



United States
Department of
Agriculture

Forest
Service



Forest Inventory And Analysis 2000 Business Summary





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Dear FIA Partners:

The Forest Inventory and Analysis (FIA) program is the key Forest Service program that provides the information needed to assess status and trends of the Nation's forests. We collect and report information which addresses topics such as the extent, size, and species composition of forests; forest growth and mortality rates; forest land ownership patterns; rates and efficiency of wood utilization; and forest health and sustainability. This information is vital for a wide array of customers drawn from public and private environmental organizations, business enterprises, researchers, consultants, and private citizens. This business report summarizes FIA program activities in fiscal year 2000, covering the period October 1, 1999, through September 30, 2000. It is intended to provide our customers and stakeholders with a snapshot of past activities and future program direction.

In 2001 we implemented the annual FIA program in seven new states. This means that 42 percent of the Nation is now covered by the annual FIA program, up from 21 percent of the Nation in 1999. We produced 123 publications and reports on the Nation's forested resources, an increase of 32 publications over 1999. We completed integration of the phase-three (formerly Forest Health Monitoring) sample plots into the FIA program and extended phase-three coverage to all annual FIA states. We negotiated agreements with the National Association of State Foresters and with the National Forest System of the USDA Forest Service to clarify our collaboration in program implementation. We almost doubled the amount of contributions leveraged by program partners, from \$4.6 million in 1999 to \$7.4 million in 2000, and we increased our funding of grants and agreements by nearly a factor of four, from \$2.2 million in 1999 to \$8.3 million in 2000.

In 2001 we intend to continue expanding the annual inventory program to over 65 percent of the country; enter into new partnerships to incorporate satellite imagery in our operational inventory program; continue to increase our investments in analysis and reporting capabilities to keep up with increased data collection; and continue to reduce the reporting cycle toward the target of one report per state every 5 years.

The success of the FIA program depends upon the support of our customers and partners. On behalf of the FIA program thank you for your continued support.

Sincerely,

ROBERT LEWIS JR.
Deputy Chief for Research
& Development



Contents

| | <i>Page</i> |
|--|-------------|
| Introduction | 1 |
| Changes from Business Reports of Previous Years | 1 |
| 2000 Program Highlights | 2 |
| Outputs and Products | 2 |
| Program Changes | 3 |
| Program Resources | 4 |
| Partner Contributions | 6 |
| 2000 Regional Highlights | 9 |
| South | 9 |
| West Coast | 9 |
| Interior West | 10 |
| North Central | 10 |
| Northeast | 10 |
| National Office | 11 |
| Multi-Resource Applications of FIA Data | 12 |
| Grants and Agreements | 13 |
| Comparing 2000 FIA Accomplishments With Our 1999 Goals | 14 |
| 2001 FIA Program Direction | 15 |
| Long-Term Strategic Direction | 17 |
| Conclusions | 18 |
| Appendix | 19 |
| Glossary of Terms Used in Report Tables | 19 |
| Tables (1-5) | 21 |

INTRODUCTION

The Forest Inventory and Analysis (FIA) program of the USDA Forest Service provides the information needed to assess the status, trends, and sustainability of America's forests. This report, which summarizes program activities in fiscal year 2000 (October 1, 1999, through September 30, 2000), gives our customers and partners a snapshot of past activities, current business practices, and future program directions. It is designed to increase our accountability and foster performance-based management of the FIA program. (Note: This business report does not include statistical information about the forests of the U.S.; if you are interested in such information, please contact the appropriate regional or national FIA office listed on the back cover of this report.)

The FIA program collects, analyzes, and reports information on the status and trends of America's forests: how much forest exists and where, who owns it, and how is it changing, as well as how the trees and other forest vegetation are growing and how much of the forest has died or been removed in recent years. This information can be used in many ways, such as in evaluating wildlife habitat conditions, assessing sustainability of current ecosystem management practices, monitoring forest health, supporting planning and decisionmaking activities undertaken by public and private enterprises, and predicting the effects of global change. The FIA program combines this information with related data on insects, diseases, and other types of forest damage to assess the present health and potential future risks to forests. The program also projects what forests are likely to be like in 10 to 50 years under various scenarios, for evaluating whether current forest management practices are sustainable in the long run and whether current policies will allow our grandchildren and their grandchildren to enjoy America's forests as we do today.

CHANGES FROM BUSINESS REPORTS OF PREVIOUS YEARS

The Strategic Plan for Forest Inventory and Monitoring calls for integrating the Forest Health Monitoring (FHM) plots into the FIA program. We completed this in 2000, incorporating the FHM plots as a subsample of the larger set of FIA plots. These former FHM plots are now referred to as "phase-three" plots to distinguish them from the larger sample of basic or "phase-two" FIA plots. However, from now on, both phase-two and phase-three plots are considered to be part of the FIA program and will be reported on accordingly. Along with moving the responsibility for implementing the phase-three plots into FIA, we have moved the financial resources and staffing needed to deliver that portion of the program. For this reason, some of the financial measures reported in this and future FIA business reports will not be directly comparable to previous years' measures that did not incorporate information about the phase-three plots.

Based on partner and customer feedback to our 1999 business report, we have also increased the level of detail in reporting contributions made by program partners outside of the Forest Service. We distinguish between two kinds of contributions. "Contributions towards the base program" include cash or in-kind contributions from external program partners that help deliver the basic FIA program outlined by Congress: 20 percent of all sample plots measured every year, with reports at 5-year intervals. "Contributions which add value" are contributions that do not directly support the base program but that enable partners to derive more value from the FIA program. Examples of the latter include State-sponsored sample grid intensifications and the addition of new measurements. Both kinds of contributions demonstrate the value that partners attach to the FIA program.

2000 PROGRAM HIGHLIGHTS

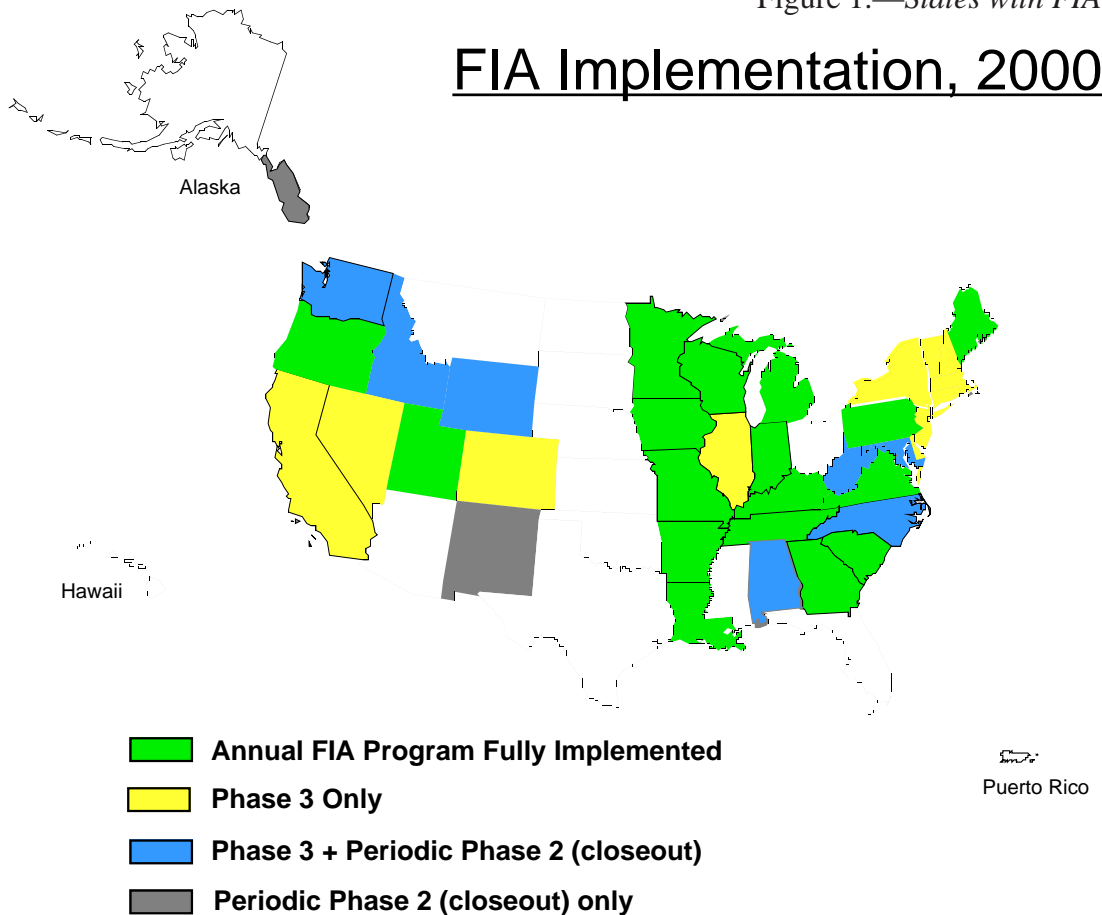
Outputs and Products

Table 1 (in the appendix) shows some comparisons across FIA regional units in the rates, cost, and performance of implementing the FIA program. Federal funding of the FIA program in 2000 totaled \$39,497,000, or approximately 67 percent of the funding needed to implement the base Federal FIA program. In addition, partners contributed an additional \$7,437,341 towards implementing or enhancing the FIA program. We were active in 38 States in 2000 (fig. 1), covering 25,433 phase-two and 2,916 phase-three sample locations, or 8 percent and 15 percent, respectively, of the total FIA sample locations nationwide (including forested and non-forested sample locations). At the end of 2000, 42 percent of the Nation was covered by the new annual FIA program, an increase from 21 percent in 1999. The FIA program produced 123 reports and publications in 2000,

32 more than in 1999. The publications included 3 State statistical reports, 1 State analytical report, 29 articles in peer-reviewed outlets, and 58 articles presented to colleagues at professional meetings.

We wrote a series of program fact sheets, available at our national Web site fia.fs.fed.us, to present general background on various aspects of our program. We also developed a demonstration FIA plot in cooperation with the Society of American Foresters. This demonstration plot, located on the SAF property in Bethesda, Maryland, is being used to inform national-level partners and supporters about the FIA program. In addition, we continued to develop our World Wide Web resources, increasing the programmatic information available on the Web site as well as servicing over 19,800 forest data retrievals and 5,400 timber product output data retrievals from our online databases.

Figure 1.—States with FIA fieldwork, 2000.



