

Response to objection to Puerco Draft DN FONSI and EA
3/12/2020

Susan Ostlie RGVBB of the Great Old Broads for Wilderness

I appreciate your willingness to work with me on this objection. I will begin with my response to the *Letter of Clarification to my Objection* which Shawn Martin sent in an email on February 5, 2020.

Response:

- It was not clear to me when I wrote the comment on the requirement that “only trees >18” dbh without any evidence of insect or infestation are exempt from thinning,” that it only referred to a small acreage (775 ac) of mixed conifer. At the time I was thinking it referred to ponderosa pines. However, I don’t really see much difference in terms of whether it is one mixed conifer tree species or another. >18” dbh is still not that common a tree in an area like the Zuni Mountains that has been heavily logged several times over.
- When Shawn Martin and I discussed the areas that this stipulation applied to, he stated that most of the mixed conifer area was on steeper hillsides, but I don’t see that referenced anywhere in the DN FONSI or the EA. I can’t really make a judgement about this information, based on the maps attached to the EA and FONSI, although I did attempt to find the mixed conifer section on the maps. The detail on the printed maps is just not as visible as it needs to be for me to confirm this information.
- Because this was the information I had received initially, I looked at a document that I received when inquiring about the Corona CFRP. (Mountainair RD.) I didn’t understand what SDI meant, and when I googled it, there seemed to be many different versions or models of SDIs from different years and locations based on a study originally done by Reineke in 1933 (?). When I asked the Mountainair staff which model they were using, they referred me to an article entitled “Reineke’s Stand Density Index: Where Are We and Where Do We Go From Here?” by John D. Shaw, USDA Forest Service, Rocky Mountain Research Station 507 25th Street, Ogden, UT 84401 jdshaw@fs.fed.us.
- In this article I learned about using the QSDI, and how using the quadratic equation was considered to be a more accurate way to arrive at a Stand Density Index. While trying to read and understand the Shaw article, I noticed on pages 4 and 11 (I did a word search on insects and disease), that there was a discussion of the inability of trees that are lost to insect and disease on sloped areas to regenerate to the extent that would enable the stand to stay viable. This is a concern if indeed these mixed conifer stands are on slopes.
- On pages 3 and 4, it states, “In older stands, insects, disease, and other disturbances may reduce stocking more rapidly than the residual stand is able to re-occupy growing space. In both cases it is necessary to censor the data or apply methods that are insensitive to observations in understocked conditions. Although some work has been done to address these problems (e.g., Leduc 1987, Bi and Turvey 1997, Bi et al. 2000), limitations persist. Given the difficulty of determining the “true” self-thinning trajectory, one might ask whether it is productive to continue debate over the universality of the self-thinning slope among species. One answer

might be that the phenomenon is real, but simply not observable because of the externalities inherent in natural systems. The fact that the argument over slope continues, despite abundant data on stand density and dynamics suggests that demonstration of a common self- thinning slope, or lack thereof, will remain elusive.

- On Page 9-10 - “Zeide (2005) suggested that there are 2 causes of self-thinning: one caused by increase of stem diameter and the other caused by a decrease in self-tolerance. The former cause is the well-known mechanism of crowding, whereas the latter occurs when **canopy gaps cannot be filled as fast as they are created. It is easy to visualize how fire, as well as insects, diseases, and other biotic and abiotic disturbances can lead to this situation.**
- CONCLUSION: It is apparent that the three issues that extend the concept of SDI are not completely independent. Stand dynamics and, consequently, site occupancy, are affected by structure and composition. The introduction of new species through succession and modification of composition by disturbances affects the potential maximum SDI. Also, **differing analysis methods and data censorship approaches inevitably lead to differing results. Researchers must consider the relative effects of data characteristics and analysis methods on their results.”**

Now I will admit that there is some of this that is over my head, but if the restoration project is using adaptive analysis, it would make sense to me that a more conservative approach to this part of the forest thinning prescription is called for. That would leave room for a healthy stand replacement process. You can always remove more trees; it is much more difficult, according to the above analysis, to add needed trees if too many are removed.

So what do I want? I would like the offending sentence to add a qualifier to the prescription. Eytan Krasilovsky suggested that the prescription could include a phrase like **“retain all trees that are 18 dbh and greater that are not significantly departed from background conditions due to insect and infestation.”** I am sure there is a more elegant way to state this; I am hoping we can agree on:

1. The need for a qualifier similar to what I suggested above, and
2. A professional way to write it into the EA and DN FONSI.

I hope this will help us reach a consensus on how to use restoration to create a more resilient forest in the western Zuni Mountains.

Sincerely, Susan Ostlie - Leader, the Rio Grande Valley Broadband of the Great Old Broads for Wilderness