Timber Suitability under Alternative 2-modified

Introduction

Harvest of timber on National Forest System lands occurs for many different reasons, including ecological restoration, community protection in wildland-urban interfaces, habitat restoration, protection of municipal water supplies, and production of timber, pulp for paper, specialty woods for furniture, and fuel as a renewable energy source-all of which can support local businesses and employment. While timber harvest often occurs on lands classified as suitable for timber production, many of the forest products (timber, firewood, etc.) generated on the Carson National Forest have been, and will continue to be, produced as a result of restoration and fire protection activities that occur both on lands classified as suitable and those classified as unsuitable for timber production. The quantification of suitable timber lands neither commits lands to timber production nor commits the Carson National Forest to any future volume of timber sale.

The 1976 National Forest Management Act guides land management planning on national forests and grasslands. Like all laws, it is a product of the social and political issues at the time of its passage. Beginning in the 1950s, the Forest Service was called upon to provide large amounts of wood products for the marketplace, and did so, using industrial forest management techniques that emphasized maximum production. As harvest levels increased over the decades, Congress and members of the public became increasingly concerned about the impacts of intensive forest management on national forests. The National Forest Management Act was enacted in response to those public concerns, most notably, concerns associated with clearcutting. Consequently, the law has numerous timber-specific management requirements that focus on the appropriate regulation of harvest practices, especially clearcutting. The political environment and social values related to national forest management have substantially changed since the National Forest Management Act was enacted. The largely utilitarian views of the 1950s have given way to a balanced and integrated view of national forest management. Timber harvest may be considered a resource use (as described in the Act) or a management tool to achieve desired conditions (an activity to improve or restore healthy forest conditions). Timber harvest may be used as a tool on all lands, even those that are not suitable for timber production, in order to achieve desired conditions. The agency now focuses land management plans on desired conditions (outcomes) rather than on production of goods and services (outputs). This shift in management direction affects how the agency presently analyzes the National Forest Management Act required timber harvest suitability and sustained yield limit.

The National Forest Management Act requires the agency to determine the suitability of National Forest System lands for timber production and has specific requirements for timber suitability analysis in land management plans. This analysis includes specific timber production terminology.

Timber production is the purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use (36 CFR 219.19). There is a distinction between regulated timber harvest as a resource use (timber production) and timber harvest as a management tool to achieve desired conditions.

Suitability is the appropriateness of applying certain resource management practices to a particular area of land, taking into consideration relevant social, economic, and ecological factors. Suitability is determined based on compatibility with plan desired conditions and objectives.

Per the 2012 Planning Rule, all forest plans must identify those lands that are suitable for timber production. This document describes the criteria used to make the determination of timber suitability on the Carson National Forest under the final plan, (alternative 2 – modified). The identification of an area as

suitable for a particular use or uses guides project and activity decision making and is not a commitment or a final decision approving any particular project or activity. It does not mean that a particular use will or will not occur in the area.

Phase 1: Lands that may be Suitable for Timber Production

Identification of land that may be suitable for timber production is the first phase in the process of determining lands that are suited for timber production. This preliminary classification is made prior to the consideration of plan components that may impact where timber production is desired and permitted. Lands that may be suitable excludes National Forest System lands based on the following criteria:

a. Land that is not forested, identified by having less than 10 percent tree cover at maturity or having a non-forest use (powerline clearings, residential or administrative sites, and improved pasture).

b. Known environmental factors (e.g., poor site conditions) exist that preclude reasonable assurance that restocking can be achieved within 5 years of final regeneration harvest.

c. Technology to harvest timber without causing irreversible damage is not currently available.

d. Timber production is prohibited by statute, executive order, or regulation, or the Secretary of Agriculture or the Chief of the Forest Service has withdrawn the land from timber production. Examples include designated wilderness areas, designated wild river segments, research natural areas, or other designated areas where timber production is specifically prohibited.

Forest lands that remain after this initial screening (following removal of lands under A–D) are termed "lands that may be suitable for timber production," and do not vary by alternative.

Non-forested Lands (Criteria A)

The identification of suitable lands relied heavily on existing Terrestrial Ecological Unit Inventory data for the Carson National Forest. To address non-forested lands, all terrestrial ecological units that are not capable of supporting 10 percent tree cover were removed from the analysis. Because some forested terrestrial ecological units have unforested components that are not mapped in the Terrestrial Ecological Unit Inventory, the remaining lands were refined by removing non-forested areas (tree cover capability is less than 10 percent) based on the Forest Service midscale vegetation classification.

