

THE EASTSIDE PINE TYPE OWNERSHIP OBJECTIVES
FOR A NATIONAL FOREST*

Jerry Jensen

Timber Management Officer, USDA Forest Service
Modoc National Forest, Alturas, California.

ABSTRACT

Ownership objectives for a national forest reflect the wide range of goods and services produced by a national forest. They change over time, between national forests, and in response to changing conditions in the country. A few, such as the goal of maintaining basic soil productivity, are the base upon which others are built and remain constant. In this brief paper, I will work from broad, general goals which define major programs, to site-specific objectives against which project success or failure is measured.

BROAD POLICY OBJECTIVES

Basic objectives for all national forest land, and eastside pine in particular, are found in many laws, regulations, and directives which have been issued over the last 100 years. A few of those more important to timber lands are the Organic Act of 1897, the Multiple-Use Sustained-Yield Act of 1960, the National Environmental Policy Act of 1969, the Resource Planning Act of 1974, and the National Forest Management Act of 1976. Since nearly all of you have some knowledge of this basic legislation, I will not review the specifics of each act, but I would like to point out that these basic laws do, in fact, define our "on-the-ground" activities. For instance, we will manage all resources, at some level of planning, on the National Forest; we will reforest within five years if we make a regeneration cut; we will consider other resources and mitigate project effects on other resources; and we will plan the flow or output of goods and services far into the future. Notice that these objectives apply to all resources, not just to timber. For instance, range management must consider and mitigate the effects of sheep-bedding grounds on the scenic resources of major travel corridors, just as timber management must consider and mitigate

effects of timber-cutting in these areas.

In addition to basic laws, many regulations, directives, orders, and much Congressional advice have been issued over the years. Three examples illustrate how this type of direction may affect on-the-ground objectives. The first are the Executive Orders (Presidential) that require protection and mitigation of archaeological sites. The second example are the "Church Guidelines" of March 1972, relating to clearcutting, which have since largely been incorporated into existing law. The third example is the Forest Service directive found in FSM 2405.14--9, requiring that five percent of each forest type, outside of wilderness, in each planning unit be reserved as older mature stands. The point of all this is that a specific timber management objective which I, as a functional specialist, may have for a given stand may not be the preferred objective for that stand. Samples of broad objectives are given in Table 1.

MULTIPLE-USE OBJECTIVES

The bridge between general laws and the timber stand is the RPA budgeting process shown in Figure 1. This is an overview of the process of program planning and project selection which I have greatly condensed from the Forest Service Manual. The critical element in the process is the presence of several feedback loops, whereby the goals and objectives of a program can be adjusted or changed to meet changed conditions. A basic issue which has caused much confusion is whether planning on a national forest should be directed from higher levels to meet national demands or if it should be centered on the individual forest to best respond to that forest's capabilities. This ambiguity shows up in the lower left corner of the chart.

Assuming that the issue of the best mix of outputs at the forest level has been solved, the next level of goal-setting is done under the direction of the Forest Plan. Multiple-use plans prepared in the late 1960's are the basic direction by which to manage specific

*Personal opinion of the author; data has been greatly condensed from many sources and does not represent official Forest Service policy.

Table 1--Samples of Objectives.

Modoc National Forest Multiple use Plan, 1965. "National Forests are developed and managed for outdoor recreation, range, timber, watershed, and wildlife and fish purposes." "Functional resource and activity plans must be compatible with approved Ranger District Multiple Use Plans and Ranger District Multiple Use Plans must be compatible with this Guide." The Northern California Subregion has "an allowable cut of about 1,958 million board feet. This will need to be increased approximately 10 percent by the year 2,000 to meet the Chief's goal for production of forest products." An example from the Warner Mountain Ranger District Multiple Use Plan shows the type of timber management objectives for the District: "The District contains approximately 121,000 acres of commercial forest land...The [Forest Timber Management] Plan should not include uneconomical isolated pockets, timber on ground unsuitable for logging, or inferior species not economic to process in this area."

Modoc National Forest Timber Management Plan, 1975. "The programmed allowable harvest for the standard component of the regulated commercial forest land within the Modoc Working Circle including the Big Valley Federal Sustained-Yield Unit is established as 46.9 million board feet per year. An additional allowable harvest volume of 14.6 million board feet is available from the special component and an additional 1.1 million board feet is available from the marginal component of the regulated commercial forest land for a total allowable harvest volume of 62.6 million board feet annually."

