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Organization:

Title:

Comments: Hello Jay and Rachel,

In my October scoping letter about Grand Targhee Resort, I briefly mentioned whitebark pine. I should have also mentioned that some, or perhaps most, of the five-needled pine on Fred's and Peaked Mountain are limber pine. My main point was about slow changes and recovery up there, so tree species did not matter that much. But now that the whitebark pine may be federally listed, the distinction and perhaps relative amounts of these two species become more important. I am sorry I missed that - I am usually more careful about these things.

Around 1990, as a USFS employee at the Teton Basin RD, I mapped the vegetation on Fred's and Peaked Mountains, and I think this work had something to do with the EIS related to Grand Targhee around that time.

There should be a report on file at the district office to refer to.

While wandering around mapping, I remember some whitebark pine along the ridge leading south from the summit, and a few more places, but I think many of the trees on Fred's were limber pine. In my travels among the mountains of NW Wyoming, I see that limber pine is more common on marine, carbonate sediments (e.g, limestone), and whitebark becomes prevalent on more acidic rock such as granite, and sandstone with a lot of quartz in it, especially if cemented by silica instead of carbonates.

A familiar local example is on Mount Glory. Most if not all of the five-needle pines on the slopes of marine, carbonate rock are limber pine, but there is some sandstone on the slopes north of the summit, and whitebark pine is common there. The same thing occurs on Mount Taylor.

On Fred's and Peaked Mountain, the Madison limestone, as with the other sedimentary rock there, dips to the west and dominates many of the slopes (Warren Anderson's scoping letter discusses this in more detail).

The Darby and Bighorn dolomite formations are the next two formations below the Madison. Flathead sandstone, which supports whitebark pine at higher elevations (e.g, Alaska Basin), is well-below the Bighorn, and I don't think it outcrops within the south bowl expansion area. Just above the Madison is the Amsden formation (if it is not eroded away), which contains some sandstone at its base (the Dorwin sandstone member). I don't recall seeing any of this on either mountain in GTR, but it is common on the southern end of west slope of the Tetons. Tensleep sandstone, which is just above the Amsden, is also locally common towards the south and appears even more acid than the Dorwin as indicated by plant species composition. There is some rhyolitic welded tuff in the lower part of Chief Joseph Bowl, and this is acidic (similar to granite) and as I recall, it supported plants that typically grow on acidic soils, such as *Vaccinium*. There may be some whitebark pine around there too.

The vegetation map for the Targhee NF from around 2013 shows "Whitebark pine mix" for the higher areas that have scattered clumps of trees.

Their cones are the definitive way of telling whitebark and limber pines apart, so close inspection is needed to do so.

If possible, please add this comment to the scoping record.

Thanks.