

## INDIAN AFFAIRS MANUAL

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**8.1 Purpose.** This chapter documents the policies, standards, and responsibilities applicable to the collection, analysis and use of scientifically based data for monitoring and management of resources on Indian forest lands (see 53 IAM 1).

**8.2 Guidance.** Handbooks, directives and other guides may be issued and revised as necessary. In addition to standard guides identified in 53 IAM 1.3 and the *Indian Forest Management Handbook, Volume 8*, titled, *Inventory and Monitoring*, a project specific "Forest Inventory Field Procedures Guide" will be developed for all inventories.

**8.3 Scope.** The directives contained in this chapter apply to all Federal agencies and programs participating in the management, accountability, or protection of Indian forest resources. Regardless of the means of program execution, the appropriate Federal official shall assure that the standards prescribed herein are met.

**8.4 Policy.** Sound forest inventory and analysis shall be the basis for approval and implementation of decisions relative to the management and protection of Indian forest resources.

**8.5 Inventory Standards.** The national inventory standards described herein are tiered to the Reservation Prioritization Categories defined in 53 IAM 2.8.A. Inventory design shall be correlated with the basic purpose and need for data collection. The BIA recognizes the following inventory types:

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## **A. Forest Inventory for Management Planning & Trust Monitoring (Planning Inventory).**

The purpose of the Planning Inventory, also known as the Continuous Forest Inventory (CFI) system on Category 1 Reservations, is accountability of the Indian forest resource and scientific basis for long-term planning. Planning Inventories must meet or exceed the following national standards.

	Category 1	Category 2	Category 3	Category 4
<b>Scheduling</b>	15-years or less	15-years or less	15-years or less	As necessary for plan
<b>Design</b>	Permanent fixed-area plot for entire timberland ownership on a systematic grid with 100% of plots measured, & Category 3 standards applied on woodland areas.	Temporary plot for entire timberland ownership on a systematic grid with 100% of plots measured, & Category 3 standards applied on woodland areas.	Forest-wide inventory based on Regional Discretion	Forest-wide inventory based on Regional Discretion
<b>Mapping Requirements</b>	Ownership, Forest Land Classification, Cover Type, Stratum Boundaries, Plot Location	Ownership, Forest Land Classification, Cover Type, Stratum Boundaries	Ownership, Forest Land Classification, Cover Type	Ownership, Forest Land Classification, Cover Type
<b>Accuracy of Inventory and Trust Monitoring (Sampling Error at 1 Standard Deviation)</b>	<u>TIMBERLAND:</u> ≤ 5% for BA <u>Comm. Timberland Stratified:</u> ≤ 5% for pooled strata for primary unit of volume and ≤ 15% per stratum <u>Unstratified:</u> ≤ 5% for primary unit of volume <u>WOODLAND:</u> Cat. 3 standards.	<u>TIMBERLAND:</u> ≤ 10% for BA <u>Comm. Timberland Stratified:</u> ≤ 10% for pooled strata for primary unit of volume and ≤ 15% per stratum <u>Unstratified:</u> ≤ 10% for primary unit of volume <u>WOODLAND:</u> Cat. 3 standards.	<u>Comm. Woodland:</u> 20% for BA	At Regional Discretion
<b>Data</b>	Acres, Species, Frequency, Diameter, Height, Tree Condition, Plot Description, Regeneration	Same as Category 1.	Same as Category 1.	Same as Category 1.
<b>Analysis</b>	See 53 IAM 8.6.	See 53 IAM 8.6.	See 53 IAM 8.6.	See 53 IAM 8.6.
<b>Quality Control</b>	10% plot verification, Crew qualifications as per Forest Inventory Field Procedure Guide.	Same as Category 1.	Same as Category 1.	At Regional Discretion.
<b>Document Retention</b>	Data & Approved FIA archived in Central Office	Same as Category 1.	Same as Category 1.	Same as Category 1.

Trust Standards are not specified for Category 5 reservations, as they are non-trust.

