United States
Department of
Agriculture

Forest Service

FS-913

May 2008

Forest Inventory and Analysis

Fiscal Year 2007 Business Report

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Disclaimer

Cover photo: *Island Lake in the Beartooth Mountains of Montana. Courtesy of Jeremy Marshall, Interior West FIA crew leader, Bozeman, MT.*

Contents

Introduction

The Forest Inventory and Analysis (FIA) program of the Forest Service, U.S. Department of Agriculture (USDA), provides the information needed to assess the status, trends, and sustainability of America's forests. This business report, which summarizes program activities in fiscal year (FY) 2007 (October 1, 2006, through September 30, 2007), 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 United States. Those who wish to obtain such information should contact the appropriate regional or national FIA office listed on the inside back cover of this report or go to http://www.fia.fs.fed.us.)

The FIA program is the Nation's continuous forest census. We collect, analyze, and report information on the status and trends of America's forests: how much forest exists, where it exists, who owns it, and how it is changing, as well as how the trees and other forest vegetation are growing, how much has died or been removed, and how the harvested trees are used 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 decision making 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 current health and potential risks to forests. These data are also used to project how forests are likely to appear in 10 to 50 years under various scenarios in order to evaluate whether current forest management practices are sustainable in the long run and to assess whether current policies will allow our grandchildren and their grandchildren to enjoy America's forests as we do today.

Changes from Previous Years' Business Reports

Rescissions, national assessments, and loss of fixed-cost increases continue to have a negative impact on the program. Initial State and Private Forestry (S&PF) funding of $5 million in 2000 should have grown to $6.5 million adjusted for inflation by 2007 but only $4.2 million was provided. Continued losses in this funding are placing cooperative support for States at risk. Increases on the Research and Development side have largely gone to national assessments funding the Albuquerque Service Center. This has been offset by lower indirect costs at the unit level.

We have changed the "Total plots and percent sampled" section of Appendix 1 to more clearly reflect regional accomplishments based on inclusion of funds and support from States. While Congress targeted a 7-year cycle in the East and 10 years in the West, most Eastern States contribute funds to attain a 5-year cycle.

The financial table (app. 2) appears the same as last year's, with a continued focus on consistency between FIA units in how data are reported for administrative and indirect costs. This has been a particular concern of regional and national user groups. Since each unit is expected to share some of the national analysis burden, the inter-unit transfers for this activity are no longer a separate line but are imbedded in each unit's base allocation.

The FIA program continues to seek performance measures that accurately reflect the program's progress toward meeting the goal of annualized inventory in all 50 States. In addition to Appendix 7, which provides a 5-year summary to compare the number of States and the area of forest under annualized inventory, Appendix 9 provides a multiyear performance summary of key program indicators. This will allow users to see program progress toward full implementation.

The FIA performance measures shown in the "Long-Term Strategic Direction" section have been revised to conform to new measures required by the Office of Management and Budget (OMB) Program Assessment Rating Tool. These changes are consistent with OMB guidance to use easily defined measures that clearly convey performance with reduced ambiguity.

Fiscal Year 2007 Program Highlights

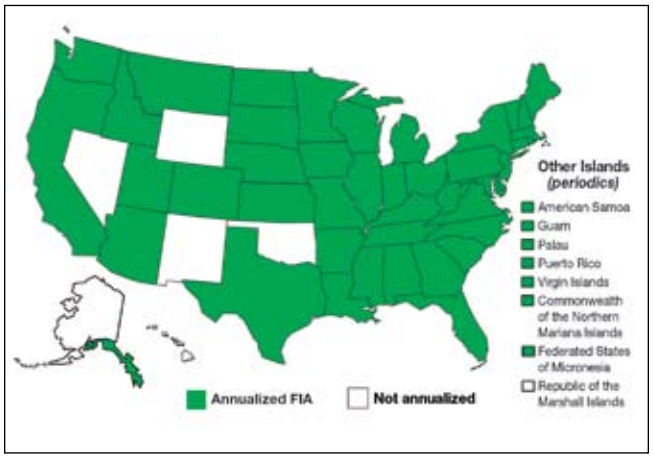
Program highlights for FY 2007 include outputs and products, program changes, program resources, and partner contributions.

Outputs and Products

Appendix 1 shows some comparisons across FIA regional units in the rates, costs, and performance of implementing the FIA program. In FY 2007, we were active in 45 States (fig. 1), measuring 44,637 Phase 2 and 3 sample locations from the base grid, or 14 percent of the total. At the end of FY 2007, 90 percent of all States were covered by the annual FIA program, the same as in FY 2006. The FIA program has also completed periodic inventories, despite exemption from the annualized system, in the Commonwealth of Puerto Rico, U.S. Virgin Islands, American Samoa, Guam, the Republic of Palau, and the Commonwealth of the Northern Mariana Islands in compliance with a congressional mandate under the Renewable Resources Research Act of 1978, as amended.

The FIA program produced 135 reports and publications in FY 2007. Of these publications, 34 were core publications consisting of reports specific to a complete survey unit or complete State, national forest, or national report. We also published 37 articles in peer-reviewed journals, and 31 articles in proceedings from scientific meetings and conferences. Peer-reviewed articles and proceedings contributions reflect our continued commitment to sharing our expertise in inventory and monitoring with the scientific community. The FIA staff participated in 1,571 significant consultations with FIA customers, requiring 6,767 hours of staff time—equivalent to nearly 3 full-time staff positions. The FIA technical staff met on several occasions to further refine the national core FIA program, resulting in continued improvement of the national core field guide; enhancement of Internet tools for accessing and analyzing FIA data, including the National Information Management System (NIMS), which provides a single national platform for processing FIA data and posting it on the Web. Our Internet resources processed 24,335 completed data retrievals where FIA customers obtained user-defined tables and maps of interest, along with 566 retrievals by users of the FSVeg (Field Sampled Vegetation) forest vegetation simulator, which uses FIA data as one source of input data for modeling forest growth and yield.

Figure 1.—*FIA implementation status, 2007.*



Program Changes in FY 2007

In FY 2007, the FIA program completed the 9th year of program transition to an annual inventory system in all 50 States as 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). The FIA program includes three sample levels, or "phases": Phase 1, consisting of remote sensing for stratification to enhance precision; Phase 2, based on the original set of FIA forest measurement plots (approximately 1 plot per 6,000 acres); and Phase 3, consisting of a subsample of Phase 2 plots measured for a broader set of forest ecosystem indicators (approximately one sample location per 94,800 acres). By the end of FY 2003, our goal was to implement an annual FIA program that measures at least 10 percent of all Phase 2 sample locations per year in the Western United States, 15 percent of Phase 2 sample locations per year in the Eastern United States, and 20 percent of Phase 3 sample locations per year in all States. Owing to lack of full funding, we are still more than 2 years behind the original plan. The base program will include annual compilations of the most recent

year's information, with full reporting at 5-year intervals. All States 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 permanent funding level in FY 2007 was still $9.7 million short of the target levels required to complete this transition. A modest increase of $1.9 million expected in the budget for FY 2008 suggests little further progress will be made toward full implementation unless other funding sources are identified.

Program Resources

Appendix 2 shows Federal funding available for the FIA program in 2007 totaled $64,876,885, a net decrease of $538,980 from the previous year's total available funding of $65,415,865. The funding consisted of $63,605,000 appropriated by Congress specifically for FIA, $1,236,885 in carryover and preyear adjustments, and $35,000 for a special urban forestry project in Colorado.

Congress currently appropriates funds annually for the FIA program in two different Forest Service deputy areas: (1) Research and Development and (2) S&PF. Historically, most FIA funding was contained within the research budget of the Forest Service. In FY 2007, the amount of research money provided by Congress for the FIA program was $59,380,000, an increase of $51,000 over the FY 2006 level of $59,329,000 (app. 2). Overall funding includes $4,225,000 in the S&PF Forest Resource Inventory and Analysis budget line (a decrease of $87,000 below the 2006 level of $4,312,000) to support the FIA program in those States that provide cost-share contributions. Cost-share States contributed and additional $7,203,827 toward enhancing the FIA program in 2007. Thus, after all contributions and adjustments, a total of $72,080,712 was available to the FIA program in FY 2007.

The overall indirect rate averaged 20 percent for the program in FY 2007 (fig. 2) compared to 19 percent in FY 2006. Across FIA regions, cost and productivity figures differ because of the cyclical nature of the current inventory system and because of differences among field units in operational methods and ease of access to property. Rates of effective indirect expenses in FIA field units in 2007 ranged from about 9 to 13 percent across the country for field units (app. 2), reflecting differences in both sources of funding as well as research station overhead assessment practices. The National Office had an 82-percent rate of indirect cost that reflects USDA overhead and FIA programwide charges for many support services, which are now paid "off-the-top" to the Albuquerque Service Center. As these costs shifted to the national office, regional indirect rates should decline. Figure 3 shows the total appropriated funding available for FIA from FY 1995 to FY 2008 from all sources, as well as

Figure 2.—*FIA program expenditures by category, 2007.*

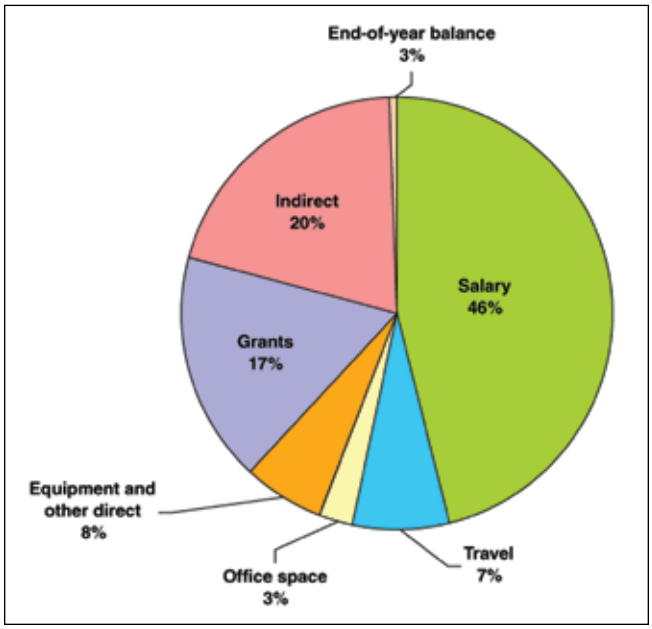
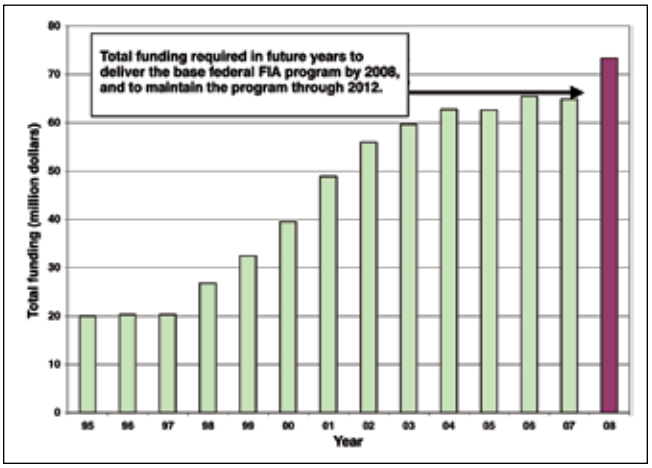


Figure 3.—*FIA funding level, 1995–2008 (projected).*

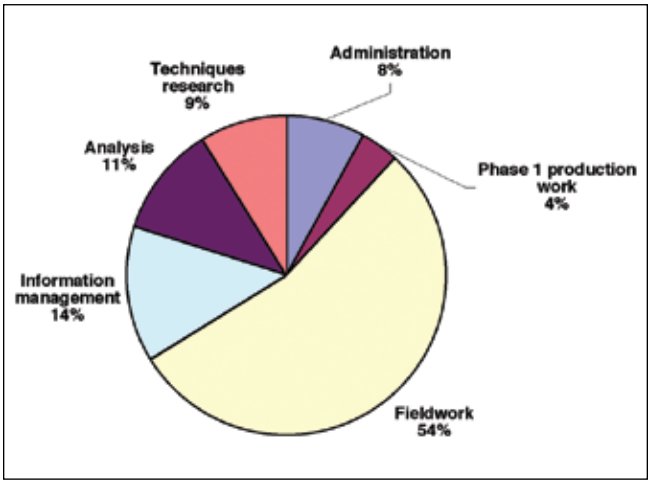


the projected future total funding needed to deliver the base Federal program beyond FY 2008. Appendix 9 also shows trend data in FIA performance measures for 2000 through 2007.

In FY 2007, FIA program staffing consisted of 387 Federal person-years of effort (app. 3), down from 410 Federal person-years in FY 2006. The largest change was in quality assurance staff (declined from 44 to 23 person-years) as we seek efficiencies in this area; otherwise, the changes were relatively small and may indicate that our non-field staffing is approaching the strength needed to implement the program over the long run. Of the Federal FIA employees, approximately 54 percent were involved in supervising and data collection, 25 percent in analysis and information management, 8 percent in program management and administration, 9 percent in techniques research, and 4 percent in Phase 1 production work (fig. 4). Each of these percentages is within 1 to 4 percent of the 2006 staffing values.

Cooperators, especially State forestry organizations, through grants and agreements, accomplish much of the work done by FIA. In FY 2007, it is estimated that we employed an additional 179 people through this mechanism. These additional employees bring the total number of employees working for FIA to 566 and represent 32 percent of the total FIA workforce.

