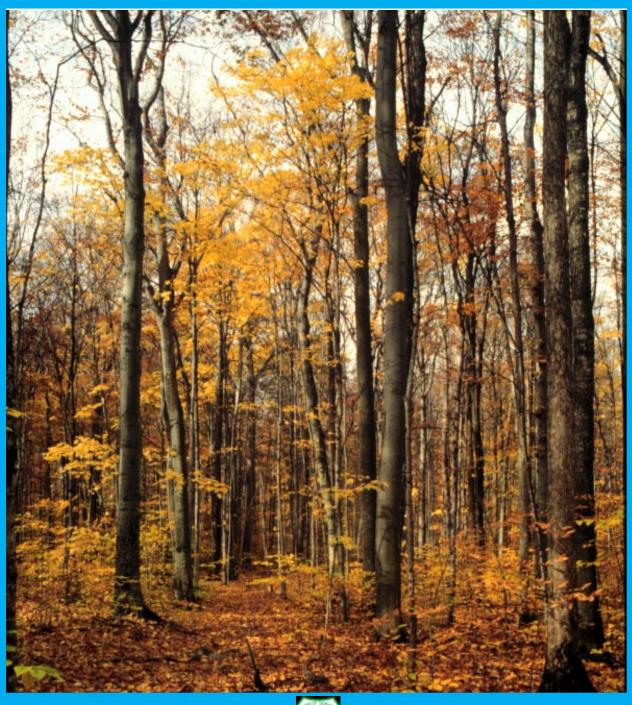
1998

Annual Business Report

Forest Inventory and Analysis Program



Forest



File Code: 4000

Date: May 1, 1999

Dear FIA Partners:

The Forest Inventory and Analysis (FIA) program is the key Forest Service program that provides the information needed to assess the health and sustainability of the Nation's forests. We collect and report information on status and trends in most of the Nation's forested ecosystems, addressing topics such as the extent, size, and species composition of forests; forest growth and mortality rates; forest land ownership patterns; and rates and efficiency of wood utilization. This information is vital for a wide array of customers drawn from public and private environmental organizations, business enterprises, researchers, consultants, and private citizens.

This report summarizes program activities in fiscal year 1998, covering the period October 1, 1997, through September 30, 1998. It is intended to provide our customers and stakeholders with a snapshot of past activities and future program directions. We intend to make this an annual report in keeping with current government efforts to increase accountability and performance-based management.

Because this is the first such report, I am especially interested in receiving your comments and constructive criticism. Is the report useful? Is there too much or too little detail on inputs, outputs, or outcomes? What should we change in the report for future years? Your feedback is especially important as we increase our efforts to measure and report on results.

On behalf of the FIA program, I thank you for your continued support.

Sincerely,

ROBĚRT LÉWIS JR.

Deputy Chief, Research and Development



INTRODUCTION

The Forest Inventory and Analysis (FIA) program of the USDA Forest Service provides the information needed to assess the health and sustainability of America's forests. This report, which summarizes program activities in fiscal year 1998 (October 1, 1997, through September 30, 1998), is a snapshot of past activities, current business practices, and future program directions. It is the first in an annual series of reports that we hope will make us more accountable and foster performance-based management of the FIA program. (Note: This business report does not include statistical information about the forests of the U.S.; if you are interested in such information, please contact the national FIA office or the appropriate regional office listed on the back cover of this report.)

