FIA Program
Accomplishment & Coordination

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USDA Forest Service

Forest Inventory and Analysis Program
Forest Inventory and Analysis (FIA) Program

Monitoring U.S. forests since 1928
“make and keep current a comprehensive inventory and analysis of the present and prospective conditions and requirements of the renewable resources of the forest and rangelands of the United States”

- 1928 McSweeney/McNary Act
- 1978 Research Act
Sec 3 (e) Forest Inventory and Analysis shall

(1) Establish a program to inventory all U.S. forest land
(2) Prepare 5-year reports for each State
(3) National standards and definitions
(4) Protect private property rights
Farm Bill 1998/2014 & 2018

The Nation’s Forest Census

• Added annual inventories
• Emphasized annual data available to public within 6 months
• 2014 Farm emphasized completing the 98FB and added some specific language
• TPO, NWOS, LULC, Biomass/Carbon, Urban

Forest Inventory and Analysis Program
FIA monitors over 766 million acres of forest in 12 time zones

From the Artic Circle to the Tropic of Capricorn.

From the Virgin Islands to Palau, west of Sidney
Value of User Groups, Partners and Contractors

- User groups promote program ownership
  - Users and partners know what they need
- Partners improve program delivery
  - and create useful value-added products
- How we all as partners contractors can reduce program cost
  - and improve program delivery
Strategic features

- A standard set of variables with consistent meanings and measurements
- Inventory of all forested lands
- A national sampling design and plot configuration
- A systematic, annual sample of each state
- A national database with user friendly access
The basics of the FIA sample design

Sample P3 hexagon divided into P2 hexagons, panels (years) assigned to P2 hexagons. Increased intensity plots shown.
Overall progress and 2018 Farm Bill

- FIA is in the 21\textsuperscript{th} year of annualized inventory
- 50 States including interior Alaska [+7 island groups]
- Accountability has been institutionalized
- Information systems continue to be a challenge
- Have implemented needs from the 2014 Farm Bill
- 2018 Farm Bill emphasized one portion of the 2014 FB…….continued integration of remote sensing
- Congress and partners continue to be engaged
<table>
<thead>
<tr>
<th>YEAR</th>
<th>BUDGET</th>
<th>TARGET</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>$20M</td>
<td>$72M ALL STATES 7-east/10-west cycle</td>
</tr>
<tr>
<td>1999</td>
<td>$33M</td>
<td>$72M</td>
</tr>
<tr>
<td>2004</td>
<td>$56M</td>
<td>$72M</td>
</tr>
<tr>
<td>2009</td>
<td>$65M</td>
<td>$72M</td>
</tr>
<tr>
<td>2011</td>
<td>$71M</td>
<td>$78M Target updated for inflation</td>
</tr>
<tr>
<td>2015</td>
<td>$70M</td>
<td>$78M Original Plan (Option A and B in 2015 Plan)</td>
</tr>
<tr>
<td>2016</td>
<td>$75M</td>
<td>$78-92M (Option C is $14million)</td>
</tr>
<tr>
<td>2017</td>
<td>$77M</td>
<td>$78-92M (TPO, Carbon, Ownership, LU/LC, Urban)</td>
</tr>
<tr>
<td>2018 &amp; 19</td>
<td>$77M</td>
<td>$78-92M (same as above)</td>
</tr>
</tbody>
</table>
**FIA Field Costs and State Agreements**

<table>
<thead>
<tr>
<th>Year</th>
<th>FIA Appropriation in Millions</th>
<th>Field Expenses in Millions</th>
<th>State Grants and Agreements in Millions</th>
<th>State Partner Contributions in Millions</th>
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</thead>
<tbody>
<tr>
<td>2009</td>
<td>65.5</td>
<td>28.2</td>
<td>6.9</td>
<td>7.1</td>
</tr>
<tr>
<td>2010</td>
<td>71.8</td>
<td>29.7</td>
<td>7.3</td>
<td>7.5</td>
</tr>
<tr>
<td>2011</td>
<td>71.4</td>
<td>30.9</td>
<td>8.0</td>
<td>9.1</td>
</tr>
<tr>
<td>2012</td>
<td>69.1</td>
<td>28.4</td>
<td>7.5</td>
<td>10.1</td>
</tr>
<tr>
<td>2013</td>
<td>65.5</td>
<td>26.7</td>
<td>5.3</td>
<td>7.8</td>
</tr>
<tr>
<td>2014</td>
<td>66.8</td>
<td>27.6</td>
<td>7.1</td>
<td>8.1</td>
</tr>
<tr>
<td>2015</td>
<td>70</td>
<td>26.5</td>
<td>5.2</td>
<td>8.9</td>
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<tr>
<td>2016</td>
<td>75</td>
<td>30.9</td>
<td>8.4</td>
<td>10.1</td>
</tr>
<tr>
<td>2017</td>
<td>77</td>
<td>32.1</td>
<td>8.9</td>
<td>10.9</td>
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<tr>
<td>2018</td>
<td>77</td>
<td>30.8</td>
<td>9.6</td>
<td>11.1</td>
</tr>
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</table>
### FIA Station Allocations