Figure 4.—*FIA program Federal employees, by job group, 2007.*



Partners' 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 inventory program that collects data from 10 percent of sample locations in the Western United States and 15 percent of the sample locations in the Eastern United States on an annual basis, with comprehensive, analytical reports for all States produced at 5-year intervals.

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 from their perspective, such as intensifying the base FIA sample location grid to support analysis at finer spatial resolution, funding additional types of measurements on FIA sample locations, or providing analyses or reporting beyond that provided by FIA. The willingness of partners to contribute resources demonstrates the inherent value of the FIA program as a flexible framework upon which to address other issues of interest.

Appendix 4 lists those partners that have contributed resources to the FIA program in FY 2007, 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 noncash 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 $3,169,499 toward the full 20-percent FIA program envisioned by Congress, and another $4,034,328 in contributions that add value to the FIA program, for a total of $7,203,827 in partners' contributions. This amount is an increase from $7,033,592 contributed by partners in FY 2006. The source of the partner contributions depends on the region of the country and the ability of States and partners to contribute. In the West, where forest land ownership is primarily Federal, the major cost-sharing partners tend to be Federal land managers, particularly the National Forest

System (NFS) branch of the Forest Service, which contributed approximately $124,300 in additional funds to add value to the basic FIA program. In the East, where forest land ownership is predominantly private, States are the major contributors. In FY 2007, States contributed over $2.8 million to help implement the basic 20 percent FIA program, plus an additional $3 million to add value to the basic FIA program.

FIA Data Availability

The FIA program is designed and intended to provide continuously updated, accurate, and reliable information on status and trends in the Nation's forest resources. Current information is one of the chief interests of FIA customers. Our program objectives include (1) providing annual updates for all forested lands sampled as part of the annual inventory system and (2) producing complete analytical reports for all States on a 5-year cycle.

As we move through our transition and toward full program implementation, one key performance measure is how well we are satisfying those objectives. Figure 5 shows, for each State, the age of FIA data accessible in our public database as of October 2007—the start of the 2008 fiscal year. States with 1- to 2- year-old data—the program objective—are shaded green; States with 3- to 5-year-old data are shaded yellow; and States for which data are more than 5 years old are shaded blue. This map shows that progress is being made in all regions of the country. The few States with data older than 5 years are in the South and West. The number of "green" States was 45 in 2007, and the number of "blue" States were 5. The full implementation of the FIA NIMS is now paying dividends by allowing us to catch up with the previous data backlog.

Figure 6 shows, for each State, the data collection year for the most recently published statewide FIA report. States where publications exist based on data less than 5 years old—the program objectives—are shaded green. States with publications 5 to 10 years old are shaded yellow, and States where the most recent publication reports on data more than 10 years old are shaded blue. The North leads the Nation in States having reports based on data that are less than 5 years old, with 13 of 24 States. The South is a distant second, with 4 of 13 States less than 5 years old, and due to the longer base cycle of 10 years, progress is slower in the West.

Figure 5.—*Availability of State FIA data, 2007.*

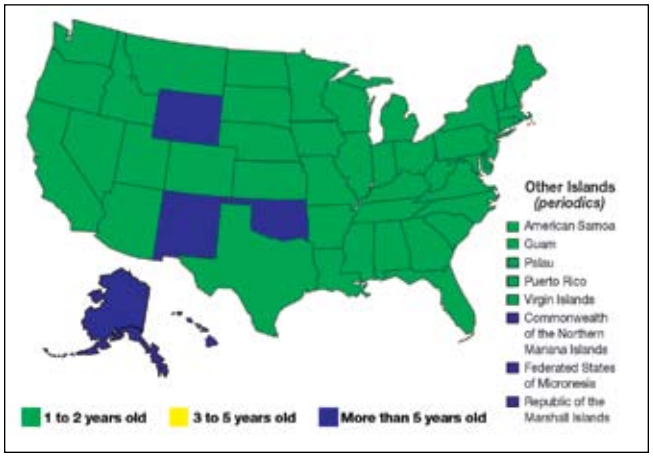
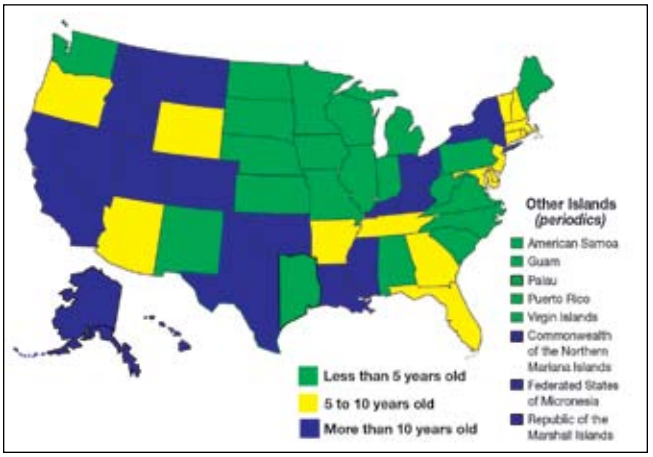


Figure 6.—*Publication status of State reports, 2007.*



Fiscal Year 2007 Regional Highlights

This section provides information on FIA results, accomplishments, and outcomes throughout the country. Those wanting more detailed information may either go to provided links or contact the respective FIA unit (contact information for each FIA unit can be found on the inside back cover of this report). Some examples of FIA program accomplishments and outcomes for FY 2007 follow:

West Coast

Finding: The Forest Resources of Palau, 2003.

Accomplishment: Resource managers in Palau require knowledge of the status and trends in forest vegetation to help plan sustainable supplies of wood, control invasive species, control erosion, detect and plan for land use change, and manage disturbances such as fire and animal damage. The sampled forest area on Palau occupies approximately 90,685 acres, with limestone forest accounting for about 16 percent, and volcanic forest 67 percent of that total. About 2 percent of Palau was classified as urban land and includes roads, towns, and airstrips. About 13 percent of the trees sampled exhibited some form of physical damage. The growth of damaging vines in the crowns of trees was the most prevalent damage type, with conks and lost apical dominance following in prevalence. The most frequently identified damaging agents were other vegetation, disease, and weather.

Outcome: In addition to providing a baseline for change detection in Palau's forests, the FIA inventory provided field training for local students and foresters. The ongoing inventory has been conducted on a different island group each year by a multinational crew that has included foresters trained by FIA. Initial demand for this data has been high with clients including Palau forestry staff, the Natural Resources Conservation Service, university researchers, the Institute for Pacific Islands Forestry, the United Nations Food and Agriculture Organization, the Pacific Southwest Region of the Forest Service, and the U.S. Fish and Wildlife.

Contact: Joseph A. Donnegan, jdonnegan@fs.fed.us, Pacific Northwest Research Station, FIA
Partners: Foresters and ecologists of Palau

Finding: Timber resource statistics for forest land in eastern Washington.

Accomplishment: Understanding the status and trends of forest resources across large regions is important for forest managers and industry. This report is a summary of timber resource statistics for an inventory of the 20 counties in eastern Washington. The inventory in 2001 sampled all private and public lands except those administered by NFS and those that were reserved from management for wood products. Area information for parks and other reserves was obtained directly from the organizations managing these areas. Statistical tables provide estimates of land area, timber volume, growth, mortality, and harvest for eastern Washington as a whole. The area of land producing timber products in eastern Washington has remained relatively stable but the volume per acre of timber that is available has declined over the 11 years studied. Intensive forestry practices on private lands combined with protection and longer rotations on public lands have many implications for nontimber forest resources and future economic outputs.

Outcome: Information on the status and trends of forest resources in Washington is extremely useful to land managers, investment bankers, policymakers, and others in evaluating future investments and management options for their lands. Recently, the Washington Department of Natural Resources published *The Future of Washington Forests*, a report to the State legislature. It documents a new model for public policy development, created through a distinctive collaboration between the Washington Department of Natural Resources and the University of Washington's College of Forest Resources, and used the FIA data as a basis for some of the projections.

Contact: Andrew Gray, agray01@fs.fed.us, Pacific Northwest Research Station, FIA
Partners: Washington Department of Natural Resources

Finding: Pre-epidemic mortality rates for common *Phytophthora ramorum* host tree species in California.

Accomplishment: *Phytophthora ramorum*, the exotic pathogen causing the disease popularly known as "Sudden Oak Death," has a wide variety of hosts and was first noted in California in 1995. Understanding the impacts of *Phytophthora ramorum* on forests requires knowledge of predisease distribution, abundance, and rates of change for affected species. This study estimated pre-epidemic mortality rates for nine common host tree species (bigleaf maple [*Acer macrophyllum*], California bay laurel [*Umbellularia californica*], California black oak [*Quercus kelloggii*], canyon live oak [*Quercus chrysolepis*], coast live oak [*Quercus agrifolia*], Douglas-fir [*Pseudotsuga menziesii*], madrone [*Arbutus menziesii*], coastal redwood [*Sequoia sempervirens*], and tanoak [*Lithocarpus densiflorus*]) using inventory data from 1981-84 and 1991-94 statewide inventories of private (and some public) forest land.

Outcome: Inventory information is currently being collected annually to understand the impacts of *Phytophthora ramorum* on coastal California forest ecosystems. The information in this report provides a predisease baseline that can be used to analyze results from this ongoing monitoring. In addition, the pre-epidemic changes in host species reported in this study may provide helpful background information for forest managers in California deciding whether and how to adjust their silvicultural practices due to concern over Sudden Oak Death.

Contact: Tara M. Barrett, tbarrett@fs.fed.us, Pacific Northwest Research Station, FIA
Partners: Forest Service Forest Health Protection

Interior West

Finding: Spatial Prediction of Species Distributions.

Accomplishment: Knowledge of the probable location of certain key species—as well as their spatial patterns and associations to other species—are vital components of any realistic land management activity. Mapping spatial distributions of both plant and animal species poses numerous statistical challenges. In 2004, a group of ecologists and statisticians met in Riederalp, Switzerland, to discuss advances in predictive modeling of species distributions. One of the products of this workshop was a special issue in Ecological Modeling. The papers contained in this issue offer a diverse look into current modeling issues for spatial prediction of both plant and animal species distributions at a variety of scales. Topics of these papers span several stages of the species distribution modeling process, including choosing between purposive and probabilistic sampling schemes; handling problematic characteristics of ecological data such as disproportionate numbers of zero values, small sample sizes, and presence only data; comparing predictive modeling tools; and making best use of ecological theory in modeling practices. All of these topics are central to the proper modeling of species distributions, and this series of papers provides new insights to each topic, presenting a broad-based context in which to evaluate modeling tools.

Outcome: Rocky Mountain Research Station scientists and their collaborators helped edit the special issue in Ecological Modeling and contributed to some of the individual papers within. Advancing our ability to more accurately predict species distributions will lead to improved maps that can better inform land management decisions.

Moisen, G.G.; Edwards, Jr., T.C.; Osborne, P.E. Further advances in predicting species distributions. Ecological Modelling 199: 129-131.

Moisen, G.G.; Freeman, E.; Blackard, J.; Frescino, T.; Zimmermann, N.E.; Edwards, Jr., T.C. 2007. Predicting tree species presence in Utah: a comparison of stochastic gradient boosting, generalized additive models, and tree-based methods. Ecological Modelling 199:176-187.

Edwards, Jr., T.C.; Cutler, D.R.; Zimmermann, N.E.; Geiser, L.; Moisen, G.G. 2007. Effects of sample survey design on the accuracy of classification models in ecology. Ecological Modelling 199: 132-141.

Contact: Gretchen Moisen, (gmoisen@fs.fed.us), Rocky Mountain Research Station, FIA
Partners: Utah State University; Swiss Federal Research Institute WSL; Forest Service, Pacific Northwest Region

Finding: Report on the status and condition of Bureau of Land Management (BLM) Forest Lands.

Accomplishment: FIA is the only source of strategic-level forest inventory data for the 33 million acres of forest land managed by the BLM outside of Alaska. The BLM requested general information concerning the overall condition of these forest lands in order to understand and manage for recent changes and challenges, including the effects of drought, insect damage and mortality, and fuel loadings. The 10 most common forest types on BLM land accounted for 93 percent of the BLM forest land outside of Alaska. The Rocky Mountain Research Station presented these 10 types by extent, trees per acre, stand size, stand age, volume and biomass, basal area, stand density index, and number of snags. The station also produced maps of the distributions of each of the 10 common forest types. These maps display the extent of the forest types on BLM lands relative to its distribution on other lands and also relative to other forest lands both on and off of BLM lands. A map of forest types on BLM land in Alaska was also produced, from which estimates of forest land acreage by forest type were estimated. Data on each of the States' forest types by stand age, as well as recent growth and mortality were also presented for Interior West States. Causes of mortality were also addressed by species, so that, especially in the States where annual inventory was used, BLM mangers could get a better understanding of recent threats to their forest lands. Fire and insect attack were identified as the major causes of tree mortality.

Outcome: The report will help guide future strategic goals of the BLM Forestry Program. It also identifies broad-scale concerns for BLM forests that should be evaluated on a local scale by BLM State and field offices as they prepare and implement management plans. These include high tree densities for some forest types, expansion of pinyon and juniper types into previously nonforested areas, risk to aspen from decline and die-off, and risk to lodgepole pine from mountain pine beetle.

