Title: The Spatial and Temporal Impacts of Mechanical Fuel Treatments on Wildfire
Hazard Ratings in Colorado

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Abstract: A set of uneven-aged and even-aged treatments to reduce fire hazard,
developed as part of a broad study to examine the impacts of mechanical fuel treatments
on timber markets in the Western United States, were simulated for 4.5 million
timberland acres in Colorado using available Forest Inventory and Analysis (FIA) data.
This article describes their simulated impact on wildfire hazard with and without limits
on basal area removed to retain canopy closure. We also examine how hazard ratings
evolve as stand conditions change post-treatment in ponderosa pine and Douglas-fir
forest types. The results show that, with a limit on removals, the even-aged treatments
initially place more area within our hazard thresholds. Simulating growth and
regeneration on ponderosa pine and Douglas-fir stands following treatment reveals that
the uneven-aged treatments retain more treated area above our hazard thresholds after 25
years.   However, basal area recovers to pre-treatment levels within 15 to 25 years for all
six treatments considered. The choice of treatment has implications for forest condition
at the stand and landscape levels, the effectiveness and extent of wildfire risk reduction,
the economic viability and social acceptance of a treatment program, and the length of
time before required reentry into a stand for further treatment.

Keywords: Wildfire, Risk, Fuel Treatments, Stand Density Index

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1. Introduction

Silvicultural treatments are methods for altering forest conditions and thereby changing the likelihood and severity of wildfire (Graham et al., 1999; Graham et al., 2004; Raymond and Peterson, 2005; Stephens, 1998; Stratton, 2004; van Wagtendonk, 1996; Wilson et al., 1998). Properly designed fuel treatments can increase resiliency and resistance in dry forests and change the behavior of subsequent wildfires so that suppression is more readily accomplished (Graham et al., 2004) by changing the arrangement of fuel. Recent legislative actions such as the Healthy Forests Restoration Act (HFRA, 2003) and policy initiatives like the Ten Year Comprehensive Strategy and Implementation Plan (WGA, 2001; WGA, 2002) envision broad-scale fuel reductions to reduce the likelihood and severity of uncharacteristic wildland fire.

Many treatment options are available to land managers seeking to reduce fire hazard. Prescribed burning and mechanical thinning change fire hazard by reducing the amount of fuel, while treatments such as mastication and mulching change fire hazard without a reduction in loading (Graham et al., 2004). Prescribed fire, while often the cheapest to implement, is not a viable option in many cases due to poor weather conditions, concerns about smoke, and the likelihood that a fire will escape in a populated area (USFS, 2003). Mechanical treatment alternatives can create a variety of uneven-aged or even-aged stand structures depending on the desired treatment goals such as fuel reduction, silvicultural objectives, wildlife habitat maintenance requirements, and restoration of spatial and structural conditions.

The purpose of this paper is to describe a set of simulated uneven-aged and even-aged treatments and their impacts on wildfire hazard ratings in Colorado. The methods section will commence with descriptions of the data and the metrics for quantifying wildfire hazard. The uneven-aged treatments are based on the Stand Density Index (SDI) of Reineke (1933) and remove trees from all size classes. The even-aged thin-from-below (TFB) treatments remove smaller trees first. The results section will show how each treatment changes stand condition and wildfire hazard. We also projected the growth of Colorado ponderosa pine and Douglas-fir stands out 25 years to examine the temporal efficacy of the treatments. The paper will conclude with a discussion of the implications of our findings for management and policy.

2. Methods
2.1 Data and Hazard Assessment

Information on Colorado forest conditions was obtained from Forest Inventory and Analysis (FIA) data provided by the U.S. Forest Service[1]. A set of screens was applied to the data to eliminate plots prior to the determination of pre-treatment wildfire risk. A plot was eliminated if it was classified as reserved (withdrawn by law for the production of timber products), located in a designated roadless area (road management activities mostly prohibited), or not classified as timberland (productivity at least 20 ft^3/acre/year). There are 21.6 million acres of forestland in Colorado, of which 18.9 million acres are not reserved. Of the nonreserved forestland 11.6 million acres are classified as timberland. Removal of roadless areas from consideration left approximately 9.3 million acres of timberland prior to the pre-treatment measurement of wildfire hazard.

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[1] Colorado RPA periodic inventory, 1983 cycle 2. Available at http://www.fia.fs.fed.us/tools-data/data/.

Wildfire hazard for this study was assessed using the torching index (TI) and crowning index (CI) of Scott and Reinhardt (2001), which links the surface fire (1972) and crown fire (1991) models of Rothermel with the transition model of Van Wagner (1977). TI is the windspeed at a height of 20 feet that is sufficient to create a crown fire, when fire moves from surface fuels to the crowns of individual trees. TI is a function of surface fuel and foliar moisture content, canopy wind reduction, canopy base height (CBH), and slope (Scott and Reinhardt, 2001). CI is the windspeed at a height of 20 feet that is sufficient to induce active crowning, when fire moves through the forest canopy. CI is influenced by surface fuel moisture content, canopy bulk density (CBD), and slope (Scott and Reinhardt, 2001). Higher values of TI and CI correspond to lower hazard ratings. The TI and CI thresholds for each plot for were:

1. $TI \geq 25$ mph and $CI \geq 25$ mph or
2. $TI < 25$ mph and $CI \geq 40$ mph.

The first threshold, both TI and CI of at least 25 mph, would protect most stands from both the initiation and active spreading of crown fire. The second threshold, CI of at least 40 mph even if TI does not meet the 25 mph objective, reflects the theory that if CI is high enough, a crown fire would not actively spread even if torching were to occur. A plot was excluded from treatment if it meets either of the two threshold conditions.

A plot was eligible for treatment if it did not meet one of these conditions. On the eligible plots our objective was to simulate a change in stand characteristics, and hence CBD and CBH, through the treatments that enabled each plot to reach one of the two thresholds. The thresholds also allowed us to define hazard levels for plots that did not meet these criteria pre- or post-treatment. Plots with $TI < 25$ and $25 < CI \leq 40$ were classified as low hazard, plots with $TI \geq 25$ and $CI < 25$ were classified as medium hazard, and plots with $TI < 25$ and $CI < 25$ were classified as high hazard. These ratings reflect our goal of reducing active crown fire hazard through the treatment simulations.

2.2 Treatments

We considered both uneven-aged and even-aged treatments in our analysis. The uneven-aged treatments are SDI- based and thin across all diameter classes. These treatments, referred to as SDI-FLEX (Shepperd, 2006) begin with a forest type and ecoregion-specific maximum SDI for each plot. The maximum SDI is a benchmark for the maximum possible density of stems per acre. Two variables are used to manipulate the shape and height of the stocking curve for each plot. The flex factor (*flex*) determines how SDI is distributed among diameter classes while the SDI seed (*seed*) establishes the percent of maximum SDI stocking desired on the residual plot. With both *flex* and *seed* set at 1, the plot is stocked at the maximum SDI level with an equal distribution of SDI stocking in all diameter classes. Decreasing *seed* while keeping *flex* constant lowers the plot stocking curve while maintaining an equal distribution of SDI across diameter classes. Decreasing *flex* while keeping *seed* constant flattens the stocking curve (changes its slope) by reducing SDI in smaller diameter classes. The even-aged thin from below treatments remove a given amount of biomass from a plot by cutting the smallest diameter trees first and successively cutting those of larger diameter.

2.3 Simulation Algorithm

Several existing software tools were integrated in a single simulation process to calculate risk and simulate treatment. Pre- and post-treatment CBD and CBH for each plot were determined using the FORTRAN algorithm of Reinhardt et al. (in press). CBH

was calculated as the lowest height where the 3-foot running mean of the crown's weight was at least 30 lb/acre/ft. CBD was the maximum of a 13-foot running mean of crown weight. Crown fire hazard was measured using NEXUS (Scott, 1999), a program that takes the plot-level CBD, CBH, and slope as well as assumptions on fuel moisture and fuel model to estimate a variety of fire behavior variables including TI and CI. Fuel moisture conditions were assumed to be "summer drought" (Rothermel, 1991). The lack of plot-level information on surface fuels and the broad scope of the area being simulated forced us to make some simplifying assumptions in this regard. Fuel model 9 (Albini, 1976; Anderson, 1982), hardwood or long-needle pine litter, was assumed for all forest types. We recognize that it is highly unlikely that every acre of timberland considered by this study would be classified as model 9 based on actual fuels. However the mid-range of fire behavior exhibited by model 9 made it a good candidate for a study of this breadth. Table 1 shows the moisture, loading, and site variables that were used as inputs into NEXUS. Note that only slope, CBD, and CBH varied among plots- all other variables are held constant. The objective of the treatments was to influence CBH and CBD through changes in stand condition.

The treatment simulation can be broken into three parts: pre-treatment, treatment, and post-treatment. The pre-treatment phase began with an assessment of CBD, CBH, TI and CI on the plots representing the 9.2 million acres of eligible timberland. Plots which met one of the two threshold conditions were eliminated from the pool of eligible plots, leaving roughly 4.5 million acres of timberland in Colorado on which treatments would be simulated.

The uneven-aged SDI treatments and even-aged TFB treatments were simulated with and without limits on the amount of basal area removed. The basal area removal limits were designed to retain closure of the canopy. Loss of canopy closure may introduce conditions that intensify surface fires (Pollet and Omi, 2002) and stimulate the initiation of crown fires.

2.3.1 Forest Types other than Lodgepole and Fir-Spruce

On plots classified as a forest type other than lodgepole or fir-spruce, two uneven-aged stand density treatments and one even-aged thin from below treatment were applied with ("A" scenario) and without ("B" scenario) a 50% limit on basal area removed (*barem*). The first stand density treatment (SDI 1), biased toward leaving greater numbers of small trees and designed to result in high structural diversity, treated plots by setting *flex* =1. The second stand density treatment (SDI 2), designed to leave fewer small trees than SDI 1 and to result in limited structural diversity, treated plots by setting *flex* = 0.844421 (the lowest value that will maintain a continuously downward sloping post-treatment stocking curve across all diameter classes). The even-aged thin from below treatment (TFB 3) removed trees on a plot, beginning with the smallest diameter and moving up, necessary to remove basal area in successive 1% increments.

Each plot's optimal prescription for each of the three treatments for scenario "A" was determined by performing a search over the parameter space of each treatment to locate the highest values of *seed* for SDI 1 and SDI 2 and the lowest value of *barem* for TFB 3 that achieved the first of (1) TI $\geq$ 25 and CI $\geq$ 25, (2) TI < 25, CI $\geq$ 40, or (3) 50% of beginning basal area had been removed. Note that under the "A" scenario some plots will not meet one of the two risk thresholds due to the limit on basal area removed. For the "B" scenario, a search was performed over the parameter space of each treatment to

locate the highest values of *seed* for SDI 1 and SDI 2 and the lowest value of *barem* for TFB 3 that achieved the first of (1) TI ≥ 25 and CI ≥ 25 or (2) TI < 25, CI ≥ 40. All plots should achieve one of the risk thresholds under the "B" scenarios.

The pre- and post-treatment weighted average basal area per acre by diameter class for these forest types with a 50% limit on basal area removed (scenario "A") are shown in Figure 1 to illustrate the relative impact of each treatment on average stocking. Relative to pre-treatment conditions the thin from below treatment (TFB 3) removed the most basal area in the lower diameter classes while SDI 1 removed the most area in the larger classes. SDI 2 removed more area in the under 5" class than SDI 1, but less than TFB 3. This relationship inverts around the 9"-10.9" class- in the larger classes SDI 2 removed more area than TFB 3 but less than SDI 1. Figure 2 illustrates pre- and post-treatment visualizations for a Douglas-fir stand in San Miguel County where pre-treatment torching index is below the threshold of 25 mph. SDI 1, by removing larger trees, reduced CBD and increased CI to above 40 mph but did not impact CBH and TI. SDI 2 removed more small trees than SDI 1, increasing both TI and CI through the increase in CBH and reduction in CBD. The thin-from-below treatment increased TI through an increase in CBH but minimized the change in CBD and hence left CI relatively unchanged. Compared to pre-treatment, SDI 1 and SDI 2 produced reductions in basal area of around 35 ft^2 and 25 ft^2 respectively while basal area was virtually unchanged for TFB 3.

2.3.2 *Lodgepole and Fir-Spruce Forest Types*

Plots classified as forest type lodgepole or fir-spruce were treated with a less aggressive thin from below treatment, TFB 4. The "A" scenario for these forest types limited removals to 25% of beginning basal area to avoid wind throw in these vulnerable forest types with stand replacement fire regimes (Alexander, 1986a; Alexander, 1986b). The "B" scenario allowed a maximum of 50% of beginning basal area to be removed. Each plot's optimal prescription for TFB 4 under scenario "A" was determined by performing a search over the parameter space of each treatment to locate the lowest value of *barem* for that achieved the first of (1) TI ≥ 25 and CI ≥ 25, (2) TI < 25, CI ≥ 40, or (3) 25% of beginning basal area had been removed. For the "B" scenario, a search was performed over the parameter space of each treatment to locate the lowest value of *barem* that achieved the first of (1) TI ≥ 25 and CI ≥ 25, (2) TI < 25, CI ≥ 40, or (3) 50% of beginning basal area had been removed. The presence of removal limits on both of the scenarios for these forest types implies that not all plots will meet one of the two thresholds. Table 2 provides summary descriptions of the simulated treatments by forest type and scenario.

3. Results

Post-treatment processing consisted of reassessing CBD and CBH on each plot using the treated conditions and estimating new fire behavior metrics. Aggregate treatment outcomes for the treatments are given in Table 3. Weighted average fire CBD, CBH, TI, CI, rate of spread, heat per unit area, fireline intensity, and flame length are shown in Table 4[2].

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[2] Space prevents the presentation and discussion of weighted average fire behavior metrics for finer spatial scales, such as individual forest types or counties, within Colorado. These are available from the author

3.1 Results for Forest Types other than Lodgepole and Fir-Spruce

Approximately 2 million acres of timberland in these forest types did not meet the TI and CI thresholds based on their initial inventoried condition. Pre-treatment CBH and CBD averaged 6 feet and 0.14 kg/m^3, respectively, while average initial TI and CI were below the 25 mph threshold. The "A" treatments did not achieve the thresholds on every acre due to the limit on basal area removed. SDI 1A achieved the thresholds on just over one-half of eligible acres, SDI 2A on almost two-thirds, and TFB 3A on 87%. The absence of a removal threshold for the "B" treatments resulted in every eligible acre meeting the treatment objectives. For both scenarios, TFB 3 had the most acres with both TI and CI $\geq$ 25 mph. SDI 2A resulted in the most acres with CI $\geq$ 40 mph, even though it removed fewer large trees than SDI 1A. However removing the limit on basal area removed allowed SDI 1B to exceed SDI 2B in the number of acres with CI $\geq$ 40 mph. Average CBH was modestly improved by the uneven-aged SDI treatments and increased by about two-thirds for the even-aged options. The TI improvements embody the CBH changes- only SDI 1A failed to meet the 25 mph objective on average and the two even-aged treatments, TFB 3A and TFB 3B, almost doubled TI from its initial average value. CBD improved by 41% to 56%, resulting in every treatment reaching an average CI above the threshold of 25 mph. Mean fireline intensity was reduced by at least one-half under all options, with the even-aged thinnings resulting in the most dramatic decreases.

3.2 Results for Lodgepole and Fir-Spruce Forest Types

Over 2.5 million acres of lodgepole and fir-spruce timberland did not meet either of the thresholds based on their initial inventoried conditions. Doubling the maximum amount of beginning basal area removed from 25% in TFB 4A to 50% in TFB 4B increased the treated area meeting our thresholds by 40%. Average CBD was doubled at a minimum and average TI increased substantially under both treatments. On average, TFB 4B met the CI threshold of 25 mph but TFB 4A did not. Both treatments showed large improvements in rate of spread, heat per unit area, fireline intensity, and flame length.

4. Growth and Temporal Efficacy of the Treatments

The results presented in Tables 3 and 4 reflect conditions at a single point in time, immediately following the simulated treatments. To examine the temporal efficacy of the treatments as well as the entry of initially "in condition" stands into "out of condition" status as stand conditions change over time, treated and untreated ponderosa pine and Douglas-fir forest types were projected 25 years into the future.

