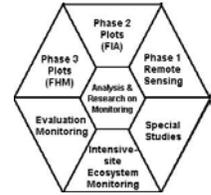




# Program Structure for Forest Inventory and Monitoring



FIA

Fact Sheet Series

FHM

**Background.** In response to the PL 105-185, which called for the integration of Forest Inventory and Analysis (FIA) and Detection Monitoring plot component of Forest Health Monitoring (FHM), all plot based inventory and monitoring has been combined into one program, the enhanced FIA program. FIA now includes three phases: phase 1 is the remote sensing phase of about 3,000,000 aerial photography and remote sensing points; phase 2 is the set of plots from which the forest inventory data is collected (about 125,000 plots) and; phase 3 is the set of plots from which the forest health data is collected (about 7,800 plots).

*Estimated Number of Aerial Photographic or Remote Sensing Points (Phase 1), FIA Plots (Phase 2) and FHM plots (Phase 3) in the US by FIA Unit, (Based on 1997 Data).*

### Phase 1 – Aerial Photography Points

| Unit             | Total            | Forest           | Nonforest        |
|------------------|------------------|------------------|------------------|
| NE               | 638,000          | 389,000          | 249,000          |
| NC               | 1,895,000        | 341,000          | 1,554,000        |
| SRS              | 2,227,000        | 891,000          | 1,336,000        |
| RMRS             | 2,283,000        | 577,000          | 1,760,000        |
| PNW <sup>#</sup> | 867,000          | 383,000          | 484,000          |
| Alaska           | 1,521,000        | 531,000          | 990,000          |
| <b>Totals</b>    | <b>9,431,000</b> | <b>3,112,000</b> | <b>6,319,000</b> |

### Phase 2 – Inventory Plots (FIA)

| Unit             | Total          | Forest         | Nonforest      |
|------------------|----------------|----------------|----------------|
| NE               | 25,504         | 15,557         | 9,947          |
| NC               | 75,794         | 13,631         | 62,163         |
| SRS              | 89,087         | 35,653         | 53,434         |
| RMRS             | 91,230         | 23,074         | 68,246         |
| PNW <sup>#</sup> | 34,665         | 15,318         | 19,347         |
| Alaska           | 60,840         | 21,230         | 39,610         |
| <b>Totals</b>    | <b>377,210</b> | <b>124,463</b> | <b>252,747</b> |

### Phase 3 – Forest Health Plots (FHM)

| Unit             | Total         | Forest       | Nonforest     |
|------------------|---------------|--------------|---------------|
| NE               | 1,546         | 983          | 563           |
| NC               | 4,787         | 861          | 3,926         |
| SRS              | 5,627         | 2,252        | 3,375         |
| RMRS             | 5,768         | 1,457        | 4,311         |
| PNW <sup>#</sup> | 2,189         | 967          | 1,222         |
| Alaska           | 3,843         | 1,341        | 2,502         |
| <b>Totals</b>    | <b>23,760</b> | <b>7,861</b> | <b>15,899</b> |

<sup>#</sup> Note PNW values don't include Alaska.

Because both FIA and FHM have used the same plot design and are taking steps to use the same sampling grid on the ground, the merger of the two plot systems is possible. The FHM detection monitoring plots (now referred to as phase 3) should be thought of as a subset of the FIA plots (now referred to as phase 2). Phase 3 plots are a subset of the phase 2 plots and all measurements collected on the phase 2 plots are collected on all phase 3 plots. Additional indicators, measurements, and samples are collected on phase 3 plots.

**Management Structure.** From a management perspective, the FIA program (including phases 1, 2, and 3) are managed by the FIA Management Team which is comprised of each FIA Unit Program Manager; a representative from the northern, southern, and western States; a representative of the National Forest System and State and Private Forestry; and the National FIA and FHM Program Managers. The FHM Program still exists and consists of the aerial survey program of Detection Monitoring (State and Private Forestry, Forest Health Protection and State aerial survey program), Evaluation Monitoring, Intensive Site Ecosystem Monitoring, and Research on Monitoring Techniques. In addition, information from the FIA program is an integral part of the analyses of forest health produced by the FHM program.

These distinctions need to be recognized when reviewing aspects of the FIA and FHM Programs including this series of Fact Sheets. Close integration of the FIA and

FHM Programs is possible and successful because the management structure of both programs includes many of the same individuals. The FIA Unit Managers also manage the FHM Programs in their areas. In addition many personnel have dual duty for FIA and FHM and the funds are pooled in all Regional FIA Units.

**FIA Program Overview.** The FIA program of the USDA Forest Service has been in continuous operation since 1930 with a mission to:

*"make and keep current a comprehensive inventory and analysis of the present and prospective conditions of and requirements for the renewable resources of the forest and rangelands of the US."*

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 has been removed in recent years. This information can be used in many ways, such as in evaluating wildlife habitat conditions, assessing the sustainability of ecosystem management practices, and supporting planning and decision-making activities undertaken by public and private enterprises.

The components and characteristics of the FIA Program include:

\* **Coverage** - A single inventory program to include all forested lands in the US, regardless of ownership or availability for forest harvesting.

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\* **Sampling Intensity** - The new program includes the measurement of 20% of the plots in each State, each year. Plans have been developed for less intensive sampling levels of 15% per year and 10% per year.

\* **Error Reduction** - The plot intensity assumes that enough plots are measured to achieve standard errors of area and volume estimates, which are consistent with historical levels.

\* **National Cell Grid** - A nationally uniform cell grid has been superimposed over our existing set of sample locations, in order to provide a uniform basis for determining the annual set of measurement plots.

\* **Core Variables** - The FIA program includes a national set of core measurements (including some additional ecological variables), collected on a standard field plot.

\* **Data Collection** - All field data collectors, regardless on whether they are Federal, State, or contractor receive standardized training and as well as pass a certification test before collecting data.

\* **Quality Assurance (QA)** - The FIA program will extend the present QA program, which includes, training for data collectors, documentation of methods, checks of data quality, peer review of analysis products, and continuous feedback to ensure that the system improves over time.

\* **Information Management (IM)** - The IM database will consist of a core set of tables, data validation procedures, algorithms, analytical and compilation procedures, and data access tools to ensure that core data are treated identically.

\* **Analysis** - The FIA program will include several levels of analysis including annual state level statistics, five year reports at the State level, and other National and Regional level reports.

**FHM Program Overview.** Several Federal and State agencies in response to the increasing concern

on forest ecosystem health established the National FHM Program in 1990. FHM is designed to develop and implement a cooperative program to monitor, assess, and report on the long-term status, changes, and trends in the health of U.S. forests.

FHM is comprised of four inter-related activities Detection Monitoring, Evaluation Monitoring, Intensive Site Ecosystem Monitoring and Research on Monitoring Techniques. Detection Monitoring has two components – a plot component which is now the responsibility of the enhanced FIA program and an aerial survey component for insect and disease damage that is part of State and Private Forestry, Forest Health Protection and State agencies aerial survey activities. Evaluation Monitoring examines the extent, severity, and probable causes of changes in forest health by initiating issue specific projects. Intensive Site Ecosystem Monitoring is conducted on a set of representative forested ecosystems and focuses on intensive monitoring of forest conditions and processes. Research on Monitoring Techniques supports the other components of FHM by improving the efficiencies and effectiveness of forest health data collection activities.

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