Bottomley, T. and J. Menlove. 2006. BLM Forest Lands Report–2006: Status and Condition. Bureau of Land Management, Denver, CO. BLM/ST/ST-07/001+5000. 111 pages. Found online at: http://www.blm.gov/style/medialib/blm/wo/Planning_and_Renewable_Resources/0.Par.12541.File.dat/BLMForestLands2006.pdf.

Contact: Jim Menlove, jmenlove@fs.fed.us. Rocky Mountain Research Station, FIA
Partners: BLM

Finding: IW-FIA Scientists take the lead on producing U.S. Forest Biomass Map.

Accomplishment: Forest inventory data collected by the FIA program support estimates of forest population totals over large geographic areas. Regional maps of forest characteristics make these extensive forest resource data more accessible and useful to a larger and more diverse audience. Of particular interest are maps of forest biomass that permit spatially explicit estimates of forest carbon storage and net fluxes from land-use change. A collaborative effort between the FIA program, the Remote Sensing Applications Center, and the International Institute of Tropical Forestry produced this spatially explicit dataset of aboveground live forest biomass for the conterminous United States, Alaska, and Puerto Rico. Aboveground live forest biomass collected on FIA plots were modeled as functions of more than 100 geospatially continuous predictor layers, resulting in an unprecedented picture of how forest biomass is distributed spatially across U.S. landscapes. In addition to the biomass dataset, other products from this effort include a national geospatial predictor database, nationwide forest probability surface, as well as spatial depictions of uncertainty in all products.

Outcome: Synthesizing point data from tens of thousands of ground plots into one spatial dataset, this nationwide map permits visual assessment of forest biomass distribution and can easily feed into those ecosystem and atmospheric models that do not assimilate the point-based data.

Blackard, J.; Finco, M.; Helmer, E.; Holden, G.; Hoppus, M.; Jacobs, D.; Lister, A.; Moisen, G.; Nelson, M.; Riemann, R.; Ruefenacht, B.; Salajanu, D.; Weyermann, D.; Winterberger, K.; Brandeis, T.; Czaplewski, R.; McRoberts, R.; Patterson, P.; Tymcio, R. [In Press.] Mapping U.S. forest biomass using nationwide forest inventory data and moderate resolution information. Remote Sensing of Environment.

Contact: Gretchen Moisen (gmoisen@fs.fed.us)
Partners: Forest Service Remote Sensing Applications Center

Southern

Finding: Analysts report findings for two regional timber product assessments and two State level harvest and utilization studies.

Accomplishment: The Southern Research Station published the 2005 Southern Pulpwood report, along with *The South's Timber Industry-An assessment of Timber Product Output and Use, 2003*. They also published Harvest and Utilization studies for Georgia and North Carolina in 2006, as well. Each of these reports gives statistics on various aspects of utilization and product output for removals from the Southern Region. In addition, the station developed the SOFTIA (Southern Felled-Tree Inventory and Analysis) program to enhance the data collection, processing, and reporting of felled-tree utilization data. This program has already been implemented in ongoing utilization studies in the field in Alabama, Kentucky, North Carolina, and Virginia. They also processed forest industry data for the calendar year 2005 and added it to the Timber Product Output Data Retrieval tool on the Southern FIA Web site.

Outcome: The Southern Research Station will publish 12 individual State timber product output assessments and a Southern timber product output assessment for 2005 over the next fiscal year. The station will also publish the 2006 Southern Pulpwood report, along with two Harvest and Utilization reports.

Contact: Tony G. Johnson, tjohnson09@fs.fed.us, Southern Research Station, FIA

Finding: Scientist shows how FIA data relate to annual changes in forest populations.

Accomplishment: The Southern Research Station developed a formal definition for the sample design of the Forest Service's FIA program with respect to the three-dimensional forest population, e.g., two dimensions of forest area and one dimension in time. One paper presents discrete, time invariant definitions for the components of change, allowing users of FIA data to efficiently partition forest change into the annual components of entry, live growth, mortality, and harvest. The definitions obviate the special problems that arise in the application of the traditional definitions of the components of growth due to the continuous and overlapping temporal intervals featured in the sample design. Prior to this work, the population attributes of the components of growth were not defined by FIA, rendering impossible the task of estimator development. Unlike the traditional components of growth, the temporally discrete definitions can be used to build three-dimensional populations in terms of a set of mutually exclusive component matrices that can be summed to represent the entire population, independently of the sample design. A second paper shows how to formulate highly efficient estimators of those components using FIA data.

Outcome: There are two *Forest Science* articles that give the theory and show potential estimation routes based on that theory:

> **Roesch, F.A. 2007.** The Components of Change for an Annual Forest Inventory Design. Forest Science. 53(3): 406-413.
>
> **Roesch, F.A. 2007.** Compatible Estimators of the Components of Change for a Rotating Panel Forest Inventory Design. Forest Science. 53(1):50-61.

Contact: Dr. Francis A. Roesch, froesch@fs.fed.us, Southern Research Station, FIA

Finding: Scientist describes the effects of harvesting and disturbance on tree species importance in Mississippi.

Accomplishment: The Southern Research Station described impacts of timber harvesting on tree species composition, succession, and importance in north Mississippi over a 27-year period using FIA plot and tree-level data. On undisturbed plots, i.e., plots with less than 5 percent of basal area removed over the study period, the 1967 population had *Pinus echinata* Mill., *Carya* spp., *Quercus falcata* Michx., and *Q. alba* L. as the top four ranking species accounting for 13.8, 12.7, 10.6, and 9.9 percent of basal area, respectively. Upon the final remeasure of these same undisturbed plots in 1994, the data showed that *Q. alba* became dominant followed by *P. echinata*, *Q. falcata*, and *Liquidambar styraciflua* L. Conversely, in stands that had more than 75 percent of basal area removed *P. taeda* accounted for more than 50 percent of stand basal area. It appears that harvesting disturbance and management preferences has resulted in an alteration of the normal trajectory of species

composition dynamics. *P. taeda* is now the dominant species and the dominant overstory softwood across the uplands of north Mississippi. This appears to be markedly different than what would occur naturally as evidenced by the dominance of *Q. alba* on the undisturbed plots. There were also noteworthy differences in understory species composition, most notably *P. taeda* dominant on disturbed plots and *Cornus florida* L. dominant on undisturbed plots.

Outcome: This paper was an integral part of the 15th Central Hardwoods Forest Conference.

> **Hartsell, Andrew J.; Rosson, James F. Jr. 2007**. Changes in tree species importance following harvesting and disturbance in north Mississippi between 1967 and 1994. In: Proceedings of the 15th Central Hardwood Forest Conference. e-GTR-SRS-101. p. 658-667.

Contact: Andrew J. Hartsell, ahartsell@fs.fed.us, Southern Research Station, FIA
Partners: None

Northern

Finding: Northern FIA monitors nonnative invasive species.

Accomplishment: The threat of nonnative invasive plant species in the Nation's forests is an ever growing concern. The aggressive nature of these species allows many of them to out compete native species, causing ecological and economic harm. In 2007, the Northern Research Station FIA started tracking the distribution and abundance of 44 nonnative invasive plants on 20 percent of the forested plots in the North using a nationally consistent protocol in the leaf-on season. On a third of these plots, we also initiated a complete vascular plants inventory using the national P3 understory vegetation protocol to provide a comprehensive picture of vegetative composition of northern forests and to better gauge the full ecological impact of nonnative invasive species.

Outcome: The annual monitoring of native and nonnative plants will allow for the first complete characterization of the region's forest vegetation and help quantify the extent, spread, and impact of invasive plants across the region.

Contact: Dennis May, dmay@fs.fed.us, Northern Research Station, FIA
Partners: The States of Connecticut, Delaware, Iowa, Illinois, Indiana, Kansas, Massachusetts, Maryland, Maine, Michigan, Minnesota, Missouri, North Dakota, Nebraska, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, South Dakota, Vermont, Wisconsin, West Virginia, and Forest Service Regions 1, 2, and 9, and S&PF

Finding: FIA research assists NFS monitoring plan development.

Accomplishment: Each national forest must develop a monitoring plan to track the implementation and effectiveness of the forest plan. We collaborated with the Mark Twain National Forest to investigate ways to provide inventory and monitoring information efficiently. In order to leverage the information that FIA is already collecting, forest personnel worked with FIA to enhance the survey. A team within FIA developed an inventory and monitoring planning tool to intensify the FIA sample where needed. The forest used the tool to link the plan's desired conditions, objectives, and monitoring questions to metrics to use to answer the vegetation-related questions. The tool also helped determine the desired precision of the estimates and the expected number of additional FIA plots to sample on the forest.

Outcome: The result was that the forest needed to continue doubling the number of standard FIA plots and take six times as many forest health and understory vegetation plots. The forest will now be able to efficiently and effectively answer questions about movement toward desired condition, oak decline, restoration of natural forest types, forest fuels, effects of prescribed burning, nonnative species, species richness, wildlife habitat, tree regeneration, growth, removals, mortality, biomass, and carbon.

Contact: Charles T. Scott, ctscott@fs.fed.us, Northern Research Station, FIA
Partners: Forest Service Regions 8 and 9 and Mark Twain National Forest

Finding: FIA research develops an efficient, fractal-based sampling method that maintains spatial balance and allows for standard statistical analyses of results.

Accomplishment: In order to help Wisconsin Division of Forestry and Indiana Department of Natural Resources set up a monitoring network on their State-owned forest lands, FIA's National Inventory and Monitoring Applications Center (NIMAC) developed a fractal-based technique to create spatially balanced networks of sample plots and assure an even distribution of plots across the forest and over time. The technique can be used for any intensification of FIA-like plots. The research has accepted for publication in the journal Environmental Monitoring and Assessment. The tool has been programmed into a GIS. NIMAC also helped develop the field manual and the data collection, data processing, and analysis software. These tools will allow them to analyze their forest lands and compare them to the surrounding areas using FIA data.

Outcome: Both Wisconsin and Indiana have begun using the plots chosen with this technique—Wisconsin is currently collecting data, and Indiana is planning their field work. This technique allowed the States to leverage the information collected by FIA, resulting in a more efficient inventory. Results will help Wisconsin maintain their forest certification on over 500,000 acres, and will help Indiana better manage their State forest land.

Contact: Andrew Lister, alister@fs.fed.us, Northern Research Station, FIA and NIMAC
Partners: Wisconsin Department of Natural Resources, Indiana Department of Natural Resources

National Office

The National Office of the FIA program helps to guide and coordinate the FIA field units engaged in implementing the enhanced FIA program. Much of the National Office experience is in making presentations, preparing policy white papers and budget justifications, and providing input to national and international organizations.

In FY 2007, the National Office staff:

- Provided budget coordination, briefings, and guidance for FIA field units.
- Facilitated one FIA management team meeting and dozens of briefings for internal and external partners, customers, collaborators, and supporters.
- Collaborated with the Society of American Foresters and assisted with the seventh national user-group meeting for FIA customers, which was held in Baltimore, MD.
- Worked with the National Park Service to improve access to park lands and encourage opportunities for collaborative work. Developed a generic work plan to inform National Park Service regional coordinators on upcoming park access needs.
- Collaborated with the BLM and the Natural Resources Conservation Service to design common protocols for strategic rangeland monitoring.
- Continued working with the Conservation Biology Institute in Corvallis, OR, to develop and improve the Protected Areas Database.
- Completed design, layout, author selection, and draft report for the upcoming Resource Planning Act (RPA) assessment report on forest resources. Posted notice of review national tables to the Federal Register and completed review.
- Began planning for leadership of Criterion 2, maintenance of productive capacity of forest ecosystems, for the 2010 U.S. forest sustainability report.
- Began work on coordinating coding and testing National Vegetation Classification System algorithm for use with FIA data in the Eastern United States in cooperation with FIA by NatureServe.
- Cooperated with United Nations Food and Agriculture Organization to help Natural Inquirer experts develop a teaching guide for global indicators of sustainable forests based on inputs from the United Nations and other nations.

- Participated in Food and Agriculture Organization/North American Forestry Commission Inventory Working Group project on a large-scale summary database for North America. Published a joint peer-reviewed publication with Canada and Mexico on estimating tree species diversity from national inventory data.
- Cooperated with Brazil on design and implementation of their new national forest inventory.
- Coauthored publication on the history of forest survey in the United States from 1830 to 2004.

Spatial Data Service Center

Spatial Data Services (SDS) Members
Liz LaPoint—Team Lead, Northern Research Station FIA, National projects
Mark Hatfield—Northern Research Station FIA
Sam Lambert—Southern Research Station FIA
Ron Tymcio—Interior West FIA
Dale Weyermann—Pacific Northwest FIA

News, Changes, and Updates

As part of an effort to increase the visibility of Spatial Data Services (SDS), the group created a brochure that came out in time for distribution at the SAF meeting in October 2007. We plan on distributing the brochure at user's group meetings in the future. See your local SDS person for a copy. We also produced and distributed a short summary document describing our work.

SDS is currently working with the following partners under MOU's (memorandum of understanding): Pacific Northwest Research Station, University of Maryland, Canadian Forest Service, Clark University, Woods Hole Institute, National Aeronautics and Space Administration (NASA)—Jet Propulsion Lab, NASA— Goddard Space Flight Center, National Park Service, University of Wisconsin, Virginia Tech, researchers assigned to provide analyses for the Resource Planning Act 5 year reports, Institute of Ecosystem Studies, Earth Resources Observation and Science (EROS) Data Center, Oregon State University, the Forest Service Landfire project, and Maine Inland Fish and Wildlife.

The EROS Data Center has completed the National Land Cover Dataset. The MOU that covers this group's work with FIA data has not yet been terminated, but will be within the next few months as work closes out on the project.

