



United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
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IN REPLY REFER TO:

53 BIAM Supplement 2, Release 4

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Memorandum

To: Holders of 53 BIAM

From: Deputy Commissioner of Indian Affairs

Subject: 53 BIAM Supp. 2, Forest Management Planning

This release of 53 BIAM Supplement 2 replaces 53 BIAM Supplement 2, Release 3, issued November 4, 1981.

It provides detailed instructions on the development of Forest Management Plans compatible with the direction provided within 30 BIAM Supp. 10, for Integrated Resource Management Planning.

Area Offices are encouraged to develop local Addendum to reflect these revised instructions and if needed refine the planning process for local application.

Acting Deputy Commissioner of Indian Affairs

Filing Instructions:

- (a) Remove superseded material:
- | | |
|---|-------------|
| 53 BIAM Supp. 2, Table of Contents, Release 3 (Dated 11/4/81) | (1 sheet) |
| 53 BIAM Supp. 2, 1.1-3.3 (Dated 11/4/81) | (14 sheets) |
| Illustrations, 1-4 (Dated 11/4/81) | (10 sheets) |
- (b) Insert new material transmitted:
- | | |
|---|-------------|
| 53 BIAM Supp. 2, Table of Contents, Release 4 (Dated 3/21/91) | (1 sheets) |
| 53 BIAM Supp. 2, 1.1-5.5 (Dated 3/21/91) | (19 sheets) |
| Illustrations, 1-9 (Dated 3/21/91) | (9 sheets) |
- (c) Pen-and-ink changes:
- None

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General

1. GENERAL

1.1 Policy.

A. Planning with IRMP. It is the policy of the Bureau, in accordance with 25 CFR 163, to require a current Forest Management Plan (FMP) for all Indian forest lands in trust status prior to the commencement of forest management activities and obligation of related funds. Such plans shall incorporate reservation specific resource management policies developed by, and documented within, an Integrated Resource Management Plan (IRMP), refer to 30 BIAM Supp. 10.

B. Planning without IRMP. If an IRMP is not in place, the Area Director shall provide, after consultation with the Tribe, reservation-specific forest management policies that would normally be developed by, and documented within, an IRMP. Because the IRMP satisfies the environmental assessment (EA) of planned management required by NEPA, where an FMP is developed in the absence of an IRMP, or where the environmental assessment provided by the IRMP is considered inadequate by the Tribe, an EA consistent with the requirements of Section 3.2F will be developed for the FMP.

C. Management without FMP. Where current FMP's are not in place, or where the Area Director has not formally extended an existing FMP, the Bureau's trust obligation will be satisfied through the implementation of a restricted level of management (Section 1.3). Waiver to this policy, if requested by the Tribe, will be considered on a case by case basis by the Assistant Secretary - Indian Affairs, and granted only upon the establishment of satisfactory schedules for completion of planning requirements. Additionally, it is the policy of the Bureau to:

- (1) Encourage Indian tribes to become increasingly knowledgeable about Bureau activities; to plan, conduct, and administer local programs; and to facilitate tribal coordination of other federal programs on Indian reservations.
- (2) Consult with and actively seek involvement of authorized Indian representatives in all aspects of forest management planning.
- (3) Comply with the National Environmental Policy Act as revised and other statutory mandates relative to resource management; e.g., National Historic Preservation Act, Threatened and Endangered Species Act, Archeological Resources Protection Act, etc.,.

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- (4) Refrain from management practices contrary to, or out of the scope of, a current FMP.
- (5) Allocate available funding and staff based upon the program requirements of current forest management plans.
- (6) Limit the span of an FMP to a period commensurate with that for the IRMP; with extensions, if requested by the Tribe, authorized in writing by the Area Director.
- (7) Implement forest management practices in accordance with state-of-the-art standards while recognizing the unique character of Indian lands and the Bureau's legal obligation.
- (8) Install and maintain an accurate long range planning inventory of the Indian forest resource with scheduled remeasurements coinciding with IRMP development, or as necessary to satisfy prudent management.
- (9) Utilize, as appropriate, uneven-aged and even-aged silvicultural systems to best satisfy the goals of the Indian owners.
- (10) Ensure compatibility of forest management prescriptions with other programs and existing tribal ordinances and/or standards.
- (11) Provide technical assistance in forest management to all trust reservations or properties having a forest resource, and all tribes recognized by the Congress and not ineligible for such services.
- (12) Coordinate mapping and aerial photography to ensure compatibility with the Bureau's digital data base.
- (13) Support tribal efforts toward self-determination and provide assistance in harmony with the intent of PL 93-638 as amended.
- (14) Comply with Congressional intent relative to the allocation and use of all Bureau appropriations.
- (15) Monitor and report annually the status of reservation forest inventories and management plans.

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1.2 Scope. As required by 25 CFR 163.4, a Forest Management Plan shall be prepared for reservations, or other trust properties, having commercially viable forest resources. A commercially viable forest is an area comprised of sufficient commercial forest land, as defined by 25 CFR 163.1, (timberland and/or woodland) to afford an economic opportunity to utilize available forest products in the present market place.

A. Prioritization Categories. To facilitate program definition and management priorities, reservations/Indian properties shall be categorized as follows based upon current forest land data:

- Category 1 = Major Forested Reservation - Comprised of more than 10,000 acres of commercial timberland in trust, or determined to have more than 1.0 MMBM harvest of timber products annually.
- Category 2 = Minor Forested Reservation - Comprised of less than 10,000 acres of commercial timberland in trust, and less than 1.0 MMBM harvest of timber products annually, or whose forest resource is determined by the Area Office to be of significant commercial timber value.
- Category 3 = Significant Woodland Reservation - Comprised of an identifiable forest area of any size which is lacking a timberland component, and whose forest resource is determined by the Area Office to be of significant commercial woodland value.
- Category 4 = Minimally Forested Reservation - Comprised of an identifiable forest area of any size determined by the Area Office to be of minor commercial value at this time.
- Category 5 = Reservation or Indian property with forest land that the Bureau is charged with some degree of legal responsibility, but the land is not in trust status.
- Category N = A Forested Reservation that has not been categorized.

B. FMP Content. A reservation's category is determined by the Area Director, in accordance with the above definitions, based upon regional resource value standards. As a minimum for each category, an FMP shall consist of the following items:

- Category 1 - Forest Inventory Analysis Report consistent with Illustration 1; based upon a 15-year reoccurring permanent plot inventory subject to an accuracy standard of 5% error at 1 standard deviation on both basal area and the primary unit of volume measurement used in the calculation of allowable cut; and in accordance with the Bureau's "Forest Management Inventories Handbook". Area addenda to 53 BIAM Supp. 2 may be more restrictive.

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Resource Protection Program Implementation Plan consistent with Section 3.2A, inclusive of the following sections as a minimum;

- 1) Tribal Ordinances or Standards,
- 2) Fire,
- 3) Insect & Disease,
- 4) Trespass,
- 5) Emergency Rehabilitation,
- 6) Documentation & Records,
- 7) Planning Coordination and Communication,
- 8) Organization & Funding.

Timber Management Program Implementation Plan consistent with Section 3.2B, inclusive of the following sections as a minimum;

- 1) Tribal Ordinances or Standards,
- 2) Silvicultural Guidelines,
- 3) Harvest Schedule,
- 4) Harvest Policy,
- 5) Forest Development,
- 6) Data Collection,
- 7) Documentation & Records,
- 8) Planning Coordination and Communication,
- 9) Organization & Funding.

Woodland Management Program Implementation Plan if appropriate, inclusive of the following sections as a minimum;

- 1) Tribal Ordinances or Standards,
- 2) Silvicultural Guidelines,
- 3) Harvest Policy,
- 4) Documentation & Records,
- 5) Organization & Funding (refer to Section 3.2C).

Forest History or update consistent with Section 3.2D, inclusive of the following sections as a minimum;

- 1) Chronology of Events,
- 2) Harvest Record,
- 3) Maps & Charts.

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Forest Economic Benefits Assessment consistent with Section 3.2E, inclusive of the following sections as a minimum;

- 1) Income,
- 2) Indian Benefits,
- 3) Non-Indian Benefits,
- 4) Regional Economic Impacts,
- 5) Trends.

Category 2 - Forest Inventory Analysis Report consistent with Illustration 1; based upon a 15-year reoccurring temporary plot inventory supported by permanent growth plots, as deemed necessary, and subject to an accuracy standard of 10% error at 1 standard deviation for basal area and/or the primary unit of volume measurement used in the calculation of the allowable cut; or to a more constraining interval and accuracy standard as defined by Area addenda to 53 BIAM Supp. 2.

Resource Protection Program Implementation Plan consistent with Section 3.2A, inclusive of the following sections as a minimum;

- 1) Tribal Ordinances or Standards,
- 2) Fire,
- 3) Insect & Disease,
- 4) Trespass,
- 5) Emergency Rehabilitation,
- 6) Documentation & Records,
- 7) Planning Coordination and Communication,
- 8) Organization & Funding.

Timber Management Program Implementation Plan inclusive of the following sections as a minimum;

- 1) Tribal Ordinances or Standards,
- 2) Silvicultural Guidelines
- 3) Harvest Policy,
- 4) Data Collection,
- 5) Documentation & Records,
- 6) Organization & Funding,
- 7) Planning Coordination and Communication.

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Woodland Management Program Implementation Plan if appropriate, inclusive of the following sections as a minimum;

- 1) Tribal Ordinances or Standards,
- 2) Silvicultural Guidelines,
- 3) Harvest Policy,
- 4) Documentation & Records,
- 5) Organization & Funding.

Forest Economic Benefits Assessment consistent with Section 3.2E, inclusive of the following sections as a minimum;

- 1) Income,
- 2) Indian Benefits,
- 3) Non-Indian Benefits,
- 4) Regional Economic Impacts,
- 5) Trends.

Category 3 - Forest Inventory Analysis Report (Illustration 1) based upon a 15-year reoccurring stand reconnaissance (SR) inventory (refer to Section 2.2D(2)) or as may be more restrictively defined by Area addenda to 53 BIAM Supp 2. An inventory may be required more frequently due to the occurrence of environmental and/or developmental impacts.

Resource Protection Program Implementation Plan consistent with Section 3.2A, inclusive of the following sections as a minimum;

- 1) Tribal Ordinances or Standards,
- 2) Fire,
- 3) Insect & Disease,
- 4) Trespass,
- 5) Emergency Rehabilitation,
- 6) Documentation & Records,
- 7) Planning Coordination and Communication,
- 8) Organization & Funding.

Woodland Management Program Implementation Plan if appropriate, inclusive of the following sections as a minimum;

- 1) Tribal Ordinances or Standards,
- 2) Silvicultural Guidelines,
- 3) Harvest Policy,
- 4) Data Collection,
- 5) Documentation & Records,
- 6) Organization & Funding.

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Category 4 - Forest Inventory Analysis Report (Illustration 1) based upon a 15-year reoccurring stand reconnaissance (SR) inventory (refer to Section 2.2D(2)) or as may be more restrictively defined by Area addenda to 53 BIAM Supp 2. An inventory may be required more frequently due to the occurrence of environmental and/or developmental impacts.

Resource Protection Program Implementation Plan consistent with Section 3.2A, inclusive of the following sections as a minimum;

- 1) Tribal Ordinances or Standards,
- 2) Fire,
- 3) Insect & Disease,
- 4) Trespass,
- 5) Emergency Rehabilitation,
- 6) Documentation & Records,
- 7) Planning Coordination and Communication,
- 8) Organization & Funding.

Category 5 - Items as may be required by Area addenda to 53 BIAM Supp 2.

Category N - Same as Category 5.

1.3 Objectives. The objectives to be sought in the management of Indian forests are set forth in the General Forest Regulations, 25 CFR 163.3, and defined herein. The foremost objective is to manage Indian forest lands by sound silvicultural practices designed to attain the goals of the Indian owners (53 BIAM 2.1). Where current FMP's are not in place and Section 1.1 planning requirements are not waived, the Bureau's legal obligation will be restricted to implementation of the following:

1. Free use cutting without permit, 25 CFR 163.20
2. Fire management measures, 25 CFR 163.21(a), (b), (c)
3. Trespass, 25 CFR 163.22
4. Insect and disease control, 25 CFR 163.24(b)
5. Emergency Sale of Timber, 25 CFR 163.7(b)

Refer to 53 BIAM 2 and 25 CFR 163.3 for general objectives.

1.4 Authority. The Indian Reorganization Act of June 18, 1934 (Sec. 6, 48 Stat. 986, 25 USC 466), the General Forest Regulations, 25 CFR part 163, and National Indian Forest Resources Management Act, PL 101-630, (104 Stat. 4531).

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1.5 Responsibility.

A. Assistant Secretary. The Assistant Secretary shall: issue and maintain forest inventory and planning policy and guidelines through the BIA Manual system and other channels; provide technical assistance as necessary to facilitate state-of-the-art forest inventory and planning; ensure that the protection, utilization, and development of the Indian forest resources is under the direction of a current Forest Management Plan; monitor and annually document program status.

B. Area Director. The Area Director shall: coordinate the systematic implementation of forest inventory and planning policy and develop as necessary Bureau Manual addendum to facilitate inventory and planning commensurate with the local situation; after consultation with the authorized Indian representatives, provide reservation-specific forest management policies either by approved IRMP or program directive to enable the development of FMP's; and require forest utilization and development to be consistent with current FMP's.

C. Superintendent. The Superintendent shall: install forest management inventories consistent with Bureau standards, secure data compilation, and develop Forest Inventory Analysis Reports; develop Forest Management Plans which are responsive to tribal goals and objectives, consistent with the Area Office policies, and ensure their compliance with legislative mandates (e.g., NEPA, Threatened and Endangered Species Act, Historic Preservation Act, etc.); and authorize management practices only when in compliance with an approved management plan.

D. Indian Owners. The Tribe is charged with the responsibility to: actively participate in the scoping of forest management issues and concerns; provide written management goals and objectives; strive to assume as much of the planning activities as possible; and approve the final plan and support its implementation or communicate to the Superintendent the Tribe's reasoning for disapproval.

1.6 Supporting Materials. These handbooks and guides are incorporated as a part of 53 BIAM:

A. "Forest Management Inventories Handbook," BIA, 1983, and current revisions incorporated by reference under separate cover. Copies available through Bureau of Indian Affairs, Division of Forestry.

B. "Terminology of Forest Science, Technology, Practice and Products," Society of American Foresters, 1971 as amended.

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- C. "Native American Woodland Resources: A National Overview," BIA, 1988.
- D. "Status of Forest Management Inventories and Planning," BIA, 1990, and current revisions.
- E. "Catalog of Forest Acres," BIA, 1990, and current revisions.

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2. INVENTORY

2.1 General. Forest inventory includes determination of area, volume, growth, condition, and quality by species, as well as associated trends. Procedures and sample intensity vary in accordance with the purpose of the inventory. The following four principal inventory purpose categories are recognized; Forest Inventory for Management Planning, Forest Inventory/Cruising for Timber Sales, Forest Inventory for Real Estate Values, and Forest Stand Inventory (Refer to Sections 2.2A, 2.2B, 2.2C, and 2.2D).

