



FYI

INFORMATION

*A Research
Summary
From the
Washington
Forest
Protection
Association*

Black Bear Supplemental Feeding Program Joins Group of Management Tools Used in Helping Control Bear Damage to Trees



Black bears in some areas of western Washington feed on Douglas-fir and western hemlock if they cannot find other suitable food. To get to the interior sapwood, they use their teeth and claws to pull the bark off young conifers. This process is usually fatal to the tree.

Washington State has one of the largest black bear (*Ursus americanus*) populations in the United States, estimated at 35-50,000. Each spring black bears come out of their winter dens with large appetites and a need to restore weight they lost over the winter. Although habitat conditions on private, federal and state lands support the bear population without creating an intraspecific stress

situation (meaning that bears enjoy plenty of living space), their emergence in mid-March comes at a time when the quantity and nutritional value of natural foods are limited.

The berries, insects, and other foods that sustained them through the previous summer and fall do not appear until the end of June, so their early spring diet consists primarily of grasses, skunk cabbage, mosses, false dandelion, horsetail, cow parsnip and—to the consternation of many forest landowners—the sugary sapwood of trees.

Bears kill or severely weaken 15-25 year old conifers by stripping the bark at the base of the tree and eating the soft, sugar-rich sapwood tissue beneath. The phenomenon, known as “tree girdling,” is a substantial problem because—according to Georg Ziegler, a scientist with the Washington Forest Protection Association—a single black bear can destroy as many as 70 trees a day. Tree girdling causes millions of dollars in damage each year in Washington, and has an enormous economic impact on forest landowners.

To reduce tree damage, forest managers have historically employed lethal means to control bear numbers—either depredation hunts or sport hunting. “Recreational

hunting may suppress bear populations over a large area,” says Dr. Dale Nolte, mammal research program manager with the USDA/APHIS National Research Center in Fort Collins, Colorado. “However, it is generally not effective in targeting specific problem animals.” For that, professional agents are able to remove problem animals more effectively, he said. Recently, however, a new feeding program has proven itself effective as a way of reducing tree damage and the number of bears taken by lethal means.

Supplemental Feeding Program

Essentially, bear food is placed in specially designed dispensers for 2.5 months in the spring to fill the nutritional gap from



Feeders like this one were designed to dispense food pellets while preventing bears from capturing it. These feeders have proven effective in reducing damage in some cases.

the time bears come out of their winter dens until natural food is available. Feeders are located in areas where forest stands are of susceptible age, usually where damage has previously occurred. The containers are then removed in July, after bears wean themselves naturally off the man-made pellets. Over the last few years, WFPA and a group of scientists known as the Collaborative Research Team has sponsored a study to evaluate this innovative feeding program scientifically, the findings of which, Ziegltrum says, generally support the practice. "Although the practice did not work in every case," he said, "during the first four years after initiation of feeding, the treated areas had six times less damage on average than control areas where no supplemental food was available." Today more than half a million pounds of feed are distributed annually in more than 900 Oregon and Washington feeding stations.

Options for Forest Managers

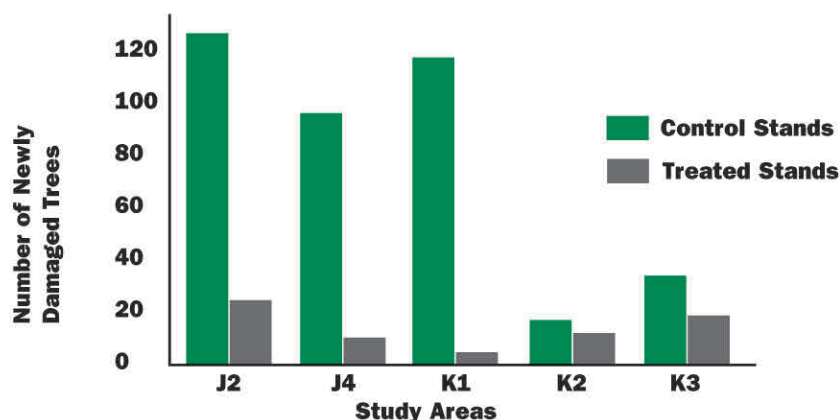
Supplemental feeding is one of several options available to forest managers for reducing bear damage. The best approach is usually a combination of a number of practices and will depend on the situation and objectives of the land manager. According to a recent USDA publication—"Timber Damage by Black Bears: Approaches to Control the Problem"—there are some other options available for addressing the problem. For example, evidence suggests that bears tend to avoid pruned trees, so pruning can reduce damage in some cases. In addition, thinned stands tend to be more attractive to bears, so managers can also alter thinning schedules to help control damage.

There are other options outlined in the publication, like fencing, birth control, devices to frighten bears, repellents, introducing alternative natural plants, and even moving bears to other areas. Certain aspects of some of these methods might be incorporated into a management strategy, but in general all of them have drawbacks that prevent widespread use.

Evolution of the Feeding Program

Black bears are omnivorous, says Ziegltrum, and will eat whatever is available that fulfills their bodies' needs at any given time. Their diet throughout the year follows the seasonal pattern of plant development—each tree species is targeted as it begins to develop new tissue. Observation of this feeding cycle almost three decades ago led the late Ralph

Girdling Damage in Study Areas 1999-2002



The graph above shows the results of Georg Ziegltrum's study of the supplemental feeding program. For decades, it was widely accepted that placement of a feeder in a stand was a highly effective tool, but the evidence was purely anecdotal until this study.

Flowers of WFPA to begin experiments with supplementing the diet of bears in heavily damaged areas of the forest.

According to Ziegltrum, who worked with him at WFPA for a number of years, Flowers theorized that if black bears had an alternative food source during the critical months between denning and the summer ripening of berries, they would not destroy trees by feeding on sapwood. Mindful of introducing artificial food sources that might upset the natural cycle or result in increased bear populations, Flowers developed a nutritional pellet by studying bears' dietary needs and eating habits.

Flowers succeeded beyond his expectations—dispensing feeders reduced damage to acceptable levels within two to three years in nearly all of the early trials. As a result, a supplemental bear-feeding program was instituted in Washington.

Looking to the Future

Dr. Nolte has spent years studying the factors that cause bears to select certain trees or stands, as well as the economic impact of tree girdling on forest landowners. "Landowners need to evaluate all options and select the most appropriate approach to fit their needs," he says. "In some cases, removing animals from some critical areas may be the only feasible approach to resolve the problem. While removal of black bears is still needed to control populations in some problem areas, WFPA's supplemental feeding program has been effective at reducing tree damage in others."

Some aspects of black bear behavior and the impacts of a feeding are still

poorly understood, says Nolte, and he believes further study will be important. A series of studies has been conducted to assess the impact of the feeding program on bear behavior around the feeders, their nutritional status, and the effect that provision of unlimited food might have on bear movement. What is not well understood is the impact of the feeding program on reproductive success and long-term population growth.

Meanwhile, forest managers with tree girdling problems must evaluate all approaches for reducing damage, and develop a strategy that employs one or a combination of options most appropriate for their situation.

For additional reading see:

Georg Ziegltrum, "Efficacy of Black Bear Supplemental Feeding to Reduce Conifer Damage in Western Washington," *Journal of Wildlife Management*, Vol. 68, No. 3, July 2004
Dale L. Nolte, et al, "Timber Damage by Black Bears: Approaches to Control the Problem," USDA 0324-2832-MTDC, November 2003



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