Managing for Deer and Elk on Small Woodlands

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Originally printed by the Woodland Fish & Wildlife Group, June 2014; this edited version is reprinted with approval of the author.

Both deer and elk play important roles in the ecology and culture of the Pacific Northwest. These iconic animals can provide both substantial benefits to woodland owners through viewing and hunting, but can also be considered pest due to the damage they are known to cause. There are many pressures on habitat for these species. The most important thing that small woodland owners can do to maintain habitat for deer and elk is to keep their land in forest use.

Elk will use forests of all ages, but are most commonly associated with young stands (clearcuts) where food is most abundant. Closed-canopy forests are used for forage in late summer, shelter, and as hiding cover from predators. Principal predators include mountain lions, bears, wolves, and people. Rocky mountain elk are known to eat grasses and forbs in the summer, grasses in the spring and fall, and grasses, shrubs, tree bark and twigs during the winter, especially aspen (RMEF 2013).

Cover
Recent studies regarding thermal cover (dense vegetation to provide warmth) for deer and elk have shown that the availability of thermal cover has little influence over survivability of elk. However, biologists do recommend providing and maintaining cover for deer and elk as it provides security and protection from predators (Wisdom and Cook 2000). Biologists also suggest that land managers who are interested in promoting healthy elk populations should focus on providing forage opportunities.

Providing dense forest vegetation on winter range in eastern Oregon and Washington may be an important strategy in some areas, especially for visual security from predators. In areas where deer and elk regularly congregate in winter, reducing or eliminating disturbance from humans may be the most important way we can help them through winter months.
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Montana Hazardous Fuels Mitigation - Partner Service Regions

The DNRC Forestry Division’s Stewardship Program delivers $2M annually in cost-share assistance to help private forest landowners manage their forest land sustainably. This funding, made available through a partnership with USDA Forest Service State and Private Forestry, supports active forest stewardship, enhances public benefits from private forests, and provides important jobs in the forest products sector. The Stewardship Program’s hazardous fuels mitigation cost-share assistance is made available to individual forest landowners through regional partnerships with non-profit organizations and local governments. Inquiries can be directed to the contact numbers below:

Beartooth RC&D (Joliet): Stillwater & Carbon Counties - 406.962.3914
Beaverhead County (Dillon): Beaverhead, Deer Lodge & Silver Bow Counties - 406.596.1251
Bitter Root RC&D (Hamilton): Ravalli & Missoula Counties - 406.363.5450
Blackfoot Challenge (Ovando): Blackfoot River Watershed - 406.793.3900
Clearwater Resource Council (Seeley Lake): Greater Seeley Lake - 406.210.8453
Flathead Economic Policy Center (Columbia Falls): Flathead, Lincoln & Sanders Counties - 406.892.8155
Gallatin County Extension (Belgrade): Gallatin, Park & Meagher Counties - 406.388.3213
Madison County (Virginia City): Virginia City & Nevada City - 406.843.4253
Red Lodge Fire Rescue (Red Lodge): Greater Red Lodge Area - 406.425.3175
Swan Valley Connections (Condon): Swan Valley - 406.754.3137
Sweet Grass County Conservation District (Big Timber): Sweet Grass County - 406.932.5160
Tri-County FireSafe Working Group (Helena): Lewis & Clark, Jefferson & Broadwater Counties - 460.442.4873
Dear Tree Farmers,

This is the last Letter from the Chair I will write for the Montana Tree Farm newsletter. My two-year term comes to an end in December. In this time the Tree Farm Steering Committee has accomplished several large goals, including the decision to retain certified status for our state program, a draft revision to our by-laws to clarify steering committee membership requirements, developing a new-member packet and, most recently, approving a Memorandum of Understanding outlining the roles and responsibilities of the Montana DNRC’s Stewardship Program relative to Tree Farm. This means that my service to Montana’s Tree Farmers will continue long after my term as an officer comes to a close. I couldn’t be happier that this relationship is now formalized.