Lands not Suitable for Timber Production due to Environmental and Technical Reasons (Criteria B and C)

The forested terrestrial ecological units remaining after criteria A screening were professionally evaluated by forest specialists[1] to determine their suitability based on soil and site productivity attributes in the terrestrial ecological unit reports. See table 1 below for a list of the terrestrial ecological units determined to be not suitable for timber production. The following conditions resulted in the exclusion of terrestrial ecological units from the suitable timber base (most excluded terrestrial ecological units had multiple contributing factors and conditions):

- Terrestrial ecological units with a climate class of 5(-1) or below, which represents marginal growth conditions for ponderosa pine production. Cooler and wetter climate classes (above 5(-1)) may be marginal for the preferred timber species on that site but were included because they have the potential to support other (non-preferred) tree species.

[1] Timber suitability workshop for the Santa Fe National Forest and Carson National Forest was held on December 4, 2017. Participants and attendees: Greg Miller (Soil Scientist), Jim Arcineiga (Forester), Peter Rich (Assistant Forest Planner), Robert Madera (Ecologist), Ken Reese (Forester), and Estella Smith (Soil Scientist).

- The presence and dominance of lithic soils, which suggests lower restocking potential due to shallow soils.
- Low reforestation potential or poor soil conditions, which would limit the ability to reforest within 5 years following final regeneration harvest.
- Low site indices (generally 60 or below), which suggest low site productivity and inadequate restocking potential.
- Severe erosion and mass wasting potential, which suggest timber harvest may cause irreversible damage to the site and to soil productivity.
- Other sensitive soil types and steep slopes (usually over 40 percent slope), which suggest likely irreversible damage.

To refine the analysis, slopes greater than 40 percent (areas susceptible to irreversible damage) were removed from the remaining Terrestrial Ecological Unit Inventory map units.

Table 1. Terrestrial Ecological Unit Inventory (TEUI) mapping units not suitable for timber production

TEUI Mapping Unit	Ecological Response Unit	Adequate restocking (criteria B)	Available technology (criteria C)	Reason for finding of not suitable for timber production
156	Ponderosa Pine Forest	No	Yes	Shallow soils, low productivity
179	Spruce-Fir Forest	No	No	Rocky outcrops, shallow soil inclusions, steep, erodible soils
202	Ponderosa Pine Forest	No	No	Steep, shallow soils, droughty, low reforestation potential
302	Bristlecone Pine	No	No	Steep, droughty, low site index, not a commercial species
306	Spruce-Fir Forest	No	No	Erodible soils
309	Spruce-Fir Forest	Yes	No	Erodible soils
311	Ponderosa Pine Forest	No	No	Shallow, rocky soils, low-moderate reforestation potential
313	Spruce-Fir Forest	No	No	Erodible soils
317	Spruce-Fir Forest	No	No	Steep, erodible soils
450	Ponderosa Pine Forest	No	No	Steep, rocky, low reforestation potential
475	Spruce-Fir Forest	No	No	Timber is not an identified use, steep, low productivity
531	Ponderosa Pine Forest	No	No	Low site index, low soil strength
626	Ponderosa Pine Forest	No	No	Cobbly soils, low site index, low reforestation potential
631	Ponderosa Pine Forest	No	No	Unstable soils, low site index
632	Spruce-Fir Forest	Yes	No	Portions are too wet, unstable soils
634	Spruce-Fir Forest	No	Yes	Cobbly, low site index, low reforestation potential
800	Ponderosa Pine Forest	No	No	Shallow soils, steep, droughty
803	Mixed Conifer - Frequent Fire	Yes	No	Steep, oak competition
817	Mixed Conifer - Frequent Fire	Yes	No	Steep, erodible, rocky soils
820	Mixed Conifer w/ Aspen	Yes	No	Steep, erodible, rocky soils

