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A Private Landowner's Guide to Managing
Black Bear Habitat



Wildlife Habitat Enhancement Series, No. 2

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and
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No. 1 - *A Private Landowner's Guide to Managing Northwest Bluebird Habitat* - Bulletin No. 778

No. 2 - *A Private Landowner's Guide to Managing Black Bear Habitat* - Bulletin No. 777

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A Private Landowner's Guide to Managing Black Bear Habitat

Pamela Town and Ronald L. Mahoney



Introduction

Ferocious, mystical, shy, and unpredictable. All of these adjectives describe the black bear (*Ursus americanus*) with some degree of authenticity. So why would any landowner want to manage their property for black bears? In addition to the personal gratification of seeing a bear or simply knowing one is using your forest lands, a habitat management plan designed for black bears will benefit a wealth of other forest dwellers.

The key to successful wildlife management is habitat management. Black bear habitat covers hundreds of acres, allowing a variety of management techniques. Bear habitat management includes silvicultural (forest management) techniques that combine aesthetically pleasing harvesting and habitat development with an income for the landowner. Even if you are a small landowner, black bear management may still be possible as wildlife does not recognize property boundaries. By managing your forest to meet bear habitat requirements lacking in surrounding properties, you may find bears using your land. Also, as a small land owner, you could provide a valuable corridor linking bear habitats or isolated bear populations.

Initiating a habitat management plan for black bears will benefit a host of other wildlife species, giving you the satisfaction of helping sustain wildlife in the Pacific Northwest.

Life history

American black bears are the most widespread and numerous bears in North America. The name "black bear" can be misleading as black bears may be black, cinnamon, blond, white, beige, or even blue in coloration.

Black bears are the smallest North American bear. Adults average 35 to 40 inches high when on all fours and from 4 to 6 feet from nose to tail, with weights ranging from 100 to over 600 pounds. Size and weight vary considerably and depend on food quality and availability in their habitat. They travel great distances, with home ranges averaging 6 to 19 square miles for adult females (sows), 4 to 15 square miles for juvenile sows, and 18 to 160 square miles for juvenile and adult males (boars). Sex, age, season, and habitat determine home range size. Home ranges may overlap, but specific areas are rarely used by different adult bears at the same time, except briefly during the mating season.

Bears emerge from their den in early spring. Spring food includes grasses, forbs, clover, and carrion. This food, although it may be abundant, is of low quality so bears are unable to maintain their body weight. They must live off stored body fat, continuing to lose weight. At this time bears bed in uncut timber areas where trees or shrubs provide a dense overstory with some midstory and ground vegetation. Bears forage in open timber areas and meadows but do not stray too far from the forest edge, where security (cover) is available.

As food quality increases in the late summer and fall, bears feed intensely to increase their fat reserve. They continue to bed in uncut timber and search out shrub fields, riparian areas, and agricultural lands for soft-mast foods (berries and apples).

The availability of fall food may determine denning times. With large quantities of fall food, bears will remain active longer. In the Pacific Northwest, bears generally den in October or November. Dens are found under tree roots, or within fallen logs, hollow trees, brush piles, or rock caves. By denning, bears are able to overcome food scarcity and unfavorable weather conditions. In general, once bears hibernate, they are there to stay; however, bears may emerge, especially if they are disturbed. They are easily roused to a state closely resembling full consciousness, which allows them to escape danger or defend themselves. If left undisturbed, bears will usually go several months before they leave the den.

Adult boars and non-breeding sows are usually solitary except during the breeding season, which occurs in June, or early July. Sows will not successfully mate until 3 to 5 years old. Where food supplies are very unpredictable, sows may not successfully mate until 5 to 7 years old. After successful mating, the fertilized egg does not develop until denning. Cubs are born in January to early February and weigh less than 1 pound. The sow usually has a litter of 1 or 2 cubs but could have up to 5. Cubs develop quickly and emerge with their mother from the den in April ready to experience the world. Cubs will stay with their mother for approximately 17 months; therefore, subsequent breeding takes place every other year.