2.2 Standards to be Established. Standards for forest inventory depend upon the specific purposes for which resulting data will be used. Detailed standards, which will be updated periodically as techniques improve, are provided in handbooks and Area addenda to attain specific management objectives. Following are general standards that should apply to all forest inventory projects within the Bureau.

A. Forest Inventory for Management Planning. Inventories of this type involve sampling procedures of limited intensity to determine within reasonable degrees of accuracy the volumes, growth and conditions over considerable forest areas such as an entire reservation, management unit, broad forest type or other major condition or use class categories (e.g., watershed). Inventories are essential for management planning and recognition of conditions that require management activity. Management planning inventories will be analyzed, discussed and presented in terms of stocking and growth in basal area, board feet and cubic feet volume, insofar as it is appropriate and practical to do so. Deviations from this approach shall be justified by Area Offices.

(1) Scheduling. Designed to satisfy the scope detailed in Section 1.2, an inventory timetable of all inventory segments will be maintained by Area Offices for each forested reservation. The completion of inventories and subsequent Forest Inventory Analysis Reports, that are appropriate for the level of management required at a reservation, shall be scheduled at intervals coinciding with management planning cycles. The maximum interval between reinventory shall not exceed that specified by Section 1.2, or as further constrained by Area addenda to 53 BIAM Supp. 2. Catastrophic conditions, e.g., insect, fire, windthrow, etc., may necessitate unscheduled revisions.

(2) Remote Sensing Imagery. Acquisition of recent aerial photography and/or satellite imagery is a management planning inventory requirement for determination of present forest area by type and condition. Acquisition of new aerial photography and satellite imagery will be coordinated with the National GIS Coordinator. New aerial photography will be considered only if adequate coverage of the area by another Government agency

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or commercial firm does not exist. Aerial photography contract specifications shall meet standards shown in USDA-AP-300, "Aerial Photography Specifications," which is contained in the "Forest Management Inventories Handbook," 1983, BIA.

(3) Forest Cover Type Maps. Accurate planimetric cover, soil, and habitat type maps are an essential part of a forest inventory. When cover type maps are prepared and updated from aerial photography or satellite imagery, they shall meet the accuracy requirements set forth in Area addenda, and all standards established by the National GIS Coordinator, for data entry into Bureau geographic information system programs. Forest cover typing systems will be designed to reflect forest management planning inventory requirements for acreage compilation by type and land classification categories to show the following generic forest land categories; reserved unreserved, accessible, inaccessible, timberland, woodland, commercial, noncommercial, productive and nonproductive (Refer to Illustration 2). Cover type symbols shall be standardized on an Area basis, and as practicable, shall be correlated with those used by adjacent public land management agencies.

(4) Inventory Design. Management planning inventories for Category 1 reservations will be based on measurement of permanent fixed radius plots installed on a systematic sample grid covering all commercial forest land for all trust ownership classes. Measurement data will be taken on both commercial and non-commercial tree species. Additional guidelines are provided in Section 1.2 and the "Forest Management Inventories Handbook," 1983, BIA. Any deviations from these procedures must be coordinated with, and approved by, the Central Office. Areas may specify modified procedures for Category 2, 3, and 4 reservations providing such procedures meet minimum standards outlined in Section 1.2 and are consistent through out the Area's jurisdiction and data is sufficient for development of the Forest Inventory Analysis Report outlined in Illustration 1.

(5) Data to Collect. Sufficient data must be collected to provide accurate estimates of stocking and growth on the commercial forest for each reservation and for each major forest type or unit where a reservation has been subdivided. These estimates will be used for determination and regulation of allowable cuts and for other land use planning objectives. Before field work can begin, detailed instructions will be written for each project and submitted to the Central Office for concurrence. These instructions will be in the form of "Forest Inventory Field Procedures" whose content is outlined in the "Forest Management Inventories Handbook," 1983, BIA. These field procedures shall indicate exactly what data are to be collected with explicit instructions on measurement procedures.

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(6) Accuracy.

(a) Sampling Error. In general, the sampling error in Basal Area per acre and/or the primary unit of volume measurement used in the calculation of allowable cut for the total commercial forest component on a Category 1 reservation should not be greater than five percent (5%) in terms of one standard deviation (the 67 percent confidence limit). The sampling error for Category 2 reservations should not exceed ten percent (10%). Area Offices should evaluate the informational needs of the Tribe and the Bureau with consideration of forest productivity and value in the development of Area addenda. Area addenda may specify a more restrictive error should it be deemed necessary (refer to Section 1.2). In addition to the above standard for accuracy of the sample for the entire reservation, a sampling error for a sample segment or strata utilized in the calculation of the indicated annual cut (IAC) should never exceed fifteen percent (15%) in terms of one standard deviation.

(b) Quality Control. A quality control program similar to that illustrated in the "Forest Management Inventories Handbook," 1983, BIA, shall be implemented on every management planning inventory project whether contracted or conducted by personnel within the Tribe or the Bureau. A minimum of ten percent (10%) of the plots will be randomly checked and quality control records kept on file at the Agency.

(c) Data Entry, Edit, and Processing. Inventory data will be entered and initial edit performed at the field level utilizing hand-held data recorders or desktop microcomputers when possible. Data entry software utilized for continuous inventory plot remeasurement shall incorporate audit routines designed to compare current and past measurements on a tree level basis, so as to detect questionable changes in tree measurements and ratings. Inventory project supervisors will strive to maintain data entry concurrent with plot measurement in order to provide for timely submission for data processing and capability to revisit plots, as necessary, to correct data errors during the current field season. An edited data file on project specified electronic media shall be supplied to the data processing organization within 30 days of the completion of field plot measurement. Every effort will be made to ensure data accuracy by use of automated error checking, and field level verification and editing. Data editing is the responsibility of the field level and must be performed prior to the beginning of the next growing season. Data processing will be completed within one year of field level verification of data accuracy.

(7) Data Archival. A digitized data file will be maintained for all planning inventories for historical reference by the Central Office, Branch of

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Forest Resources Planning (BOFRP). This includes data processed by an agency outside the Bureau, or by private contractors including tribal facilities when federal funding is utilized to conduct the inventory, process the data, or prepare the Forest Inventory Analysis Report. In these situations the Agency shall provide the Central Office, BOFRP, with a corrected data file configured for entry on Bureau computer hardware. Data file documentation and a copy of the field procedures handbook will also be required.

(8) Contracting. It is preferable, due to the benefits of local knowledge gained, that inventories be conducted by the Tribe, the Bureau, or other Governmental agencies. However, when time limitations, lack of trained personnel, or other factors prevent this, the work may be accomplished through contracting with a technically qualified and capable forestry consultant.

(9) Reports. An analysis titled "Forest Inventory Analysis Report" will be drafted within one year of the completion of inventory data processing. The report will describe current forest conditions, summarize stocking and growth information, include comparisons to previous inventories and analyze forest trends. The Illustration 1 outline format shall be followed when preparing this report; however, modification is permitted to meet individual Area/Field Office (Agency and/or Tribe) needs, provided, each topic is addressed. Specific instructions regarding change in format will be incorporated in Area addenda. The report will also include a current management (IRMP Alternative 1) calculation of indicated annual cut (IAC), and regulated annual cut (RAC). IAC, RAC, and AAC are value/terms essential to the mandate of sustained-yield (25 CFR Part 163.4) and shall be used in the consideration of Bureau management objectives (25 CFR Part 163.3(c)). These value/terms are defined as follows:

- IAC - Indicated Annual Cut is the calculation of expected annual harvest under the constraints of current management during a conversion period from the present to a regulated forest condition. In the case of an IRMP or FMP where multiple planning alternatives are presented, an IAC shall be calculated for each alternative reflecting the management constraints of each alternative.

- RAC - Regulated Annual Cut is the calculated sustainable yield for the future forest after regulation is attained and as management is constrained by a continuation of the requirements of the management alternative. In the case of an IRMP or FMP where multiple planning alternatives are presented, an RAC shall be calculated for each alternative reflecting the management constraints of each alternative.

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AAC - Allowable Annual Cut is the maximum annual harvest level allowed during a planning period. The determination of AAC is the result of either the scientific calculation of IAC under an Area Director's policy directive, or defined by the Tribe's preferred management alternative documented in an approved IRMP. The cumulative AAC, or portion thereof as may be defined by Area addenda, can be harvested at any time during the planning period, but cannot be carried as surplus volume to the next planning period.

B. Forest Inventory/Cruising for Timber Sales. Inventories for timber sales require more intensive sampling, since they concern smaller population units on smaller areas, than those involved in management planning. The sample must provide data of sufficient quantity and quality to support accurate stumpage appraisals for advertisement and sale purposes. Accuracy of the stumpage appraisal is dependent on the estimate of the volume and quality of timber to be cut from a proposed timber sale area. Errors can result in considerable financial losses, either to the seller or to the purchaser. Timber sale inventories must be carefully planned and work conducted to a high degree of accuracy.

(1) Scheduling. The objective will be to complete an inventory/cruise for each proposed sale area at least one year prior to advertisement when possible with available personnel and funds. Consistent with the harvest schedule (Section 3.2B(3)), and with approval by authorized tribal representatives, a schedule of proposed sales should be published periodically, giving areas, volumes and other data in sufficient detail to enable advance planning by prospective purchasers.

(2) Design. Inventory/cruise designs, other than those involving 100 percent cruises, shall utilize unit samples that can be statistically analyzed for sampling accuracy. Sample locations must be identified in a way that facilitates relocation for checking purposes within a reasonable time period. Field tally sheets, inventory maps, and data summary sheets must be retained in the sale preparation file along with sufficient instructions to enable audits to clearly ascertain all aspects of the sale preparation process. Data retention will correspond with other timber sale documents.

(3) Timber Sale Unit Map. Unit maps delineating harvest area, ownership, transportation system, topography and operability shall be required for all proposed timber sale units. The final unit map must be compiled on a base map in such manner as to avoid gross errors in relative position of map features and must conform to accuracy standards contained in Area addenda. All acreage figures used for expanding per acre volume figures to arrive at total volumes shall be measured on the final unit map unless ground traversed.

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(4) Data to Collect. Specific methods to be used and data to be collected will depend on local conditions and on requirements as determined by each Area Office.

(5) Accuracy.

(a) Sampling Error. The sampling error for the volume and value to be cut on predetermined sales shall not exceed five percent (5%) in terms of one standard deviation (the 67 percent confidence limit). For estimated volume sales, sampling errors should be established with consideration of timber values, in addition to logging and unit development costs. In the case of estimated volume sales the sampling error in cut volume and value for the entire sample, or individual strata utilized for separate appraisal purposes within sales, shall not exceed 15 percent (15%) in terms of one standard deviation.

(b) Human Error. Whether contracted or conducted by personnel within the Tribe or the Bureau, errors must be minimized through adequate training of inventory personnel and through frequent checking of procedures and measurements. It must be stressed to personnel that accuracy of final results is largely dependant on the accuracy of field measurements. In addition, it is important where inventories are conducted by Bureau personnel that particular effort be directed towards adequate training of inventory crews in collecting log or tree grade data. It is recommended that the Area Forester establish standard training plots where representative trees have been log or tree graded by acknowledged experts in interpretation of the most current and relevant grading rules. Field forestry personnel can then be trained and checked on these plots for the purpose of more nearly standardizing interpretation and application of log or tree grading rules. This type of training and checking will reveal if there is a need for greater accuracy in grading of individual logs or trees and where corrective effort is most needed. Forest Officers in Charge shall frequently check work of cruisers to maintain high standards of accuracy. These checks shall be well documented for future audits.

C. Forest Inventory for Real Estate Values. This type of inventory may provide the major basis for estimation of real estate value for forested lands. The Branch of Real Estate Appraisal frequently requests a report of volumes and quality of timber and/or woodland on specific forested ownership tracts, usually individual trust allotments. Branch of Forestry personnel skilled in inventory procedures should be assigned to respond to these requests.

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(1) Responsibility of the Branch of Real Estate Appraisal. The Branch of Real Estate Appraisal is responsible for the evaluation of real estate. In order to facilitate completion of this function, the Branch of Forestry is normally requested to perform the field work and data compilation of timber and/or woodland inventories necessary for the Branch of Real Estate Appraisal to estimate market value.

(2) Responsibility of the Branch of Forestry. The Branch of Forestry is responsible solely for the technical supervision of its personnel when conducting the inventories. The Branch of Real Estate Appraisal shall inform the Branch of Forestry of their data needs and the manner in which it is to be presented. The Branch of Forestry shall determine procedures for obtaining the data.

(3) Inventory Design and Accuracy. Each inventory shall be designed to accurately produce the data requested by the appraiser. Sampling error standards contained in Section 2.2B(5)(a) for predetermined volume sales apply to forest inventory for Real Estate Values.

(4) Inventory Report. A report summarizing the necessary data shall be prepared and certified by the forester who conducted the inventory. It will clearly and concisely set forth the information requested by the appraiser. The report shall also include a map on the appropriate appraisal form delineating, by areas, the forest conditions discussed in the report.

(5) Scheduling. Area Offices shall issue instructions regarding the scheduling of forest inventories requested by the Branch of Real Estate Appraisal. Schedules must allow sufficient time for field work and report compilation along with consideration for other major forestry program aspects. The Branch of Forestry shall work closely with the Branch of Real Estate Appraisal in periodically reassessing and prioritizing outstanding inventory requests. The time frame for fulfilling Branch of Real Estate Appraisal requests shall be reasonable so as not to unduly cause delays in real estate transactions or cause hardship to the owners. Assignment of additional personnel within the Branch of Forestry or short term details of other personnel in the Area to process inventory requests as scheduled may be necessary.

D. Forest Stand Inventory. Inventories of this type have been termed "Stand Exam," "Stage II Inventory," or "Operations Inventory". They are designed to gather data specific to individual stands. Forest stand inventory provides data needed for the development of silvicultural prescriptions, post treatment analysis, and operational scheduling. As such, forest stand

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inventory is a day to day working tool and a continuing process as contrasted to the management planning inventory which is designed to gather total forest data based on forest conditions at a specified point in time.

(1) Responsibilities. A standard forest stand inventory system has not been adopted by the Bureau. If stand inventories are to be employed at an Agency, it is the responsibility of the Area Office to select the regional or Bureau supported systems that best fulfill day to day inventory requirements. The following guidance is provided:

(a) Areas are encouraged to select systems for Area-wide use that are nonproprietary and supported by a public agency whenever possible.

(b) When other than Bureau services are utilized, a Memorandum of Understanding (MOU) or contract covering the following points is required: software licensing, system access, data entry, data correction, file maintenance/security, technical support, training, proprietary aspects of inventory data on trust lands, time period and all cost factors.

(c) Area Offices will issue addendum to this supplement establishing Area policy, schedules and objectives for forest stand inventory that are consistent with the standards in the section.

(2) Standards. Forest stand inventory systems adopted by the Bureau must satisfy a variety of day to day program information and scheduling requirements. Systems selected must provide the option of collecting stand information at different levels of survey intensity which can be generally categorized as follows:

(a) Photo Interpretative (PI) - Forest type, size, density, major species, stand number, compartment number and stand area are recorded to create a basic forest-wide stand record data base. Information is based on photo interpretation, vegetative type mapping and subjective delineation of compartment and management boundaries. Although not adequate for most silvicultural prescriptions, PI stand information provides area, species and size class data used for expansion of management planning inventory data to forest-wide estimates and calculation of annual cut.

