

## What is low-impact logging?

By Steven J. Milauskas, Forest Operations Extension Specialist, WVU Appalachian Hardwood Center

More than 260,000 individuals own part of West Virginia's 12 million acres of forests. Tract sizes average around 40 acres. Many large forest products companies own large tracts, and the publicly owned Monongahela National Forest consists of more than 900,000 acres.

Managing and harvesting the forest with gentle or low-impact methods can have different meanings to different types of landowners. For the purposes



Landowner, logger, and forester need an understanding about how the woodlot will be harvested.

of this article, I will use the terms "low-impact" and "gentle logging" as if they mean the same thing. Despite somewhat differing definitions, most landowners usually share such objectives as minimizing damage to the residual stand (the trees that are left after logging).

Smaller woodlot owners across the country have taken

a keen interest in these low-impact logging methods for several reasons. Many newer landowners from more urban areas have a different set of management objectives than traditional farm or woodlot owners. They are often concerned with management for wildlife, recreation, and aesthetics, along with timber management. Traditional farm woodlot owners bring another set of interests to the table. They have increasingly expressed interest in forestry operations that are sustainable, produce income, and support local community interests. Low-impact logging methods are increasingly looked at as a way to help meet these changing landowner objectives.

Low-impact has different meanings to different individuals, landowners, and organizations. For some, low-impact means logging with horses; others look to using high-tech machines that leave lighter "footprints" on the land. We can have traditional or conventional logging systems that are low-impact or alternative, truly unconventional systems that minimize impacts and incorporate some social or community values. Some of the newer concepts for making smaller woodlot management and logging sustainable and profitable can be exciting. Education and commitment by individuals will be very important if any of these methods are to succeed. This article describes some of the commonalities, definitions, and advantages of low-impact systems.

### WHAT IS GENTLE OR LOW-IMPACT LOGGING?

Generally, gentle logging systems incorporate several practices that most foresters, landowners, and conscientious loggers could agree on regardless of the type of equipment used:

- having a written forest management or stewardship plan
- planning roads and trails before the harvest
- employing directional tree felling
- cutting stumps low to the ground
- constructing roads and trails to minimum widths
- constructing landings to minimum size and spacing
- minimizing ground disturbance
- paying attention to aesthetics or how the site looks after harvest
- minimizing residual stand damage
- following best management practices (BMPs) as given in the West Virginia Logging Sediment Control Act
- having a good understanding among landowner, logger, and forester of how the site will be harvested, what will be removed, how it will be removed, and measures taken to protect and enhance the remaining stand of trees

Gentle or low-impact forestry and logging also imply other meanings and objectives to some landowners, foresters, and loggers. It begins with how sustainable forestry is defined. Meeting current needs without compromising the ability of future generations to meet their needs is a common definition of a sustainable practice. Some view sustainable forestry on woodlots as the ability to produce a steady flow of timber

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## Oral rabies project scheduled this month