<table>
<thead>
<tr>
<th></th>
<th>NRS</th>
<th>SRS</th>
<th>IW-RM</th>
<th>PNW</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>14 states</td>
<td>10 states</td>
<td>2 states</td>
<td>2 states</td>
</tr>
<tr>
<td>2005</td>
<td>24 states</td>
<td>11 states</td>
<td>5 states</td>
<td>3.5 states</td>
</tr>
<tr>
<td>2011</td>
<td>all 24</td>
<td>all 13</td>
<td>all 8</td>
<td>3.5/5</td>
</tr>
<tr>
<td>2016</td>
<td>same</td>
<td>same</td>
<td>same</td>
<td>Add</td>
</tr>
<tr>
<td>interior AK</td>
<td>same</td>
<td>same</td>
<td>same</td>
<td></td>
</tr>
<tr>
<td>2017/18</td>
<td>same</td>
<td>same</td>
<td>same</td>
<td>same</td>
</tr>
</tbody>
</table>

Appropriation in **2011** was $71.4M, in **2016** $75M, in **2017/18/19** $77M

Since FY16 FIA station distributions reflect first area update since early 2000’s (reflects more acres in SRS and interior AK)

<table>
<thead>
<tr>
<th></th>
<th>NRS</th>
<th>SRS</th>
<th>IW-RM</th>
<th>PNW</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>$17.16M</td>
<td>$16.44M</td>
<td>$14.7M</td>
<td>$14.89M</td>
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<tr>
<td>2016</td>
<td>$16.9M</td>
<td>$17.65M</td>
<td>$13.8M</td>
<td>$15.96M</td>
</tr>
<tr>
<td>2017/18</td>
<td>$17.7M</td>
<td>$18.18M</td>
<td>$14.2M</td>
<td>$16.49M</td>
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</table>

Forest Inventory and Analysis Program
Update on Staffing/Hiring

FIA and State partners continue to be in hiring mode.

<table>
<thead>
<tr>
<th>Year</th>
<th>FTEs FIA</th>
<th>FTEs States</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>352</td>
<td>213</td>
</tr>
<tr>
<td>2017</td>
<td>341</td>
<td>209</td>
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<tr>
<td>2018</td>
<td>339</td>
<td>220</td>
</tr>
</tbody>
</table>

Looking to alternatives to federal hiring

More funding for data collection agreements

FIA continues to upfront state agreements at full annual level
Option C: TPO

- Annualized TPO sample design published in Forest Science in 2018
- National TPO database
- Work with industry directly where possible
- As with FIADB produce data and estimates within 6 months
- Currently $1M of the $1.5M needed
- 67% of target
Option C: Carbon/Biomass

- FIA has been working on new individual tree volume/biomass/carbon data collection and modeling efforts since 2013.
- Sequestration slowed us and return to fuller funding has greatly aided the effort.
- $450k per year over last 4 years
- Due to be completed in 2020 and hand off to the IM coding team.
- 90% of target
Option C: NWOS

- NWOS on time with traditional survey
- Additions include large corporate survey, urban survey
- Funding since 2014 consistent
- Short one analyst
- 50% of target
Option C: Land Cover/Land Use

- 2018 Farm Bill Emphasizes further integration of remote sensing
- ICE, LCMS, NLCD Tree Cover
- NAIP interpretation in 33 states in support of all products (CA, CO, CT, DE, GA, HI, IL, IN, IA, KS, MI, MO, MA, MD, MN, ND, NJ, NY, NV, NC, NE, NH, OH, OR, PA, RI, SD, TX, UT, VT, WA, WV, WI)
- 60% of target
- LCMS model-based disturbances of cover
- NAIP based measurement of LU and cover.
Option C: Urban FIA

- $1 million of the $3.4 million.
- Full funding ($3.4 of $83 million)
- 786 Plots $650,600 Estimated Cooperator Contribution
- 35 out of 100 cities
- 35% of target
Element 7: Engage in non-Federal IT

- Working with ESRI on the Digital Engagement/Atlas/Forest in Focus
  - 2014-16 $0
  - 2017 $400k
  - 2018 $280K
  - 2019 projected at FY18 level
  - 30% of target
FIA Sampling and Estimation

The Nation’s Forest Census