



**FOREST SERVICE HANDBOOK  
NATIONAL HEADQUARTERS (WO)  
WASHINGTON, DC**

**FSH 4809.11 – FOREST SURVEY HANDBOOK**

**CHAPTER 10 – OPERATIONAL PROCEDURES**

**INTERIM DIRECTIVE NO.:** 4809.11-2003-1

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Title of Approving Official

**Date Approved:** mm/dd/yyyy

**Posting Instructions:** Interim directives are numbered consecutively by Handbook number and calendar year. Post by document at the end of the chapter. Retain this transmittal as the first page(s) of this document. The last interim directive was xxxx.xx-xx-x to chapter xx.

<b>New Document</b>		xx Pages
<b>Superseded Document(s) (Interim Directive Number and Effective Date)</b>	None	

Digest:

A notice of issuance of this interim directive was published in the Federal Register on August XX, 2003 (68 FR XXXX).

19.01 - Adds the Forest and Rangeland Renewable Resources Act of 1978, as amended, and the Food Security Act of 1985, as amended, as authorities that provide direction for managing the Forest Inventory and Analysis program.

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19.02 - Adds objectives for the administration of the Forest Inventory and Analysis (FIA) program, such as maintaining a uniform data delivery system at the State, Regional, and National levels; protecting the privacy of FIA data providers; providing cost effective customer access to FIA databases; and ensuring high quality, consistent, and reliable FIA databases.

19.03 - Revises policies for the Forest Inventory and Analysis program by: (1) protecting individual ownership and data information; (2) randomly assigning new plot locations within plus or minus ½ mile of the exact location; (3) ensuring consistent data reporting at all organizational levels; (4) pursuing policies and technologies that will anticipate emerging customer requirements; and (5) only collecting data with landowner permission and with the assurance of confidentiality.

19.04 - Adds responsibilities in paragraph 3 for Research Station Directors to identify and authorize external parties to conduct work in the Forest Inventory and Analysis (FIA) program when the work is necessary for the successful implementation of the FIA program and the use of an Authorized Agent is the most efficient manner in which to complete that task.

19.05 - Sets out definitions for terms used in the Forest Inventory and Analysis program.

19.1 - 19.13 - Provides direction on the documentation of Authorized Agent status (sec. 19.11), the role of an Authorized Agent (sec. 19.12), and access to confidential FIA information (sec. 19.13).

19.2 - Provides direction and standards for collecting data in support of the Forest Inventory and Analysis program.

19.3 - Provides direction and standards for ensuring data privacy.

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19.4 - 19.41 - Provides direction and standards for maintaining and releasing data associated with the Forest Inventory and Analysis program.

19.5 - 19.52 - Provides direction and standards for allowing data access for information used in the Forest Inventory and Analysis program.

19.6 - Provides direction and standards for processing special requests for specific spatial Forest Inventory and Analysis information.

19.7 - Includes as exhibits Section 1770 of the Food Security Act of 1985 (ex. 01) and the Forest Inventory and Analysis data access table guide by user group and data owner origin (ex. 02).

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## **19 - RESOURCE DATA MANAGEMENT**

### **19.01 - Authority**

1. Forest and Rangeland Renewable Resources Act of 1978 (16 U.S.C. 1600, 1641-1648). Section 3(b)(1) of this Act directs the Secretary of Agriculture to “. . . make and keep current a comprehensive survey and analysis of the present and prospective conditions of and requirements for renewable resources of the forests and rangelands of the United States and of the supplies of such renewable resources, including a determination of the present and potential productivity of the land, and of such other facts as may be necessary and useful in the determination of ways and means needed to balance the demand for and supply of these renewable resources, benefits, and uses in meeting the needs of the people of the United States. The Secretary shall conduct the survey and analysis under such plans as the Secretary may determine to be fair and equitable and cooperate with appropriate officials of each State and, either through them or directly, with private or other entities.” Section 3(e) further directs the Secretary of Agriculture to “. . . establish a program to inventory and analyze, in a timely manner, public and private forests and their resources in the United States.”