**B. Forest Inventory for Timber Product Sales (Cruise).** The purpose of the Cruise is to accurately estimate the timber products and volume of the forest resources. Cruise design will vary depending upon product values, extent of the resource, harvest policies, etc. However, the Cruise standards below shall be met as a minimum and further constrained as necessary by the Regional Office to fulfill the Secretary's trust obligations.

	All Categories
<b>Scheduling</b>	Within 2-years of advertisement of predetermined volume sale and within 5-years of advertisement of estimated volume sales. This will occur as detailed in the Forest Management Plan (FMP) harvest schedule.
<b>Design</b>	As Regionally required.
<b>Accuracy (Sampling Error at 1 Standard Deviation)</b>	Estimated Volume Sale of Timber: 15% for volume and value. Pre-determined Volume Sale of Timber: 5% for volume and value.
<b>Data</b>	Acres, Species, Products, Volume and Value Variables
<b>Analysis</b>	Sample Compilation with summary statistics Sample Expansion using spatial data
<b>Quality Control</b>	Standards will be set by Regional Directors.
<b>Document Retention</b>	Consistent with BIA <i>Files and Maintenance Handbook</i> .

**C. Forest Inventory for Other Forest Product Sales (Other Products Inventory).** The purpose of the Other Products Inventory is to accurately estimate the other forest products and their volume from the forest resources. Design standards will vary depending upon product values, extent of the resource, harvest policies, etc., and will be determined by the Regional Director to fulfill the Secretary's trust obligations.

**D. Forest Inventory for Real Estate Values (Realty Cruise).** Timber is part of the "Real Property" and thus a trust resource under the protection and care of the Secretary. The fair market value of the timber must be accounted for as a part of a Realty appraisal. A Realty Cruise will be performed to the standards determined by the Regional Director to fulfill the Secretary's trust obligations.

**E. Forest Inventory for Stand Management (Stand Exam).** The purpose of this type of inventory is to collect site-specific forest data and other information for silvicultural and other forest management purposes. All stand level inventories shall be based upon site specific data acquired by the Stand Exam, consistent with procedures defined in the *Indian Forest Management Handbook, Volume 8*. Stand Exams will be performed to the standards determined by the Regional Director to fulfill the Secretary's trust obligations.

**F. Forest Inventory for Trespass Investigation (Trespass Inventory).** When unauthorized use or damage of the resource is reported, a determination of extent and value is to be made using Trespass Inventory methods to substantiate claims for compensation. The nature of the damage and the physical evidence present will influence the design (refer to 53 IAM Chapter 7. A Trespass Inventory shall be performed to the standards below.

	For All Occurrences
<b>Scheduling</b>	Promptly upon reported detection.
<b>Design</b>	100% sample; or utilize a sampling method regionally approved for the specific incident.
<b>Accuracy</b>	5% Sampling Error at 1 standard deviation if using regionally approved sampling method.
<b>Data</b>	All physical evidence will be mapped and photographically documented. All measurements necessary to yield quantity and value will be recorded.
<b>Analysis</b>	Full documentation of quantity and value calculations, cost of site rehabilitation, and loss of intrinsic values.
<b>Quality Control</b>	Regional Discretion.
<b>Document Retention</b>	Consistent with BIA file maintenance plans.

**G. Forest Inventory for Ecosystem Management.** Ecosystem management is recognized as an integration of resources, values, and activities over a very broad area. Ecosystem inventory is more than simple measurement of physical characteristics of trees. The standard required is that of adequate documentation of forest related data collected in all types of inventory, so as to facilitate its use by other disciplines. This type of inventory could be used in addressing forest health, adaptive management and landscape issues. Standards are determined by the Regional Director.

**H. Forest Inventory for Research (Research Inventory).** BIA research studies are designed to demonstrate and understand local forest potentials. Research Inventories for stocking study blocks shall meet the standards in the *Indian Forest Management Handbook, Volume 8*. Research Inventories for other purposes, such as genetic improvement, shall have applicable scientifically based procedures established and record analysis maintained.