Program Changes

In 2000, the FIA program completed the second of 5 years of transition outlined in the Strategic Plan for Forest Monitoring written in response to the Agricultural Research, Extension, and Education Reform Act of 1998 (Public Law 105-185). By the end of 2003, we expect to implement an annual FIA program that measures at least 10 percent of all sample locations per year in Western States and at least 15 percent per year in Eastern States, with full reporting at 5-year intervals. This program is referred to as the “base Federal program” and is intended to be fully funded by the Forest Service. All States and other partners have the option to contribute the resources necessary to bring the program up to the full sample intensity of 20 percent per year or to make other value-added contributions such as funding new measurements or additional sample locations.

The Strategic Plan also addressed integrating the Forest Health Monitoring (FHM) program with the FIA program. FHM is a Forest Service - State partnership that reports on status and trends in forest ecosystem health. It includes a plot sampling component similar to FIA in concept, with a broader suite of forest health indicators measured on a smaller sample of plots. In 2000, we finished incorporating the plot component of FHM into the FIA program, creating an enhanced FIA program that now includes three sample levels: phase one consisting of remote sensing for stratification, phase two consisting of the original set of FIA plots (approximately one plot per 6,000 acres), and phase three consisting of a subsample of phase-two plots measured for a broader suite of indicators (approximately one sample location per 94,800 acres). The remaining components of the FHM program, including aerial damage surveys, evaluation monitoring, and intensive site/long-term ecological monitoring, will continue as a separate but related FHM program. Starting in 2000, FIA was managed as a single program for all three phases.

This current business report is the first to include information for the full, enhanced FIA program, including phase three.

Two major accomplishments in 2000 involved formal negotiated agreements between FIA and program partners. The first was the signing of a Memorandum of Understanding between the USDA Forest Service and the National Association of State Foresters (NASF). This memorandum, signed on February 15, 2000, by Mike Dombeck, Chief of the Forest Service, and Stanford Adams, President of the NASF, outlines the commitment of these two organizations to collaborate in delivering the planned FIA program by 2003. The agreement recognizes that the FIA program is an Agency responsibility of the Forest Service and that the State Foresters are key partners in program delivery.

The second major agreement involves an internal Memorandum of Understanding between the FIA program and the National Forest System of the Forest Service that provides for the implementation of FIA on all national forest lands. This agreement will provide consistency in the strategic-scale inventory across 100 percent of U.S. forestland and will provide a consistent framework that national forests can build upon to meet their more detailed planning information needs. The agreement provides for including NFS officials in all stages of the FIA management structure to ensure that FIA remains responsive to national forest needs. Along with this agreement is a commitment by the national forests to contribute \$6.2 million to the FIA budget to cover the cost of this program expansion on national forest lands, with the understanding that the FIA program will be responsible for providing any additional future funds needed to maintain the base program on NFS lands.

Copies of both agreements are available in the library section of the FIA Web site at fia.fs.fed.us.

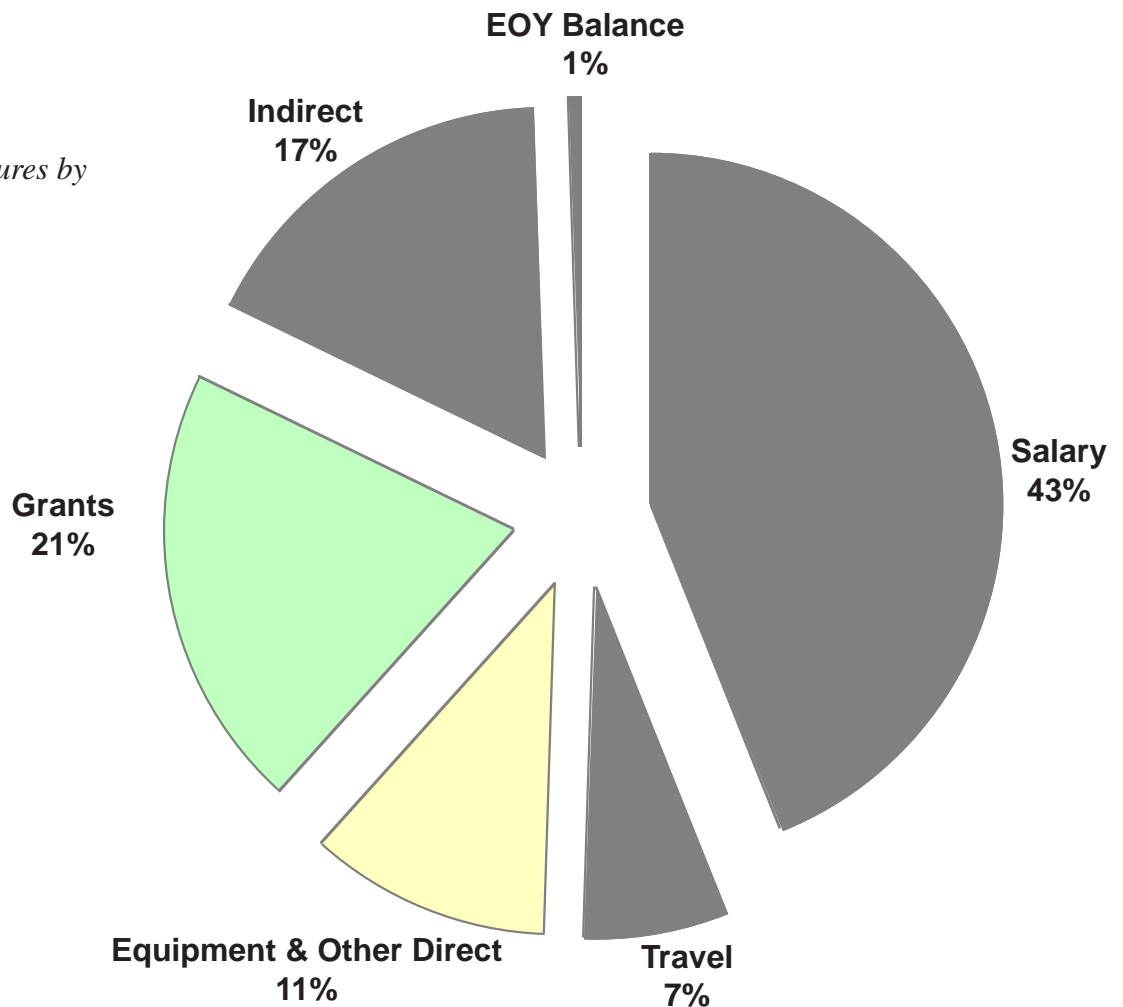
Program Resources

Federal appropriated funding for FIA increased by \$7,890,088 from \$23,796,912 in 1999 to \$31,687,000 in 2000 (table 2 in the appendix). This increase consists of \$2,890,000 in Forest Service Research funds formerly allocated to the FHM program that are now considered part of the FIA program, plus an increase of \$5 million in newly appropriated funding. This funding was augmented by \$5,000,000 from the National Forest System to cover the cost of FIA on national forest lands and by \$2,810,000 from State and Private Forestry to continue their historical support of the FHM plots, which are now part of FIA. This is approximately 67 percent of the total Federal funds of \$58,879,000 in 2000 dollars needed to fully fund the Federal share of the proposed 10 percent/15 percent base Federal program.

Of the funding available, 83 percent was spent in direct support of FIA activities (fig. 2) including 43 percent on salaries, 21 percent on external grants, 11 percent on equipment and related expenses, and 7 percent on travel expenses. Indirect costs charged by Research Stations accounted for 17 percent of expenditures, the same percent as in FY 1999. Figure 3 shows the appropriated and total funding available for FIA from 1995 to 2000, as well as the projected future total funding needed to deliver the 10 percent/15 percent base Federal program as planned by 2003. Because these figures now include funding for phase-three fieldwork, they are not directly comparable with figures published in earlier FIA business reports that included only phase-two funds.

Across FIA regions, cost and productivity figures vary because of the cyclical nature of the current

Figure 2.—FIA expenditures by category, 2000.



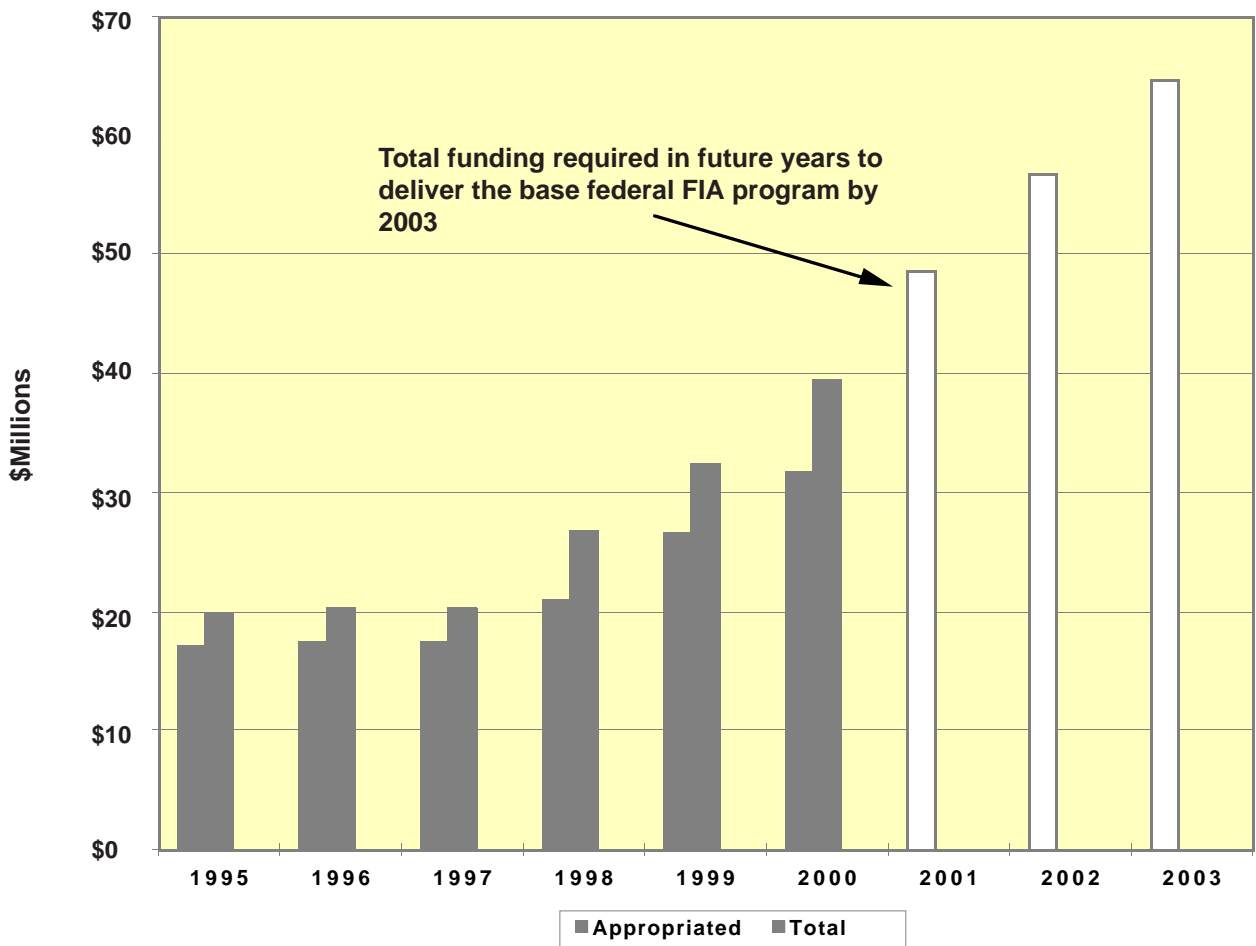


Figure 3.—FIA appropriated and total funds available, 1995-2003.

inventory system and because of differences between field units in operational methods and ease of access. Rates of indirect costs in FIA field units range from about 10 to 21 percent across the country (table 2), reflecting differences in both sources of funding as well as Station policies. For example, some Stations assess different rates of indirect costs for Federal and non-Federal funds. The Washington Office has a 32-percent rate of indirect cost because its FIA budget includes the U.S. Department of Agriculture overhead assessed to the entire FIA program.