2. Food Security Act of 1985 (7 U.S.C. 2276). Section 1770 of this act protects the identity of private landowners on whose property Forest Inventory and Analysis information is collected. This information would otherwise be available under the Freedom of Information Act of 1966 (5 U.S.C. 552). Key provisions of section 1770 are excerpted and displayed in section 19.7, exhibit 01.

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## **19.02 - Objectives**

1. Develop and maintain databases that support uniform data delivery at State, Regional, and National levels.
2. Protect the privacy of Forest Inventory and Analysis (FIA) data providers.
3. Provide cost effective and efficient customer access to FIA databases.
4. Ensure the input of high quality, consistent, reliable data.

## **19.03 - Policy**

1. Protect individual ownership and data information by masking ownership and providing data information in broad categories, over wide spatial areas, and with embedded ownership uncertainty.
2. Data coordinates shall be randomly assigned within plus or minus ½ mile of the exact location (fuzzing) to reduce the risk of unauthorized visits to the plot locations or contact with individuals providing data.
3. The method of protecting the privacy and integrity of the Forest Inventory and Analysis (FIA) data shall maintain consistency of data reporting at the county and State level; standard published FIA core tables shall be consistent and repeatable.
4. Pursue policies and technologies that anticipate emerging customer requirements.

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5. Collect data only with the permission of the landowner or information provider with an assurance of confidentiality.

## **19.04 - Responsibility**

### **19.04a - Station Director**

The Station Director is responsible for:

1. Identifying and authorizing external parties to conduct work in the Forest Inventory and Analysis (FIA) program when:

- a. The task to be completed is necessary for the successful implementation of the FIA program and
- b. Use of an Authorized Agent is an efficient way to complete that task.

2. Ensuring that Authorized Agents adhere to the privacy provisions and policies of the FIA program.

## **19.05 - Definitions**

Authorized Agent. An external party authorized to perform work critical to the mission of the Forest Inventory and Analysis (FIA) program.

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External Party. An individual other than a Forest Inventory and Analysis program employee.

Forest Inventory and Analysis Database. The Forest Inventory and Analysis Database (FIADB) contains all Forest Inventory and Analysis plot data available to the public and accessible at the worldwide web at <http://www.fia.fs.fed.us>.

Fuzzing. The process of masking the precise spatial coordinates of a Forest Inventory and Analysis plot or information collection location to within ½ mile of its actual location for all data collected after January 1, 2000.

Plot. A location where field measurements of forest attributes are collected.

Plot Data.

Phase 1. A stratification of the landbase into forest and nonforest areas using remote sensing.

Phase 2. The base sample of Forest Inventory and Analysis plots selected from Phase 1 remote sensing at the intensity of approximately 1 plot per 6,000 acres of land.

Phase 3. The base sample of Forest Inventory and Analysis plots selected from Phase 1 remote sensing at the intensity of approximately 1 plot per 96,000 acres of land. Phase 3 plots are a subset of Phase 2 plots.

Public. All individuals not in the direct employment of the Forest Inventory and Analysis program (FIA) or acting as an Authorized Agent on behalf of the FIA program.

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Supercounty. A group of counties that have been combined to ensure sufficient sample size or non-disclosure of ownership information of Forest Inventory and Analysis data. The latter generally occurs when an owner group contains less than three owners in one county, thus potentially providing owner-specific information.

Swapping. The process of exchanging the coordinates of one plot or information collection location with another similar plot or location in the same county, supercounty, or owner group using the data's most "similar neighbor." The "similar neighbor" method uses a select list of data attributes of one plot to swap its coordinates with another plot to ensure data privacy.

## **19.1 - Authorized Agent**

Authorized Agent status shall not be granted to any individual working in a regulatory capacity, such as individuals whose duties include the enforcement of environmental standards. This exclusion complies with data use restrictions provided for in the Food Security Act of 1985 (7 U.S.C. 2276).

### **19.11 - Documentation of Authorized Agent Status**

Authorized Agent status shall be documented in a formal written agreement between the Station Director and the Authorized Agent.

