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Forest Service Handbook 2409.13 – Timber Resource Planning Handbook

Chapter 30 - Timber Sale Scheduling

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Digest: Following is an explanation of the changes throughout the directive by section.

This amendment is a reissuance of FSH 2409.13 to conform the format and structure of the Handbook to the requirements of electronic directive issuance.

This amendment makes no substantive changes to the text. The only changes made are those necessary to meet new format requirements or to correct spelling, punctuation, or unit names.

This Handbook is now available electronically in the National Information Center in the same format as the paper copy. Henceforth, amendments to this Handbook will be issued to Forest Service units electronically on a document basis.

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Timber sale scheduling requires the calculation of the base sale schedule and, where appropriate, the departure schedule through use of an optimizing model that leads toward long-term sustained yield capacity (LTSYC) for suitable lands in each alternative. The calculation shall be in cubic feet; converted to board feet for selected periods in the planning horizon.

The sale schedule in the approved forest plan establishes the allowable sale quantity (ASQ) for the first decade and projected ASQ for future periods.

31 - Long-Term Sustained-Yield Capacity

Determine the long-term sustained yield capacity (LTSYC) in conjunction with the calculation of the allowable sale quantity for a given alternative. Base this determination on the yield by prescription from regenerated stands, including where appropriate, intermediate yields selected in the solution of that alternative.

32 - Rotation

In even-aged management, the selection of rotation age or ages materially affects the length of time required to achieve the desired distribution of age classes and LTSYC. Within the requirements described in FSH 2409.13-32.1, a range of rotation ages or timing options is preferable for analysis of present and future stands. A variety of rotation ages provides a means of progressing toward the regulated forest as well as providing the variety of tree sizes required to meet the needs of other resources. For most species and forest types, select rotations that produce sawtimber and veneer products, unless otherwise provided for in the forest plan.

32.1 - Culmination of Mean Annual Increment

Rotation ages must meet the requirement that all even-aged stands scheduled for harvest generally will have reached the culmination of mean annual increment (CMAI) of growth. Permit the harvest of trees or stands before CMAI for: (1) sound silvicultural practices such as thinning or other stand improvement measures; (2) salvage or sanitation harvesting of stands substantially damaged by fire, windthrow, or other catastrophes, or stands that are in imminent danger from insect or disease attack; (3) experimental and research purposes; and (4) removal of particular species of trees, after consideration of the multiple-use objectives of the forest plan alternative.

Base the determination of CMAI on the yield from regeneration harvest and any additional yields from intermediate harvests, consistent with the selected management prescription. In general, base minimum rotation age on the length of time required to achieve volume production equivalent to at least 95 percent of CMAI as expressed in cubic measure. (FSH 2409.13-22). During analysis of the management situation, alternatives to CMAI may be evaluated in the establishment of benchmarks.

33 - Base Sale Schedule

The base sale schedule (BSS) reflects a constant or increasing level of planned timber sale offerings, consistent with the principle of nondeclining flow (36 CFR 219.16(a)(i)). Calculate the BSS far enough into the future to provide for a forest structure that will ensure a perpetual sale schedule at long-term sustained yield capacity (LTSYC). The BSS reflects the intensities of management and the degree of timber utilization, consistent with the goals, assumptions, and standards contained or used in the preparation of the current Resources Planning Act (RPA) program and Regional guide. For the BSS, the management and utilization assumptions reflect the projected changes in practices for the five decades contained or used in the preparation of the current Resources Planning Act program and Regional guide.

Sale schedules coincide with each of the decades in the RPA planning horizon. For the remaining portion of the planning horizon, decades may be grouped in a manner suitable for analysis of their long-term effects.

34 - Departure from Base Sale Schedule

The purpose of analyzing departures is to determine whether or not it is possible to better meet multiple-use objectives by regulating the planned sale and harvest of timber volume in a manner that deviates from the principle of nondeclining flow (36 CFR 219.16(a)(3)).

34.1 - Criteria for Analysis and Selection of Departures

Evaluate departure opportunities in forest planning when any one of the following conditions do, or are likely to, exist: (1) it is possible to reduce significantly or prevent high mortality losses from any cause; (2) it is possible to improve timber age or size class distribution, thereby facilitating the attainment of the forest growing at its LTSYC; (3) implementation of the corresponding base sale schedule (BSS) would have a substantial adverse impact upon a community in the economic area in which the forest is located; (4) none of the alternatives under consideration provide a BSS that achieves the goals of the Resources Planning Act (RPA) program; or (5) it is reasonable to expect that it would be better to attain overall multiple-use objectives in other ways. The RPA program, Regional guide, and the forest plans under development set forth the multiple-use objectives, which incorporate physical, biological, economic, and social considerations.

Analyze departure opportunities as a means of attaining 90 percent of the average annual growth rate at the LTSYC by the year 2030, as specified in the revised RPA statement of policy (FSM 2410.3-7).

34.2 - Calculation of Departures

1. Departures are discrete alternatives in that they may be selected individually as the preferred alternative; however, link them to the BSS of a given alternative. Accordingly, the

BSS constitutes the basis for analyzing departures in determining whether or not departures meet the criteria set forth above.

The basic configuration of a departure can take two forms: (1) the departure schedule temporarily exceeds the BSS and subsequently drops below the BSS before eventually reaching it; and (2) the departure schedule temporarily exceeds the BSS and subsequently drops down to, but not below, the BSS. When the BSS for the first decade equals the long-term sustained yield capacity (LTSYC), explore the possibility of the latter configuration in the departure analysis.

