FIA User Flash Session

2018 National FIA Users Group Meeting and Carbon Day Event
Goals and objectives:

- To learn something about FIA data users
- To demonstrate how FIA data users are applying FIA data to their organization’s needs
- To provide input to the FIA program on potential expansion of the FIA program to meet their current and future data need
How is this going to work?

- The order of the presenters was selected at random
- Each presenter will be given 7 to 9 minutes to present 3 slides that respond to 3 specific questions (details next slide)
- There will be a short time for 1 to 2 clarifying questions or comments while the next presenter moves to the “stage”
- A summary of the flash session will be presented tomorrow – Wednesday April 25 at 3:00 pm
Three Questions for Each Presenter

- Who you are and what does your organization do?
- An example of how you have used FIA data in to answer (or partially answer) questions important to you and your organization.
- Complete the following statement:
  
  If FIA data could do __________ at this scale, it would benefit my organization” or If I could combine FIA data (this or the data variables – fill in the blank __________) with this data source (fill in the blank) ____________, to answer this question (pose the question – fill in the blank ____________), it would meet some of my organization’s needs.

Note: you may have to define the scale at which you would like to answer the question.
Fantastic Information Applied!

Sherri Wormstead
Sustainability & Planning Coordinator
USDA Forest Service
Northeastern Area, State and Private Forestry
Use of FIA Data

- To inform strategic planning
- Forest health risk applications
- For State Forest Action Plan assessments (revisions due June 2020!)
Some FIA Wishes

- Continue regional-level reporting and analysis, e.g., Northern Forest Futures
- Continue dynamic, online display of trends at State- and regional-levels and seamless
- Seamless across urban to rural continuum
- Invasive plant distribution at various scales
Who are you and what does your organization do?

• Burl Carraway
• Sustainable Forestry Department Head, Texas A&M Forest Service
• Southern representative on FIA Management Team
• Texas state forestry agency
An example of how you have used FIA data to answer important questions

• Is ______ a viable site for a sawmill? How will competition affect the supply?
  • FIA data formed basis of supply projections for feasibility analysis
    • Volume and growth of sawtimber in supply area of potential site
    • Volume and growth of sawtimber in overlapping portions of supply areas of competing mills
    • Combined (along with removals data) to project supply for potential mill site over 20 years, accounting for effects of competition
If FIA could...

• If FIA could **process** Urban FIA data **faster**, it would benefit my organization
• If FIA could **provide differentiated** private ownership **information**, it would benefit my organization
• If FIA could **do more change estimates and at multiple time scales**, it would benefit my organization
• If FIA could **do DWM evaluations on a rolling basis**, it would benefit my organization
• If FIA could **do DWM at a finer scale (map?)**, it would benefit my organization
Who you are and what does your organization do?

• Andy Stoltman

• Wisconsin DNR extensively uses FIA data
  • 2X intensity
  • Continuous Forest Inventory on designated state forests
  • Urban FIA statewide and intensified
  • Forest regeneration monitoring, based on the P2+ regen protocol

• We use these data for:
  • Woodbasket analyses
  • Monitoring trends in insects and diseases, GRM, ownership etc.
  • Inform policies, guidance, statues handbooks etc.
  • Most importantly, these data inform sound management practices
An example of how you have used FIA data in to answer (or partially answer) questions important to you and your organization.

Southwestern Wisconsin woodbasket analysis

• Decrease in northern red oak harvest and utilization
• Increase in white oak harvest and utilization
• Concentration on black walnut management
• General under-utilization of all species and size classes (G/R ratio of 2.77)

• Our Forest Products Team is focusing on how to promote the utilization of wood products in this area
If I could combine FIA data with the TPO data to answer by species, where is supply meeting, exceeding or falling short of demand? it would meet some of my organization’s needs.
CA Forest Carbon Inventory and FIA

Nadia Tase
Senior Environmental Scientist
Climate Change and Forest Inventory
Fire and Resources Assessment Program
CA Dep’t of Forestry and Fire Protection
nadia.tase@fire.ca.gov
Carbon flux: Pool, owner

California forest land statewide estimate of average annual carbon flux (MMT CO₂e/yr) by pool and ownership, 2001-2005 to 2011-2015.

- Live trees
- Dead trees
- Roots
- Understory
- Down woody debris
- Soils
- Net annual flux (95% CI)

5 MMT CO₂e/yr
AB1504 Target

Million metric tons CO₂e/year

National Forests
Other Federal
State and Local Gov.
Private - Corporate
Private - Noncorporate
All Ownerships
Carbon flux:
Live trees, disturbance, owner (per acre)
Carbon flux: Live trees, region, disturbance

![Graph showing carbon flux in different regions.]

- **Growth**
- **Cut**
- **Mortality**
- **Net Flux (± 95% CI)**

**Regions**:
- Central Coast - Interior Ranges
- Central Valley
- Eastside
- Klamath Interior - Coast Ranges
- North Coast
- Sierra - Cascades
- South Coast Mountains - Deserts
FIA Wish List

- Smaller scales
- Improving errors
- More frequent estimates
- Land-use change estimates
- Urban forests
CA Forest Carbon Reports available at:
http://bof.fire.ca.gov/board_committees/ab_1504_process/
Marbled murrelet habitat change in Oregon

Steve Prisley, Principal Research Scientist
NCASI
Marbled murrelet habitat in Oregon: 50+ year-old forest within 50 miles of coast

Annual acres added to 50+ year-old forests in coastal OR: 94,000
Annual harvest acres in 50+ year-old forests: 28,000
Net recruitment: 66,000 acres annually
If FIA data could...

be easily queried for past silvicultural or disturbance events,

Then, it would benefit all who wish to monitor rates of harvest/utilization or disturbance of forest resources.