4.1 Methods

Growth and regeneration were projected on ponderosa pine and Douglas-fir plots, including 1.6 million acres of that received the simulated treatments as well as the 2.2 million untreated acres that initially met the threshold conditions for TI and CI. Future stand conditions were projected in five year steps using the Landscape Management System (LMS; McCarter et al., 1998) and the Central Rockies variant of the Forest Vegetation Simulator assuming no additional treatments over the 25 year projection. Regeneration for treated plots was simulated by partitioning basal area into a series of groups, where each group was assigned regeneration based on the average profile of

upon request. While the metrics presented in Table 4 illustrate the simulation results at a very broad aggregate level, they are useful for comparing average pre- and post-treatment behavior.

seedlings for plots with pre-treatment basal area within that group. Within a group, the pre-treatment inventoried mean number of stems per acre, mean height, and mean diameter of trees less than 1" dbh were calculated by species for each forest type. A plot was matched to a regeneration profile based on its post-treatment basal area and forest type. For untreated plots, regeneration was the initial inventory of trees less than 1" dbh. Regeneration for both treated and untreated plots was inserted between the second and third five year growth step. TI and CI were measured after each growth step to assess the evolution of wildfire hazard over the 25 year projection.

4.2 Results

The 25 year projections of the proportion of area meeting the thresholds for treated and untreated stands are shown in Table 5, while Figure 3 shows the projected trajectory of weighted average basal area per acre for the treated stands. For both scenarios the post-treatment percentages of area in condition for the three treatments match closely with those for Colorado as a whole.

The sharp declines after the first five year growth step in the proportion of acres in condition for all treatments are not surprising. The simulation algorithms chose the optimal prescription that met the thresholds as closely as possible. It is quite conceivable that after only five years the change in stand conditions could result in a 1 or 2 mph drop in TI and CI so that a stand no longer met our objectives. On average 25% of treated area remained in condition under scenario "A" after five years, with TFB 3A having retained the most at 27%. However the even-aged treatment had the least number of acres in condition after five years under scenario "B". The decrease in treated area with CI of at least 40 mph after five years was very pronounced for the uneven-aged treatments in the "A" scenario but much smaller in the "B" scenario.   Almost half of the treated area still met our objectives after five years with SDI 1B as a result of the large share of acres with CI at or above 40 mph.

Over the next 20 years the steeper trajectory of average basal area for SDI 1A and SDI 2A slowly approached TFB 3A and thus at the end of the projection the three treatments in the "A" scenario resulted in a similar aggregate area, 7% to 8%, in condition. SDI 1B and 2B are very comparable in the amount of area with TI and CI of at least 25 mph over the projection period. The large advantage held by SDI 1B in area with CI $\geq$ 40 slowly deteriorated after five years post-treatment. Between 15 years to 25 years post-treatment it was very close to SDI 2B in the total amount of area in condition.

Over three-quarters of the initially untreated acres still met our thresholds for TI and CI after 25 years. The remaining one-quarter, nearly 500,000 acres, which were initially "in condition" moved into the status of requiring treatment based on our objectives over the course of the projection.

The frequency distributions of land area moving from one hazard category to another over the simulation as growth and regeneration change plot conditions allowed us to produce a set of transition matrices. These are shown in Tables 6-11 for SDI 1A, Tables 12-17 for SDI 2A, Tables 18-23 for TFB 3A, Tables 24-29 for SDI 1B, Tables 30-35 for SDI 2B, Tables 36-41 for TFB 3B, and Tables 42-46 for initially untreated stands. The utility of these transitions is that we can use them in Markov chains to understand the probability that a stand will attain an ending condition given a starting point. At broader spatial scales, we can calculate the percentage of total treated area that moves along a defined path from one hazard condition to another over time. See the accompanying

document "A Description of the Timber-Based RTP Mixed-Integer Goal Program Economic Model" (Prestemon et al.) for an application of these matrices to a timber market optimization model.

5. Discussion

This analysis considered the efficacy of a suite of even- and uneven-aged treatments to address fire hazard in Colorado based on their ability to reduce crown fire initiation and spread. The treatment simulations were performed over a very broad area using available forest inventory data and consistent assumptions about surface fuels and weather conditions. The results show that the even-aged treatments place the most acres at or above the threshold of 25 mph for both TI and CI. The uneven-aged treatment that removed more large trees achieved CI ≥ 40 on the most acres when there was not a limit on removals while the uneven-aged treatment that removed more small trees achieved CI ≥ 40 on the most acres when there was a limit on removals. The growth projection suggests that the two uneven-aged treatments retain more acres in condition over time when there is not a limit on removals while all three treatments were comparable in area retained when a limit was imposed.

The comparison of the treatments and growth projections assumed that the same treatment would be applied across the entire landscape at a single point in time. In reality the choice of treatment and timing of application are local decisions based on a variety of factors including political, social, and cultural institutions and goals, treatment and processing capacity, and management goals other than wildfire prevention. Market conditions and dynamics are a critical consideration in the decision to undertake a treatment program and the choice of treatment at the plot and landscape levels. A large program would introduce a significant amount of product into the market. As broad areas are treated, the influx of material would drive down prices (Abt and Prestemon, 2006) increasing the net cost of treatment, thereby making additional treatments more expensive. These price impacts would make a large program more costly compared to one that assumed a constant price, increasing the length of a program given a fixed annual government subsidy for treatment and increasing the necessary annual subsidy given a fixed date for completion of the program.

It is important to note that the price impacts would vary across the treatments. Table 47 shows the softwood sawlog volume removed for each treatment. For forest types other than lodgepole and fir-spruce, the expected volume gradients within the two scenarios (volume decreases as more small trees are removed) and across scenarios (volume is higher with no limit on removals) imply differing magnitudes of welfare changes for timber producers and consumers (mill owners). The even-aged treatments, TFB 3A and TFB 3B, would likely have the smallest impacts while the uneven-aged treatments that removed the most large trees, SDI 1A and SDI 1B, would have the most substantial. But since the uneven-aged treatments result in the most sawlog volume, they are more able to "pay for themselves" than the even-aged alternatives. In evaluating a treatment, revenue generation and price-induced welfare changes must be weighed against hazard reduction, temporal efficacy, and the other various management and societal objectives.

Since fire behavior objectives may be met with either even-, or uneven-aged management, a word must also be said as to the social implications of choosing one

approach over the other. Use of even-aged treatments in the Wildland Urban Interface may not be socially acceptable given that choosing an even-aged thin-from-below treatment implies that the residual forest must eventually be removed and replaced with a new forest. Uneven-aged management might be more appropriate in situations where the objective is to maintain a desired forest condition through time, since it allows for the establishment of some younger "replacement trees" at each entry as well as the retention of some larger trees on-site at all times.

Figure 3 reveals that basal area recovers to pre-treatment levels between 15 and 25 years, depending on the treatment. Over the 25 years about one-half million acres that initially met the threshold conditions moved into out of condition status. These results imply the need for both passive and active management past the initial treatment application. The 25 year projection assumes no natural disturbances or human interventions past the initial treatment. The presence of wildfire, insects, and disease would alter stand conditions and hence change the fire behavior metrics. Under acceptable conditions, a "let burn" policy for wildland use fire would allow stands to self-regulate. Regeneration and the subsequent growth of ladder fuels in treated stands will require a suite of management alternatives to maintain stand conditions within desired tolerances. Reentry for precommercial thinning and prescribed burning will likely be necessary, making a treatment program longer and more expensive.

Since all eligible land will not be treated at the same time, the return of treated stands into hazardous condition raises equity issues. For example, should all land be treated once before reentering stands a second time to perform additional management? An alternative would be to treat stands with the most hazardous conditions regardless of the number of previous management interventions or the interval since the last application. One implication of a policy such as this is that some medium or low hazard locations might not be treated at all if priority stands quickly return to high hazard condition following treatment.

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Table 1. Fuel model and fuel moisture variables used for estimating crown fire hazard.

Type	Variable	Value
Surface Fuels: moisture	1-hour fuel moisture (%)	4
	10-hour fuel moisture (%)	5
	100-hour fuel moisture (%)	7
	Live fuel moisture (%)	78
Surface Fuels: model 9 loading and depth	1-hour fuel loading (tons/acre)	2.92
	10-hour fuel loading (tons/acre)	0.41
	100-hour fuel loading (tons/acre)	0.15
	Live fuel loading (tons/acre)	1×10^{-5}
	Fuel bed depth (feet)	0.20
Site Conditions	Foliar moisture content (%)	100
	Open windspeed (mph)	15
	Wind reduction factor (%)	25
	Canopy fuel load (tons/acre)	4
	Canopy bulk density (kg/m^3)	Plot specific
	Canopy base height (feet)	Plot specific
	Slope (%)	Plot specific

Table 2. Summary of treatments.

Treatment	Description	Removal Limit*
forest types other than lodgepole and fir-spruce		
SDI 1A	uneven-aged: leave more small trees	50%
SDI 2A	uneven-aged: leave more large trees	50%
TFB 3A	even-aged; thin from below	50%
SDI 1B	uneven-aged: leave more small trees	none
SDI 2B	uneven-aged: leave more large trees	none
TFB 3B	even-aged; thin from below	none
lodgepole and fir-spruce forest types		
SDI 4A	even-aged; thin from below	25%
SDI 4B	even-aged; thin from below	50%

* As a percentage of beginning basal area.

Table 3. Aggregate treatment summary by risk level for forest types other than lodgepole and fir-spruce.

| Treatment | Area In Condition | | | | Area Out of Condition | | | | |
| | Acres (000s)* | | | | Acres (000s)** | | | | |
	in 25	in 40	Total	Total %	low	med.	high	Total	Total %
forest types other than lodgepole and fir-spruce									
Pre-Treat.					562	673	728	1,963	100%
SDI 1A	570	467	1,037	53%	478	228	220	926	47%
SDI 2A	759	515	1,274	65%	380	174	135	689	35%
TFB 3A	1,317	391	1,708	87%	79	170	6	255	13%
SDI 1B	953	1,010	1,963	100%	0	0	0	0	0%
SDI 2B	1,090	873	1,963	100%	0	0	0	0	0%
TFB 3B	1,506	457	1,963	100%	0	0	0	0	0%
lodgepole and fir-spruce forest types									
Pre-Treat.					308	1,072	1,149	2,529	100%
TFB 4A	788	83	870	34%	205	1,231	222	1,658	66%
TFB 4B	1,684	189	1,873	74%	127	490	38	655	26%

*in 25 ≡ TI ≥ 25 and CI ≥ 25; in 40 ≡ TI < 25 and CI ≥ 40
**low ≡ TI < 25 and 25 ≤ CI < 40; med. ≡ TI ≥ 25 and CI < 40; high ≡ TI < 25 and CI < 25

Table 4. Weighted average fire behavior statistics.

	Canopy Base Height (ft)	Canopy Bulk Density (kg/m3)	Torching Index (mph)	Crowning Index (mph)	Rate of Spread (ft/min)	Heat Per Unit Area (btu/ft2)	Fireline Intensity (btu/ft/sec)	Flame Length (ft)
forest types other than lodgepole and fir-spruce								
Pre-Treatment	6.077	0.138	22.834	21.175	18.141	641.551	312.742	6.696
SDI 1A	6.436	0.081	24.357	30.068	13.334	514.403	152.392	4.362
SDI 2A	6.800	0.076	25.952	31.106	12.486	491.665	129.853	4.034
TFB 3A	10.448	0.078	40.072	30.055	10.364	437.750	79.318	3.284
SDI 1B	6.877	0.060	26.328	36.843	10.907	453.224	86.647	3.422
SDI 2B	7.173	0.063	27.529	34.727	10.942	454.086	87.723	3.435
TFB 3B	10.633	0.072	40.732	31.015	10.298	436.313	77.865	3.264
lodgepole and fir-spruce forest types								
Pre-Treatment	6.837	0.173	26.843	17.998	17.130	684.302	324.760	7.053
TFB 4A	12.776	0.123	49.214	22.804	9.172	442.874	81.406	3.268
TFB 4B	14.239	0.092	54.390	26.635	8.472	422.363	60.508	2.944

Table 5. Proportion of ponderosa pine and Douglas-fir acres meeting our thresholds based on a 25 year projection using LMS and the Central Rockies variant of FVS.

	Percentage of Acres Meeting Thresholds					
Treatment	post-treat.	+5 yrs.	+10 yrs.	+15 yrs.	+20 yrs.	+25 yrs.
For plots that received simulated treatment*						
1: Percentage of area with TI $\geq$ 25, CI $\geq$ 25						
SDI 1A	33.66%	19.32%	19.16%	14.51%	11.06%	7.23%
SDI 2A	42.74%	23.52%	23.78%	16.69%	13.15%	7.90%
TFB 3A	68.90%	23.29%	20.56%	16.82%	12.34%	6.92%
SDI 1B	52.38%	31.17%	28.77%	23.23%	15.80%	11.72%
SDI 2B	59.90%	29.64%	31.03%	23.66%	15.52%	10.67%
TFB 3B	77.38%	23.91%	20.71%	15.41%	10.81%	5.54%
2: Percentage of area with TI < 25, CI $\geq$ 40						
SDI 1A	21.50%	2.34%	0.63%	0.26%	0.16%	0.16%
SDI 2A	23.22%	1.02%	2.12%	0.94%	1.43%	0.16%
TFB 3A	18.56%	3.49%	2.86%	2.10%	0.00%	0.00%
SDI 1B	47.62%	16.57%	9.29%	5.74%	3.57%	2.54%
SDI 2B	40.10%	4.73%	2.78%	2.93%	2.16%	1.67%
TFB 3B	22.62%	3.73%	3.10%	2.34%	0.24%	0.24%
3 = 1 + 2: Percentage of area with TI $\geq$ 25, CI $\geq$ 25 or TI < 25, CI $\geq$ 40						
SDI 1A	55.16%	21.66%	19.79%	14.76%	11.22%	7.39%
SDI 2A	65.96%	24.55%	25.90%	17.64%	14.58%	8.06%
TFB 3A	87.46%	26.78%	23.42%	18.92%	12.34%	6.92%
SDI 1B	100.00%	47.73%	38.06%	28.98%	19.38%	14.26%
SDI 2B	100.00%	34.37%	33.82%	26.59%	17.68%	12.34%
TFB 3B	100.00%	27.65%	23.82%	17.76%	11.05%	5.78%
For plots that did not receive simulated treatment**						
4: Percentage of area with TI $\geq$ 25, CI $\geq$ 25						
		84.65%	83.05%	75.73%	73.18%	70.93%
5: Percentage of area with TI < 25, CI $\geq$ 40						
		9.24%	6.60%	7.84%	6.80%	6.55%
6 = 4 + 5: Percentage of area with TI $\geq$ 25, CI $\geq$ 25 or TI < 25, CI $\geq$ 40						
		93.89%	89.65%	83.57%	79.97%	77.48%

* area failing to initially meet TI $\geq$ 25 and CI $\geq$ 25, or TI < 25 and CI $\geq$ 40
** area initially meeting TI $\geq$ 25 and CI $\geq$ 25, or TI < 25 and CI $\geq$ 40

Table 6. Transition matrix for treatment 1A: pre- to post-treatment.

	In Condition		Out of Condition			
	TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	***Total***
In Condition						
TI & CI ≥ 25						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
TI < 25, CI ≥ 40						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	37.9	306.2	41.8	0.0	0.0	**386.0**
overall %	2.39%	19.30%	2.64%	0.00%	0.00%	**24.33%**
row %	9.83%	79.34%	10.83%	0.00%	0.00%	**100.00%**
column %	7.10%	89.76%	11.73%	0.00%	0.00%	
TI ≥ 25, CI < 25						
acres (000s)	436.2	0.0	0.0	163.3	0.0	**599.5**
overall %	27.49%	0.00%	0.00%	10.29%	0.00%	**37.78%**
row %	72.76%	0.00%	0.00%	27.24%	0.00%	**100.00%**
column %	81.68%	0.00%	0.00%	92.76%	0.00%	
TI & CI < 25						
acres (000s)	59.9	34.9	314.5	12.7	179.0	**601.1**
overall %	3.78%	2.20%	19.82%	0.80%	11.28%	**37.89%**
row %	9.97%	5.81%	52.32%	2.12%	29.78%	**100.00%**
column %	11.22%	10.24%	88.27%	7.24%	100.00%	
Total						
acres (000s)	**534.0**	**341.2**	**356.3**	**176.0**	**179.0**	1,586.5
overall %	**33.66%**	**21.50%**	**22.46%**	**11.09%**	**11.28%**	

TO

FROM

Table 7. Transition matrix for treatment 1A: post-treatment to 5 years following treatment.

| | **TO** | | | | | |
| | **In Condition** | | **Out of Condition** | | | |
	TI & CI ≥ 25	TI < 25, CI ≥ 40	TI < 25, 25 ≤ CI < 40	TI ≥ 25, CI < 25	TI & CI < 25	*Total*
In Condition						
TI & CI ≥ 25						
acres (000s)	112.8	2.5	54.0	332.9	31.7	**534.0**
overall %	7.11%	0.16%	3.41%	20.98%	2.00%	**33.66%**
row %	21.12%	0.47%	10.12%	62.34%	5.94%	**100.00%**
column %	36.79%	6.81%	11.43%	64.77%	12.39%	
TI < 25, CI ≥ 40						
acres (000s)	113.2	27.8	197.5	2.7	0.0	**341.2**
overall %	7.14%	1.75%	12.45%	0.17%	0.00%	**21.50%**
row %	33.19%	8.14%	57.89%	0.78%	0.00%	**100.00%**
column %	36.94%	74.83%	41.78%	0.52%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	66.7	6.8	214.7	21.7	46.3	**356.3**
overall %	4.20%	0.43%	13.54%	1.37%	2.92%	**22.46%**
row %	18.71%	1.91%	60.27%	6.10%	13.01%	**100.00%**
column %	21.75%	18.36%	45.43%	4.23%	18.09%	
TI ≥ 25, CI < 25						
acres (000s)	11.4	0.0	0.0	143.4	21.2	**176.0**
overall %	0.72%	0.00%	0.00%	9.04%	1.34%	**11.09%**
row %	6.46%	0.00%	0.00%	81.49%	12.04%	**100.00%**
column %	3.71%	0.00%	0.00%	27.91%	8.27%	
TI & CI < 25						
acres (000s)	2.5	0.0	6.4	13.2	156.9	**179.0**
overall %	0.16%	0.00%	0.40%	0.83%	9.89%	**11.28%**
row %	1.39%	0.00%	3.57%	7.38%	87.66%	**100.00%**
column %	0.81%	0.00%	1.35%	2.57%	61.25%	
Total						
acres (000s)	**306.6**	**37.1**	**472.7**	**514.0**	**256.2**	**1,586.5**
overall %	**19.32%**	**2.34%**	**29.79%**	**32.40%**	**16.15%**	

FROM

Table 8. Transition matrix for treatment 1A: 5 years to 10 years following treatment.