One thing I certainly wouldn’t want to give up is my role as a Tree Farm inspector. I dearly value the interactions I have with forest landowners and the unique approach each takes to managing their piece of forestland. One common goal that unites nearly all, however, is wildlife. Most Tree Farm plans I certify contain a goal or objective related to maintaining or improving wildlife habitat. The ranks of Montana Tree Farmers include many bird watchers, elk lovers, and even a few grizzly-bear whisperers. In honor of them, and of all Tree Farmers whose sustainable management practices provide a safe haven for animals of every shape and size, Editor Chris Town has selected a number of wildlife-oriented articles for the 2016 Fall Tree Farm newsletter. We hope you enjoy them!

Sincerely,

Angela Mallon
Montana Tree Farm Steering Committee Chair and Certification Coordinator
Forage
The availability of high-quality forage has profound effects on deer and elk survivability and reproductive success. In general, deer and elk require the most quantity and quality of forage during the late spring and summer. Landowners have an opportunity to provide quality foraging opportunities by making nutritious forage available at the right times of the year (particularly in summer).

What plants are nutritious for deer and elk?
Salal, Oregon grape, and most ferns (especially bracken fern and sword fern) are not good forage species for deer and elk as they lack the nutrition deer and elk need. Instead, deer and elk need high protein and mineral-rich grasses, forbs and shrubs common to open areas following fire, storm events or logging. In moist forest ecosystems, elk tends to utilize a harvest site following clearcutting or thinning of trees, encouraged by the increase in sunlight that reaches the forest floor. Cook (2005) found that clearcutting, site preparation, planting and herbicide application produced a large flush of early-successional vegetation with good representation of species preferred by elk and deer during summer and fall. The average digestibility of forage was highest in the early years, although even during some of the early years of this study, forage in some locations was inadequate to provide high-quality nutrition. Given the importance of summer forage, land managers may also want to consider using wildlife specific seed mixes in disturbed areas.

Many seed mixes are available, and choosing a deer and elk-friendly mix could go a long way toward providing much-needed forage. Also, as the conifers on a site begin to close canopy, the deciduous component of the vegetation starts to dwindle, and over the next 20 to 30 years the site becomes dominated by less-nutritious evergreen shrubs and forbs. Land managers may want to consider practices such as thinning to increase forage for deer and elk within closed canopy stands.

What about deer and elk friendly forage mixes?
There are many places to find forage mixes for wildlife. It’s a good idea to check to make sure you are getting locally sourced, weed free mixes. There are both native and nonnative mixes available and costs vary widely among sources and seed mixes. If you’re not sure about the mix you are thinking of using, check with Rocky Mountain Elk Foundation or a local wildlife biologist.

What about damage from deer and elk?
Conifer forests in the Pacific Northwest are certainly susceptible to deer and elk browse, primarily during stand initiation following harvest or natural disturbance. During the first five years of tree growth, deer and elk forage on the terminal and lateral shoots of young seedlings. In some cases, seedlings are completely uprooted, usually indicative of elk. Trees may also be trampled or broken by deer and elk moving through or bedding down in a stand. Browse and other sources of seedling mortality are expected by land managers; however, severe and repeated browse can lead to significant economic loss and noncompliance with reforestation standards. Strategies for dealing with deer and elk damage involve three basic methods: Repellent, exclusion or armoring, and tolerance. Several commercial repellents are sold to deter deer browse. They generally act on one or more modes of action including irritation, conditioned aversion and flavor modification. Research conducted at the National Wildlife Research Center (NWRC) has shown that habituation to odor limits the effectiveness of repellents that are not applied directly to food sources, while topically applied irritants and animal-based products produce significant avoidance. While repellents may provide temporary relief in some situations, they are not a long-term solution to deer
and elk browse. The durability and effectiveness of repellents can be affected by environmental factors such as air temperature, rain, snow and wind. Physical barriers range from protection of individual trees with devices such as tubing to exclusion of large areas with fencing. Fencing is an option for excluding deer and elk but is usually avoided because it is cost-prohibitive. However, it can be a good option for smaller areas such as riparian plantings. Research has shown that not just any fence will exclude deer and elk. Fences must be sturdy enough to withstand breakthrough by running ungulates and tall enough to prevent jumping (minimum 8 feet). It is extremely important that if you do build a fence that you build it at least 8 feet tall. Shorter fences are dangerous for deer and elk, especially the young, as they can become entangled in these lower fences when trying to cross.