(b) Stand Reconnaissance (SR) - Ground check verification of PI information, confirmation of stocking level and stand condition. SR or walk-through surveys are used for the determination of silvicultural prescriptions,

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evaluation of insect and disease problems, stand age and structure, merchantability and to update past treatment stand records. It may be necessary to collect broad based volume data. However, SR volume estimates are low statistical accuracy samples exceeding 20 percent standard error in terms of one standard deviation.

(c) Stand Exam (SE) - Plots are normally installed on a systematic or line grid and individual tree measurements are recorded to produce stand and stock tables. SE inventories are of higher statistical reliability than PI and SR inventories, with designed sample errors of less than 20 percent in terms of one standard deviation. SE inventories provide data for silvicultural prescriptions, computer modeling, and comparisons to regulated stand objectives. SE information is also used for detailed post treatment evaluations.

(3) Scheduling. Forest-wide stand records based on photo interpretative (PI) survey information will be established as part of vegetative type mapping projects. In view of the high costs and labor intensive nature of stand reconnaissance (SR) and stand exam (SE), these survey techniques should be limited to treatment and/or harvest areas identified in the current FMP (Section 3.2B & C) or areas affected by the invoking of 25 CFR 163.7(b). It is recommended that Stand Reconnaissance survey information be collected on stands visited during quality control checks on vegetative type mapping projects and for forest strata information necessary in the development of the Forest Inventory Analysis Report on Category 3 reservations (refer to Section 1.2).

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3. FOREST MANAGEMENT PLAN

3.1 General. The Forest Management Plan (FMP) is a composite of IRMP Implementation Plans and related supporting materials addressing a reservation's resource management actions for which the Forestry Program is responsible. The FMP provides the direction and technical specifications by which day to day activities are regulated in the execution of the IRMP preferred alternative. The implementation of the FMP, like the IRMP, will be reviewed on an annual basis and updated if necessary. It is important that the FMP comply with the IRMP and, that when finalized, it be approved by the Area Director and the Tribe. Any deviation or modification during the course of the plan must be similarly adopted. In the absence of an IRMP, the FMP can be developed based upon a resource-specific management policy approved by the Area Director (refer to Section 1.1). This management policy should be responsive to tribal goals and objectives and must be supported by tribal resolution. Because the IRMP satisfies the environmental assessment of planned management required by NEPA, where an FMP is developed in the absence of an IRMP or where the environmental assessment provided by the IRMP is considered inadequate by the Tribe an EA consistent with requirements of Section 3.2F will be developed for the FMP.

3.2 Content. The FMP content is dependent upon the significance of its forest resources as reflected by the reservation categories defined in Section 1.2. Refer to Section 1.2 for specific reservation FMP content. Normally, three programs are addressed as IRMP program Implementation Plans in the FMP by the forestry staff (Resource Protection, Timber Management, and Woodland Management) whereas, other resource programs are addressed by other resource expertise in accordance with appropriate program manuals. The detail of each program will be preceded by a Program Management Summary page consistent with that outlined by Illustration 4. An acceptable format for the detail of these programs is presented in Illustration 5 and described in Sections 3.2A, 3.2B, and 3.2C. As a minimum an FMP shall consist of:

- (1) Approval Page (See Illustration 9)
- (2) Forest Inventory Analysis Report (Illustration 1 and 2)
- (3) Program Implementation Plans with Program Management Summary (Illustration 4)
- (4) Supporting Materials as required (e.g., Forest History, Forest Economic Benefits Assessment Illustration 6, etc.)

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A. Resource Protection Program Implementation Plan. The reservation's resources to be protected from fire, trespass, and insect and disease should be briefly described in terms of extent and value to the Tribe (tangible as well as intangible).

(1) Tribal Ordinances or Standards (O-S). Tribal ordinances or standards relevant to resource protection should be included. Without specific tribal ordinances or standards the Bureau should make no assumptions of resource priorities and prudently enact cost effective resource management practices compatible with the preferred alternative identified by the IRMP.

(2) Fire. Reference normal fire year plan and ensure its compatibility with any existing tribal O-S.

(3) Insect & Disease. Specify methods and responsibilities for monitoring, reporting, and controlling insect and disease activity ensuring compliance with tribal O-S, if in existence.

(4) Trespass. Define types of trespass (timber and fire). Identify responsibility, and action to be taken, to report and investigate events as well as to expedite the process for restitution. Reference O-S where necessary.

(5) Emergency Rehabilitation. Any existing rehabilitation plan should be included or referenced and/or established procedures for emergency rehabilitation proposals stated.

(6) Documentation, Monitoring & Records. Area, Agency, and Tribal handbooks and instructions should be referenced as appropriate. Specific record keeping requirements, monitoring processes, and periodic reviews should be identified. Example forms and other explicative information should be attached with routing procedures and filing instructions.

(7) Planning, Coordination and Communication. Coordination of the resource protection program with all resources of value (e.g., Timber, Wildlife, Archeology/Historical, Range, etc.) and programs under the jurisdiction of other Agency branches is essential and must be scheduled and maintained. Schedules for annual plan review and periodic plan revision will be developed with dates specified. Procedures for coordinating activities (e.g., I.D. Team policy), and communication with the Tribe, will be specified. Also, this part should identify the position(s) responsible for initiating and maintaining this action. Overall responsibility is with the Superintendent, even-though the task is usually delegated to the Agency Forest Manager.

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(8) Organization & Funding. Manpower and funding requirements to execute the protection program will be identified and organization charts attached. If necessary to satisfy the implementation needs of the plan, an Agency reorganization schedule will be developed as well as current and prospective funding sources defined. This section should specify probable program impact if unexpected funding or manpower shortfall is incurred, as well as, state the possible impact if implementation of PL 93-638 is identified by the Tribe as a management objective.

B. Timber Management Program Implementation Plan. A description of the resources to be managed under the timber program as stipulated by the IRMP policy direction must be included in the FMP. Often this may include more than one timbered management unit and related IRMP resource policy (e.g., watershed, cultural reserve, recreation, etc.). As resource priorities deviate from one unit to the next it will be necessary to subdivide the following categories by specific unit and elaborate upon practices that enhance, protect, maximize, etc., resource values to attain tribal objectives. Maps delineating management units and/or IRMP policy boundaries are essential for program clarity. The following topics should be addressed relative to tribal ordinances or standards (O-S).

(1) Tribal Ordinances or Standards (O-S). Any tribal O-S relevant to timber must be included or referenced. If the Tribe has not developed timber management standards, the Bureau should encourage their development. Without tribal O-S to establish acceptable procedures for timber management activities and thus providing local government control of environmental and socioeconomic impacts, the Bureau's standards, as exist in manuals, CFR, contract parts, etc., will solely apply.

(2) Silvicultural Guidelines. Specific state-of-the-art silvicultural guides will be developed by forest vegetative (habitat) type for each management area or zone to implement the policy adopted by the IRMP. Consideration should be given to the enhancement or protection of other forest resources identified to be of value to the Tribe. Guidelines could include the level of experience and training required by those responsible for implementation in the field and should include methods of supervision, quality control checks, and standards that are to be applied.

(3) Harvest Schedule. Future timber sales will be identified and mapped to satisfy the allowable annual cut for the entire management period. The specifications (size, location, etc.) of sales will comply with IRMP management objectives. Market buffers (AAC deviations) will be identified for optimum harvest in times of good markets and minimum harvest during poor markets with consideration for sustained tribal employment goals that may be identified in the IRMP. During a normal planning period (10-years), sale detail should be as follows:

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<u>Year</u>	<u>Designation</u>	<u>Specified Information</u>
1-2	Scheduled Sales	Final Map Layout Volume by Species & Areas Development Requirements Special Resource Protection Identified Harvest Systems Harvest Timing
3-5	Planned Sales	Proposed Map Layout Total Volume & Area Primary Access Identified Special Resource Identified Proposed Harvest Systems
6-10	Projected Sales	General Map Area Planned Volume & Area Existing Access Identified

Scheduled activity will be progressively advanced or updated, moving forward in time by a year, thus perpetuating an ever current 10-year harvest schedule. This normally occurs at the time of the annual FMP review.

(4) Harvest Policy. The harvest policy will detail timber sale objectives and those practices considered acceptable on the reservation in order to comply with the IRMP and tribal O-S. Category 1 reservations may require individual harvest policies for differing management units if tribal O-S are unit definitive. They will include but not be limited to:

- (a) Sale size, volume, value and duration (min./max.);
- (b) Harvest unit size, shape, location or other constraints (a sale may be composed of many harvest units, sometimes called cutting blocks, and may require designation by management area);
- (c) Product size and merchantability standards;
- (d) Market area & solicitation policy;
- (e) Access road right-of-way, location, construction, maintenance specs., closure;
- (f) Falling and bucking standards;
- (g) Yarding methods and restrictions;

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- (h) Hauling policies, safety and routing;
- (i) Slash disposal standards;
- (j) Scaling policies;
- (k) Regeneration or TSI policies;
- (l) Mapping standards;
- (m) Special resource protection;
- (n) Required documentation;
- (o) Permit program, and
- (p) Post Harvest Analysis.

(5) Forest Development. This part should address in detail the regeneration and timber stand improvement activities scheduled during the plan period for areas not addressed in the harvest schedule. Detailed are prescription standards, project execution methodologies and quality controls, scheduled project and associated maps, access requirements, source and quality of regeneration stock, and protection of special resources. This part should also contain reference to an existing tree improvement plan.

(6) Data Collection. Data requirements and collection standards will be addressed in accordance with Section 2.1, and 53 BIAM Supp.3. Included are processing procedures, timing, quality control and means of acquisition.

(7) Documentation, Monitoring, and Records. This part should specify the monitoring process and record keeping requirements for the timber management program. Acceptable forms or other means of documentation should be exemplified, with routing, verification, audit, approval, distribution and filing procedures included. Area, Agency, and Tribal handbooks/instructions should be referenced as appropriate.

(8) Planning, Coordination and Communication. Coordination of the timber management program with other resources of value (e.g., Wildlife, Archeology/Historical, Range, etc.) and programs under the jurisdiction of other Agency branches is essential and must be scheduled and maintained. Schedules for annual plan review and periodic plan revision will be developed. Procedures for coordinating activities (I.D. Team policy), and communication with the Tribe, will be specified. Also, this part should identify the

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position(s) responsible for initiating and maintaining this action. Overall responsibility is with the Superintendent even-though the task is usually delegated to the Agency Forest Manager.

(9) Organization & Funding. Manpower and funding requirements to execute the timber management program will be identified (year by year over the period of the plan if large fluctuations are anticipated due to varying work loads). Organization charts will be included and an Agency reorganization plan developed if necessary. Current and prospective funding sources shall be defined. Probable program impact, if funding or manpower shortfall is incurred, should be specified. If identified as a tribal goal, the impact of the implementation of PL 93-638 must be defined.

C. Woodland Management Program Implementation Plan. A description of the resources to be managed under the woodland program, as stipulated by the IRMP policy direction, must be included in the FMP. Where distinct units exist, as resource priorities deviate from one unit to the next, it will be necessary to clarify how the following topics will apply to each unit. Maps delineating management units and/or IRMP policy boundaries are essential for program clarity. The following topics should be included in the woodland management program description.

(1) Tribal Ordinance or Standards (O-S). Any tribal O-S relevant to woodlands must be included or referenced. If the Tribe has not developed woodland management standards, the Bureau should encourage their development. Without tribal O-S to establish acceptable procedures for woodland management activities and thus providing local government control over environmental and socioeconomic impacts, the Bureau's standards, as exist in manuals, CFR, contract parts, etc., will solely apply.

(2) Silvicultural Guidelines. Silvicultural guides will be developed by forest vegetative types for each unit, management area, or zone to implement the policy adopted by the IRMP. Consideration should be given to the enhancement or protection of other forest resources of value to the Tribe that interface with proposed forestry activities. Guidelines could include the level of experience and training required by those responsible for implementation in the field and should include methods of supervision, quality control checks, and standards that are to be applied.

(3) Harvest Policy. The harvest policy will detail woodland sale and use permit objectives to comply with the IRMP and tribal O-S. They will include but not be limited to:

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- (a) Description of acceptable sale size, volume, and duration;
- (b) Permit program policy;
- (c) Individual unit sizes, shapes, or other constraints;
- (d) Product size and merchantability standards;
- (e) Market area & solicitation policy;
- (f) Road use constraints;
- (g) Utilization requirements;
- (h) Yarding restrictions;
- (i) Slash disposal standards;
- (j) Method of scaling and payment policy;
- (k) Regeneration and stand improvement policies;
- (l) Mapping standards;
- (m) Required documentation.

(4) Documentation, Monitoring & Records. This part should specify the monitoring process and record keeping requirements for the woodland management program. Acceptable forms and other documentation should be provided, with routing, verification, audit, approval, and filing procedures. Bureau and tribal instructions should be referenced as appropriate.

(5) Organization & Funding. Personnel and funding requirements to execute the woodland management program will be identified for the plan period. Organization charts will be included, and Agency or tribal reorganization plans developed if necessary. Current and prospective funding sources shall be defined. Probable program impact, if funding or manpower shortfall is incurred, should be specified. If identified as a tribal goal, the impact of the implementation of PL 93-638 must be defined.

D. Forest History. A forest history shall be prepared for each Category 1 reservation. Whether or not the history is included as a part of the FMP (see Illustration 5) or prepared separately, is largely dependent upon the scope of the forestry program and the amount of forest activity that requires recordation. Because of great diversity in activities and methods

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from reservation to reservation, the outline for a history will be provided in instructions issued by the Area Office. The final history product must as a minimum portray a complete chronology of events since the inception of forestry activities or an update since the last history was published. It must also include specifics relative to each timber sale unit, cutting history maps, and other pertinent maps and charts.

E. Economic Benefits Assessment. The Economic Benefits Assessment is an important summary of resource value data and program impact projections useful for the program management decision process. It is an integral part of the FMP, and is used as a management tool much like the Forest Inventory Analysis Report and Forest History. It should reflect the current resource benefits that are derived from the forest resources and management program, and a projection of potential estimated benefits under the preferred management alternative. Illustration 6 details specific components of an Economic Benefits Assessment. This Illustration should be included as a page in all Category 1 FMPs, and may be required for other Categories by Area addenda.

(1) Indian Benefits. This part should specify benefits derived by individual Indians from forest resources and the forestry program. Estimates of these values may be on file at Area or field offices, since the information is requested periodically by the Central Office. Listed benefits are:

(a) Income. From timber sales, permits, and any other forest-related income received by the Indian owners.

(b) Wages. Includes wages paid to Indians by the BIA and tribal forestry programs, forest product enterprises, and Indian fire crews working on or off the Reservation.

(c) Self-employed Income. Income received by self-employed Indians from forest-related activities.

(d) Personal Use Benefits. Includes estimated non-market benefits utilized by individuals. Major items are fuelwood and pinyon nuts. Other items include, but are not limited to, bark, Christmas trees, herbs, forage, posts/poles, shakes/shingles.

(e) Employment (full time). In man/years

(f) Employment (part time). In man/years, includes Tribal fire crews working on or off the Reservation.