TO

| | In Condition | | Out of Condition | | | |
	TI & CI $\geq$ 25	TI < 25, CI $\geq$ 40	TI < 25, 25 $\leq$ CI < 40	TI $\geq$ 25, CI < 25	TI & CI < 25	Total
In Condition						
TI & CI $\geq$ 25						
acres (000s)	231.3	0.0	6.8	63.8	4.7	**306.6**
overall %	14.58%	0.00%	0.43%	4.02%	0.30%	**19.32%**
row %	75.46%	0.00%	2.21%	20.80%	1.53%	**100.00%**
column %	76.10%	0.00%	1.73%	10.62%	1.67%	
TI < 25, CI $\geq$ 40						
acres (000s)	8.3	10.0	18.8	0.0	0.0	**37.1**
overall %	0.52%	0.63%	1.19%	0.00%	0.00%	**2.34%**
row %	22.30%	26.90%	50.81%	0.00%	0.00%	**100.00%**
column %	2.72%	100.00%	4.81%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 $\leq$ CI < 40						
acres (000s)	64.4	0.0	366.6	2.5	39.2	**472.7**
overall %	4.06%	0.00%	23.10%	0.16%	2.47%	**29.79%**
row %	13.62%	0.00%	77.55%	0.53%	8.29%	**100.00%**
column %	21.18%	0.00%	93.47%	0.42%	13.99%	
TI $\geq$ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	496.1	17.9	**514.0**
overall %	0.00%	0.00%	0.00%	31.27%	1.13%	**32.40%**
row %	0.00%	0.00%	0.00%	96.52%	3.48%	**100.00%**
column %	0.00%	0.00%	0.00%	82.66%	6.38%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	37.8	218.4	**256.2**
overall %	0.00%	0.00%	0.00%	2.38%	13.77%	**16.15%**
row %	0.00%	0.00%	0.00%	14.76%	85.24%	**100.00%**
column %	0.00%	0.00%	0.00%	6.30%	77.96%	
Total						
acres (000s)	**304.0**	**10.0**	**392.2**	**600.2**	**280.1**	**1,586.5**
overall %	**19.16%**	**0.63%**	**24.72%**	**37.83%**	**17.66%**	

FROM

Table 9. Transition matrix for treatment 1A: 10 years to 15 years following treatment.

| | | **In Condition** | | **Out of Condition** | | | |
		TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	**Total**
In Condition							
TI & CI ≥ 25	acres (000s)	208.3	2.5	49.9	25.4	17.8	**304.0**
	overall %	13.13%	0.16%	3.15%	1.60%	1.12%	**19.16%**
	row %	68.53%	0.82%	16.42%	8.37%	5.86%	**100.00%**
	column %	90.52%	61.54%	13.47%	4.37%	4.46%	
TI < 25, CI ≥ 40	acres (000s)	0.0	1.6	4.2	0.0	4.2	**10.0**
	overall %	0.00%	0.10%	0.27%	0.00%	0.27%	**0.63%**
	row %	0.00%	15.59%	42.20%	0.00%	42.20%	**100.00%**
	column %	0.00%	38.46%	1.14%	0.00%	1.05%	
Out of Condition							
TI < 25, 25 ≤ CI < 40	acres (000s)	14.3	0.0	316.6	0.0	61.3	**392.2**
	overall %	0.90%	0.00%	19.96%	0.00%	3.86%	**24.72%**
	row %	3.66%	0.00%	80.72%	0.00%	15.62%	**100.00%**
	column %	6.23%	0.00%	85.40%	0.00%	15.33%	
TI ≥ 25, CI < 25	acres (000s)	7.5	0.0	0.0	532.4	60.4	**600.2**
	overall %	0.47%	0.00%	0.00%	33.56%	3.80%	**37.83%**
	row %	1.25%	0.00%	0.00%	88.70%	10.06%	**100.00%**
	column %	3.25%	0.00%	0.00%	91.45%	15.11%	
TI & CI < 25	acres (000s)	0.0	0.0	0.0	24.3	255.8	**280.1**
	overall %	0.00%	0.00%	0.00%	1.53%	16.13%	**17.66%**
	row %	0.00%	0.00%	0.00%	8.68%	91.32%	**100.00%**
	column %	0.00%	0.00%	0.00%	4.18%	64.04%	
Total	acres (000s)	**230.2**	**4.0**	**370.7**	**582.1**	**399.5**	**1,586.5**
	overall %	**14.51%**	**0.26%**	**23.37%**	**36.69%**	**25.18%**	

TO

FROM

Table 10. Transition matrix for treatment 1A: 15 years to 20 years following treatment.

<div style="color:red; text-align:center">TO</div>

	In Condition		Out of Condition			
	TI & CI ≥ 25	TI < 25, CI ≥ 40	TI < 25, 25 ≤ CI < 40	TI ≥ 25, CI < 25	TI & CI < 25	*Total*
In Condition						
TI & CI ≥ 25						
acres (000s)	145.3	2.5	50.7	19.5	12.2	**230.2**
overall %	9.16%	0.16%	3.20%	1.23%	0.77%	**14.51%**
row %	63.11%	1.10%	22.04%	8.47%	5.28%	**100.00%**
column %	82.77%	100.00%	18.76%	3.78%	1.95%	
TI < 25, CI ≥ 40						
acres (000s)	0.0	0.0	1.6	0.0	2.5	**4.0**
overall %	0.00%	0.00%	0.10%	0.00%	0.16%	**0.26%**
row %	0.00%	0.00%	38.46%	0.00%	61.54%	**100.00%**
column %	0.00%	0.00%	0.58%	0.00%	0.40%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	30.2	0.0	218.2	9.1	113.2	**370.7**
overall %	1.91%	0.00%	13.75%	0.58%	7.13%	**23.37%**
row %	8.16%	0.00%	58.85%	2.46%	30.53%	**100.00%**
column %	17.23%	0.00%	80.67%	1.77%	18.19%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	452.3	129.8	**582.1**
overall %	0.00%	0.00%	0.00%	28.51%	8.18%	**36.69%**
row %	0.00%	0.00%	0.00%	77.70%	22.30%	**100.00%**
column %	0.00%	0.00%	0.00%	87.69%	20.86%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	34.9	364.6	**399.5**
overall %	0.00%	0.00%	0.00%	2.20%	22.98%	**25.18%**
row %	0.00%	0.00%	0.00%	8.73%	91.27%	**100.00%**
column %	0.00%	0.00%	0.00%	6.76%	58.60%	
Total						
acres (000s)	**175.5**	**2.5**	**270.5**	**515.8**	**622.2**	**1,586.5**
overall %	**11.06%**	**0.16%**	**17.05%**	**32.51%**	**39.22%**	

FROM

Table 11. Transition matrix for treatment 1A: 20 years to 25 years following treatment.

		TO				
		In Condition		*Out of Condition*		
			TI < 25,	**TI < 25,**	**TI ≥ 25,**		
		TI & CI ≥ 25	**CI ≥ 40**	**25 ≤ CI < 40**	**CI < 25**	**TI & CI < 25**	*Total*
In Condition							
TI & CI ≥ 25							
	acres (000s)	94.7	0.0	49.4	19.5	11.9	**175.5**
	overall %	5.97%	0.00%	3.11%	1.23%	0.75%	**11.06%**
	row %	53.99%	0.00%	28.13%	11.12%	6.76%	**100.00%**
	column %	82.57%	0.00%	22.68%	4.46%	1.46%	
TI < 25, CI ≥ 40							
	acres (000s)	0.0	2.5	0.0	0.0	0.0	**2.5**
	overall %	0.00%	0.16%	0.00%	0.00%	0.00%	**0.16%**
	row %	0.00%	100.00%	0.00%	0.00%	0.00%	**100.00%**
	column %	0.00%	100.00%	0.00%	0.00%	0.00%	
Out of Condition							
TI < 25, 25 ≤ CI < 40							
	acres (000s)	17.1	0.0	168.3	2.5	82.6	**270.5**
	overall %	1.08%	0.00%	10.61%	0.16%	5.21%	**17.05%**
	row %	6.31%	0.00%	62.22%	0.92%	30.55%	**100.00%**
	column %	14.88%	0.00%	77.32%	0.57%	10.15%	
TI ≥ 25, CI < 25							
	acres (000s)	0.0	0.0	0.0	394.2	121.6	**515.8**
	overall %	0.00%	0.00%	0.00%	24.85%	7.67%	**32.51%**
	row %	0.00%	0.00%	0.00%	76.42%	23.58%	**100.00%**
	column %	0.00%	0.00%	0.00%	90.15%	14.94%	
TI & CI < 25							
	acres (000s)	2.9	0.0	0.0	21.1	598.2	**622.2**
	overall %	0.18%	0.00%	0.00%	1.33%	37.71%	**39.22%**
	row %	0.47%	0.00%	0.00%	3.38%	96.15%	**100.00%**
	column %	2.55%	0.00%	0.00%	4.82%	73.46%	
Total							
	acres (000s)	**114.7**	**2.5**	**217.6**	**437.3**	**814.4**	**1,586.5**
	overall %	**7.23%**	**0.16%**	**13.72%**	**27.56%**	**51.33%**	

FROM

Table 12. Transition matrix for treatment 2A: pre- to post-treatment.

	In Condition		**Out of Condition**			
	TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	**Total**
In Condition						
TI & CI ≥ 25						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
TI < 25, CI ≥ 40						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	90.9	287.0	8.0	0.0	0.0	**386.0**
overall %	5.73%	18.09%	0.51%	0.00%	0.00%	**24.33%**
row %	23.56%	74.37%	2.08%	0.00%	0.00%	**100.00%**
column %	13.41%	77.91%	2.72%	0.00%	0.00%	
TI ≥ 25, CI < 25						
acres (000s)	460.5	0.0	0.0	139.0	0.0	**599.5**
overall %	29.03%	0.00%	0.00%	8.76%	0.00%	**37.78%**
row %	76.82%	0.00%	0.00%	23.18%	0.00%	**100.00%**
column %	67.90%	0.00%	0.00%	93.97%	0.00%	
TI & CI < 25						
acres (000s)	126.8	81.4	286.7	8.9	97.4	**601.1**
overall %	7.99%	5.13%	18.07%	0.56%	6.14%	**37.89%**
row %	21.09%	13.54%	47.69%	1.48%	16.20%	**100.00%**
column %	18.69%	22.09%	97.28%	6.03%	100.00%	
Total						
acres (000s)	**678.2**	**368.4**	**294.7**	**147.9**	**97.4**	**1,586.5**
overall %	**42.74%**	**23.22%**	**18.58%**	**9.32%**	**6.14%**	

TO

FROM

Table 13. Transition matrix for treatment 2A: post-treatment to 5 years following treatment.

<table>
<tr><td rowspan="3"></td><td colspan="5" align="center">**TO**</td><td rowspan="3"></td></tr>
<tr><td colspan="2" align="center">*In Condition*</td><td colspan="3" align="center">*Out of Condition*</td></tr>
<tr><td align="center">TI & CI ≥ 25</td><td align="center">TI < 25, CI ≥ 40</td><td align="center">TI < 25, 25 ≤ CI < 40</td><td align="center">TI ≥ 25, CI < 25</td><td align="center">TI & CI < 25</td><td align="center">*Total*</td></tr>
<tr><td colspan="7">**In Condition**</td></tr>
<tr><td colspan="7">**TI & CI ≥ 25**</td></tr>
<tr><td>acres (000s)</td><td>185.9</td><td>0.0</td><td>104.4</td><td>319.7</td><td>68.2</td><td>**678.2**</td></tr>
<tr><td>overall %</td><td>11.71%</td><td>0.00%</td><td>6.58%</td><td>20.15%</td><td>4.30%</td><td>**42.74%**</td></tr>
<tr><td>row %</td><td>27.41%</td><td>0.00%</td><td>15.39%</td><td>47.15%</td><td>10.05%</td><td>**100.00%**</td></tr>
<tr><td>column %</td><td>49.80%</td><td>0.00%</td><td>19.54%</td><td>68.38%</td><td>34.92%</td><td></td></tr>
<tr><td colspan="7">**TI < 25, CI ≥ 40**</td></tr>
<tr><td>acres (000s)</td><td>131.7</td><td>16.2</td><td>220.4</td><td>0.0</td><td>0.0</td><td>**368.4**</td></tr>
<tr><td>overall %</td><td>8.30%</td><td>1.02%</td><td>13.89%</td><td>0.00%</td><td>0.00%</td><td>**23.22%**</td></tr>
<tr><td>row %</td><td>35.76%</td><td>4.41%</td><td>59.83%</td><td>0.00%</td><td>0.00%</td><td>**100.00%**</td></tr>
<tr><td>column %</td><td>35.29%</td><td>100.00%</td><td>41.25%</td><td>0.00%</td><td>0.00%</td><td></td></tr>
<tr><td colspan="7">**Out of Condition**</td></tr>
<tr><td colspan="7">**TI < 25, 25 ≤ CI < 40**</td></tr>
<tr><td>acres (000s)</td><td>44.1</td><td>0.0</td><td>209.5</td><td>12.7</td><td>28.5</td><td>**294.7**</td></tr>
<tr><td>overall %</td><td>2.78%</td><td>0.00%</td><td>13.20%</td><td>0.80%</td><td>1.80%</td><td>**18.58%**</td></tr>
<tr><td>row %</td><td>14.95%</td><td>0.00%</td><td>71.08%</td><td>4.31%</td><td>9.66%</td><td>**100.00%**</td></tr>
<tr><td>column %</td><td>11.80%</td><td>0.00%</td><td>39.21%</td><td>2.71%</td><td>14.59%</td><td></td></tr>
<tr><td colspan="7">**TI ≥ 25, CI < 25**</td></tr>
<tr><td>acres (000s)</td><td>11.6</td><td>0.0</td><td>0.0</td><td>122.0</td><td>14.4</td><td>**147.9**</td></tr>
<tr><td>overall %</td><td>0.73%</td><td>0.00%</td><td>0.00%</td><td>7.69%</td><td>0.91%</td><td>**9.32%**</td></tr>
<tr><td>row %</td><td>7.82%</td><td>0.00%</td><td>0.00%</td><td>82.47%</td><td>9.71%</td><td>**100.00%**</td></tr>
<tr><td>column %</td><td>3.10%</td><td>0.00%</td><td>0.00%</td><td>26.08%</td><td>7.36%</td><td></td></tr>
<tr><td colspan="7">**TI & CI < 25**</td></tr>
<tr><td>acres (000s)</td><td>0.0</td><td>0.0</td><td>0.0</td><td>13.2</td><td>84.2</td><td>**97.4**</td></tr>
<tr><td>overall %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>0.83%</td><td>5.31%</td><td>**6.14%**</td></tr>
<tr><td>row %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>13.56%</td><td>86.44%</td><td>**100.00%**</td></tr>
<tr><td>column %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>2.83%</td><td>43.13%</td><td></td></tr>
<tr><td colspan="7">*Total*</td></tr>
<tr><td>acres (000s)</td><td>**373.2**</td><td>**16.2**</td><td>**534.3**</td><td>**467.6**</td><td>**195.2**</td><td>**1,586.5**</td></tr>
<tr><td>overall %</td><td>**23.52%**</td><td>**1.02%**</td><td>**33.68%**</td><td>**29.47%**</td><td>**12.30%**</td><td></td></tr>
</table>