EXAMPLE OF FOREST SERVICE STOCKING OBJECTIVE FOR REGENERATION UNITS
FSM 2472.30, R-5 SUPP. 232, 5/80

"...The objective is to successfully plant clearcut areas the spring following clearcutting, but not later than three years after timber harvest. The goal for shelterwood harvested areas is to have the recommended level of stocking of two-year-old or older seedlings present five years after the seed cut step. If adequate stocking has not been obtained within five years, reinforcement planting, or clearcutting and planting, will be scheduled. Additional site preparation may be needed. Also, animal damage control treatments may be needed."

" 1. Recommended Stocking and Minimum Acceptable Seedling Stocking....

<u>Forest Type</u>	<u>R-5</u>	<u>Number of Trees</u>	<u>Minimum acceptable</u>
	<u>Site Class</u>	<u>Recommended</u>	<u>for Certification</u>
Ponderosa Pine	I	200	150
	II	200	125
	III	150	100
	IV	125	75

*-The initial planting spacing should be selected on the basis of having enough surviving trees with good vigor in all parts of the plantation to meet the above recommendations. The important thing is that adequate stocking is obtained with the first reforestation effort. It is recommended that ponderosa pine and other species, for which survival on local sites has been good, be planted on a 10' x 10' or equivalent spacing (8' x 12' etc.) (435 trees per acre). Otherwise, planting should be on 8' x 8' spacing (680 trees per acre) or denser. The number of trees planted per acre will be less than the numbers for the above spacings because of the presence of windrows, rocks, etc."

REGION 5 - FOREST SERVICE
 MULTIYEAR DIRECTION - MAY 1981
 EXAMPLE OF OBJECTIVE FROM BUDGET ADVICE

SITUATION
 (why it should be done)

GOAL GOAL
 NO. (what should be done)

OBJECTIVE TARGET WHEN INSTRUCTIONS
 (what is going to be done) (who, when, how)

The nation is dependent upon the continual supply of timber from the N.F. Harvest of this timber must be in full accord with the direction in the NFMA; F&RPA, other laws, land management, & resource plans. Coordination of this national dependency & the concern for all resources is vitally important.

E.1. Prepare and offer for sale, the full yield for the standard component, & that portion of the marginal and special component which can be sold within economic, environmental, financial & manpower limitations.

E.1.2. Complete the timber sale planning process through the E.A. development and approval phase in a coordinated and timely manner.	Have approval for Timber sale EA's at least 3 years in advance of sell date and/or before any on-the-ground layout.	1983	All timber Forests, except for Emer. & salvage sales.
--	---	------	---