SDS team members participated in the FIA Symposium, Wildlife Society Meeting, and Northern Area State Foresters meetings.

SDS Team members are active in many groups within the FIA organization: National Reporting and Data Distribution Team, Information Management Band, National Carbon Reporting Team, Rapid Assessment Team.

FY 2007 Data Requests

There were 492 requests active in FY 2007. National or multiregional data requests accounted for 6 percent of the total number of requests. Of the received requests, 94 percent were completed by the end of the fiscal year, and 5 percent remain in progress. The remaining 1 percent was either canceled by the client, put on hold by the client, or the client has not remained in contact with SDS.

The two largest categories are consultation type requests and those for spatial intersections. The consultation request may be a clarification of FIA data, a search for a GIS data layer or assistance with a GIS task. The spatial requests generally involve overlaying FIA plots on a client's GIS or imagery and returning information to the client.

Our largest customer group continues to be academia, accounting for 28 percent of all new requests. The group Other FS, consists of non-FIA Forest Service researchers and S&PF clients. The Forest Service Research community has also become an important client for FIA.

Figure 7.—*Requests made to the FIA Spatial Data Service Center by unit, 2007.*

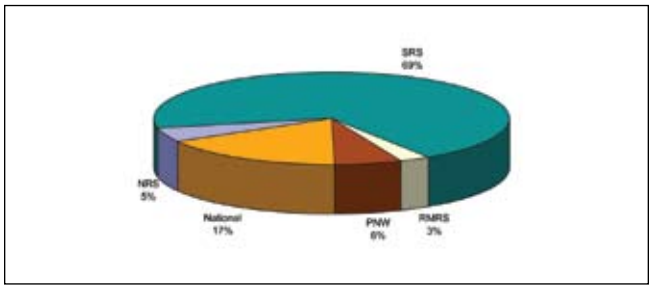


Figure 8.—*Requests made to the FIA Spatial Data Service Center by type, 2007.*

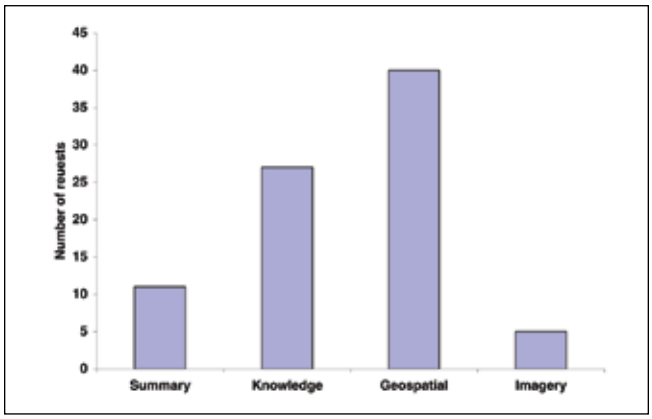
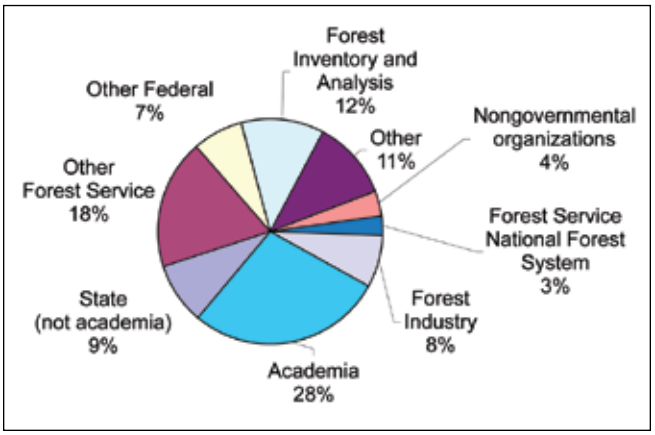


Figure 9.—*Requests made to the FIA Spatial Data Service Center by organization, 2007.*

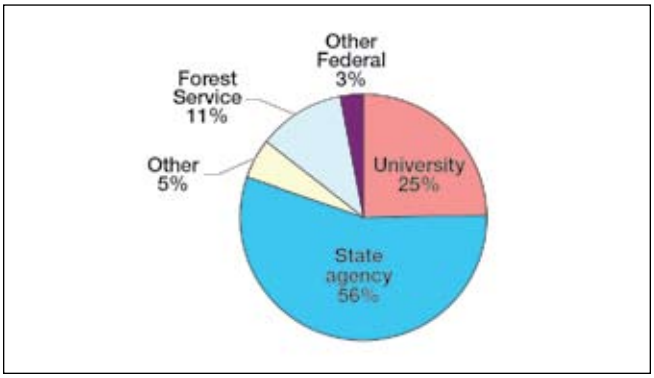


Grants and Agreements

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. Appendix 5 lists 81 grants and agreements funded in FY 2007, composing $11,226,642 or approximately 17 percent of the total available FIA program budget. This amount is an increase of $1.2 million above those awarded in FY 2006. This number fluctuates from year to year but demonstrates the reliance of the FIA program on collaborating with external partners to get work done efficiently. Most of these grants and agreements were with State agency (56 percent of funds) and university partners (25 percent of funds) (fig. 10).

Additional cooperators included other Federal and Forest Service offices (14 percent of funds) and other non-Federal partners (5 percent of funds). The major purpose for grants was for collaboration in data collection (66 percent), research in techniques development (19 percent), and information management (15 percent). We expect to continue to make significant use of grants and agreements to augment FIA staff capacity in the analysis and reporting of annual FIA data for individual States.

Figure 10.—*Grants and agreements, by recipient group, 2007.*



Consultations by FIA Staff

Consulting with FIA customers is a growing part of our business. Just as we have increased information (both data and analyses) made available on our Web site, our FIA staff are increasingly in demand by customers seeking either to understand more about the FIA program and our results, or seeking to address a specific question not obviously addressed through other means. Questions pertaining to a single administrative unit (for example, to a single State or to a single national forest) often are referred to partners within that administrative unit (for example, State foresters, national forest analytical staff) who can often provide better context and who prefer to maintain their contacts with their customers. When questions span multiple administrative units, FIA staff will try to help the customer find an answer. FIA does not compete with private sector consultants; rather, we answer questions about our methods and help customers (including private consultants) use FIA data to answer their own questions. Appendix 6 shows the number of significant consultations that FIA staff provided in FY 2007, by unit and by type of customer. A significant consultation is defined as any dialogue with a customer outside of FIA that requires more than a single hour to address, and which is not part of our normal course of business in collecting, analyzing, and reporting on FIA information. All together, FIA staff addressed 1,571 significant consultations requiring 6,767 staff hours to complete—equivalent to nearly 3 full-time staff-years. Over one-half of the time and consultations were conducted with other government agencies, such as State agencies and other Federal agencies, as well as having internal discussions within the Forest Service. Other major client groups included academic clients (approximately 20 percent of the consultations and 15 percent of the time), industry (14 percent of the consultations and 8 percent of the time), and nongovernmental organizations (8 percent of the consultations and 12 percent of the time). The data also show some regional variations. For example, although government organizations (largely State agencies) are the major clients throughout the country, industry and academic customers are secondary major clients in the East.

Program Safety

Safety is a primary concern for the Forest Service and especially for FIA, whose employees travel hundreds of thousands of miles each year in routine conduct of its business. Standard safety training is mandatory and is conducted at each field unit. Safety training and equipment are provided for headquarters offices, field offices, and field crews, including driver training, first aid kits, cell phones, etc. In regions with special circumstances, such as need for aircraft, access to large areas of wilderness, or exposure to potentially dangerous wildlife, additional training and equipment is provided. Information on specific safety training and criteria are available through the FIA main Web site at http://fia.fs.fed.us.

Regional Safety Notes

Pacific Northwest Research Station—The Pacific Northwest participated in the national safety review of FIA units. Highlights of the review were recognizing the engagement of staff in all aspects of safety, including quality safety training for field staff, excellent management of the unit's aviation program, and its emphasis on safety recognition and reward system. The safety committee also conducted the annual safety perceptions survey, created a near miss reporting system, held a safety logo contest, and successfully implemented the "Safety Bucks" program to recognize and reward safe behaviors.

Interior West—The Interior West safety committee completed multiple projects this year while focusing efforts on leading indicators. The unit completed a project aviation safety plan; developed a safety awards program in which every employee has the ability to recognize coworkers; purchased new, more reliable satellite phones; developed accident investigation procedures and a "Lessons Learned" accident summary form; and started a monthly newsletter for all employees that includes contests and trivia to encourage reading and feedback. The unit is also active in the newly formed Rocky Mountain Research Station Safety Task Force. Additionally, the program and the Intermountain Regional Office created a joint safety committee. This new partnership provides multiple "lunch 'n' learns" throughout the year, an annual health fair, blood screenings, blood drives, flu shots, and trainings related to use of all-terrain vehicles, defensive driving, and Cardiopulmonary Resuscitation/First Aid/automated external defibrillator for regional and FIA employees. In addition to the unit's full time safety specialist, three employees were trained as collateral duty safety officers to assist the program in safety facilities inspections and accident investigations. The program displayed improvement in all pillars of the annual safety program evaluation.

Southern Research Station—Training in defensive driving was provided for all employees that needed to renew their defensive driving requirement. Required first aid and CPR training was provided for all office supervisors and offered to all other office employees. The Southern Research Station FIA Safety Committee was re-chartered during FY 2007. Training was also offered in precautions associated with blood-borne pathogens and the proper use of vehicle winches.

Northern Research Station—The Northern Research Station FIA safety committee—comprised of four members from the field, Newtown Square, and St. Paul locations—sent monthly safety reminders and initiated a nonmonetary award for safety writing. Northern Research Station FIA participated in a baseline review to improve its safety program.

FIA program safety summary for FY 2007.

Incident measure	Pacific Northwest	Interior West	Southern	Northern
Injury and illness frequency rate[1]	8 6	6 4.8	14 15.02	 Not available
Motor vehicle accident frequency rate[2]	6 4	3 4.1	3 3.43	5
Fixed wing aircraft accident frequency rate[3]	0	2 flights 0	 Not applicable	 Not applicable
Rotary wing aircraft frequency rate[4]	0	Not applicable	Not applicable	Not applicable

[1] Injury/Illness Frequency rate = number of chargeable injuries (incidents) per 100 full-time equivalent employees.

[2] MVA Frequency rate = number of chargeable Motor Vehicle Accidents (MVA) per million miles driven.

[3] Fixed Wing Aircraft Frequency Rate = number of fixed-wing aircraft accidents per 100,000 miles flown.

[4] Rotary Wing Aircraft Frequency Rate = number of rotary-wing aircraft accidents per 100,000 miles flown.

FIA—National Forest Collaboration

In FY 2002, the Deputy Chief for Research and Development and the Deputy Chief for NFS signed an internal memorandum of understanding providing for permanent inclusion of all national forest lands within the FIA program. This was a significant step forward for FIA customers, guaranteeing the availability of consistent FIA information across the entire United States, including all national forest lands. Under the terms of the negotiated agreement, the national forests provide permanent funding to help cover the cost of the FIA program on national forest lands, and, in return, the FIA program agrees to implement the program in a consistent manner with inventory on other lands within the same State and to load FIA data into the national forest information base for use in forest planning and other strategic-scale assessments. FIA will also provide advice and assistance in developing forest-level sampling protocols linked to FIA, and collaborate with national forests that want to contribute additional resources for additional sampling.

In FY 2007, FIA continued development and operation of applications to load FIA data from national forests into FSVeg (Field Sampled Vegetation module of NIMS), the corporate standard database for national forest staff. Recent collaborative efforts between FIA and NFS may be reviewed on the Web at http://www.fia.fs.fed.us.

Based on feedback from the nine NFS regions, FIA is meeting the needs of NFS partners with caveats. Additional work continues to be needed in the western regions in the areas of coordinating fieldwork and in defining and collecting a consistent set of regional variables on NFS lands to meet NFS needs. More effort needs to be made in getting FIA data from NFS lands into the hands of NFS staff and in developing data presentations, analyses, and reports tailored to the specific needs of NFS managers. FIA will continue to work on these issues in FY 2007. Increasing demands from NFS customers for additional forest planning data and the move toward an Environmental Monitoring Systems (EMS) approach to planning will most certainly require changes in current financial arrangements with stronger NFS funding support at the national level. In a meeting with NFS inventory specialists on inputs to the FIA Strategic Plan the following issues were raised as NFS priorities:

- Implement the annual system in all States.
- Collect data on all lands.
- Collect a full suite of vegetation and associated information.
- Follow standard protocols across all NFS lands.
- Allow for “a la carte protocols.”
- Allow for increasing the intensity of the core grid as needed.
- Support a mid-level vegetation map product meeting Federal Geographic Data Committee standards.
- Provide an inventory compilation package that meets NFS business needs.

The NFS will participate in a national user’s survey on defining the FIA core program and provide input on their planning needs from the annualized inventory.

Comparing FY 2007 Accomplishments with FY 2006 and FY 2008 Plans

In the FY 2006 business report for FIA, we included a section stating our plans for FY 2007. Below we show how our actions in FY 2007 matched our plans from FY 2006 and our plans for FY 2008.