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

1998 PROGRAM HIGHLIGHTS

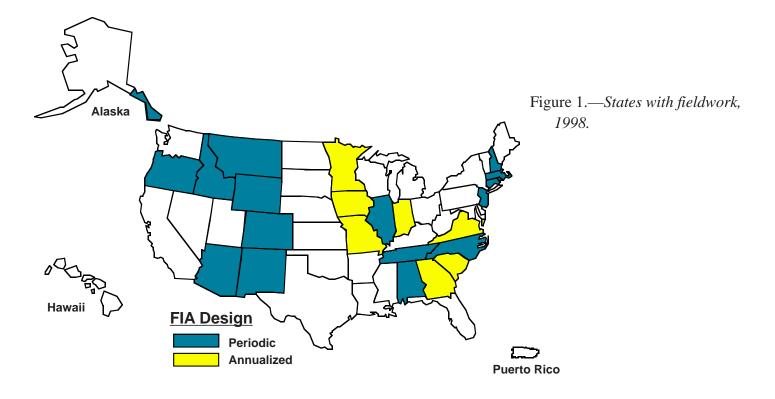
Outputs and Products

The FIA program produced 87 publications in 1998 including 1 State statistical report, 3 State analytical reports, and 13 timber product output reports (table 1). Our crews visited 8,382 forested plots in 23 States—approximately 6.9 percent of all forested plots in the Nation (figure 1). We currently cover 95 percent of the forest lands of the U.S. including

"Today, FIA is the only program that monitors the extent, condition, uses, impacts of management, and health of the forest ecosystems across all ownerships in the US..."
-- Dr. John W. Moser, Jr., Professor, Purdue University

Table 1.—Summary statistics for the 1998 FIA program

				FIA Unit	Jnit			
	Pacific Northwest	Rocky Mountain	Southern	North Central	North- east	Fort Collins	Washington, DC	Total
Total funds expended	\$4,258,250	\$3,524,354	\$9,249,583	\$2,846,077	\$3,045,013	\$404,264	\$1,247,000	\$24,574,541
Acres inventoried								
(thousands of acres)	11 8/13	7 126	777 07	37 044	8 726			100 453
Forest acres	6.207	5,120	25.806	3.768	6,720 4,820			45.745
Cost/thousand acres		· · ·						<u>.</u>
of forest (dollars)	\$686	\$685	\$358	\$755	\$632			\$537
Forest plots visited	852	856	4,434	1,291	949			8,382
Percent forest plots visited	ited 3.2	3.8	10.9	4.1	5.9			6.9
Cost per forest plot	\$4,998	\$4,117	\$2,086	\$2,205	\$3,209			\$2,932
Forest plots per person	1 23.0	17.9	32.2	33.3	23.1			27.3
Publications								
Survey Unit Reports	0	0	က	0	0	0	0	က
State Statistical Reports	orts 0	0	0	_	0	0	0	_
State Analytical Reports	orts 1	0	2	0	0	0	0	က
State TPO Reports	0	_	2	7	0	0	0	13
Other State Reports	0	0	0	_	_	0	0	2
Other Research publications		4	7	က	က	က	0	22
Peer-reviewed journal articles		2	2	2	_	4	0	7
Proceedings papers	4	_	4	2	2	0	2	18
Other	1	1	5	2	4	1	0	14
Total	∞	6	28	18	14	∞	2	87
Current reporting cycle (years) Percent of forest land	(years) 12	15	10	13	13			12.5
covered by FIA	83	100	100	100	100			96



everything except national forests in Oregon, Washington, and California, which are inventoried by the respective national forest managers. Nationly, inventory cycles in 1998 averaged around 10 years, ranging from 8 years in the Southern U.S. to 15 years in the Interior West.

FIA staff made over 100 presentations at various meetings of resource professionals, private landowner associations, industry groups, and scientists. One of our scientists received a major international award. We continued to develop our Internet-accessible web pages for all regional FIA units as well as a national homepage. On our homepage, we have posted documents for review and directed users to our on-line databases and other resources.

In 1998, we worked closely with the White House to prepare for a major new report on the status and trends of the Nation's forest, cropland, and coastal marine environments. Work continued on a new national database for the Resource Planning Act (RPA) 1997 assessment, which melds FIA data with other data to provide a complete snapshot of the status of U.S. forest resources as of 1997. The Timber Product Output (TPO) portion of the RPA database is available to the public on our web site, and the 1997 national database will be completed and available in 1999.