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(2) Regional Economic Impacts. These impacts are based on regional direct, indirect, and induced employment and income multipliers, developed by the U.S. Forest Service. Multipliers are expressed per million board feet of harvested timber.

(a) Employment. In man/years

(b) Income. In dollars

F. Environmental Assessment. Where an FMP is developed in the absence of an IRMP or where the environmental assessment provided by the IRMP is considered inadequate by the Tribe it will be necessary to prepare an Environmental Assessment (EA) for the FMP. The EA will satisfy the requirements of the National Environment Policy Act and the Paper Reduction Act utilizing modern graphics, spatial representation of data, and comparative matrices to assess the probable impacts of the proposed management in as concise a document as possible. A document in excess of 15 pages (inclusive of maps) is considered prodigal. Based upon the EA, the authorized NEPA decision maker will issue a decision either in the form of a Finding of No Significant Impact (FONSI) or a Notice of Intent (NOI) to pursue an Environmental Impact Statement (EIS). This document will be incorporated in the Appendix of the FMP.

(1) Content. The EA will as a minimum address the following topics. Reference to existing information may totally or in part satisfy the need for redundant information.

(a) Statement of Purpose. A brief statement expressing the object and scope of the FMP. It may include the purpose of and need for the FMP, the period it covers, authority, what it is designed to accomplish, area of consideration (ownership, resource), major constraints and other background information that may prepare the reader to better understand its content.

(b) Description of the Affected Environment. A brief description of the current condition of the forest. It details the extent and present value of the forest resources as well as forecasts for future values of these resources.

(c) Issues and Concerns. Documents tribal consultation. This section will reference the tribal resolution approving the proposed management policy and should concisely list the Tribe's expressed forest management issues and concerns.

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(d) Goals and Objectives. Sets the management direction and principles under which activities should be executed during the period of management. It may reference tribal O-S, resolutions, and/or the General Forest Regulations.

(e) Alternatives and Environmental Consequences. A summary of the two alternatives considered for management (the No Change and the Proposed alternatives). This is the primary section of the EA. It should briefly describe the No Change alternative in terms of past methods of management, resources emphasized, objectives desired, and environmental components known to have been impacted. It should also describe the management policies of the Proposed alternative and how they compare to the No Change alternative. The environmental consequences of the two alternatives should be compared by utilizing a matrix displaying projected impacts to resource concerns. The impacts of the Proposed alternative can be described in subjective terms compared to the No Change alternative (e.g., improve, degrade, enhance, maximize, etc.) or rated numerically (e.g., +3, +2, +1, 0, -1, -2, -3). Refer to CEQ regulation 1502.16.

(f) Mitigating Measures. Describes the proposed protective action to be taken to reduce or alleviate the identified impacts to environmental concerns by the Proposed alternative.

(g) Contributing Individuals. Briefly records methods used to secure input for determining issues, evaluating alternatives, and establishing management direction and policy. It is essential to document public involvement and comment as well as names, titles, and organization of participants.

G. Appendix. Other material necessary to support the forest management plan should be carefully selected and presented in this section. Summary of results under previous plans, forest resource analysis (inventory analysis) summary, glossary of terms, rehabilitation plans, control records, soils and geology, are a few of the items that might be included hereunder. Some of the information required in, or pertinent to, the FMP may be the topic of separate studies, and should only require brief summarization and appropriate referencing. Long involved tabulations in spread-sheet form should not be incorporated here. Instead, they should appear in the forest resource analysis (inventory analysis), or as addendum to the FMP. Copies of the records, forms and instructions prescribed by the Area Office for control of forest management should appear in this section.

FOREST MANAGEMENT PLANNING
Branch of Forest Resources Planning (BOFRP)

4. BRANCH OF FOREST RESOURCES PLANNING (BOFRP)

4.1 General. Nationwide forest inventory and management planning assistance is provided by the Branch of Forest Resources Planning (BOFRP), a field office within the Central Office, Division of Forestry, located at Portland, Oregon. The principal objective of the BOFRP is to offer specialized technical assistance, guidance, and on-the-job training in all phases of forest inventory and management planning from the initial inventory concept and design through approval, implementation, and monitoring of forest management plans. The BOFRP provides guidance in the development of IRMP's and provides specialized expertise as necessary to field offices (Tribe and/or BIA Agency). In addition to providing a national repository for reservation specific forest data, the BOFRP monitors the national status of mandated forest inventories and management plans on Indian trust reservations and properties. The BOFRP also provides national oversight for the forest pest management program. Activities are performed in accordance and compliance with all statutes and regulations as detailed in 53 BIAM 1.2, 53 BIAM Supplement 2 and Supplement 6, departmental manuals, Area addenda, Agency handbooks and tribal ordinances or standards. At every opportunity the BOFRP will emphasize the objectives of the forest owners to insure that their concerns will be carefully addressed and values appropriately incorporated in the planning process.

4.2 Organization. Central Office forestry staff located at Portland, Oregon, receive leadership and supervision from the Chief, BOFRP. The office is responsible for conduct of the forest management inventory and planning program, forest pest management program, and the forestry personal computer (PC) users support program. The Chief, BOFRP, is responsible to the Chief, Division of Forestry. Organizational structure of the BOFRP is based upon two functional components, Forest Management Inventory Section and Forest Management Planning Section.

A. Forest Management Inventory. Forest management inventory is accomplished through direction of the Section Chief, Forest Management Inventory Section. Staffed with a team of inventory, mensuration and computer specialists, this Section provides technical assistance expertise in all aspects of forest inventory from design and conduct of field inventories through computer processing, data analysis and compilation of the "Forest Inventory Analysis Report" (Section 2.2A(9)). The Section maintains inventory guidelines and monitors national status of reservation inventories to insure Bureau compliance with Section 1.1. In addition, the Section provides overall direction, developmental expertise, trouble shooting, and field training for the forestry PC users support program.

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Branch of Forest Resources Planning (BOFRP)

B. Forest Management Planning. Forest management planning is accomplished through direction of the Section Chief, Forest Management Planning Section. Staffed with specialists having expertise in forest management, silviculture, environmental analysis, forest development, economics, pest management, and forest products, the Section provides guidance in the interdisciplinary approach to the development and compilation of multiple-use forest management plans, as required by Section 3 herein. The Section maintains management planning guidelines and monitors national status of reservation plans to insure Bureau compliance with Section 1.1. In addition, the Section provides national oversight of the forest pest management program.

4.3 Services. While primarily designed to assist and guide field offices (Tribe and/or BIA Agency) in the forest management planning process, the BOFRP will, upon request and as manpower and funds are available, accept the lead role in any or all aspects of the planning process if capability is not present at the local or Area level. Assistance with other forestry activities may be provided as need dictates and capability is developed, and insofar as that assistance does not interfere with the primary mission of the BOFRP.

A. Types of Services. The BOFRP can provide technical assistance to fulfill, or will perform, the following activities in conjunction with the forest management planning process:

Forest Management Inventory

Pre-inventory Planning
 Field Inventory Specifications
 Field Forest Inventory
 PC Users Support
 Contract Specification Packages for
 Inventory, Aerial Photography,
 Mapping, Resource Surveys, PC
 Acquisitions, Digitizing, etc.,
 Regulation Analysis
 Computer Programming and Processing
 Forest Inventory Analysis Report
 Inventory Analysis
 Statistical Analysis
 Stock Plot Specifications
 Data Processing
 Data Archive
 Training

Forest Management Planning

Planning Process Organization
 Management Prescriptions
 Implementation Plans
 Economic Analysis
 Feasibility Studies
 Silvicultural Prescriptions
 Market Analysis
 Forest Utilization Studies
 Integrated Pest Management Review
 Public Awareness
 Contract Specification
 Packages for Management Planning
 Environmental Assessments
 Forest Histories
 Management Plan Compilation
 Forest Resource Analysis Reports
 Training

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Branch of Forest Resources Planning (BOFRP)

B. Eligibility to Receive Services. Technical assistance in forest management inventory and planning is available upon request to all BIA organizational units, as well as, federally recognized tribes or individual Indians with an ownership interest in reservations or properties having a forest resource. These same services are extended to self-governance tribes, tribal organizations/enterprises, and tribal contractors, unless such activities are specifically restricted and/or tribes declared to be not eligible by contract, MOU, agreement, directive, etc.

C. Procedure for Requesting Services. BIA Agencies seeking technical assistance may initiate requests at any time and submit them through their Area Office to the Chief, Branch of Forest Resources Planning. Area Offices may initiate Area level requests directly to the Chief, BOFRP. Tribes and individual Indians who meet the requirements of Section 4.3B may request assistance through the Area Office or directly from the Chief, BOFRP. All requests should be in writing.

D. Prioritizing Requests for Services. The Chief, BOFRP, will provide a timely response to all written requests. Services will only be restricted by available funding and staff.

4.4 BOFRP Operational Method. BOFRP's preferred approach to management planning is an organized team effort under tribal direction. The team should consist of the necessary specialized expertise to organize, plan, develop, write and compile a management plan document to guide or define management activities through the plan period.

A. Area or Field Office (Tribe or BIA Agency) in Lead Role. When the Area or field office (Tribe or BIA Agency) assumes the lead role, the BOFRP, if requested and as practicable or feasible, will assist as needed, in organizing the planning effort, by providing computer services, participate in an active role on the management planning team, by providing on-the-job training, etc.

B. BOFRP in Lead Role. If the BOFRP is requested and accepts the lead role in any or all aspects of the planning process, it will assemble a team sufficient to fulfill that commitment. Working with both the Area and receiving field office (Tribe and/or BIA Agency), the BOFRP team leader designate will assemble a management planning team. Team members will be chosen first from qualified tribal, Agency, and Area staff who can devote the required time to the project. Remaining team slots will be filled by Central Office forestry staff, staff from other Bureau offices, or from other federal and state agencies.

FOREST MANAGEMENT PLANNING
Branch of Forest Resources Planning (BOFRP)

C. Communications. The initial planning session with the involved parties should develop a communication (both oral and written) plan for the project. In order to expedite the management planning process, direct communications are encouraged between the BOFRP staff, other team members and those involved in planning activities at the field level concerning technical matters relative to fulfilling a service commitment to the field. Written communications between the BOFRP and the Area, and field offices (Tribe and/or BIA Agency) will be assured as necessary.

D. Funding. Responsibility for funding forest management inventory and planning project work rests with the Superintendent. The receiving field office will be expected to fund all or part of the travel and per diem expenses of management plan team members. The BOFRP will pay these costs for its personnel and will provide funding support for field forest management activities to the extent of available appropriations.

4.5 Tribal Involvement. It is Bureau policy to consult with and actively seek involvement of authorized Indian representatives in all aspects of forest management Planning. Refer to Section 1.1.

FOREST MANAGEMENT PLANNING
Silvicultural Planning

5. SILVICULTURAL PLANNING

5.1 General. One of the most important tasks in the management of Indian forest resources is the planning of silvicultural treatment. This planning is best accomplished through the process of silvicultural examinations, treatment diagnosis, and prescription preparation prior to treatment implementation. Silvicultural examinations require careful planning prior to the gathering of resource and other site data. To enhance uniformity of forest management within, and between the Areas, silvicultural prescriptions are required for all treatments which will affect the present and/or long-term character of a timber or woodland stand.

5.2 Objectives. Silvicultural examinations and prescriptions are undertaken for the following reasons:

A. To secure adequate and accurate biotic and abiotic data for specific forest areas;

B. To evaluate past treatment;

C. To analyze and diagnose treatment needs to meet the management objectives of the Indian owners;

D. To predict the consequences and determine the economic efficiency of feasible treatment alternatives;

E. To prescribe specific methods, techniques, and timing of activities to accomplish the silvicultural treatments necessary to meet management objectives;

F. To insure compatibility of multiple resource management objectives; and

G. To provide a basis for future post-treatment review.

5.3 Policy. It is Bureau policy to implement silvicultural practices in accordance with state-of-the-art standards (Section 1.1) as expressed through a current Forest Management Plan.

A. Silvicultural Constraints. Timber will be harvested from forest lands only where:

(1) Soil, landform, or other watershed conditions will not be irreversibly damaged;

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Silvicultural Planning

(2) There is assurance that such lands can be adequately restocked in a timely and economically justified manner;

(3) Protection is provided for streams, stream banks, shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment, where harvests will adversely affect water conditions or fish habitat; and

(4) The harvest system and silvicultural method to be used best satisfy the goals and objectives of the Indian owners and are not selected solely on the basis of greatest dollar return or greatest unit output of timber.

B. Silvicultural Methods. It is Bureau policy to utilize both even-aged and uneven-aged silvicultural methods. However, harvest methods such as clear-cutting, seed tree cutting, shelterwood cutting, and other cuts designed to regenerate an even-aged stand of timber will be limited to use where:

(1) Uneven-aged methods are documented to be inappropriate;

(2) The interdisciplinary review has been completed and potential environmental, biological, aesthetic, engineering, and economic impacts have been assessed with regard to overall goals of the Integrated Resource Management Plan;

(3) Cut blocks, patches or strips are shaped and blended to the extent practicable with the natural terrain; and

(4) Areas to be cut in one harvest operation are within size limitations prescribed by a current management plan or tribal ordinances and standards (O-S). These limits may be established geographic areas, forest types or other suitable classifications. Such limits shall not apply to areas salvaged as a result of natural catastrophic conditions such as fire, insect attack or windstorm.

C. Silvicultural Compliance. It is further the policy of the Bureau to comply with the following:

(1) Silvicultural examinations, diagnosis of treatment needs, and the prescriptions detailing the methods, techniques, and timing of silvicultural, monitoring and review activities (e.g., timber stand improvement, forestation, timber removal, etc.) are required prior to initiating any silvicultural treatment on Indian forest lands.

FOREST MANAGEMENT PLANNING
Silvicultural Planning

(2) Detailed prescriptions shall be consistent with the management goals within a current IRMP and existing tribal ordinances and/or standards incorporated within the Forest Management Plan. In unique situations where prudent management calls for prescribing treatment outside the scope of these approved plans, silvicultural prescriptions shall be approved by the Area Director prior to initiating any silvicultural treatment. The Area Director may require a formal amendment to the plans prior to approval.

5.4 Silvicultural Examinations. The silvicultural examination is the process for obtaining data needed to identify existing conditions for stand diagnosis and prescription development. Various methods exist for gathering such data, ranging from informal surveys to Stand Exam (SE) inventories. Refer to Section 2.2D(2)(c). The particular method used and the amount of information collected will vary with the complexity of the resource and detail needed to adequately prescribe treatment. An example form of diagnosis report is shown in Illustration 7. The Area Director shall provide guidelines for implementing silvicultural examinations.

5.5 Silvicultural Prescription. A silvicultural prescription is usually stand specific but can encompass several stands where current condition is similar and desired treatment result is the same. It is a document which describes current condition, history, environment, ecological potential, and diagnoses stand problems. The prescription proposes, through analysis of options, a specific treatment that will meet management and resource objectives within existing constraints and desired time frames. The prescription will describe the desired post treatment stand in terms of tree density and distribution, species composition and growth objectives to provide a basis for treatment monitoring and evaluation. A guideline for a silvicultural prescription is provided in Illustration 8.

Outline for Forest Inventory Analysis Report

ACKNOWLEDGEMENTS *

PREFACE *

Purpose, IRMP requirements, description of current management.

