

B. Alternative Development

1. Basis for Alternative Development

The alternative development process used by the Malheur National Forest was based on a number of requirements in the regulations implementing the National Environmental Policy Act (NEPA) and the National Forest Management Act (NFMA)

NEPA regulations (40 CFR 1502.14) direct that agencies

- a. Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study briefly discuss the reasons for their having been eliminated
- b. Devote substantial treatment to each alternative considered in detail, including the Proposed Action, so that reviewers may evaluate their comparative merits.
- c. Include reasonable alternatives not within the jurisdiction of the lead agency
- d. Include a No Action Alternative
- e. Identify the agency's Preferred Alternative as the Proposed Action
- f. Include appropriate mitigation measures not already included in the Proposed Action or other alternatives

In addition, the implementing regulations (36 CFR 219.12(f)) for the National Forest Management Act (NFMA) contain the following requirements for alternative formulation

- a. Alternatives shall be distributed between the minimum resource potential and the maximum resource potential to reflect to the extent practicable the full range of major commodity and environmental resource uses and values that could be produced from the Forest. Alternatives shall reflect a range of resource outputs and expenditure levels.
- b. Alternatives shall be formulated to facilitate analysis of opportunity costs and of resource uses and environmental trade-offs among alternatives, and between benchmarks and alternatives
- c. Alternatives shall be formulated to facilitate evaluation of the effects on present net value, benefits, and costs of achieving various outputs and values that are not assigned monetary values, but are provided at specified levels
- d. Alternatives shall provide different ways to address and respond to the major public issues, management concerns, and resource opportunities identified during the planning process.
- e. Reasonable alternatives which may require a change in existing law or policy to implement shall be formulated, if necessary, to address a major public issue, management concern, or resource opportunity identified during the planning process (40 CFR 1501.7, 1502.14(c)).
- f. At least one alternative shall be developed which responds to and incorporates the Resources Planning Act Program tentative resource objectives for each Forest displayed in the Pacific Northwest Regional Guide
- g. At least one alternative shall reflect the current level of goods and services provided by the unit and the most likely amount of goods and services expected to be provided

in the future if there is a continuation of current management direction Pursuant to NEPA procedures, this alternative Shall be deemed the "No Action" Alternative

h Each alternative shall represent, to the extent practicable, the most cost-efficient combination of management prescriptions examined that can meet the objectives established in the alternative

1 Each alternative shall state at least the condition and uses that will result from long-term application of the alternative, the goods and services to be produced, the timing and flow of these resource outputs together with associated costs and benefits, the resource management standards, and the purposes of the management direction proposed

2. Analysis Process

a *Introduction*

Forest planning is a complex process which requires the evaluation of an enormous amount of information This evaluation occurs in a series of steps which utilize specific tools and techniques to facilitate the analysis of data

The planning regulations and agency direction emphasize the use of economic efficiency criteria in the major analytical phases of the planning process The development of management prescriptions and the analysis of benchmarks, management constraints and alternatives are steps which focus on cost-efficiency and the calculation of economic and resource trade-offs

The amount of data needed for these analyses and the complexity of analyzing the important economic and resource relationships on the Malheur National Forest requires the use of computer models The central tool used to conduct these analyses was a linear programming model called FORPLAN (an acronym for FOREst PLANning, Johnson and Crim, 1986) Other models were used to develop input data for FORPLAN and to conduct additional analyses after FORPLAN solutions were obtained

The following sections briefly describe the analytical process and tools used by the Malheur National Forest during the planning process, and the analysis performed Reviewers are encouraged to refer to Appendix B for a more complete and technical discussion of the analysis process

b *The FORPLAN Model*

The Malheur National Forest used FORPLAN Version 1, to conduct the required analysis in the land management planning process The FORPLAN model is a comprehensive, computerized, mathematical optimization model capable of analyzing the economic and resource relationships associated with management of the Forest. It is a linear programming model designed to assist in the identification of the particular combination of land assignment, management prescriptions, and activity schedules that best meet the objectives of each benchmark or alternative

FORPLAN is composed of a matrix generator, a linear programming solution system, and a report writer. Within the bounds of the matrix generator and the Functional Mathematical Programming System, the user is allowed a great deal of latitude in formulating the mathematical representation of the Forest planning problem to be analyzed The FORPLAN model was specifically designed to assist the interdisciplinary planning team analyze the economic and production trade-offs associated with recreation, timber, scenery, old growth, water, roadless, and wildlife resources, and to evaluate the extent to which various alternative management scenarios were able to address and resolve the identified planning issues