A Real Bear: Recognizing and Managing Bear Damage to Trees

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Interestingly, it was the black bear that led me to study forestry.

Growing up in rural Kitsap County, we frequently had bears in our woods, visiting our property, even climbing up on the porch on occasion.
Black bear footprints.

One day, my dad showed me a tree that had its bark removed and appeared scarred up. He explained it had been done by a bear. I was both amazed and fascinated. From then on, I paid particular attention to bears and the signs they leave behind, and, along with several memorable encounters growing up, I developed a curiosity for bears that continues to this day.

Black bear footprints. Photo by Dave Houk

After college, I moved to the South Beach area of Grays Harbor County. While on a hunting trip, I began noticing trees with similar damage to those I had seen and learned about back in our woods. The main difference in this case was quantity. I was amazed at how many trees were damaged or dead within this particular area.

The following weekend, I traveled to the Clearwater River on the Olympic Peninsula, where I discovered yet more damage to trees. Not long after, I happened upon a book called “Education of a Bear Hunter” by Ralph Flowers.

Flowers has authored several books detailing his adventures as a recreational and professional bear hunter, as well as the history and management of black bear timber damage in working forests throughout western Washington. As I began to read the book, I realized I was not the first to be curious (and in some cases alarmed) at the intensity of tree damage witnessed. The book went on to explain foresters had been documenting and expressing concern over bear damage to young conifer stands in the region for decades.

The more I read and experienced first-hand, the more interested I became in forestry and resource management, so much so that I went back to school to study forestry. For the past 6 ½ years, I have been providing technical forestry assistance and helping develop forest management plans for landowners throughout Grays Harbor and Pacific counties.

Fresh bear damage is seen on a Douglas-fir. (Photo by Dave Houk)

Bear damage is a common issue. It's difficult to manage and often too late once discovered. It comes in a variety of ways, and there are several ways for landowners to recognize, control, and reduce damage to their trees.

When black bears emerge from their winter dens in spring, food is limited. Their "go-to" sources of food, such as berries and insects, are not available until early summer. During this time, Black bears rely primarily on emerging shoots of sedges, grasses, cow parsnip, leaf buds and skunk cabbage.

Within certain areas, however, black bears will also feed on trees. Bears use their claws and teeth to remove or strip bark from the bole of a tree, then feed on the sugary, carbohydrate-rich sapwood. If bark is removed or girdled from around the entire circumference of the tree, it will die. Partial girdling will result in slowed growth and stagnation as well as an increase in the tree's susceptibility to damaging insects and disease. Partially damaged trees also frequently succumb to windthrow, too.

Bears can cause extensive damage within some stands of timber and pose harm to the health of a stand. According to the Washington Forest Protection Association, a single bear can strip bark from as many as 70 trees per day. Damage typically occurs on trees 15-30 years old or with diameters ranging from 6-12 inches.

Tree species damaged by bears vary depending on location. In Grays Harbor and Pacific counties, Douglas-fir and western hemlock are preferred species. However, I have seen damage on western red cedar, Sitka spruce, grand fir, subalpine fir, Pacific silver fir, red alder, bigleaf maple, and black cottonwood.

In general, bear-damaged trees tend to catch the eye, but they often occur within dense stands or are mistaken for another pest pressure, such as porcupines.

It is important to understand how to recognize bear damage, but equally important to recognize conditions that may lead to bear damage.

Classic bear damage is one in which the base of the tree is girdled up to 4 to 6 feet in height. However, in many cases I have seen bear forgo the base altogether and feed high up in the tree.

After a tree is peeled, the white sapwood is distinctive and easily identifiable in the forest. Within several months, however, this color darkens, becoming more difficult to spot. Whether fresh or old, trees peeled by bears will have vertical scrape marks left by the bear's teeth while feeding on the sapwood. Scattered remnants of bark and bark peels are found at the base of a tree or hanging from its branches.

These bark peels sitting at the base of a Douglas-fir tree are likely evidence of bear damage to the tree. (Photo by Dave Houk)

Locating bark peels may help signal the presence of damage, even when it is hard to spot. Bark peels tend to be large strips 1 to 3 feet in length and 2 to 4 inches in width. Trees of any age and size are susceptible to bear damage; however, in my experience, bears appear to prefer Douglas-fir and western hemlock over other species. This may be due to the fact that they are more readily available.