SYNOPSIS *

Forest area (Illustration 2), volume, growth, sample statistics (Data Book Plot Summary Statistical Analysis), Indicated Annual Cut (IAC). 1/

I. DESCRIPTION OF FOREST *

- A. Location and Topography
- B. Climate
- C. Major Forest Types
- D. Economic Development and Utilization of Forest Resources

II. SUMMARY OF RESULTS

A. Previous Inventories *

Sample methods, forest area, volume, growth, mortality, regulatory objectives, indicated annual cut (IAC); and allowable annual cut (AAC) approved by the Indian owners.

B. Current Inventory

1. Sample Methods *

Statistical Summary (Data Book (DB) Table 2-1), sample grid, field procedures and data processing.

2. Area & Volume *

Per acre volume summaries by major forest types with expansion by area to provide total estimate for commercial forest (DB Section 3 - Measured Stocking and Growth).

3. Growth

Measured growth summary (accretion, ingrowth, gross growth, mortality and net growth) by major forest type with area expansion to provide total estimate for commercial forest (DB Section 3 - Measured Stocking and Growth).

4. Forest Condition *

Insect and disease problems, stand age distribution, stocking problems, fuel loading, etc. (DB Section 6 - Tree Condition and Regeneration).

5. Forest Trends

Volume, growth, mortality, species and size or age class distribution (DB Section 8 - Trend Analysis).

6. Allowable Cut *

a. Indicated Annual Cut (IAC)

Summary of IAC for management plan Alternative I (Section 2.2A(9)) as calculated for the next plan period.

b. Regulated Annual Cut (RAC)

Sustained yield allowable cut summary based on

attainment of management plan Alternative I managed stand objectives.

c. Comparative Analysis

Compare IAC and RAC with previous cut calculations.

III. COMPILATION AND ANALYSIS OF DATA

A. Forest Type or Unit

Repeat for each allowable cut stratification.

B. Description

Species, size and age class distribution, cutting history, stand condition (DB Section 6 - Tree Condition and Regeneration Tables).

C. Statistical Analysis

Number of plots, mean, standard deviation, coefficient of variation, standard error on per acre basis (DB Table 2-1 Statistical Summary).

D. Volume and Growth

Stock, stand and growth tables by species (DB Section 5 - Measured Stocking and Growth Summaries).

E. Cutting Cycle or Plan Period Objectives

Short term objectives including stand table projection of growth and harvest on unevenaged types (DB Section 4 - Growth Projection) and harvest modeling on evenaged types.

F. Regulated Stand Objectives

Long term managed stand objectives for stocking to include predicted growth and cutting cycle for unevenaged types; age class distribution and rotation for evenaged types.

G. Indicated Annual Cut (IAC)

Calculation of cut for management plan Alternative I during a conversion period from present to regulated stand conditions.

H. Regulated Annual Cut (RAC)

Sustained yield cut calculation for the regulated or managed stand.

IV. RECOMMENDATIONS *

A. Mapping and Area Classification

B. Data Stratification

C. Reinventory Procedures and Data Needs

D. Data Processing

E. Analysis and Modeling

F. Plot Maintenance

V. APPENDIX *

A. Field Procedures Handbook

B. Volume Tables, Coefficients and Equations

C. Site Index Curves/Equations

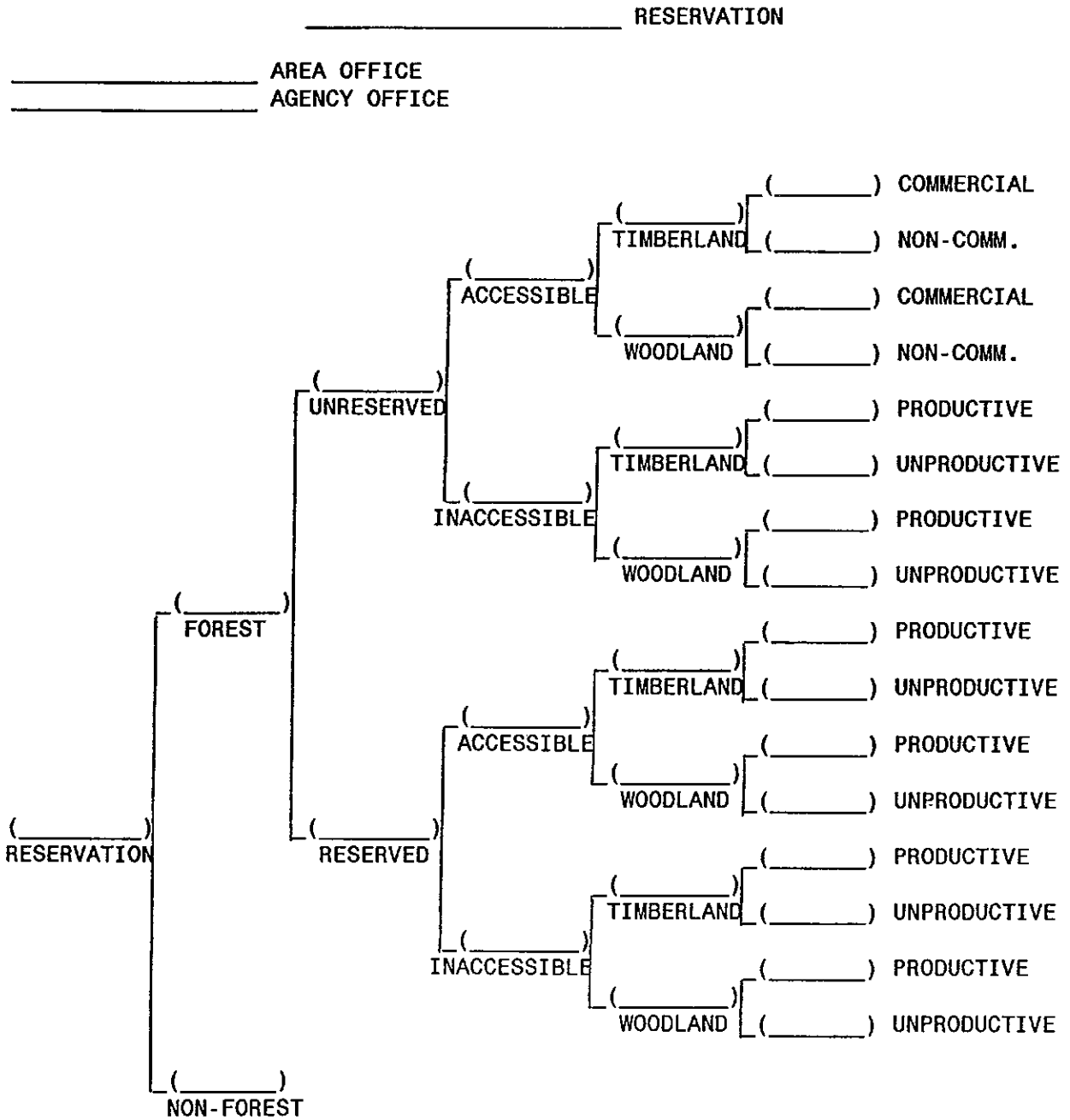
D. Inventory Project Cost Data

E. Other

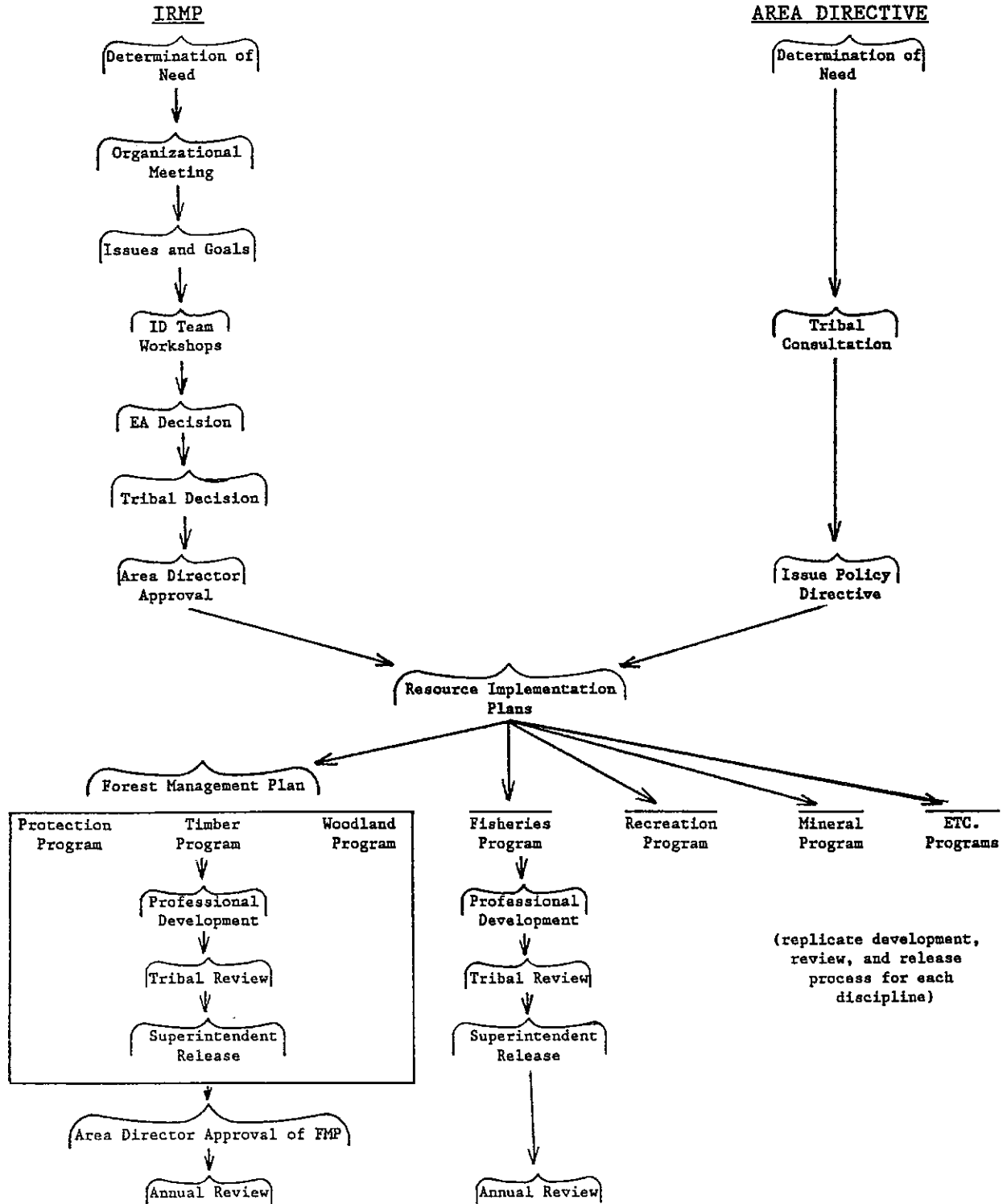
* Required minimum topics for Category 2 reservation Forest Inventory Analysis Report.

1/ Data Book (DB)- Example continuous forest inventory (CFI) program data output tables.

FOREST LAND CLASSIFICATION
(acres)



PLANNING PROCESS



Program Management Summary

_____ RESERVATION

_____ Program

Management Plan Approved ___/___/___

for the period 19__ through 20__

Total area of management _____ acres.
Total Program Cost _____ dollars/year.
Total Program Benefit _____ dollars/year.

Management Unit #1

_____ effected area _____ annual activity _____ annual cost _____ annual benefit

description of management to be applied

EXAMPLE
Timber Management Program

Management Unit #1

24,558 acres 2,000 A./ 5.2MMBM \$100,000 \$780,000

Intensive Management Unit - Management direction is for the purpose of maximizing revenues from timber products. Limited protection will be provided streams and 23 A. archeological site. Even-aged practices will be employed on 15% of the area. Tractor logging is restricted to summer, fall and winter access. All roads will be closed to the public.

Management Unit #2

5,660 acres _____ _____ cultural

Tribal Reserve Unit - Management direction is for protection of cultural significance by avoidance of all harvest activity.

Management Unit #3

27,000 acres 500 A./ 0.3MMBM \$153,127 \$45,000

Residential/Industrial Unit - Management direction is for the purpose of maintaining safe residential areas and scenic values along the highway corridor and within the Tribe's tourism complex. Management is through single tree selection of hazard or diseased trees and small group selection for right-of-way and development sites. Hauling will be short log with restricted weights. All visual signs of harvest will be removed and impact areas rehabed.

FOREST MANAGEMENT PLAN OUTLINE

Forest Management Plan

Approval Signature Page

- A. Resource Protection Program Implementation Plan
 - 1. Tribal Protection Code (or Standards)
 - 2. Fire
 - 3. Insect & Disease
 - 4. Trespass
 - 5. Emergency Rehabilitation
 - 6. Documentation, Monitoring & Records
 - 7. Planning, Coordination, and Communication
 - 8. Organization & Funding

- B. Timber Management Program Implementation Plan
 - 1. Tribal Timber Management Code (or Standards)
 - 2. Silvicultural Guidelines
 - (a) covertime or area or zone
 - (b) covertime or area or zone
 - (c) covertime or area or zone
 - (d) etc.
 - 3. Harvest Schedule
 - 4. Harvest Policy
 - 5. Forest Development
 - 6. Data Collection
 - 7. Documentation, Monitoring & Records
 - 8. Planning, Coordination, and Communication
 - 9. Organization & Funding

- C. Woodland Management Program Implementation Plan
 - 1. Tribal Woodland Management Code (Ordinances or Standards)
 - 2. Silvicultural Guidelines
 - 3. Harvest Policy
 - 4. Documentation, Monitoring & Records
 - 5. Organization & Funding

FOREST MANAGEMENT PLAN OUTLINE

- D. Forest History
- E. Forest Economic Benefit Assessment
 - 1. General
 - 2. Income
 - 3. Indian Benefits
 - 4. Non-Indian Benefits
 - 5. Regional Economic Impacts
 - 6. Trends
- F. Environmental Assessment (If Appropriate)
- F. Appendix
 - 1. Environmental Decision
 - 2. Glossary
 - 3. Ordinances
 - 4. Accomplishment of Past Plans
 - 5. Long Term Emergency Rehabilitation Plans
 - 6. Inventory Analysis
 - 7. Other

Outline for Economic Benefits Assessment

_____ Reservation

Economic Benefits of Forest Management - 19__ thru 20__

Annual Estimated Benefits

Economic Components	Annual Estimated Benefits	
	Past ^{1/} Management	Planned Management
<u>INDIAN BENEFITS</u>		
Income	_____	_____
Wages	_____	_____
Self-employed Income	_____	_____
Personal Use Benefits	_____	_____
Employment (full-time)	_____	_____
Employment (part-time)	_____	_____
<u>REGIONAL ECONOMIC IMPACTS</u>		
Employment	_____	_____
Income	_____	_____

Past management data may be available in reports retained in
 the Area Office.