In a research study conducted on commercial forests with historic browse damage, NWRC scientists found that survival of Douglas-fir seedlings inside and outside fences was similar after two years; however, seedling heights were reduced significantly outside fences due to browsing by deer and elk. Additionally, NWRC scientists found that survival and heights of seedlings planted with scented bud caps were no different than untreated seedlings. Landowners may wish to consult with a wildlife biologist or stewardship forester for site specific animal control recommendations.

What silvicultural methods can I use to promote habitat for deer and elk?

Early seral vegetation provides forage and habitat for deer and elk, as well as many of the other wildlife species associated with young forest habitats. Land managers whose objectives include providing habitat and forage for deer and elk may want to consider the following silvicultural treatments:

- Where thinning is prescribed, thin timber stands to or below 50 percent crown closure to allow sufficient sunlight to reach the ground surface for early seral vegetation to become established.
- Retain any natural meadows and openings and remove encroaching conifers from these open areas. Note that power-line easements make great openings and often provide habitat for deer and elk.
- In managed or thinned stands, create gaps of 1 to 5 acres on sites with east, south or west facing slopes, on slopes less than 30 percent and away from open roads.
- In created gaps, plant native shrubs that provide fruit, nuts, berries or browse for wildlife.
- Protect preferred forage species during forest operations.
- Seed all disturbed soil including skid trails, yarding corridors, landings and decommissioned roads with a seed mix of native grass and forb species that will provide high forage value for deer, elk and other species.

These management prescriptions may not make sense for all landowners or all landscapes, but they will generally help provide better habitat for deer and elk.

Summary

Managing for both healthy forests and healthy deer and elk herds is challenging. As the human population increases and the demand for human habitat rises, there will be more pressure to convert forested areas to other uses. Remember, keeping lands as working forests is the number one thing that land managers can do to promote wildlife habitat, including habitat for deer and elk.

More specifically, deer and elk require the right kinds of nutrition at the right times of year. Land managers whose goals include healthy deer and elk herds may consider what actions they can take to provide forage opportunities for ungulates on their lands. Conversely, managers may look at ungulate distribution across the state and take appropriate actions to discourage deer and elk from their lands. Damage to trees resulting from deer and elk is one of the biggest challenges facing landowners today. There are many ways of dealing with deer and elk damage, and more studies are needed to determine the actual cost to landowners resulting from deer and elk browse. Understanding the needs of deer and elk, and how they change throughout the year is an important step toward achieving individual management objectives.

Your forests, regeneration sites, meadows and streams can be managed to help provide excellent habitat for deer and elk through thoughtfully planned timber harvest, planting, vegetation management, and other stewardship activities.


Montana Tree Farm Program
2016 Annual Meeting Agenda and Registration
Saturday, September 24, 2016

Florence-Carlton Community Church Fellowship Hall
20075 Hwy 93 South, Florence, MT 59833

Transportation: Meet at the Florence Carlton Community Church Fellowship Hall
Buses will pick us up there for the tour.