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### **19.12 - Role of Authorized Agent**

Authorized Agent status shall be limited to specific tasks and time periods determined by the Station Director and documented in the written agreement. Authorized Agents have the responsibility for safeguarding the confidentiality of Forest Inventory and Analysis (FIA) data they possess and conforming to the FIA privacy policy provisions contained in this interim directive in section 19.3.

### **19.13 - Access by Authorized Agents**

Authorized Agents may be granted access to confidential FIA information, but only as required for performing the assigned task. Authorized Agents shall consent in writing to be bound by the guidelines provided for in this interim directive.

### **19.2 - Data Collection**

The Forest Inventory and Analysis (FIA) program conducts and maintains comprehensive inventories and reports on status and trends of the Nation's forests across all landownerships.

Data are collected from two primary sources:

1. Plot Data. Plot data is collected in three phases. In Phase 1, forested areas are identified using remote sensing. In Phases 2 and 3, a sample of the forested area is visited on the ground to further describe the quantity, condition, and health of the vegetation and related

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resources. Information is collected that refers to the geographic location of the sample site (plot) and identifies the landowner of record.

2. Other Data. Other data may be collected in special studies involving Timber Product Output (TPO), Residential Fuelwood Assessment (RFA), Logging Utilization (LU), and the National Woodland Owner Survey (NWOS). These studies quantify and characterize two of the major influences shaping the forests of the Nation. Data providers for TPO studies are primary wood-using mills reporting amounts of harvested wood received. Data providers for RFA, LU, and NWOS are private individuals providing data on wood harvested for fuel, trees felled during logging, and responses to questions that characterize forest landowners actions and intents relative to their holdings.

### **19.3 - Data Privacy**

All individuals, including Authorized Agents, having access to Forest Inventory and Analysis (FIA) data are subject to the provisions of the Food Security Act of 1985 (7 U.S.C. 2276) regarding data privacy. State level legislation regarding data privacy is subordinate to the Food Security Act. Criminal penalty provisions under the Food Security Act of 1985 apply to any individual having access to detailed FIA data coordinates.

Individuals using Authorized Agent status to gain access to FIA data for other than agreed upon and documented purposes shall be considered in violation of the Food Security Act of 1985 as it pertains to the Forest and Rangelands Renewable Resources Research Act of 1978 (16 U.S.C. 1642(e)). Permission for all uses of protected data must be made in writing to the appropriate Station Director.

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## **19.4 - Data Release**

Forest Inventory and Analysis (FIA) data records made available to external users (except those holding Authorized Agent status) shall have their plot or information provider coordinates (latitude and longitude) fuzzed and masked to the extent necessary to avoid direct or indirect disclosure of the identity of individual data suppliers and to ensure plot integrity. Previously released files containing more detailed ownership and coordinate data must have their fuzzed coordinates restored, but swapped as necessary to ensure confidentiality. Plots that are re-measured as part of the annual inventory system must have their plot identification numbers altered. These actions partially sever the link to the past, but provide a basis for linking current plot data to future measurements. Links to summarized historic data for detailed trend analysis shall remain in FIA's internal databases.

### **19.41 - Data Masking**

Data masking alters basic location identifier data in such a way that the user cannot identify with certainty the individual data supplier. Data masking is accomplished by fuzzing and swapping data location coordinates.

Plot locations shall be fuzzed by randomly changing the plot coordinates by up to ½ mile from the actual location in any direction (generally within the county of origin) creating the first level of uncertainty in linking the data to an individual owner. The primary purpose of fuzzing is to avoid unauthorized visits to plot locations, thus compromising the reliability of the data and credibility of the Forest Inventory and Analysis (FIA) program. This masking approach is designed to ensure that users can reliably re-create all of the county-level tables, including those that specify an owner group. In extreme situations, where there are fewer than three private information suppliers by owner group in a county, either adjoining counties shall be combined or owner groups aggregated further.

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In addition, a second layer of masking shall be introduced that swaps a small number of plot locations with other similar plots in the same county (or supercounty) to create further uncertainty in the identity of the data provider. The general characteristics of the plots that are swapped shall be retained to ensure the utility of the data for relating the plots to other spatial data. Generally, confining location swapping within the county (or supercounty) ensures that the reported totals remain the same as in published reports.