In the FY 2006 business report, we said that in FY 2007 we would—	In FY 2007, we—	In FY 2008, we will—
Continue transition to an annual inventory system by continuing annual inventories on all forested lands in all current States and evaluating damage from Hurricane Katrina in Mississippi.	Continued annual inventories on all forested lands in all current States. A pilot study in new techniques continues in Nevada. Completed the closeout inventory in Mississippi after Hurricane Katrina. Initiated understory vegetation sampling protocol across 24 States in the North.	Continue annual inventories in 45 States and the pilot study in Nevada. Add Oklahoma and New Mexico to the annualized inventory program.
Support the National Woodland Owner Survey (NWOS)	Staffed the Family Forest Research Center at University of Massachusetts—Amherst. Completed and compiled information from the first cycle of the annualized NWOS.	Publish a 5-year summary report, develop an on-line data distribution tool, and begin planning for the next iteration of the survey.
Continue engaging partners, users, and clients to develop and finalize the new Strategic Plan to guide the program for FY 2008 through FY 2012, setting priorities and implementation goals.	Completed the new FIA Strategic Plan for 2008-2012 and revised core variables. Published plan is available on the Web at http://fia.fs.fed.us. Held 16 user group and management team meetings.	Continue to consult with clients on program priorities and new directions. Complete rangeland pilot study and implement initial urban forest monitoring.
Continue to publish the comprehensive 5-year State reports that integrate information on forest health in Indiana, Iowa, Minnesota, Missouri, Pennsylvania, Arkansas, Kentucky, east Texas, Virginia, and Oregon. Complete North Carolina and Alabama final periodic reports. Complete a periodic report for Puerto Rico, including a Spanish translation.	Published State report for Indiana, Iowa, Minnesota, Missouri, Pennsylvania, and Virginia. Published final periodic reports for North Carolina, Alabama, and West Virginia. Due to processing delays, reviewed, but did not publish, reports for Arkansas, Kentucky, east Texas, and Oregon. Published periodic report for Virgin Islands and Puerto Rico in English and started Spanish version.	Publish State reports for Wisconsin, Michigan, Kansas, Illinois, Ohio, Oregon, California, Arkansas, Kentucky, and east Texas. Continue movement to convert annual reports to simplified Web-based format. Complete Spanish version of Puerto Rico report.
Continue collaborative stewardship of the FIA program by holding user-group meetings in all regions of the country and at the national level, holding regional management team meetings in all regions of the country, and holding one scientific symposium on FIA.	Held a total of 16 user group and management team meetings in all regions of the country and a national user group meeting Baltimore, MD, in October 2007. Shared the strategic plan with our partners and users and used their feedback to complete final plan. Re-evaluated the science symposium to determine the best timing for this program feature.	Continue collaborative stewardship of the FIA program by holding user-group meetings in all regions of the country and at the national level, holding regional management team meetings in all regions of the country, and resuming scientific symposium on a biennial basis.
Continue to make our data more accessible and usable by adding analytical tools and program documentation to online FIA databases and Web pages. Release a Web Services data distribution tool.	Delivered the Forest Inventory Data Online (FIDO) system, FIA's primary delivery tool was demonstrated for clients at the 2007 Society of American Foresters National Convention in October. The prototype may be viewed on FIA Web site at http://fia.fs.fed.us.	Continue ongoing enhancement of FIDO system, including more output formats.

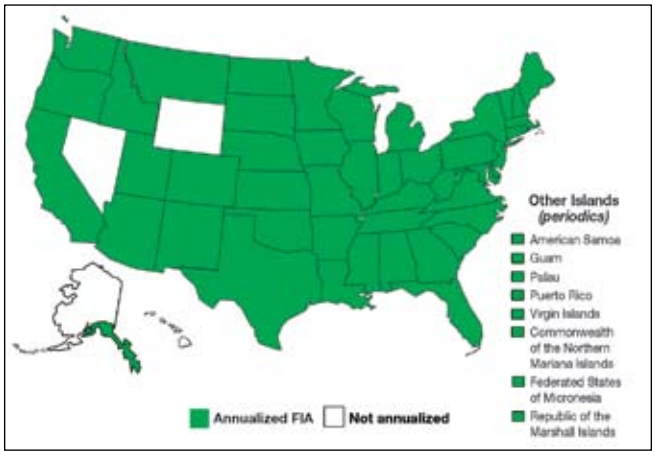
In the FY 2006 business report, we said that in FY 2007 we would—	In FY 2007, we—	In FY 2008, we will—
Publish national forest/nonforest mask, cover type map, and biomass map based on FIA data. Finalize a prototype set of core map products based on FIA data.	Peer reviewed and published forest cover and biomass publications. Began work on developing standards and protocols for FIA map atlas.	
Continue to conduct applied research into ways of using technology to increase program efficiency, to develop new products to meet customers' needs, and to collaborate with partners to reduce program costs and increase the scope of products offered. Complete the estimation engine for Phase 2 data.	Evaluated remote sensing options for more efficient field data collection, phase 1 sampling, and for the development of core map products such as the Biomass Map. Added the Down Woody material (DWM) processing procedures to the estimation engine. Developed and deployed a regional portable data recorder program for data collection of logging utilization studies in the Southern States.	Review and evaluate client recommendations on possible program efficiencies to assure full-core program implementation in all States.
Complete the beta release of the Portable Data Recorder data collection program (originally e-Plot, now MIDAS) with national and regional variables.	Based on the results of a mid-project review, refined the goals and charged a new team to complete the project in 2008. Evaluated field data measurement quality objectives and published the quality assurance results published.	Complete the beta release of the Portable Data Recorder data collection program (MIDAS) with national and regional variables.
Provide technical assistance and software tools to States, NFS, and collaborating nations, to monitor criteria and indicators of sustainable forestry on their lands using consistent and compatible methods.	Provided technical assistance and software tools to implement State forest monitoring programs in Wisconsin and Indiana. Collaborated with Mark Twain National Forest to identify information needs and intensify the existing FIA sample. Provided guidance to the Russian Federal Forest Agency on developing their new National Forest Inventory and continued collaboration on inventories of Honduran national forests for sustainable management.	Provide technical assistance and software tools to States, NFS, and collaborating nations, to monitor criteria and indicators of sustainable forestry on their lands using consistent and compatible methods.
Complete production release of NIMS V3.0.	Completed NIMS 3.0 and continued testing at regional units.	Continue to improve NIMS to enhance program data delivery. Release NIMS-CS 3+. Release FIADB 4.0.
Develop a prototype for FIAtlas, the first electronic atlas of mapped FIA data layers. Complete the first 15 core layers as input to a mini-atlas in the 2007 Forest Resources of the United States RPA publication.	Produced 20 draft atlas maps for the Forest Resources of the United States RPA publication, including map themes, cartographic layout, geographic templates, and corresponding FIA data base files. Developed prototype maps for the FIAtlas for review and placed on the national FIA Web site. Produced an initial timetable and map type list for the atlas.	Prepare a final 20 map atlas for the 2007 Forest Resources of the United States RPA publication. Complete the first design phase of a national FIAtlas consisting of over 75 web based maps illustrating multiple aspects of nation wide forest issues using FIA and related data.

Fiscal Year 2008 FIA Program Direction

The FIA program initially intended to implement the "Strategic Plan for Forest Inventory and Monitoring" by achieving a base Federal program of 10 percent per year in the West and 15 percent per year in the East by FY 2003. Unfortunately, while funding for the FIA program increased over the past several years, it has not increased sufficiently to allow full program implementation as scheduled in 2003. And, as we will receive only a modest increase in funds in 2008, we will continue to maintain annual inventory only in the states currently in the program. We continue to be optimistic that funding will increase in 2009 to allow full implementation of the program in those states not currently being inventoried.

In FY 2008, to continue progress toward full program implementation. Planned accomplishments for FY 2008 were noted in the previous section. Figure 11 shows the status of implementation the annualized inventory in FY 2008 by State.

Figure 11.—*Planned FIA implementation status, 2008.*



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 toward those goals. Although intended for application at the agency level, the GPRA framework also provides an excellent tool for guiding progress at the project level. The following tabulation shows our key goals, performance measures, benchmarks, and targets for the FIA program for 2003-2007. In future business reports, we will repeat this table to show how we are progressing toward our goals.

Goal	Performance measure	2003 level	2004 level	2005 level	2006 level	2007 level	Target level
		Inputs					
Maintain sufficient funding to support the base Federal FIA program	Percentage of total Federal funding necessary for annualized inventory received	84	82	83	87	87	100
		Outputs					
Include 100 percent of U.S. forest lands in the FIA sample population	Percentage of Nation's forest land included in the target FIA sample population	100	100	100	100	100	100
Keep fieldwork current	Percentage of States actively engaged in the Annualized Inventory program	78	88	90	90	90	100
Make data accessible to national forest customers	Percentage of national forest land for which FIA data are loaded into NRIS	18	65	80	84	86	100
		Outcomes					
Keep analysis current	Percentage of States with FIA State report less than 5 years old	48	52	48	42	42	100
Keep online data current	Percentage of States with FIA online data less than 2 years old	38	56	80	84	88	100
Customer satisfaction	Percentage of customers rating service as "satisfactory" or better	89	85	85	85	85	100
Partner participation	Partner financial contributions expressed as percentage of total Federal FIA budget	18	10	10	11	10	20

Conclusions

We continue to operate in a new era of partnership and collaboration in which Federal and State agencies and other colleagues work together 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 the latest 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 transparent view of the business practices of the FIA program, and we encourage you to help us improve the program with your feedback.

Glossary of Terms Used in Appendixes

Base Federal FIA program. A level of FIA program delivery that includes sampling 10 percent of base grid Phase 2 plots per year in the Western United States, 15 percent of base grid plots per year in the Eastern United States, and 20 percent of Phase 3 plots nationwide, with data compiled and made available annually and complete State analyses done every 5 years.

Base grid plots sampled. The base grid consists of one sample location per approximately 6,000 acres (Phase 2) and one location per approximately 94,800 acres (Phase 3). Some partners chose to intensify beyond the base grid.

Buy down. Plots installed at State expense to reach 20-percent implementation level stated in the Farm Bill.

Core reports. A class of publications that summarizes forest status and trends for a complete administrative unit, such as a whole State or a national forest. Examples include survey unit reports, State statistical or analytical reports, or national forest reports.

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 "effective indirect expenses." Includes work done for other units as a normal part of FIA business and the following items:

***Salary*.** Includes direct salary and costs, plus benefits charged to the FIA unit, broken into the following categories:

Administration. Program manager, project leader, and clerical staff.

Phase 1 production. Aerial photointerpreters, satellite image analysts engaged in Phase 1 stratification.

Field support. Field crew supervisors who spend less than 50 percent of their time measuring plots; others involved in supporting and coordinating field crews.

Data collection. All staff spending at least 50 percent of their time measuring regular plots.

QA (quality assurance) crews. All staff spending at least 50 percent of their time doing QA fieldwork.

Information management. Programmers, data 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. Broken into the following categories:

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, communications costs.

Other. Any cost that does not fit into one of the above equipment categories.

Publications. Costs for laying out, editing, printing, and distributing publications.

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

Office space and utilities. Charges for rent, lease, or other real estate costs for FIA staff, plus utilities.

Other direct expenses. Any cost that does not fit into one of the above categories, including training costs, unemployment, office supplies, postage, awards, moving expenses, and other expenses related to delivering the FIA program.

FRIA (Forest Resource Inventory and Assessment). An account created by Congress within the S&PF portion of the Forest Service budget to provide funds to support FIA collaboration with States.

Effective indirect expenses. Indirect expenses include items such as research station management and administrative salaries, operating expenses, research station budget shortfalls, and other items for which the FIA unit is assessed by their research station. Each station has its own means for determining these assessments. Rather than reporting the different rates, we simply calculate the "Effective Indirect Expenses" item by subtraction:

Effective indirect expenses = (total available funds) – (total direct FIA expenses + end of year balance).

Effective indirect rate. Effective indirect expenses divided by total available funds. 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 funds available to FIA.

Intensification. Plots installed at partner expense to achieve higher quality estimates for smaller areas of a State.

Management meetings held. Number of national or regional management team meetings held by each FIA unit. A management team for each FIA region consists of partners who are sharing in the funding and implementation of the FIA program. This group typically consists of representatives from the FIA unit, NFS regional offices, S&PF offices, and State forestry agencies.

NGO (nongovernmental organization). A class of customers with whom FIA staff are asked to consult. Includes environmental organizations, professional societies, and other generally not-for-profit organizations.

NIPF (nonindustrial private forest land owners). Private individuals or organizations who own forest land for purposes other than industrial operations.

Percentage of total plots sampled. Total number of base grid plots sampled divided by the total number of plots in the base grid.

Percentage of full funding. Total available funds divided by the funding needed to fully implement the base Federal program for a given year's target funding.

Percentage 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.

Phase 1. Stratification of the land base into forested and nonforested classes by using remotely sensed imagery (aerial photographs or satellite imagery). Done to increase the efficiency of fieldwork and estimation.

Phase 2. A set of sample locations, approximately one for every 6,000 acres of land, measured for basic mensurational forest attributes.

Phase 3. A subset of Phase 2 sample locations, approximately one for every 96,000 acres of land, measured for a more extended set of ecosystem attributes, including tree crown condition, lichen community diversity, soil data, and down woody debris.

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

Core reports. A report pertaining to reporting inventory results for a complete geographic entity. Includes:

National forest reports. A complete analysis for a single national forest.

State resource reports. A complete statistical or analytical summary of the forested resources within a single State.

State timber product output (TPO) reports. A complete analysis of TPO data for a single State.

Regional reports. A report for a group of States or other contiguous unit larger than a single State, such as a regional assessment.