Table 1 also shows some comparisons across units in the rates and cost of implementing the FIA program. The figures for cost per

plot include the entire program cost, including planning, data collection, data management and analysis, reporting, and management. Costs range from about \$2,000 per plot in the Southern and North Central U.S. (where crews work 12 months per year due to modest terrain) to over \$4,000 per plot in the Interior West (where field seasons are shorter due to harsh weather) to nearly \$5,000 in the Pacific Northwest (reflecting the higher costs of completing fieldwork in Alaska, where the most efficient means of data collection involves use of helicopters to fly crews to sample locations). Nationally, the program measured approximately 7 percent of field sample locations in 1998, ranging across the country from 3.2 percent in the Northwest to 10.9 percent in the South.

"Forest Inventory and Analysis has been one of the most important issues for the National Association of State Foresters..." -- Mr. James W. Garner, Virginia State Forester This variation reflects both historical differences in Federal budget allocations by region as well as differences in the willingness of non-Federal partners to contribute funds to support the program.

Program Changes

The year 1998 was a time of major change for the FIA program, culminating in two events: passage of the Agricultural Research, Extension, and Education Reform Act of 1998 (also known as the Research Title to the Farm Bill, or Public Law 105-185), and release of the Report of the Second Blue Ribbon Panel on Forest Inventory, an assessment by a broad cross section of FIA customers. Both events were brought about largely by customer concern about the increasing cycle length of FIA reporting and by the decreasing availability of useful analysis.

Both the new law and the panel report directed the FIA program to implement an annual inventory program that gathers more information that is more consistent across the U.S. and to report information for each State at 5-year intervals. The legislation directed us to write a strategic plan for implementing these changes, and we completed this plan in December 1998. The Blue Ribbon Panel report and the draft strategic plan are available on our web site at www.srsfia.usfs.msstate.edu/

wo/wofia.htm. We expect significant discussions with our customers throughout 1999 to determine the final shape of the future FIA program. A critical goal of these discussions will be to determine the relative responsibilities of Federal and State partners to fund and implement the FIA program.

In 1998, we progressed towards increasing national consistency through collaborative development of a core field manual that will be implemented as we begin to inventory additional States in 1999. Future work will focus on developing core quality assurance, data compilation and analysis, and database management protocols. When this core program is completed, we expect that the increased consistency will save approximately \$750,000 per year in analysis time for internal and external users who aggregate data across administrative boundaries. Individual regions or States will be able to add to the core program to handle local needs.

Program Resources

Federal appropriated funding increased by \$3,360,000 from \$16,465,000 in 1997 to \$19,825,000 in 1998 (table 2). This 20-percent increase (figure 2) was allocated among all FIA programs to begin or continue transition to an annual forest inventory system and to regain the

Table 2.—Financial statement for the 1998 FIA program (see Appendix for definitions of terms)