FIA program staffing consisted of 342 Federal person-years of effort in 2000 (table 3 in the appendix), up from 296 Federal person-years in 1999. This increase largely reflects the inclusion of the phase-three fieldwork in reporting on the whole FIA program. Of the Federal FIA employees, 51 percent were

involved in the supervision and collection of field data, 28 percent in analysis and information management, 6 percent in techniques research, and 9 percent in program management and administration (fig. 4).

Partner Contributions

The complete FIA program required by Congress is envisioned to be a Federal-State partnership, with both partners contributing resources to accomplish the work. We have agreed that the base Federal share of this program is an annual inventory program that collects data from 10 percent of sample locations in the Western U.S. and 15 percent of the sample locations in the Eastern U.S. on an annual basis, with reports for all States produced at 5-year intervals.

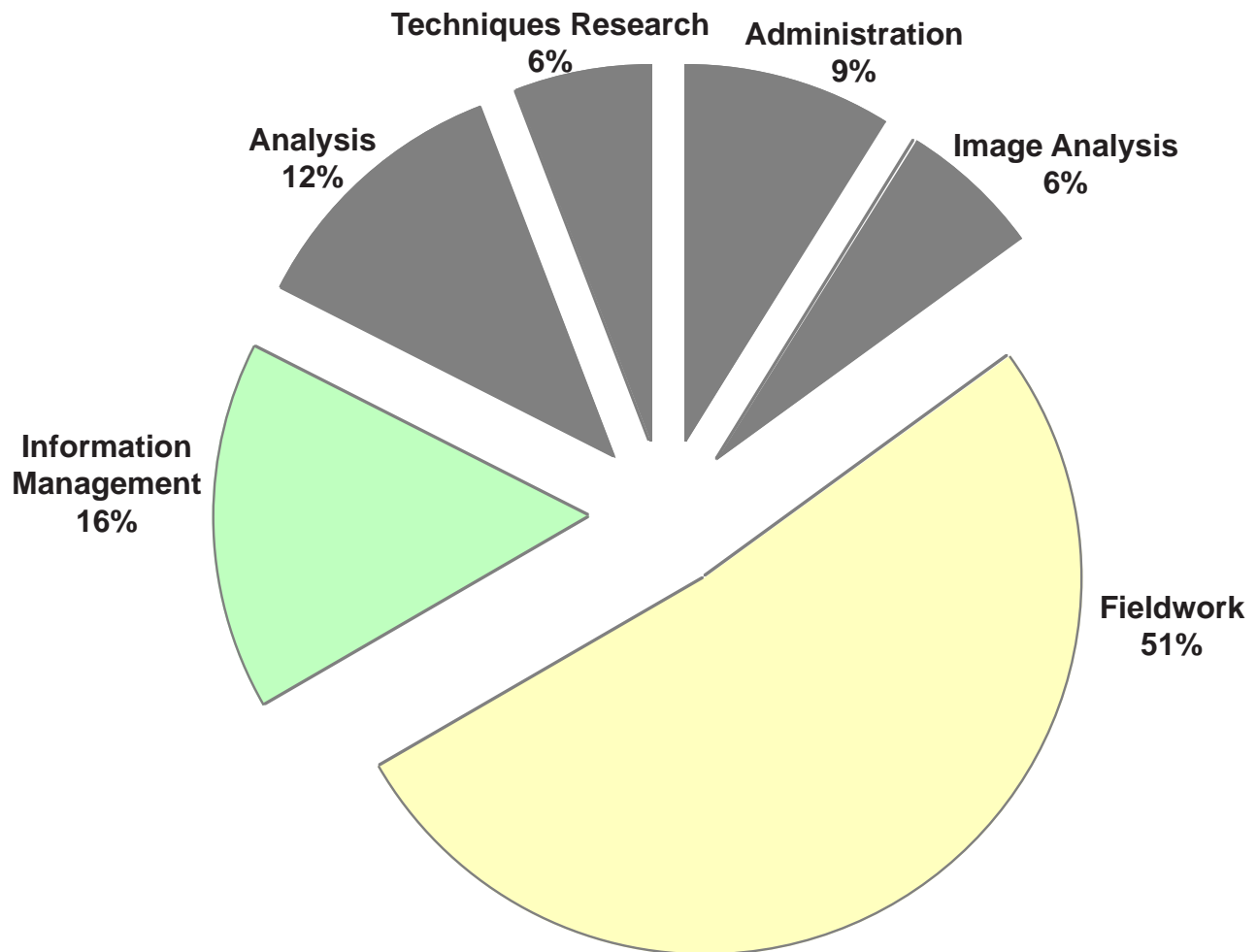


Figure 4.—*FIA Federal person-years by category, 2000.*

Partners at their discretion may choose to contribute the resources needed to bring the FIA program up to the full 20-percent measurements per year described in the law. Additionally, or alternately, partners may choose to contribute resources for other purposes that add value to the FIA program, such as by intensifying the base FIA sample location grid to support analysis at finer spatial resolution, by funding additional types of measurements on FIA sample locations, or by providing analyses or reporting beyond that provided by FIA. The willingness of partners to contribute resources demonstrates the inherent value of the FIA program.

Table 4 in the appendix lists those partners that have chosen to contribute resources to the implementation of the FIA program, either to achieve the 20-percent program envisioned by Congress or to add value to

FIA data in other ways. These resources include staff time, vehicle use, office space, equipment, travel costs, and other non-cash items that support or add value to the FIA program. Contributions are valued for reporting purposes in terms of what it would cost the Federal FIA staff to provide the same service, which may not necessarily be the same as the actual cost to the partner making the contribution. Overall, partners contributed \$4,209,776 towards the full 20 percent FIA program envisioned by Congress and another \$3,227,565 in contributions that add value to the FIA program for a total of \$7,437,341 in partner contributions. This is an increase from the \$4,585,889 contributed by partners in 1999. By far the greatest contributors to the FIA program are State agencies, which collectively contributed \$7,191,408 towards the program, accounting for approximately 97 percent of all partner contributions.

2000 REGIONAL HIGHLIGHTS

The following section presents general information on the types of activities completed in each part of the country in 2000. For more detailed information on results, accomplishments, and impacts, please contact the respective FIA unit.

South

The Southern Research Station FIA unit continued periodic inventory fieldwork in North Carolina and Alabama; implemented annual fieldwork in Arkansas and Louisiana; and continued annual inventory fieldwork in Virginia, Georgia, South Carolina, Tennessee, and Kentucky. All listed States include phase-three (Forest Health Monitoring) plots. In collaboration with our partners, we measured a total of 9,185 phase-two plots (10 percent of the regional total) and 568 phase-three plots (10 percent of the regional total).

The Southern program continued to provide national leadership in developing and maintaining World Wide Web support for Resource Planning Act (RPA) reporting. We attended approximately five different regional user group and partner meetings, mostly focused on logistic details of cooperative implementation of annual FIA, and we held one regional user group meeting. The unit produced 37 publications (up from 30 in 1999) including one State analytical report, one State statistical report, and three survey unit statistical reports. The Southern FIA unit also hosted a national FIA science symposium, conducted 231 consultations with FIA information users, and filled 367 specific data requests. We continued to focus research activities on developing analytical and compilation procedures for processing annual forest inventory data.

The Southern Research Station also supports the national office of the Forest Health Monitoring program, located in Research Triangle Park, North Carolina. The National FHM office is partly funded by a grant from FIA to conduct indicator development research and to analyze FIA data with respect to forest health. In 2000, the FHM unit produced two FIA-related publications and coordinated a series of cooperative agreements that provided for technical support of lichen, ozone, soil, and vegetative measures.

West Coast

In 2000, the Pacific Northwest Research Station unit continued periodic inventory fieldwork in Alaska, initiated periodic fieldwork in Washington, initiated annual FIA in Oregon (the first implementation of the annual FIA system in the Pacific Northwest), and continued phase-three fieldwork in California and Washington. We continued a remeasurement project in beetle-killed spruce stands on the Kenai Peninsula that will provide data for a comparison of the extent and condition of the forest from 1987 to 1999. Altogether, we measured 2,380 phase-two plots (6 percent of our regional total outside of interior Alaska) and 539 phase-three plots (22 percent of our regional total outside of interior Alaska).

We held two user group meetings in 2000, one in Anchorage, Alaska, and one in Olympia, Washington. We also collaborated with the Southern FIA unit to lead a team that wrote a white paper on conducting future inventory activities in the Pacific and Caribbean islands that are part of the United States. This white paper will guide the future strategy for implementing FIA in these regions.

Research in 2000 focused on continuing the development of measurement and analysis methods for down

woody debris, woody debris, and understory vegetation. The down woody debris protocol is ready for implementation on all phase-three plots in annual inventory States in 2001. Understory vegetation measures will undergo one more year of pilot testing before implementation in 2002.

The PNW unit produced 26 publications in 2000 (an increase from 19 in 1999), including six papers in peer-reviewed journals and seven papers in conference proceedings.