Sugar concentrations are also an important factor in determining which species are likely to be damaged and when. Out along the coast, we tend to see damage occurring first on western hemlock, then Douglas-fir. This is because western hemlock break dormancy first, resulting in higher concentrations of sugars prior to Douglas-fir.

Damage may occur in even-aged or uneven-aged, single- or multi-species stands. Fast growing, highly productive sites tend to be at most risk. Bears are selective, targeting the most vigorous, healthiest, and fastest growing trees.

Because damage often occurs within dense stands or in areas with difficult access, it is important to walk and monitor the forest throughout the year, especially in the spring.

Certain silvicultural practices may inadvertently attract bears, resulting in an increased risk of damage. For example, damage frequently occurs after stand improvement practices, such as thinning, where an increase in productivity and sugar concentrations may make the trees more appetizing.

Bear damage is seen high up a Douglas-fir. Photo by Dave Houk)

It is also important to note that black bears mark or scar trees for other reasons, including leaving scent and marking territory, especially during the rut. This may include biting or scarring trees 4 to 6 feet above the ground. Damage caused by this behavior is typically not severe.

What should you do if you have bear damage? It depends largely on your management goals and objectives, as well as the severity of damage taking place.

Deciding if and when to take action can be difficult. For this reason, I recommend working with a forestry professional who can evaluate the damage, or potential for damage, and help come up with the best option based on your management goals and objectives.

Some landowners may not take issue with bear damage on their property. Tree mortality often results in stand openings and a resurgence of understory vegetation important to local wildlife. Furthermore, stand openings caused by bear damage tend to regenerate a mixture of tree species, increasing both vertical and horizontal stand diversity. With this in mind, some landowners may choose a “no-action” approach. Within intensively managed forests, however, the same stand openings can result in significant economic losses. The following are two primary options landowners use to help control or reduce bear damage — removal of the problem bear and preventative silvicultural treatments.

Historically, efforts to control or reduce bear damage to timber resources have focused largely on lethal means. A combination of professional and recreational hunting controlled bear numbers and targeted problem bears within areas of known bear damage. Professional hunters employed a variety of methods to target bears damaging trees including still hunting, the use of hounds, and snaring or trapping.

However, regulations governing lethal removal of bears have changed. Today, lethal means of control available to landowners are limited. For updated information, rules, and regulations pertaining to the removal of problem bears contact the Washington Department of Fish and Wildlife. The U.S. Department of Agriculture’s Animal and Plant Health Inspection Service (APHIS) is another resource available for landowners who are experiencing bear damage. APHIS agents are available to help evaluate and carry out wildlife damage management activities, including removal of problem animals.

Perhaps one of the simplest ways to help control or reduce damage caused by bears is to try and avoid creating the conditions that attract them.

Silvicultural adjustments can be made to help decrease the vulnerability of trees to bear damage, such as managing tree size, growth, vigor, species composition, and density in a way that reduces their attractiveness. Within areas of known bear damage, we often recommend a delay in thinning or thinning more lightly.

Higher densities may reduce the stand’s vulnerability by suppressing sugar concentrations. This also retains an ample amount of growing stock if and when bear damage occurs. Though trees may not release as vigorously under higher stand densities, this may outweigh losses associated with dead and defected trees caused by bears. This is a preventive strategy that doesn’t solve all problems but may help reduce the likelihood or severity of damage.

Protecting your trees from bear can be challenging, and no single method has proven to solve all bear problems. For landowners experiencing significant damage, management may require a combination of methods.

Regularly monitoring the forest is critical, especially for those that have or will have optimum conditions to attract bear — highly productive sites, with fast-growing, vigorous trees (Douglas-fir, western hemlock aged 15 to 30 years) — and/or are located in an area with a large bear population or known damage.

Similar to other damaging agents in the forest, some level of bear damage may have to be tolerated before it makes economic sense to invest in control measures. To help make this determination, I recommend working with a forestry professional who can survey the damage or potential for damage and make recommendations based on your management goals and objectives. To find a consulting forester, visit the WSU Extension Forestry website and search the consulting forester directory.

Published in Forest Stewardship Notes, February 2020