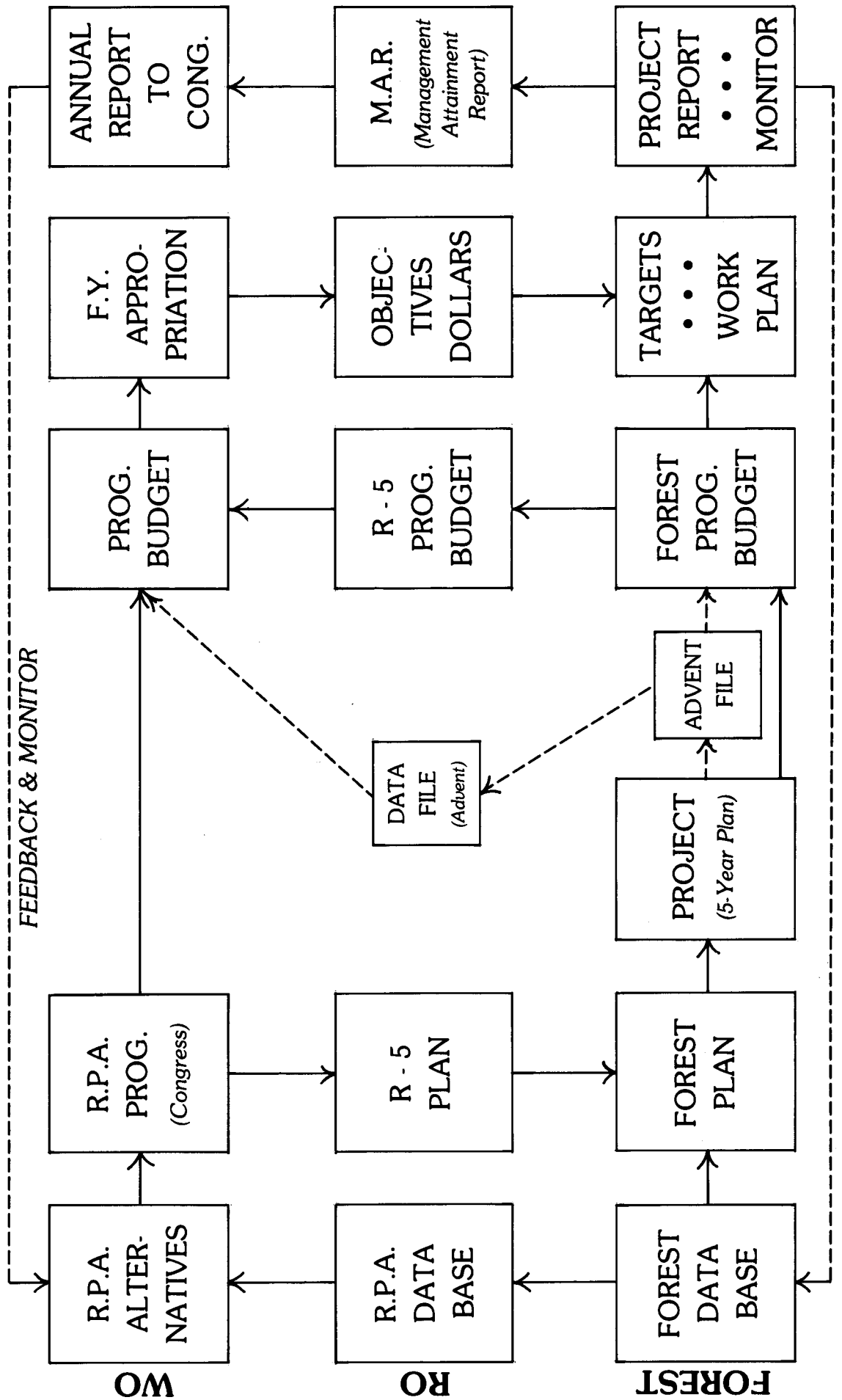


Figure 1.--R-5 Program Planning & Objective Setting Process.

areas of land unless superseded by an approved Unit Plan (such as the Medicine Lake Planning Unit on the Modoc National Forest). These plans were completed prior to NEPA (no EIS was prepared) and will be superseded by the integrated Forest Plan required by NFMA.

TIMBER MANAGEMENT OBJECTIVES

Specific objectives for timber management on each national forest can be found in the Timber Management Plan (currently) or in the Forest Land Management Plan (to be completed by 1985). These plans generally schedule particular types of timber-cutting in particular types of stands for many decades into the future, to meet some of the objectives discussed earlier. A critical assumption is that either regenerated stands or thinned stands will grow at rates specified in the planning model. If actual practice subsequently deviates from the plan by a significant amount, the Timber Management Plan must then be modified. One factor which might cause a plan revision would be significant regeneration failures which could not be corrected.

Figure 2 shows an example of a linear program solution for a current forest plan. Notice that the type of harvest is closely regulated by the type of stand and decade. This solution was designed to maximize volume production in board feet during the first decade while meeting given constraints. Obviously, a solution to maximize present net benefits for cubic feet of wood, as is being done in the new plans, will give different results.

The major constraints used in this analysis included the following:

- 1) non-declining, even flow yields;
- 2) achievement of a balance of age classes, leading to regulation at the end of the period;
- 3) solution was to be feasible from an administrative standpoint;
- 4) 20-year entry cycle for eastside pine;
- 5) overmature sawtimber to be harvested by the end of the 10th decade;
- 6) overstory removal of two-story stands to be completed by fifth decade;
- 7) maximum harvest age of 110 years;
- 8) precommercial thinning in regenerated stands; and
- 9) no lag in securing regeneration.

