SLOWING THE SPREAD OF EXOTIC FOREST DISEASES

Eradicating Port-Orford-cedar Root Disease from the Shasta-Trinity National Forest

Figure 1. Girdled Port-Orford-cedar in Scott Camp Creek POC eradication treatment area, June 2008.

Port-Orford-cedar root disease has been a major concern since the introduction of the pathogen, *Phytophthora lateralis* (PL), into the natural range of Port-Orford-cedar (POC) during the 1950's. In September, 2001, seven infected POC were identified in an area along Scott Camp Creek on the Shasta-Trinity National Forest. Although there are 11 known infestations in POC along the lower Sacramento River between Dunsmuir and the mouth of Shotgun Creek (approximately 12 miles downstream), this was the first (and only) infestation in the upper Sacramento River watershed and on the Shasta-Trinity National Forest. Without swift action, POC mortality was sure to increase as the pathogen spread downstream along Scott Camp Creek to Siskiyou Lake and the Sacramento River. After much consideration, managers at the Shasta-McCloud Management Unit decided to attempt to eradicate the pathogen from the area by killing all POC in a 3-acre area around the infected trees. Because success depends on keeping all live POC out of the infestation site until the pathogen dies out in 4-7 years, and ensuring that it does not spread out from the treatment area, previous eradication attempts have had mixed results. However, because the infestation was identified before pathogen had built up, and was in an area where easy access would allow intensive monitoring and follow-up treatment, the Scott Camp Creek site was an excellent area in which to attempt eradication. Treatment took place in 2003-2004, shortly after an Environmental Analysis was completed and signed. The treatment, funded by Forest Health Protection, consisted of pulling small POC out of the ground and killing large POC by girdling (Figure 1) with cuts around the base.

Figure 2. Interpretive sign placed near Scott Camp Creek POC eradication treatment area, October 2010.

Figure 3. Port-Orford-cedar bait seedlings in Scott Camp Creek, August,2009.

An interpretive sign was put up near the treatment area (Figure 2). Annual follow-up treatments were performed by Forest Health Protection personnel to ensure that the girdling cuts were effective in killing the larger POC and that no live POC remained or regenerated. Monitoring consisted of checking the area downstream of the treatment area for declining or dying POC and tracking the decline of PL in the treatment area by placing POC bait seedlings into the creek for 10 weeks each summer (Figure 3). Visual assessment of bait tree roots for PL-caused stain and necrosis was done until 2008, when a more precise genetic scanning technique became available. That year, only 1 POC bait seedling out of 24 tested positive for PL. From 2009-2012, no PL was detected. The complete lack of PL recovery 5-8 years after the POC was removed, together with the absence of POC mortality downstream from the treatment area, indicates that the pathogen has been successfully eradicated. While the Shasta-Trinity National Forest is once again free of the disease, continued vigilance and the use of preventative measures are key to keeping PL out of the Forest.

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