FROM

Table 14. Transition matrix for treatment 2A: 5 years to 10 years following treatment.

| | | **In Condition** | | **Out of Condition** | | | |
		TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	**Total**
In Condition							
TI & CI ≥ 25	acres (000s)	288.9	0.0	8.4	58.7	17.2	**373.2**
	overall %	18.21%	0.00%	0.53%	3.70%	1.09%	**23.52%**
	row %	77.41%	0.00%	2.25%	15.72%	4.62%	**100.00%**
	column %	76.57%	0.00%	2.16%	10.46%	7.64%	
TI < 25, CI ≥ 40	acres (000s)	0.0	13.4	2.8	0.0	0.0	**16.2**
	overall %	0.00%	0.85%	0.18%	0.00%	0.00%	**1.02%**
	row %	0.00%	82.70%	17.30%	0.00%	0.00%	**100.00%**
	column %	0.00%	40.03%	0.72%	0.00%	0.00%	
Out of Condition							
TI < 25, 25 ≤ CI < 40	acres (000s)	88.4	20.1	377.7	7.5	40.6	**534.3**
	overall %	5.57%	1.27%	23.81%	0.47%	2.56%	**33.68%**
	row %	16.54%	3.77%	70.69%	1.40%	7.60%	**100.00%**
	column %	23.43%	59.97%	97.12%	1.33%	17.98%	
TI ≥ 25, CI < 25	acres (000s)	0.0	0.0	0.0	456.3	11.3	**467.6**
	overall %	0.00%	0.00%	0.00%	28.76%	0.71%	**29.47%**
	row %	0.00%	0.00%	0.00%	97.59%	2.41%	**100.00%**
	column %	0.00%	0.00%	0.00%	81.34%	4.99%	
TI & CI < 25	acres (000s)	0.0	0.0	0.0	38.5	156.7	**195.2**
	overall %	0.00%	0.00%	0.00%	2.43%	9.87%	**12.30%**
	row %	0.00%	0.00%	0.00%	19.74%	80.26%	**100.00%**
	column %	0.00%	0.00%	0.00%	6.87%	69.39%	
Total							
	acres (000s)	**377.3**	**33.6**	**388.9**	**561.0**	**225.8**	**1,586.5**
	overall %	**23.78%**	**2.12%**	**24.51%**	**35.36%**	**14.23%**	

TO

FROM

Table 15. Transition matrix for treatment 2A: 10 years to 15 years following treatment.

	In Condition		Out of Condition			
	TI & CI ≥ 25	TI < 25, CI ≥ 40	TI < 25, 25 ≤ CI < 40	TI ≥ 25, CI < 25	TI & CI < 25	Total
In Condition						
TI & CI ≥ 25						
acres (000s)	246.6	4.2	77.9	31.8	16.7	**377.3**
overall %	15.55%	0.27%	4.91%	2.01%	1.05%	**23.78%**
row %	65.37%	1.12%	20.64%	8.44%	4.43%	**100.00%**
column %	93.12%	28.15%	20.15%	5.58%	4.78%	
TI < 25, CI ≥ 40						
acres (000s)	0.0	10.7	22.8	0.0	0.0	**33.6**
overall %	0.00%	0.68%	1.44%	0.00%	0.00%	**2.12%**
row %	0.00%	32.02%	67.98%	0.00%	0.00%	**100.00%**
column %	0.00%	71.85%	5.90%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	18.2	0.0	285.8	6.8	78.1	**388.9**
overall %	1.15%	0.00%	18.01%	0.43%	4.92%	**24.51%**
row %	4.68%	0.00%	73.49%	1.75%	20.08%	**100.00%**
column %	6.88%	0.00%	73.95%	1.19%	22.36%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	502.6	58.5	**561.0**
overall %	0.00%	0.00%	0.00%	31.68%	3.68%	**35.36%**
row %	0.00%	0.00%	0.00%	89.58%	10.42%	**100.00%**
column %	0.00%	0.00%	0.00%	88.01%	16.74%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	29.8	196.0	**225.8**
overall %	0.00%	0.00%	0.00%	1.88%	12.35%	**14.23%**
row %	0.00%	0.00%	0.00%	13.20%	86.80%	**100.00%**
column %	0.00%	0.00%	0.00%	5.22%	56.12%	
Total						
acres (000s)	**264.8**	**15.0**	**386.5**	**571.0**	**349.2**	**1,586.5**
overall %	**16.69%**	**0.94%**	**24.36%**	**35.99%**	**22.01%**	

TO

FROM

Table 16. Transition matrix for treatment 2A: 15 years to 20 years following treatment.

<table>
<tr><td></td><td colspan="6" align="center">TO</td></tr>
<tr><td></td><td colspan="2" align="center"><i>In Condition</i></td><td colspan="3" align="center"><i>Out of Condition</i></td><td></td></tr>
<tr><td></td><td></td><td>TI < 25,</td><td>TI < 25,</td><td>TI ≥ 25,</td><td></td><td></td></tr>
<tr><td></td><td>TI & CI ≥ 25</td><td>CI ≥ 40</td><td>25 ≤ CI < 40</td><td>CI < 25</td><td>TI & CI < 25</td><td><i>Total</i></td></tr>
<tr><td colspan="7"><i>In Condition</i></td></tr>
<tr><td>TI & CI ≥ 25</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>acres (000s)</td><td>182.4</td><td>2.5</td><td>54.8</td><td>15.9</td><td>9.3</td><td>264.8</td></tr>
<tr><td>overall %</td><td>11.49%</td><td>0.16%</td><td>3.45%</td><td>1.00%</td><td>0.58%</td><td>16.69%</td></tr>
<tr><td>row %</td><td>68.86%</td><td>0.95%</td><td>20.69%</td><td>6.01%</td><td>3.50%</td><td>100.00%</td></tr>
<tr><td>column %</td><td>87.39%</td><td>11.15%</td><td>20.13%</td><td>3.06%</td><td>1.65%</td><td></td></tr>
<tr><td>TI < 25, CI ≥ 40</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>acres (000s)</td><td>0.0</td><td>0.0</td><td>11.0</td><td>0.0</td><td>3.9</td><td>15.0</td></tr>
<tr><td>overall %</td><td>0.00%</td><td>0.00%</td><td>0.69%</td><td>0.00%</td><td>0.25%</td><td>0.94%</td></tr>
<tr><td>row %</td><td>0.00%</td><td>0.00%</td><td>73.68%</td><td>0.00%</td><td>26.32%</td><td>100.00%</td></tr>
<tr><td>column %</td><td>0.00%</td><td>0.00%</td><td>4.05%</td><td>0.00%</td><td>0.70%</td><td></td></tr>
<tr><td colspan="7"><i>Out of Condition</i></td></tr>
<tr><td>TI < 25, 25 ≤ CI < 40</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>acres (000s)</td><td>26.3</td><td>20.1</td><td>206.3</td><td>2.5</td><td>131.2</td><td>386.5</td></tr>
<tr><td>overall %</td><td>1.66%</td><td>1.27%</td><td>13.01%</td><td>0.16%</td><td>8.27%</td><td>24.36%</td></tr>
<tr><td>row %</td><td>6.81%</td><td>5.21%</td><td>53.39%</td><td>0.65%</td><td>33.94%</td><td>100.00%</td></tr>
<tr><td>column %</td><td>12.61%</td><td>88.85%</td><td>75.82%</td><td>0.49%</td><td>23.32%</td><td></td></tr>
<tr><td>TI ≥ 25, CI < 25</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>acres (000s)</td><td>0.0</td><td>0.0</td><td>0.0</td><td>443.0</td><td>128.0</td><td>571.0</td></tr>
<tr><td>overall %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>27.92%</td><td>8.07%</td><td>35.99%</td></tr>
<tr><td>row %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>77.58%</td><td>22.42%</td><td>100.00%</td></tr>
<tr><td>column %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>85.11%</td><td>22.76%</td><td></td></tr>
<tr><td>TI & CI < 25</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>acres (000s)</td><td>0.0</td><td>0.0</td><td>0.0</td><td>59.0</td><td>290.2</td><td>349.2</td></tr>
<tr><td>overall %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>3.72%</td><td>18.29%</td><td>22.01%</td></tr>
<tr><td>row %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>16.91%</td><td>83.09%</td><td>100.00%</td></tr>
<tr><td>column %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>11.35%</td><td>51.58%</td><td></td></tr>
<tr><td><i>Total</i></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>acres (000s)</td><td>208.7</td><td>22.7</td><td>272.2</td><td>520.4</td><td>562.6</td><td>1,586.5</td></tr>
<tr><td>overall %</td><td>13.15%</td><td>1.43%</td><td>17.15%</td><td>32.80%</td><td>35.46%</td><td></td></tr>
</table>

FROM

Table 17. Transition matrix for treatment 2A: 20 years to 25 years following treatment.

<table>
<tr><td></td><td></td><td colspan="2">In Condition</td><td colspan="3">Out of Condition</td><td></td></tr>
<tr><td></td><td></td><td></td><td>TI < 25,</td><td>TI < 25,</td><td>TI ≥ 25,</td><td></td><td></td></tr>
<tr><td></td><td></td><td>TI & CI ≥ 25</td><td>CI ≥ 40</td><td>25 ≤ CI < 40</td><td>CI < 25</td><td>TI & CI < 25</td><td>Total</td></tr>
<tr><td colspan="8">In Condition</td></tr>
<tr><td colspan="8">TI & CI ≥ 25</td></tr>
<tr><td></td><td>acres (000s)</td><td>116.0</td><td>0.0</td><td>48.2</td><td>37.4</td><td>7.0</td><td>208.7</td></tr>
<tr><td></td><td>overall %</td><td>7.31%</td><td>0.00%</td><td>3.04%</td><td>2.36%</td><td>0.44%</td><td>13.15%</td></tr>
<tr><td></td><td>row %</td><td>55.58%</td><td>0.00%</td><td>23.12%</td><td>17.94%</td><td>3.37%</td><td>100.00%</td></tr>
<tr><td></td><td>column %</td><td>92.52%</td><td>0.00%</td><td>21.19%</td><td>8.27%</td><td>0.90%</td><td></td></tr>
<tr><td colspan="8">TI < 25, CI ≥ 40</td></tr>
<tr><td></td><td>acres (000s)</td><td>0.0</td><td>2.5</td><td>0.0</td><td>0.0</td><td>20.1</td><td>22.7</td></tr>
<tr><td></td><td>overall %</td><td>0.00%</td><td>0.16%</td><td>0.00%</td><td>0.00%</td><td>1.27%</td><td>1.43%</td></tr>
<tr><td></td><td>row %</td><td>0.00%</td><td>11.15%</td><td>0.00%</td><td>0.00%</td><td>88.85%</td><td>100.00%</td></tr>
<tr><td></td><td>column %</td><td>0.00%</td><td>100.00%</td><td>0.00%</td><td>0.00%</td><td>2.59%</td><td></td></tr>
<tr><td colspan="8">Out of Condition</td></tr>
<tr><td colspan="8">TI < 25, 25 ≤ CI < 40</td></tr>
<tr><td></td><td>acres (000s)</td><td>9.4</td><td>0.0</td><td>179.4</td><td>9.1</td><td>74.3</td><td>272.2</td></tr>
<tr><td></td><td>overall %</td><td>0.59%</td><td>0.00%</td><td>11.31%</td><td>0.57%</td><td>4.68%</td><td>17.15%</td></tr>
<tr><td></td><td>row %</td><td>3.44%</td><td>0.00%</td><td>65.91%</td><td>3.34%</td><td>27.30%</td><td>100.00%</td></tr>
<tr><td></td><td>column %</td><td>7.48%</td><td>0.00%</td><td>78.81%</td><td>2.01%</td><td>9.55%</td><td></td></tr>
<tr><td colspan="8">TI ≥ 25, CI < 25</td></tr>
<tr><td></td><td>acres (000s)</td><td>0.0</td><td>0.0</td><td>0.0</td><td>386.3</td><td>134.2</td><td>520.4</td></tr>
<tr><td></td><td>overall %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>24.35%</td><td>8.46%</td><td>32.80%</td></tr>
<tr><td></td><td>row %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>74.22%</td><td>25.78%</td><td>100.00%</td></tr>
<tr><td></td><td>column %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>85.33%</td><td>17.24%</td><td></td></tr>
<tr><td colspan="8">TI & CI < 25</td></tr>
<tr><td></td><td>acres (000s)</td><td>0.0</td><td>0.0</td><td>0.0</td><td>19.9</td><td>542.7</td><td>562.6</td></tr>
<tr><td></td><td>overall %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>1.25%</td><td>34.21%</td><td>35.46%</td></tr>
<tr><td></td><td>row %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>3.53%</td><td>96.47%</td><td>100.00%</td></tr>
<tr><td></td><td>column %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>4.39%</td><td>69.73%</td><td></td></tr>
<tr><td colspan="8">Total</td></tr>
<tr><td></td><td>acres (000s)</td><td>125.3</td><td>2.5</td><td>227.6</td><td>452.7</td><td>778.4</td><td>1,586.5</td></tr>
<tr><td></td><td>overall %</td><td>7.90%</td><td>0.16%</td><td>14.35%</td><td>28.53%</td><td>49.06%</td><td></td></tr>
</table>

TO

FROM

Table 18. Transition matrix for treatment 3A: pre- to post-treatment.

<div style="text-align:center; color:red">TO</div>

| | In Condition | | Out of Condition | | | |
	TI & CI ≥ 25	TI < 25, CI ≥ 40	TI < 25, 25 ≤ CI < 40	TI ≥ 25, CI < 25	TI & CI < 25	Total
In Condition						
TI & CI ≥ 25						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
TI < 25, CI ≥ 40						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	193.0	186.6	6.4	0.0	0.0	**386.0**
overall %	12.16%	11.76%	0.40%	0.00%	0.00%	**24.33%**
row %	50.01%	48.34%	1.65%	0.00%	0.00%	**100.00%**
column %	17.66%	63.35%	9.91%	0.00%	0.00%	
TI ≥ 25, CI < 25						
acres (000s)	528.6	0.0	0.0	70.8	0.0	**599.5**
overall %	33.32%	0.00%	0.00%	4.46%	0.00%	**37.78%**
row %	88.18%	0.00%	0.00%	11.82%	0.00%	**100.00%**
column %	48.36%	0.00%	0.00%	53.64%	0.00%	
TI & CI < 25						
acres (000s)	371.5	108.0	57.9	61.2	2.5	**601.1**
overall %	23.42%	6.80%	3.65%	3.86%	0.16%	**37.89%**
row %	61.80%	17.96%	9.64%	10.19%	0.41%	**100.00%**
column %	33.99%	36.65%	90.09%	46.36%	100.00%	
Total						
acres (000s)	**1,093.1**	**294.5**	**64.3**	**132.1**	**2.5**	**1,586.5**
overall %	**68.90%**	**18.56%**	**4.05%**	**8.32%**	**0.16%**	

FROM

Table 19. Transition matrix for treatment 3A: post-treatment to 5 years following treatment.

| | | In Condition | | Out of Condition | | | |
		TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	**Total**
In Condition							
TI & CI ≥ 25							
	acres (000s)	214.7	0.0	62.6	783.8	32.0	**1,093.1**
	overall %	13.53%	0.00%	3.94%	49.41%	2.02%	**68.90%**
	row %	19.64%	0.00%	5.72%	71.71%	2.93%	**100.00%**
	column %	58.11%	0.00%	32.94%	84.93%	65.61%	
TI < 25, CI ≥ 40							
	acres (000s)	137.1	55.3	83.3	12.0	6.8	**294.5**
	overall %	8.64%	3.49%	5.25%	0.76%	0.43%	**18.56%**
	row %	46.54%	18.78%	28.28%	4.09%	2.31%	**100.00%**
	column %	37.09%	100.00%	43.86%	1.30%	13.96%	
Out of Condition							
TI < 25, 25 ≤ CI < 40							
	acres (000s)	12.8	0.0	44.1	0.0	7.5	**64.3**
	overall %	0.81%	0.00%	2.78%	0.00%	0.47%	**4.05%**
	row %	19.86%	0.00%	68.51%	0.00%	11.62%	**100.00%**
	column %	3.46%	0.00%	23.20%	0.00%	15.33%	
TI ≥ 25, CI < 25							
	acres (000s)	5.0	0.0	0.0	127.1	0.0	**132.1**
	overall %	0.31%	0.00%	0.00%	8.01%	0.00%	**8.32%**
	row %	3.77%	0.00%	0.00%	96.23%	0.00%	**100.00%**
	column %	1.35%	0.00%	0.00%	13.77%	0.00%	
TI & CI < 25							
	acres (000s)	0.0	0.0	0.0	0.0	2.5	**2.5**
	overall %	0.00%	0.00%	0.00%	0.00%	0.16%	**0.16%**
	row %	0.00%	0.00%	0.00%	0.00%	100.00%	**100.00%**
	column %	0.00%	0.00%	0.00%	0.00%	5.10%	
Total							
	acres (000s)	**369.6**	**55.3**	**189.9**	**923.0**	**48.8**	**1,586.5**
	overall %	**23.29%**	**3.49%**	**11.97%**	**58.17%**	**3.07%**	

TO

FROM

Table 20. Transition matrix for treatment 3A: 5 years to 10 years following treatment.