Outline for Stand Diagnosis

Items to address in the stand diagnosis:

Reservation

Preparer's name

Date of preparation

Method of field exam

Stand designation number

Stand type (classification)

--additional comments on grass & forb components

--current & potential competition to tree growth

--site potential measure

Stand Description

--stand density and distribution

--size and age class information by species

--insect and disease factors

--other factors of impact

Special management constraints and direction

--soils, geology

--water

--fish and wildlife

--other resources

--land owner desires: as described in IRMP/FMP and other specific sources

Briefly list stand needs and viable prescription scenarios to address those needs

Items to include on an accompanying map:

Utilize standardized mapping format; north arrow, legend, scale, legal description

Stand boundary

Relationship to transportation and other geographic features

Field examination plots or line transects (if applicable)

Show factors impacting the stand

--improvements, housing, fencing, water

--management constraints or direction

--adjacent stand types and surrounding forest factors

--insect & disease centers or concentrations

--other resources

Outline for Silvicultural Prescription

Tier into the Stand Diagnosis

--note any amendments or disagreements with the diagnosis

Statement of long-term goal for the stand

--density and distribution goals

--size and age class by species goals

Viable treatment alternatives described briefly

Description of chosen alternative

--reasoning why chosen

--how treatment fits long-term

--operational steps (what, where, when, how, and why)

--what the stand should look like when successfully treated

Briefly describe subsequent treatments needed through rotation to fully meet the long-term stand goal

--competition controls

--site enhancement

--species regulation

--pest control

--fire protection

--other resources mitigation measures

Include map(s)

--pertinent soils & geography

--water & riparian

--resources that have need of spatial descriptions

--stand unit; relationship to larger sale area (if applicable)

--activities

Monitoring needs

Appendix of supporting material

FOREST MANAGEMENT PLAN

_____ RESERVATION

19__ - 20__

Compiled by

Concur: _____, 19__

Superintendent _____ Agency

Approved: _____, 19__

Approved: _____, 19__

Chairman

_____ Tribe

Area Director

_____ Area Office

by Tribal Resolution No. _____



United States Department of the Interior

BUREAU OF INDIAN AFFAIRS

WASHINGTON, D.C. 20245

IN REPLY REFER TO:

Forestry
101-10-1

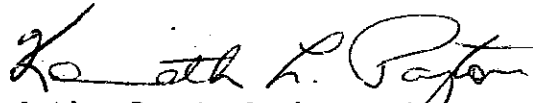
53 BIAM Supp. 2, Release 3

NOV 4 1981

Memorandum

To: Holders of 53 BIAM Supp. 2
From: Acting Deputy Assistant Secretary - Indian Affairs (Operations)
Subject: 53 BIAM Supp. 2, Forest Management Planning

This release provides procedural instructions for operation of the Forestry Field Staff Assistance Office (FFSAO), Lakewood, Colorado.


Acting Deputy Assistant Secretary -
Indian Affairs (Operations)

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None

COMPLETE

4/5/82

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 - B. Eligibility to Receive Services
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 - .4 Organizing the Management Planning Effort
 - A. FFSAO in Lead Role
 - B. Area or Local Field Office in Lead Role
 - C. Communications
 - D. Funding
 - .5 Tribal and Alaskan Native Involvement

Illustrations 1 - 4

FOREST MANAGEMENT PLANNING
Forestry Field Staff Assistance Office (FFSAO)

4. FORESTRY FIELD STAFF ASSISTANCE OFFICE (FFSAO)

4.1 General. Bureauwide forest management planning assistance is provided by the Central Office, Division of Forestry, Branch of Forest Resources Planning, located at the Forestry Field Staff Assistance Office (FFSAO), Lakewood, Colorado.

The principal objective of the FFSAO is to offer specialized technical assistance, guidance and on-the-job training in all phases of forest management planning from the initial field forest inventory through approval of a viable, multiple-use forest management plan by the forest owners. Work will be performed in accordance and compliance with Section 6 of the Act of June 18, 1934 (see 53 BIAM 1.2A), 25 CFR 141, other applicable statutes and regulations, Departmental procedures and guidelines, 53 BIAM, Area addendums to 53 BIAM, and agency handbooks. Also, objectives of the forest owners will be carefully addressed and appropriately incorporated in the planning process.

Area Directors are delegated authority to approve forest management plans as provided in 10 BIAM and further stipulated in Section 3.2C(1)(a) herein. The FFSAO provides technical assistance and support to Area Directors and field installations based on analysis of field inventory data and state-of-the-art forest management techniques.

4.2 Organization. Central Office forestry staff located at Lakewood, Colorado, receive leadership and supervision from the Director, FFSAO, who is responsible for conduct of the field forest management inventory and planning technical assistance program at the national level. The Director, FFSAO, is responsible to the Chief, Division of Forestry. Organizational structure of the FFSAO is essentially comprised of two functional components; namely, forest management inventory and forest management planning.

A. Forest Management Inventory. Forest management inventory is accomplished through direction of the Section Chief, Forest Management Inventory Section. Staffed with a team of inventory, mensuration and computer specialists, this Section provides technical assistance expertise in all aspects of forest inventory from design and conduct of field inventories through computer processing, data analysis and compilation of the "Forest Inventory Analysis" report (see Section 2.2A(8) of this supplement).

FOREST MANAGEMENT PLANNING
Forestry Field Staff Assistance Office (FFSAO)

B. Forest Management Planning. In order to provide capability to address two or more management plans simultaneously, the forest management planning function consists of two Forest Management Planning Sections, each headed by a Section Chief, one of which has the added responsibility of Assistant Director. Staffed with an interchangeable team of specialists in forest management, silviculture, environmental analysis, soils, forest development, economics and forest products, both Sections provide an interdisciplinary approach to the development and compilation of multiple-use forest management plans, as required by Section 3 herein.

4.3 Services. While primarily designed to assist and guide field installations in the forest management planning process, the FFSAO will, upon request, accept the lead role in any or all aspects of the planning process if capability is not present at the local or Area level. Additionally, assistance with other forestry activities may be provided as need dictates and capability is developed, and insofar as that assistance does not interfere with the primary mission of the FFSAO.

A. Types of Services. The FFSAO will provide technical assistance to fulfill, or will perform, the following activities in conjunction with the forest management planning process:

Forest Management Inventory

Pre-inventory Planning
Field Inventory Specifications
Field Forest Inventory
Contract Specification Packages
for Inventory, Aerial Photography,
Mapping, etc.
Computer Programming and Processing
Inventory Analysis
Statistical Analysis
Forest Inventory Analysis Report
Compilation
Training (OJT)

Forest Management Planning

Organize and Outline Planning
Process
Regulation
Silvicultural Prescriptions
Management Prescriptions
Action Plan
Economic Analysis
Feasibility Studies
Market Analysis
Benefit/Cost Analysis
Forest Residue Utilization and
Management
Soil Survey
Habitat Typing
Multiple-use Considerations
Environmental Assessment
Forest History
Special Management Studies
Contract Specification Packages for
Management Planning
Management Plan Compilation
Training (OJT)

FOREST MANAGEMENT PLANNING
Forestry Field Staff Assistance Office (FFSAO)

B. Eligibility to Receive Services. Technical assistance in forest management inventory and planning is available upon request to all trust reservations or properties having a forest resource. This same service is extended to tribes and Alaskan Natives providing active memorandums of understanding (MOU), grants, cooperative agreements or contracts exist (between the Federal Government and tribal/Alaskan Native entities) which clearly define a management planning responsibility. Any technical assistance eventually rendered will be restricted to only those forest management inventory and planning aspects not specifically funded through the above mechanisms or other forms of agreement.

C. Procedure for Requesting Services. Requests for technical assistance must be initiated by Agency Superintendents or Area Directors. If initiated by a Superintendent, the request shall first go through the Area Director. Requests shall be submitted to the Director, Office of Trust Responsibilities, Attention: Chief, Division of Forestry. Tribes and Alaskan Natives who meet the requirements of Section 4.3B may request assistance through the field or Area Office having jurisdiction.

All requests for technical assistance must be in writing and must specify the nature or type of service desired, time frame available to perform the work, and priority and reasons for assigned priority. Each request will be reviewed promptly upon receipt, and the initiating office will be informed in writing regarding the scheduling action taken. No requests will be acted upon unless they meet the foregoing requirements and are submitted through appropriate channels specified herein and depicted in Illustration 4, Flow Chart -- Procedure for Requesting Services from the FFSAO.

D. Prioritizing Requests for Services. Requests for technical assistance for major inventory and management planning projects should be received by January 1 of the year preceding the year assistance is desired. If received after January 1, such requests will be considered as received by the following January 1. In no event does date of receipt guarantee assistance for the time period desired.

The Director, FFSAO, and the Chief, Division of Forestry, will prioritize requests for technical assistance based on present management plan expiration, need or urgency, resource value and date of request. Scheduling and timetables will be developed therefrom and initiating offices so notified. Periodic scheduling changes may necessarily be required due to unforeseen problems, higher priority projects, personnel deficiencies and funding constraints. Those concerned will be duly consulted about pending schedule changes.

FOREST MANAGEMENT PLANNING
Forestry Field Staff Assistance Office (FFSAO)

4.4 Organizing the Management Planning Effort. The most practical and expedient approach to management planning is through an organized team effort, which consists of the necessary specialized expertise to organize, plan, develop, write and compile a management plan document to guide management activities through the plan period.

A. FFSAO in Lead Role. If the FFSAO accepts the lead role in any or all aspects of the planning process, i.e., the forest management inventory function or the forest management planning function, or both, it will assemble a team sufficient to fulfill that commitment. Working with both the Area and receiving field office, the FFSAO team leader designate will mold a management planning team. Team members will be chosen first from qualified Area, agency and/or tribal/Alaskan Native staff who can devote the required time to the project. Remaining team slots will be filled by Central Office forestry staff (Washington, D.C., BIFC and FFSAO) and forestry staff from other Bureau offices.

B. Area or Local Field Office in Lead Role. When the Area or local field office assumes the lead role, the FFSAO, if requested and insofar as practicable or feasible, will assist in organizing the planning effort, provide computer services, participate in an active role on the management planning team, provide on-the-job training, etc.

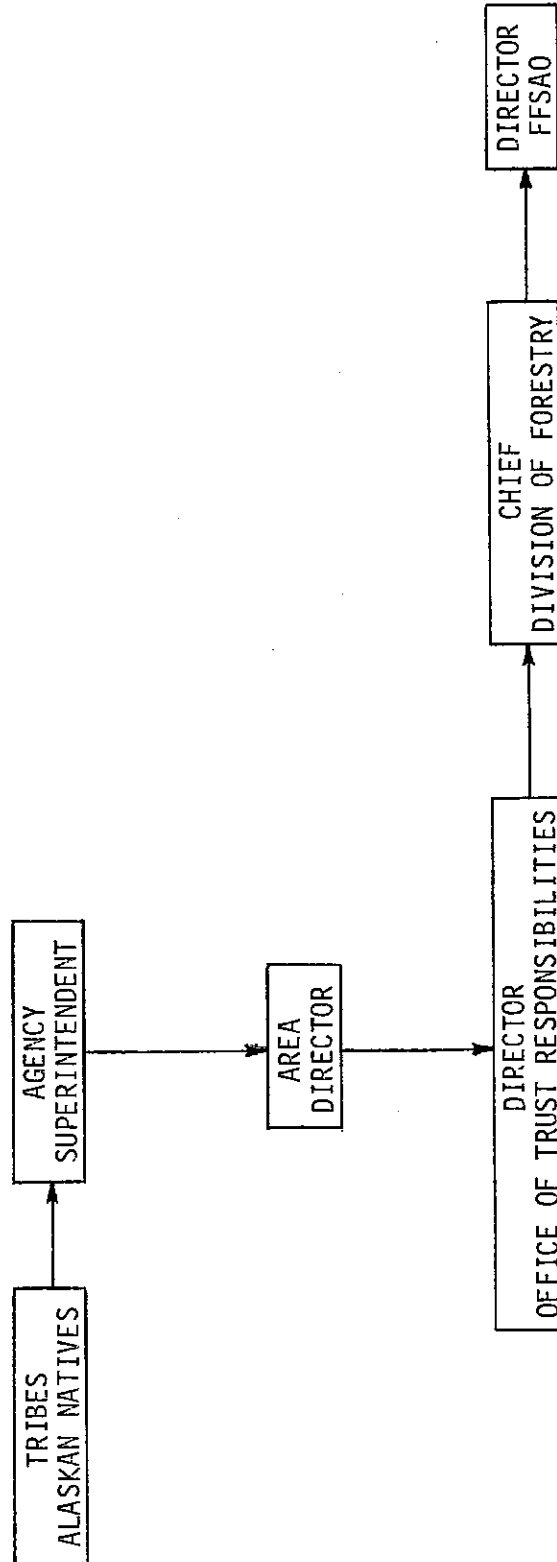
C. Communications. The initial planning session with the involved parties will lay the ground work for communications flow (both oral and written) throughout the duration of the project. The communications plan shall be incorporated into the strategy guideline developed at the initial planning session. In order to expedite the management planning process, it is encouraged that direct communications be permitted between the FFSAO, other team members and those involved in planning activities at the field level in technical matters relative to fulfilling a service commitment to the field. Incoming and outgoing written communications between the FFSAO and Area and field offices regarding all other matters will be directed to, or channeled through, the Director, Office of Trust Responsibilities. This will include, but not be limited to, technical assistance requests, recruitment of team members and disposition of final project work.

D. Funding. Responsibility for funding forest management inventory and planning project work rests with each field installation. Additionally, the receiving field office will be expected to fund all or part of the travel and per diem expenses of management plan team members. Insofar as is possible, the FFSAO will pay these costs for its personnel and will provide funding support for field forest management activities to the extent of available appropriations.

FOREST MANAGEMENT PLANNING
Forestry Field Staff Assistance Office (FFSAO)

4.5 Tribal and Alaskan Native Involvement. It is Bureau of Indian Affairs policy to consult with and actively seek involvement of authorized Indian representatives in all aspects of forest management planning (see Section 1.1). To this end, the Bureau will encourage Intergovernmental Personnel Act (IPA) assignments or other arrangements for detail of tribal forestry personnel and Alaskan Natives, involved in the management of Alaska Native Claims Settlement Act (ANCSA) lands, in situations where their respective field offices are engaged in ongoing forest management projects.

FLOW CHART
Procedure for Requesting Services from the FFSAO



Note: All requests must be in writing per Section 4.3C herein.



United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
WASHINGTON, D.C. 20245

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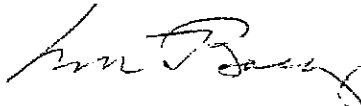
53 BIAM Supp. 2 Release 2

APR - 6 1981

Memorandum

To: Holders of 53 BIAM Supp. 2
Acting Deputy
From: Commissioner of Indian Affairs
Subject: 53 BIAM Supp. 2, Forest Management Planning

This release provides scheduling instructions for the performance of forest inventories as requested by the Branch of Real Estate Appraisal.


Commissioner of Indian Affairs

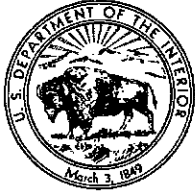
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None

(1 sheet)

FOREST MANAGEMENT PLANNING
Inventory

(5) Scheduling. Area Directors shall issue instructions requiring the establishment of schedules for accomplishing forest inventories requested by the Branch of Real Estate Appraisal. Schedules shall provide sufficient allowance for field work and report compilation along with consideration for other major forestry program aspects. Additionally, the Branch of Forestry shall work closely with the Branch of Real Estate Appraisal in periodically reassessing and prioritizing outstanding inventory requests. The time frame for fulfilling Branch of Real Estate Appraisal requests shall be reasonable so as not to unduly cause delays in real estate transactions or cause hardship to the owners. Reassignment of additional personnel within the Branch of Forestry or short term details of other personnel in the Area to process inventory requests per schedule may be necessary.



