

Case Study: Coast Fawn Lily (*Erythronium revolutum*) Response to Herbicide Treatment of Tan Oak and California Bay Laurel in Northern California Coastal Mixed Conifer and Oak Woodland

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Coast fawn lily (*Erythronium revolutum*) is a local native plant in the lily family (Liliaceae) considered rare or sensitive in California but more common elsewhere. Coast fawn lily generally inhabits mixed conifer forests with a strong hardwood component. These forest types are typical of those that could receive herbicide treatment of hardwoods for both improving conifer stocking and control of forest pathogens such as *Phytophthora ramorum*, the causal agent of sudden oak death. Beginning in 2004 portions of a population of Coast fawn lily near Kneeland, CA. were monitored for response to selective removal of tan oak and bay laurel by direct application of herbicide to the cambium of the target species. Thirteen monitoring plots (10 treatment, 3 control) were established and have been visited regularly between 2004 and 2015. Adjacent timber harvest occurred in 2004. Treatment occurred in 2007 and 2008. Conifer species, larger hardwoods (>32”), and true oaks (*Quercus* spp.) were not treated. Results indicate that maintenance of this sensitive species may be compatible with herbicide treatment of hardwoods. Post treatment density (plants/m²) of Coast fawn lily was not significantly different from pre-treatment numbers and was not significantly different from control plots either before or after treatment. Average canopy cover in treatment plots was significantly reduced over the same time period. Although an increase in herbaceous competition and woody litter may have reduced Coast fawn lily density in some individual plots, the treatment did not result in a significant reduction in plant density when averaged across all treatment plots.