Woodland
Fish and Wildlife

March 1990

Managing Deer on Small Woodlands

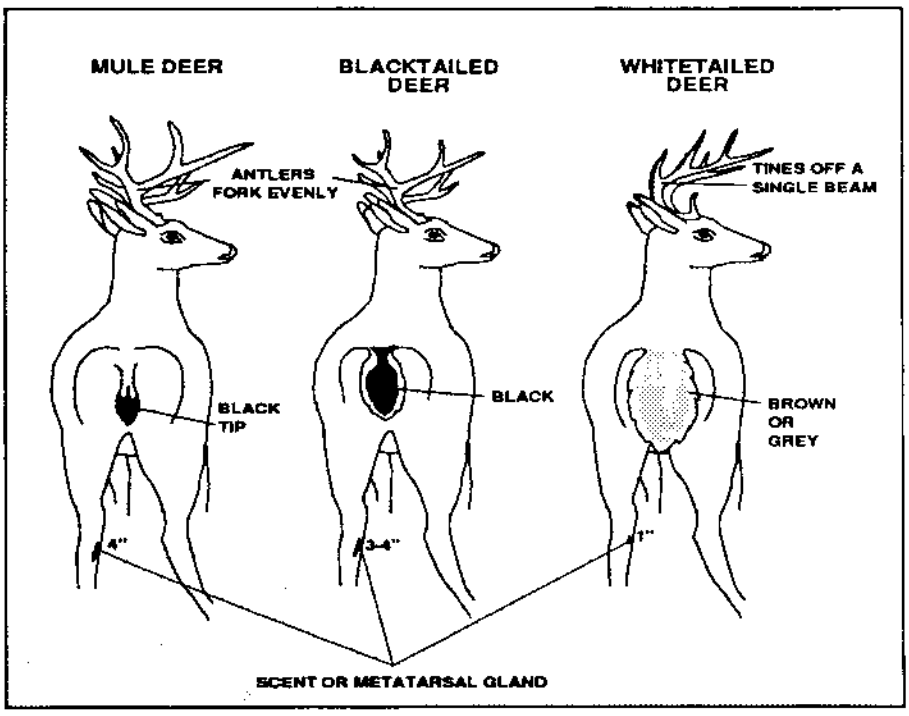
Most of us have an opinion about how many deer there are and about how many there ought to be...the numbers rarely match. There always seem to be too few, if one is a hunter or watcher of game animals, and too many, if one is attempting to raise crops, whether they be trees or gardens. What is the true trend in deer populations in the Northwest? It depends on the specific location, but in general, there is less habitat base available in Washington and Oregon each year, due to human population growth and land use changes. The management of deer populations on a shrinking habitat base is not a simple task.

One part of deer management is accomplished by hunting regulations developed by state wildlife agencies. In the spring of each year, deer populations increase about 25-35 percent. Hunters normally harvest about 12 percent. The number of deer remaining through the year is based on critical habitat needs being met, such as necessary food, cover, and water.

Deer and other big game range over a fairly large area, so woodlot owners with large acreages can be influential in the management of deer habitat. Those with small acreages can also contribute, as every bit helps. This publication describes the requirements of deer, and outlines some ways in which forest management can be accomplished while at the same time maintaining or improving deer habitat.

Description and Distribution

Two species of deer occur in Oregon and Washington. East of the Cascade Mountains, white-tailed deer *(Odocoileus virginianus ochrouris)* and mule deer *(Odocoileus hemionus hemionus)* are found. West of the mountains, a sub-species of mule deer, the black-tailed deer *(Odocoileus hemionus columbianus)* prevails. The Columbian white-tailed deer *(Odocoileus virginianus columbianus)* also exists on the westside (lower Columbia river and the area around Roseburg, Oregon) and is classified as an



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endangered subspecies of white-tailed deer.

Mule deer are distinguished from other species by a black tipped tail and white over the rump above the tail. The black-tailed deer, as the name suggests, has a tail which is mainly black on the outer surface. White-tailed deer have large (about 11 inches long) reddish-brown or grayish tails that flag white when raised. Another characteristic that distinguishes white-tailed from mule and black-tailed deer is the antler shape. White-tailed deer antlers have unbranched tines that originate from a single beam, while mule deer and black-tailed deer have branched tines and a branched beam.

Life History

Deer breed in November and December and have their fawns from May through July. Young females, or does, usually give birth to one 5-8 pound fawn, while older does often have twins and sometimes triplets. The fawns retain spots until they are about three months old. Male fawns (bucks) develop buttons (small bumps) at six to eight months of age which eventually become antlers. Adult bucks grow new antlers each year. Antler growth begins in early spring and is complete by early fall. When antler growth is complete, the coating of soft velvet dries and peels off, leaving the hard antler ready for the breeding season, or rut. Antlers are shed after the rut in December or January.