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BUREAU OF INDIAN AFFAIRS
WASHINGTON, D. C. 20245

MAR 17 1980

Memorandum

53 BIAM Supp. 2 Release 1

To: Holders of 53 BIAM Supp. 2

From: Commissioner of Indian Affairs

Subject: 53 BIAM Supp. 2, Forest Management Planning

This release provides detailed instructions on Forest Management Planning in the form of a supplement to the basic portion of the new Forestry Program Manual.

Additional instructions in the form of Central Office supplements to the basic manual parts are currently being developed and will be issued at a future date.

Commissioner of Indian Affairs

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 - D. Environmental Assessment
 - .3 Scheduling of Plans and Plan Revisions

Illustrations 1-3

FOREST MANAGEMENT PLANNING
General

1. GENERAL

1.1 Policy and Scope. The policy of the Bureau for the management of Indian forest lands is expressed in 25 CFR 141.3, 141.4, and 53 BIAM 2. The scope, as expressed in 25 CFR 141.2, is "applicable to all Indian forest lands except as this part may be superseded by special legislation." Additionally, it is the policy of the Bureau to consult with and actively seek involvement of the authorized Indian representatives in all aspects of forest management planning.

1.2 Objectives. 25 CFR 141.3 sets forth the objectives to be sought in the management of Indian forests.

1.3 Authority. Section 6 of the Indian Reorganization Act, 48 Stat. 986; 25 USC 466, provides that the Secretary be directed to make rules and regulations for the operation and management of Indian forestry units under the principles of sustained-yield management. The Indian Reorganization Act applies only to tribes which accepted the Act. The principles of sustained-yield management as set forth in Section 6 of that Act are similar to the requirements of the General Forest Regulations, 25 CFR 141.

FOREST MANAGEMENT PLANNING
Inventory

2. INVENTORY

2.1 General. Forest inventory includes determination of area, timber volume, growth, condition, and quality by species. Procedures and intensities vary in accordance with purposes for which inventories are normally intended. Three principal purpose categories are recognized and are addressed in Sections 2.2 A., B., and C. below.

2.2 Standards to be Established. Standards for forest inventory depend upon the specific purposes for which resulting data will be used. Detailed standards, to be updated periodically as techniques are improved, are provided in handbooks in the form of Area supplements for attainment of specific management objectives. Following are general standards that should apply to all forest inventory projects within the Bureau.

A. Forest Inventory for Management Planning. Inventories of this type involve sampling procedures of sufficient intensity to determine within reasonable degrees of accuracy the timber volumes, growth and conditions over considerable forest areas such as an entire reservation forest, a working circle or a broad forest type or condition class. Inventories are essential for management planning and recognition of conditions requiring varying management prescriptions. The basic unit for management planning and inventory is normally the reservation.

Forest inventories will be analyzed, discussed and presented in terms of basal area, board feet and cubic feet, insofar as it is appropriate and practical to do so. Deviations from this approach shall be justified by Area Directors.

(1) Scheduling. Forest management plans will be reviewed periodically by Area Foresters with new plans or revisions being scheduled at intervals not exceeding 10 years, unless otherwise authorized by the Area Director. Catastrophic conditions, e.g., insect, fire, windthrow, etc., may necessitate unscheduled revisions. Periodic plot measurements or remeasurements will be scheduled prior to planned revisions. An inventory timetable depicting the time frame of all inventory segments through analysis will be maintained for each timbered reservation by Area Directors. Inventories and subsequent analyses that are applicable to the ensuing plan period shall be scheduled in order that completion thereof is achieved prior to expiration of the current management plan period.

FOREST MANAGEMENT PLANNING
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(2) Aerial Photography. Aerial photography materially improves accuracy and reduces costs of forest inventory. High quality, properly prepared photographs are most desirable for type and condition class mapping, and for establishment and relocation of permanent plots. New aerial photography will be considered only if it is assured that coverage of the area by another Government agency or commercial firm does not already exist and is satisfactory for the purpose intended.

(3) Forest Cover Type Maps. Accurate planimetric cover type maps are an essential part of a forest inventory. Cover type maps shall be prepared from recent aerial photography that meets the accuracy requirements set forth in Area supplements. Forest cover type symbols shall be standardized on an Area basis, and insofar as practicable, shall be correlated with those being used by other adjacent public land management agencies.

(4) Inventory Design. Area Directors shall issue instructions which will establish designs consistent with management planning for their Area. A standard Bureau inventory design is not specified herein because of the complexity of conditions encountered in the various forest regions of the country.

(5) Data to Collect. Sufficient data must be collected to provide accurate estimates of the timber resources on the commercial forest lands for each reservation and for each working circle where a reservation has been subdivided. These estimates will be used for determination and regulation of allowable cuts and for other management planning objectives and schedules. Before field work can begin, detailed instructions in the form of "Forest Inventory Field Procedures" will be written for each project. These field procedures shall indicate exactly what data are to be collected and provide explicit instructions on how it is to be collected.

(6) Accuracy.

(a) Sampling Error. In general, the sampling error of the entire sample for the total commercial forest component for a reservation should not be greater than five percent (5%) in terms of one standard deviation (the 67 percent confidence limit).

FOREST MANAGEMENT PLANNING
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Area Directors shall establish accuracy standards for the various strata within a reservation. Bureau-wide standards are not established because of the variability of existing conditions and the probability of future improvements in techniques. Deviations from the general guidelines above regarding sampling error must be qualified by appropriate footnote.

(b) Human Error.

(i) Inventories Conducted by Personnel within the Bureau. Errors must be minimized through adequate training of inventory personnel and through frequent checking of procedures and measurements. It must be stressed to personnel that accuracy of final results is largely dependent on accuracy of measurements by which data are collected. Results of the inventory are expressed in estimated quantities and averages, which are largely dependent on accuracy of measurement on small samples. These must represent the actual situation as closely as is practicable under the sampling design and system in effect.

(ii) Contracted Inventory. The statement in (i) above will apply.

(7) Contracting. It is preferable that inventories be conducted by foresters of the Bureau or other Governmental agencies. However, when time limitations, lack of trained personnel or other factors prevent this, the work may be accomplished through contracting with a technically qualified and capable local tribal forestry organization or forestry consultant.

(8) Reports. A forest inventory report entitled, "Forest Inventory Analysis," will be compiled upon completion of each field inventory project. This report will then become one of the basic management documents for a reservation or subdivision thereof (See Section 3.2A.). The outline shown in Illustration 1 shall be followed when preparing this report; however, modification of the basic outline is permitted to meet individual Area/agency needs as long as each point in Illustration 1 is addressed. Specific instructions will be contained in Area supplements. A copy of each "Forest Inventory Analysis" will be furnished the Central Office.

FOREST MANAGEMENT PLANNING
Inventory

Acreage and volume data in the "Forest Inventory Analysis" must be organized and compiled as a minimum by land status, species and cover type, and by commercial, commercial virgin, commercial cutover and non-commercial areas. It must then be totaled by management unit, working circle or other strata where a reservation has been subdivided, county, state and reservation. Finally, the data must be compiled as instructed in Area supplements in order that compatibility can be maintained with the format for annual and other specialized reports. Where reliable data are lacking for annual and other reports, the best estimates available should be used and qualified by appropriate footnotes.

B. Forest Inventory for Timber Sales. Inventory for timber sales requires more intensive sampling since it concerns smaller population units on smaller areas than those involved in management planning, and must be of sufficient accuracy to provide quantity and quality data on which there may be based accurate stumpage appraisals for advertisement and sale purposes. Accuracy of the stumpage appraisal is dependent on the estimate of the volume and quality of timber to be cut from a proposed timber sale area. Errors can result in considerable financial losses, either to the seller or to the purchaser. Timber sale inventories must be carefully planned and work conducted to an acceptable high degree of accuracy.

(1) Planning. Planning will be towards an objective of a complete inventory for each proposed sale area at least one year prior to advertisement wherever it is possible to accomplish this with available personnel and funds. If possible, and if approval by authorized tribal representatives is obtained, there should be published periodically a schedule of proposed sales, giving areas, volumes and other data in sufficient detail to enable advance planning by prospective purchasers.

(2) Design. All inventory designs, other than those involving 100 percent cruises, shall utilize unit samples that can be statistically analyzed for sampling accuracy. Sample locations must be identified in a way that facilitates relocation for checking purposes within a reasonable time period. Field tally sheets, inventory maps and data summary forms must be retained in the sale preparation file along with sufficient instructions to enable persons conducting later audits to clearly ascertain all aspects of the sale preparation process. Data retention will correspond with that of other timber sale documents.

(3) Timber Sale Unit Map. Unit maps, compiled directly from maps that were produced through utilization of aerial photographs as a base, or aerial photographs, showing timber types and condition, land ownership, access, etc., shall be required for all proposed timber sale units. The final unit map must be compiled on a base map in such manner as to avoid gross errors in relative position of map features and must conform to accuracy standards contained in Area supplements. All acreage figures used for expanding per acre volume figures to arrive at total volumes shall be measured on the final unit map.

(4) Data to Collect. Specific methods to be used and data to be collected will depend on local conditions and on requirements as determined by each Area Director.

(5) Accuracy.

(a) Sampling Error. In general, the sampling error for the volume to be cut on both predetermined and estimated volume sales should not be greater than five percent (5%) in terms of one standard deviation (the 67 percent confidence limit). Any exception to this accuracy shall be noted in the Forest Officer's Report along with its justification, such as species of relatively low value, insignificant road development costs, etc. If the unit is stratified into timber types and the inventory is compiled by these types, the sampling error shall be computed for each type and the overall cut volume.

On timber sales where the appraisal involves log grades or other quality/value criteria, Area supplements will provide guidelines that will indicate the required number of trees of each species that must be log graded.

(b) Human Error. The discussion in Section 2.2A.(6) (b)(i) of this chapter also applies here. In addition, it is important where inventories are conducted by Bureau personnel that particular effort be directed towards adequate training of inventory crews in collecting log or tree grade data. It is recommended that Area Foresters establish standard training plots where representative trees have been log or tree graded by acknowledged experts in interpretation of the most current and relevant grading rules. Field forestry personnel can then be trained and checked on these plots for the purpose of more nearly standardizing interpretation and application of log or tree grading rules. This type of training and checking will reveal if there is a need for greater accuracy in grading of individual logs or trees and where corrective effort is most needed.

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Inventory

Forest Officers in Charge shall frequently check work of cruisers for the purpose of encouraging continuing high standards of accuracy. These checks shall be well documented for future audits.

C. Forest Inventory for Real Estate Values. This type of inventory may provide the major basis for estimation of real estate value for forested lands. The Branch of Real Estate Appraisal frequently requests a report of volumes and quality of timber on specific forested ownership tracts, usually individual trust allotments. Branch of Forestry personnel skilled in inventory procedures should be assigned in response to these requests.

(1) Responsibility of the Branch of Real Estate Appraisal. The Branch of Real Estate Appraisal is responsible for the evaluation of real estate. However, the Branch of Forestry, in order to facilitate completion of this function, may accomplish the field work and data compilation of timber cruises necessary for the Branch of Real Estate Appraisal to estimate market value.

(2) Responsibility of the Branch of Forestry. The Branch of Forestry is responsible solely for the technical supervision of its personnel when conducting the inventories. The Branch of Real Estate Appraisal shall inform the Branch of Forestry concerning data desired and the manner in which it is to be presented. The Branch of Forestry shall determine procedures for obtaining the data, including the accuracy standards necessary to achieve the desired results.

(3) Inventory Design and Accuracy. Each inventory shall be designed to accurately produce the data requested by the appraiser. In general, the sampling error should not be greater than five percent (5%) in terms of one standard deviation (the 67 percent confidence limit) unless otherwise provided for in Area supplements and subsequently justified in the inventory report.

(4) Inventory Report. A report summarizing the necessary data shall be prepared and certified by the forester who conducted the inventory. It will clearly and concisely set forth the information requested by the appraiser. The report shall also include a map on the appropriate appraisal form delineating by areas the forest conditions discussed in the report.

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3. MANAGEMENT PLANS

3.1 General. Sound management of forest resources requires carefully prepared management plans that vary in complexity and coverage but provide the guidance required to effectively manage the forest land resource of the reservation.

A forest management plan shall be prepared for each reservation of major importance from an industrial forestry standpoint (25 CFR 141.4), as determined by the Area Director, and for each reservation of lesser importance from an industrial forestry standpoint but engaged in producing commercial forest crops. The plan shall consist of four major components, three of which could conceivably be incorporated into one document or be addressed separately. Included are: (1) forest inventory analysis, (2) forest history, (3) forest management plan, and (4) environmental assessment, which must be developed and presented separately.

All terms used in preparing these management documents shall conform to the most recent edition of "Terminology of Forest Science, Technology, Practice and Products" of the Society of American Foresters. Species names shall follow the most recent "Forest Service Check List of Forest Trees of the United States."

The basic forest management unit is normally an entire reservation. However, major forested reservations, and perhaps others, may be subdivided into working circles to facilitate management. Working circles must be feasible administrative units with well-defined boundaries.

The working circle may be subdivided into blocks, compartments and stands according to management requirements. The definition given for these subdivision terms in "Terminology of Forest Science, Technology, Practice and Products" shall apply. To standardize forest management plans within the Bureau for common understanding, all plans will use these subdivisions. Other subdivisions are not to be used.

3.2 Preparation. Preparation of forest management plans and their revisions are a responsibility of Agency Superintendents. A forest management plan will be prepared for each basic forest management unit (reservation) under their jurisdiction. Where the reservation is subdivided into working circles, each will be addressed individually and included in the forest management plan manuscript as a separate and distinct entity. The four major components of the forest management plan are addressed below.

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Management Plans

A. Forest Inventory Analysis. The analysis is usually compiled as a separate report because of large amounts of tabularized data. However, it can be included in the forest management plan document as supporting data. See Illustration 2, Outline for Forest Management Plan. Instructions and format for preparing a forest inventory analysis are contained in Section 2.2A.(8) and Illustration 1, Outline for Forest Inventory Analysis.

B. Forest History. A forest history shall be prepared for each timbered reservation that has experienced any substantial past forestry activity as determined by the Area Director. Whether or not the history is included as supporting data (see Illustration 2) in the forest management plan, or prepared separately, is largely dependent upon the scope of the forestry program and the amount of forest activity that requires recordation. Because of great diversity in activities and methods from reservation to reservation, the outline for a history will be provided in instructions issued by Area Directors. However, as a minimum, the final history product must portray a complete chronology of events since the inception of forestry activities or an update since the last history was published. It must also include specifics relative to each timber sale unit, cutting history maps, and other pertinent maps and charts.

C. Forest Management Plan. This report is a plan of action setting forth in a thorough but concise manner both long-range objectives and actions that will govern management of the forest property during the ensuing plan period.