8:00 – 8:30 am  Meet at Florence Fellowship Hall, coffee, pastries, browse silent auction items
8:30 – 8:45 am  Travel to Arno Tree Farm
9:00 – 10:30 am Visit Arno Tree Farm
10:30 am  Walk to Carlson Tree Farm
11:00 – 12:30 pm Visit Carlson Tree Farm
12:30 pm  Load buses, depart to Fellowship Hall
1:00 pm  Return to Fellowship Hall, serve lunch, present awards.
2:00 pm  Business Meeting Items:
  • Membership fee discussion
  • Update to bylaws
  • DNRC-Tree Farm partnerships
3:30 pm  Adjourn

Registration Form: Tree Farm Tour and Luncheon

Preregistration is necessary to get an accurate meal count. Registration due to Montana Tree Farm by September 18th.
Registration fee is $25 per person (Children under 16 are $12.50). Attendance is limited to 100.
If tour is filled, late applicants will be notified immediately.

Name(s): ______________________________________________________________________________
Postal Address:___________________________________________________________________________
Phone *: ___________________________ e-mail: ______________________________________________

Please indicate how many of your preferred lunch option: _____meat lasagna _____vegetarian linguine
(entrees include salad, drink, and dessert)

# of persons attending: _______ Amount enclosed: $ _________

Please send this form and your check to: Montana Tree Farm Program
PO Box 17276, Missoula, MT 59808
Forest Snapshots

Tree Farmer Allen Chrisman, of the North Fork of the Flathead, has captured some spectacular photos on his game camera over the years. The grizzly bear families and the black bear pictured here have a particular fondness for their lodgepole pine scratching post. Mountain lions and deer are also frequent visitors to the area.
I navigate my truck around Smith Lake as instructed, then follow a secondary road and one long dirt driveway up into the pine-covered foothills west of Kalispell. At Birdsong Tree Farm’s entry gate, I pause to admire owner Valerie Beebe’s shrine to forest conservation – a signpost virtually bowing under the weight of placards displaying her membership in the Montana Stewardship Program, status as a Certified Tree Farmer, and conservation easement with the Flathead Land Trust. I continue past the two rescued donkeys and a couple of horses in a corral to park in front of the house.

I am visiting Birdsong Tree Farm on this postcard Montana spring day to approve a plan for a small aspen restoration project. Birdsong Tree Farm qualified for a one-time special Stewardship Plan Implementation grant to help defray the costs of the project. This grant, funded by Forest Service State and Private Forestry and administered by the Montana Department of Natural Resources and Conservation, offered a short-term opportunity to Stewardship or Tree Farm plan holders to apply for funding to implement one or more goals of their plan.

Val Beebe’s primary goals for Birdsong Tree Farm include restoration of forest health, increasing diversity of both plant and animal life, and creating habitat for wildlife, particularly birds and pollinators. Her small aspen grove displays all the hallmarks of great wildlife habitat: abundant native grasses, fruit-bearing shrubs, mountain bluebirds flitting in and out of bird boxes, woodpecker holes in a couple of the larger trees, and antler-rub on nearly all of the smaller aspen saplings. Indeed, whitetail deer have been loving these aspens to death. For this project, Val has proposed constructing an innovative fencing exclosure designed by Clayton Marlow at Montana State University Extension to keep deer out. Her hope is that giving the aspen stand a respite from constant browse and other general punishment from deer will allow the saplings to gain a foothold and new sprouts to regenerate. She also plans to remove several conifers that have encroached on the grove, scarify the soil to promote aspen regeneration, and girdle a few of the larger conifers to create snags for cavity nesters. The work will be completed by Val herself, with assistance from the Montana Conservation Corps (MCC).

As we walk around the property together, Val tells me a little bit about her evolution as a forest steward. She says, “When I first bought this property, I thought forest restoration meant planting more trees. Through my efforts to educate myself, I learned that my property evolved as a drier, more open site, and its inhabitants are adapted to those conditions. Now, I find myself removing more trees than I plant!” I approve Val’s proposed plan of work without reservations and bid her farewell, but not before being served a cup of tea and a slice of exquisite banana bread.