Habitat Requirements

Deer don't necessarily stay in the same areas year round. In winter, deer generally prefer lower elevations and moderate sloping areas with south or southeast exposures. Black-tailed and white-tailed deer are normally resident in a small area (1/2 to 1 square mile), although some herds migrate. Herds of mule deer usually migrate rather long distances to winter ranges.

In spring, fawning areas are sought. These are usually flat and within several hundred feet of water. Ideal locations include riparian areas, low shrubs or small trees from 2-6 feet tall under a tree overstory of approximately 50% crown closure for cover, and a supply of succulent forage.

In summer, deer range widely, spending considerable time near water where green forage is most available.

Year-round, deer require some basic habitat elements: water, food, and cover. The availability of these vary with the time of the year.

WATER: If there is water on your property - even if it's only a marsh, intermittent stream, or spring - it is important. During timber harvest, protection of water, the associated riparian areas or wetland vegetation will maximize their value to deer and other wildlife.

FOOD: Deer browse on the growing tips of woody, brushy plants, although in late winter and early spring, most deer include grass in their diet. The optimum amount of forage in a deer's home range is between 40 and 60 percent. The way that this food is distributed and mixed with cover is important, since deer will not generally use forage areas that are more than 600 feet from hiding cover (sufficient vegetation or topographic features to provide security from predators). If an opening is more than about 25 acres, deer may not use all of it unless hiding cover is provided within the opening.

Forage is provided in natural openings, or in openings that have been created through timber harvest, fire, blowdown, or other disturbance. Quantities of deer forage can be increased during the 10-15 years following timber harvest. Some preferred forage species for deer are listed on the next page.

COVER: Deer use cover for two reasons: security from predators (hiding cover) and protection against the elements (thermal cover). Optimally, 40-60% of a deer's home range will provide cover. Thermal cover helps deer to tolerate the heat of summer and the cold of winter, and is provided in winter by stands of evergreen trees and by evergreen or deciduous trees in the summer. Thermal cover is most effective when the canopy is dense (70% or more closed), and in the winter is best when the tree diameter is large as well. Stands of 5-36 acres are effective. You will often find winter and summer beds under patches of thermal cover.

Hiding cover protects deer from predators. It consists of vegetation thick enough to hide about 90% of a deer from observation at a distance of 200 feet or less, and can be provided by small trees or tall shrubs. Greatest benefit is provided if hiding cover is maintained where deer may otherwise be seen: along roads, between openings, along travel corridors such as riparian areas. Young conifer plantations provide excellent hiding cover, especially when provided in patches at least an acre in size.

Both thermal cover and hiding cover are most effective when they are distributed well. Generally, about half of all cover should

Preferred Food Plants

MULE DEER	BLACK-TAILED DEER	WHITE-TAILED DEER
Trees and Shrubs		
Thimbleberry	Salmonberry	Westside:
Snow brush	Snow brush	Snowberry
Snowberry	New growth of	Elderberry
New growth of	Douglas fir	Red-osier dogwood
Douglas Fir	Bitterbrush	Evergreen blackberry
Bitterbrush	Willow	
Willow	Trailing blackberry	Eastside:
Rose	Ceanothus	Willow
Ninebark	Red huckleberry	Sagebrush
Mock orange	Vine maple	Deer brush
Dogwood	Western red cedar	Serviceberry
Currant	Salal	Bitterbrush
Cherry		Wild cherry
Red stem ceanothus		Buckbrush
Buckbrush		Evergreen ceanothus
Serviceberry		Red stem ceanothus
		New growth of Douglas fir
		Western red cedar
Forbs and Legumes		
Alfalfa	Alfalfa	Westside:
Clover	Clover	Swordfern
Balsamroot	Deer vetch	Bulrush
Bluebells	Pearly everlasting	
Burnet	Fireweed	Eastside:
Hawkweed	Vetch	Burnet
Prickly lettuce	Deer-fern	Alfalfa
Dandelion	Cats Ear	Dandelions
Twinflower	Clover	
Trefoils	Balsam root	
Grasses and Others		
Bluegrass	Bluegrass	Westside:
Wheat	Wheat	Bulrush
Oats	Oats	Sawgrass
Cheatgrass	Lichens	Reed canary grass
Lichens	Mushrooms	
Mushrooms		Eastside:
		Wheat
		Orchard grass
		Lichens
		Mushrooms

be in thermal cover, and half in hiding cover, with slightly more toward thermal cover if in a winter range.

Forest Management for Deer

Habitat can be maintained or enhanced during land management activities such as timber harvest. Habitat needs can be most effectively considered when planning timber harvest, such as harvest scheduling. A long-term or large scale planning approach allows consideration of habitat needs throughout a large area and through time, and individual units of land, managed well, contribute to this approach.