All new forest management plans and revisions of existing plans shall follow the form outlined herein and summarized in Illustration 2. Inclusion of additional topics is permitted to meet individual Area/agency needs. A copy of each forest management plan will be furnished the Central Office.

On reservations where the forest resource is of some importance to the reservation economy but not of major importance from an industrial forestry standpoint to the regional economy, is relatively small in total area, or has low productivity, the management plan may be abbreviated, providing management issues are thoroughly explored and presented. Area supplements will contain specific instructions.

FOREST MANAGEMENT PLANNING
Management Plans

(1) Introduction.

(a) Title and Approval. This shall be on the first page of the plan and will include the typed name(s) and signature(s) of the author(s) or compiler(s), Agency Forest Manager, Agency Superintendent, Tribal Chairman or President, Area Forester and Area Director. See Illustration 3, Title and Approval, at the end of this supplement for the format to be followed. The forest management plan, comprised of the four major components identified in Section 3.1 herein, shall be approved by the tribe(s) and the Area Director.

(b) Tribal Approval. This shall be in the form of a tribal resolution approving the plan.

(c) Small Scale Map of Reservation. The map, preferably letter-size, should depict the forest area and any subdivisions, such as working circles, compartments, etc.

(d) Acknowledgements.

(e) Preface. The preface is usually a brief statement which expresses the object and scope of the plan and includes by way of explanation any material which is not part of the plan. Also, it often presents an account of the importance of the subject to the Indian community, definitions and delimitations.

(f) Table of Contents.

(2) Reservation Setting. This is a descriptive narrative of reservation location, topography and climate.

(3) Summary of Management Plan. The summary is a concise abstract discussion that will enable the reader to understand the content and scope of the plan by reading a few pages. It should address all of the major topics contained in the management plan (see Illustration 2) along with alternatives, recommendations and final alternative selection.

FOREST MANAGEMENT PLANNING
Management Plans

(4) Management Plan.

(a) Management Objectives and Goals. Portrayed here are the management objectives contained in 25 CFR 141.3, and the specific goals that both the Indian owners and Bureau desire to achieve during the management plan period.

(b) Regulation. This section will develop the allowable annual cut. Forest regulation is concerned with the technical, as opposed to the business and administrative, aspects of organizing and maintaining a forest for sustained yield. Regulation may be by area for even-aged stands where the annual cut is on the basis of area, or by volume for uneven-aged stands where the annual cut is on the basis of growing stock and increment, using formulae, or by combinations of both. Regulation will consider rotations, cutting cycles, intermediate cuts, growing stock and its manipulation, growth, mortality, allowable cut and allowable cut alternatives. The allowable cut will be both a limitation on and an objective for the area to be treated or the merchantable volume to be removed during the plan period. Periodic sustained yield rather than allowable annual cuts may be a requirement to secure harvest and sustain productivity on some reservations.

(c) Silvicultural Prescriptions. This section shall set forth the methods and procedures for reaching established objectives, taking into consideration the goals and constraints placed on management by the owners. Silvicultural prescriptions set and maintain the course from wild to managed forests and determine the speed and efficiency of this transition.

Silvicultural prescriptions should be stated as definitely as possible and prescribe the most intensive management practices which will be practical and acceptable during the plan period. If silvicultural prescriptions have been published in various guides within a geographic area, only a brief discussion of these guides need be made in the management plan. Special problems relating to accepted methods should be thoroughly discussed. If established methods are not to be followed, then the prescriptions that are to be used should be specified and justified in the plan. Terminology used in specifying silvicultural prescriptions such as regeneration cutting, intermediate cutting, shelterwood cutting, seed tree cutting, selection cutting, and group selection, patch, strip and stand improvement cutting should accurately comply with definitions given in "Terminology of Forest Science, Technology, Practice and Products."

FOREST MANAGEMENT PLANNING
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Subdivisions of the working circle may be used as necessary when more than one set of silvicultural prescriptions are applicable to the working circle. Stand conditions, not artificial administrative or legal subdivisions, will dictate the silvicultural prescriptions to be applied. Timber marking guides which apply to the various subdivisions are an important component of the prescription. Where applicable, Area or other marking guides shall be referred to in the management plan.

Often certain areas in the forest require special cutting in order to coordinate timber management with other uses. This coordination is imperative to protect, improve, and, as necessary, regenerate stands of timber for recreation, watershed, wildlife and range uses. If there are points requiring compromise to established silvicultural methods, the considerations leading to the prescriptions adopted shall be discussed in the forest management plan. When special cutting is to be done on restricted areas to prevent disease and insect damage from spreading to adjacent commercial stands, or for salvage and improvement purposes, the expected yield should be shown in the plan as an unregulated cut objective.

Silvicultural prescriptions for allotments will be developed and administered in a manner similar to that of tribal lands. Departure from this or conventional approaches shall be documented and justified in the management plan.

(d) Management Prescriptions. An in-depth narrative describing the forest and its composition will be included hereunder for each subdivision of the reservation forest, or for the reservation as a whole, depending on the management scheme employed. This section shall also discuss multiple use aspects of the forest resource, the constraints placed on timber management to protect, improve and enhance other use forms, and coordination of special timber harvest procedures to maintain harmony with the management of other forest uses. Both silvicultural and harvest systems shall be appropriately addressed. Finally, display of viable management alternatives, developed jointly by the Bureau and tribe(s), shall be included along with identification of those recommended for implementation by the Bureau and those finally selected to guide management for the plan period.

(e) Action Plan. This section translates silvicultural and management prescriptions into an action plan. Where silvicultural and management prescriptions describe how objectives are to be accomplished, the action plan indicates when and where they are to be

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accomplished. Action plans should include (1) forest development program, (2) forest protection, (3) logging roads, (4) access roads, (5) rights-of-way, (6) land acquisition, (7) permit program, (8) sales policy, (9) cutting budget, (10) forest inventory program, (11) stand examination program, and (12) other action type programs. The action plan may be developed in a sequence other than presented above.

A cutting budget establishes the amount, time and sequence of cutting within flexible limits. The allowable cut is usually budgeted by 5-year periods, and the entire cut for the 5-year period may be harvested in any one or more years during the period, depending on economic conditions and available markets. Overcuts will be carried forward from one 5-year period to the next; however, no undercutting or overcutting will be carried forward in any revisions of the plan unless justified and approved by the Area Director.

The Bureau's timber sales policy is established in 53 BIAM 3 and supplements thereto. The plan may include references to such material, but it is not necessary to quote them. Special conditions may require refinements to sales policy, or special policies to aid in accomplishing silvicultural or social objectives, and should be discussed in the plan. The plan may include a discussion of how the cutting budget will be carried out by timber sales of varying sizes.

Area supplements will provide more detailed instructions for development of action plan topics.

(5) Supporting Data. Other material necessary to support the forest management plan should be carefully selected and presented in this section. Summary of results under previous plans, forest inventory analysis, economic aspects of management, control records, soils and geology, and forest history are a few of the items that might be included hereunder. Some of the information required in, or pertinent to, the management plan may be the topic of separate studies and should only require brief summarization and appropriate referencing in the management plan manuscript. Long, involved tabulations in spread-sheet form should not be incorporated here. Instead, they should appear in the forest inventory analysis or as addendums to the management plan.

Area Directors will prescribe the necessary records for control of forest management in their Areas. Copies of the record forms and instructions for their use should appear in this section.

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As a minimum, both map and keyed tabular control records shall be kept for all stands cut. Where regeneration cuts are in two or more stages this record should show which regenerated areas are still subject to removal cutting and when removal is completed. Selection cuttings to maintain uneven-aged stands are considered regeneration cuttings at each entry. Where cutting is in groups too small for mapping, the general area covered should be shown, and acres and percent regenerated or released tabulated. The record will also show areas and time of all subsequent treatment of new stands and of action taken to bring non-stocked areas into production.

D. Environmental Assessment. To comply with requirements for protection of the environment, as set forth in the National Environmental Policy Act (NEPA) of 1969, as amended, the Historic Preservation Act, the Endangered Species Act and other applicable statutes, an environmental assessment will be prepared as a separate document. The environmental assessment will examine the proposed forest management prescriptions and associated activities set forth in the management plan, along with considered alternatives, as to cause and effect upon existing forest conditions and the human environment, and the conditions expected to prevail upon implementation of the plan. The environmental assessment will be prepared in compliance with the regulations issued by the Council on Environmental Quality (CEQ), and both Departmental and Bureau procedures and guidelines. Refer to 30 BIAM.

3.3 Scheduling of Plans and Plan Revisions. Scheduling the preparation of management plans or plan revisions is largely dependent on scheduling and progress of prerequisite forest inventory analysis reports (See Section 2.2A.(1)). However, some aspects of the management planning process can be initiated prior to completion of the inventory analysis, such as environmental assessment, forest history, economic analysis, silvicultural prescriptions and forest development program plans. The forest management plan for each reservation shall be completed and approved within 18 months following the date of completion of the forest inventory analysis.

Forest management plans will be reviewed periodically with new plans or revisions being scheduled at intervals not exceeding 10 years, unless otherwise authorized by the Area Director. The plan will also be revised and brought up-to-date at such time unforeseen circumstances make revisions desirable or necessary. This might result from major fires, insect or disease epidemics, natural catastrophes, tribal desires, or from market or technological changes in the industry.

Outline For Forest Inventory Analysis

- I. Title Page
- II. Acknowledgements
- III. Preface
- IV. Table of Contents
- V. Summary of Inventory Results
- VI. Forest Inventory
 - A. Introduction
 1. Small scale map of reservation depicting the forest area and subdivisions thereof
 2. Definitions of forest inventory and management terminology
 3. Brief resume of previous inventories
 4. Description of present inventory
 - a. Sample stratification, if any, number of sample plots, etc.
 - b. Forest cover types utilized, methods of volume determination, merchantability standards, etc.
 - c. List species (common and scientific names) and/or species groups, i.e., white firs, hardwoods, etc.
 - d. Forest Inventory Field Procedures Handbook
 - (1) Include in its entirety along with provisions and procedures for inspecting field work and controlling human errors

- B. Statistical Analysis
 - 1. Formulas
 - 2. Statistical analysis for the various strata and inventory components
- C. Compilation and Analysis of Inventory Data
 - 1. Volume and basal area compilation and preparation of local volume tables
 - 2. Measured growth
 - 3. Projected growth
 - 4. Predicted growth
 - 5. Other data compilation exercises necessary to arrive at C.1. through C.4. above
- D. Acreage

Compiled in accordance with management goals and the minimum requirements of Section 2.2A.(8).
Example: By management unit, ownership class and county, by cover type, species, size class, density class, cutover class, accessibility and by reservation
- E. Summary of Reservation Board Foot and Cubic Foot Volumes
- F. Comparative Analysis
 - 1. Present vs Past -- Identify differences
 - 2. Other agencies and organizations
- G. Technical Discussion Regarding Methods of Computation and Alternatives
 - 1. Growth
 - 2. Stocking

3. Allowable annual cut and alternatives

H. Plans for Reinventory

1. Scheduling

2. Recommendations for improving future inventories, accuracy standards, etc.

VII. Appendix

A. Volume and V-BAR Tables

B. Volume Equations and/or Curves

C. Site Curves

D. Special Studies

E. Maps

F. Other

VIII. Bibliography

Outline For Forest Management Plan

- I. Introduction
 - A. Title and Approval Sheet
 - B. Tribal Approval (Resolution)
 - C. Small Scale Map
 - D. Acknowledgements
 - E. Preface
 - F. Table of Contents
- II. Reservation Setting
 - A. Location
 - B. Topography
 - C. Climate
- III. Summary of Management Plan
 - A. Areas and Volumes
 - 1. Describe summary tables and define type call and other breakdowns.
 - 2. Major area and volume summary tables
 - B. Comparative Stand Data
 - C. Regulation
 - D. Management and Silvicultural Principles

- E. Management Prescriptions
 - 1. By forest management unit (reservation) and/or other subdivisions
- F. Action Plan
- G. Forest Inventory Analysis
- H. Economic Aspects of Timber Management
- I. Forest History*
- J. Revision of the Management Plan
- K. Environmental Assessment**

Note: The management plan summary must include all of the alternatives examined, and additionally identify those recommended for implementation and those finally selected to guide management for the plan period.

- IV. Management Plan
 - A. Management Objectives and Goals
 - B. Regulation
 - 1. Calculations of allowable annual cut
 - 2. Alternatives

*The forest history may be included within the text of the management plan or prepared as a separate document depending on the magnitude of past forestry activity to be recorded.

**Although a part of the management planning process, the environmental assessment shall be prepared as a separate document.

C. Silvicultural Prescriptions

1. Timber marking guidelines by species, type and/or condition class
2. Site preparation considerations

D. Management Prescriptions

1. By forest management unit (reservation) and/or other subdivisions
 - a. Description of forest components
 - b. Multiple use (coordination with other uses)
 - c. Forest management alternatives
 - d. Recommendation(s)

E. Action Plan

1. Forest development program
 - a. General
 - b. Scope
 - c. Plans for period
2. Forest protection
 - a. Insects and disease
 - (1) General
 - (2) Scope
 - (3) Control
 - b. Trespass
 - (1) Timber
 - (2) Fire
 - c. Fire management
 - (1) Prevention
 - (2) Presuppression
 - (3) Suppression

3. Logging roads
 - a. Design
 - b. Location
 - c. Construction
 - d. Maintenance
 - e. Stabilization
 - f. Road closure
4. Access roads
5. Rights-of-way
6. Land acquisition
7. Permit program
8. Sales policy
 - a. Merchantability standards
 - b. Scaling and log control
 - c. Logging methods
9. Cutting budget
10. Continuous forest inventory (CFI) or other forest inventory
11. Stand examination
 - a. General
 - b. Scope
 - c. Implementation
12. Other action type programs (photopoint system, etc.)

V. Supporting Data

- A. Summary of Results Under Previous Plans
- B. Forest Inventory Analysis--briefly describe and reference, or include hereunder

C. Economic Aspects of Management

1. General
2. Sources of income from the forest resource
3. Tribal income from the forest resource--identify relationship to total tribal income
4. Individual Indian employment and income from the forest resource
5. Cost of forest management--Agency/tribal budgets and staffing, etc.
6. Markets--present and potential
7. Other economic benefits--increase in forage, etc.
8. Summary--past and present trends in the market, outlook, etc.

D. Control Record

E. Soils and Geology

1. Geologic setting
2. Soil resource

F. Forest History

Chronology of events including timber sale unit specifics, cutting history maps, and other pertinent maps or charts

G. Other

VI. Appendix

- A. Maps, Forms, Special Studies, Etc.

VII. Bibliography

Note: All or a portion of the topics contained herein, or subsequently added, may require the development of alternatives. These must be displayed for examination. Recommended alternatives must also be identified, as must those eventually selected by the Indian forest owners.

TITLE AND APPROVAL
FOREST MANAGEMENT PLAN
_____ INDIAN RESERVATION

(State)

Plan Period: _____ - _____
(Date) (Date)

Submitted: _____
(Date)

Prepared By OR Compiled By

(Forester)

Concur: _____, 19__

Concur: _____, 19__

Forest Manager

Area Forester

Concur: _____, 19__

Superintendent

Approved: _____, 19__

Approved: _____, 19__

Tribal Chairman (President)

Area Director

Tribal Approval Per Resolution No. ____