**8.6 Minimum Content Standards for a Forest Inventory Analysis (FIA).** The analysis of Planning Inventory data shall be documented by a Forest Inventory Analysis report approved by the Regional Director. The substance of the functional elements will be unique to the resource and its beneficial owners' aspirations for management. Prior to approval, the FIA shall meet or exceed the following content standards according to Reservation Prioritization Categories defined in 53 IAM 2.8.A. The identified basic elements within each function shall be addressed with sufficient detail for clarity and understanding of the data. For examples of Forest Inventory Analysis outline formats, refer to *Indian Forest Management Handbook, Volume 8*.

	Category 1	Category 2	Category 3	Category 4
<b>APPROVAL</b>	Required	Required	Required	Required
<b>PREFACE</b>	Required	Required	Required	Required
<b>SYNOPSIS</b>	Required	Required	Required	Required
<b>DESCRIPTION OF FOREST</b>	Required	Required	Required	Required
<b>SUMMARY OF RESULTS</b>	Previous Inventories Current Inventory Sample Methods Area and Volume Growth Forest Condition Forest Trends Cut Calculations Indicated Annual Cut Regulated Annual Cut Comparative Analysis	Previous Inventories (if any) Current Inventory Sample Methods Area and Volume Growth Forest Condition Cut Calculations Indicated Annual Cut Regulated Annual Cut Comparative Analysis	Regional discretion	Regional discretion
<b>COMPILATION AND ANALYSIS OF DATA</b>	Forest Strata Description. Statistical Analysis Method of Forest Regulation Volume and Growth Cutting Cycle / Rotation Age Planning Period Objectives Present Forest Objectives Indicated Annual Cut Regulated Annual Cut	Same As Category 1	Regional discretion	Regional discretion
<b>RECOMMENDATIONS</b>	See <i>Indian Forest Management Handbook, Volume 8</i>	Same As Category 1	Same As Category 1	Regional discretion
<b>APPENDIX</b>	FIMP&TM Field Proc Guide Volume Reference & Tables Regression Coefficients and Equations, Site Index Curves/Equations Inventory Cost Data	Same As Category 1	Same As Category 1	Regional discretion

Trust Standards are not specified for Category 5 reservations, as they are non-trust.

**8.7 Responsibilities.** In addition to the responsibilities identified in 53 IAM 1.7, the following are directly associated with forest inventory.

**A. Director, Bureau of Indian Affairs.**

- (1) Develop national inventory and trust monitoring policies, standards and procedures.
- (2) Provide national forest inventory program direction, oversight, and guidance.
- (3) Assure state-of-the-art forest inventories are implemented, maintained and analyzed for forest management planning and trust monitoring purposes.
- (4) Maintain data and document archive for all forest lands in trust.
- (5) Annually compile and publish the *"Status of Forest Management Inventories and Planning Report"* and the *"Catalog of Forest Acres"*.
- (6) Approve regional inventory guidelines for program implementation.

**B. Regional Director.**

- (1) Develop regional inventory guidelines for program implementation within the scope of this manual and in compliance with all other national policies, directions and standards.
- (2) Assure national and regional trust monitoring standards, policies and procedures are met and followed.
- (3) Assure national and regional inventory policies, standards and procedures are met and followed.
- (4) Provide regional forest inventory program direction, oversight and guidance within the scope of this manual and in compliance with all other national policies, directions and standards.
- (5) Approve each project "Forest Inventory Field Procedures Guide" prior to project initiation.
- (6) Approve each "Forest Inventory Analysis" report.

**C. Agency Superintendent.**

- (1) Plan and budget for field inventory events.
- (2) Organize and conduct field inventory activities.
- (3) Develop project "Forest Inventory Field Procedures Guide".
- (4) Analyze inventory data and develop "Forest Inventory Analysis" report.
- (5) Assure inventory quality control.