Interior West

The Rocky Mountain Research Station FIA unit completed periodic inventory fieldwork in New Mexico, continued periodic inventory fieldwork in Wyoming and South Dakota, and initiated final closeout periodic inventory work in Idaho. We also initiated the complete annual FIA system in Utah, the first State to be done in the Interior West, and we conducted phase-three fieldwork in Colorado, Idaho, Nevada, Utah, and Wyoming. In addition, we continued ongoing phase-three fieldwork in Idaho, Wyoming, Nevada, and Colorado. We measured 5,453 phase-two plots (6 percent of the total for our region) and 972 phase-three plots (17 percent of the total for our region). Fieldwork in 2001 was greatly hampered by access restrictions and difficulty in hiring crews due to the extreme fire season.

We produced two reports specific to individual national forests, demonstrating the usefulness of FIA data to national forests for strategic planning and resource characterization. We continued research in cooperation with Utah State University to develop models for forest inventory variables as functions of satellite-based information for mapping and stratification, generating three publications from this work. The Rocky Mountain unit produced five publications in 2000 (an increase from four in 1999). We also

produced a CD demonstrating forest habitat modeling in the Uinta Mountains and a set of Web-based interactive maps of forest structure by ecoregion.

The Rocky Mountain Research Station also supports a mathematical statistics research unit in Fort Collins, Colorado, which conducts research on new inventory methods aimed at increasing efficiency and effectiveness of forest inventory across the United States, with particular reference to the FIA program. In 2000, this unit produced 13 publications pertaining to the FIA program including five in peer-reviewed journals. Topics included statistical techniques to improve utilization of the FIA mapped plot, and access accuracy of remotely sensed data. The unit has increased research and development to better serve the needs of the national forests, including better estimates for small areas, combination of remotely sensed data with FIA plots for forest planning, and surveys of rare plants and animals. The unit served national FIA objectives by exploring inter-agency partnerships to efficiently produce digital land cover maps for the entire Nation at 1:24,000 scale; helping national forests more effectively conduct resource inventories and monitoring programs; prioritizing technology development for inventory and monitoring; helping guide development of geospatial analysis capabilities within the Forest Service; helping design an inventory and monitoring program for the Nation's forests on tropical islands; and coordinating research, development, and technology transfer among NAFTA nations on inventory, monitoring, and geomatic sciences.

North Central

In 2000, the North Central Research Station FIA unit continued annual inventory fieldwork in Indiana, Iowa, Minnesota, and Missouri and initiated annual FIA in Michigan and Wisconsin. The unit also continued phase-three fieldwork in Illinois. We measured 5,905 phase-two plots (8 percent of our regional total)

and 563 phase-three plots (12 percent of our regional total).

We processed and analyzed data from the first panels of annual inventory data collected in Indiana, Iowa, Minnesota, and Missouri and will be publishing our first annual inventory reports early in 2001. In 2000, the North Central unit produced 22 publications including State analytical reports for Indiana and South Dakota. We continued collaborative research with the University of Minnesota and with the Minnesota Department of Natural Resources on methods for an annual forest inventory system, including cooperative research into “k-nearest neighbor (kNN)” techniques and other uses of satellite imagery for producing forest-nonforest maps. We attended the longstanding annual meeting of the NC user group in Sioux Falls, South Dakota. We also led the effort to improve public access to FIA data and analytical tools by developing a new version of Web-based analysis engine for public use and by partnering with Michigan Tech University to develop and distribute a GIS-based tool for spatially accessing and analyzing FIA data. Finally, we began to scan historical FIA publications into an electronic format for easier public access.

Northeast

The Northeastern Research Station FIA unit completed periodic fieldwork in Maryland and continued periodic fieldwork in West Virginia. These will be the final States inventoried under the periodic system. We also continued annual FIA in Maine and initiated annual FIA in Pennsylvania. We continued phase-three data collection in all of these States plus Connecticut, Delaware, Massachusetts, New Jersey, New Hampshire, New York, Rhode Island, and Vermont. We measured 2,510 phase-three plots (10 percent of

our regional total) and 274 phase-three plots (17 percent of our regional total).

The unit produced 17 publications in 2000 (an increase from 12 in 1999) including five peer-reviewed journal articles and nine papers presented to colleagues at professional meetings. We collaborated with the Maine Forest Service to complete the first-ever analysis of annual inventory data collected under the new FIA system, which was released in October of 2000. We held our first regional FIA partners meeting in July 2000 and agreed to meet annually to coordinate FIA-related activities with our State, National Forest System, and State and Private Forestry partners. We continued planning for the implementation of the next National Forest Land Ownership Study, scheduled to begin in 2001.

National Office

The National Office of the FIA program provides coordination, oversight, and guidance to the FIA field units engaged in implementing the enhanced FIA program. In 2000, we organized, facilitated, and documented two FIA Executive Team meetings, three FIA Management Team meetings, and dozens of briefings for internal and external partners, customers, collaborators, and supporters. In collaboration with the Society of American Foresters, we participated in the first national user group meeting for FIA customers, held in Alexandria, Virginia. We organized and hosted the first meeting of the North American Forest Commission working group on Forest Inventory, Monitoring, and Assessment, which brought colleagues from the United States, Canada, and Mexico together to discuss common interests in forest ecosystem monitoring.

National Office staff produced three publications and coordinated the completion of the final draft analysis

for the 1997 Resource Planning Act (RPA) Assessment. We led the drafting of a Memorandum of Understanding, signed by the Chief of the Forest Service and the President of the National Association of State Foresters, which outlines and underscores the intention of the Forest Service to implement the base Federal FIA program envisioned in the Strategic Plan for Forest Inventory and Monitoring. We also negotiated an agreement between the FIA program and the National Forest System that outlines the terms under which NFS will fully participate in the FIA program. This is the first time that FIA has been recognized as having the responsibility for implementing a consistent forest inventory program across all U.S. lands.

MULTI-RESOURCE APPLICATIONS OF FIA DATA

Historically, the strength of the FIA program has been in the reliable reporting of status and trends in forest area, forest productivity, timber product outputs, and forestland ownership patterns. This basic inventory information is of high interest to forest managers, planners, consulting foresters, and people associated with the wood product industry. However, the information has also historically been of high interest to others who are interested in the distribution and composition of America's forests. FIA data are used in a wide variety of assessments, such as prediction and measurement of changes in tree species distributions associated with global climate change; models of the capacity for carbon sequestration through forest growth; assessments of wildlife habitat suitability based on forest species composition and size structure; and assessments of forest fragmentation associated with urban and suburban development.

With the incorporation of the phase-three (Forest Health Monitoring) plots into the FIA program, FIA is signaling its intention to continue addressing the needs of our customers for multi-resource information on America's forests. In 2000, we completed the incorporation of phase-three plots as a subset of our phase-two sample grid, with every 16th phase-two plot also serving as a phase-three plot, measured on a 5-year cycle. Additional information currently collected on phase-three plots includes:

- a suite of tree crown measurements documenting the size, density, and health of tree crowns;
- determination of the relative abundance and diversity of lichen species existing near the sample plot;
- description of types, location, and severity of tree damage;
- assessment of ozone damage symptoms in suitable areas near the sample plot.

In addition, in 2000, we completed pilot testing of several additional measures that will be implemented on all phase-three plots in 2001 including:

- a set of soil measurements, including site description and chemical analysis of litter and soil,
- a set of down woody debris and fuel measures that will be used for carbon and fire assessments.

Finally, in 2000, we also continued testing of field measures for a more complete set of vegetative diversity measures that will provide information on all vascular plants associated with the plot. We hope to finish testing these methods in 2001 and position the program for full implementation in 2002. As we incorporate the phase-three data into the FIA program, we will add these data elements to our online databases and make them available to the public.

GRANTS AND AGREEMENTS

Each year, FIA units enter into various grants and cooperative agreements with partners to accomplish specialized work in support of the FIA mission. In some cases partners provide expertise that is not available within the FIA program; in other cases they share the workload. Table 5 in the appendix lists 87 grants and agreements funded in 2000, making up \$8,282,166 or approximately 21 percent of the total available FIA program budget. This is a nearly four-fold increase over the total of \$2,286,149 (approximately 8.2 percent of the total funds available to the FIA program) reported in 1999. Some of the increase

can be attributed to the addition of the Forest Health Monitoring funds; nearly \$2.0 million of the \$2.81 million State and Private funds contributed to FIA went to cover various grants and agreements to support phase-three indicators. The balance of the increase is attributed to an increase in grants and agreements to accomplish FIA fieldwork and analysis. Most of these grants and agreements were with State (55 percent of funds) and university (27 percent of funds) partners (fig. 5). Other cooperators included other Forest Service offices (16 percent of funds), other Federal agencies (>1 percent of funds), and a mix of private consultants and other organizations (2 percent of funds).