National report. A report for the entire Nation, such as the Resource Planning Act (RPA) report.

Peer-reviewed journal articles. An article appearing in a refereed or peer-reviewed journal.

Proceedings papers. An article appearing in the proceedings from a meeting or symposium.

Other station publications. A manuscript published by the Forest Service, for example, a general technical report.

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

FY (end-of-the-year) balance. Funds reported in the previous fiscal year business report as unspent at the end of that fiscal year and presumably available for use in the current fiscal year.

Significant consultations. Cases in which an FIA staff person spent at least 1 hour in discussion, analysis, or research to address a specific question or need raised by an external FIA program customer, and which is not part of our normal course of business in collecting, analyzing, and reporting FIA information.

Total available funds. Total funds available for delivering the FIA program, including funds appropriated by Congress for the FIA program, other funds made available by Forest Service partners, and previous year carryover funds. This is a measure of Federal funding for the base Federal program.

User-group meetings held. Number of user group meetings sponsored or attended by each FIA unit. A user group meeting is an open meeting in which 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.

Contacts

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

Northern

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

Southern

(includes Commonwealth of Puerto Rico and the U.S. Virgin Islands)
Program Manager, FIA
Forest Service
Southern Research Station
4700 Old Kingston Pike
Knoxville, TN 37919
865–862–2073

National Office

National Office
National Program Leader, FIA
Forest Service
1601 North Kent Street, Suite 400
Arlington, VA 22209
703–605–4177

Interior West

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

Pacific Northwest

Program Manager, FIA
Forest Service
Pacific Northwest Research Station
620 SW Main St., Suite 400
Portland, OR 97205
503–808–2066

All our regional Internet home pages, as well as a wealth of statistical and other information, are available through the national FIA homepage located at http://www.fia.fs.fed.us.

Appendix 1.—*Performance Measures for the FY 2007 FIA Program.*

	Pacific Northwest	Interior West	Southern	Northern	National Office	Total
Total available Federal funds, FY 2007	$13,555,000	$11,983,561	$14,550,596	$17,107,049	$7,680,679	$64,876,885
Total appropriated Federal funds, FY 2007	$13,479,000	$11,699,000	$14,597,000	$16,167,000	$7,663,000	$63,605,000
Estimated % of FY 2007 full funding	86%	85%	88%	95%	72%	87%
Contributions from partners:						
Supporting the 20% FIA program	$85,000	$0	$1,484,393	$1,600,106	$0	$3,169,499
Value-added contributions	$261,000	$399,151	$403,553	$2,900,624	$70,000	$4,034,328
Total contributions	$346,000	$399,151	$1,887,946	$4,500,730	$70,000	$7,203,827
Base grid plots sampled (includes buy down):						
Phase 2, forested	2,243	1,785	8,469	6,302		18,799
Phase 2, nonforested	1,535	4,416	5,260	12,444		23,655
Total Phase 2 plots	3,778	6,201	13,729	18,746		42,454
Phase 3, forested	193	127	332	429		1,081
Phase 3, nonforested	102	11	174	815		1,102
Total Phase 3 Plots	295	138	506	1,244		2,183
Total base grid plots	4,073	6,339	14,235	19,990		44,637
Intensification plots sampled (Partner cost):						
Phase 2/3, forested	-	-	-	2,992		2,992
Phase 2/3, nonforested	-	-	-	3,513		3,513
Total intensification plots	-	-	-	6,505		6,505
Number of quality assurance plots						
Phase 2 (forest + nonforest)	152	656	1,626	1,043		3,477
Phase 3 (forest + nonforest)	16	29	97	45		187
Total quality assurance plots	168	685	1,723	1,088		3,664
Total base grid plots and percent sampled[a]:						
Total Phase 2/3 base grid plots	40,933	92,311	90,151	102,417		325,812
Phase 2/3 Target (with buy down)	20%	20%	20%	20%		20%
Phase 2/3 Target (without buy down)	10%	10%	15%	15%		12%
Phase 2/3 Accomplishment for 2007	10%	7%	16%	20%		14%
Percentage of States with annual FIA activity[b]	80%	63%	91%	100%		94%
Number of publications:						
National forest reports	1	-	1	-	-	2
State resource reports	2	-	3	21	-	26
State timber product output reports	-	-	1	-	-	1
Regional reports	-	-	3	1	-	4
National reports	-	-	1	-	-	1
Subtotal--core reports	3	-	9	22	-	34
Peer-reviewed journal articles	10	10	7	8	2	37
Proceedings articles	4	8	11	8	-	31
Other station publications	8	1	1	7	-	17
Other publications	5	2	3	2	4	16
Total, all reports	30	21	31	47	6	135
Number of publications per Federal FTE	0.37	0.23	0.33	0.39	2.00	0.35

Appendix 1.—*Performance Measures for the FY 2007 FIA Program (continued).*

	Pacific Northwest	Interior West	Southern	Northern	National Office	Total
Consulting activities:						
Number of significant consultations	207	211	856	276	21	1,571
Total hours of significant consultations	915	1,358	2,259	2,087	148	6,767
Meetings:						
User-group meetings held	2	2	2	2	1	9
Management meetings held	2	2	1	2	0	7

[a] *Base grid targets shown are 20 percent of samples per year as stated in the Farm Bill. Congressional conference notes recommended annual Federal targets of 15 percent in the East and 10 percent in the West. Interior Alaska as well as the Caribbean and Pacific Island inventories are periodic and excluded from this mandate in compliance with Congressional recommendations.*

[b] *Revised measure based on number of States where annualized inventory is active (see last section of app. 7 for previous measures).*

Appendix 2.—*Financial Statement for the FY 2007 FIA Program.*

	Pacific Northwest	Interior West	Southern	Northern	National Office	Total
Available funds:			Dollars			
Previous year end-of-year balance	0	147,180	37,205	169,236	17,679	371,300
Post-year adjustments[a]	76,000	102,381	(83,609)	770,813	0	865,585
Subtotal pre-year adjustments	**76,000**	**249,561**	**(46,404)**	**940,049**	**17,679**	**1,236,885**
FY appropriated funds						
Research	12,749,000	10,704,000	14,317,000	15,355,000	6,255,000	59,380,000
State and Private-FRIA	730,000	995,000	280,000	812,000	1,408,000	4,225,000
Subtotal appropriated funds	**13,479,000**	**11,699,000**	**14,597,000**	**16,167,000**	**7,663,000**	**63,605,000**
Special project funding	0	35,000	0	0	0	35,000
Total available Federal funds	**13,555,000**	**11,983,561**	**14,550,596**	**17,107,049**	**7,680,679**	**64,876,885**
Direct expenses:						
Salary--	**7,196,559**	**6,377,551**	**7,017,658**	**9,005,164**	**245,578**	**29,842,510**
Administration	492,513	717,110	465,902	356,546	245,578	2,277,649
Phase 1 production	0	163,050	582,479	459,744	0	1,205,273
Field support	914,334	942,945	509,327	808,849	0	3,175,455
Data collection	2,246,033	2,288,122	1,514,677	2,896,215	0	8,945,047
Quality assurance	414,247	439,907	503,025	580,333	0	1,937,512
Information management	1,472,391	954,209	1,193,798	1,453,998	0	5,074,396
Analysis	988,150	445,918	1,657,339	1,426,817	0	4,518,224
Techniques research	668,891	426,290	591,110	1,022,662	0	2,708,953
Travel--	**2,008,064**	**816,404**	**896,946**	**935,121**	**23,412**	**4,679,947**
Office travel	136,668	135,280	200,359	257,583	23,412	753,302
Field/quality assurance crew travel	1,871,396	681,124	696,587	677,538	0	3,926,645
Equipment--	**415,717**	**804,244**	**232,560**	**689,745**	**0**	**2,142,266**
Imagery	3,912	84,998	0	5,306	0	94,216
Vehicles	223,616	427,671	218,422	374,636	0	1,244,345
Field equipment	64,869	53,653	0	75,346	0	193,868
Information technology/communications	123,320	199,849	14,138	229,304	0	566,611
Other	0	38,073	0	5,153	0	43,226
Publications	**30,613**	**5,547**	**0**	**0**	**0**	**36,160**
Grants and agreements[b]	**576,053**	**1,442,906**	**4,439,588**	**3,641,095**	**1,127,000**	**11,226,642**
Field work	0	1,262,415	4,224,219	1,725,695	150,000	7,362,329
Information management	37,425	59,000	63,328	904,568	690,000	1,754,321
Research	538,628	121,491	152,041	1,010,832	287,000	2,109,992
Office space and utilities[c]	**550,748**	**430,281**	**383,125**	**420,895**	**0**	**1,785,049**
Other direct expenses[d]	**865,570**	**446,921**	**200,944**	**111,850**	**0**	**1,625,285**
Total direct expenses	**11,643,324**	**10,323,854**	**13,170,821**	**14,803,870**	**1,395,990**	**51,337,859**
Effective indirect expenses						
Total effective indirect[e]	**1,786,000**	**1,599,662**	**1,287,740**	**2,244,363**	**6,276,079**	**13,193,844**
Total effective indirect rate	13%	13%	9%	13%	82%	20%
2007 EOY balance	**125,676**	**60,045**	**92,035**	**58,816**	**8,610**	**345,182**

[a] *Some bookkeeping is not completed until after the new fiscal year begins, which may affect beginning balances. These adjustments including items such as carryover adjustments, return of fire transfer and others, are accounted for here.*

[b] *Grants and Agreements include general allocation to basic categories.*

[c] *Note that this row was new in 2003; formerly, these expenses were lumped into "Other Direct and Indirect Expenses."*

[d] *Note: Because office space and other direct expenses are no longer included in this line, these figures are not directly comparable to data prior to 2003.*

[e] *Program charges for Albuquerque Service Center included in National Office column.*

Appendix 3a.—*Federal Staffing (Full-Time Equivalents) for the FY 2007 FIA Program.*

	Pacific Northwest	Interior West	Southern	Northern	National Office	Total
Administration	5.8	11.8	6.6	4.3	2.0	30.5
Phase 1 production work	0.0	1.7	9.4	5.6	0.0	16.7
Field support	12.4	15.6	5.4	9.5	0.0	42.9
Data collection	26.8	40.5	25.0	51.3	0.0	143.6
Quality assurance crew	4.6	1.7	7.6	9.2	0.0	23.1
Information management	14.0	10.5	13.2	15.3	0.0	53.0
Analysis	10.4	5.7	19.0	9.0	0.0	44.1
Techniques research	6.4	3.7	7.0	15.2	1.0	33.3
Total	**80.4**	**91.2**	**93.2**	**119.4**	**3.0**	**387.2**

** Techniques person is in unit funded by National Office at Research Triangle Park, NC.*

Appendix 3b.—*Estimate of Cooperator Staffing Funded by FIA Grants and Agreements (Full-Time Equivalents) for the FY 2007 FIA Program.*

	Pacific Northwest	Interior West	Southern	Northern	National Office	Total
Administration	0.0	0.6	0.4	0.0	0.0	1.0
Phase 1 production work	0.0	0.0	0.9	0.2	0.0	1.1
Field support	0.0	1.0	9.1	2.3	0.0	12.4
Data collection	0.0	10.5	99.3	20.1	0.0	129.9
Quality assurance crew	0.0	0.1	0.0	0.0	0.0	0.1
Information management	1.0	1.5	0.0	7.6	5.0	15.1
Analysis	0.0	1.0	0.0	10.6	0.0	11.6
Techniques research	0.0	0.0	0.0	7.5	0.0	7.5
Total	**1.0**	**14.7**	**109.7**	**48.3**	**5.0**	**178.7**

Appendix 3c.—*Estimate of Total Federally Funded Staffing (Full-Time Equivalents) for the FY 2007 FIA Program.*

	Pacific Northwest	Interior West	Southern	Northern	National Office	Total
Administration	5.8	12.4	7.0	4.3	2.0	31.5
Phase 1 production work	0.0	1.7	10.3	5.8	0.0	17.8
Field support	12.4	16.6	14.5	11.8	0.0	55.3
Data collection	26.8	51.0	124.3	71.4	0.0	273.5
Quality assurance crew	4.6	1.8	7.6	9.2	0.0	23.2
Information management	15.0	12.0	13.2	22.9	5.0	68.1
Analysis	10.4	6.7	19.0	19.6	0.0	55.7
Techniques research	6.4	3.7	7.0	22.7	1.0	40.8
Total	**81.4**	**105.9**	**202.9**	**167.7**	**8.0**	**565.9**