TEUI Mapping Unit	Ecological Response Unit	Adequate restocking (criteria B)	Available technology (criteria C)	Reason for finding of not suitable for timber production
822	Mixed Conifer - Frequent Fire	No	No	Low productivity, steep
823	Mixed Conifer w/ Aspen	No	No	Low productivity, steep, rocky
921	Mixed Conifer w/ Aspen	No	No	Low productivity, steep
922	Mixed Conifer w/ Aspen	No	No	Low productivity, steep
974	Sparsely Vegetated	No	No	Erodible, acidic soils
999	Spruce-Fir Forest	No	No	Steep, rocky soils

Lands Withdrawn from Timber Production (Criteria D)

Remaining lands were removed from the suitable timber base if timber production has been legally prohibited (criteria D). Areas removed because timber production is not allowed include designated wilderness areas (Pecos, Wheeler Peak, Columbine-Hondo, Latir Peak, Cruces Basin, and Chama River Canyon wilderness areas), The Rio Grande Wild and Scenic River, and inventoried roadless areas. Other designated areas with management specified by the laws associated with their enactment including, national recreational trails, national scenic trails, and national historic trails were not removed from lands that may be suitable for timber production because sustainable timber harvest is not inconsistent with the law, regulation, policy, or plan direction that directs management of these lands. For these areas, site specific analyses during project planning would determine appropriate timber harvest prescriptions that are consistent with plan components for these areas.

Lands that may be Suitable for Timber Production

Based on this first phase of the suitability analysis, there are 465,350 acres on the Carson National Forest that may be suitable for timber production (table 27). These “lands that may be suitable for timber production” do not vary among action alternatives in the forest plan revision environmental impact statement. The previous plan used a different process to identify lands that may be suitable. The previous process was not based on terrestrial ecological unit mapping or midscale vegetation mapping and was more generalized. The accuracy of mapping was lower and used different criteria for classification. Also, the order in which non-suitable lands are removed affects the number of acres in each category. For example, there are areas above tree line (non-forested) that are also in wilderness areas (withdrawn from timber production) that are counted on line 2 in table 2, not on line 4. In the previous process, those areas were included in lands withdrawn from timber production. All these factors contribute to a slightly different total for lands that may be suitable under the existing plan (487,898 acres). The actual location of those acres is significantly different.

Table 2. Determination of lands that may be suitable for timber production

Land classification category	Acres not suitable for timber production	Potentially suitable acres
1. Total Carson National Forest acres	not applicable	1,486,353
2. Non-forested land	747,743	not applicable
3. Lands where irreversible resource damage is likely and adequate restocking cannot be assured	212,093	not applicable
4. Lands withdrawn from timber production	61,167	not applicable
5. Total lands not suitable for timber production due to legal, technical, or environmental reasons (line 2+3+4)	1,021,003	not applicable
6. Lands that may be suitable for timber production (line 1-5)	not applicable	465,350

Phase 2: Lands suited and not suited for timber production based on compatibility with desired conditions and objectives

The second phase of the timber suitability analysis determines which of the lands that may be suitable for timber production (identified in phase 1) are suited for timber production based on plan components. Additional areas may be removed from the suitable timber base when desired conditions, standards, and guidelines are not compatible with timber production. Lands and areas that met the following criteria were defined as suitable for timber production:

- Timber production is a desired primary or secondary use of the land.
- Timber production is anticipated to continue after desired conditions have been achieved.
- A flow of timber can be planned and scheduled on a reasonably predictable basis.
- Regeneration of the stand is intended.
- Timber production is compatible with the desired conditions or objectives for the land.

On lands identified as unsuitable for timber production in this phase, harvest may still occur to protect or manage for multiple-use values other than timber production. Common examples include salvage, sanitation, public health, or safety, but may also include various other restoration activities. For example, meadow restoration may require cutting encroaching trees. While this activity may produce timber as a byproduct, the treatment would have objectives other than timber production (e.g., keeping the meadow open as per desired conditions for that vegetation type) and would not be included in the suitable timber base. Table 3 shows management areas included in the final plan, and whether they are suitable or not suitable for timber production based on their plan components. Table 4 and figure 1 display the criteria and resulting acres considered to be suitable for timber production under the final plan.