<table>
<tr><th rowspan="3"></th><th colspan="2"><i>In Condition</i></th><th colspan="3"><i>Out of Condition</i></th><th rowspan="3"><i>Total</i></th></tr>
<tr><th></th><th>TI < 25,</th><th>TI < 25,</th><th>TI ≥ 25,</th><th></th></tr>
<tr><th>TI & CI ≥ 25</th><th>CI ≥ 40</th><th>25 ≤ CI < 40</th><th>CI < 25</th><th>TI & CI < 25</th></tr>
<tr><td colspan="7">In Condition</td></tr>
<tr><td>TI & CI ≥ 25</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>acres (000s)</td><td>311.7</td><td>0.0</td><td>23.2</td><td>33.2</td><td>1.6</td><td>369.6</td></tr>
<tr><td>overall %</td><td>19.64%</td><td>0.00%</td><td>1.46%</td><td>2.09%</td><td>0.10%</td><td>23.29%</td></tr>
<tr><td>row %</td><td>84.33%</td><td>0.00%</td><td>6.27%</td><td>8.98%</td><td>0.42%</td><td>100.00%</td></tr>
<tr><td>column %</td><td>95.56%</td><td>0.00%</td><td>11.89%</td><td>3.46%</td><td>2.59%</td><td></td></tr>
<tr><td>TI < 25, CI ≥ 40</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>acres (000s)</td><td>0.0</td><td>45.4</td><td>10.0</td><td>0.0</td><td>0.0</td><td>55.3</td></tr>
<tr><td>overall %</td><td>0.00%</td><td>2.86%</td><td>0.63%</td><td>0.00%</td><td>0.00%</td><td>3.49%</td></tr>
<tr><td>row %</td><td>0.00%</td><td>82.00%</td><td>18.00%</td><td>0.00%</td><td>0.00%</td><td>100.00%</td></tr>
<tr><td>column %</td><td>0.00%</td><td>100.00%</td><td>5.11%</td><td>0.00%</td><td>0.00%</td><td></td></tr>
<tr><td colspan="7">Out of Condition</td></tr>
<tr><td>TI < 25, 25 ≤ CI < 40</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>acres (000s)</td><td>14.5</td><td>0.0</td><td>161.8</td><td>1.0</td><td>12.6</td><td>189.9</td></tr>
<tr><td>overall %</td><td>0.91%</td><td>0.00%</td><td>10.20%</td><td>0.06%</td><td>0.80%</td><td>11.97%</td></tr>
<tr><td>row %</td><td>7.63%</td><td>0.00%</td><td>85.20%</td><td>0.52%</td><td>6.64%</td><td>100.00%</td></tr>
<tr><td>column %</td><td>4.44%</td><td>0.00%</td><td>83.00%</td><td>0.10%</td><td>20.96%</td><td></td></tr>
<tr><td>TI ≥ 25, CI < 25</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>acres (000s)</td><td>0.0</td><td>0.0</td><td>0.0</td><td>913.5</td><td>9.5</td><td>923.0</td></tr>
<tr><td>overall %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>57.58%</td><td>0.60%</td><td>58.17%</td></tr>
<tr><td>row %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>98.97%</td><td>1.03%</td><td>100.00%</td></tr>
<tr><td>column %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>95.17%</td><td>15.72%</td><td></td></tr>
<tr><td>TI & CI < 25</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>acres (000s)</td><td>0.0</td><td>0.0</td><td>0.0</td><td>12.2</td><td>36.6</td><td>48.8</td></tr>
<tr><td>overall %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>0.77%</td><td>2.30%</td><td>3.07%</td></tr>
<tr><td>row %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>25.07%</td><td>74.93%</td><td>100.00%</td></tr>
<tr><td>column %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>1.27%</td><td>60.73%</td><td></td></tr>
<tr><td><i>Total</i></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>acres (000s)</td><td>326.1</td><td>45.4</td><td>194.9</td><td>959.9</td><td>60.2</td><td>1,586.5</td></tr>
<tr><td>overall %</td><td>20.56%</td><td>2.86%</td><td>12.29%</td><td>60.50%</td><td>3.79%</td><td></td></tr>
</table>

TO (column header group)

FROM (row header group)

Table 21. Transition matrix for treatment 3A: 10 years to 15 years following treatment.

	TO					
	In Condition		*Out of Condition*			
		TI < 25,	TI < 25,	TI ≥ 25,		
FROM	TI & CI ≥ 25	CI ≥ 40	25 ≤ CI < 40	CI < 25	TI & CI < 25	*Total*
In Condition						
TI & CI ≥ 25						
acres (000s)	225.7	0.0	37.1	53.9	9.5	**326.1**
overall %	14.22%	0.00%	2.34%	3.40%	0.60%	**20.56%**
row %	69.19%	0.00%	11.36%	16.54%	2.91%	**100.00%**
column %	84.59%	0.00%	22.97%	5.66%	5.54%	
TI < 25, CI ≥ 40						
acres (000s)	0.0	33.3	12.0	0.0	0.0	**45.4**
overall %	0.00%	2.10%	0.76%	0.00%	0.00%	**2.86%**
row %	0.00%	73.47%	26.53%	0.00%	0.00%	**100.00%**
column %	0.00%	100.00%	7.46%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	41.1	0.0	112.2	8.0	33.6	**194.9**
overall %	2.59%	0.00%	7.07%	0.51%	2.12%	**12.29%**
row %	21.09%	0.00%	57.57%	4.12%	17.22%	**100.00%**
column %	15.41%	0.00%	69.56%	0.84%	19.61%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	886.4	73.5	**959.9**
overall %	0.00%	0.00%	0.00%	55.87%	4.63%	**60.50%**
row %	0.00%	0.00%	0.00%	92.34%	7.66%	**100.00%**
column %	0.00%	0.00%	0.00%	92.92%	42.95%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	5.6	54.6	**60.2**
overall %	0.00%	0.00%	0.00%	0.35%	3.44%	**3.79%**
row %	0.00%	0.00%	0.00%	9.31%	90.69%	**100.00%**
column %	0.00%	0.00%	0.00%	0.59%	31.90%	
Total						
acres (000s)	**266.8**	**33.3**	**161.3**	**954.0**	**171.1**	**1,586.5**
overall %	**16.82%**	**2.10%**	**10.17%**	**60.13%**	**10.79%**	

Table 22. Transition matrix for treatment 3A: 15 years to 20 years following treatment.

		TO					
		In Condition		*Out of Condition*			
			TI < 25,	TI < 25,	TI ≥ 25,		
		TI & CI ≥ 25	CI ≥ 40	25 ≤ CI < 40	CI < 25	TI & CI < 25	*Total*
In Condition							
TI & CI ≥ 25							
	acres (000s)	161.8	0.0	55.7	41.5	7.8	**266.8**
	overall %	10.20%	0.00%	3.51%	2.62%	0.49%	**16.82%**
	row %	60.65%	0.00%	20.88%	15.56%	2.92%	**100.00%**
	column %	82.61%	0.00%	33.17%	4.87%	2.11%	
TI < 25, CI ≥ 40							
	acres (000s)	24.2	0.0	0.0	0.0	9.1	**33.3**
	overall %	1.53%	0.00%	0.00%	0.00%	0.57%	**2.10%**
	row %	72.63%	0.00%	0.00%	0.00%	27.37%	**100.00%**
	column %	12.36%	0.00%	0.00%	0.00%	2.46%	
Out of Condition							
TI < 25, 25 ≤ CI < 40							
	acres (000s)	9.8	0.0	112.2	3.9	35.3	**161.3**
	overall %	0.62%	0.00%	7.07%	0.25%	2.23%	**10.17%**
	row %	6.11%	0.00%	69.57%	2.44%	21.89%	**100.00%**
	column %	5.03%	0.00%	66.83%	0.46%	9.54%	
TI ≥ 25, CI < 25							
	acres (000s)	0.0	0.0	0.0	771.4	182.5	**954.0**
	overall %	0.00%	0.00%	0.00%	48.62%	11.50%	**60.13%**
	row %	0.00%	0.00%	0.00%	80.87%	19.13%	**100.00%**
	column %	0.00%	0.00%	0.00%	90.47%	49.31%	
TI & CI < 25							
	acres (000s)	0.0	0.0	0.0	35.8	135.4	**171.1**
	overall %	0.00%	0.00%	0.00%	2.26%	8.53%	**10.79%**
	row %	0.00%	0.00%	0.00%	20.91%	79.09%	**100.00%**
	column %	0.00%	0.00%	0.00%	4.20%	36.57%	
Total							
	acres (000s)	**195.9**	**0.0**	**167.9**	**852.7**	**370.1**	**1,586.5**
	overall %	**12.34%**	**0.00%**	**10.58%**	**53.74%**	**23.33%**	

FROM

Table 23. Transition matrix for treatment 3A: 20 years to 25 years following treatment.

	In Condition		Out of Condition			
	TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	**Total**
In Condition						
TI & CI ≥ 25						
acres (000s)	107.2	0.0	68.9	5.2	14.6	**195.9**
overall %	6.76%	0.00%	4.34%	0.33%	0.92%	**12.34%**
row %	54.75%	0.00%	35.18%	2.63%	7.44%	**100.00%**
column %	97.67%	0.00%	34.93%	0.69%	2.74%	
TI < 25, CI ≥ 40						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	2.6	0.0	128.4	6.1	30.9	**167.9**
overall %	0.16%	0.00%	8.09%	0.39%	1.95%	**10.58%**
row %	1.53%	0.00%	76.45%	3.64%	18.39%	**100.00%**
column %	2.33%	0.00%	65.07%	0.82%	5.81%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	730.4	122.2	**852.7**
overall %	0.00%	0.00%	0.00%	46.04%	7.70%	**53.74%**
row %	0.00%	0.00%	0.00%	85.67%	14.33%	**100.00%**
column %	0.00%	0.00%	0.00%	97.65%	23.00%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	6.3	363.8	**370.1**
overall %	0.00%	0.00%	0.00%	0.40%	22.93%	**23.33%**
row %	0.00%	0.00%	0.00%	1.70%	98.30%	**100.00%**
column %	0.00%	0.00%	0.00%	0.84%	68.45%	
Total						
acres (000s)	**109.8**	**0.0**	**197.3**	**748.0**	**531.5**	**1,586.5**
overall %	**6.92%**	**0.00%**	**12.43%**	**47.15%**	**33.50%**	

TO

FROM

Table 24. Transition matrix for treatment 1B: pre- to post-treatment.

| | In Condition | | Out of Condition | | | |
	TI & CI ≥ 25	TI < 25, CI ≥ 40	TI < 25, 25 ≤ CI < 40	TI ≥ 25, CI < 25	TI & CI < 25	Total
In Condition						
TI & CI ≥ 25						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
TI < 25, CI ≥ 40						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	45.5	340.4	0.0	0.0	0.0	**386.0**
overall %	2.87%	21.46%	0.00%	0.00%	0.00%	**24.33%**
row %	11.79%	88.21%	0.00%	0.00%	0.00%	**100.00%**
column %	5.48%	45.06%	0.00%	0.00%	0.00%	
TI ≥ 25, CI < 25						
acres (000s)	599.5	0.0	0.0	0.0	0.0	**599.5**
overall %	37.78%	0.00%	0.00%	0.00%	0.00%	**37.78%**
row %	100.00%	0.00%	0.00%	0.00%	0.00%	**100.00%**
column %	72.13%	0.00%	0.00%	0.00%	0.00%	
TI & CI < 25						
acres (000s)	186.1	415.0	0.0	0.0	0.0	**601.1**
overall %	11.73%	26.16%	0.00%	0.00%	0.00%	**37.89%**
row %	30.96%	69.04%	0.00%	0.00%	0.00%	**100.00%**
column %	22.39%	54.94%	0.00%	0.00%	0.00%	
Total						
acres (000s)	**831.1**	**755.5**	**0.0**	**0.0**	**0.0**	**1,586.5**
overall %	**52.38%**	**47.62%**	**0.00%**	**0.00%**	**0.00%**	

TO

FROM

Table 25. Transition matrix for treatment 1B: post-treatment to 5 years following treatment.

	In Condition		Out of Condition			
	TI & CI ≥ 25	TI < 25, CI ≥ 40	TI < 25, 25 ≤ CI < 40	TI ≥ 25, CI < 25	TI & CI < 25	Total
In Condition						
TI & CI ≥ 25						
acres (000s)	282.8	20.7	75.8	393.7	58.2	**831.1**
overall %	17.82%	1.30%	4.78%	24.81%	3.67%	**52.38%**
row %	34.03%	2.49%	9.12%	47.37%	7.00%	**100.00%**
column %	57.19%	7.86%	20.23%	99.33%	100.00%	
TI < 25, CI ≥ 40						
acres (000s)	211.7	242.2	298.9	2.7	0.0	**755.5**
overall %	13.34%	15.26%	18.84%	0.17%	0.00%	**47.62%**
row %	28.02%	32.06%	39.57%	0.35%	0.00%	**100.00%**
column %	42.81%	92.14%	79.77%	0.67%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
Total						
acres (000s)	**494.5**	**262.8**	**374.7**	**396.4**	**58.2**	**1,586.5**
overall %	**31.17%**	**16.57%**	**23.62%**	**24.98%**	**3.67%**	

TO

FROM

Table 26. Transition matrix for treatment 1B: 5 years to 10 years following treatment.

| | **In Condition** | | **Out of Condition** | | | |
	TI & CI ≥ 25	TI < 25, CI ≥ 40	TI < 25, 25 ≤ CI < 40	TI ≥ 25, CI < 25	TI & CI < 25	*Total*
In Condition						
TI & CI ≥ 25						
acres (000s)	404.1	6.6	11.2	70.1	2.5	**494.5**
overall %	25.47%	0.42%	0.71%	4.42%	0.16%	**31.17%**
row %	81.71%	1.34%	2.27%	14.18%	0.50%	**100.00%**
column %	88.52%	4.48%	2.59%	14.14%	4.61%	
TI < 25, CI ≥ 40						
acres (000s)	23.0	140.8	99.0	0.0	0.0	**262.8**
overall %	1.45%	8.87%	6.24%	0.00%	0.00%	**16.57%**
row %	8.76%	53.56%	37.68%	0.00%	0.00%	**100.00%**
column %	5.05%	95.52%	22.88%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	29.4	0.0	322.6	9.5	13.2	**374.7**
overall %	1.85%	0.00%	20.33%	0.60%	0.83%	**23.62%**
row %	7.84%	0.00%	86.10%	2.55%	3.51%	**100.00%**
column %	6.44%	0.00%	74.53%	1.93%	24.35%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	390.1	6.3	**396.4**
overall %	0.00%	0.00%	0.00%	24.59%	0.40%	**24.98%**
row %	0.00%	0.00%	0.00%	98.41%	1.59%	**100.00%**
column %	0.00%	0.00%	0.00%	78.68%	11.64%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	26.1	32.1	**58.2**
overall %	0.00%	0.00%	0.00%	1.64%	2.02%	**3.67%**
row %	0.00%	0.00%	0.00%	44.81%	55.19%	**100.00%**
column %	0.00%	0.00%	0.00%	5.26%	59.41%	
Total						
acres (000s)	**456.5**	**147.4**	**432.9**	**495.8**	**54.0**	**1,586.5**
overall %	**28.77%**	**9.29%**	**27.28%**	**31.25%**	**3.41%**	

TO

FROM

Table 27. Transition matrix for treatment 1B: 10 years to 15 years following treatment.