Appendix 4.—*Partner Contributions Toward Implementing FIA in FY 2007.*

Unit	Partner	Contributions toward the base program	Contributions that add value
		- - - - - - - - - Dollars - - - - - - - - -	
Interior West	Colorado State Forest Service		226,310
	Montana State Department of Natural Resources		1,000
	University of Montana, Bureau of Business and Economics Research		76,341
	USDA Forest Service Region 1		49,500
	USDA Forest Service National Office		35,000
	USDI Bureau of Land Management		10,000
	USDI National Park Service		1,000
IW total		**0**	**399,151**
National Office	University of Wisconsin		70,000
NO total		**0**	**70,000**
Northern	American Forest Foundation		4,000
	Auburn University		3,600
	Connecticut	1,000	
	Conservation Biology Institute		3,000
	Delaware Department of Agriculture	7,770	15,600
	Illinois Division of Forest Resources	19,000	
	Indiana Department of Natural Resources	116,982	179,695
	Iowa Department of Natural Resources	17,953	
	Kansas State Forest Service	63,762	
	Lumberjack Research Conservation and Development	13,638	
	Maine Forest Service	196,799	233,905
	Mark Twain National Forest		60,000
	Maryland Department of Natural Resources Forest Service	11,200	
	Massachusetts Department of Conservation and Recreation	9,700	
	Michigan Division of Forest Management	40,200	1,358,326
	Minnesota Department of Natural Resources	228,485	367,426
	Missouri Department of Conservation	67,492	
	Nebraska Department of Forestry, Fish, and Wildlife	5,880	
	New Hampshire Department of Resources and Economic Development Division of Forests and Lands	20,400	
	New Jersey	2,000	
	New York Department of Environmental Conservation	194,057	
	North Dakota Forest Service	7,200	
	Ohio Department of Natural Resources	11,830	
	Oregon State University		5,000
	Pennsylvania Department of Conservation and Natural Resources	195,420	39,272
	Resources Planning Act		30,000
	Rhode Island Department of Environmental Management	18,283	
	Shawnee National Forest		34,800
	South Dakota Department of Forestry and Natural Resource Management	17,409	
	University of Massachusetts	32,632	
	University of Michigan	4,600	
	University of Nevada in Las Vegas	177,914	
	University of West Virginia		6,000
	USDA Forest Service Region 9	3,000	
	USDA Forest Service State & Private Forestry Northern Area	3,000	
	Vermont Department of Forests, Parks & Recreation	8,600	
	West Virginia Division of Forestry	49,300	
	Wisconsin Department of Natural Resources	54,600	560,000
NR total		**1,600,106**	**2,900,624**

Appendix 4.—*Partner Contributions Toward Implementing FIA in FY 2007 (continued).*

Unit	Partner	Contributions toward the base program	Contributions that add value
Pacific Northwest	Alaska Department of Natural Resources	15,000	
	California Department of Forestry	15,000	
	Oregon Department of Forestry	35,000	
	USDA Forest Service National Office		221,000
	USDA Forest Service Region 6		40,000
	Washington State Department of Natural Resources	20,000	
PNW total		**85,000**	**261,000**
Southern	Alabama Forestry Commission	175,746	
	Arkansas Forestry Commission	145,802	
	Florida Department of Agriculture and Consumer Services	31,548	
	Georgia Forestry Commission	195,975	
	International Institute of Tropical Forestry	92,170	
	Kentucky Division of Forestry	137,472	
	North Carolina Division of Forest Resources	13,050	
	Northern Research Station		150,000
	Oklahoma Department of Agriculture, Food, and Forestry	50,000	
	Rocky Mountain Research Station		50,000
	South Carolina Forestry Commission	108,850	
	State and Private Forestry		110,160
	Tennessee Department of Agriculture	143,628	
	Texas Forest Service	250,028	
	University of Tennessee		14,393
	USDA Forest Service National Office		50,000
	USDA Forest Service National Office		29,000
	Virginia Department of Forestry	140,124	
SRS total		**1,484,393**	**403,553**
Grand total, all FIA units		**3,169,499**	**4,034,328**

Appendix 5.—*Grants and Agreements Entered Into by FIA Units, FY 2007.*

Unit	Amount	Recipient	Purpose
	Dollars		
Interior West	834,819	Colorado State Forest Service	Implementation of annual FIA
	50,000	Southern Research Station	Implementation of annual FIA
	59,641	White Mountain Fort Apache	Implementation of annual FIA
	35,000	Colorado State Forest Service	Urban FHM pilot, field plots
	89,779	Rocky Mountain Research Station	Soils indicator lead and sample analysis
	193,176	University of Montana, Bureau of Business and Economic Research	Forest industry timber products analysis for the Interior West States
	59,000	University of Nevada, Las Vegas	Support for MIDAS data recorder software
	121,491	University of Montana, Bureau of Business and Economic Research	Idaho logging utilization study
IW total	**1,442,906**		
National Office	80,000	International Institute of Tropical Foresty	Implementation of annual FIA
	33,000	Northeastern Area State and Private Forestry	Damage indicators
	37,000	University of Wisconsin	Lichen communities for FIA
	15,000	Conservation Biology Institute	Protected areas database
	675,000	University of Nevada in Las Vegas	Information Management
	287,000	Research Triangle Park FHM Unit	National FHM support
NO total	**1,127,000**		
Northern	134,635	Indiana Department of Natural Resources	Implementation of annual FIA
	2,014	Iowa Department of Natural Resources	Implementation of annual FIA
	317,755	Jameson Professional Services	Implementation of annual FIA
	68,332	Kansas State University	Implementation of annual FIA
	68,192	Lumberjack Resource Conservation and Development Council	Implementation of annual FIA
	462,351	Maine Forest Service	Implementation of annual FIA
	360,318	Minnesota Department of Natural Resources	Implementation of annual FIA
	4,324	North Dakota State University	Implementation of annual FIA
	69,636	South Dakota Department of Forestry and Natural Resource Mgmt.	Implementation of annual FIA
	150,000	Southern Research Station	Implementation of annual FIA
	23,000	University of Michigan	Implementation of annual FIA
	6,110	University of Nebraska	Implementation of annual FIA
	44,028	University of Massachusetts	National ozone indicator advisor
	15,000	Northern Research Station Grand Rapids	Soil analyses
	889,568	University of Nevada in Las Vegas	Information Management
	170,000	FS Remote Sensing Application Center	Remote sensing research
	15,000	Conservation Biology Institute	Protected Area Database enhancement
	20,000	American Forest Foundation	Sustaining Family Forests Initiative
	18,000	Auburn University	Family forest owners research
	30,500	Northern Research Station St. Paul	Ownership survey text analysis
	50,000	Forest Health Technology Enterprise Team	Remote sensing research
	45,000	Northern Research Station Burlington	Black ash assessment
	50,000	Northern Research Station Chicago	Land use/cover response to demographic change in the north
	46,600	Northern Research Station Columbia	Development and testing of spatial and non-spatial wildlife habitat suitability models

Appendix 5.—*Grants and Agreements Entered Into by FIA Units, FY 2007 (continued).*

Unit	Amount	Recipient	Purpose
Northern (cont.)	36,000	Northern Research Station Delaware	Assessing forest site quality in Ohio
	47,500	Northern Research Station Durham	Landscape characteristics of a keystone forest-matrix raptor
	60,000	Northern Research Station Durham	Greenhouse gases and carbon estimation
	30,000	Northern Research Station Grand Rapids	Tools for estimating forest root biomass
	50,000	Northern Research Station Princeton	Northern logging utilization study
	50,000	Northern Research Station Rhinelander	Upscaling and partitioning carbon fluxes
	38,100	Northern Research Station Syracuse	Urban forest monitoring code development
	45,000	Northern Research Station Warren	Assess and predict future overstory species
	25,000	Oregon State University	Down woody material/carbon research
	50,000	Southern Research Station Athens	Forest resource supply and demand projections for northern states
	119,132	University of Massachusetts - Amherst	Private forest owners research
	30,000	University of West Virginia Research Corp.	Northern Global Change Program soil carbon research
NRS total	**3,641,095**		
Pacific Northwest	20,000	University of Nevada Las Vegas	Combine compatible legacy interior forest inventory and analysis inventories into a common database
	17,425	USDA Farm Service Agency	Aerial photograph prints from the National Aerial
	14,965	Oregon Department of Forestry	Inventory and modeling of changes in subalpine forests, tree line, and alpine plant communities using permanent plot systems and predictive mapping
	23,000	Oregon Department of Forestry	Monitoring Oregon's ozone plot grid, 2008-09
	75,000	Oregon Department of Forestry	Integrating annual forest inventories into ongoing Oregon forest assessment work
	65,021	Oregon State University	Developing climate and air quality gradient lichen communities in California
	25,000	Oregon State University	Using imputation to estimate change and status of forest attributes from paneled inventory data
	17,204	Oregon State University	Regional patterns of forest wildlife habitat: scaling from plots to landscapes
	105,000	Oregon State University	Using ancillary information and forest inventory data to improve small area estimates
	58,001	Texas Agricultural Experiment Station of the Texas University System	LIDAR-assisted forest inventory measurements
	10,000	The Nature Conservancy	1970 FIA inventory and 1980s Tongass inventory database, maps, and publication
	4,000	United State Fish and Wildlife Service	Forest inventory and analysis core variables meeting
	43,000	United States Geological Survey	National Land Cover Data for Alaska canopy cover
	74,997	University of Montana	Forest market census for California for year 2005-06
	10,000	University of Nevada Las Vegas	Develop graphical user interface wrappers around file executables
	13,440	University of Washington	Use of high-resolution LIDAR and multispectral data collection for forest inventory
PNW total	**576,053**		

Appendix 5.—*Grants and Agreements Entered Into by FIA Units, FY 2007 (continued).*

Unit	Amount	Recipient	Purpose
Southern	497,763	Alabama Forestry Commission	Implementation of annual FIA
	437,405	Arkansas Forestry Commission	Implementation of annual FIA
	75,071	Florida Dept. of Agric. and Consumer Services	Implementation of annual FIA
	549,898	Georgia Forestry Commission	Implementation of annual FIA
	347,166	Kentucky Division of Forestry	Implementation of annual FIA
	390,000	North Carolina Department of Environment and Natural Resources	Implementation of annual FIA
	150,000	Oklahoma Forestry Commission	Implementation of annual FIA
	311,250	South Carolina Forestry Commission	Implementation of annual FIA
	352,358	Tennessee Department of Agriculture	Implementation of annual FIA
	735,235	Texas Forest Service	Implementation of annual FIA
	378,073	Virginia Department of Forestry	Implementation of annual FIA
	20,000	Southern Research Station	Nontimber forest product analysis for reports
	20,900	Southern Research Station	Biometrics assistance
	63,328	University of Tennessee	Programmer Assistance
	111,141	Small Business Innovation Research	Coop Agreement Assessment
SRS total	**4,439,588**		
Grand total	**11,226,642**		

Appendix 6.—*Number and Hours of Significant Consultations by FIA Staff, by Customer Group, FY 2007.*

Customer group	Pacific Northwest		Interior West		Southern		Northern		National Office		Total	
	No.	*Hours*	*No.*	*Hours*	*No.*	*Hours*	*No.*	*Hours*	*No.*	*Hours*	*No.*	*Hours*
Academic	33	121	60	269	152	389	71	191	3	20	319	990
Government	125	658	108	807	298	880	123	1,390	6	50	660	3,785
Industry	10	30	2	6	181	454	20	43	2	5	215	538
NGO[a]	15	63	29	192	48	134	35	407	4	50	131	846
NIPF[b]	5	10	1	10	84	163	6	12	1	3	97	198
Media	-	-	2	45	16	31	11	29	4	15	33	120
Other	19	34	9	29	77	208	10	15	1	5	116	291
Total	**207**	**915**	**211**	**1,358**	**856**	**2,259**	**276**	**2,087**	**21**	**148**	**1,571**	**6,767**

[a] *NGO = nongovernmental organization.*

[b] *NIPF = nonindustrial private forest landowner.*

Appendix 7.—*Land and Forest Area and FIA Annualized Implementation Status by State and Region, FY 2004-2008.*[a]

Region and State	Land area	Forest area	Entry year	2004	2005	2006	2007	2008 (plan)
	----------*Thousand acres*----------							
Northern								
Connecticut	3,101	1,859	2003	1,859	1,859	1,859	1,859	1,859
Delaware	1,251	383	2004	383	383	383	383	383
Illinois	35,580	4,331	2001	4,331	4,331	4,331	4,331	4,331
Indiana	22,957	4,501	1999	4,501	4,501	4,501	4,501	4,501
Iowa	35,760	2,050	1999	2,050	2,050	2,050	2,050	2,050
Kansas	52,367	1,545	2001	1,545	1,545	1,545	1,545	1,545
Maine	19,753	17,699	1999	17,699	17,699	17,699	17,699	17,699
Maryland	6,295	2,566	2004	2,566	2,566	2,566	2,566	2,566
Massachusetts	5,016	3,126	2003	3,126	3,126	3,126	3,126	3,126
Michigan	36,359	19,281	2000	19,281	19,281	19,281	19,281	19,281
Minnesota	50,955	16,680	1999	16,680	16,680	16,680	16,680	16,680
Missouri	44,095	13,992	1999	13,992	13,992	13,992	13,992	13,992
Nebraska	49,201	947	2001	947	947	947	947	947
New Hampshire	5,740	4,818	2002	4,818	4,818	4,818	4,818	4,818
New Jersey	4,748	2,132	2004	2,132	2,132	2,132	2,132	2,132
New York	30,223	18,432	2002	18,432	18,432	18,432	18,432	18,432
North Dakota	44,156	672	2001	672	672	672	672	672
Ohio	26,210	7,855	2001	7,855	7,855	7,855	7,855	7,855
Pennsylvania	28,685	16,905	2000	16,905	16,905	16,905	16,905	16,905
Rhode Island	668	385	2003	385	385	385	385	385
South Dakota	48,574	1,619	2001	1,619	1,619	1,619	1,619	1,619
Vermont	5,920	4,618	2003	4,618	4,618	4,618	4,618	4,618
West Virginia	15,415	12,108	2004	12,108	12,108	12,108	12,108	12,108
Wisconsin	34,761	15,963	2000	15,963	15,963	15,963	15,963	15,963
Southern								
Alabama	32,481	22,987	2001	22,987	22,987	22,987	22,987	22,987
Arkansas	33,328	18,771	2000	18,771	18,771	18,771	18,771	18,771
Florida	34,520	16,285	2001	16,285	16,285	16,285	16,285	16,285
Georgia	37,068	24,405	1998	24,405	24,405	24,405	24,405	24,405
Kentucky	25,428	12,684	1999	12,684	12,684	12,684	12,684	12,684
Louisiana	27,883	13,812	2000	13,812	13,812	13,812	13,812	13,812
Mississippi	30,025	18,580	2007				18,580	18,580
North Carolina	31,180	19,302	2003	19,302	19,302	19,302	19,302	19,302
Oklahoma	43,955	7,665	2008					7,665
South Carolina	19,272	12,495	1998	12,495	12,495	12,495	12,495	12,495
Tennessee	26,381	14,396	1999	14,396	14,396	14,396	14,396	14,396
Texas	167,626	17,149	2000	17,149	17,149	17,149	17,149	17,149
Virginia	25,343	16,074	1998	16,074	16,074	16,074	16,074	16,074
Interior West								
Arizona	72,732	19,427	2001	19,427	19,427	19,427	19,427	19,427
Colorado	66,387	21,637	2002	21,637	21,637	21,637	21,637	21,637
Idaho	52,960	21,646	2004	21,646	21,646	21,646	21,646	21,646
Montana	93,157	23,293	2003	23,293	23,293	23,293	23,293	23,293
Nevada	70,276	10,204						
New Mexico	77,674	16,682	2008					16,682
Utah	52,587	15,676	2000	15,676	15,676	15,676	15,676	15,676
Wyoming	62,147	10,995						