Table 3. Lands and areas suitable and not suitable for timber production based on compatibility with desired conditions and objectives

Alternative	Area	Suitable	Not Suitable
2-modified	Recommended Wilderness Management Area		X
2-modified	Eligible Wild and Scenic River Management Area – wild classification		X
2-modified	Eligible Wild and Scenic River Management Area – scenic or recreational	X	
2-modified	Developed Winter and Summer Resort Management Area	X	
2-modified	Potential Developed Recreation Site Management Area	X	
2-modified	Jicarilla Natural Gas Management Area	X	
2-modified	Grassland Maintenance Management Area		X
2-modified	Valle Vidal Management Area	X	
2-modified	San Antonio Management Area	X	
2-modified	Proposed Research Natural Area Management Area		X

Table 4. Timber production suitability determination (alternative 2-modified)

Phase of the Timber Suitability Analysis	Land classification category	Acres
1st	A. Total National Forest System lands in the plan area	1,486,353
1st	B. Lands not suitable for timber production due to legal, technical, or environmental reasons	1,021,003
1st	C. Lands that may be suitable for timber production	465,350
2nd	E. Lands removed because management objectives limit timber harvest	see E-1 to E-3
2nd	E-1. Recommended Wilderness	2,916
2nd	E-2. Eligible Wild and Scenic River – wild classification	6,545
2nd	E-3. Grassland Maintenance Management Area	81
2nd	E-4. Proposed Research Natural Area Management Area	540
2nd	F. Total lands not suitable for timber production (B+E)	1,031,085
2nd	G. Total lands suitable for timber production (A-F)	455,268

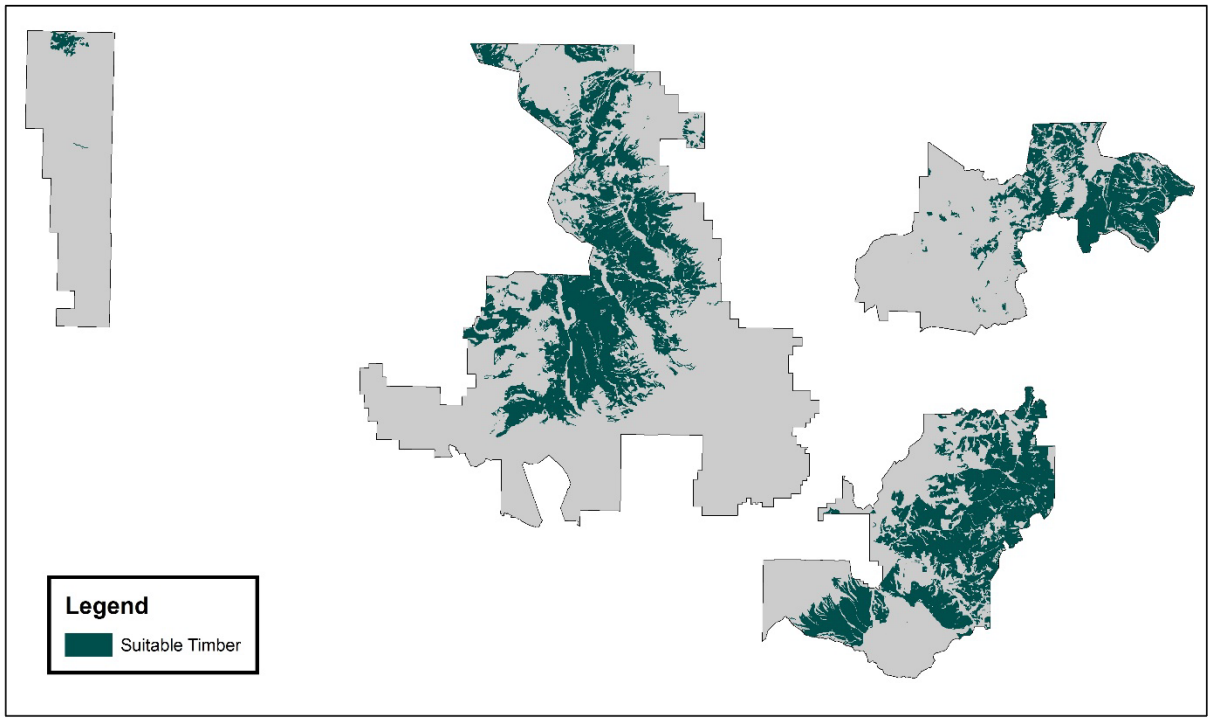

Figure 1. Areas suitable for timber production under the final plan (alternative 2 – modified)