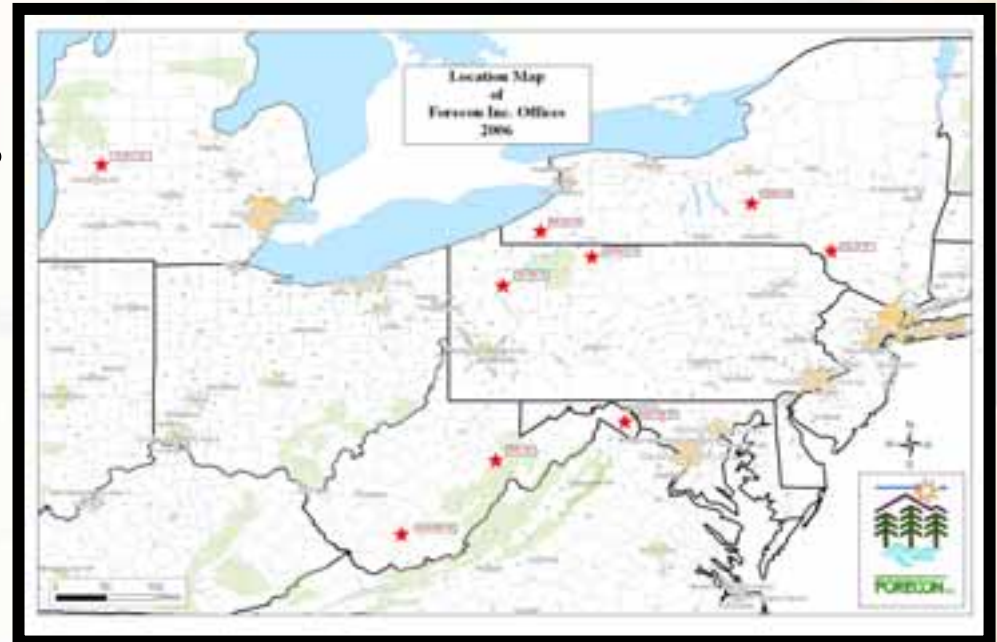
- Forest Land Management is Core Business
- Representative Expertise in Forestry, Wildlife Management, Ecosystems Markets (Carbon Sequestration), Forest Certification, and Growth & Yield Modeling (and Others)
- Developed Concept of Hardwood Database Management System to Provide Support for Institutional Forestland Investors





# FORECON, Inc

- Staff of Over 50
- Nine (9) Offices in NY, PA, WV & MI
- Recognized Leader in Hardwood Forest Mgt.
- GSA Schedule Contractor





# GeoDecisions

## Founded in 1986

- GIS Mapping and Analysis
- Out of Penn State University



## Subsidiary of Gannett Fleming 1992

- Support Engineering Operations
- Became Software Independent







# GeoDecisions

## 2002 GeoDecisions

- Operates as a Division of Gannett Fleming
- IT Company Specializing in Spatial Information







# GeoDecisions

- Staff of over 170
- 20 offices  
Nationwide
- Recognized leader  
in GIS industry
- ISO 9001 Certified



## Forecon TMS

- Need for moving forward
  - Coverage based GIS
  - Antiquated tools
- Phase Approach
  - Needs Assessment
  - Implementation plan

# GIS Needs Assessment

- Outline the future
- Develop usable modules
- Dynamic document





# Enterprise GeoDatabase

- MS SQL Server
- ArcSDE 9
- Migrated Coverages
- Orthos and DRG's in Catalogs





## ArcMap Tools

- Client Management Tool
- Grid Tool
- Harvest Tool
- Field Data import utility





# ArcMap – Client Management

- Import legacy Data
- Create new owner databases





## ArcMap – Grid Tool

- Generate Cruise Grids
- Specific Spacing & Direction
- Auto Attributing to Stands/Tracts
- Auto Numbering

## ArcMap – Harvest Tool

- Maintain Topology
- Generate Harvest polygons
- Creates historical layers
- Merge Stands



## ArcMap - Field Data Import Utility

- Import field inventory data collected on handheld devices
- Maintains data integrity







# TIGER Desktop™

- Stand Typing routines
- Growth
- Reporting





## TIGER Desktop™ - Stand Typing

- Generates Stand Types from Inventory information
- Creates Stand Type Profiles





# TIGER Desktop™ - Growth

- Multiple Variants of USFS TWIGS Model
- Multiple Log Rules
- Multiple Volume Units





# TIGER Desktop™ - Reporting

- Reporting at all levels
- Stand and Stock Tables
- Quarterly or Annual Reporting
- Initial Inventory Volumes







# TIGERWeb™

- Mapping
- Growth
- Reporting
- Ad-Hoc Harvest Routine and Summary
- Administration