	TO					
	In Condition		*Out of Condition*			
	TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	*Total*
In Condition						
TI & CI ≥ 25						
acres (000s)	329.4	10.9	62.8	30.8	22.6	**456.5**
overall %	20.76%	0.69%	3.96%	1.94%	1.42%	**28.77%**
row %	72.17%	2.40%	13.75%	6.74%	4.94%	**100.00%**
column %	89.37%	12.01%	13.28%	6.58%	12.08%	
TI < 25, CI ≥ 40						
acres (000s)	7.3	80.1	43.6	0.0	16.2	**147.4**
overall %	0.46%	5.05%	2.75%	0.00%	1.02%	**9.29%**
row %	4.98%	54.38%	29.62%	0.00%	11.02%	**100.00%**
column %	1.99%	87.99%	9.23%	0.00%	8.70%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	24.4	0.0	366.3	0.0	42.2	**432.9**
overall %	1.54%	0.00%	23.09%	0.00%	2.66%	**27.28%**
row %	5.63%	0.00%	84.63%	0.00%	9.75%	**100.00%**
column %	6.61%	0.00%	77.49%	0.00%	22.58%	
TI ≥ 25, CI < 25						
acres (000s)	7.5	0.0	0.0	419.1	69.2	**495.8**
overall %	0.47%	0.00%	0.00%	26.41%	4.36%	**31.25%**
row %	1.51%	0.00%	0.00%	84.53%	13.97%	**100.00%**
column %	2.03%	0.00%	0.00%	89.68%	37.06%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	17.4	36.6	**54.0**
overall %	0.00%	0.00%	0.00%	1.10%	2.31%	**3.41%**
row %	0.00%	0.00%	0.00%	32.28%	67.72%	**100.00%**
column %	0.00%	0.00%	0.00%	3.73%	19.59%	
Total						
acres (000s)	**368.6**	**91.1**	**472.7**	**467.3**	**186.8**	**1,586.5**
overall %	**23.23%**	**5.74%**	**29.80%**	**29.45%**	**11.78%**	

FROM

Table 28. Transition matrix for treatment 1B: 15 years to 20 years following treatment.

		TO				
	In Condition		*Out of Condition*			
	TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	*Total*
In Condition						
TI & CI ≥ 25						
acres (000s)	212.9	11.2	68.5	44.6	31.5	**368.6**
overall %	13.42%	0.71%	4.32%	2.81%	1.98%	**23.23%**
row %	57.75%	3.04%	18.57%	12.09%	8.54%	**100.00%**
column %	84.91%	19.78%	16.26%	10.91%	7.00%	
TI < 25, CI ≥ 40						
acres (000s)	1.4	45.5	33.4	0.0	10.8	**91.1**
overall %	0.09%	2.87%	2.10%	0.00%	0.68%	**5.74%**
row %	1.58%	49.94%	36.66%	0.00%	11.82%	**100.00%**
column %	0.58%	80.22%	7.93%	0.00%	2.39%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	36.4	0.0	319.2	2.5	114.6	**472.7**
overall %	2.29%	0.00%	20.12%	0.16%	7.23%	**29.80%**
row %	7.70%	0.00%	67.52%	0.53%	24.25%	**100.00%**
column %	14.52%	0.00%	75.81%	0.62%	25.50%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	341.0	126.2	**467.3**
overall %	0.00%	0.00%	0.00%	21.50%	7.96%	**29.45%**
row %	0.00%	0.00%	0.00%	72.99%	27.01%	**100.00%**
column %	0.00%	0.00%	0.00%	83.46%	28.08%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	20.5	166.4	**186.8**
overall %	0.00%	0.00%	0.00%	1.29%	10.49%	**11.78%**
row %	0.00%	0.00%	0.00%	10.95%	89.05%	**100.00%**
column %	0.00%	0.00%	0.00%	5.01%	37.02%	
Total						
acres (000s)	**250.7**	**56.7**	**421.0**	**408.6**	**449.4**	**1,586.5**
overall %	**15.80%**	**3.57%**	**26.54%**	**25.76%**	**28.33%**	

FROM

Table 29. Transition matrix for treatment 1B: 20 years to 25 years following treatment.

	In Condition		**Out of Condition**			
	TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	**Total**
In Condition						
TI & CI ≥ 25						
acres (000s)	134.0	4.7	67.4	32.1	12.4	**250.7**
overall %	8.45%	0.30%	4.25%	2.03%	0.78%	**15.80%**
row %	53.44%	1.88%	26.90%	12.82%	4.96%	**100.00%**
column %	72.06%	11.69%	19.83%	7.83%	2.04%	
TI < 25, CI ≥ 40						
acres (000s)	0.0	35.6	11.6	0.0	9.5	**56.7**
overall %	0.00%	2.24%	0.73%	0.00%	0.60%	**3.57%**
row %	0.00%	62.81%	20.44%	0.00%	16.75%	**100.00%**
column %	0.00%	88.31%	3.41%	0.00%	1.56%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	49.0	0.0	261.1	0.0	110.9	**421.0**
overall %	3.09%	0.00%	16.46%	0.00%	6.99%	**26.54%**
row %	11.64%	0.00%	62.02%	0.00%	26.33%	**100.00%**
column %	26.36%	0.00%	76.77%	0.00%	18.18%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	347.1	61.5	**408.6**
overall %	0.00%	0.00%	0.00%	21.88%	3.88%	**25.76%**
row %	0.00%	0.00%	0.00%	84.95%	15.05%	**100.00%**
column %	0.00%	0.00%	0.00%	84.61%	10.08%	
TI & CI < 25						
acres (000s)	2.9	0.0	0.0	31.0	415.5	**449.4**
overall %	0.18%	0.00%	0.00%	1.95%	26.19%	**28.33%**
row %	0.65%	0.00%	0.00%	6.90%	92.45%	**100.00%**
column %	1.57%	0.00%	0.00%	7.56%	68.14%	
Total						
acres (000s)	**185.9**	**40.3**	**340.2**	**410.3**	**609.8**	**1,586.5**
overall %	**11.72%**	**2.54%**	**21.44%**	**25.86%**	**38.44%**	

TO

FROM

Table 30. Transition matrix for treatment 2B: pre- to post-treatment.

	In Condition		**Out of Condition**			
	TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	**Total**
In Condition						
TI & CI ≥ 25						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
TI < 25, CI ≥ 40						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	90.9	295.0	0.0	0.0	0.0	**386.0**
overall %	5.73%	18.60%	0.00%	0.00%	0.00%	**24.33%**
row %	23.56%	76.44%	0.00%	0.00%	0.00%	**100.00%**
column %	9.57%	46.38%	0.00%	0.00%	0.00%	
TI ≥ 25, CI < 25						
acres (000s)	599.5	0.0	0.0	0.0	0.0	**599.5**
overall %	37.78%	0.00%	0.00%	0.00%	0.00%	**37.78%**
row %	100.00%	0.00%	0.00%	0.00%	0.00%	**100.00%**
column %	63.08%	0.00%	0.00%	0.00%	0.00%	
TI & CI < 25						
acres (000s)	260.0	341.2	0.0	0.0	0.0	**601.1**
overall %	16.39%	21.50%	0.00%	0.00%	0.00%	**37.89%**
row %	43.25%	56.75%	0.00%	0.00%	0.00%	**100.00%**
column %	27.36%	53.62%	0.00%	0.00%	0.00%	
Total						
acres (000s)	**950.3**	**636.2**	**0.0**	**0.0**	**0.0**	**1,586.5**
overall %	**59.90%**	**40.10%**	**0.00%**	**0.00%**	**0.00%**	

FROM

TO

Table 31. Transition matrix for treatment 2B: post-treatment to 5 years following treatment.

| | | In Condition | | Out of Condition | | | |
		TI & CI ≥ 25	TI < 25, CI ≥ 40	TI < 25, 25 ≤ CI < 40	TI ≥ 25, CI < 25	TI & CI < 25	Total
In Condition							
TI & CI ≥ 25							
	acres (000s)	287.5	2.5	177.6	392.7	90.1	**950.3**
	overall %	18.12%	0.16%	11.20%	24.75%	5.68%	**59.90%**
	row %	30.25%	0.26%	18.69%	41.32%	9.48%	**100.00%**
	column %	61.13%	3.32%	32.86%	100.00%	83.47%	
TI < 25, CI ≥ 40							
	acres (000s)	182.8	72.6	363.0	0.0	17.8	**636.2**
	overall %	11.52%	4.58%	22.88%	0.00%	1.12%	**40.10%**
	row %	28.73%	11.41%	57.05%	0.00%	2.80%	**100.00%**
	column %	38.87%	96.68%	67.14%	0.00%	16.53%	
Out of Condition							
TI < 25, 25 ≤ CI < 40							
	acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
	overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
	row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
	column %	0.00%	0.00%	0.00%	0.00%	0.00%	
TI ≥ 25, CI < 25							
	acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
	overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
	row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
	column %	0.00%	0.00%	0.00%	0.00%	0.00%	
TI & CI < 25							
	acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
	overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
	row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
	column %	0.00%	0.00%	0.00%	0.00%	0.00%	
Total							
	acres (000s)	**470.2**	**75.1**	**540.6**	**392.7**	**107.9**	**1,586.5**
	overall %	**29.64%**	**4.73%**	**34.07%**	**24.75%**	**6.80%**	

TO (column header group)

FROM (row header group)

Table 32. Transition matrix for treatment 2B: 5 years to 10 years following treatment.

| | **In Condition** | | **Out of Condition** | | | |
	TI & CI ≥ 25	TI < 25, CI ≥ 40	TI < 25, 25 ≤ CI < 40	TI ≥ 25, CI < 25	TI & CI < 25	*Total*
In Condition						
TI & CI ≥ 25						
acres (000s)	384.7	0.0	8.7	74.3	2.5	**470.2**
overall %	24.25%	0.00%	0.55%	4.68%	0.16%	**29.64%**
row %	81.81%	0.00%	1.86%	15.81%	0.53%	**100.00%**
column %	78.13%	0.00%	1.92%	14.96%	2.55%	
TI < 25, CI ≥ 40						
acres (000s)	9.8	44.2	21.1	0.0	0.0	**75.1**
overall %	0.62%	2.78%	1.33%	0.00%	0.00%	**4.73%**
row %	13.10%	58.82%	28.08%	0.00%	0.00%	**100.00%**
column %	2.00%	100.00%	4.63%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	97.8	0.0	425.9	2.2	14.7	**540.6**
overall %	6.17%	0.00%	26.84%	0.14%	0.93%	**34.07%**
row %	18.10%	0.00%	78.78%	0.40%	2.73%	**100.00%**
column %	19.87%	0.00%	93.45%	0.43%	15.12%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	387.4	5.3	**392.7**
overall %	0.00%	0.00%	0.00%	24.42%	0.33%	**24.75%**
row %	0.00%	0.00%	0.00%	98.66%	1.34%	**100.00%**
column %	0.00%	0.00%	0.00%	77.97%	5.39%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	33.0	75.0	**107.9**
overall %	0.00%	0.00%	0.00%	2.08%	4.73%	**6.80%**
row %	0.00%	0.00%	0.00%	30.53%	69.47%	**100.00%**
column %	0.00%	0.00%	0.00%	6.63%	76.93%	
Total						
acres (000s)	**492.4**	**44.2**	**455.7**	**496.8**	**97.5**	**1,586.5**
overall %	**31.03%**	**2.78%**	**28.72%**	**31.32%**	**6.14%**	

TO

FROM

Table 33. Transition matrix for treatment 2B: 10 years to 15 years following treatment.

	TO					
	In Condition		*Out of Condition*			
	TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	***Total***
In Condition						
TI & CI ≥ 25						
acres (000s)	335.8	7.4	78.3	51.6	19.2	**492.4**
overall %	21.17%	0.47%	4.94%	3.25%	1.21%	**31.03%**
row %	68.20%	1.51%	15.90%	10.48%	3.90%	**100.00%**
column %	89.46%	16.03%	17.06%	10.29%	9.41%	
TI < 25, CI ≥ 40						
acres (000s)	2.5	39.0	2.7	0.0	0.0	**44.2**
overall %	0.16%	2.46%	0.17%	0.00%	0.00%	**2.78%**
row %	5.64%	88.28%	6.08%	0.00%	0.00%	**100.00%**
column %	0.66%	83.97%	0.59%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	37.1	0.0	378.1	6.8	33.7	**455.7**
overall %	2.34%	0.00%	23.83%	0.43%	2.12%	**28.72%**
row %	8.14%	0.00%	82.97%	1.49%	7.40%	**100.00%**
column %	9.88%	0.00%	82.36%	1.36%	16.52%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	424.1	72.8	**496.8**
overall %	0.00%	0.00%	0.00%	26.73%	4.59%	**31.32%**
row %	0.00%	0.00%	0.00%	85.35%	14.65%	**100.00%**
column %	0.00%	0.00%	0.00%	84.55%	35.66%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	19.1	78.4	**97.5**
overall %	0.00%	0.00%	0.00%	1.20%	4.94%	**6.14%**
row %	0.00%	0.00%	0.00%	19.57%	80.43%	**100.00%**
column %	0.00%	0.00%	0.00%	3.80%	38.41%	
Total						
acres (000s)	**375.4**	**46.4**	**459.1**	**501.6**	**204.1**	**1,586.5**
overall %	**23.66%**	**2.93%**	**28.94%**	**31.61%**	**12.86%**	

FROM

Table 34. Transition matrix for treatment 2B: 15 years to 20 years following treatment.

<table>
<tr><td></td><td></td><td colspan="2">**TO**
In Condition</td><td colspan="3">*Out of Condition*</td><td></td></tr>
<tr><td></td><td></td><td>TI & CI ≥ 25</td><td>TI < 25,
CI ≥ 40</td><td>TI < 25,
25 ≤ CI < 40</td><td>TI ≥ 25,
CI < 25</td><td>TI & CI < 25</td><td>*Total*</td></tr>
<tr><td colspan="8">*In Condition*</td></tr>
<tr><td colspan="8">**TI & CI ≥ 25**</td></tr>
<tr><td></td><td>acres (000s)</td><td>217.6</td><td>5.0</td><td>65.1</td><td>62.4</td><td>25.3</td><td>**375.4**</td></tr>
<tr><td></td><td>overall %</td><td>13.72%</td><td>0.32%</td><td>4.10%</td><td>3.93%</td><td>1.59%</td><td>**23.66%**</td></tr>
<tr><td></td><td>row %</td><td>57.97%</td><td>1.34%</td><td>17.34%</td><td>16.62%</td><td>6.73%</td><td>**100.00%**</td></tr>
<tr><td></td><td>column %</td><td>88.38%</td><td>14.62%</td><td>18.18%</td><td>13.76%</td><td>5.11%</td><td></td></tr>
<tr><td colspan="8">**TI < 25, CI ≥ 40**</td></tr>
<tr><td></td><td>acres (000s)</td><td>0.0</td><td>29.3</td><td>13.2</td><td>0.0</td><td>3.9</td><td>**46.4**</td></tr>
<tr><td></td><td>overall %</td><td>0.00%</td><td>1.85%</td><td>0.83%</td><td>0.00%</td><td>0.25%</td><td>**2.93%**</td></tr>
<tr><td></td><td>row %</td><td>0.00%</td><td>63.05%</td><td>28.47%</td><td>0.00%</td><td>8.48%</td><td>**100.00%**</td></tr>
<tr><td></td><td>column %</td><td>0.00%</td><td>85.38%</td><td>3.69%</td><td>0.00%</td><td>0.80%</td><td></td></tr>
<tr><td colspan="8">*Out of Condition*</td></tr>
<tr><td colspan="8">**TI < 25, 25 ≤ CI < 40**</td></tr>
<tr><td></td><td>acres (000s)</td><td>28.6</td><td>0.0</td><td>279.6</td><td>0.0</td><td>150.9</td><td>**459.1**</td></tr>
<tr><td></td><td>overall %</td><td>1.80%</td><td>0.00%</td><td>17.62%</td><td>0.00%</td><td>9.51%</td><td>**28.94%**</td></tr>
<tr><td></td><td>row %</td><td>6.23%</td><td>0.00%</td><td>60.90%</td><td>0.00%</td><td>32.87%</td><td>**100.00%**</td></tr>
<tr><td></td><td>column %</td><td>11.62%</td><td>0.00%</td><td>78.12%</td><td>0.00%</td><td>30.50%</td><td></td></tr>
<tr><td colspan="8">**TI ≥ 25, CI < 25**</td></tr>
<tr><td></td><td>acres (000s)</td><td>0.0</td><td>0.0</td><td>0.0</td><td>364.2</td><td>137.3</td><td>**501.6**</td></tr>
<tr><td></td><td>overall %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>22.96%</td><td>8.66%</td><td>**31.61%**</td></tr>
<tr><td></td><td>row %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>72.62%</td><td>27.38%</td><td>**100.00%**</td></tr>
<tr><td></td><td>column %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>80.33%</td><td>27.76%</td><td></td></tr>
<tr><td colspan="8">**TI & CI < 25**</td></tr>
<tr><td></td><td>acres (000s)</td><td>0.0</td><td>0.0</td><td>0.0</td><td>26.8</td><td>177.3</td><td>**204.1**</td></tr>
<tr><td></td><td>overall %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>1.69%</td><td>11.17%</td><td>**12.86%**</td></tr>
<tr><td></td><td>row %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>13.14%</td><td>86.86%</td><td>**100.00%**</td></tr>
<tr><td></td><td>column %</td><td>0.00%</td><td>0.00%</td><td>0.00%</td><td>5.91%</td><td>35.83%</td><td></td></tr>
<tr><td colspan="8">*Total*</td></tr>
<tr><td></td><td>acres (000s)</td><td>**246.2**</td><td>**34.3**</td><td>**357.9**</td><td>**453.4**</td><td>**494.7**</td><td>**1,586.5**</td></tr>
<tr><td></td><td>overall %</td><td>**15.52%**</td><td>**2.16%**</td><td>**22.56%**</td><td>**28.58%**</td><td>**31.18%**</td><td></td></tr>
</table>