					FIA Unit			
	Pacific Northwest	Rocky Mountain	Southern	North	North- east	Fort Collins	Washington, DC	Total
I. Available funds								
Initial allocation	\$3,146,000	\$1,797,000	\$7,447,000	\$2,850,000	\$2,945,000	\$393,000	\$1,247,000	\$19,825,000
1997 carryover	200,000	53,604	279,643	-72,313	25.013	26,264	0	512,211
Additional Station funds	40,000	18 406	22 740		100 000			181 146
	~	5	150,000	o c	000	o c	0 C	220,120
Additional WO R&D lung			136,200) (> ()	007,000
NFS funds received	888,750	1,655,344	257,000	153,510	0	0	0	2,954,604
S&PF funds received	70,000	0	1,000,000	34,000	0	0	0	1,104,000
State funds received	35,000	0	0	4,845	0	0	0	39,845
Other funds received	0	0	0	87,962	0	0	0	87,962
Total available funds	\$4,552,250	\$3,524,354	\$9,164,583	\$3,058,004	\$3,070,013	\$419,264	\$1,247,000	\$25,035,468
II. Direct Expenses								
Salary								
Administration	\$220,000	\$196,486	\$337,000	\$171,060	\$203,900	\$43,470	\$191,457	\$1,363,373
Image analysis	325,000	0	245,250	199,063	109,300	0	0	878,613
Field supervision	285,000	257.389	418,000	178,427	259,800	0	0	1.398,616
Field crews	453,000	753,320	2 912 800	452,627	413,760	C	С	4 985 507
OACREWS	104,000	62,688	316.500	C	29,400	· C	· C	512,588
Information		Î		•		•	•))) (
management	495,000	399,572	000'689	275,097	319,800	0	0	2,178,469
Analysis	280,000	163,320	988,000	318,261	344,500	C	С	2.094.081
Techniques research		0	225,500	392,654	205,600	215.218	0	1.183.972
Travel		•					•	
Office travel	104,000	95.730	282,000	76.007	35.800	18.212	33.902	645.651
Field/OA crew travel	176,000	126,658	1.026,300	131,805	132,000	C	C	1.592.763
Equipment						•	•	
Imagery	61.000	0	53.000	32.031	29.000	0	0	175.031
Vehicles	488,000	126.101	260,000	105,062	89.700	0	0	1.068.863
Field equipment	40,000	180.892	535,000	26,22	11 200			793 590
Computer/telecom-	7,000	20,00	,,,,,,	6,5	007,11	•	Þ	0,000
minications	150 000	215 570	204 000	30 127	000 66	9.280	532	708 509
Other	28,000	164 889	60 781	3.473	8,600	37	3 0 2 0	268,850
Publications (printing	20,00	500	2,	6	5	5	5	0,00
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distribution)	000,0	0	000,11	171,0	3,000	0,740	7,500	04,900
Miscellaneous	0	55	0	18,495	29,600	6,225	2,290	106,665
Total direct expenses	\$3,360,000	\$2,742,670	\$8,564,131	\$2,415,808	\$2,373,960	\$299,787	\$233,760	\$19,990,116
III. Indirect expenses (indirect rate, all funds.	\$898,250	\$781,684	\$685,452	\$430,269	\$671,053	\$104,477	\$1,013,240	\$4,584,425
percent)	20	22	7	4	22	25	81	18
IV. 1998 Carryover	\$294,000	\$0	-\$85,000	\$211,927	\$25,000	\$15,000	\$0	\$460,927

Funding in million dollars

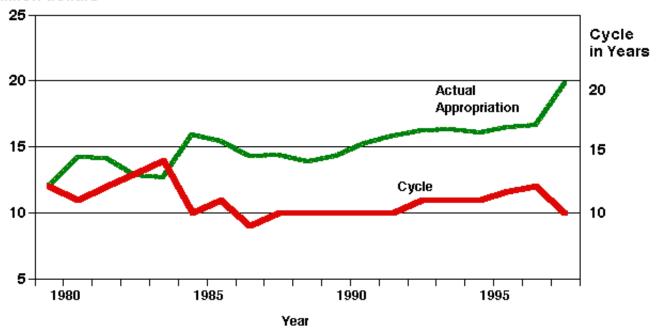


Figure 2.—Long-term FIA appropriation and inventory cycle.

analytical capacity that has been eroding. This increase is by far the largest of the past decade, yet is still short of the funding level needed to implement the annual inventory program called for by recent legislation. Figure 2 shows the linkage between inventory cycle length and appropriated dollars: as dollars go up, the cycle shortens.

This appropriated funding was augmented by a total of \$5,210,000 contributed by various other Forest Service and external sources, for a total available funding level of \$25,035,000. Of this, approximately 80.2 percent was spent in direct support of FIA activities; 18.3 percent was spent on indirect costs provided by Research Stations; and 1.5 percent was carried over to the next fiscal

year. In addition, State partners contributed an additional \$2.4 million in in-kind support (mainly staff time, office space, and travel), which is not reflected in this table. Much of this in-kind contribution was aimed at implementing an annual forest inventory system in the Southern U.S., which will provide complete area coverage on a 5-year cycle.

Variations across units exist partly because of the cyclical nature of the current inventory system and the differences in operational methods among units. For example, the Rocky Mountain unit incurred no image analysis charges in 1998 because that work had been completed in previous years. The North Central FIA unit did not break out a cost for quality assurance crews in table 2 because

it does not separate quality assurance crews from regular crews. Rates of indirect costs range from about 7 to 25 percent across the country, reflecting differences in both sources of funding and Station policies. For example, some Stations assess different rates of indirect costs for Federal and non-Federal funds. The indirect rate of 81 percent for the Washington Office reflects the fact that the Washington Office FIA budget includes the U.S. Department of Agriculture overhead assessed to the entire FIA program.

