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Control Deer and Elk Browse Damage

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Most forest owners value deer and elk on their property. However, these animals can cause problems in new tree plantings. Deer and elk can kill or injure tree seedlings by eating buds and succulent new growth or pulling seedlings from the ground. Browse damage stifles seedling growth and ultimately increases reforestation costs.

Identifying Damage. Many animals can injure tree seedlings. Deer and elk leave a ragged, splintered break, because they grasp foliage between their lower incisors and the upper palate. Rabbits and hares normally leave a clean angled clip. Mice usually girdle a seedling (chew the bark off) rather than clip. Deer and elk damage is most easily confused with other damage when succulent new growth is consumed.

Prevention Strategies. Deer and elk damage can be hard to predict. Damage is usually worse on sites next to standing timber, which provides cover. Also look for signs that deer or elk are present in the area when their preferred grasses and woody shrubs are unavailable (usually during late winter or early spring). Ask neighbors and local natural resource professionals about animal damage in your area. If damage seems likely, many prevention tools are available, with varying degrees of effectiveness for different situations.

- *Fencing* - Fencing deer and elk out with tall mesh or electric fences is the most consistently effective browse prevention method. However, it is usually only cost effective for high value plantations such as seed orchards, hardwood plantations or woody ornamental production.
- *Mechanical Devices* - Mechanical devices can be effective until seedlings grow out of them. *Rigid tubes* (Vexar, Tree Shelters, Tubex, etc.) staked with the seedling are the most commonly used method to prevent browse in Idaho reforestation plantings. They can also help prevent gopher and other rodent damage. *Flexible sleeves and bud caps* may be useful but can constrict terminal growth if they are improperly applied or maintained.
- *Repellents* - Repellents come in three types. *Contact repellents* (ex: Hot pepper sauce, Thiram, Big Game Repellent, Deer Away, Hinder) are applied directly to plants and repel by taste (some also repel by smell). They are the most commonly used type of repellent for reforestation plantings in the Northwest. *Area repellants* are applied near plants, hung in bags, or other methods, and repel by smell. Some are synthetic (ex: Animal Browse Control, bone tar oil). Others can be lumped into a "home brew" category (ex: human hair, mothballs, blood meal, soap, putrefied meat scraps, big cat urine). A third category is *systemic repellants* (ex: Anapel), which are absorbed through seedling roots. Research on systemic repellents is limited. If you try them, consider applying the material at the seedling nursery rather than in the field, so foliage can fully absorb the repellent before planting. Surface applied repellant effects often last less than 3 months. However, repellents may condition browsers to shy away from seedlings even after the active ingredient has dissipated. Be sure to follow manufacturers label instructions closely.
- *Habitat manipulation* - Some have tried planting forbs and grasses in or near plantations to attract deer or elk away from trees. Such plantings must be "ready to eat" when deer would otherwise be

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damaging seedlings. Thorough understanding of local deer herds and feeding habits is also critical. This method can backfire if you attract more deer and elk to the area than you can feed.

- *Stocking* - Planting stock selection can influence browse damage. Some species (ex: Douglas-fir) bounce back from browse better than others (ponderosa pine). Larger seedlings (if practical) have more resources to sustain damage than 1-0 seedlings. Some landowners opt to overplant seedlings. On most sites, hybrid poplars and other hardwoods **MUST** be protected.

Choosing a strategy. All these methods vary considerably in their effectiveness and cost, depending on site characteristics, and availability of more desirable browse. Think carefully about which tool or combination of tools will work best for your situation. Study the costs of different browse prevention strategies relative to the likely cost of damage. Also, don't forget to integrate deer and elk browse prevention with other pest management efforts. For example, will planting favored deer browse attract gophers to the site?

For more specific information on browse control, stop by your local University of Idaho Cooperative Extension System Office and ask for *Understanding and controlling deer damage in young plantations* (OSU: EC 1201).

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