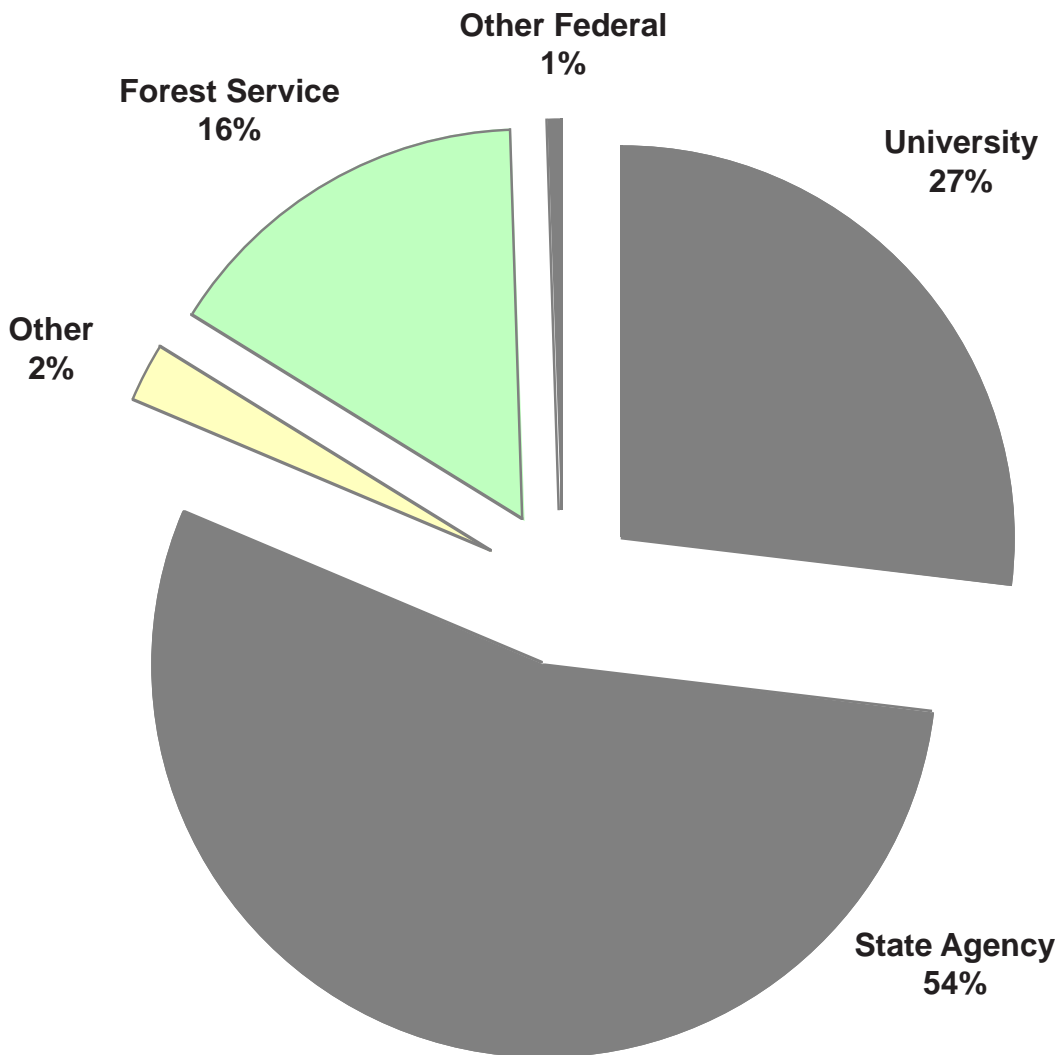


Figure 5.—Allocation of FIA grants and agreements, 2000.

COMPARING 2000 FIA ACCOMPLISHMENTS WITH OUR 1999 GOALS

In the 1999 annual business report for FIA, we included a section stating our plans for fiscal year 2000. Below we show how our actions in 2000 matched our promises in 1999.

In the 1999 annual report, we said that in 2000 we would:

Implement annual FIA approaches in Pennsylvania, Wisconsin, Michigan, Arkansas, Louisiana, Utah, and Oregon.

Continue final periodic inventories in Alabama, Alaska, Colorado, Idaho, North Carolina, Maryland, Washington, West Virginia, and Wyoming.

Continue development and documentation of nationally consistent compilation, analysis, and database management procedures.

Implement phase-two and phase-three fieldwork together in those States that are currently conducting annual FIA. Pilot test soil and vegetative measures on some phase-three plots to prepare for full implementation in 2001.

Continue collaborative stewardship of the FIA program by holding user group meetings in all regions of the country and at the national level

Continue to make our data more accessible and usable by adding analytical tools and program documentation to online FIA databases and Web pages.

Continue to conduct applied research into ways of using technology to increase program efficiency, and continue to develop new products to meet customer needs. Produce a white paper summarizing experience, lessons learned, and the status of remote sensing in FIA.

Sign an internal Memorandum of Understanding between FIA and the USDA Forest Service, National Forest System, to ensure that all national forest lands are in the future covered by the same core FIA program as all other lands.

Sign a Memorandum of Understanding between the President of the National Association of State Foresters and the Chief of the USDA Forest Service demonstrating Agency commitment to treat the FIA program as an Agency obligation and to take all allowable steps to ensure that the base Federal program is fully funded by Fiscal Year 2003.

In 2000, we:

Implemented and continued annual FIA in all States listed.

Continued final periodic inventory in all listed States except Colorado.

Continued documentation of core statistical and compilation procedures, formed an information management system design team to develop a new system by April 2002.

Included both phase-two and phase-three fieldwork in all annual FIA States. Tested soil and down woody debris methods for implementation in 2001. Vegetative diversity measures need further pilot testing in 2001.

Held at least one user group meeting in each FIA region, plus one national user group meeting.

Added program fact sheets, publications to Web page. Developing next generation Web interface and presentation database for release in 2001.

Funded 79 external cooperative studies dealing with technology, of which 18 deal with some aspect of remote sensing or spatial analysis. Sponsored research proposal competition on remote sensing for FIA. White paper in progress.

Finalized MOU for signature in December 2000.

MOU signed by Chief Mike Dombeck of the USDA Forest Service and NASF President Stan Adams on February 15, 2000.

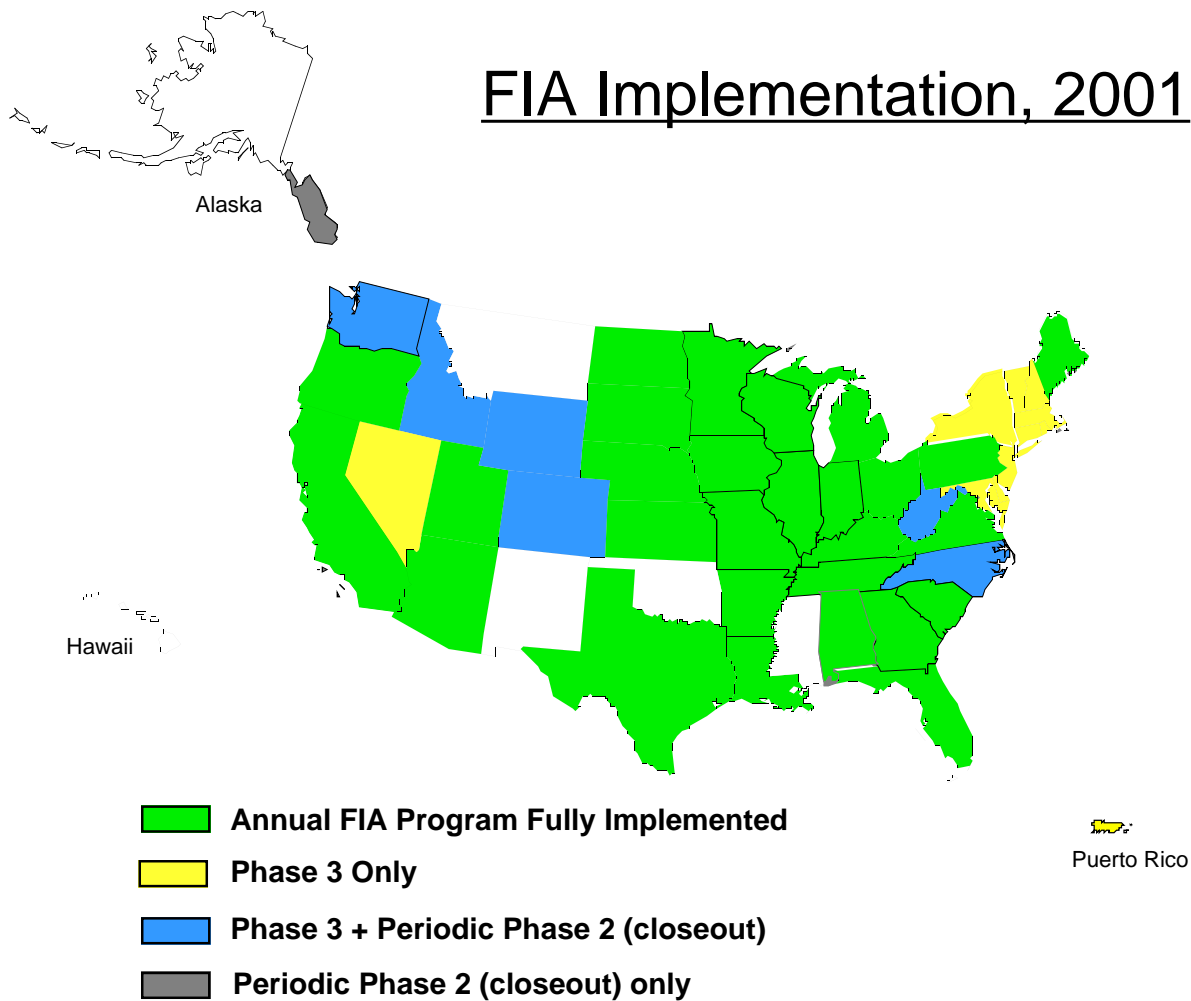
2001 FIA PROGRAM DIRECTION

The FIA program is committed to implementing the Strategic Plan for Forest Inventory and Monitoring, with an initial focus on achieving a base Federal program of 10 percent per year in the West and 15 percent per year in the East by FY 2003. We have made significant changes to our program by forming a partnership with State Foresters to lead and implement the FIA program in a more responsive manner. We are implementing annual inventory systems in every region of the country.

In fiscal year 2001, we intend to accomplish the following:

- Continue transition to an annual inventory system by continuing annual inventory in all current States and initiating an annual inventory system in Alabama, Arizona, California, Florida, Illinois, Kansas, Nebraska, North Dakota, Ohio, Puerto Rico (phase three only), South Dakota, and eastern Texas (fig. 6). This will mean that annual inventory is implemented in every region of the country and will include coverage of over 65 percent of the Nation (exclusive of interior Alaska) under a cooperative program involving full Federal-State partnerships in program management and delivery.

Figure 6.—Planned FIA fieldwork, 2001.



- ❑ Continue traditional periodic inventories to establish a baseline in advance of implementing annual inventory in Alaska, Colorado, Idaho, North Carolina, Washington, West Virginia, and Wyoming. Continue phase-three data collection in all currently active States.
- ❑ Continue development and documentation of nationally consistent compilation, analysis, and database management procedures.
- ❑ Implement soil and down woody debris measures on phase-three plots, and continue pilot testing of vegetative diversity measures to prepare for full implementation in 2002.
- ❑ Continue collaborative stewardship of the FIA program by holding user group meetings in all regions of the country and at the national level, and by holding one scientific symposium on FIA.
- ❑ Continue to make our data more accessible and usable by adding analytical tools and program documentation to online FIA databases and Web pages.
- ❑ Continue to conduct applied research into ways of using technology to increase program efficiency, and to develop new products to meet customer needs; explore collaboration with the U.S. Geological Survey through its Multi-Resolution Land Characteristics (MRLC) project.
- ❑ Implement FIA on all national forest lands in States where FIA is conducting fieldwork.
- ❑ Publish our first annual reports for the North Central and Southern FIA regions.