FROM

Table 35. Transition matrix for treatment 2B: 20 years to 25 years following treatment.

| | **In Condition** | | **Out of Condition** | | | |
	TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	***Total***
In Condition						
TI & CI ≥ 25						
acres (000s)	134.0	4.7	67.4	32.1	12.4	**250.7**
overall %	8.45%	0.30%	4.25%	2.03%	0.78%	**15.80%**
row %	53.44%	1.88%	26.90%	12.82%	4.96%	**100.00%**
column %	72.06%	11.69%	19.83%	7.83%	2.04%	
TI < 25, CI ≥ 40						
acres (000s)	0.0	35.6	11.6	0.0	9.5	**56.7**
overall %	0.00%	2.24%	0.73%	0.00%	0.60%	**3.57%**
row %	0.00%	62.81%	20.44%	0.00%	16.75%	**100.00%**
column %	0.00%	88.31%	3.41%	0.00%	1.56%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	49.0	0.0	261.1	0.0	110.9	**421.0**
overall %	3.09%	0.00%	16.46%	0.00%	6.99%	**26.54%**
row %	11.64%	0.00%	62.02%	0.00%	26.33%	**100.00%**
column %	26.36%	0.00%	76.77%	0.00%	18.18%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	347.1	61.5	**408.6**
overall %	0.00%	0.00%	0.00%	21.88%	3.88%	**25.76%**
row %	0.00%	0.00%	0.00%	84.95%	15.05%	**100.00%**
column %	0.00%	0.00%	0.00%	84.61%	10.08%	
TI & CI < 25						
acres (000s)	2.9	0.0	0.0	31.0	415.5	**449.4**
overall %	0.18%	0.00%	0.00%	1.95%	26.19%	**28.33%**
row %	0.65%	0.00%	0.00%	6.90%	92.45%	**100.00%**
column %	1.57%	0.00%	0.00%	7.56%	68.14%	
Total						
acres (000s)	**185.9**	**40.3**	**340.2**	**410.3**	**609.8**	**1,586.5**
overall %	**11.72%**	**2.54%**	**21.44%**	**25.86%**	**38.44%**	

TO (column header above table)

FROM (row label on left side)

Table 36. Transition matrix for treatment 3B: pre- to post-treatment.

	TO					
	In Condition		**Out of Condition**			
	TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	**Total**
In Condition						
TI & CI ≥ 25						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
TI < 25, CI ≥ 40						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	193.0	193.0	0.0	0.0	0.0	**386.0**
overall %	12.16%	12.16%	0.00%	0.00%	0.00%	**24.33%**
row %	50.01%	49.99%	0.00%	0.00%	0.00%	**100.00%**
column %	15.72%	53.77%	0.00%	0.00%	0.00%	
TI ≥ 25, CI < 25						
acres (000s)	599.5	0.0	0.0	0.0	0.0	**599.5**
overall %	37.78%	0.00%	0.00%	0.00%	0.00%	**37.78%**
row %	100.00%	0.00%	0.00%	0.00%	0.00%	**100.00%**
column %	48.83%	0.00%	0.00%	0.00%	0.00%	
TI & CI < 25						
acres (000s)	435.2	165.9	0.0	0.0	0.0	**601.1**
overall %	27.43%	10.46%	0.00%	0.00%	0.00%	**37.89%**
row %	72.40%	27.60%	0.00%	0.00%	0.00%	**100.00%**
column %	35.45%	46.23%	0.00%	0.00%	0.00%	
Total						
acres (000s)	**1,227.7**	**358.9**	**0.0**	**0.0**	**0.0**	1,586.5
overall %	**77.38%**	**22.62%**	**0.00%**	**0.00%**	**0.00%**	

FROM

Table 37. Transition matrix for treatment 3B: post-treatment to 5 years following treatment.

	In Condition		Out of Condition			
	TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	*Total*
In Condition						
TI & CI ≥ 25						
acres (000s)	229.6	0.0	62.6	903.6	32.0	**1,227.7**
overall %	14.47%	0.00%	3.94%	56.95%	2.02%	**77.38%**
row %	18.70%	0.00%	5.10%	73.60%	2.61%	**100.00%**
column %	60.51%	0.00%	33.62%	98.69%	69.14%	
TI < 25, CI ≥ 40						
acres (000s)	149.8	59.2	123.5	12.0	14.3	**358.9**
overall %	9.44%	3.73%	7.78%	0.76%	0.90%	**22.62%**
row %	41.76%	16.49%	34.41%	3.35%	3.98%	**100.00%**
column %	39.49%	100.00%	66.38%	1.31%	30.86%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
Total						
acres (000s)	**379.4**	**59.2**	**186.0**	**915.6**	**46.3**	**1,586.5**
overall %	**23.91%**	**3.73%**	**11.73%**	**57.71%**	**2.92%**	

FROM

TO

Table 38. Transition matrix for treatment 3B: 5 years to 10 years following treatment.

	TO					
	In Condition		*Out of Condition*			
		TI < 25,	**TI < 25,**	**TI ≥ 25,**		
	TI & CI ≥ 25	**CI ≥ 40**	**25 ≤ CI < 40**	**CI < 25**	**TI & CI < 25**	*Total*
In Condition						
TI & CI ≥ 25						
acres (000s)	314.1	0.0	23.2	40.5	1.6	**379.4**
overall %	19.80%	0.00%	1.46%	2.55%	0.10%	**23.91%**
row %	82.80%	0.00%	6.11%	10.68%	0.41%	**100.00%**
column %	95.59%	0.00%	11.74%	4.22%	3.03%	
TI < 25, CI ≥ 40						
acres (000s)	0.0	49.2	10.0	0.0	0.0	**59.2**
overall %	0.00%	3.10%	0.63%	0.00%	0.00%	**3.73%**
row %	0.00%	83.18%	16.82%	0.00%	0.00%	**100.00%**
column %	0.00%	100.00%	5.04%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	14.5	0.0	164.3	1.0	6.2	**186.0**
overall %	0.91%	0.00%	10.36%	0.06%	0.39%	**11.73%**
row %	7.79%	0.00%	88.32%	0.53%	3.36%	**100.00%**
column %	4.41%	0.00%	83.22%	0.10%	12.17%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	906.1	9.5	**915.6**
overall %	0.00%	0.00%	0.00%	57.11%	0.60%	**57.71%**
row %	0.00%	0.00%	0.00%	98.97%	1.03%	**100.00%**
column %	0.00%	0.00%	0.00%	94.40%	18.44%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	12.2	34.1	**46.3**
overall %	0.00%	0.00%	0.00%	0.77%	2.15%	**2.92%**
row %	0.00%	0.00%	0.00%	26.42%	73.58%	**100.00%**
column %	0.00%	0.00%	0.00%	1.27%	66.36%	
Total						
acres (000s)	**328.6**	**49.2**	**197.4**	**959.9**	**51.3**	**1,586.5**
overall %	**20.71%**	**3.10%**	**12.45%**	**60.50%**	**3.24%**	

FROM

Table 39. Transition matrix for treatment 3B: 10 years to 15 years following treatment.

| | **TO** | | | | | |
| | In Condition | | Out of Condition | | | |
	TI & CI ≥ 25	TI < 25, CI ≥ 40	TI < 25, 25 ≤ CI < 40	TI ≥ 25, CI < 25	TI & CI < 25	Total
In Condition						
TI & CI ≥ 25						
acres (000s)	230.6	0.0	34.6	53.9	9.5	**328.6**
overall %	14.54%	0.00%	2.18%	3.40%	0.60%	**20.71%**
row %	70.18%	0.00%	10.52%	16.42%	2.88%	**100.00%**
column %	94.32%	0.00%	18.98%	5.70%	5.37%	
TI < 25, CI ≥ 40						
acres (000s)	0.0	37.2	12.0	0.0	0.0	**49.2**
overall %	0.00%	2.34%	0.76%	0.00%	0.00%	**3.10%**
row %	0.00%	75.55%	24.45%	0.00%	0.00%	**100.00%**
column %	0.00%	100.00%	6.61%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	13.9	0.0	135.6	8.0	39.9	**197.4**
overall %	0.88%	0.00%	8.55%	0.51%	2.52%	**12.45%**
row %	7.04%	0.00%	68.67%	4.07%	20.23%	**100.00%**
column %	5.68%	0.00%	74.42%	0.85%	22.64%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	881.1	78.7	**959.9**
overall %	0.00%	0.00%	0.00%	55.54%	4.96%	**60.50%**
row %	0.00%	0.00%	0.00%	91.80%	8.20%	**100.00%**
column %	0.00%	0.00%	0.00%	93.12%	44.64%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	3.1	48.2	**51.3**
overall %	0.00%	0.00%	0.00%	0.20%	3.04%	**3.24%**
row %	0.00%	0.00%	0.00%	6.06%	93.94%	**100.00%**
column %	0.00%	0.00%	0.00%	0.33%	27.34%	
Total						
acres (000s)	**244.5**	**37.2**	**182.2**	**946.2**	**176.4**	**1,586.5**
overall %	**15.41%**	**2.34%**	**11.48%**	**59.64%**	**11.12%**	

FROM

Table 40. Transition matrix for treatment 3B: 15 years to 20 years following treatment.

| | **In Condition** | | **Out of Condition** | | | |
	TI & CI ≥ 25	TI < 25, CI ≥ 40	TI < 25, 25 ≤ CI < 40	TI ≥ 25, CI < 25	TI & CI < 25	*Total*
In Condition						
TI & CI ≥ 25						
acres (000s)	139.9	0.0	63.2	41.5	0.0	**244.5**
overall %	8.82%	0.00%	3.98%	2.62%	0.00%	**15.41%**
row %	57.20%	0.00%	25.83%	16.97%	0.00%	**100.00%**
column %	81.59%	0.00%	31.78%	5.02%	0.00%	
TI < 25, CI ≥ 40						
acres (000s)	24.2	3.9	0.0	0.0	9.1	**37.2**
overall %	1.53%	0.24%	0.00%	0.00%	0.57%	**2.34%**
row %	65.08%	10.40%	0.00%	0.00%	24.52%	**100.00%**
column %	14.12%	100.00%	0.00%	0.00%	2.37%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	7.4	0.0	135.6	3.9	35.3	**182.2**
overall %	0.46%	0.00%	8.55%	0.25%	2.23%	**11.48%**
row %	4.04%	0.00%	74.42%	2.16%	19.38%	**100.00%**
column %	4.29%	0.00%	68.22%	0.48%	9.17%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	743.5	202.7	**946.2**
overall %	0.00%	0.00%	0.00%	46.87%	12.78%	**59.64%**
row %	0.00%	0.00%	0.00%	78.58%	21.42%	**100.00%**
column %	0.00%	0.00%	0.00%	89.86%	52.65%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	38.5	137.9	**176.4**
overall %	0.00%	0.00%	0.00%	2.43%	8.69%	**11.12%**
row %	0.00%	0.00%	0.00%	21.81%	78.19%	**100.00%**
column %	0.00%	0.00%	0.00%	4.65%	35.82%	
Total						
acres (000s)	**171.4**	**3.9**	**198.7**	**827.4**	**385.0**	**1,586.5**
overall %	**10.81%**	**0.24%**	**12.53%**	**52.15%**	**24.27%**	

TO

FROM

Table 41. Transition matrix for treatment 3B: 20 years to 25 years following treatment.

| | **TO** | | | | | |
| | *In Condition* | | *Out of Condition* | | | |
	TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	*Total*
In Condition						
TI & CI ≥ 25						
acres (000s)	85.3	0.0	68.9	2.7	14.6	**171.4**
overall %	5.38%	0.00%	4.34%	0.17%	0.92%	**10.81%**
row %	49.76%	0.00%	40.19%	1.56%	8.49%	**100.00%**
column %	97.08%	0.00%	34.73%	0.38%	2.45%	
TI < 25, CI ≥ 40						
acres (000s)	0.0	3.9	0.0	0.0	0.0	**3.9**
overall %	0.00%	0.24%	0.00%	0.00%	0.00%	**0.24%**
row %	0.00%	100.00%	0.00%	0.00%	0.00%	**100.00%**
column %	0.00%	100.00%	0.00%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	2.6	0.0	129.5	6.1	60.6	**198.7**
overall %	0.16%	0.00%	8.16%	0.39%	3.82%	**12.53%**
row %	1.29%	0.00%	65.15%	3.07%	30.49%	**100.00%**
column %	2.92%	0.00%	65.27%	0.87%	10.19%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	687.0	140.4	**827.4**
overall %	0.00%	0.00%	0.00%	43.30%	8.85%	**52.15%**
row %	0.00%	0.00%	0.00%	83.03%	16.97%	**100.00%**
column %	0.00%	0.00%	0.00%	97.85%	23.63%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	6.3	378.7	**385.0**
overall %	0.00%	0.00%	0.00%	0.40%	23.87%	**24.27%**
row %	0.00%	0.00%	0.00%	1.63%	98.37%	**100.00%**
column %	0.00%	0.00%	0.00%	0.90%	63.73%	
Total						
acres (000s)	**87.9**	**3.9**	**198.4**	**702.1**	**594.3**	**1,586.5**
overall %	**5.54%**	**0.24%**	**12.50%**	**44.25%**	**37.46%**	

FROM

Table 42. Transition matrix for Untreated: beginning to +5 years.

	In Condition		Out of Condition			
	TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	**Total**
In Condition						
TI & CI ≥ 25						
acres (000s)	1,810.6	55.0	27.1	69.4	2.5	**1,964.7**
overall %	82.31%	2.50%	1.23%	3.16%	0.11%	**89.31%**
row %	92.16%	2.80%	1.38%	3.53%	0.12%	**100.00%**
column %	97.23%	27.08%	46.44%	100.00%	36.82%	
TI < 25, CI ≥ 40						
acres (000s)	51.5	148.2	31.3	0.0	4.2	**235.2**
overall %	2.34%	6.74%	1.42%	0.00%	0.19%	**10.69%**
row %	21.89%	63.02%	13.29%	0.00%	1.79%	**100.00%**
column %	2.77%	72.92%	53.56%	0.00%	63.18%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	0.0	0.0	**0.0**
overall %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
row %	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
column %	0.00%	0.00%	0.00%	0.00%	0.00%	
Total						
acres (000s)	**1,862.1**	**203.3**	**58.4**	**69.4**	**6.7**	**2,199.9**
overall %	**84.65%**	**9.24%**	**2.65%**	**3.16%**	**0.30%**	

TO (column header group)

FROM (row header group)

Table 43. Transition matrix for Untreated: +5 years to +10 years.

	In Condition		Out of Condition			
	TI & CI ≥ 25	TI < 25, CI ≥ 40	TI < 25, 25 ≤ CI < 40	TI ≥ 25, CI < 25	TI & CI < 25	Total
In Condition						
TI & CI ≥ 25						
acres (000s)	1,783.3	5.9	28.5	44.4	0.0	**1,862.1**
overall %	81.06%	0.27%	1.30%	2.02%	0.00%	**84.65%**
row %	95.77%	0.32%	1.53%	2.38%	0.00%	**100.00%**
column %	97.61%	4.08%	27.54%	39.49%	0.00%	
TI < 25, CI ≥ 40						
acres (000s)	31.3	136.4	35.6	0.0	0.0	**203.3**
overall %	1.42%	6.20%	1.62%	0.00%	0.00%	**9.24%**
row %	15.38%	67.11%	17.51%	0.00%	0.00%	**100.00%**
column %	1.71%	93.90%	34.37%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	8.5	2.9	39.5	2.5	5.0	**58.4**
overall %	0.39%	0.13%	1.79%	0.11%	0.23%	**2.65%**
row %	14.51%	5.01%	67.59%	4.27%	8.62%	**100.00%**
column %	0.46%	2.01%	38.09%	2.22%	43.03%	
TI ≥ 25, CI < 25						
acres (000s)	3.9	0.0	0.0	65.5	0.0	**69.4**
overall %	0.18%	0.00%	0.00%	2.98%	0.00%	**3.16%**
row %	5.67%	0.00%	0.00%	94.33%	0.00%	**100.00%**
column %	0.22%	0.00%	0.00%	58.30%	0.00%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	0.0	6.7	**6.7**
overall %	0.00%	0.00%	0.00%	0.00%	0.30%	**0.30%**
row %	0.00%	0.00%	0.00%	0.00%	100.00%	**100.00%**
column %	0.00%	0.00%	0.00%	0.00%	56.97%	
Total						
acres (000s)	**1,827.0**	**145.3**	**103.6**	**112.3**	**11.7**	**2,199.9**
overall %	**83.05%**	**6.60%**	**4.71%**	**5.11%**	**0.53%**	

TO

FROM

Table 44. Transition matrix for Untreated: +10 years to +15 years.