When I return six weeks later for a final project inspection, I can barely keep up with Val on the short walk from her house to the aspen stand. She is clearly excited to show me what she and the MCC crew have accomplished. When we arrive in the grove, the effect of the fencing is immediately evident. Aspen sprouts are everywhere, some nearly a foot high. With the removal of a few large conifers, sunlight dapples the ground. On the edge of the stand, a couple large pines stand girdled, still green but awaiting their inevitable doom. The MCC crew has left a few neatly stacked woodpiles here and there, which Val will add to her cordwood stash for burning this winter. By all
accounts, it has been a successful effort. Later this spring, Val plans to plant golden currant, American plum, and buffalo berry to increase the food resources available to the woodland denizens. In the coming years, she will continue to monitor and repair the fencing as needed to ensure it stands up to pressure from deer during early spring browsing and the fall rut. Reflecting on the project, Val says, “So far, the results are incredible! I can hear the aspen singing praises that they now have more sunshine and ground moisture!”

To learn more about Birdsong Tree Farm and see photos of the aspen project, visit http://facebook.com/BirdsongTreeFarm.

Wood for Wildlife

Chris Schnepf, The University of Idaho
Article first appeared in Woodland NOTES, Vol. 17, No.1
This edited version is reprinted with approval of the author.

When foresters talk about leaving organic debris, they often focus on feeding forest soils, minimizing fire risk, and avoiding bark beetle problems. But if they are looking at broader ecosystem functions, they will also look at organic debris for wildlife. Many forest owners value wildlife for their own sake, but even where management focus is primarily on timber, wildlife can contribute to those objectives. For example, the owls that use snags left on a site will prey on pocket gophers—a chief nemesis of tree planters everywhere.

For the most part, wildlife biologists looking at organic debris concentrate on material larger than three inches in diameter, known as coarse woody debris (CWD). Slash, organic debris smaller than three inches in diameter, ultimately helps wildlife to the extent it enriches forest soils, which in turn feeds the plants, trees, and fungi that wildlife depend on. Slash piles may also shelter small mammals. But inadequate coarse woody debris is often more limiting to wildlife. Species ranging from bears to rubber boas use CWD for many purposes. For example:

- both birds and mammals use CWD as a place to forage for insects or fungi;
- martens, fishers, bobcats, and black bears use CWD for dens and shelter;
- many small mammals use CWD for hiding cover and protection;
- small mammals also use logs as runways;
- many amphibians benefit from CWD because it provides cooler, moister habitats with more stable temperatures for breeding and other activities;
- birds use CWD for lookout posts and reproductive displays; and
- predators such as martens and weasels use CWD for access under snow to their prey.

Managing CWD for forest nutrition is relatively straightforward. Determine how many tons of CWD you need per acre and when and how to treat it to minimize insect and fire concerns. Managing CWD for wildlife is more complicated. The size, distribution, and orientation of logs are more important than sheer quantity. Also, different wildlife species have different habitat needs, some of which may conflict. Heavy log concentrations may be good for small mammals but limit elk movement.

Since many, if not most, wildlife species of interest cross property boundaries, you also have to factor in what needs are being met by nearby forests. More research is needed, but some general strategies for managing CWD for wildlife can be grouped into three categories: snags, size and characteristics, and arrangement.

Coarse Woody Debris Size And Characteristics
Wildlife biologists often emphasize large pieces of organic debris for wildlife, as they can benefit a wider range of species. For example, black bears can den in the stump of a large windthrown tree. Obviously bears cannot use a six-inch tree for the same purpose. But these small logs still benefit other species—maybe even bears, if they can forage grubs from the decayed log. Longer pieces of CWD are also preferred because they provide a wider range of diameters, in turn benefiting a wider range of wildlife species.

continued on page 11
Our family forest has a decided lack of snags. I’ve noticed that even small diameter, short snags often have cavity nests in them, so as a woodworker with a band saw, I did some thinking-drinking. I took the concept of band saw boxes and now make boxes out of firewood that I mount on top of fence posts or high stumps. The chickadees and nuthatches love them!