# TIGERWeb™ - Mapping

- Client Data layers
- Basemap Reference Layers
- Orthophotos
- USGS Topo
- User defined selections for
  - Reporting
  - Growth
  - Summaries



# TIGERWeb™ - Growth

- Multiple Variants of USFS TWIGS Model
- Multiple Log Rules
- Multiple Volume Units
- Export to
  - PDF
  - HTML
  - EXCEL

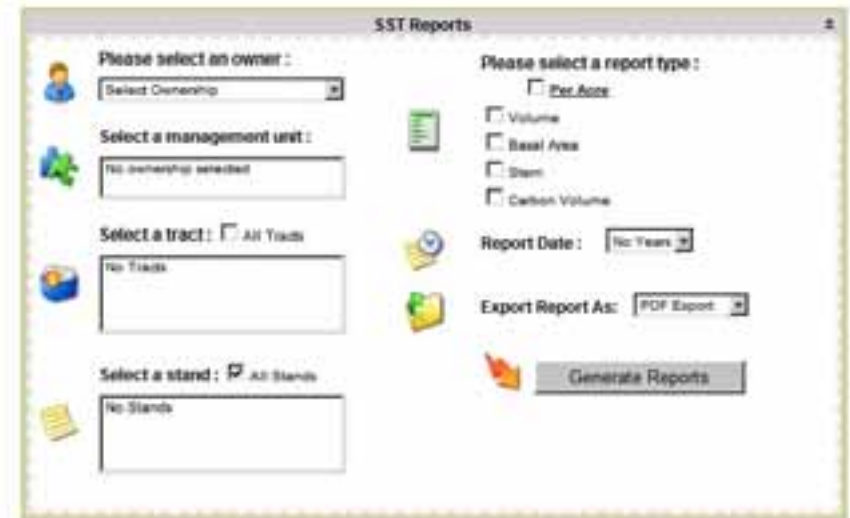


The screenshot shows the 'Adhoc Growth' web application interface. It features several sections for user input:

- Please select an owner:** A dropdown menu labeled 'Select Ownership'.
- Select a management unit:** A text box containing 'No ownership selected'.
- Select a tract:** A text box containing 'No Tracts' and a checkbox for 'All Tracts'.
- Select a stand:** A text box containing 'No Stands' and a checked checkbox for 'All Stands'.
- Please select a report type:** A section with a 'Per Area' checkbox and three unchecked checkboxes: 'Volume Report', 'Basal Area Report', and 'Carbon Report'.
- Projection Year:** An empty text input field.
- Export Report As:** A dropdown menu set to 'PDF Export'.
- Log Rule:** A dropdown menu set to 'Doyle'.
- Growth Variant:** A dropdown menu set to 'NE-TWIGS'.
- Saw Units:** A dropdown menu set to 'MBF'.
- Pulp Units:** A dropdown menu set to 'Tons Dry'.
- Generate Reports:** A button at the bottom right.

# TIGERWeb™ - Reporting

- Reporting at all levels
- Stand and Stock Tables
- Quarterly or Annual Reporting
- Export to
  - PDF
  - HTML
  - EXCEL



The screenshot shows the 'SST Reports' web interface. It features several sections for user input:

- Please select an owner:** A dropdown menu labeled 'Select Ownership'.
- Select a management unit:** A text input field with the placeholder 'No ownership selected'.
- Select a tract:** A text input field with the placeholder 'No Tracts' and a radio button for 'All Tracts'.
- Select a stand:** A text input field with the placeholder 'No Stands' and a radio button for 'All Stands'.
- Please select a report type:** A section with checkboxes for 'Per Acre', 'Volume', 'Basal Area', 'Stems', and 'Carbon Volume'.
- Report Date:** A dropdown menu set to 'No Years'.
- Export Report As:** A dropdown menu set to 'PDF Export'.
- Generate Reports:** A button with a printer icon.



## TIGERWeb™ - Administration

- Set user
  - Roles
  - Permissions
  - Privileges
- Define viewable data and limits by ownership rights
- Defines accessible services by subscription level





# TIGERWeb™

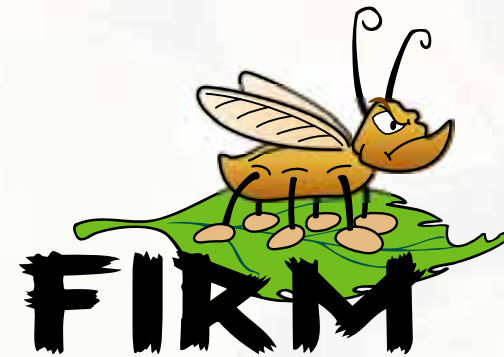
Live Demo

[TIGERWebPortal.net](http://TIGERWebPortal.net)



## What the Future Holds

- Forest Insect Reporting & Mapping (**FIRM™**)



- Timberland Realty (**TLR™**)