	TO					
	In Condition		**Out of Condition**			
		TI < 25,	TI < 25,	TI ≥ 25,		
	TI & CI ≥ 25	CI ≥ 40	25 ≤ CI < 40	CI < 25	TI & CI < 25	*Total*
In Condition						
TI & CI ≥ 25						
acres (000s)	1,648.6	62.9	56.9	55.7	2.8	**1,827.0**
overall %	74.94%	2.86%	2.59%	2.53%	0.13%	**83.05%**
row %	90.24%	3.44%	3.12%	3.05%	0.16%	**100.00%**
column %	98.96%	36.48%	33.24%	34.15%	10.47%	
TI < 25, CI ≥ 40						
acres (000s)	10.3	109.6	24.4	0.0	1.0	**145.3**
overall %	0.47%	4.98%	1.11%	0.00%	0.05%	**6.60%**
row %	7.07%	75.42%	16.79%	0.00%	0.72%	**100.00%**
column %	0.62%	63.52%	14.24%	0.00%	3.83%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	7.0	0.0	90.0	0.0	6.6	**103.6**
overall %	0.32%	0.00%	4.09%	0.00%	0.30%	**4.71%**
row %	6.76%	0.00%	86.85%	0.00%	6.39%	**100.00%**
column %	0.42%	0.00%	52.52%	0.00%	24.33%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	103.1	9.2	**112.3**
overall %	0.00%	0.00%	0.00%	4.69%	0.42%	**5.11%**
row %	0.00%	0.00%	0.00%	91.80%	8.20%	**100.00%**
column %	0.00%	0.00%	0.00%	63.26%	33.85%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	4.2	7.5	**11.7**
overall %	0.00%	0.00%	0.00%	0.19%	0.34%	**0.53%**
row %	0.00%	0.00%	0.00%	35.99%	64.01%	**100.00%**
column %	0.00%	0.00%	0.00%	2.58%	27.52%	
Total						
acres (000s)	**1,665.9**	**172.5**	**171.3**	**163.0**	**27.2**	**2,199.9**
overall %	**75.73%**	**7.84%**	**7.79%**	**7.41%**	**1.24%**	

FROM

Table 45. Transition matrix for Untreated: +15 years to +20 years.

	TO					
	In Condition		*Out of Condition*			
	TI & CI ≥ 25	**TI < 25, CI ≥ 40**	**TI < 25, 25 ≤ CI < 40**	**TI ≥ 25, CI < 25**	**TI & CI < 25**	***Total***
In Condition						
TI & CI ≥ 25						
acres (000s)	1,595.5	17.8	25.2	21.8	5.6	**1,665.9**
overall %	72.53%	0.81%	1.14%	0.99%	0.26%	**75.73%**
row %	95.77%	1.07%	1.51%	1.31%	0.34%	**100.00%**
column %	99.11%	11.94%	15.92%	11.90%	5.66%	
TI < 25, CI ≥ 40						
acres (000s)	4.2	131.6	36.6	0.0	0.0	**172.5**
overall %	0.19%	5.98%	1.66%	0.00%	0.00%	**7.84%**
row %	2.44%	76.33%	21.22%	0.00%	0.00%	**100.00%**
column %	0.26%	88.06%	23.16%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	10.1	0.0	96.3	0.0	64.9	**171.3**
overall %	0.46%	0.00%	4.38%	0.00%	2.95%	**7.79%**
row %	5.89%	0.00%	56.22%	0.00%	37.90%	**100.00%**
column %	0.63%	0.00%	60.92%	0.00%	65.26%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	159.6	3.5	**163.0**
overall %	0.00%	0.00%	0.00%	7.25%	0.16%	**7.41%**
row %	0.00%	0.00%	0.00%	97.88%	2.12%	**100.00%**
column %	0.00%	0.00%	0.00%	87.16%	3.47%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	1.7	25.5	**27.2**
overall %	0.00%	0.00%	0.00%	0.08%	1.16%	**1.24%**
row %	0.00%	0.00%	0.00%	6.37%	93.63%	**100.00%**
column %	0.00%	0.00%	0.00%	0.95%	25.61%	
Total						
acres (000s)	**1,609.8**	**149.5**	**158.1**	**183.1**	**99.5**	**2,199.9**
overall %	**73.18%**	**6.80%**	**7.18%**	**8.32%**	**4.52%**	

FROM

Table 46. Transition matrix for Untreated: +20 years to +25 years.

TO

	In Condition		Out of Condition			
	TI & CI ≥ 25	TI < 25, CI ≥ 40	TI < 25, 25 ≤ CI < 40	TI ≥ 25, CI < 25	TI & CI < 25	Total
In Condition						
TI & CI ≥ 25						
acres (000s)	1,533.4	26.6	20.9	24.2	4.7	**1,609.8**
overall %	69.70%	1.21%	0.95%	1.10%	0.21%	**73.18%**
row %	95.26%	1.65%	1.30%	1.50%	0.29%	**100.00%**
column %	98.27%	18.48%	12.59%	11.02%	4.26%	
TI < 25, CI ≥ 40						
acres (000s)	14.7	117.5	17.3	0.0	0.0	**149.5**
overall %	0.67%	5.34%	0.79%	0.00%	0.00%	**6.80%**
row %	9.82%	78.58%	11.60%	0.00%	0.00%	**100.00%**
column %	0.94%	81.52%	10.46%	0.00%	0.00%	
Out of Condition						
TI < 25, 25 ≤ CI < 40						
acres (000s)	12.3	0.0	127.6	2.7	15.5	**158.1**
overall %	0.56%	0.00%	5.80%	0.12%	0.70%	**7.18%**
row %	7.78%	0.00%	80.72%	1.69%	9.81%	**100.00%**
column %	0.79%	0.00%	76.95%	1.22%	14.04%	
TI ≥ 25, CI < 25						
acres (000s)	0.0	0.0	0.0	179.1	4.0	**183.1**
overall %	0.00%	0.00%	0.00%	8.14%	0.18%	**8.32%**
row %	0.00%	0.00%	0.00%	97.84%	2.16%	**100.00%**
column %	0.00%	0.00%	0.00%	81.75%	3.58%	
TI & CI < 25						
acres (000s)	0.0	0.0	0.0	13.2	86.3	**99.5**
overall %	0.00%	0.00%	0.00%	0.60%	3.92%	**4.52%**
row %	0.00%	0.00%	0.00%	13.23%	86.77%	**100.00%**
column %	0.00%	0.00%	0.00%	6.00%	78.13%	
Total						
acres (000s)	**1,560.4**	**144.1**	**165.8**	**219.1**	**110.5**	**2,199.9**
overall %	**70.93%**	**6.55%**	**7.54%**	**9.96%**	**5.02%**	

FROM

Table 47

Softwood Sawlog Volume by treatment.

Treatment	Volume (mmcf)
forest types other than lodgepole and fir-spruce	
SDI 1A	440.5
SDI 2A	306.8
TFB 3A	49.7
SDI 1B	608.3
SDI 2B	391.2
TFB 3B	65.5
lodgepole and fir-spruce forest types	
SDI 4A	106.3
SDI 4B	406.2

Fig. 1. Pre- and post-treatment weighted average basal area per acre by diameter class

for forest types other than lodgepole and fir-spruce under scenario "A"*.
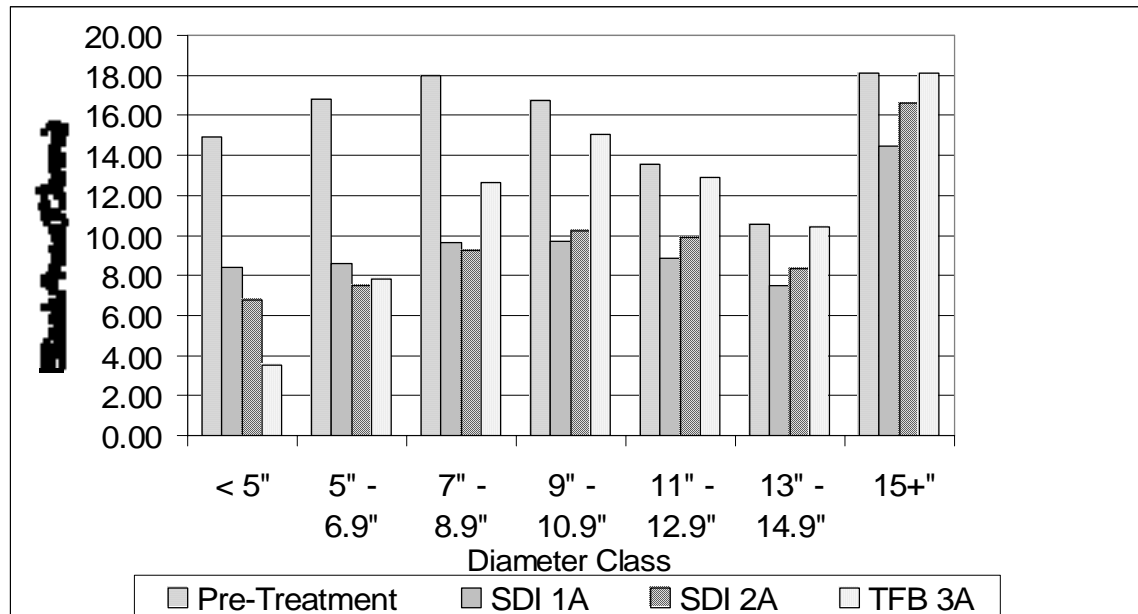
* "A" treatments feature a limit on beginning basal area removed of 50%.

Fig. 2. Visualization of a Douglas-fir plot in San Miguel County prior to and following
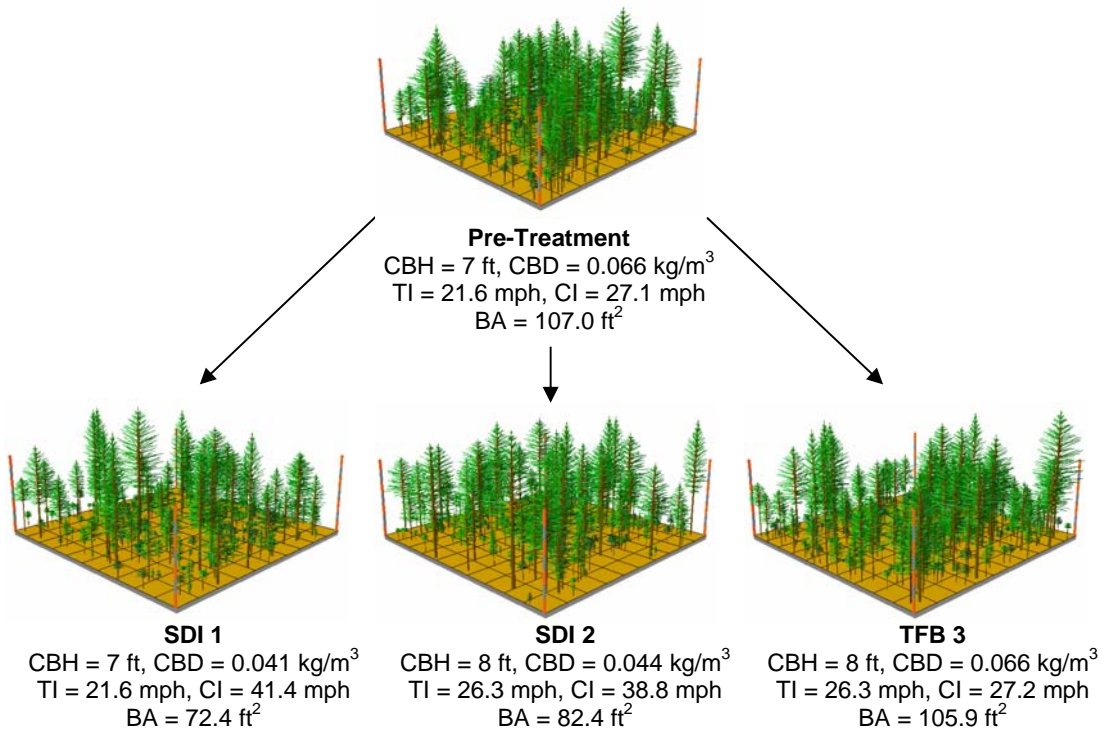simulated treatment.

Pre-Treatment
CBH = 7 ft, CBD = 0.066 kg/m^3
TI = 21.6 mph, CI = 27.1 mph
BA = 107.0 ft^2

SDI 1
CBH = 7 ft, CBD = 0.041 kg/m^3
TI = 21.6 mph, CI = 41.4 mph
BA = 72.4 ft^2

SDI 2
CBH = 8 ft, CBD = 0.044 kg/m^3
TI = 26.3 mph, CI = 38.8 mph
BA = 82.4 ft^2

TFB 3
CBH = 8 ft, CBD = 0.066 kg/m^3
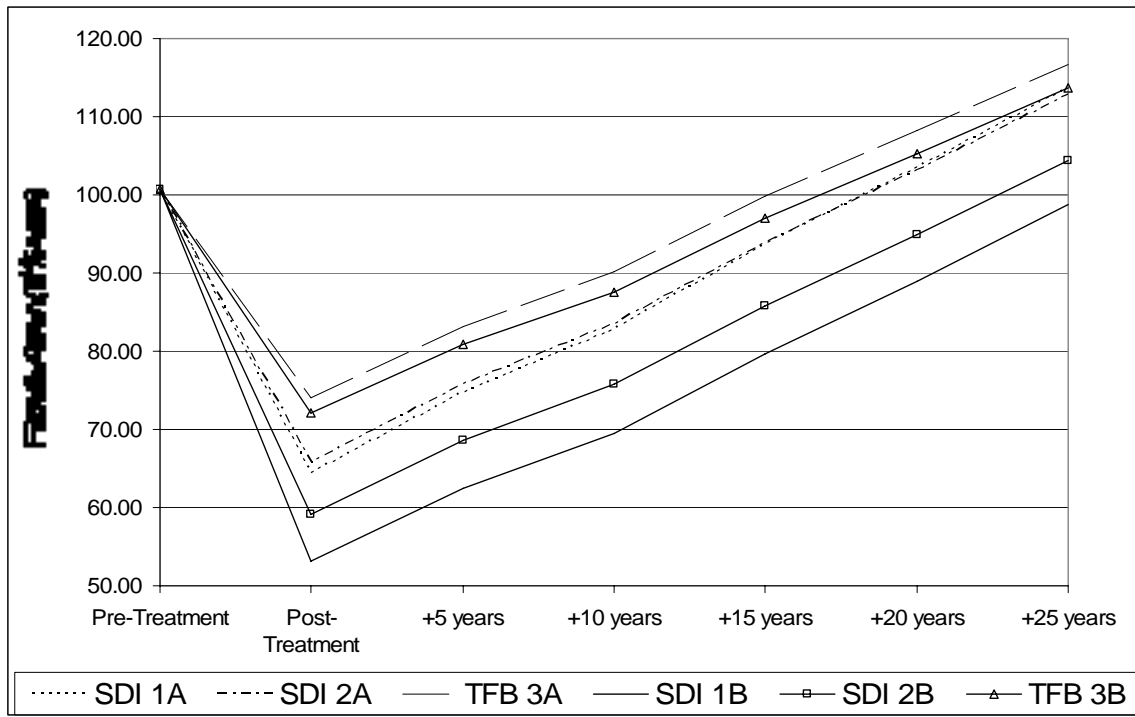TI = 26.3 mph, CI = 27.2 mph
BA = 105.9 ft^2

Fig. 3. Weighted average basal area per acre on ponderosa pine and Douglas-fir plots

based on a 25 year projection using LMS and the Central Rockies variant of FVS*.

* "A" treatments feature a limit on beginning basal area removed of 50%. "B" treatments have no limit.