FIA program staffing consisted of approximately 307 person-years of effort in 1998; of these, 57 percent were involved in the supervision and collection of field data, 35 percent were involved in analysis

and information management, and 8 percent were involved in program management and administration (table 3). The large number of field staff for the Southern FIA program reflects the additional cooperators whose salaries were paid out of the total available funds, including the contribution of \$1 million from State & Private Forestry.

"The need for current, consistent forest inventory data for all forest lands has never been greater..."
-- Mr. James Hubbard, Colorado State Forester

REGIONAL FIA PROGRAMS: THE YEAR IN REVIEW

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

South

The Southern Research Station FIA unit conducted periodic inventory fieldwork in North Carolina, Tennessee, and Alabama, and it completed periodic inventory fieldwork in Georgia. The annual forest inventory system was continued in Virginia and initiated in Georgia and South Carolina. Publications included survey unit statistical reports for three units in Georgia; state analytical reports for Puerto Rico and South Carolina; State timber product output studies for Oklahoma, Arkansas, Alabama, Mississippi, and Tennessee; three regional timber product output studies; and articles on wetland ecology, forest health, inventory methods, remote sensing applications, and spatial statistics. During 1998, the Southern program continued to provide national leadership in developing and maintaining world wide web applications including the national FIA homepage as well as on-line databases for State inventories, the Resource Planning Act, and timber product output data.

Table 3.—Staffing (full-time positions) for the 1998 FIA program

	Pacific Northwest	Rocky Mountain	Southern	North Central	North- east	Fort Collins	Washington, DC	Total
	HOLLINGOL	mountain	Countrie	Jonata	ouot	Commo	20	Total
Administration	5.0	4.5	6.5	3.3	3.5	0.5	2.0	25.3
Image analysis	6.0	3.5	6.0	4.9	2.3	0.0	0.0	22.7
Field supervision	2.5	4.4	7.5	3.0	6.0	0.0	0.0	23.4
Field crews	9.0	26.0	79.0	11.7	14.0	0.0	0.0	139.7
QA crews	2.5	2.0	6.3	0.0	0.7	0.0	0.0	11.5
Information management	8.0	4.4	12.2	5.0	6.5	0.0	0.0	36.1
Analysis	2.0	3.0	17.3	5.3	4.5	0.0	0.0	32.1
Techniques research	2.0	0.0	2.7	5.6	3.5	2.5	0.0	16.3
Total	37.0	47.8	137.5	38.8	41.0	3.0	2.0	307.1

Northeast

The Northeastern Research Station FIA unit completed fieldwork in New Hampshire, Massachusetts, Rhode Island, and Connecticut, and initiated fieldwork in New Jersey. The unit conducted a special ice storm damage assessment across New York, Vermont, New Hampshire, and Maine, and it continued analysis of forest fragmentation and spatial patterns in New England. No State statistical, analytical, or timber product output reports were published in 1998. Publications included 14 articles on diverse topics including inventory methods, remote sensing, land ownership trends, forest biomass, and regional pulpwood production. The Northeastern program also continued to provide national leadership in the areas of landowner surveys. In 1998, it continued analysis and reporting from the 1994 National Landowner survey and began planning the implementation of the next landowner survey to be completed early in the next decade.

North Central

The North Central Research Station FIA unit conducted fieldwork in Indiana and Illinois, and it initiated annual forest inventory fieldwork in Indiana, Iowa, Minnesota, and Missouri. In 1998, the North Central program collaborated with the Southern Research Station in developing an Internet database for timber product output data. It also continued collaborative research with the Minnesota Department of Natural Resources on methods for an annual forest inventory system. Publications in 1998 included one State statistical report for Wisconsin; timber product output studies for Minnesota, Michigan, Illinois, Indiana, Wisconsin, Missouri; and 11 other publications on various topics including regional assessments, modeling, and the status of black walnut.

