



# Forest Inventory & Analysis Data Collection and Analysis



## FIA Fact Sheet Series

**FIA Program Elements.** The FIA program is actually a collection of related surveys designed to focus on different aspects of America's forested ecosystems. These surveys may be considered in the following hierarchy:

1. Forest Monitoring – a three phase sample used to track status and trends in forest extent, cover, growth, mortality, removals, and overall health;
2. Ownership Study – a questionnaire-based survey of landowner plans, desires, values, and intentions.
3. Timber Product Output – A questionnaire-based survey of wood processing facilities used to track the commercial production of wood products.
4. Utilization Studies – studies conducted on logging sites to record how much wood is actually removed during harvest.

Each of these kinds of studies is further described below.

**Forest Monitoring.** The forest monitoring component is the best-known component of the FIA program. This component consists of a three stage systematic sample of sites across all forested lands of the US. Phase 1 consists of remote sensing for stratification, to identify where the forested land is. Phase 2 consists of one field sample site for every 6,000 acres of forest, where field crews collect data on forest type, site attributes, tree species, tree size, and overall tree condition. Phase 3 consists of a subset of Phase

2 sample plots which are measured for a broader suite of forest health attributes including tree crown conditions, lichen community composition, understory vegetation, down woody debris, and soil attributes. Soil samples are sent to a laboratory for chemical analysis. Finally, an associated sample scheme exists to detect cases of ozone damage occurring to adjacent forest vegetation.

Collectively, the forest monitoring component of FIA provides a nationwide systematic sample of a wide array of measurements on forested ecosystems, which are used by a diverse set of customers for many purposes. For example, FIA data have been used to map habitat for endangered animal species, to identify areas of forest decline, and to track the effect of global change reflected in changing species distributions.

In addition to producing a variety of reports and analyses at the state and regional level, information from the FIA forest monitoring program are publicly available through our online database at [fia.fs.fed.us](http://fia.fs.fed.us).

**Ownership Studies.** Approximately half of America's forests are privately owned, either by individuals or by corporations. Private owners therefore have a huge impact on the state of America's forests. The FIA program conducts periodic surveys of private forest owners to assess their ownership objectives, expected benefits, harvest intentions, and management plans. These surveys are completed through voluntary questionnaires sent to private forestland owners. Responses are kept confidential to protect landowner privacy. Information is summarized at the state and regional

level to provide information on status and trend in forest land ownership.

**Timber Product Outputs.** The FIA program tracks and reports on the fate of wood, which is harvested from America's forests. Wood may be harvested for industrial purposes, such as the production of lumber or paper; or it may be removed for nonindustrial purposes such as firewood. In either case, monitoring the removal and processing of wood provides information about a significant component of the US economy.

Timber Product Output studies are typically done through questionnaires sent to the processors, which may be a timber mill or an individual harvesting fuelwood. Like ownership information, information reported by wood processors is kept confidential and only analyzed and published in aggregate form so as to protect confidentiality. The aggregate Timber Products Output data is also available through the online database.

**Utilization Studies.** Utilization studies provide the factors needed to link the input (trees standing in the forest) with the output (wood products produced by a mill). These studies take place at active logging operations. Crews measure felled trees as if the tree were still standing on an FIA plot, then the collect more detailed measurements on the portion of the tree which is actually removed from the site. This process yields information about what is left in the woods versus what is removed, and ultimately helps the FIA program to relate timber removals with wood production.

**Quality Assurance.** Quality Assurance includes documentation of methods, training for data collectors, checks of data quality, peer review of analysis products, and continuous feedback to ensure that the system improves over time. QA data and

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analyses will be included in publications and made available. All of the studies included in the FIA program are subject to various forms of Quality Assurance.

**For more information regarding the FIA Program:**

- See our “FIA Contacts” Fact Sheet
- Visit our national FIA website: [www.fia.fs.fed.us](http://www.fia.fs.fed.us)