Masking shall be used for all FIA raw data from private lands that is publicly released, whether from plot owners, primary wood-using mills, or landownership survey respondents. Swapping of coordinates is not required for data from public ownership lands. However, fuzzing of coordinates shall be applied to this group for publicly accessible data.

All electronic or hardcopy summaries or tables of private data released through the FIA program shall be comprised of information masked to protect individual ownership information.

## **19.5 - Data Access**

Data access shall be determined by status of the user (internal or external) and whether the release involves data for records on public or private land ownership (sec. 19.7, ex. 02).

### **19.51 - Public Access**

The general public shall have access to plot coordinates fuzzed to within ½ mile (or 1.0 mile) and a small number of private land plots swapped, generally within the same county, to create individual ownership uncertainty.

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### **19.52 - Authorized Agent Access**

Authorized Agents may be granted access to confidential Forest Inventory and Analysis (FIA) data only to the extent that the access is necessary to perform their assigned tasks in accordance with the FIA mission. Access to confidential FIA data shall be documented in the written agreement between the Station Director and the Authorized Agent.

### **19.6 - Requests for Specific Spatial Information**

Requests for Forest Inventory and Analysis (FIA) data that involves spatial specificity, such as Geographic Information System (GIS) applications that assign or compare FIA plot attributes to user-defined polygons or other mapped attributes, may be processed at:

1. A Regional FIA unit when the request involves an area solely within that unit's territory. The requester may conduct the data analysis himself/herself at the FIA unit or the Station Director may appoint an Authorized Agent, such as a State government entity or a university, to handle the request.

2. National FIA Spatial Data Services when the request involves an area that covers more than one FIA unit's territory.

Regardless of the alternative used, only aggregate inventory and analysis results (derived layers, custom retrievals, models, validation results, and so forth), not exact coordinates, may be taken from an FIA office or placed in a distribution tool. In addition, all released products shall be aggregated in such a way that landowner confidentiality is maintained.

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## **19.7 - Exhibits**

1. Exhibit 01. Exhibit 01 displays Section 1770 of the Food Security Act of 1985.
2. Exhibit 02. Exhibit 02 displays the Forest Inventory and Analysis data access table guide by user group and data owner origin.

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**19.7 - Exhibit 01**

**Section 1770 of the Food Security Act of 1985**

CONFIDENTIALITY OF INFORMATION [SEC. 1770]

- (a) In the case of information furnished under a provision of law referred to in subsection (d), neither the Secretary of Agriculture, any other officer or employee of the Department of Agriculture or agency thereof, nor any other person may-
- (1) use such information for a purpose other than the development or reporting of aggregate data in a manner such that the identity of the person who supplied such information is not discernible and is not material to the intended uses of such information; or
  - (2) disclose such information to the public, unless such information has been transformed into statistical or aggregate form that does not allow the identification of the person who supplied the information.
- (b) (1) In carrying out a provision of law referred to in subsection (d), no department, agency, officer, or employee of the Federal Government, other than the Secretary of Agriculture, shall require a person to furnish a copy of statistical information provided to the Department of Agriculture.
- (2) A copy of such information-
- (A) shall be immune from mandatory disclosure of any type, including legal process; and
  - (B) shall not, without the consent of such person, be admitted as evidence or used for any purpose in any action, suit, or other judicial or administrative proceeding.
  - (C) Any person who shall publish, cause to be published, or otherwise publicly release information collected pursuant to a provision of law referred to in subsection (d), in any manner or for any purpose prohibited in section (a), shall be fined not more than \$10,000 or imprisoned for not more than 1 year, or both.

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**19.7 - Exhibit 02**

**Forest Information and Analysis (FIA)**

**Data Access Table Guide**

**by**

**User Group and Data Owner Origin**

<b>Landownership</b>	<b>User Group</b>	
	<b>FIA or its Authorized Agents</b>	<b>General Public</b>
Public	--Exact coordinates	--Fuzzed coordinates
Private	--Exact coordinates --Individual landowner identification (only for field data collection purposes) or detailed landowner class	--Fuzzed and swapped coordinates --Ownership group