Rocky Mountain (Interior West)

The Rocky Mountain Research Station FIA unit completed fieldwork in Arizona and continued fieldwork in New Mexico, Colorado, Wyoming, Montana, and Idaho. Its publications in 1998 included one State timber product output report for Utah; statistical reports on forest resources for the Dixie, Ashley, and Fishlake National Forests in Utah; and five other publications on diverse topics including techniques for merging FIA data with satellite data and the use of geospatial models.

- "This strategic inventory is the envy of many nations who now seek to develop methods to monitor the sustainability of their forests."
- -- Dr. John W. Moser, Jr., Professor, Purdue University

"As a major forest land owner in the United States, we ... value the information developed by the FIA program. It provides the critical and essential inventory information on growth, removals, supply, and overall health conditions..."
-- Dr. Stephen P. Prisley, Westvaco Corporation

The Rocky Mountain Research Station also supports a techniques research unit, located in Fort Collins, Colorado, which conducts research on new inventory methods aimed at increasing the efficiency and effectiveness of forest inventory across the United States. In 1998, this unit completed studies on statistical survey methods for rare species, annual forest inventory systems, and assessment of cause and effect relations from inventory data. It advised other Forest Service units, the United Nations Food and Agriculture Organization, and the Government of Argentina. A scientist of this unit, Dr. Hans Schreuder, was recognized by the International Congress of Ecology as the Distinguished Statistical Ecologist for his many years of service to the profession of forest inventory.

Pacific Northwest (West Coast)

In 1998, the Pacific Northwest Research Station FIA unit conducted fieldwork in Alaska—the fourth year of installing permanent forest inventory plots in the southeastern part of the State in cooperation with the Forest Service's Alaska Region. The vast majority of these plots are located on the Tongass National Forest, but some are located on State and private lands in the area. The unit's plans to conduct inventory throughout designated wilderness areas in Alaska are still on hold, pending an administrative decision to allow use of helicopters to transport data collection crews into remote, inaccessible areas. The Pacific Northwest unit also began fieldwork on non-Forest Service lands in eastern Oregon. Associated with this is a study of the extent and dynamics of the spread of western juniper in eastern Oregon. Publications in 1998 included one analytical report for non-Federal lands in western Oregon, no State statistical reports or timber product output reports, and seven other reports on various topics including techniques for using remote sensing in analysis, biomass in Alaska, and forest ecosystem health.

FUTURE PROGRAM DIRECTIONS

We are entering a new era in partnership and collaboration that will see Federal, State, and other colleagues working side by side to plan, manage, and implement the FIA program. We will be 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 will increase 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. The FIA program is committed to responding to our customers' concerns as expressed in recent legislation and in the Second Blue Ribbon Panel Report. We are already making significant changes to our program by forming a partnership with State Foresters to lead and implement the FIA program in a more responsive manner. We are implementing annual inventory systems in the Eastern U.S. where interest remains highest. We are developing and documenting a core FIA program that will guarantee consistent data definitions, field methods, and data compilation and analysis procedures across all forested lands in the U.S.

Specifically, in fiscal year 1999, we plan to:

- ◆ Continue transition to an annual inventory system by using an annual approach in South Carolina, Georgia, Virginia, Tennessee, Arkansas, Kentucky, Indiana, Iowa, Minnesota, Missouri, and Maine (figure 3). Fiscal year 1999 will be the first full year of transition to the annual forest inventory system as required by Congress. It will include coverage of over 22 percent of the forests in the lower 48 States under a cooperative program involving full Federal-State partnerships in program management and delivery.
- Continue traditional periodic inventories and prepare for transition to an annual system in Arizona, New Mexico, Colorado, Wyoming, Alabama, Louisiana, North Carolina, Tennessee, New Jersey, Delaware, West Virginia, Maryland, Alaska, and Oregon. These inventories, undertaken after consultation with State foresters, will prepare the way for subsequent implementation of the annual forest inventory approach in the future.

 Figure 3.—States with planned fieldwork, 1999.