By Bill Grafton, Wildlife Specialist, WVU Extension Service

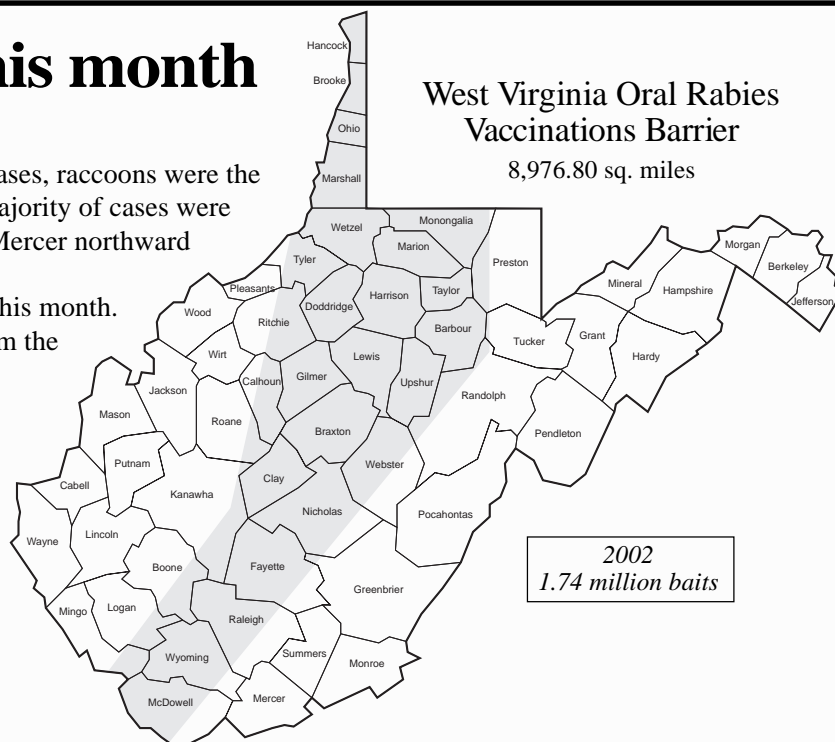
Rabies virus was identified in 141 animals in West Virginia last year. With 96 cases, raccoons were the leading affected animal, followed by skunks (22 cases) and bats (11). The vast majority of cases were in the state's Northern and Eastern Panhandles and in the eastern counties from Mercer northward to Preston.

A major effort to stop the westward and southward spread of rabies will occur this month. Nearly 2 million small, square baits will be dropped from airplanes in a band from the Northern Panhandle to McDowell County.

The 2 million baits will form a barrier of immunized raccoons, skunks, foxes, and other animals after the wild animals eat the fish-smelling baits that contain rabies vaccine. Some baits will also be placed by hand around selected cities in the state.

This oral rabies vaccination project should greatly reduce the chances of people and pets getting rabies. It is hoped that this project will prevent rabies from becoming common in western West Virginia. The project is in its second year.

You can also help by keeping rabies vaccinations up-to-date on pets and farm animals. Do not handle or feed adult or young wild animals. Make an effort to teach children never to handle unfamiliar wild or domestic animals.





Barbour County 4-Her's are outstanding in land judging and homesite evaluation. Coached by WVU Extension Agent Roger Nestor, the teams placed first in last year's state contests. The senior land judging team won the 2002 national event in Oklahoma City.

## Protect your 4-H livestock when exhibiting

By David W. Snively, Associate Director, Agriculture, Natural Resources, and Community Development, WVU Extension Service

Reducing the risk of disease in your project animals begins with selecting healthy animals. Project animals should come from farms that have a well-developed health program. Be sure to ask questions about the health of the herd. Then work with your veterinarian to develop a health program to fit your situation. Your health program probably will be fairly simple and may only require some vaccinations, parasite control, and a sound feeding program.

If you exhibit your project animals at fairs and shows, exposing them to other animals, to equipment used on other animals, or to livestock trucks and trailers will increase the chances of your animals contracting and spreading a disease. Once your animals are exposed to other animals, there is also the chance that they may bring a problem back to your farm.

Exhibiting livestock is an important part of the 4-H livestock education experience. By following these simple suggestions, you can help keep your livestock healthy during the show season.

- Isolate all purchased animals for a minimum of two weeks.
- When you return from a show or other situation where there was contact with other animals, isolate your show animals for a minimum of two weeks.
- Watch your animals closely for at least two weeks after any exposure to observe any signs of developing disease. Call your veterinarian at the first sign of sickness.
- Use clean, recently disinfected trucks and trailers to haul your animals.
- Avoid sharing grooming equipment and feed and water containers. Clean and disinfect your equipment when you return from shows.
- Discourage fair visitors from petting or feeding your animals.
- Wash with soap and water after handling your animals and put on clean clothes. Keep your boots and shoes clean. Wear rubber boots when working with your animals and disinfect them after each use.
- Be cautious about who has contact with your animals. Visitors to your farm should wear clean clothes that have not been in contact with other animals. Make sure their shoes and boots are clean and disinfected. Provide visitors with plastic disposable boots and coveralls for maximum protection.
- At the fair or show, be sure your animals have access to clean water and feed in containers you bring from home. Minimize nose-to-nose contact with other animals as much as possible.