Bear/Human interactions

Bear diets lack protein and fats while being high in carbohydrates; thus they prefer high protein and fatty foods when available. The preferred wild foods available in the Pacific Northwest are listed in Table 2. Bears are opportunists, and do not mind feeding on human garbage. They will readily invade your picnic and camping site leading to the most common bear/human interaction. Bears will also venture close to homes when pet or livestock food is left outside. For those landowners managing their property for bears, do not allow them to become too accustomed to humans. Securing compost piles, trash sites, and pet or livestock foods while providing "natural food" is the best practice.

Bears may also be attracted to bee hives and orchards, in some cases causing costly damage. Fencing, preferably electric fencing, may discourage bears from entering these areas. As bears are expert tree climbers, overhanging trees and limbs must be removed from the fence line. Fences should be continuously maintained to assure effectiveness. Many beekeepers have found fences ineffective and have resorted to 6 foot elevated platforms on steel posts for their hives.

The above listed bear/human interactions are a few reasons why talking to adjacent landowners is necessary for effective management. Although you may enjoy the presence of bears, your neighbor may not be willing to tolerate them. Sharing management information can help avoid conflicts.

Timber damage

Bear damage to timber production has been noted throughout the Pacific Northwest. In the spring, bears may strip bark and sapwood off trees 4 to 8 inches diameter at breast height (dbh) as another food source. Damage varies from localized bark removal to girdling the main stem, which kills the tree.

A University of Idaho study of black bear damage to thinned timber stands in northwest Montana found a higher level of damage to trees in a thinned stand than in an adjacent unthinned stand. However, the study indicates that even if bears damage 50 percent of the trees in a precommercially thinned stand, and half of those trees die, the stand will still out-yield an unthinned stand. So, if a landowner prescribes a precommercial thinning on a stand that is subject to bear damage, careful consideration needs to be given to stocking level and species left. Stocking level needs to assume some damage will occur and species less susceptible to bear damage should be left. The preference for sapwood of certain species varies with the geographical area and forest type (Table 1).

Until more research is available on timber damage, your damage-control methods include spring hunting in bear damaged stands, live trapping and relocation of bears (contact your

Table 1. Black bear preference for sapwood of certain tree species based on geographic area.

| <i>Geographic area</i> | <i>Tree Species</i> |
|--|--|
| Northwest Montana | western larch (<i>Larix occidentalis</i>) lodgepole pine (<i>Pinus contorta</i>) Engelmann spruce (<i>Picea engelmannii</i>) |
| Cascades (high elevations) | subalpine fir (<i>Abies lasiocarpa</i>) |
| Olympic and Cascades (upper slopes and lower ridges) | Pacific silver fir (<i>Abies amabilis</i>) |
| Cascades (eastern slopes) | lodgepole pine (<i>Pinus contorta</i>) |
| Western Washington (lower and intermediate elevation) | Douglas-fir (<i>Pseudotsuga menziesii</i>) |
| Northern Idaho and Eastern Washington | western hemlock (<i>Thuja heterophylla</i>) western red cedar (<i>Thuja plicata</i>) red alder (<i>Alnus rubra</i>) |

local wildlife agency), or managing your forest to allow for damage. Foresters with Cooperative Extension or state agencies, as well as private forestry and/or wildlife consultants can provide assistance.

Habitat management

Habitat is the key to successful wildlife management. Black bears' home ranges cover many miles and habitat management can span across many ownerships. Before starting your bear habitat management activities you must answer a few questions:

- Are there bears in the area?
- What does your land have to offer?
- What do neighboring properties have to offer?
- What are your neighbors' land management objectives?

The remainder of this publication describes some land management ideas to improve black bear habitat. Try to select the options you can achieve on your property and that are lacking in the surrounding area. Remember, it may be easier to improve a habitat rather than create a new one.

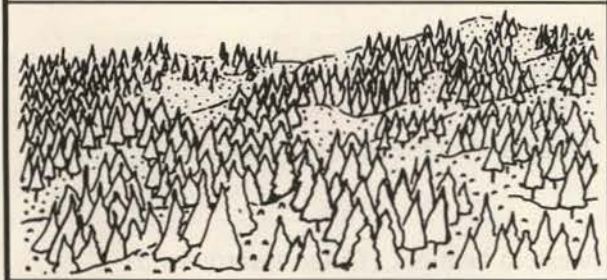
Food sources: Black bears are generally driven by their stomach. They will move many miles to locate prime food sources. Table 2 indicates the foods they prefer during different times of the year. The most important food source is the food available in the late summer and fall that bears use to build up their fat reserve. Forest openings, old burned areas, and meadows are critical because they can provide an abundance of berry producing plants.