 Periodic

 Annualized

 Puerto Rico

- "To keep every cog and wheel is the first precaution of intelligent tinkering." -- Aldo Leopold: Round River
- "'Inventory' means identifying all of the cogs and wheels. 'Monitoring' means checking from time to time, to see if they are being kept. FIA is thus a vital component of intelligent forest tinkering."
 -- Andrew J.R. Gillespie, USDA Forest Service
- ◆ Continue implementation of the core field guide and continue development of nationally consistent compilation, analysis, and database management procedures. This will move us toward a consistent program across all land ownerships, as required by the Congress and by our customers.
- ◆ Increase collaborative stewardship of the program by including State forestry representatives in program management, and by sharing information about how together we can build support for implementing the Strategic Plan for Forest Inventory and Monitoring. We will collaborate in the development of a complete business plan for implementing the strategic plan, addressing such issues as marketing, organization, operations, and finances. This will help us articulate the benefits of the FIA program and, we hope, draw the funding necessary to respond to the legislative mandate.
- ◆ Continue to make our data more accessible through the Internet and via compact disks, as well as increase our investment in analysis and reporting to provide users with information in a format they can use. We will also rebuild lost analytical capability and catch up on the backlog of late analyses by entering cooperative agreements with academic and other collaborators and by hiring additional analytical staff. This will enable us to better serve existing customers and to expand our product line to attract new customers. Better customer service will lead to stronger customer support for maintaining and enhancing the FIA program.
- ◆ Continue to conduct applied research into ways of using technology to increase program efficiency, and to develop new products to meet customer needs. In 1999, we will pilot test the integration of the FIA and Forest Health Monitoring program and plan to achieve full integration in 2000. Increasing efficiency will allow us to expand the program with existing funding levels, but it won't be enough to achieve the full program implementation envisioned by the recent legislation. The integrated program will be referred to in future reports as the Forest Inventory and Monitoring (FIM) program.

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

APPENDIX

Glossary of Terms Used in Report Tables

- Acres inventoried.—Area covered by FIA units in the current year.
- Additional Station funds.—Additional funds redirected to the FIA unit by the Research Station, most commonly from savings arising from budgeted salaries for Station positions that were left unfilled. These funds are typically reallocated midway through the year.
- Additional WO R&D funds.—Additional funds allocated to the FIA unit by the Washington Office Research and Development Staff, typically midway through the year in response to requests for special projects.
- All acres.—All forest and nonforest land surveyed this year by FIA. The FIA program covers all lands to monitor the conversion between forest and nonforest, but the bulk of field time is spent on forested plots.
- Cost per forest plot.—Total funds
 Expended divided by Forest plots
 visited, a measure of the cost of
 doing business in a particular region
 of the country.
- Cost/thousand acres of forest.—Total funds expended divided by Forest acres, a measure of the cost of doing forest inventory in each region of the country.
- Current reporting cycle.—Time, in years, between the previous measurement and the current measurement,

- for the most recently measured State. Assumes continuation of the periodic cycle approach; as we make the transition to an annual system, this statistic will be replaced by Percent Forested Plots Visited, which we hope will approach 20 percent.
- Direct expenses.—All expenses directly attributable to the FIA unit, incurred as a part of doing unit business.

 Excludes items donated to other units, such as long-term details, shared positions, or funding of unrelated cooperative research agreements. Includes work done for other units as a normal part of FIA business. Includes the following items:
 - Salary.—Includes direct and indirect salary costs charged to the FIA unit. Broken into the following categories:
 - Administration.—Program Manager, Project Leader, and clerical staff.
 - Image analysis.—Airphoto interpreters, satellite image analysts.
 - **Field supervision.**—Field crew supervisors who spend <50 percent of time measuring plots.
 - Field crews.—All staff spending at least 50 percent of time measuring regular plots.
 - QA crews.—Staff who spend at least 50 percent of time doing quality assurance work.

Information management.—

Programmers, compilers, computer system support staff.

- **Analysis**.—Staff who analyze data and write publications.
- Techniques research.—Mainly research staff who work on new inventory methods aimed at increasing efficiency and effectiveness of FIA.

