

December 12, 2011

Re: Crazy Horse Wood Piles; RCSC-04-12

To: Dennis Yellow Thunder and Reed Haug

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On December 8, 2011 Dennis Yellow Thunder (Natural Resources Technician), Reed Haug (Visitor Services Director), Emy Yellow Thunder, Mark Ziolkowski, and I examined 7 wood piles at the Crazy Horse Memorial in the Black Hills of South Dakota. Logs from these wood piles will be sent to the Pine Ridge Indian Reservation in South Dakota to be used as firewood by the tribal membership. The wood will be cut and burned soon after delivery. There is concern that mountain pine beetles (*Dendroctonus ponderosae*) (MPB) could be transported with the wood.

Observations:

The wood is too old to contain live MPB. Many logs appeared to have been added to the piles after MPB exited the logs based on the lack of needles, decay in the wood, and fungal growth in and on the logs. Extensive staining indicates the logs were in the piles for several months. Most of the logs had numerous small round MPB beetle exit holes. Mark Ziolkowski said the wood was from fading-green-hit and red-tops MPB killed trees that were cut from January through March 2011. Trees that were infested at that time should no longer have live MPB.

Internal examinations of the logs revealed they are too old to support MPB populations, and no live beetles, pupae, larvae, or eggs were found. Within the 7 wood piles 35 logs (averaging 5 per pile) were partially debarked to check for MPB presence. We found several logs with dead MPB adults that were the original mating-pairs. In 2 of the 35 partially debarked logs we found a few dead, young adults (light brown beetles) and pupae that crumbled into dust when touched. Larvae and eggs were not found.

MPB overwinter mostly as larvae within the inner bark of host trees. Occasionally, pupae and young adults may overwinter. Most pupate in late spring, and adults emerge from the bark in midsummer (about early July through August). Beetle galleries, areas where

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larvae/pupae/beetles develop, were extensively stained, indicating the beetles have long exited the logs. Our bark examinations confirm that the logs have been in the piles for several months and beetles have exited the logs.

Other observations:

We found one live flatheaded wood borer larva, a white, legless grub, with an elongate body and flat head. We also observed many wide, meandering galleries under the bark with tightly packed, fine boring dust and holes penetrating into the wood that are typical of these wood borer larvae. Emerging adults leave oval, cleanly cut exit holes. Most of the logs had numerous oval exit holes typical of the borer. These beetles often attack freshly cut timber before it dries and most have long exited the wood. These wood borers are native to both the Black Hills and Pine Ridge Indian Reservation in South Dakota, they do not attack healthy trees, and do not kill live trees.

Pine engraver beetles (*Ips* spp.) galleries were found in a very-small percentage of the logs, but no eggs, larvae, pupae, or beetles were found. These beetles are often attracted to green slash piles, and rarely cause tree mortality in the area. As with the MPB, the logs are too old to support live pine engravers.

Conclusions:

- The wood piles examined at the Crazy Horse Memorial on December 8 present no continuing threat regarding the transport of MPB.
- These trees were cut several months ago and held in log piles well after the MPB exited the logs. Some were cut after MPB exited the dead trees.
- Trees infested with live MPB should not be shipped until all beetles have exited the logs, the beetles have died within the logs due to desiccation, or logs are debarked.