Planting shrubs is often expensive and results are not always predictable. From the cost standpoint, there is no good substitute for natural regeneration of native berry producing species. Maintain naturally occurring forest openings and meadows. Prescribed burning may be used to maintain openings, however, different species of shrubs should be burned at different intensities and different times of the year for best growth results. Some forestry and wildlife management consultants specialize in prescribed burning for private landowners. Abandoned apple orchards and fruit trees should be released by removing the invading non-berry producing trees and shrubs. All fruit trees, whether wild or cultivated, provide a valuable food source for black bears and many other wildlife species.

Huckleberries provide a delightful wild food source for humans as well as for bears. Regulate the amount of huckleberry picking from your property. Bears cannot go to the store and are dependent upon this fall food source for survival.

Black bears tend to avoid newer (less than 15 years old) large clearcuts; therefore, group selection (cuts that remove trees in small groups) is a preferred option to create forest openings (Figure 1). You can minimize the impact by

Figure 1. Group selection.



harvesting small and irregular shaped areas in a rotation that precludes adjacent cuts within a 20-year period. The maximum width of the groups should be twice the height of the mature trees. If fruiting shrubs exist in the understory, the group selection cut will provide an abundance of food as a result of reduced canopy cover allowing for berry producing shrubs to grow. In dense forests, larger openings may be required to enable shrubs to seed-in and establish before the tree canopy again dominates the site. Herbicides or prescribed burning may be needed to remove undesirable shrub species. Remaining trees serve as cover for the bear and provide a seed source for regenerating timber.

Another method to create small forest openings is leaving small patches of trees within a clearcut, known as a clearcut with reserves (Figure 2). Trees should be left at a rate of 1/4-acre to 1/2-acre patches per 10 acres of clearcut. These remaining trees provide cover for the bear while serving as a seed source for regeneration. The bear may forage around the edges until thick vegetation returns to the area.

Openings created specifically for wildlife with no intention of producing tree regeneration need to be specifically located to prolong the life of the clearing. Proper location of forest openings is the key to prolonged existence with minimum

maintenance. The best place to make openings are where there is little or no advanced reproduction present, areas that are poorly or excessively drained, or areas with the presence of shallow soil. Stands of trees less than 25 years old are also good places for a clearing because they tend to produce small amounts of seed. The above conditions make for poor regeneration and slow seedling growth, which prolongs the life of clearings for wildlife purposes.

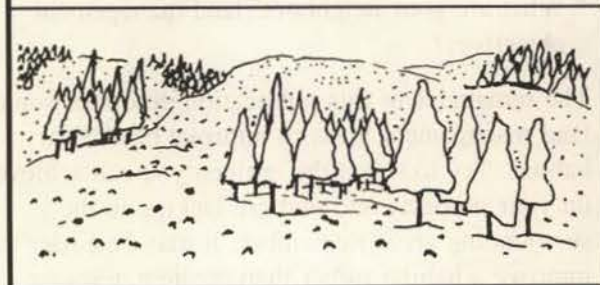
In clearing the land for berry-producing shrubs, do not scarify the soil. Scarifying the soil causes root damage to berry shrubs. Slash (tree residue after a logging operation) should be broadcast burned (the slash is burned as it lies within prepared fire lines) or left untreated rather than piled by heavy equipment. Winter harvesting on snow or frozen ground using rubber tired vehicles will also minimize soil damage.

Bears will also feast upon insects and honey. Leaving some large, dead logs on the ground not only attract insects (valuable food source) but enables vital nutrients to leach back into the soil. Do not fell cull trees (non-merchantable trees) or other live trees as a method of creating down woody logs. Leaving live green logs on the ground may increase populations of insects harmful to living trees (example: bark beetles). Generally, insects that feed upon dead and decaying logs are harmless to living trees while providing a food source for wildlife.

Bedding, escape, and cover: Bears usually bed within uncut timber stands on steep slopes, often on north or east aspects. Thick and patchy understory, rough topography, and few roads provide escape from potential dangers. Install a gate on private roads to limit access.