Travel

- Office travel.—Travel costs for all staff except field crews and QA crews.
- **Field travel.**—Travel costs for field crews and QA crews.
- **Equipment.**—Costs for durable goods. Includes the following: **Imagery**.—Aerial photos,
 - satellite imagery data files.
 - Vehicles.—All vehicle costs, including such items as operating costs, depreciation, and leases.
 - Field equipment.—Measurement tools and equipment such as data recorders carried by field crews.
 - Computer/telecommunications.—Computer hardware, software, communication costs.
 - Other.—Anything that does not fit into one of the above equipment categories.
- **Publications.**—Costs for layout, editing, printing, and distribution of publications.

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

Forest acres.—All forested acres surveyed by the FIA unit.

Forest plots per person.—Forest plots visited divided by the total number of full-time analytical, supervisory, and management staff employed by the FIA unit; a measure of the cost of doing business in a given region.

Forest plots visited.—Total number of forested plots visited by field crews during the fiscal year.

Indirect expenses.—Station management salaries, utilities, and other items that the FIA unit does not pay for directly but that are deemed to be a fair and reasonable assessment for the basic services needed to support FIA along with other Station activities. Each Station has its own means for determining these assessments. Rather than trying to report the different rates, we calculate the "Indirect expenses" item simply by subtraction:

Indirect expenses = Total available resources - Total direct expenses -Current year carryover

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

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

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

1997 Carryover.—Unspent funds from the prior fiscal year that were returned to the unit for use in the current fiscal year.

1998 Carryover.—Funds that were available but unspent during this fiscal year. It is hoped these funds will be available for use next year. If a unit has overspent its budget, this may be a negative figure indicating a debt to the Station to be paid next year.

Other funds received.—Funds received from other sources, such as universities, collection agreements.

Percent forest land covered by FIA.—

Percent of forest land in the region where an FIA unit is expected to operate. Equal to 100 percent except in regions where national forests do not participate in the FIA program.

Percent forest plots visited.—Forest plots visited divided by the total number of forested plots in the region.

Publications.—Number of publications per unit, by type of publication.

Describes some of the primary program outputs. Joint publications are credited to the lead author's unit. Types of publications include:

Survey Unit Reports

State Statistical Reports.

State Analytical Reports.

State Timber Product Output Reports.

Other State Reports

Other Station Publications

Peer-reviewed Journal articles

Proceeding papers

State funds received.—Funds received from a State agency in direct support of the FIA program in the State.

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

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

Northeast

Program Manager, FIA USDA Forest Service Northeastern Research Station 5 Radnor Corporate Center, Suite 200 Radnor, PA 19087 (610) 975-4075 fia/ne_fia@fs.fed.us

South

Program Manager, FIA USDA Forest Service Southern Research Station 200 Weaver Blvd. Asheville, NC 28802 (704) 257-4309 srs4801/srs fia@fs.fed.us

Pacific Northwest (includes Alaska and Hawaii)

Program Manager, FIA USDA Forest Service Pacific Northwest Research Station 1221 SW Yamhill St., Suite 200 Portland, OR 98205 (503) 808-2066 prime/r6pnw_portland@fs.fed.us

National

Forest Inventory National Program Leader USDA Forest Service 1NW 201 14th Street SW Washington, DC 20090-6090 (202) 205-1507 sppii/wo@fs.fed.us

North Central

Program Manager, FIA USDA Forest Service North Central Research Station 1992 Folwell Avenue St. Paul, MN 55108 (651) 649-5139 fia/nc@fs.fed.us

Rocky Mountain

Program Manager, FIA USDA Forest Service Rocky Mountain Research Station 507 25th Street Ogden, UT 84401 (801) 625-5388 dvanhoos/rmrs_ogdenfsl@fs.fed.us

Statistical Techniques

Project Leader, FIA USDA Forest Service Rocky Mountain Research Station 240 W. Prospect Road Fort Collins, CO 80526-2098 (970) 498-1292 rczaplew/rmrs@fs.fed.us

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

www.srsfia.usfs.msstate.edu/wo/wofia.htm