## What is low-impact logging? (continued)

harvests and income from their land. Timber stand volume and quality are to be enhanced over time. This typically means many smaller periodic harvests rather than one or two large cuts in a lifetime.

Such a strategy takes discipline since potential current income may be sacrificed for greater future returns. Low-impact logging here means removing the worst trees first to improve the forest for the future. Reducing or eliminating damage to the remaining trees is absolutely critical. Trees skinned or damaged by machines, skidded logs, or poor felling can significantly reduce the stand's future value. Logging costs could be higher when strict constraints on residual stand and site damage are written into a contract.

### A HOLISTIC APPROACH

Many see low-impact logging as part of a holistic approach to forestry. With this approach, low-impact logging should contribute to sustaining forests and local community values, favor local labor and markets, and fit with value-added processes. Practices promoted as making smaller woodlots more profitable to the owner by adding value over time are:

- removing inferior and undesirable trees to improve the stand's value
- logging your own timber using smaller equipment such as a farm tractor
- hiring a proven, committed, low-impact logger that either horse logs or uses smaller, less obtrusive equipment
- processing logs into lumber with portable sawmills on site
- drying lumber in smaller solar kilns
- processing into secondary products such as flooring, cabinets, or novelties

The idea is to add value and increase landowner returns by avoiding middlemen, maximizing on-site processing, and retailing direct to consumers. Implementing such practices requires a large commitment of time and personal energy.

Landowner-run cooperatives can provide services and market forest products that give smaller landowners an opportunity to maximize their timber's value. The organization might own a portable sawmill or contract with a mill to do custom cutting. The forest could be managed and harvested across boundaries to ensure that smaller woodlots can be economically and sustainably logged. These larger, cooperatively managed areas may be necessary in order to promote stable relationships with loggers dedicated to using certain low-impact methods.

Gentle or low-impact logging can exert a positive influence over the landowner's forest and local community. The range of low-impact logging definitions is wide, but most landowners agree on the specific "core" practices previously mentioned. Several systems are used to implement these practices. As important as these harvesting systems are, the logger's attitude and dedication are just as critical in carrying out these gentle methods. Ultimately, the effectiveness of the logging operation in carrying out the prescription or plan is one of the most important factors in achieving the landowner's objectives for his sustainable forest.

*This discussion will continue in the next issue.*

## Calendar of Events

<b>Aug. 9-17</b>	West Virginia State Fair <i>Lewisburg</i>
<b>Aug. 10-13</b>	W.Va. Dairy Cattle Show and Festival <i>WVU Jackson's Mill</i>
<b>Sept. 11-15</b>	State 4-H Livestock Roundup <i>WVU Jackson's Mill</i>
<b>Oct. 24-27</b>	W.VA. COVERTS (Wildlife and Forestry) Woodland Owners Training Workshop <i>Camp Caesar, Cowen</i>

## Deer damage results in significant cost in urban areas

Deer damage is a significant cost to property owners in urban areas, according to a recent West Virginia University study. WVU Extension faculty surveyed property owners in five state cities about damage to their property and vehicles caused by deer.

The 829 people surveyed a year ago reported damages totaling \$125,426. On a statewide basis, the deer-caused damage in urban areas was an estimated \$3,135,945.

Property owners in Charleston, Morgantown, Parkersburg, Hurricane, and Weirton answered questions about damage to plants and vehicles and about the control methods they used. The survey was sent to 2,023 randomly selected addresses (4 percent of the housing units) in the five cities. The faculty group received replies from 829 people.