Harvest Scheduling: One of the most important considerations in providing deer habitat is the pattern and quantity of forage, hiding cover, and thermal cover throughout an animal's home range. Using the information provided earlier, a landowner can assure a well-distributed mix of quality forage and cover over a large area. Harvested units, for 10-15 years, provide forage, but will not provide adequate thermal and hiding cover unless the residual stand meets the criteria for cover described above (such as 70% canopy closure).

Site-Specific Techniques: To protect sites known to be heavily used by deer during fawning season and under severe winter conditions, it's best to avoid disturbing these areas. When management activities such as logging are necessary, there will be smaller impact if they are conducted during seasons not critical for deer. For example, activities on deer winter ranges will cause the least stress to wintering animals if conducted during late spring to autumn.

With any timber harvest activity, there are techniques one can use to enhance or retain deer habitat. Where riparian areas are protected, they provide travel corridors and cover for deer as well as essential habitat for other wildlife and fish. Roads can be constructed, to avoid locating them near key habitat such as riparian areas or thermal cover and to maintain as much hiding cover as possible. When no longer needed, roads can be closed and landings can be seeded and fertilized to improve deer forage and prevent erosion. If slash is burned, availability and growth of some forage species including willow, ceanothus, and serviceberry may increase. If slash is not burned, windrowing or piling will create feeding areas easily traversed by deer.

Deer may eat seedlings

CHECKLIST

Percent of Area in cover:

40-60

Ratio of Thermal to Hiding Cover:

50:50

Forage:

50-100% herbaceous vegetation (grasses, forbs, legumes) and/or shrubs less than seven feet tall

One acre patches of forage

Less than 600 feet from cover

Hiding Cover:

Capable of screening 90% of a standing adult deer

1-5 acre patches

Thermal Cover:

(West of the Cascades)

Evergreen forest stand at least 40 feet tall

Crown closure of at least 50-70%

Smaller than 5 acre patches.

Large (21" diameter) trees preferable

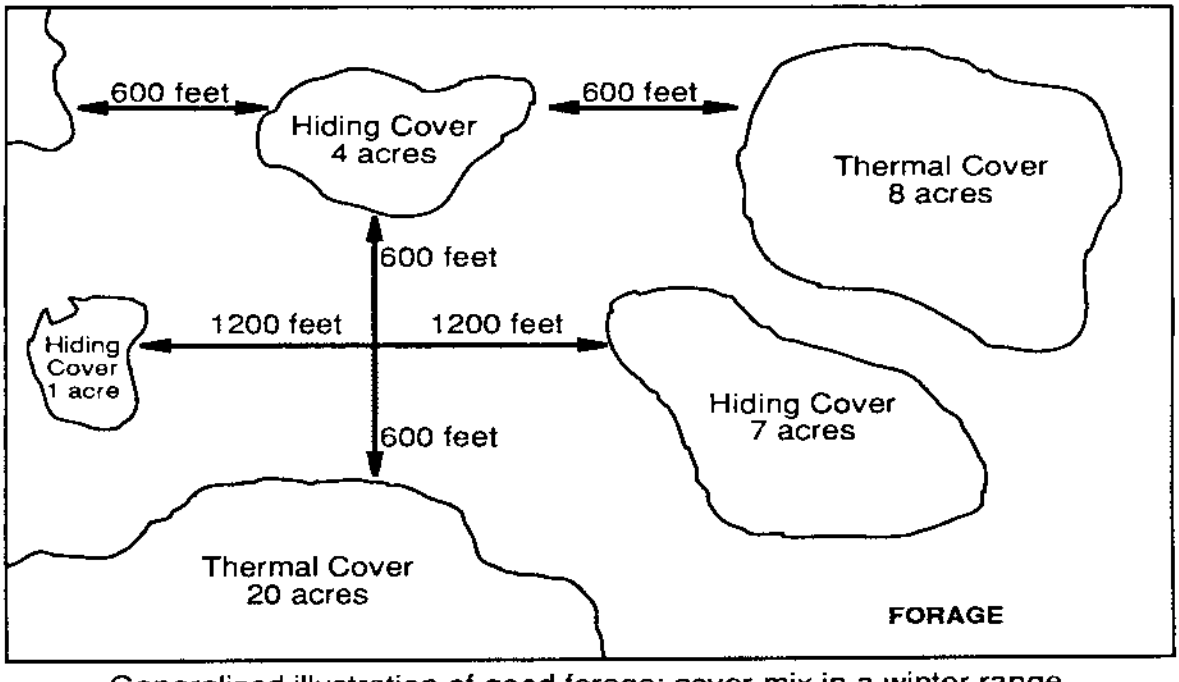
(East of the Cascades)

