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# RECOGNIZING BLACK BEAR DAMAGE TO SECOND GROWTH REDWOODS

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**ABSTRACT:** Black bears, *Ursus americanus*, have been known to cause severe damage to second-growth redwoods (*Sequoia sempervirens*). The damage is seasonal and is often associated with logging roads, skid trails or other openings in the forest. Signs of damage are characteristic and cannot easily be confused with other species of wildlife that damage redwoods.

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## INTRODUCTION

Black bears (*Ursus americanus*) damaging redwoods (*Sequoia sempervirens*) was first reported by Glover (1955). Since his work only unpublished documentation has been reported to concerned groups interested in redwood production (Laudensberger, unpubl. data). In 1986 and 1987 black bear damage to redwoods and the subsequent depredation programs conducted to eliminate problem bears resulted in a strong public outcry against the program. Because of the public interest in policies having to do with black bear population control, it is imperative that field biologists are able to recognize black bear damage to redwood in order to document and quantify the data. This paper will describe the type of damage caused by black bears and define areas that seem to be most often affected.

## DAMAGE

As reported by Glover (1955), the type of damage black bears cause to redwood is characteristic. The damage is difficult to confuse with damage caused by other wildlife species. Generally, the bark is removed from the tree in strips. These strips may be two to eight inches wide and several inches to several feet in length. In many cases the bears remove the bark in strips from the base of the tree and work upward. However, in many instances the bark may be intact at the base of the tree and the bear has begun to remove bark several feet above the ground, often as high as the first whorl of branches.

Glover (1955) believes that the bears use their forefoot to begin the process of removing the bark. Once they have started removing the bark it can easily be peeled off of the main trunk. In work reported by Glover (1955) and Giusti and Schmidt (1988), removing bark from the trees only occurs on the main trunk and not on any of the lateral branches. Damage that occurs on these laterals is usually caused by the bears trying to climb higher up the trees.

Once the bark is removed, the bears use their incisors to scrape at the cambial layer. While feeding, bears are scraping their teeth in a vertical pattern that leaves deep scars in the wood. The feeding pattern appears to be random but a major portion of the stripped area is fed upon. Presumably, once

most of the cambium is removed from the stripped area the bear simply peels off more bark and continues to feed upward. In some cases, bears continue to feed upwards until the tree can no longer support the weight of the bear (Giusti and Schmidt 1988).

## SCOPE AND DISTRIBUTION OF DAMAGE

Feeding on redwoods within any particular drainage is sporadic. Damage can occur on a single tree, or can be clumped in an area with both damaged and undamaged trees in close proximity to one another. Damage, though often associated with roads or trails, can be found throughout a drainage that has bears feeding on trees (Giusti and Schmidt 1988).

Glover (1955) reported that trees between 10 and 30 years old were injured most. In recent work by Giusti and Schmidt (1988), slightly older trees were found damaged. In Del Norte County trees between 25 and 45 years old are most often fed upon, though damage can occur on younger trees. Trees between 11-20 inches d.b.h. are most often fed upon and though other conifer species are associated with redwoods, none of these other species were selected.

Feeding damage to conifers is not only a matter of concern in northwestern California. A number of authors have reported similar damage in other parts of the United States (Poelker and Hartwell 1973, Hennon 1987, Flowers 1987, Schmidt 1987). Some authors have pointed out the fact that damage usually occurs following the thinning of an area to increase the overall vigor of the stand (Maser 1965, Poelker and Hartwell 1973, Schmidt 1987). In the case of the damage occurring in Del Norte County, damage occurred two years post-thinning in a drainage along Rowdy Creek near the town of Smith River. In other areas of the county, damage has also occurred one and two years post-thinning. Though it has not been scientifically proven, biologists should be aware that thinning, as well as other forest practices, may elicit this feeding behavior.

Once a tree is damaged, the resulting injury will remain evident for a number of years. It is important to note that black bears feed on redwoods only during the spring months, generally from the first week of May through the second week

of June. As the damage ages, the scars and other feeding marks will begin to fade. Damage caused the previous year can easily be distinguished from damage of the current year.

#### DISCUSSION

Black bear damage on coniferous species is not an endemic problem of the northwestern portion of California. Similar damage has been reported on white spruce, *Picea glauca* (Lutz 1949), Alaska-yellow cedar, *Chamaecyparis nootkatensis* (Hennon 1987) in Alaska, balsam fir, *Abies balsamea* (Zeedyk 1957) in Maine, and Douglas-fir, *Pseudotsuoa mensenzii*, in Oregon (Maser 1967) and Washington (Poelker and Hartwell 1973). However, since the range of coastal redwood is essentially all within the boundaries of California, the damage has not received the widespread recognition as have some of the more widely distributed conifer species.

With increasing public pressure on both resource management agencies and private timber companies to curtail any further bear depredation programs, it is imperative that field biologists, foresters and resource managers realize the combined strength of conservation-minded groups is enough to stop any future programs. Before any future programs will likely be approved, it will be necessary to document not only that damage is occurring but also to provide information that demonstrates the scope of the damage.

Understanding how to recognize that damage, realizing when to expect the damage, and taking into account that some forest practices may cue bears into feeding on redwoods are the first steps towards an integrated approach to solving the problem.

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