The estimated \$3 million-plus damage costs would amount to an average of \$61.95 per household in West Virginia's urban areas if every household shared equally in the costs.



Deer cause significant damage in urban areas.

More than half of the property owners reported seeing deer on their property in 2000. Although 30 percent of the respondents experienced property damage attributed to deer, 69 percent reported no damage.

Damage to shrubs and vegetable gardens amounted to more than \$31,130 in the five cities, accounting for nearly half of the total home property damage caused

by deer. Flower beds also received much damage (\$10,458 worth).

Only 4 percent reported hitting deer with their automobiles; the average cost of that damage was \$1,723. At that rate, the estimated total for deer-damaged vehicles in urban West Virginia was more than \$1.5 million in 2000.

Only 13 percent of the property owners surveyed had tried to control deer. Fencing was the most common control method cited. The property owners reported that most control methods—fencing, repellent, using scaring materials, dogs, etc.—did not work.

Half of the property owners indicated that deer damage is not acceptable on their property, but 31 percent said they would be willing to deal with some damage.

More than a third of the respondents wanted fewer deer in their city; another 36 percent thought the number should stay the same. Only 6 percent wanted more deer. Although 65 percent indicated they had never hunted, 90 percent did not object to hunting. Farmers accounted for 18 percent of those responding to the survey.

The following Extension agents conducted the research: Leanne Moorman, Hancock County; Wayne Bennett, Putnam County; H.R. Scott, Wood County; Beth Massey, Monongalia County; Charles "Bud" Cottrill, Kanawha County; and Mary Beth Bennett, Berkeley County. Also participating were Extension specialists William Grafton, Ed Collins, and Rakesh Chandran.

Controls Used			
Control	Percent Used	Percent Successful	Percent Not Successful
Repellent	5%	19%	81%
Fencing	7%	48%	52%
Shooting	1%	67%	33%
Scaring Materials	4%	22%	78%
Dog	4%	41%	59%



## AgrAbility promotes agriculture success for people with disabilities

By Marie Leichter, Information Specialist, WVU Center for Excellence in Disabilities, Robert C. Byrd Health Sciences Center

Farming is one of the nation's most dangerous professions because it involves difficult working conditions, hazardous equipment, and animals that can become out of control. These conditions are compounded in West Virginia where many part-time farmers also work in mining and logging, two other hazardous occupations.

The U.S. Department of Agriculture (USDA) National Agricultural Statistics Service estimates that more than 200,000 farmers, ranchers, and other agricultural workers experience occupational illnesses and injuries every year. Approximately 5 percent of those workers have serious or permanent results.

The Breaking New Ground Resource Center estimates that more than 500,000 people employed in agriculture have physical disabilities that interfere with their ability to perform essential tasks on the farm. In addition, thousands of children born into agricultural families have disabilities that prevent them from fully participating in farm or ranch activities enjoyed by other youth.

The AgrAbility Project is a USDA-funded program that assists farmers and farm families who, because of occupational and personal accidents or illnesses, need to find ways to accommodate their disabilities in order to remain active in agriculture. West Virginia joined the nationwide AgrAbility Project in April 2001. The WVU Safety and Health Extension, the Northern West Virginia Center for Independent Living, and the West Virginia Assistive Technology System of the WVU Center for Excellence in

Disabilities with the Robert C. Byrd Health Sciences Center formed a coalition to apply for funding. In the first year of the four-year project, staff members have talked with more than 50 West Virginia farm families and are currently providing services to many of these families.

The AgrAbility Project staff helps farmers and their families by recommending safe, affordable modifications to their homes, land, vehicles, and farming equipment. The program also helps farm families locate peer support and funding sources and provides education on farm safety and injury prevention. Project staff can inform farmers about available resources and, in some cases, help them design and build assistive devices.