Stand of trees at least five feet tall (summer)

Stand of trees at least pole/sapling size (winter)

crown closure of at least 50-70%

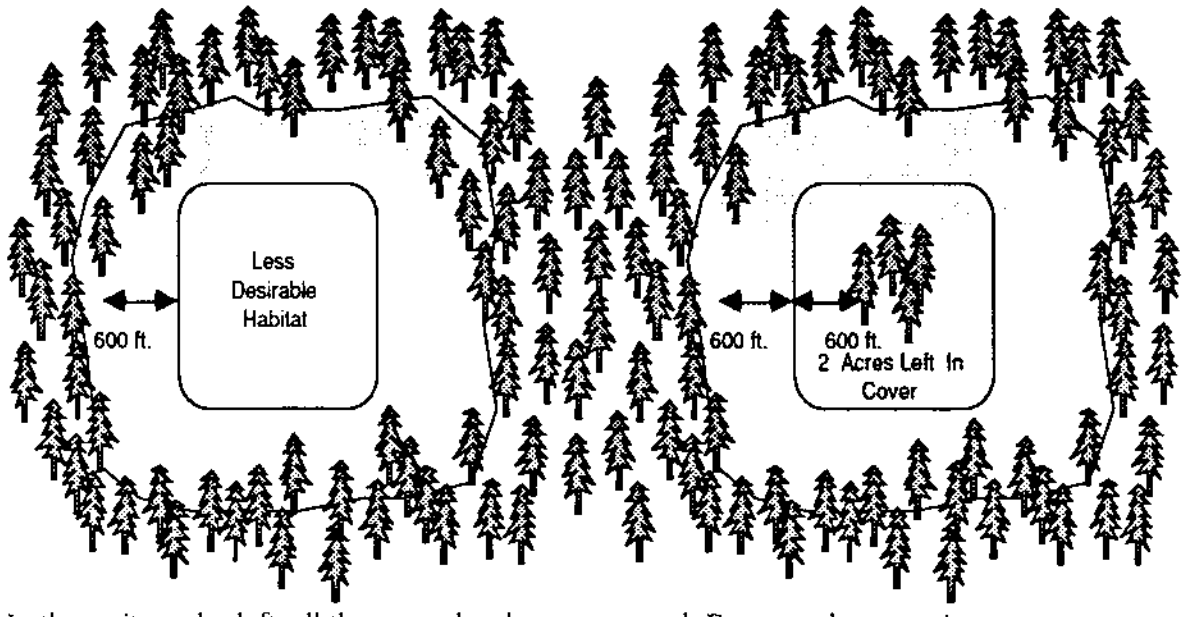
Less than 5 acre patches.



Generalized illustration of good forage: cover mix in a winter range

in a plantation. If this is a problem in your area, repellents, protective devices, or fencing may be needed. For more information on animal control, check the references for two helpful publications.

The checklist will help you to evaluate the potential for your woodland to provide excellent deer habitat. If managing for winter range, heavier snowpack areas will require more cover.



In the unit on the left, all the cover has been removed. Because deer require cover near foraging areas, the center portion of the unit is not usable foraging habitat. In the unit on the right, a two-acre stand of cover remains; the entire unit is usable habitat.

REFERENCES

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Our Purpose...

This leaflet was written by Keithlyn Watson, Cooperative Services Program Manager and Margie Schirato, formerly a biologist, Washington Department of Wildlife.

The Woodland Fish and Wildlife Project is a cooperative effort among the World Forestry Center, Oregon State Department of Forestry, Washington State Department of Natural Resources, Oregon State University Extension Service, Washington State University Cooperative Extension, University of Washington Center of Streamside Studies, Oregon Association of Conservation Districts, Oregon Small Woodlands Association, Washington Farm Forestry Association, Oregon Department of Fish and Wildlife, Washington Department of Fisheries, Washington Department of Wildlife, Oregon Soil Conservation Service, Washington Soil Conservation Service and the USDA Forest Service. The World Forestry Center serves as the coordinating organization for the project.

The Woodland Fish and Wildlife Project was initiated to provide information on fish and wildlife management to private woodland owners and managers. It is the intent of the organizations involved in this project to produce publications that will serve as practical guides to woodland owners.

Each publication is intended to be complete in itself. Users may find it convenient to collect all publications in this series in a three ring binder to form a permanent reference file. Woodland Fish and Wildlife Project publications range from an overview of fish and wildlife opportunities on woodland properties to specific publications concerning techniques for managing individual species.

These publications can be obtained from any of the cooperating organizations or by contacting the World Forestry Center, 4033 SW Canyon Road, Portland, OR 97221, (503) 228-1367.

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World Forestry Center
4033 SW Canyon Road
Portland, Oregon 97221

Woodland Fish and Wildlife Project Publication