Since large old-growth timber will be largely cut on land scheduled for timber production in a small part of the total planning period, it is obvious that most of the planned production for the long-run sustained-yield objective must come from regenerated stands. These stands are generally modeled as being promptly regenerated (less than five years), fully stocked with trees adapted to the site, protected from damage which would retard growth on a stand basis such as deer or porcupine damage, and be available for a series of commercial thinnings. In addition to all of these objectives, the stands themselves must be carried near the planned stocking levels over the life of the rotation, or they will not produce the expected yields. See Figure 3 for the expected stocking of a regenerated stand over its rotation. This figure is derived from current data being used in the Modoc National Forest Land Management Plan and is based on a 10-year reentry cycle. In other words, a stand cut back to the Modoc desired basal area will grow to 90 percent of normal basal area in 10 years. These curves, which vary according to site quality, define the most specific objectives we have in intensive timber management on the Modoc National Forest.

Other lands which are not scheduled for intensive timber management will, of course, have other objectives suited to the management emphasis selected for them.

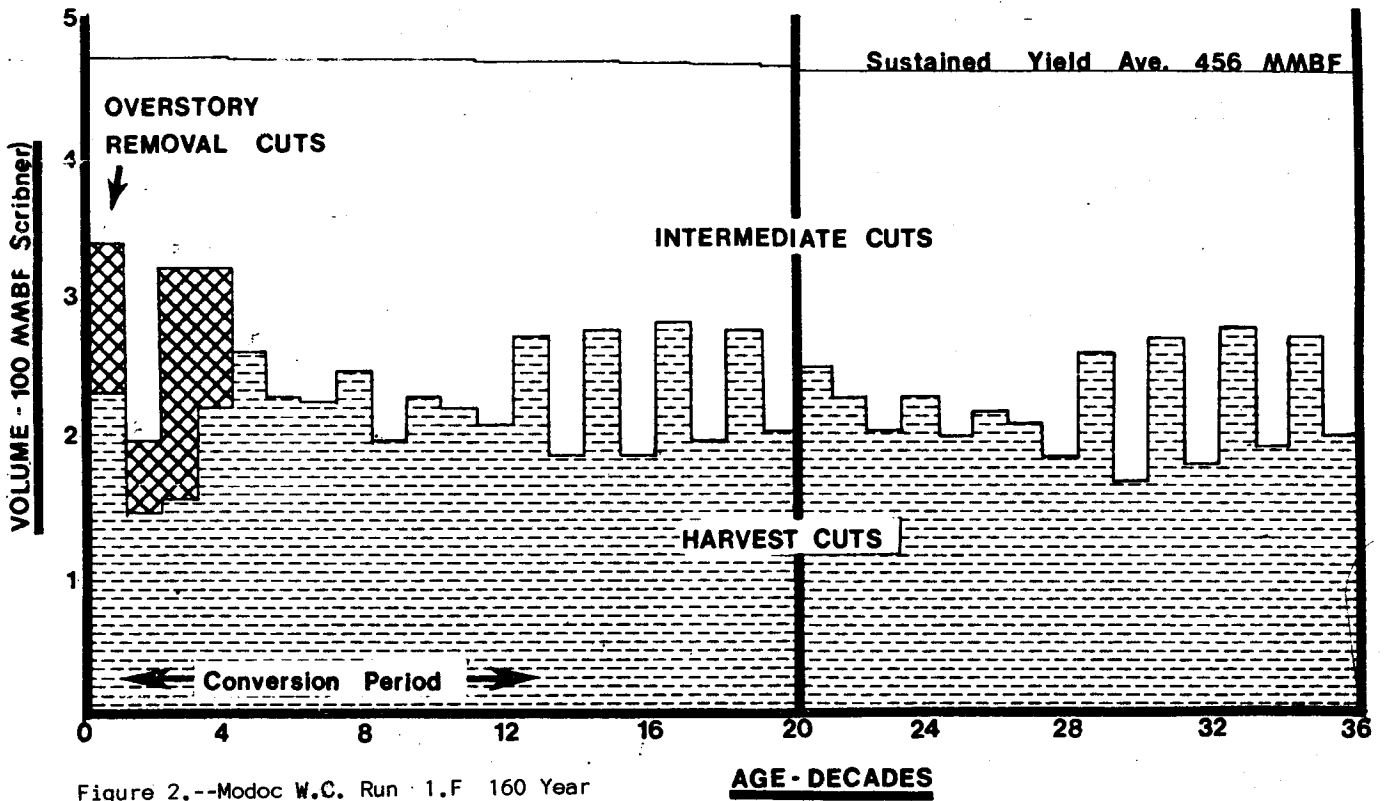


Figure 2.--Modoc W.C. Run 1.F 160 Year Rotation. This is an example of a linear program solution for a current forest plan.