In determining the magnitude, duration, incremental change, and minimum sale level for departures, consider, but do not limit consideration to such factors as: (1) consistency with multiple-use objectives; (2) environmental impacts; (3) community stability; (4) installed mill capacity; and (5) projected timber supplies from other ownerships. Exercise judgment in developing sale schedules that do not fluctuate drastically from decade to decade over the planning horizon. If appropriate, limit the magnitude of the change in consideration of the above factors and to provide for an orderly transition to a forest growing at its LTSYC. Consider Regional guidance regarding permissible decade fluctuations.

2. Use the same LTSYC associated with the BSS of a given alternative in examining a departure. The BSS establishes this LTSYC. Exceptions to this requirement are allowable in the analysis of the management situation, whereby a departure sale schedule not linked to any BSS may be established for informational and trade-off analysis purposes. (FSM 2410.3).

3. Use the same tentatively suitable acres, multiple-use objectives, and range of management prescriptions to establish the BSS of a given alternative and a departure. However, the resulting land uses, suitable acres, and selected management prescriptions may differ in their respective solutions.

4. Hold the following variables in the calculation of the BSS constant in the calculation of departures:

- a. Ending inventory volume that will enable perpetual timber harvest at the LTSYC, consistent with the multiple-use objectives.
- b. Maximum size limits on openings.
- c. Requirements for management practices as set forth in 36 CFR 219.27.
- d. Tentatively suitable acres.
- e. Minimum utilization standards.

NOTE: Any changes in the foregoing variables constitute the creation of a new alternative for which it is necessary to establish a new BSS in order to examine departures.

5. Relax the following base sale schedule (BSS) requirements in the calculation of departures.
 - a. Planned sale for any decade equal to or greater than planned sale and harvest for preceding decade (nondeclining flow).
 - b. Periodic harvests at or below LTSYC.
6. Permit the following outputs established in the BSS to vary in the calculation of departures:
 - a. Management Intensity. Use the same range of management prescriptions as input to the formulation of a BSS and departures. However, the appropriate timing and mix of prescriptions chosen may differ from those selected in the establishment of the BSS.
 - b. Land Use. Use the same tentatively suitable forest land base used in the BSS calculation. However, the resulting amount of land suitable for timber production may vary in the departures.
 - c. Management Objectives. Use the same management objectives of the alternative in formulation of a departure. Analyze with respect to the objectives of the alternative any changes in land use that the departure may cause. Objectives or targets, such as dispersed recreation visitor days may be met, but the location of the activity may change. Evaluate the significance and acceptability of the changed location.
 - d. Multiple-Use Objectives. The set of multiple-use objectives, other than timber, used as input to the BSS calculation establishes the minimum/ maximum levels for the departure. Specified targets, such as the number of recreation visitor days, constitute the minimum level of output permitted in a departure. Specified limitations, such as the tons of sediment produced, are the maximum level of output permitted in a departure.
 - e. Rotations. Several rotation lengths may be used to balance timber yields in the BSS calculation. Provide the same set for the departure; however, the lengths selected may vary from the BSS as long as it is possible to meet the culmination of mean annual increment requirement (FSH 2409.13-32.1).

34.3 - Departure Analysis

Analyze a departure according to how well it achieves:

1. Multiple-use objectives of the associated nondeparture alternative.
2. Land uses of the base sale schedule (BSS).
3. Criteria specified in FSH 2409.13-34.1 (36 CFR 219.16(a)(3)).

4. Factors contributing to the increase of net public benefits. Consider flow limits if the schedule obtained will cause adverse economic impacts or require significant industry investments to expand capacity. In those instances where more than one National Forest or other land owner contributes to a market area, the Regional Forester must coordinate flow to minimize adverse economic impacts and to provide a planning base for industry investment.

34.4 - Display of the Analysis

Describe the departures in the environmental impact statement, either as an alternative eliminated from detailed study or as a viable alternative. For those departures eliminated from detailed study, identify the rationale.

35 - Allowable Sale Quantity

The allowable sale quantity (ASQ) includes only those volumes used in the yield projection calculation of the sale schedule for suitable lands (these volumes are chargeable). It may include volume in salvage or mortality sales but only if included in the yield projection calculations. Conversely, volume not included in the calculation, such as unsound material or any planned sales in unsuitable land, is not part of the ASQ (these volumes are nonchargeable). Where a firm or intermittent market exists for unsound or dead material, the estimated amount of this class of material expected to be available during the plan period may be shown as additional volume and included in the timber sale program quantity, but it is not a part of the ASQ.

In the implementation of the forest plan, unforeseen conditions may warrant selling as fuelwood some volume that was included in the allowable sale quantity, for example, timber severely damaged by fire or insects. In such cases, fuelwood volume is chargeable.

Calculations of the ASQ shall include only trees utilized to the standards specified in the Regional guide. The ASQ includes the volume of all timber products from these trees, to the specified utilization standards. When the product mix is of interest to the wood products industry or others, the corresponding volume components may be identified subsequently in the forest plan. Do not include any other material planned for sale in the ASQ, for example, cull material and fuelwood.

Normally, make adjustments in the allowable sale quantity to reflect differences between planned budget needs and actual funds received, success in implementing planned timber management practices, or changes in timber conditions or markets at the time of forest plan revision at the end of the 10-year planning period. However, if the differences or changes are significant and are likely to continue throughout the planning period, adjust the ASQ and amend or revise the forest plan (36 CFR 219.10(e)-(g)).

36 - Timber Sale Program Quantity

The timber sale program quantity includes the allowable sale quantity (ASQ) for the first decade and any additional volume planned for sale during the first decade. Volume in addition to the

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ASQ is nonchargeable and may be harvested from suitable and/or unsuitable land, for example, fuelwood. In the execution of the timber sale program, there may be situations where volume included in the ASQ is sold as fuelwood. In these cases, charge the fuelwood volume to the ASQ.