

Reducing Wildlife Damage to Forest Resources

By DALE NOLTE

Wildlife is an integral attribute to forest ecosystems. However, wildlife can cause problems. Severity will depend on the species and numbers of animals present, along with existing habitat conditions. Whether these impacts cause significant problems or warrant action depends on the objectives of the landowner. Managers who determine they have a problem should address it through a five-step process:

- 1) assess severity of the problem and identify the culprit;
- 2) evaluate feasible approaches to alleviate the problem;
- 3) develop a strategy to implement selected approaches;
- 4) implement your strategy; and
- 5) monitor your program's results and determine if any unanticipated consequences occur.

Although excessive time need not be devoted to each step, each should be given careful thought.

Assessing the problem includes determining the potential impacts relative to management objectives. Wildlife will not be a problem for projects with unlimited resources and time. The repeated plant and replant method ultimately will lead to some form of success. However, resources that require initial seedlings to reach maturity can be severely impacted if no measures are implemented.

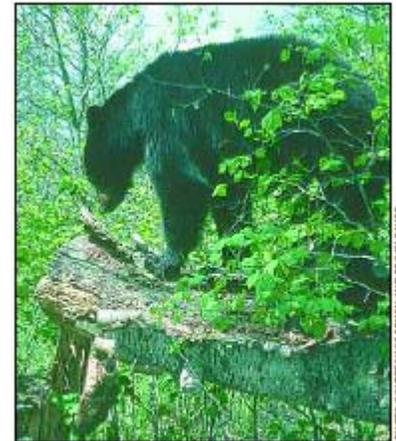
Assessing the potential of a problem is fairly simple if there is history of similar efforts and habitat in the area. Verifying past successes or reasons for failure will provide insight to the future. Planting in new areas requires an understanding of the species and habitat present, and whether additional seedlings will alter the current plant and animal interactions.

Foraging is relative and potential for damage will reflect alternative forages and desirability of the planted seedling. For example, western redcedar is generally preferred food and readily eaten, while Sitka spruce is generally ignored.

Correctly identifying the right animal or target species is essential in developing an effective program. Unfortunately, the offending animal is rarely seen. Therefore, the culprit will need to be identified by signs left at the scene.

For example, girdling low on the stem or clipped at a 45-degree angle generally indicates rodents or lagor-morphs. Additional signs can indicate which species.

Voles commonly leave marked trails. Mountain beavers create relatively large systems with open entrances. Walking across areas with dense mountain beaver populations is likely to be interrupted by collapsing burrows. Clipped vegetation and fresh earth is often spotted at their entrances. Pocket gophers also create extensive systems, but they close their entrances and generally leave dirt mounds on the surface.



Bear damage occurs in the spring when bears emerge from their dens and energy demands are high.

PHOTO COURTESY OF ERWIN AND PEGGY BAUER

Pocket gopher mounds can be readily distinguished from mole mounds because they are sloped, appearing more like a blown sand dune, whereas mole mounds are more conical. Pocket gophers may girdle roots and damage is not apparent until the tree dies and turns red. Frequent rabbit or hare droppings are generally indicative of high populations of lagomorphs.

Porcupines are likely to strip bark from the entire seedling or feed near the top of larger trees. Deer and elk take bites from the foliage or will leave stripped ends. Bears generally girdle the bottom (three to five feet above ground) bole of trees 15 to 30 years of age. Vertical tooth marks with stripped bark lying at the base are strong indicators of bear activity. Girdling by mountain beaver is distinct from bear damage, because the damage is low on the bole (12 to 18 inches above ground), with horizontal tooth and irregular claw marks. Conical shaped stumps with large wood chips are classic signs of beaver damage. Beaver girdling of large conifers can be confused with bear damage, but beavers do not leave strips of bark like bears.

All approaches to alleviate the problem are not feasible for all situations. No action may be appropriate if the problem is minor. Selecting an appropriate approach requires some familiarity with the behavioral traits and biological attributes of the target animals. Planting large stock and soon after harvest can help reduce deer, elk and some rodent problems. The intent is to establish trees before existing habitats become favorable for likely offending species. Larger stock is less likely to be damaged by rodents and rabbits, and more quickly grows to a size less vulnerable to deer and elk.

Trapping or applying rodenticides are generally employed to reduce high populations of rodents. Fences can

effectively impede deer and elk, but are expensive to install and maintain. Individual barriers around seedlings also can be effective when properly installed. Repellents provide a non-lethal approach. Protection is often limited to a few months at best and repeated applications can become costly. Repellent availability or even registration does not necessarily equate to being effective. Unfortunately, a number of marketed repellents have limited utility. Frightening devices are generally not practical and ineffective for protecting forest resources.

A few preliminary considerations when selecting a method will increase potential for success or at least minimize risk of creating additional problems. Conduct a check on legal ramifications for any action selected and ascertain that the action will not be hazardous to non-target species.

Assess how the existing environmental conditions will affect the selected method and consequences of the action to the environment. Determine probability of the selected methods to achieve an acceptable level of success and if the situation justifies the anticipated expense. Public and neighbors' attitudes toward potential methods also need to be considered when selecting an approach.

A strategy may incorporate several methods or utilize one method to stop the damage and another to limit future problems. Remember, as a forest matures, the species may vary and potential problems change. Inquire among experts for additional information. Identify and obtain necessary equipment. When necessary, acquire training for handling equipment or chemicals. Ensure you understand all pertinent regulations or laws that may govern your chosen activity and obtain any required permits.

Although it will require time and effort, implementing a well thought-

out program will be fairly straight forward. Unanticipated problems or concerns, however, may necessitate you modifying your plan or selecting an alternative strategy. In that case, repeat the decision process incorporating additional or new information.

Monitoring for continued damage and unanticipated problems is essential. Determine whether your goals are being achieved and if there are any unexpected consequences. Continue to monitor the program until trees are no longer vulnerable or conditions warrant terminating the program.

DALE NOLTE is field station leader for the National Wildlife Research Center's Olympia Field Station in Olympia, Wash.

Wildlife Damage Resources

The United States Department of Agriculture's Wildlife Services program is the federal agency responsible for responding to and resolving wildlife-related problems encountered by the public, private and commercial sectors of society. Although part of the Animal and Plant Health Inspection Service, Wildlife Services (WS) is a non-regulatory, service branch of the U.S. Department of Agriculture. WS uses an integrated approach in its wildlife damage management that consists of a combination of methods, including but not limited to habitat management, harassment, exclusion and occasional removal of animals.

WS works extensively with the National Wildlife Research Center (NWRC), the world's leader in developing safe, effective and environmentally friendly tools and techniques for resolving wildlife-related problems. The NWRC Olympia Field Station is devoted to developing tools and strategies to protect forest resources. Dale Nolte is the Field Station Leader in Olympia, Wash., and can be reached at 360-956-3793.

The Olympia Field Station relies heavily on input from the Collaborative Research Team (CRT) to develop station activities and objectives. The CRT is a collaboration of persons interested in identifying feasible solutions to resolving wildlife negative impacts to forest resources. An informal structure is used to keep participants apprised of research results and to exchange information on emerging methods and strategies to prevent damage. Anyone interested in participating with the CRT should contact the NWRC Olympia Field Station.