The program works with people having such disabilities as amputated limbs, arthritis, back pain, developmental disabilities, hearing problems, multiple sclerosis, traumatic brain injury, Parkinson's disease, vision problems, respiratory problems, stroke, spinal cord injury, post-polio syndrome, and chronic pain. The staff can serve agricultural families regardless of farm type and make on-farm visits to develop solutions to meet specific needs. To qualify for West Virginia AgrAbility Project assistance, a farm family needs to have made at least \$1,000 from their farm product.

Inetta Arbogast, West Virginia AgrAbility field operations manager, coordinates resources and services for farm families. If you know a farmer who has an injury or chronic health condition or has a family member with a disability, or if you would just like more information about West Virginia AgrAbility, call the program at 1-800-841-8436.

## WVU initiates forestry heritage tourism effort

By Marissa Rodgers, Communications Intern, WVU Davis College of Agriculture, Forestry, and Consumer Sciences

Researchers in WVU's Davis College of Agriculture, Forestry, and Consumer Sciences and the WVU Extension Service received a \$537,648 grant from the Fund for Rural America to create a unified tourism effort for the central Appalachian Mountain region from western Maryland to southeastern West Virginia.

"The forest heritage tourist destinations will provide high-quality, forestry-related retail products, programs, events, and visitor services," said David

McGill, forestry specialist for WVU Extension and one of the project leaders.

The four-year project began with a collaborative visioning and planning process. The purpose of the meeting was to establish a vision for the trail. Interested individuals learned more about WVU's new community development initiative to promote forestry heritage tourism during a community meeting at Blackwater Falls State Park.

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# Internal parasites common in horses

By Robert E. Pitts, Extension Veterinarian, WVU Extension Service

All horses have parasites. The only exception is the newborn foal. In most circumstances, the foal becomes infected with parasites through the mare's colostrum during nursing.

Parasites are the most common cause of colic in horses, which can be very serious and even life-threatening. If parasite numbers are sufficient, parasites may contribute to weight loss, disease, and performance problems. The following information addresses the most common internal parasites found in horses but does not include all of them.

The parasite that infects the foal shortly after birth is *Strongyloides westeri*, the intestinal threadworm. The larvae of this parasite lie dormant in the muscle of the mare's ventral abdominal wall. They become active near the end of pregnancy and are secreted in the mare's milk to the nursing foal.

Large numbers of these parasites may cause diarrhea in the foal. Since this occurs around the time of the mare's first heat after foaling, the diarrhea is sometimes described as the "foal heat diarrhea." Fortunately, foals usually develop resistance to this parasite quite rapidly. Threadworms are found in foals up to about 3 months of age, but they are not found in adult horses in any significant quantity. Although these parasites usually do not cause serious problems, some owners deworm foals when they are 1 to 2 weeks old.

Another parasite commonly found in young horses is the roundworm, *Parascaris equorum*. This parasite, common throughout the world, may be a cause of poor condition in young horses. This very large, white roundworm may be up to 15 inches long. Infections are usually greatest in foals and yearlings since horses develop some immunity to these parasites as they age.

The major damage caused from these parasites results from the migration of larvae from the intestines through the liver and lungs while completing their life cycles. Occasionally, adult worms in the intestines of foals can cause impaction, colic, and death. Since eggs passed by the adult roundworms are quite resistant, it is best to avoid using the same paddocks for

mares and foals in successive years. Deworming the foals at an early age may also help avoid impaction problems by not allowing large numbers of adult roundworms to build up in the intestines.

The most pathogenic parasites in horses, according to parasitologists, are the large strongyles. The "big three" species of large strongyles are *Strongylus vulgaris*, *Strongylus edentatus*, and *Strongylus equines*. Although all three species can be quite harmful to horses, the *Strongylus vulgaris*, commonly referred to as the bloodworm, is the one of most concern to horse owners.