But it should:

• Include type of activity/disturbance (e.g., partial vs. clearcut harvest)

• Retain information for life of the stand (multiple inventory cycles)

• And be easily accessible (auxiliary table linked to condition CN?)
NJFS FIA Usage Examples

Emerald ash borer (Agrilus planipennis)
Emerald ash borer, native to Asia, was introduced in North America in the 1990s and first reported causing widespread decline and mortality in trees of the ash genus (Fraxinus) in Detroit, Michigan in 2002. It was then reported in the states of Ohio, Indiana, Illinois, Maryland, Missouri, Pennsylvania, Virginia, West Virginia, and Wisconsin. The distribution of EAB is due to unknowingly transporting infested ash nursery stock and forest products such as firewood and unprocessed logs (USDA Forest Service, 2002).

The adult beetles are less than a penny in size and are bronze, golden, or reddish-green with darker metallic green wing covers. EAB feeds on ash foliage for a few weeks before a 1-year life cycle. Peak activity occurs in mid-June and early July with adult activity occurring throughout the day. Eggs are deposited individually in bark crevices under bark flaps of twigs or branches. After 7-10 days the larvae hatch; they chew the bark and into the phloem and cambial layer where they feed and overwinter. Pupation occurs in late April or May. The adults then exit the tree and form a characteristic D-shaped exit hole 3-4 mm in diameter (USDA Forest Service, 2002).

Three Ways New Jersey Forests Can Help Stabilize Our Global Climate

Jersey Department of Environmental Protection

New Jersey Forest Service
2018
If I could combine FIA Data with...

to provide insights in a scalable way.

It would meet some of my organizations needs.
Timber Flow & Milling Capacity

- County of origin & destination
- Product type
- Species
- Ownership class
"If FIA data could provide timber volumes delivered to mills by ownership class and product at the state, county, individual national forest, or individual mill scales, it would benefit the organization (NFS) I work for."

<table>
<thead>
<tr>
<th>NFS Region</th>
<th>FIA Region</th>
<th>% of annual cut vol.</th>
<th>% of annual cut $</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-4</td>
<td>IW</td>
<td>26</td>
<td>15</td>
</tr>
<tr>
<td>5,6,10</td>
<td>PNW</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>8</td>
<td>SRS</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>9</td>
<td>NRS</td>
<td>18</td>
<td>25</td>
</tr>
</tbody>
</table>

NFS timber harvest & economic impacts are NOT just western issues!
Alec Kretchun

- Research Staff, Portland State University
- Research focuses on forest ecology and landscape modeling
- How does forest management interact with disturbances such as wildfire and insect attacks?
- What are the boundaries of management influence in a ‘no analog’ future?
- Frequently funded by US Forest Service grants
FIA in Lake Tahoe

- “The goal of the Lake Tahoe West Restoration Partnership is to restore the resilience of the west shore's forests, watersheds, recreational opportunities, and communities to such threats”

- LANDIS-II landscape modeling
  - Scenario based
  - Management decision effects
  - Disturbance regime changes

LANDIS-II

FIA

FIA plot data x forest type map (FCCS) = Initial conditions

Region-specific allometry

External models
Wildlife, water quality, smoke emissions, etc
FIA in Lake Tahoe

“If FIA data could do __________ at this scale, it would benefit my organization”

Wish List

- Region or landscape –specific growth estimations by species
- Region or landscape-specific relationships between age, DBH, and biomass
- Readily available gradient nearest neighbor (or other imputation) vegetation maps drawn from plots within a specific region or landscape

FIA plot data x forest type map (FCCS) = Initial conditions

LANDIS-II

Region-specific allometry

External models Wildlife, water quality, smoke emissions, etc
The DNR manages 5.4 million total acres, 2.75 million acres of which are commercial timberland.

State lands contribute up to 1/3 of the total statewide harvest of ± 2.8 million cords.

FIA is one of the primary data sources for monitoring and assessment of the state’s forests, especially across ownerships.

MN DNR currently measures FIA plots on a 5-year double intensity cycle (~ 1,350 plots annually)
FIA is Our Window to Other Ownerships

- FIA provides insight into a wide variety of attributes across ownerships such as; harvest amounts and net growth. Allowing us to estimate growth to harvest ratios (top right).

- FIA provides total resource assessment allowing us to break it out by categories of interest, such as aspen age class distribution by owner (bottom right).
If I could combine FIA ownership classes with:

The timber products output (TPO) information, I could better manage state lands to meet timber needs where output from other owners is insufficient given the market.

Combining these data sets would allow me to provide assessments of questions such as:

- What products are other owners producing?
- What product markets can state lands take advantage of to increase value for its timber?
- Do we have the growth for desired species to support movement into these markets.
Next Steps

- General questions and discussions
- A summary of the flash session will be presented tomorrow – Wednesday April 25 at 3:00 pm
- Thanks to all of our presenters
What did we hear?

- Regional-level reporting
- Trend information at multiple scales
- Ability to access detailed private ownership data
- Small scale estimates – DWM, Invasive plant data, etc. in multiple formats including map-based
- Land-use change estimates
What did we hear?

- Integration of FIA data with various types of remotely-sensed data
- More frequent data collection
- More intensive plot distribution
- Integration of FIA plot data with TPO data including estimates of production from different ownerships
What did we hear?

- Urban FIA
- Silvicultural procedures at the plot-level across multiple plot measurements
- Growth estimation by species
- Reduce time for data processing
- Improve errors and/or reducing uncertainties
- Simple data query system to access plot data from multiple measurements
FIA User Flash Session –
Your Comments

Send to Bill Burkman at bburkman@fs.fed.us