LONG-TERM STRATEGIC DIRECTION

The Government Performance and Results Act (GPRA) of 1993 directs Federal entities to develop long-term goals and performance measures to monitor progress towards those goals. Although intended to apply at the Agency level, the GPRA framework provides an excellent tool for guiding progress at the project level as well. The following tabulation shows an initial set of goals, performance measures, targets, and benchmarks for the FIA program for 1998-2000. In future business reports, we will repeat this table to show how we are progressing towards our goals.

| Goal | Performance measure | 1998 Level | 1999 Level | 2000 Level | Target Level |
|---|--|------------|------------|------------|--------------|
| INPUTS | | | | | |
| Maintain sufficient funding to support the base Federal FIA program | Percent of necessary Federal funding received | 44 | 47 | 67 | 100 |
| OUTPUTS | | | | | |
| Include 100 percent of U.S. forest lands in the FIA sample population | Percent forest included in the FIA sample population | 95 | 95 | 95 | 100 |
| Keep fieldwork current | Percent of forested base sample locations visited/year: | | | | |
| | Phase two, East | 9.0 | 10.6 | 14.1 | 15 |
| | Phase three, East | * | * | 11.8 | 20 |
| | Phase two, West | 3.4 | 3.5 | 5.5 | 10 |
| | Phase three, West | * | * | 19.2 | 20 |
| Keep analysis current | Average number of years between State analytical reports | 11 | 9 | 8 | 5 |
| Keep online database current | Average age (years) of most recent complete panel of FIA data available online | 6 | 7 | 7 | 1 |
| OUTCOMES | | | | | |
| Customer satisfaction | Percent of customers rating service as "satisfactory" or better | ** | ** | ** | 100 |
| | Partner financial contributions expressed as percent of total Federal FIA budget | NA | 14 | 19 | 25 |
| * Data not available for previous years. | | | | | |
| ** Customer satisfaction survey has been developed and a baseline is being established. | | | | | |

CONCLUSIONS

We have entered a new era in partnership and collaboration in which Federal, State, and other colleagues work side by side to plan, manage, implement, and continuously improve the FIA program. We are gathering and disseminating information on a wider array of ecological attributes while continuing to serve our traditional customers who require timely information on forest resources. We are increasing the timeliness of our surveys and of our reporting to provide a continuously updated, publicly accessible information base that includes meaningful reports and analyses as well as elemental data for others to use. We are exploring and using modern technology to expand the scope of our products and to deliver them more efficiently. And we are openly reporting on our progress, our accomplishments, our successes, and our challenges.

In summary, we are committed to working collaboratively with our partners to deliver the best program possible with the resources that we have at our discretion. We hope this report gives you a window into the business practices of the FIA program, and we encourage you to help us improve the program with your feedback.

APPENDIX

Glossary of Terms Used in Report Tables

Additional Station funds.—Additional funds redirected to the FIA unit by the Research Station, most commonly from savings arising from budgeted salaries for Station positions that were left unfilled. These funds are typically reallocated part way through the year.

Additional WO R&D funds.—Additional funds allocated to the FIA unit by the Washington Office Research and Development Staff, typically midway through the year or in response to requests for special projects.

Station Adjustments in FY 00.—Any changes in the 1999 end of year balance made during the 2000 fiscal year. Unlike in private companies, all Federal funds unspent at the end of a fiscal year are subject to reallocation by Agency officials. Efforts are made to return unspent funds to units, but there is no guarantee that this will occur.

Base grid plots sampled.—The base grid consists of one sample location per approximately 6,000 acres (phase two) and one location per approximately 96,000 acres (phase three). Some partners chose to intensify beyond the base grid.

Direct expenses.—All expenses directly attributable to the FIA unit, incurred as a part of doing FIA business. Excludes indirect business costs (such as rent, telephones, and administrative overhead outside the FIA unit staff), which are included

below in “Indirect expenses.” Includes work done for other units as a normal part of FIA business.

Includes the following items:

Salary.—Includes direct and indirect salary costs charged to the FIA unit. Broken into the following categories:

Administration.—Program Manager, Project Leader, and clerical staff.

Image analysis.—Airphoto interpreters, satellite image analysts.

Field supervision.—Field crew supervisors who spend <50 percent of time measuring plots.

Field crews.—All staff spending at least 50 percent of time measuring regular plots.

QA crews.—Staff spending at least 50 percent of time doing quality assurance work.

Information management.—Programmers, compilers, computer system support staff.

Analysts.—Staff who analyze data and write publications.

Techniques research.—Mainly research staff who conduct FIA-related research on methods and techniques.

Travel

Office travel.—Travel costs for all staff except field crews and QA crews.

Field/QA travel.—Travel costs for field crews and QA crews.

Equipment.—Costs for durable goods used for FIA. Includes the following:

Imagery.—Aerial photos, satellite imagery data files.

Vehicles.—All vehicle costs, including such items as operating costs, depreciation, and leases.

Field equipment.—Measurement tools and equipment such as data recorders carried by field crews.

Computer/telecommunications.—Computer hardware, software, communication costs.

Other.—Anything that does not fit into one of the above equipment categories.

Grants and agreements.—Cost of cooperative grants and agreements that directly support the FIA mission.

Publications.—Costs for layout, editing, printing, and distribution of publications.

Miscellaneous.—Anything that does not fit into one of the above categories.

Indirect expenses.—Indirect expenses include items such as Research Station management salaries, telephones, utilities, and other items for which the FIA unit does not pay for directly but which are deemed by Station leaders to be a fair and reasonable assessment for the basic services needed to support FIA along with other Station activities. Each Station has its own means for determining these assessments.

Rather than reporting the different rates, we simply calculate the “Indirect expenses” item by subtraction:

Indirect expenses = Total available resources - Total direct expenses - 1999 end of year balance

Indirect rate.—Indirect expenses divided by total resources available. This is not necessarily the same as the standard Station overhead rate; instead this rate reflects the total indirect cost as a fraction of the total resources available to FIA.

NFS funds received.—Funds received from the National Forest System in direct support of the FIA program, generally received from a single Forest Service Region to cover the cost of FIA on that Region’s lands.

2000 beginning balance.—Reported 99 EOY balance plus or minus Station Adjustments in FY 00.

2000 EOY balance.—Funds remaining unspent at the end of FY00. It is hoped these funds will be available for use in FY01. If a unit has overspent its budget, this may be a negative figure indicating a debt to the Station to be paid next year.

2000 appropriation.—Funds appropriated by Congress through the Forest Service Research and Development budget that were sent to Stations for their FIA units.

Number of public meetings.—Number of user group meetings sponsored or attended by each FIA unit. A user group meeting is an open meeting where a complete regional cross

section of FIA partners and customers are invited to attend. User group meetings differ from the usual smaller meetings with one or two partners that all FIA units call as a normal course of business.

Percent of total plots sampled.—Total number of base grid plots sampled, divided by the total number of plots in the base grid.

Percent of full funding.—Total appropriated funds divided by the funding needed to fully implement the base Federal program.

Percent of region covered by annual FIA.—Sum of forested acres in States currently implementing annual FIA, divided by the total number of forested acres in each FIA region: a measure of the degree to which the FIA region has moved from periodic to annual inventory.

Publications.—Number of publications per unit, by type of publication, as reported in official Agency attainment reports. Publications are one of the major outputs of the FIA program. Types of publications include:

Survey Unit Reports

State Statistical Reports

State Analytical Reports

State Timber Product Output

(TPO) Reports

Other Station Publications

Peer-reviewed Journal articles

Proceeding papers

Other.—Publications that do not fit into any of the above categories, such as abstracts, books, or other government publications.

Reported 99 EOY balance.—Funds

reported in the 1999 Annual Report as unspent at the end of the 1999 fiscal year, and presumably available for use in FY 2000.

S&PF funds received.—Funds received from State and Private Forestry partners in direct support of the FIA program.

Total appropriated funds.—Total funds available for the FIA program, including Forest Service contributions from Research, State and Private Forestry, and the National Forest System. This is a measure of Federal funding for the base Federal program.

Total funds expended.—Sum of Direct and Indirect expenses, from table 2.

Total program cost per base plot.—Total funds expended divided by total number of base grid plots measured: another measure of the cost of doing business in a particular region.

Table 1.—Performance measures for the 2000 FIA program

| | Pacific Northwest | Rocky Mountain | Southern | North Central | North East | Fort Collins | National Office | Total |
|--|-------------------|----------------|--------------|---------------|-------------|--------------|-----------------|--------------|
| Total Appropriated Funds | \$6,983,000 | \$6,484,000 | \$11,261,000 | \$5,070,644 | \$5,765,506 | \$419,000 | \$3,513,850 | \$39,497,000 |
| Percent of Full Funding | 44% | 65% | 77% | 82% | 70% | 101% | 98% | 67% |
| Contributions from partners | | | | | | | | |
| Supporting the 20% FIA program | \$70,000 | \$392,908 | \$2,190,346 | \$881,522 | \$632,750 | \$40,000 | \$2,250 | \$4,209,776 |
| Value-added contributions | \$0 | \$50,000 | \$42,800 | \$3,134,765 | \$0 | \$0 | \$0 | \$3,227,565 |
| Base Grid Plots Sampled: | | | | | | | | |
| Phase 2, Federal Crews | 1,870 | 5,453 | 1,649 | 5,381 | 2,065 | | | 16,418 |
| Phase 2, Partner Crews | 510 | 0 | 7,536 | 524 | 445 | | | 9,015 |
| Total Phase 2 Plots | 2,380 | 5,453 | 9,185 | 5,905 | 2,510 | | | 25,433 |
| Phase 3, Federal Crews | 539 | 972 | 16 | 434 | 12 | | | 1,973 |
| Phase 3, Partner Crews | 0 | 0 | 552 | 129 | 262 | | | 943 |
| Total Phase 3 Plots | 539 | 972 | 568 | 563 | 274 | | | 2,916 |
| TOTAL BASE PLOTS | 2,919 | 6,425 | 9,753 | 6,468 | 2,784 | | | 28,349 |
| Percent of total (forest and nonforest) plots sampled ¹ | | | | | | | | |
| Phase 2 (10% West, 15% East) | 6% | 6% | 10% | 8% | 10% | | | 8% |
| Phase 3 (20% overall) | 22% | 17% | 10% | 12% | 17% | | | 15% |
| Forested phase 2 plots sampled | | | | | | | | |
| Count | 1,293 | 1,136 | 5,564 | 1,766 | 1,823 | | | 11,582 |
| Percent of regional total | 8% | 5% | 16% | 13% | 12% | | | 11% |
| % Region covered by annual FIA | 27% | 12% | 52% | 89% | 37% | | | 42% |
| Total program cost/base plot | \$2,392 | \$1,009 | \$1,155 | \$784 | \$2,071 | | | \$1,393 |
| Publications | | | | | | | | |
| Survey Unit Reports | | | 3 | | | | | 3 |
| State Statistical Reports | | | 1 | 2 | | | | 3 |
| State Analytical Reports | | | 1 | | | | | 1 |
| State TPO Reports | | | 2 | | | | | 2 |
| Other Station publications | 4 | | 2 | 2 | 1 | 1 | | 10 |
| Peer-Reviewed Journal articles | 6 | 2 | 6 | 4 | 5 | 5 | 1 | 29 |
| Proceedings articles | 7 | 1 | 21 | 13 | 9 | 6 | 1 | 58 |
| Other | 9 | 2 | 1 | 1 | 2 | 1 | 1 | 17 |
| TOTAL | 26 | 5 | 37 | 22 | 17 | 13 | 3 | 123 |
| # Publications per Federal FTE | 0.46 | 0.06 | 0.39 | 0.44 | 0.29 | 4.73 | 1.50 | 0.36 |
| # User Group Meetings Held | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 7 |

¹ Excludes interior Alaska, Hawaii, and other U.S. islands, which will be handled through special projects.