I start with a trip to the wood pile and select a log about 5” in diameter (Figure 1). Length isn’t too important. For this example I started with an 11” log. As much as I’d like to keep the bark, its going to slough off eventually so may as well remove it now.

To begin the build, cut about 1” slabs off each side and keep track of which side goes where (Figure 2).

Next, draw the area to be cut out; the hatch marks will be waste material (Figure 3).

Head back to your saw and make the cuts (Figure 4). The overall length of the insert isn’t terribly important; 5 ½ inches for this example, with 2 ½ inches from entrance hole to bottom of insert. The old mounted box pictured above is 5” from hole to inside bottom of insert. Glue the side slabs back onto the body and either strap, clamp, or brad them in place.

Drill a 1” entrance hole and cut purchase slits on the inside face of your newly created cavity so the baby birds can navigate to the exit (Figure 5).
To finish, drill a nail hole through the side of the main body and into the insert for a removable nail to keep the insert securely in place. Drill a hole in the bottom and glue a peg so the box can be mounted to a fence post (Figure 6).

I use broken arrows for pegs. You may need to caulk your saw kerfs. Sometimes I do, and sometimes not. Mount the box on a post away from too much disturbance. Orient the hole to the north or west. Leave nest material in your snag so birds will be “snuggly buggly” (as my wife says) on cold winter nights. Remove the old nest material in March to mitigate for potential parasites or ants, mind that you may need to sand the rear sides of the insert a bit to facilitate removal in the spring for cleaning.

Keep in mind that you may need to sand the rear sides of the insert a bit to facilitate removal in the spring for cleaning.

So there you have it—a value added product providing habitat that cost nothing more than the sweat of firewood gathering, the blood of playing with sharp objects and the tears that soon follow. Those secondary cavity nesters will appreciate your thoughtfulness and sacrifice.

Want the box made for this article? Attend the 2016 Annual Meeting of Tree Farmers for a chance to win it at the Silent Auction and thanks for all you do for our forests!

Hollow logs, formed by stem decay fungi such as Indian paint fungus that decay the tree’s heartwood while it is still standing, are particularly useful to many wildlife species (e.g., pine marten). Downed logs provide the widest variety of habitat if the bark is attached, as some wildlife species or their prey will live in the space between the wood and the bark as the latter starts to loosen. Try not to roughen up downed logs any more than you have to if you want to keep that habitat.

Coarse Woody Debris Arrangement
Arrangement of fallen logs is critical to some species, particularly small mammals and their prey. For example, martens and fishers like logs that are “jackstrawed” or loosely piled up across the forest floor. When these log piles are covered by snow they create a complex of snow-free spaces and runways that provide protection and foraging.

Log orientation matters too. Logs lying parallel to slope contours may be used more by wildlife than logs oriented up-and-down-hill, especially on steep slopes. Arranging logs this way also allows soil to accumulate on the uphill side, which traps moisture, hastens decay, and reduces fire risk.

Balancing Competing Objectives
With all the varied habitat needs of different wildlife species, plus all your other forest management objectives, how do you make decisions that benefit wildlife? Unfortunately, there is not much authoritative research that gives precise recommendations of how much and what kinds of CWD to leave for specific species of wildlife. Barring more prescriptive research results, the best strategy may be to leave a variety of species, degrees of decay, and distributions of CWD to benefit a broad range of species. How much depends on your other objectives, but wildlife biologists rarely talk about a site having too much CWD.

For more information on CWD:
Montana Tree Farm News
TREE FARM PROGRAM
PO Box 17276
Missoula, MT 59808

Items Needed
Montana Tree Farm is requesting your donations of items for the 2016 Annual Meeting Silent Auction. Any item, big, small, new, old, edible, drinkable, handmade, crafted, or manufactured is welcome.

Your donation is tax deductible, and if you cannot attend the meeting, a pickup of your items can be arranged.

For more information or to contribute an item, contact Pat Mandzak, Silent Auction Chair, at Mandzak@aol.com or (208) 859-5490.

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