Appendix 7.—*Land and Forest Area and FIA Annualized Implementation Status by State and Region, FY 2004-2008[a] (continued).*

Region and State	Land area	Forest area	Entry year	2004	2005	2006	2007	2008 (plan)
	----------*Thousand acres*----------							
Pacific Northwest								
Alaska, Coast	39,041	13,718	2003	13,718	13,718	13,718	13,718	13,718
Alaska, Int.	326,000	113,151						
California	99,824	40,233	2001	40,233	40,233	40,233	40,233	40,233
Hawaii	4,111	1,748						
Oregon	61,442	29,651	2000	29,651	29,651	29,651	29,651	29,651
Washington	42,612	21,790	2002	21,790	21,790	21,790	21,790	21,790
TOTAL	**2,263,230**	**748,923**		**569,898**	**569,898**	**569,898**	**588,478**	**612,825**
Forest area performance measure, excluding HI, interior AK				90%	90%	90%	93%	97%
Forest area performance measure, including HI, interior AK				76%	76%	76%	79%	82%
State activity performance measure, includes all active States				**88%**	**88%**	**88%**	**90%**	**94%**

AK = Alaska, HI = Hawaii.

[a] *Based on area from Forest Resources of the United States, 2002, and entry year into annualized inventory.*

Appendix 8.—*Status of FIA Special Project Areas Excluded From Annualized Inventory.*

Region and area	Land area in inventory	Forest area	Percentage forest	Number of major islands	Year of current inventory	Year of published report	Total Phase 2 plots[a]	Total Phase 3 plots	Available online data
Pacific (PNW):	- - - - - *Acres*- - - -								
American Samoa	48,434	43,631	90	4	2001	2004	21		Yes
Guam	135,660	63,833	47	1	2002	2004	46		Yes
Palau	111,544	96,688	87	10	2003	2007	55		Yes
Commonwealth of the Northern Mariana Islands	73,536	53,665	73	3	2004	1989	50		No
Federated States of Micronesia	149,660	135,668	91	10	2005-2006	1986-87	75		No
Marshall Islands	44,800	44,460	99	5	2007				No
Hawaii	4,141,469	1,990,000	48	8	2008	1988			
Atlantic (SRS):									
Commonwealth of Puerto Rico	2,191,815	1,260,625	57	3	2003	2007	373	61	Yes
U.S. Virgin Islands	85,590	52,478	61	3	2004	2007	73	40	Yes
Total	**6,982,508**	**3,741,048**	**653**	**47**			**693**	**101**	

[a] *Partial suite of Phase 3 data collected on all plots in Pacific region.*

Publications for Appendix 8

American Samoa

Donnegan, J.A.; Mann, S.S.; Butler, S.L.; Hiserote, B.A. 2004. American Samoa's forest resources, 2001. Resour. Bull. PNW-RB-244. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 32 p.

Guam

Donnegan, J.A.; Butler, S.L.; Grabowiecki, W.; Hiserote, B.A.; Limtiaco, D. 2004. Guam's forest resources, 2002. Resour. Bull. PNW-RB-243. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 32 p.

Republic of Palau

Donnegan, Joseph A.; Butler, Sarah L.; Kuegler, Olaf; Stroud, Brent J.; Hiserote, Bruce A.; Rengulbai, Kashgar. 2007. Palau's forest resources, 2003. Resour. Bull. PNW-RB-252. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 52 p.

Commonwealth of the Northern Mariana Islands

Falanruw, M.C.; Cole, T.G.; Ambacher, A.H. 1989. Vegetation survey of Rota, Tinian, and Saipan, Commonwealth of the Northern Mariana Islands. Resour. Bull. PSW-RB-27. Berkeley, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 11 p.

Federated States of Micronesia

Falanruw, M.C.; Cole, T.G.; Ambacher, A.H. 1987. Vegetation survey of Moen, Dublon, Fefan, and Eten, State of Truk, Federated States of Micronesia. Resour. Bull. PSW-RB-20. Berkeley, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 6 p.

Falanruw, M.C.; Whitesell, C.D.; Cole, T.G.; MacLean, C.D.; Ambacher, A.H. 1987. Vegetation survey of Yap, Federated States of Micronesia. Resour. Bull. PSW-RB-21. Berkeley, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 9 p.

MacLean, C.D.; Cole, T.G.; Whitesell, C.D.; Falanruw, M.V.; Ambacher, A.H. 1986. Vegetation survey of Pohnpei, Federated States of Micronesia. Resour. Bull. PSW-RB-18. Berkeley, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 9 p.

Whitesell, C.D.; MacLean, C.D.; Falanruw, M.C.; Cole, T.G.; Ambacher, A.H. 1986. Vegetation survey of Kosrae, Federated States of Micronesia. Resour. Bull. PSW-RB-17. Berkeley, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 8 p.

Marshall Islands

Figures reported above are from NASF: http://www.stateforesters.org/statistics/FY98_Statistics/Resource%20Base.htm. Also see: Bolsinger, C.L. 2000. Forest inventory information needs assessment for the Territory of Guam, Republic of the Marshall Islands, and the State of Hawaii with emphasis on the Island of Maui. Professional Services Contract: David Evans and Associates, Inc., Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 102 p.

Hawaii

Buck, M.G.; Branam, J.M.; Stormont, W.T. 1988. The multiresource forest inventory for Kauai, Hawaii. Resour. Bull. PNW-RB-156. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 35 p.

Buck, M.G.; Branam, J.M.; Stormont, W.T.; Costales, P.G. 1988. The multiresource forest inventory for Oahu, Hawaii. Resour. Bull. PNW-RB-155. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 35 p.

Buck, M.G.; Costales, P.G.; McDuffie, K. 1986. The multi-resource forest inventory for Molokai, Hawaii. Resour. Bull. PNW-RB-136. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 18 p.

Puerto Rico

Brandeis, Thomas J.; Helmer, Eileen H.; Oswalt, Sonja N. 2007. The status of Puerto Rico's forests, 2003. Resour. Bull. SRS-119. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 72 p.

U.S. Virgin Islands

Brandeis, Thomas J.; Oswalt, Sonja N. 2007. The status of U.S. Virgin Islands' forests. Resour. Bull. SRS–122. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 61 p.

Appendix 9.—*FIA summary statistics and performance measures for 2000-2007.*

	2000	2001	2002	2003	2004	2005	2006	2007
Program funds								
Apropriated funds[1]	39,497	45,697	50,523	56,234	56,652	60,881	63,641	63,605
Other Federal funds[2]	601	3,460	5,397	3,437	6,073	1,776	1,775	1,272
Total Federal funds	**40,098**	**49,157**	**55,920**	**59,671**	**62,725**	**62,657**	65,416	64,877
Total partner funds	7,437	8,291	8,656	10,164	7,479	6,379	7,034	7,204
Total available funds	**47,536**	**57,179**	**64,574**	**69,834**	**70,204**	**69,036**	**72,450**	**72,081**
% Full Federal appropriated funding	**67%**	**75%**	**79%**	**84%**	**82%**	**83%**	**87%**	**87%**
Program expenses and balances								
Administration	2,607	2,867	3,306	3,172	3,430	3,065	3,104	3,031
Image processing	1,305	1,362	905	967	940	1,218	919	1,300
Field support	1,801	2,253	2,154	2,252	2,786	2,940	3,287	3,175
Data collection[3]	13,472	17,323	20,891	22,514	22,461	23,470	25,106	23,630
Information management[3]	5,512	5,849	5,801	6,719	9,448	7,394	6,890	7,431
Analysis	3,019	3,493	3,440	3,484	3,967	4,161	4,499	4,518
Research[3]	4,055	4,117	3,413	4,312	3,975	3,477	3,422	4,799
Miscellaneous/other	1,206	1,180	627	3,829	4,351	3,963	5,231	3,454
Total direct expense	**32,976**	**38,444**	**40,535**	**47,249**	**51,357**	**49,687**	**52,458**	**51,338**
Total Indirect expenses	**6,892**	**9,228**	**13,025**	**11,123**	**8,919**	**11,313**	**12,587**	**13,194**
Total Federal expense	**39,868**	**47,672**	**53,560**	**58,372**	**60,277**	**61,000**	**65,045**	**64,532**
Total EOY balance	**230**	**1,485**	**2,359**	**1,298**	**2,448**	**1,657**	**371**	**345**
Total Federal funds	**40,098**	**49,157**	**55,920**	**59,671**	**62,725**	**62,657**	**65,416**	**64,877**
Category as % of total Federal funds								
Administration	6.5%	5.8%	5.9%	5.3%	5.5%	4.9%	4.7%	4.7%
Image Processing	3.3%	2.8%	1.6%	1.6%	1.5%	1.9%	1.4%	2.0%
Field support	4.5%	4.6%	3.9%	3.8%	4.4%	4.7%	5.0%	4.9%
Data collection	33.6%	35.2%	37.4%	37.7%	35.8%	37.5%	38.4%	36.4%
Information management	13.7%	11.9%	10.4%	11.3%	15.1%	11.8%	10.5%	11.5%
Analysis	7.5%	7.1%	6.2%	5.8%	6.3%	6.6%	6.9%	7.0%
Research	10.1%	8.4%	6.1%	7.2%	6.3%	5.5%	5.2%	7.4%
Miscellaneous/other	3.0%	2.4%	1.1%	6.4%	6.9%	6.3%	8.0%	5.3%
Indirect	17.2%	18.8%	23.3%	18.6%	14.2%	18.1%	19.2%	20.3%
EOY balance	0.6%	3.0%	4.2%	2.2%	3.9%	2.6%	0.6%	0.5%
Total % all categories	100%	100%	100%	100%	100%	100%	100%	100%

Appendix 9.—*FIA summary statistics and performance measures for 2000-2007 (continued).*

	2000	2001	2002	2003	2004	2005	2006	2007
Grants as % of total Federal funds								
Fieldwork grants	12.1%	11.4%	9.8%	14.4%	10.1%	9.6%	11.8%	11.3%
Research grants	6.3%	5.0%	2.7%	3.4%	2.7%	1.5%	1.8%	3.3%
Data/information grants	2.3%	1.6%	1.2%	2.6%	4.1%	2.0%	1.7%	2.7%
Total % all Federal grants	20.7%	18.0%	13.6%	20.4%	16.9%	13.1%	15.4%	17.3%
Partner funds as % of total program funds								
All partner contributions	15.7%	14.8%	13.9%	14.8%	11.0%	9.5%	9.7%	11.1%
Other measures								
% States with annual activity	34	56	64	78	88	88	88	90
% States with FIADB 1-2 yrs old	n/a	n/a	10	28	56	80	84	90
Federal employees	342	374	400	403	426	447	410	387
Other employees	169	179	160	180	166	179	171	179
Total employees	511	553	560	583	592	626	581	566
P2/3 forest plots	11,582	14,927	16,108	17,182	16,036	15,675	18,245	19,880
P2/3 nonforest plots	16,767	24,982	24,459	29,592	29,532	24,445	24,190	24,757
Total plots	28,349	39,909	40,567	46,774	45,568	40,120	42,435	44,637
All QA plots	1,701	1,658	1,889	2,332	2,874	3,584	3,382	3,664
Percent QA plots	6%	4%	5%	5%	6%	9%	8%	8%
All publications	167	116	167	138	114	164	182	135
Journal publications	28	28	28	23	25	34	45	37
Percent journal publications	17%	24%	17%	17%	22%	21%	25%	27%
Consultations, number	n/a	921	819	1,450	1,566	1,510	1,608	1,571
Consultations, hours	n/a	3,751	2,978	4,514	4,899	5,612	5,527	6,767
User/mangement meetings	7	14	18	16	20	23	16	16
Spatial data requests filled	n/a	n/a	29	44	66	145	347	492
MapMaker accesses	n/a	n/a	11,579	14,577	26,034	55,000	24,335	26,565

[1] *Net of rescissions.*

[2] *Includes return of previous year carryover, return of fire transfers and additional Research Deputy commitments.*

[3] *Includes Federal grants and agreements.*