Table 2.—Financial statement for the 2000 FIA program

| | Pacific Northwest | Rocky Mountain | Southern | North Central | North East | Fort Collins | National Office | Total |
|---------------------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|------------------|--------------------|---------------------|
| I. AVAILABLE FUNDS | | | | | | | | |
| Reported 99 EOY Balance | \$265,000 | \$182,386 | \$0 | \$104,403 | \$161,732 | \$4,700 | \$0 | \$718,221 |
| Station Adjustments to EOY Balance | \$0 | \$0 | \$0 | (\$31,031) | (\$85,919) | \$0 | \$0 | (\$116,950) |
| 2000 Initial Balance | \$265,000 | \$182,386 | \$0 | \$73,372 | \$75,813 | \$4,700 | \$0 | \$601,271 |
| 2000 Appropriation | \$5,327,000 | \$3,647,000 | \$10,836,000 | \$4,518,000 | \$5,015,000 | \$419,000 | \$1,925,000 | \$31,687,000 |
| Additional Station Funds | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Additional WO R&D Funds | \$25,000 | \$50,000 | \$0 | \$110,000 | \$48,700 | \$0 | (\$233,700) | \$0 |
| NFS funds received | \$1,587,000 | \$2,595,000 | \$385,000 | \$366,000 | \$67,000 | \$0 | \$0 | \$5,000,000 |
| S&PF funds received | \$44,000 | \$192,000 | \$40,000 | \$76,644 | \$634,806 | \$0 | \$1,822,550 | \$2,810,000 |
| TOTAL AVAILABLE FUNDS | \$7,248,000 | \$6,666,386 | \$11,261,000 | \$5,144,016 | \$5,841,319 | \$423,700 | \$3,513,850 | \$40,098,271 |
| II. DIRECT EXPENSES | | | | | | | | |
| Salary | | | | | | | | |
| Administration | \$355,000 | \$307,217 | \$454,017 | \$198,908 | \$258,112 | \$49,594 | \$226,583 | \$1,849,431 |
| Image analysis | \$274,332 | \$0 | \$193,842 | \$215,505 | \$297,350 | \$0 | \$0 | \$981,029 |
| Field supervision | \$392,668 | \$597,282 | \$393,023 | \$217,771 | \$199,939 | \$0 | \$0 | \$1,800,683 |
| Field crews | \$584,475 | \$914,406 | \$780,302 | \$725,885 | \$847,241 | \$0 | \$0 | \$3,852,309 |
| QA crews | \$168,605 | \$204,091 | \$466,233 | \$98,455 | \$186,647 | \$0 | \$0 | \$1,124,031 |
| Information management | \$695,825 | \$563,781 | \$1,115,660 | \$471,995 | \$552,602 | \$0 | \$0 | \$3,399,863 |
| Analysis | \$827,690 | \$216,495 | \$1,298,853 | \$323,770 | \$352,297 | \$0 | \$0 | \$3,019,105 |
| Techniques research | \$369,010 | \$118,390 | \$281,626 | \$270,880 | \$249,019 | \$239,709 | \$0 | \$1,528,634 |
| Travel | | | | | | | | |
| Office travel | \$97,000 | \$115,853 | \$328,541 | \$90,625 | \$71,006 | \$24,543 | \$29,693 | \$757,261 |
| Field/QA crew travel | \$358,158 | \$345,977 | \$762,359 | \$233,884 | \$285,911 | \$0 | \$0 | \$1,986,289 |
| Equipment | | | | | | | | |
| Imagery | \$60,664 | \$54,541 | \$126,000 | \$12,048 | \$71,000 | \$0 | \$0 | \$324,253 |
| Vehicles | \$254,830 | \$246,523 | \$139,500 | \$120,725 | \$109,937 | \$0 | \$0 | \$871,515 |
| Field equipment | \$226,755 | \$358,636 | \$97,000 | \$95,226 | \$13,746 | \$0 | \$11,580 | \$802,943 |
| Computer/Telecommunications | \$404,234 | \$181,738 | \$122,460 | \$304,438 | \$139,256 | \$3,183 | \$0 | \$1,155,309 |
| Other | \$257,000 | \$358,941 | \$11,971 | \$45,967 | \$194,309 | \$812 | \$0 | \$869,000 |
| Grants and Agreements | \$426,000 | \$609,856 | \$3,513,602 | \$788,849 | \$754,806 | \$91,373 | \$2,097,680 | \$8,282,166 |
| Publications (printing, distribution) | \$18,000 | \$0 | \$10,100 | \$1,176 | \$0 | \$2,786 | \$3,593 | \$35,655 |
| Miscellaneous | \$61,754 | \$129,537 | \$104,500 | \$2,981 | \$24,138 | \$0 | \$13,786 | \$336,696 |
| TOTAL DIRECT EXPENSES | \$5,832,000 | \$5,323,264 | \$10,199,589 | \$4,219,088 | \$4,607,316 | \$412,000 | \$2,382,915 | \$32,976,172 |
| III. INDIRECT EXPENSES | | | | | | | | |
| (indirect rate) | 19% | 17% | 10% | 18% | 21% | 3% | 32% | 17% |
| | \$1,344,000 | \$1,157,265 | \$1,089,411 | \$924,928 | \$1,234,003 | \$11,700 | \$1,130,935 | \$6,892,242 |
| IV. 2000 EOY Balance | \$72,000 | \$185,857 | (\$28,000) | \$0 | \$0 | \$0 | \$0 | \$229,857 |

Table 3.—Federal staffing (full-time equivalents) for the 2000 FIA program

| | Pacific Northwest | Rocky Mountain | Southern | North Central | North East | Fort Collins | National Office | Total |
|------------------------------------|----------------------|-------------------|-------------|------------------|---------------|-----------------|--------------------|--------------|
| Administration | 4.3 | 8.1 | 7.0 | 3.5 | 4.9 | 0.5 | 2.0 | 30.3 |
| Image analysis | 5.6 | 0.0 | 5.2 | 5.2 | 5.0 | 0.0 | 0.0 | 21.0 |
| Field supervision | 6.0 | 12.4 | 7.1 | 3.9 | 3.0 | 0.0 | 0.0 | 32.4 |
| Field crew | 17.8 | 36.5 | 23.1 | 20.8 | 24.7 | 0.0 | 0.0 | 122.8 |
| QA crews | 2.4 | 5.0 | 9.7 | 0.7 | 4.0 | 0.0 | 0.0 | 21.8 |
| Information management | 9.9 | 9.0 | 18.8 | 7.6 | 8.5 | 0.0 | 0.0 | 53.7 |
| Analysis Techniques research | 6.0 | 4.0 | 20.7 | 4.9 | 4.5 | 0.0 | 0.0 | 40.1 |
| | 4.6 | 2.0 | 3.5 | 3.5 | 4.0 | 2.3 | 0.0 | 19.8 |
| TOTAL | 56.5 | 77.0 | 95.0 | 50.1 | 58.6 | 2.8 | 2.0 | 342.0 |

Table 4.—Partner contributions towards implementing FIA in 2000

| Unit | Partner | Contributions towards the base program | Contributions which add value |
|----------------------|--|---|----------------------------------|
| Fort Collins | | | |
| | Minnesota Department of Natural Resources | \$15,000 | |
| | Colorado State University | <u>\$25,000</u> | |
| | Subtotal, Fort Collins | \$40,000 | \$0 |
| North Central | | | |
| | Mark Twain National Forest | | \$20,000 |
| | Great Lakes Forestry Alliance | | \$30,000 |
| | Illinois Division of Forest Resources | \$27,500 | |
| | Indiana Department of Natural Resources | \$41,472 | |
| | Iowa Department of Natural Resources | \$22,539 | |
| | Kansas State Forest Service | \$19,000 | |
| | Michigan Division of Forest Management | \$414,000 | \$1,460,000 |
| | Minnesota Division of Forestry | \$136,361 | \$437,765 |
| | Missouri Department of Conservation | \$81,193 | \$287,000 |
| | Nebraska Department of Forestry, Fish, and Wildlife | \$7,000 | |
| | North Dakota Forest Service | \$4,000 | |
| | South Dakota Department of Forestry & Natural Resource Management | \$10,000 | |
| | Wisconsin Department of Natural Resources | \$82,746 | \$900,000 |
| | Michigan Tech University | \$14,100 | |
| | University of Minnesota | <u>\$21,611</u> | |
| | Subtotal, North Central | \$881,522 | \$3,134,765 |
| Northeast | | | |
| | Monongahela National Forest | \$5,000 | |
| | Maine Forest Service | \$604,000 | |
| | Maryland Forest Service | \$1,250 | |
| | Pennsylvania Bureau of Forestry | \$15,000 | |
| | West Virginia Division of Forestry | <u>\$7,500</u> | |
| | Subtotal, Northeast | \$632,750 | \$0 |

(table continued on next page)