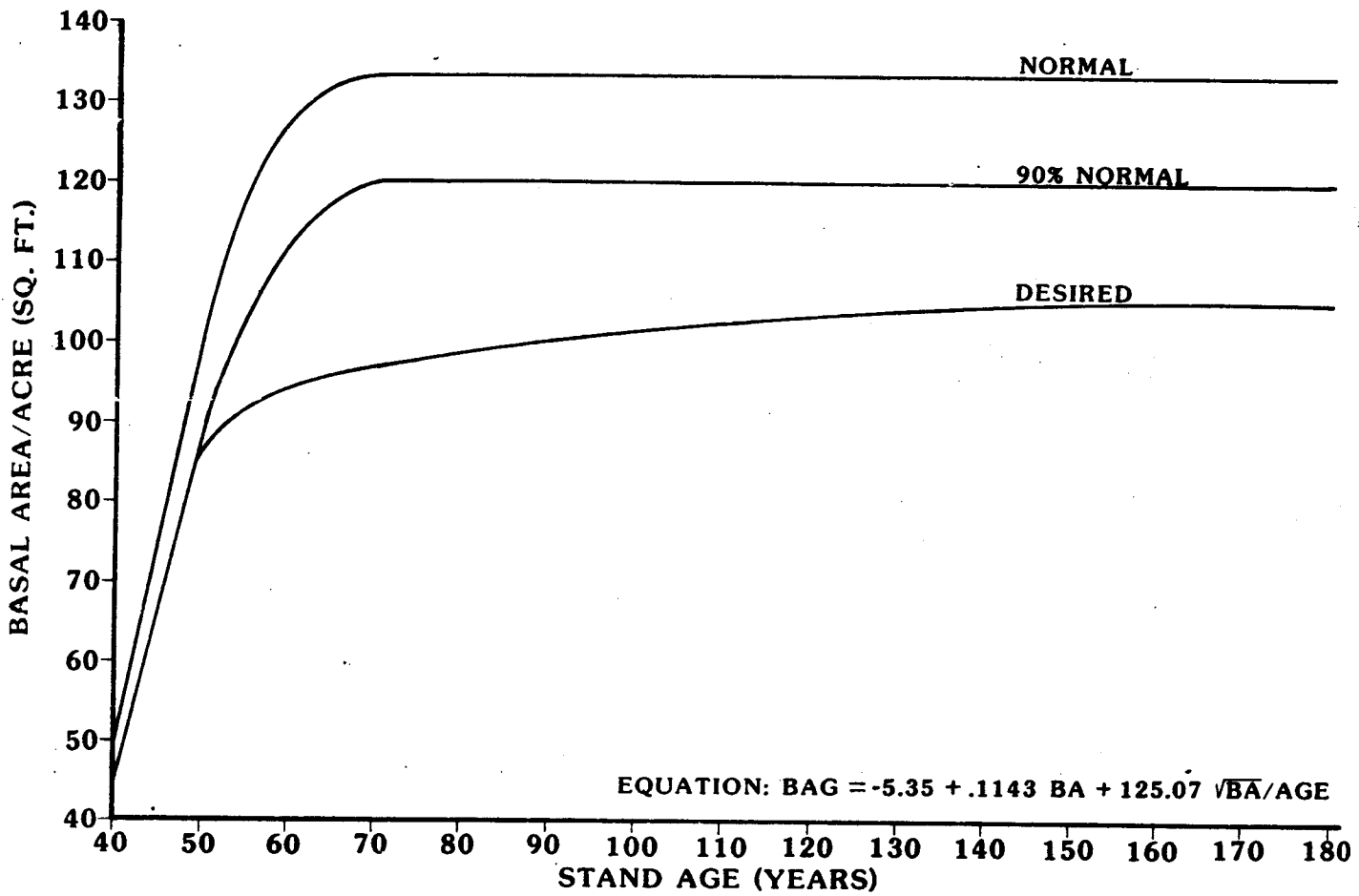


Figure 3.--The expected stocking of a regenerated stand over its rotation.

**BASAL AREA CURVES
PONDEROSA PINE (R5 SITE IV)
MODOC NATIONAL FOREST**