



10/29/19

Forest 5.16

# Bradfield and Doe Canyon Pine RX and Marking Guide.

This RX encompasses 37 stands and 2,386 acres in the lower pine zone on the west side of the San Juan National Forest. This prescription will implement an uneven-aged system utilizing the Single tree selection method (STS). The desired future stand would be regulated according to the BDQ method, where "B" is the desired residual basal area, "D" is the maximum tree size (all trees larger than 28" DBH will be retained in all stands) and "Q" describes the diameter distribution as a ratio of the number of trees in succeeding size classes. For these stand the residual basal area will be 55 ft<sup>2</sup>/ac., the maximum diameter would be 26" and the q-factor would be 1.3 (applied to 2" diameter classes). The residual stocking level of 55 ft<sup>2</sup> is chosen to allow sufficient growing space to establish new regeneration while reducing severe fire risk and promoting tree vigor by reducing SDI slightly below the target threshold of 25%. The maximum diameter of 26" addresses management objectives by providing a continuous supply of large fire resistant trees as well as desirable sawtimber products without allowing trees to progress into age related decadence. A q-factor of 1.3 also favors large diameter trees and promotes small trees, however it also keeps sub-merchantable trees fully stocked for the next cohort. The harvests would take place on a 25-year cutting cycle to allow for sufficient stand volume growth while at the same time keeping stand density within the target range. Because the original stand is mostly even-aged, the first treatment will not result in complete achievement of the target structure. The initial cut will reduce SDI and basal area to the target, but will be forced to leave a surplus of medium size trees to compensate for deficiencies in both the smallest and largest size classes.

**Marking Guides – We will use a Leave Tree Mark (LTM) for these stands, BUT, remember ultimately a Designation by Prescription will be used.**

With 2,300 acres of treatment it will important to remember the overall objectives of this RX so the final project leaves us with a good product for the next generation. This is a Single Tree Selection Prescription, which means each tree will be looked at to determine if it should be removed or left. The Criteria are below to help you make these choices. We will mark/identify for removal all trees larger than 5" DBH. Trees 5-10" DBH will sold as POL either concurrently with the sale or in a post commercial harvest treatment. We will also remove all the DEAD merchantable pine larger than 10" DBH with this this prescription. The dead trees in the stand should NOT be used to determine basal area.

The Idea with this RX is to remove trees from all AGE CLASSES across the entire sale area. There will be more 10" trees left in the stand than 20" trees and so forth, the column TPA shows the number of trees per acre in each size class that should be left post harvest. The growth models and runs from the stands show that the majority of the trees that will be removed are between 10 and 20 inches in DBH.

DBH	BA/tree	Uni_dist	Uni_BA	TPA	BA
2	0.021816	23.30	0.51	25.39	0.55
4	0.087264	17.92	1.56	19.53	1.70
6	0.196344	13.79	2.71	15.03	2.95
8	0.349056	10.60	3.70	11.56	4.03
10	0.5454	8.16	4.45	8.89	4.85
12	0.785376	6.27	4.93	6.84	5.37
14	1.068984	4.83	5.16	5.26	5.62
16	1.396224	3.71	5.18	4.05	5.65
18	1.767096	2.86	5.05	3.11	5.50
20	2.1816	2.20	4.79	2.39	5.22
22	2.639736	1.69	4.46	1.84	4.86
24	3.141504	1.30	4.08	1.42	4.45
26	3.686904	1.00	3.69	1.09	4.02
			50.27	106.41	54.80

#### Selection Parameters for all stands

- The Basal Area Target is **55** please use your prism when in doubt
  - holes in the stands due to beetles, meadows, small trees is OK
  - we will NOT be forcing group cuts or openings in these stands
    - there are plenty from beetles already
  - If you encounter a beetle pocket or other holes in the stands DO NOT adjust the BA adjacent to these disturbances, **just keep shooting for a 55 BA.**
- This equates to a 23' spacing for Leave trees above 4" DBH
- This equates to 106 TPA for all size classes post-harvest
- Do not designate any trees Smaller than 5" DBH
  - Trees between 5-9.9" DBH are considered POL and any trees not expected to release should be removed from the stand – see criteria below
- All dead trees will be removed from the stand with the exception of the criteria below
- Dead trees should not be used to determine basal area
  - Leave at least a minimum of 1 snag per acre of at least 12 inches DBH and 25 feet tall. If trees in this size class are not available, then leave 2-3 snags per acre of at least 9 inches DBH and 15 feet tall
- All trees larger than 26" DBH will be retained in the stand
  - When in doubt wrap a tape this is important.

- The Table above shows you the TPA and BA breakdown by 2 inch classes

### Selection Criteria for Trees to be removed

- Beetle infested Pine. Indicators of beetle attack include:
  - Pitch tubes on the tree, even ONE pitch tube on a tree will require its removal
  - Dying needles. These may turn yellow or greenish-yellow and fall off and can sometimes be seen on the ground under the tree.
  - Bark chips being removed by woodpeckers (particularly low on the tree) and on the ground at the base of the tree.
- Trees with mistletoe infection greater than 50% of the live crown or significantly affecting the crown vigor. DMR greater than a 3 would imply removal.
- Trees with greater than 25% of live crown area dead or dying and forming holes in the live crown which gives the tree a ragged appearance.
- Trees with weak forks or multiple forks
- Trees with needles that are definitely off color short or reduced in quantity.
- Trees with lean greater than 35%.
- Trees with grossly misshapen form.
- Trees with visible evidence of conks or cankers.
- Trees with indication of advanced decay.
- Trees with broken tops, top kill or dying top below an 8-inch top diameter.

### How to Cruise stands without Marking

1. Locate your plot center and monument the plot
2. Determine all the "IN" trees with your prism or reloskop
3. Based on the factor you are using determine how many LEAVE trees you will need to leave on the plot to achieve a BA of 55
4. Select the leave trees based on the criteria above. The crew boss will select the leave trees remembering the RX and looking at surrounding trees that may not be on the plot.
5. Monument the CUT trees as S1 S2 etc
6. Monument the LEAVE trees L1 L2 (or some other way to your work can be check cruised)
7. Cruise the CUT trees
8. Do NOT cruise any DEAD TREES they must have some green needles on them to be tallied.
9. Remember you may need to cut trees that have no defects or issues to achieve a BA of 55
10. On average. You will leave 60 BA three Times and 40 BA once out of 4 PLOTS you Cruise.

FIGURE 6-2 Keen's tree classification for ponderosa pine. The four age classes range from 1, the youngest, to 4, the oldest; the four crown vigor classes, from A, the most vigorous, to D, the poorest. (Sketch by U. S. Forest Service.)