(table 4 continued)

| Unit | Partner | Contributions towards the base program | Contributions which add value |
|--------------------------|--|---|--|
| Pacific Northwest | | | |
| | Alaska Division of Forestry | \$10,000 | |
| | California Department of Forestry and Fire Protection | \$20,000 | |
| | Oregon Department of Forestry | \$20,000 | |
| | Washington Department of Natural Resources | <u>\$20,000</u> | |
| | Subtotal, Pacific Northwest | \$70,000 | \$0 |
| Rocky Mountain | | | |
| | USDA Forest Service, Region 2 | | \$50,000 |
| | Arizona State Land Department | \$25,000 | |
| | Colorado State Forest Service | \$139,936 | |
| | Idaho Department of Lands | \$25,000 | |
| | Montana Department of Natural Resources and Conservation | \$25,000 | |
| | Nevada Division of Forestry | \$25,000 | |
| | New Mexico Forestry Division | \$25,000 | |
| | Utah Department of Natural Resources | \$25,000 | |
| | Wyoming State Forestry Division | \$25,000 | |
| | University of Montana | \$27,972 | |
| | Utah State University | <u>\$50,000</u> | |
| | Subtotal, Rocky Mountain | \$392,908 | \$50,000 |
| Southern | | | |
| | Alabama Forestry Commission | \$339,507 | |
| | Georgia Forestry Commission | \$156,414 | |
| | Kentucky Division of Forestry | \$276,006 | |
| | Louisiana Office of Forestry | \$155,277 | |
| | South Carolina Forestry Commission | \$432,191 | \$24,079 |
| | Tennessee Department of Agriculture | \$311,953 | |
| | Virginia Department of Forestry | <u>\$518,998</u> | <u>\$18,721</u> |
| | Subtotal, Southern | \$2,190,346 | \$42,800 |
| National Office | | | |
| | Society of American Foresters | <u>\$2,250</u> | |
| | Subtotal, National Office | \$2,250 | \$0 |
| Grand Total | | \$4,209,776 | \$3,227,565 |

Table 5.—Grants and agreements entered into by FIA units, FY 2000

| Unit | Amount | Recipient | Purpose |
|------------------------|------------------|---|---|
| Fort Collins | | | |
| | \$5,623 | Forest Health Management Unit | Analysis of forest health through remote sensing |
| | \$19,450 | Chojnacky Enterprise Team | Volume estimation |
| | \$15,000 | Gary Gadbury | Small area estimation methods |
| | \$16,300 | Chojnacky Enterprise Team | Data visualization |
| | \$15,000 | Minnesota Department of Natural Resources | LANDSAT 7 15m suitability evaluation |
| | \$5,000 | University of Colorado | GIS Conference |
| | <u>\$15,000</u> | Colorado State University | FIA and NRI linkages |
| | \$91,373 | SUBTOTAL | |
| North Central | | | |
| | \$7,750 | North Central Research Station 4502 | Forest health expertise |
| | \$8,500 | North Central Research Station 4401 | Development of growth models |
| | \$17,028 | US Forest Service, Region 9 | Office space |
| | \$37,939 | North Central Research Station 4154 | Forest resource analysis |
| | \$32,315 | Lumberjack RC&D | Implementation of annual forest inventories |
| | \$18,000 | Missouri Department of Conservation | Implementation of annual forest inventories |
| | \$18,156 | Iowa Department of Natural Resources | Implementation of annual forest inventories |
| | \$20,775 | Wisconsin Department of Natural Resources | Implementation of annual forest inventories |
| | \$29,887 | Indiana Department of Natural Resources | Implementation of annual forest inventories |
| | \$82,981 | Minnesota Department of Natural Resources | Implementation of annual forest inventories |
| | \$168,280 | Minnesota Department of Natural Resources | Implementation of annual forest inventories |
| | \$2,000 | University of Indiana | Geospatial analysis support |
| | \$10,000 | University of Minnesota | Satellite forest stratification |
| | \$13,333 | Virginia Tech | Satellite image classification algorithm |
| | \$16,000 | University of Minnesota | Remote sensing stratification research |
| | \$30,000 | University of Missouri | Geospatial analysis support |
| | \$30,000 | University of Illinois | Implementation of annual forest inventories |
| | \$37,500 | Minnesota Department of Natural Resources | Satellite forest stratification |
| | \$40,000 | University of Minnesota | Impacts of oak decline on forest health |
| | \$83,405 | University of Michigan | Implementation of annual forest inventories |
| | <u>\$85,000</u> | Michigan Tech University | Development and distribution of FIA datasets in GIS |
| | \$788,849 | SUBTOTAL | |
| Northeast | | | |
| | \$6,000 | Delaware Department of Agriculture | Implementation of annual forest inventories |
| | \$17,000 | Maryland Forest Service | Implementation of annual forest inventories |
| | \$17,000 | Massachusetts Department of Environment | Implementation of annual forest inventories |
| | \$18,000 | Vermont Division of Forests | Implementation of annual forest inventories |
| | \$19,806 | Delaware Department of Agriculture | Vegetation indicator pilot |
| | \$21,000 | New Hampshire Division of Forests | Implementation of annual forest inventories |
| | \$36,000 | West Virginia Division of Forests and Parks | Implementation of annual forest inventories |
| | \$44,000 | Maine Forest Service | Implementation of annual forest inventories |
| | \$54,000 | New York Department of Environment | Implementation of annual forest inventories |
| | \$310,000 | Maine Forest Service | Implementation of annual forest inventories |
| | \$3,000 | University of Massachusetts | Implementation of annual forest inventories |
| | \$33,000 | West Virginia University | Timber utilization study |
| | \$64,000 | Pennsylvania State University | Implementation of annual forest inventories |
| | <u>\$112,000</u> | University of Massachusetts | Ozone indicator support |
| | \$754,806 | SUBTOTAL | |
| National Office | | | |
| | \$15,000 | US Geological Survey | Forest cover map of the United States |
| | \$5,000 | Chojnacky Enterprise Team | Biomass estimation from FIA data |
| | \$22,000 | Region 1 Forest Health Protection | Demonstrating use of FIA data for national forest assessments |

(table 5 continued on next page)

(table 5 continued)

| Unit | Amount | Recipient | Purpose |
|--------------------------------|--------------------|--|--|
| | \$57,500 | Remote Sensing Application Center | Training course development and implementation for FIA analysts |
| | \$847,980 | USFS Forest Health Monitoring National Office | FHM analysis |
| | \$10,000 | NE Research Station | Kyoto Biomass Database |
| | \$25,000 | Rocky Mountain Research Station | Western FIA Fire Assessment Project |
| | \$10,000 | IUFRO | Global Forest Information System development |
| | \$6,200 | Society of American Foresters | National User Group facilitation |
| | \$123,000 | Eastern Sierra Institute | Lichen indicator advisor support (west) |
| | \$34,000 | Oregon State University | Vegetation indicator advisor |
| | \$101,000 | University of Wisconsin | Lichen indicator advisor support (east) |
| | \$105,000 | University of Nevada at Las Vegas | Quality Assurance support |
| | \$125,000 | North Carolina State University | Analyst support for FHM reports, manuals, monthly reports |
| | \$134,000 | University of Nevada at Las Vegas | Soil indicator support |
| | <u>\$477,000</u> | University of Nevada at Las Vegas | Information management support |
| | \$2,097,680 | SUBTOTAL | |
| Pacific Northwest | | | |
| | \$2,000 | National Park Service | Ozone monitoring |
| | \$25,000 | US Geological Service | Spatial location of historic FIA samples |
| | \$29,000 | PNW Station | Evaluation of urbanization, fragmentation, and management impacts |
| | \$85,000 | PNW Station | Spatial analysis of forest composition |
| | \$25,000 | Oregon state University | Linking forest canopy measurements to wildlife habitat models |
| | \$25,000 | University of Wisconsin | Uneven-aged management models |
| | \$76,000 | Oregon State University | Evaluation of remote sensing models for stratification |
| | <u>\$159,000</u> | University of Leeds | Biodiversity analysis of Southeast Alaska |
| | \$426,000 | SUBTOTAL | |
| Rocky Mountain | | | |
| | \$372,968 | Colorado Forest Service | Implementation of enhanced FIA |
| | \$111,888 | University of Montana | Analysis of Timber product outputs and utilization for the interior western US |
| | <u>\$125,000</u> | Utah State University | Spatial analysis of FIA data |
| | \$609,856 | SUBTOTAL | |
| Southern | | | |
| | \$3,500 | National Forests in Alabama | Assistance in ozone QA |
| | \$15,000 | USFS Remote Sensing Application Center | Development of workplan for FIA training courses |
| | \$23,200 | Southern Research Station 4104 | Development of volume equations |
| | \$30,000 | Southern Research Station 4851 | Development of historical database for the US South |
| | \$40,000 | Southern Research Station 4702 | Digital camera estimation techniques |
| | \$220,621 | South Carolina Forestry Commission | Implementation of annual forest inventories |
| | \$236,564 | Tennessee Department of Agriculture | Implementation of annual forest inventories |
| | \$239,865 | Louisiana Department of Agriculture | Implementation of annual forest inventories |
| | \$269,714 | Texas Forest Service | Implementation of annual forest inventories |
| | \$287,189 | Virginia Department of Forestry | Implementation of annual forest inventories |
| | \$340,870 | Arkansas Forestry Commission | Implementation of annual forest inventories |
| | \$346,131 | Kentucky Division of Forestry | Implementation of annual forest inventories |
| | \$422,778 | Georgia Forestry Commission | Implementation of annual forest inventories |
| | \$439,105 | North Carolina Department of Natural Resources | Implementation of annual forest inventories |
| | \$454,410 | Alabama Forestry Commission | Implementation of annual forest inventories |
| | \$20,000 | Rutgers university | Statistical estimators for annual inventory |
| | \$40,000 | Virginia Tech | Development of remote sensing classification algorithms |
| | \$84,655 | Mississippi State University | Agenda 2020 Research |
| | \$3,513,166 | SUBTOTAL | |
| Grand Total \$8,282,166 | | | |

For information about the status and trends of America's forests, please contact the appropriate office below:

Northeast

Program Manager, FIA
USDA Forest Service
Northeastern Research Station
11 Campus Boulevard, Suite 200
Newtown Square, PA 19073
(610) 557-4075

North Central

Program Manager, FIA
USDA Forest Service
North Central Research Station
1992 Folwell Avenue
St. Paul, MN 55108
(651) 649-5139

South

Program Manager, FIA
USDA Forest Service
Southern Research Station
200 Weaver Boulevard
Asheville, NC 28802
(828) 257-4373

Rocky Mountain

Program Manager, FIA
USDA Forest Service
Rocky Mountain Research Station
507 25th Street
Ogden, UT 84401
(801) 625-5388

Pacific Northwest (includes Alaska and Hawaii)

Program Manager, FIA
USDA Forest Service
Pacific Northwest Research Station
1221 SW Yamhill Street, Suite 200
Portland, OR 97205
(503) 808-2066

Statistical Techniques

Project Leader, FIA
USDA Forest Service
Rocky Mountain Research Station
2150 Centre Avenue, Bldg. A, Suite 350
Fort Collins, CO 80526-1891
(970) 295-5973

National

Forest Inventory National Program Leader
USDA Forest Service 1NW
201 14th Street SW
Washington, DC 20090-6090
(202) 205-1507

All of our regional Internet homepages, as well as a wealth of statistical and other information, are available through the national FIA homepage located at:

fia.fs.fed.us

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