

VI. ANALYSIS PRIOR TO DEVELOPMENT OF ALTERNATIVES

A. INTRODUCTION

The primary analysis prior to development of alternatives was the "Analysis of the Management Situation." This step examines the ability of the Forest to supply goods and services in response to society's demands. The primary purpose of this analysis is to provide a basis for formulating a broad range of reasonable alternatives. This is accomplished by defining the "decision space" within which the Forest can operate to address issues, concerns, and opportunities. This planning step is documented in a planning document titled "Analysis of the Management Situation and Proposed Alternatives " Most of the relevant information is also found in this appendix

A series of benchmarks was developed in accordance with Regional direction (November 10, 1983) FORPLAN was the major analytical tool used in this process. A few benchmarks were estimated outside FORPLAN

B. DEVELOPMENT OF MANAGEMENT REQUIREMENTS

The Pacific Northwest Region developed direction to assure that the Management Requirements of the National Forest Management Act (36 CFR 219.27) were applied consistently across all Forests within the Region. This direction (1920 letter from Jeff Sirmon, February 9, 1983, on "Regional Guidelines for Incorporating Minimum Management Requirements in Forest Planning") is on file in the Regional Office in Portland and the Supervisor's Office in John Day.

Application of the standards is sufficient to achieve most Management Requirements without impacting the levels of goods and services provided by the Forest. Some Management Requirements for timber, soil, water, and wildlife required special modeling constraints, however.

The size of created openings is generally limited to 40 acres in size with logical cutting units left in between (36 CFR 219 27 (d)) Additionally, shelterwood and overstory removals are limited to 80 acres in size to address watershed, wildlife diversity, and visual management concerns It was necessary to model this Management Requirement in FORPLAN because linear programming solutions tend to assign entire decision variables (in this case, analysis area/management prescription/timing choice options) rather than split them This results in entire analysis areas, which often include contiguous blocks of much more than 40 to 80 acres, being harvested in one decade. Those constraints were also considered helpful in meeting soil and water Management Requirements (36 CFR 219.27 (f)) The dispersion factors used in FORPLAN were based on the professional judgment of the Interdisciplinary Team and were tested by spatial disaggregation (mapping) to ensure their feasibility These constraints were implemented by limiting the fraction of a watershed - management emphasis combination which could be harvested in a given decade.

Special attention must be given to land and vegetation near water (36 CFR 219 27 (e)) A management prescription, Management Area 3, was developed for areas comprising surrounding the riparian zone This prescription applies to a variable width area based on slope, soil hazard, and vegetation type. The portion of each analysis area that would be included in the riparian protection zone was estimated based on stream classes. These acres were assigned to Management Area 3 in each FORPLAN run that met Management Requirements.

For the purpose of developing wildlife Management Requirements, the Forest has been assigned to the "Blue Mountain Zone." In this zone, the Forest has responsibility to maintain minimum habitat needs for the pileated woodpecker, three-toed woodpecker, pine marten, and primary cavity excavators. Each Forest had to consider the need for Management Requirements in riparian zones.

The following strategies for meeting Management Requirements of the above-named species

1. Riparian Zone: The indicator species for anadromous fish streams is steelhead, and for non-anadromous streams are bull trout, cutthroat trout, and rainbow/redband trout. The Forest did not model Management Requirements for these species because the management prescription for riparian zones to meet state water quality standards meets minimum habitat needs.
2. Primary Cavity Excavators: The Management Requirement for these species is to maintain a 20 percent population level. The current standard used on the Forest is designed to maintain a 40 percent population level on timber and range emphasis areas, and 60 percent in wildlife emphasis areas. These are to be provided in land areas no larger than normal harvest unit size. (See Regional Office letter dated Sept. 9, 1988, "Wildlife Tree Management Standards for Forest Plans", file reference 1920/2600)
3. The three indicator species that represent old-growth habitat on the Forest are three-toed woodpecker, pileated woodpecker and pine marten. Old-growth mapping started in 1982. The first step in modeling Management Requirements for the old-growth species was to identify old-growth stands on the Forest. Then a base map was developed using a grid to connect these known old-growth units to ensure adequate dispersion of old-growth units for pileated woodpecker and pine marten. The maximum distance between units was 6 miles and the minimum was 4 miles for pileated woodpeckers. Pine marten units were dispersed at 2.5-mile distances. Suitable and capable old-growth units were delineated using the grid methods.

Next, the mapped sites were used as a starting point to determine if distance requirements were met. Additional old-growth units were delineated within the 4- to 6-mile radius if necessary to meet distance requirements. Each old-growth unit was connected to at least three other units where possible. Pine marten and pileated woodpecker units were combined where possible to form one old-growth unit. Old-growth units were modified by the Ranger Districts to best fit on-the-ground conditions.

The resulting old-growth Management Requirement map was shared with neighboring Forests to ensure continuity in distribution patterns. In 1986, the grid requirement was dropped. The Forest could identify a 300-acre old-growth unit within a 10,000- to 12,000-acre area. This allowed the Forest to delineate suitable habitat instead of capable habitat where possible.

C. BENCHMARK ANALYSIS

1. Purpose of Benchmark Analysis

In the analysis process, resource supply potentials were determined by establishing the maximum production potential through FORPLAN computer analysis called benchmarks. Economic benchmarks were also developed as a point of reference to measure the costs and effects of applying Forest Service regulations and policies. These benchmarks serve as references from which to evaluate the costs and effects of various land management objectives

The benchmark analysis enabled the Forest to.

- Estimate the schedule of management activities, resource outputs, effects, discounted benefits and costs, Present Net Value, and acreages of prescription assignments needed to achieve the purpose of the benchmarks;
- Define resource production levels associated with maximizing single resource outputs,
- Analyze the implications of land management laws and policies, including Management Requirements of 36 CFR 219.27,

Analyze the potential to resolve issues and concerns,
- Analyze the current and expected future level of goods and services if current management is continued,
- Analyze the need to change management direction;
- Define the range within which alternatives could be formulated

After public comments were received on the Draft Environmental Impact Statement, the FORPLAN model was reconstructed as described in Section III. The alternatives were re-run but the benchmarks were not. Only technical and legislative changes would have affected the benchmark results, and it is estimated that the timber outputs (ASQ) would be approximately 3-4% less because of these. This difference is not considered significant with respect to the comparison between benchmarks, so that they remain suitable for this purpose

The following sections describe the benchmarks which were developed to define the production potentials and economic relationships of Forest resources

2. Benchmark 1 Maximum Timber

- a Description This benchmark estimates the maximum biological potential timber volume that can be produced on the Forest on a sustained yield basis, subject to rotation age restrictions and nondeclining yield
- b Purpose The purpose of developing this benchmark is to determine the maximum level of timber volume which could be produced subject to the harvest flow constraints stated above.