The adult parasites reside in the large intestines and pass their eggs in the horse's feces. These eggs develop and hatch as larvae in the environment. Horses then ingest the larvae while grazing. The larvae migrate through the intestinal wall and into the blood vessels that furnish the blood supply to the intestinal organs. This migration may last for up to seven months. This is the most damaging stage of the parasite since the blood supply to the intestines is being compromised. If the blood supply is damaged sufficiently, the result is colic and perhaps death. Fortunately, infection by this parasite can be controlled by the use of proper deworming medications.

Another common parasite of horses is the horse pinworm, *Oxyuris equi*. Adult worms are found in the terminal portions of the digestive tract. The adult females migrate out the rectum and lay their eggs on the skin around the anal area of the horse. This usually causes a severe pruritis, which results in the horse rubbing its rump and tail against some stationary surface. When the horse rubs against the feeder, manger, or wall of the stall, the very sticky eggs are transferred to these surfaces. The horse is infected by the larvated eggs ingested when licking these contaminated surfaces. The most harmful effect of this parasite is the self-mutilation caused by the horse rubbing its rump area against a post or stall surface.

Bots are also a concern of horse owners. In late summer or fall, bot flies lay eggs on the hairs of the horse. The location of the eggs on the horse

is related to the species of bot fly. The eggs may hatch around the mouth and crawl into the mouth area, or the horse may ingest the eggs when grooming itself or another horse. The larvae pass into the stomach where they become attached. The larvae remain in the stomach and develop for 10 to 12 months before they are passed out in the horse's feces. These larvae then pupate on the ground, and the adult fly emerges after one to two months. Most owners deworm their horse after the first hard frost has killed the adult bot flies. If the larval stage is killed in the stomach at this point and all the remaining eggs are removed from the hairs on the horse, there should be no chance of reinfection for the remainder of the year, since the cold weather killed the adult flies.

All of these parasites, except for the bot larvae, are susceptible to most of the over-the-counter anthelmintics (dewormers) for horses. Only certain products are effective against the bot larvae. It is best to consult your veterinarian about the proper use of these products as part of a regular health program.

Management practices may be employed to reduce the risk of parasite infection and reduce the reliance on treatment. If stalls are cleaned daily and paddocks cleaned weekly, many of the parasite eggs will not have time to develop into the infective larval stage and will be removed as a source of reinfection. A harrow or drag may be used in pastures to break up manure piles and expose parasite larvae and eggs to the sun. Hot summer temperatures kill many parasite larvae.

To reduce the risk of reinfection, pastures may be rotated so that horses are not on a pasture for at least eight weeks. Other species of animals, such as cattle, may be kept on the pasture since most horse parasites are specific, infecting only horses. Drain wet areas because most parasites and their eggs or larvae prefer and survive longer outside the animal in wet environments. Practice fly control measures to reduce the population of bot flies.

## WVU initiates forestry heritage tourism effort, *continued*

The project will implement two community-based projects in Elkins and Webster Springs. The focus will extend to other communities in the region later.

"Both nationally and in West Virginia, communities are discovering how well the preservation of historical, cultural, and natural resources combines with tourism development to enable communities to diversify their economies and promote traditional ways of life," said Alisa Bailey, commissioner of the West Virginia Division of Tourism. "The forestry heritage trail as envisioned by WVU is an innovative concept."

"The forest industry is a key asset in West Virginia and is responsible for much of our heritage," said Susie Salisbury, former heritage tourism program coordinator for the Preservation Alliance of West Virginia. "West Virginia and western Maryland have a wealth of potential heritage sites, which can create a unique opportunity for community and economic development growth within the region."

Minnesota and North Carolina in partnership with their cooperative extension services have also developed tourism research and outreach centers.

Project leaders will conduct future meetings on the initiative to continue the planning process. For information, contact Jeremy Morris at 304-293-4832, ext. 4399.

## WVU UPDATE

The West Virginia University Extension Service and the WVU Davis College of Agriculture, Forestry, and Consumer Sciences are pleased to offer this educational insert to the Farm Bureau NEWS as a service to West Virginians. We welcome your questions or comments.

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