Date: October 28, 2013
Re: Limber pine in western Nebraska, RCSC-1-14
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On October 24, 2013 Rachel Allison (District Forester), Laurie Stepanek (Forest Health Assistant), and I examined more than 200 limber pine (*Pinus flexilis*) for white pine blister rust (*Cronartium ribicola*) and mountain pine beetle (*Dendroctonus ponderosae*) in western Nebraska (**Fig. 1**, **Table 1**). The rust and beetle were not found. Leaves of *Ribes* spp. were also examined, but no rust was observed. The damage agents were not observed during a previous visit on May 23, 2006.

Recent limber pine tree mortality was low, but drought stress symptoms were common. These symptoms included low needle retention (often one to three years of needle whorls), yellowing needles, stunted needles, and scattered dead branches. Limber pines often maintain six to eight years of needle whorls. Cow and other ungulate damage were frequently observed. Porcupine damage was the next most common, resulting in most of the recent tree mortality (**Fig. 1**). Engraver beetles (*Ips pini*) were found in one recent dead tree.

Extreme drought stress is the likely cause of mortality in old-dead trees. Older dead trees had wood borers that colonized the trees after mortality. Engraver beetle galleries were seldom observed in these trees.

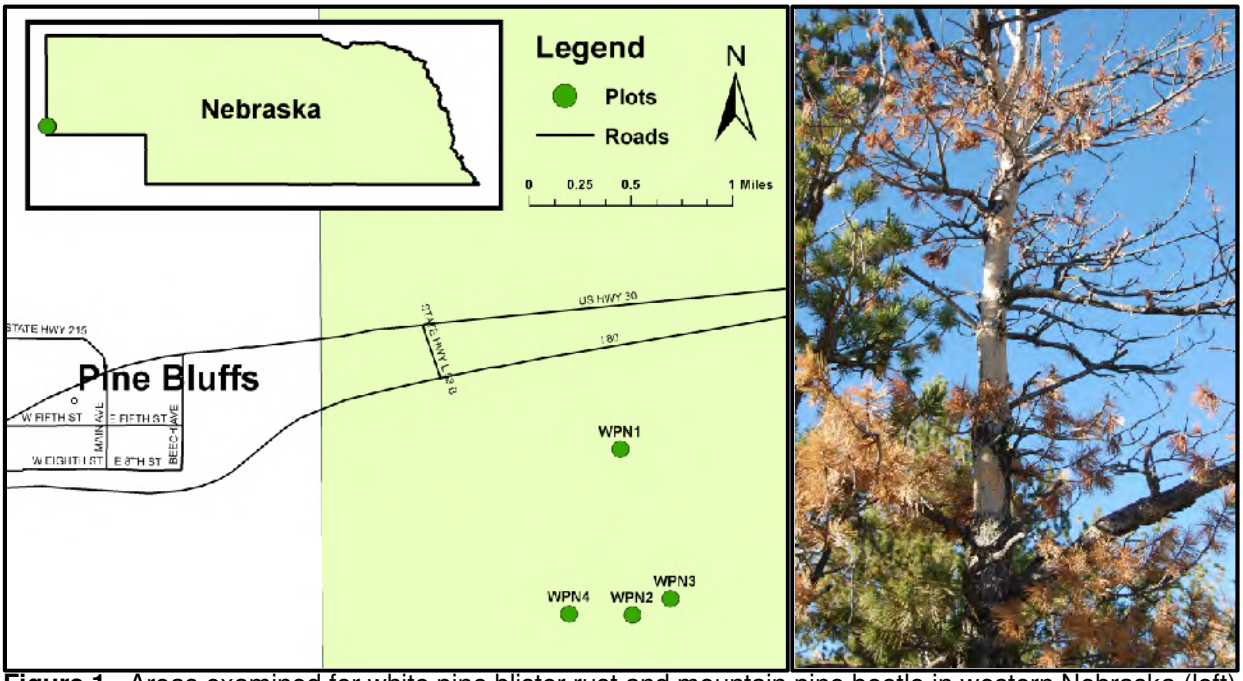

Figure 1. Areas examined for white pine blister rust and mountain pine beetle in western Nebraska (left), and tree killed by porcupine (right).

Table 1. Several limber pine were examined near four locations in western Nebraska

Plot	Latitude[1]	Longitude[1]	Date
WPN1	41.178219	-104.030936	10-23-2013
WPN2	41.166394	-104.030084	10-23-2013
WPN3	41.167558	-104.027378	10-23-2013
WPN4	41.166457	-104.034603	10-23-2013

[1] Map datum WGS 1984.