Den sites can be increased by allowing some

Figure 2. Clearcut with reserves.

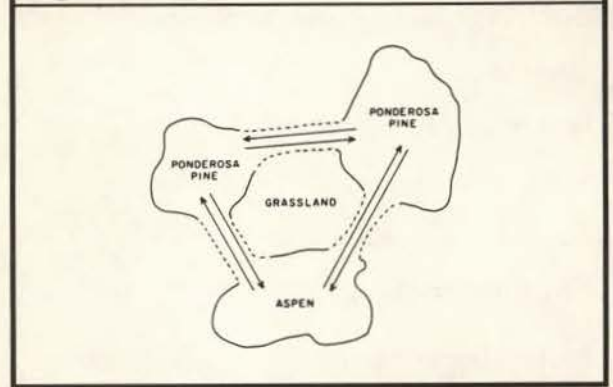


large blowdowns or large hollow logs to remain in the forest. If rocky caves occur, you may wish to avoid those areas from early October through late May to reduce the chances of disturbing a bear.

Corridors: Corridors are strips of forested areas which connect larger tracts of forests, allowing animals to move from one forested area to another while remaining under cover (Figure 3). Riparian areas and wide forested tracts, where dense vegetation occurs, provide black bears with an effective corridor to move about undetected. Narrow corridors, comprised of dense vegetation, may provide excellent cover when topography assists in reducing visibility of humans.

Corridors not only provide travel lanes but supply habitat for species adapted to the edge type of habitat (example: song sparrows, common yellowthroats, dark-eyed juncos, rabbits, elk, and deer). An edge is created when two

Figure 3. Corridors.



different vegetation types meet, such as an open field and mature timber. The edge includes vegetation from each of the adjacent habitats increasing the diversity of plants and animals. As previously mentioned, black bears avoid large open areas, but will readily move along the edges.

Table 2. Common food sources available for black bears in the Pacific Northwest.

| <u>Spring foods (May through June)</u> | | | | |
|---|---------------|------------------------|----------------------|------------------|
| Trees (sapwood) + | Grasses | Ferns & Friends | Forbs | Prey Upon ** |
| Douglas-fir | fescue | ferns | asters | deer fawns |
| Engelmann spruce | bluegrass | horsetail | biscuitroot | elk calves |
| lodgepole pine | wheatgrass | lichens | bluebells | |
| Pacific silver fir | brome | mosses | cow parsnip | |
| paper birch | | mushrooms | dandelion | |
| red alder | | | false Solomon's seal | |
| subalpine fir | | | mustards | |
| western hemlock | | | pearly everlasting | |
| western larch | | | phlox | |
| western red cedar | | | | |
| <u>Summer and fall foods (July through October)</u> | | | | |
| fruits, twigs, and leaves of | | | | |
| apple | buffaloberry* | devil's club | mountain ash* | snowberry |
| bearberry | cherry* | elderberry | salmonberry | wild sasparrilla |
| blackberry | currant | huckleberry* | serviceberry* | |
| <u>Year-round food</u> | | | | |
| Insects | | Carrion or prey upon** | | |
| ants | honey | deer | elk | |
| beetles | flies | rodents | fish | |
| bees | wasps | | | |

+ Preference for sapwood varies geographically and by individual bears and may indicate poor quality spring habitat.

* Preferred natural foods.

** It is unknown how actively the black bear seeks out these prey animals, local populations may prey on young. Often, dead animals are found and eaten (carrion).

For more information on this topic:

Black bear biology and management:

Local library

Private wildlife consultants

State wildlife agencies

US Fish and Wildlife Service

USDA Forest Service

Beekeeping and bears:

Gleaning in Bee Culture (magazine)

Honey Bee Pests, Predators, and Diseases.

Edited by Roger Morse and Richard

Nowogrodzki. Comstock Publication, Cornell

University Press. Copyright 1990. 474 pps.

Black bears and timber management:

Cooperative Extension System

Private Forestry Consultants

State Department of Lands/Natural Resources

University of Idaho Research:

Mason, Andrew, and David Adams. 1989.

Black bear damage to thinned timber stands in northwest Montana.

Western Journal of Applied Forestry.

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